ORGANIZATIONAL AND MANAGERIAL PRACTICES IN FINNISH IN-HOUSE DESIGN MANAGEMENT

Master's Thesis
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Author:
Reetta Noukka 12757

Supervisors:
D.Sc. Niina Nummela
M.Sc. Mari Ketolainen

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1   INTRODUCTION

Design is a significant, potentially powerful management resource, susceptible like every other management resource to intelligent direction and control.
(Wally Olins 1985)

1.1   From managing design to designing management

Design has been acknowledged for influencing companies' competitiveness in numerous studies since the 1980s (cf. Kotler & Rath 1984; Lorenz 1986; Walsh, Roy, Bruce & Potter, 1992; Trueman & Jobber 1998; Borja de Mozota 2002; Bruce & Bessant 2002; Design in Britain 2003; Muotoilulla menestykseen? 2007). Since mere technological superiority is no longer sufficient to make a new innovation a success (cf. Kotler & Rath 1984, 16; Lindman, Scozzi & Otero-Neira 2008, 53), and as technological features are becoming more and more uniform between competing products, there is a need for companies to differentiate themselves and their offerings with something else. The former CEO of Sony, Norio Ohga, encapsulated this challenge: "At Sony we assume that all products of our competitors have basically the same technology, price, performance and features. Design is the only thing that differentiates one product from another in the marketplace." (cf. Centre for Design Innovation 2011). Furthermore, as the production of the world gravitates more and more towards the Far East, keeping up with the pricing structures and labor costs of low production cost countries is becoming an impossible task for companies of the Western world. This further imposes a need for alternative competitive edge.

Design, difficult to outsource or automate (Pink 2008, 86), and praised for its capability of turning inventions into much needed innovations, might be a crucial competitive factor for companies and small and open economies, such as Finland (cf. Salimäki 2003). According to a study by Lindström, Nyberg and Ylä-Anttila (2006, 72), countries that have succeeded in international competitiveness comparison, use design more than the average. Major steps in linking design with the national innovation system have, in fact, already been taken in Finland: In order to initiate a formal design policy for Finland, Sitra, the Finnish innovation fund, commissioned a survey identifying the present state and future challenges of Finnish design. The results of the survey were reported in *Muotoiltu etu* (*Designed Asset*), which was published in 1998 (Valtonen 2007, 90; Korvenmaa 2009, 309). In the 1999 government program, design was identified as a central change factor in terms of Finland's future economy and culture (Pääministeri Paavo Lipposen II hallituksen ohjelma 15.4.1999), and soon after

that, in 2000, a national design program *Muotoilu2005!* was launched (Korvenmaa 2009, 311). The most significant and recent structural change in the field of design in Finland took place when Aalto University was formed in 2010 by combining Helsinki School of Economics, Helsinki University of Technology, and University of Art and Design Helsinki (Korvenmaa 2009, 319), with an objective to bring together design, technology and business. These are all signs of design being approached from the perspective of national economy and international competitiveness.

At Wharton Business School in 1966, Thomas Watson Jr. of IBM famously declared "good design is good business" (cf. Best 2006, 23). Ever since, the phrase has appeared in numerous publications and texts that link design with business. Good design, and good business for that matter, however, does not emerge by chance, but as a result of a managed process, as has been illustrated by a considerable body of research (cf. Walsh et al. 1992, 7; Bruce & Bessant 2002, 38; Chiva & Alegre 2009, 436). Numerous studies (cf. Blaich 1993, 8, 32; Cooper & Press 1995, 3; Lockwood & Walton 2008, 2) have stated that design, like any other corporate activity, requires management. Although managers might nowadays recognize the importance of design, they often ignore its management aspect as an ingredient for success (Chiva & Alegre 2009, 436). Organizations might not, for instance, have sufficient understanding of how they could actually utilize design, often associating it only with aesthetics and styling (Trueman 1998, 594). However, the design investment is only the primary input for the design process, design management skills are required to carry out the process effectively. This means that simply investing in design is not enough to enhance performance (Chiva & Alegre 2009, 436.): the investment shows in the bottom line only if design is integrated into the core business processes and managed well (Bruce & Cooper 1997, 3).

Over and above, a company always projects an image – a sum of the company's products and/or services, communications, the environment where it operates – about what it does. This image will always be projected, regardless of whether it is managed or not. (Blaich 1993, 176.) Design management is the activity that gives the company control over this image (Blaich 1993, 176). As everything that is made is designed, and the process of it is always managed one way or the other (Gorb 1990a, 8–9), be it a conscious or an unconscious activity, why not manage it well?

As the ways in which companies utilize design differ (cf. Dumas & Whitfield 1990, 55; Hasu, Keinonen, Mutanen, Aaltonen, Hakatie & Kurvinen 2004, 12; Best 2006, 16), and the ways in which design is managed and organized are numerous (cf. Gorb 1990a, 7–8; Walsh 1992, 138), research on organizations' different in-house design management practices needs to be conducted. The state of design management practices – where design is located within the firm, who does design in the firm, and what status do they have in the firm – reflect the importance, which is given to design within the firm (Walsh et al. 1992, 118). Hence, the research at hand recognizes the need for

knowledge about how in-house design management is organized and managed within Finnish companies: knowledge on the current practices enables implementing an effective and a company appropriate design management strategy, as well as developing the future of design management in the company also in a larger sense. In short, the state of design management needs to be understood in order to contribute to better design management today and in the future, in order to make the most of design in business.

1.2 Historical development of design management

It is important to know the development of design management to be able to evaluate where it stands today. Design management as a field is fairly young, both abroad and especially in Finland, and many of the early practitioners and researchers continue to influence the field today.

The origins of explicit design management stem from 1960s' Great Britain. In 1966, a new function, the design manager, was observed. The design manager's task at that time was to make sure that the projects were executed smoothly and to maintain good communications between a design agency and its clients. (Borja de Mozota 2003, 68.) Milestones in establishing the concept of design management included The Royal Society of Arts' first Design Management awards in 1966 (Gorb 1990a, 1), and founding the Design Management Institute (DMI) in Boston in 1975 (Borja de Mozota 2003, 68). Despite all this, in practice, design management, i.e. managing the design function, design process, and professional designers, has existed as long as industrial design itself (cf. Johansson & Svengren Holm 2008, 47–48), although it was not perhaps explicitly pronounced in the companies. For example, Harley Earl's, General Motors' director of styling, thinking was said to dominate the company's visual policies from 1927 to 1954 (Lorenz 1986, 15). In the postwar years, Charles Eames, George Nelson and Elliot Noyes, were in the forefront of the establishment of the integrated design program for corporations, which included product, graphic, communication, and architectural design (Blaich 1993, 22). For instance, Nelson, the director of design for Herman Miller, was a pioneer of a corporate identity program, by directing design of all the company publications, consulting marketing strategies, and exerting a strong influence on the design of the company in general. He was an early practitioner of the philosophy where a company's corporate identity is a sum of its activities (Blaich 1993, 49, 81).

The birth of design management research then again takes place in the 1970s, when the teaching of design was pioneered at the London Business School in 1976 (Gorb 1990a, vii). Design management issues were not, however, discussed broadly until in

the 1980s (Valtonen 2007, 174), when the field grew especially in Great Britain (cf. Johansson & Svengren Holm 2008, 48). For many, the eighties, according to Gorb (1990b), was the decade in which design became a central business preoccupation.

In Finnish companies, the first educated industrial designers were hired in the mid and late 1960s and early 1970s (Valtonen 2007, 201). The design tasks were still performed by individual designers, as opposed to formal design organizations, all the way to late 1980s and early 1990s (Valtonen 2007, 202). According to interviews with design-conscious companies done by Perheentupa (1989) in 1986, it seemed that, at the time, the companies were waking up to work for design management questions, and were quite untrained in handling design questions (Perheentupa 1989, 16). In Finland, a certain milestone for design management took place in 1991, when the University of Art and Design launched an educational *Design Leadership* program (Korvenmaa 2009, 306). When the economic importance of design and the areas of its application grew, management of design emerged in fast growing internationalizing companies (Korvenmaa 2009, 306). Design management became topical in Finland in the late 1980s and early 1990s (Valtonen 2007, 176), and during the late 1990s and the first decade of the 21st century, many companies developed formalized in-house design organizations (Valtonen 2007, 202). In general, the design profession is said to come into its maturity in the 1990s: design's responsibility went beyond creating beautiful things and became regarded as a source of gaining competitive advantage (Joziasse 2000, 36).

In the end of the first decade of the 21st century, management literature on design has focused on managing radical innovation, design as its driver (Verganti 2006, 2009; Esslinger 2009). Esslinger (2009, 55) sees innovation and design as the two most powerful forces for crafting a more successful future, regardless of the type of business. Also the concept of *design thinking* (cf. Brown 2008; 2009) emerged during the decade. Design thinking refers to a methodology that approaches innovation activities with a user-centered design mindset (Brown 2008, 86). Design thinking emphasizes design's involvement in the strategic level in the organization (Brown 2009, 7, 37), as well as the holistic approach to design i.e. design not as styling but as part of the process from the very beginning (Brown 2009, 7).

As discussed above, the field of formalized design management, both in terms of practice and research, is young, particularly in Finland. The birth and development of the practices of Finnish in-house design management have happened in the last two decades, and formal design organizations that exist today in Finnish companies, have been established in a fairly short time. On the level of the general discussion, at least, the trend is going towards the strategic role of design management, which shows in the emergence of concepts such as design thinking.

1.3 Defining key concepts

What do we mean exactly when we talk about *design*? After all, everything around us is designed somehow by someone. In the words of James Pilditch (1990, 14), "The good, the bad, the ugly, all are designed". There is only good design and less good design, the difference, according to Hornby (1988, 228), being, that good design works and is pleasing, bad design fails in either or both areas.

There is little uniformity in the definition of design (cf. Cooper & Press 1995, 7–8; Lindström & Pajarinen 2006, 1), as it means different things to different people (Walsh et al. 1992, 13). Design can be regarded as an art-based activity, where the emphasis is on the visual aspects of product design, but on the other hand it can also be thought of as an engineering-based activity, where the concern might be for instance on the correct application of components to complex systems (Barlow 1988, 86; Walsh et al. 1992, 13, 24–25). There has been a prevailing mindset of associating designers to people who add taste or style to an already created piece (cf. Pilditch 1990, 14–15; Blaich 1993, 35). Pilditch (1990, 14–15) uses as an example the chrome trim they used to add on as surface treatment to cars as a final nuance to an otherwise ready end-product. Even if design might sometimes still be viewed merely as the finishing touch of a product or as plain functional design, this study strives to a definition that covers both: design is seen as a relation between production, functional and aesthetic qualities (Johansson & Svengren Holm 2008, 22). Since effective design both works well and looks right (Pilditch 1990, 16), aesthetics are an integral part of design (Johansson & Svengren Holm 2008, 22).

As stated by Bruce and Bessant (2002, 19–20), design comprises planning, problem solving and combining function with materials in a way that is appealing to customers. According to the classic definition by Kotler and Rath (1984, 21), design is the process of seeking to optimize consumer satisfaction and company profitability through the creative use of major design elements (performance, quality, durability, appearance, and cost) in connection with products, environments, information and corporate identity.

In the same way as everything around us has been designed, *design management*, as in making decisions regarding design and designers, can be thought of as being conducted everywhere, consciously or unconsciously. In fact, even the decision that design and design management do not matter is a design management decision. However, Blaich (1993, 11) for example, has argued that design management makes the existence of design activities visible within the company structure, and establishes the fact that company does not regard design as an informal activity, but instead, has a formal design program. Also Borja de Mozota (2003, 79) has emphasized that design management is the *planned* implementation of design in order to achieve company

objectives. Thus, in unison with Blaich (1993) and Borja de Mozota (2003), the term design management would refer to something that is done explicitly, not implicitly.

The definition of design management best suited for this study views design management as *the organizational and managerial practices and skills that allow a company to attain good, effective design* (Chiva & Alegre 2009, 425). Even though this study consistently uses the term design management, aspects of design leadership (design strategy and vision) are also handled in this study, since in practice many design managers work in the field of design leadership and design leaders in the field of design management. Design management and design leadership are not, however, interchangeable as concepts.

Companies have three options for organizing design work: Having in-house designers, hiring outside consultants, who can be either a single designer or a design consulting company, or appointing a mixture of in-house and outside design capabilities (cf. Blaich 1993, 171; Bruce & Morris 1994, 586; Korvenmaa 1998, 61; Borja de Mozota 2003, 167–168). *In-house design management*, the main interest of this study, refers to a situation where the design function is located within the organizational structure. An in-house function is said to enable effective design, providing that the company recognizes design's strategic value for business (Lockwood 2004, 37).

The person in charge of design in the company is the design manager (Borja de Mozota 2003, 79). An *in-house design manager* has the role of managing design, but what the exact job description entails, varies greatly from organization to organization (Best 2006, 12), and will be one of the main subjects of interest in this study. It is to be noted that the role of the in-house design manager is very different compared to a design manager in a design agency (Valtonen 2007, 276). In an agency, the manager's typical role is to find new projects and clients for the agency, and, due to the usual small size of the agencies, to also act as a general manager (Valtonen 2007, 276). In organizations, design decisions and activities are also frequently carried out by people who are not designers or design managers. This is called *silent design* (Gorb & Dumas 1987). This study, however, focuses on design management that is carried out by people who have explicitly recognized themselves as in-house design managers.

1.4 Purpose and structure of the study

Although design management as a field of academic research is still comparatively small (cf. Johansson & Svengren Holm 2008, 49), design and its state have been the interest of the research community also previously. One of the earliest in-house design studies in Finland was made by Juha Järvinen and Ilpo Koskinen (2001); they studied how design is organized in machine manufacturing and medical equipment companies

and compared them to well-known international companies. More recently, Finnish in-house design has been studied in a joint project by the University of Art and Design Helsinki and the University of Helsinki, PROOMU (Proaktiivinen muotoilu, Proactive design), where Hasu et al. (2004) studied the development paths of design activities in three Finnish companies in the technology industry, offering viewpoints to the development challenges in organizing and managing design work in the 21st century. This study was followed by another in the same project; Mutanen, Virkkunen, and Keinonen (2006) described the development of design activities and capabilities in connection with new business models in Finnish international technology companies in cases such as Nokia, Metso and Rautaruukki. Valtonen (2007) has studied the development of, and the change in, Finnish industrial design. As a part of her dissertation, Valtonen (2007) has described the development of four Finnish companies' in-house design functions. Although these previous four studies do handle in-house design, they, however, approach the topic from the point of view of only a few companies, which, in the first three cases, were also from a limited industry. There seems to be a research gap in systematically studying the in-house design management practices through a broader sample of companies or design managers. Moreover, approaching the issues from the point of view of the design manager job profile is new to the field. As Table 1 indicates, the field of in-house design management research lacks a recent study that would focus only on in-house design management regardless of the industry, and studies the topic through a broad sample.

Table 1   Review on similar previous studies in Finnish design management

Author(s)	Research objective	Company focus	Geographical viewpoint
Järvinen & Koskinen (2001)	Organization of industrial design in machine and medical equipment manufacturing industries	Machine manufacturing companies and medical equipment producers	Finland
Hasu, Keinonen, Mutanen, Aaltonen, Hakatie & Kurvinen (2004)	Development paths of design activities in three Finnish companies	Technology companies	Finland
Mutanen, Virkkunen & Keinonen (2006)	New business models and developing design capabilities in technology companies	Technology companies	Finland
Valtonen (2007)	The development of the in-house design function in four Finnish companies	The change of Finnish industrial design from operational to strategic role	Finland

Internationally, however, the topic has been studied through larger samples. For instance, Dumas and Whitfield (1989) conducted a pioneering study on a variety of design management issues in manufacturing and service sector companies in the UK. In 2003, Design Council UK (Design in Britain 2003) conducted a National Survey of Firms, interviewing thousand companies across all sizes and sectors in order to assess the state of the design industry. A very recent survey was done by DME, Design Management Europe, (Kootstra 2009), where European SMEs were surveyed of their design management practices. Although these examples of studies have approached their topics through a larger sample of companies, they do not handle Finnish companies, and usually concentrate on design in general, not necessarily only on in-house design.

The topic for this study arose from the need for an initial state study for a larger research project, *Employment of Design Strategies* (EDEST), conducted in the Aalto University in Helsinki, Finland. A comprehensive research on the state of in-house design management in Finnish companies was yet to be done, and in addition to being the first step towards the design strategy research project, it is seen to contribute to the development work of the area also in a larger sense.

The purpose of this research is to analyze the different managerial and organizational in-house design management practices in Finnish companies. The sub-objectives are:

- to analyze the managerial practices of Finnish in-house design managers, consisting of the job content and focus of design management
- to analyze the organizational practices, including both the horizontal and vertical position of design management in the organization.

This research focuses on design management practices that are conducted and perceived by persons that have identified themselves as in-house design managers. The study will examine design management through the perceptions of these design management professionals.

The study is constructed as follows: The introduction describes the key concepts and objectives of this study. The theory chapter provides a framework based on the current theoretical knowledge on organizational and managerial design management concepts, and evidence to support further argumentation. The theoretical framework is used for analyzing in-house design management practices. Chapter three describes how this study was conducted, as well as evaluates the trustworthiness of the study. The results of the study are provided in chapter four, which aims to answer to the objectives of this study. Chapter five draws the conclusions from the results, and chapter six aims to summarize the entire study.

2 IN-HOUSE DESIGN MANAGEMENT PRACTICES

> *It is far easier to determine what design management is, and how it is valued, than to lay down rules how it should be organized, and who should do it.*
> (Peter Gorb 1990a, 7)

Design management was defined in chapter one as the organizational and managerial practices and skills that allow a company to attain good, effective design (Chiva & Alegre 2009, 425, 435). The theoretical background of this study aims to look at these areas of in-house design practices. This chapter is divided into the organizational and the managerial practices in in-house design management, which aim at reflecting the context and the content of design managers' work in organizations. The organizational practices (sub-chapter 2.1) form the context where the work of the design manager, handled in the chapter of managerial practices (sub-chapter 2.2), is conducted. A framework for evaluating the state of in-house design management practices will be formed based on the following theoretical background and presented in the end of this chapter. The framework will be further used to identify the different ways of organizing and managing design, and to evaluate the current state of the design management practices in Finnish companies.

2.1 Organizational practices in in-house design management

Managing design is about creating a context where design can participate in all decisions that will shape the points of contact with, or the perceptions of, customers (cf. Powell 1998, 10). As the context where design is managed is a company that most often qualifies as an organization, being a group of people joined together to achieve a common goal (cf. Anderson 1988, 6), the organization structure serves as a suitable starting point for the theoretical background for developing an understanding of the key organizational design management practices.

Organizational structure can be defined as the framework in which the organization defines how tasks are divided, resources are deployed, and departments are coordinated (Daft 1997, 319). The organizational structure is said to consist of two dimensions essential to effective organization: division of labor, (also: specialization and task structure), and coordination (also: reporting relationships) (cf. Anderson 1988, 620; Certo 1992, 267–268; Daft 1997, 319; Oliver 2002, 152; Vanhala, Laukkanen & Koskinen 2002, 188). *Division of labor* (*task structure or specialization)* refers to the allocation of different tasks to different units (such as marketing or product

development) in the organization. This realizes the horizontal division of labor, which is the central characteristic of organized activity, enabling substantially higher efficiency than without it. (Anderson 1988, 620; Certo 1992, 267; Oliver 2002, 152; Vanhala et al. 2002, 188.) *Reporting and coordinating relations* are relations between members of the organization, groups, and managers that create the organization's traditional hierarchy perceived by the members of the organization and outsiders. This is also division of labor, but now vertical, because it is centrally related to decision making and therefore defines how authority is allocated. (Vanhala et al. 2002, 189.) The two dimensions of an organizational structure are illustrated in Figure 1.
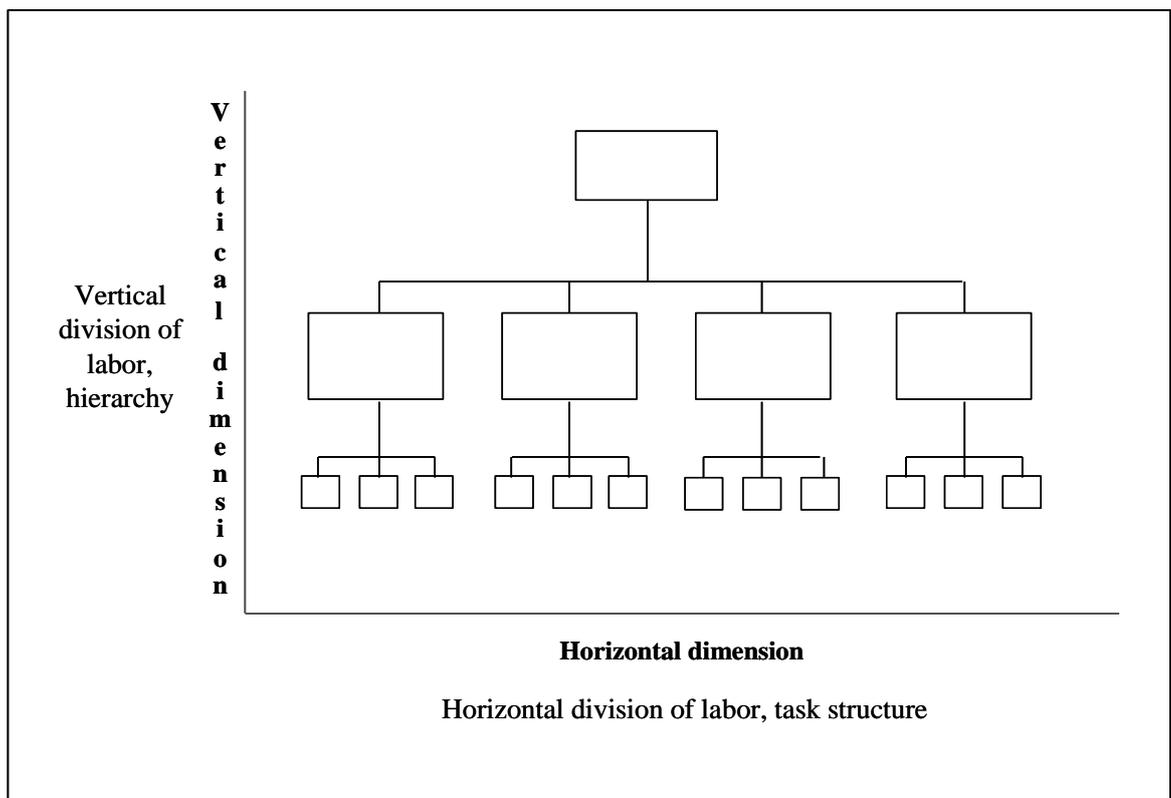
Figure 1   Two dimensions of an organizational structure

The design function's place in the organizational structure and the reporting (i.e. the horizontal and vertical division of labor) illustrates design's mission in terms of the company's business strategy (Borja de Mozota 2003, 218). These two dimensions will form the basic structure for the framework for assessing design management in organizations.

2.1.1 Vertical design management dimension

Design can be managed on three different *levels of design management*: operational, tactical, and strategic (cf. Walsh et al. 1992, 8–9; Borja de Mozota 1998, 244–245; Joziasse 2000, 39; Best 2006, 17; Kootstra 2006, 248), as portrayed in Figure 2. These levels form the vertical, or hierarchical, division labor in design management, and thus the other dimension of the context that lays a foundation for the design manager's responsibilities, tasks, and routines.
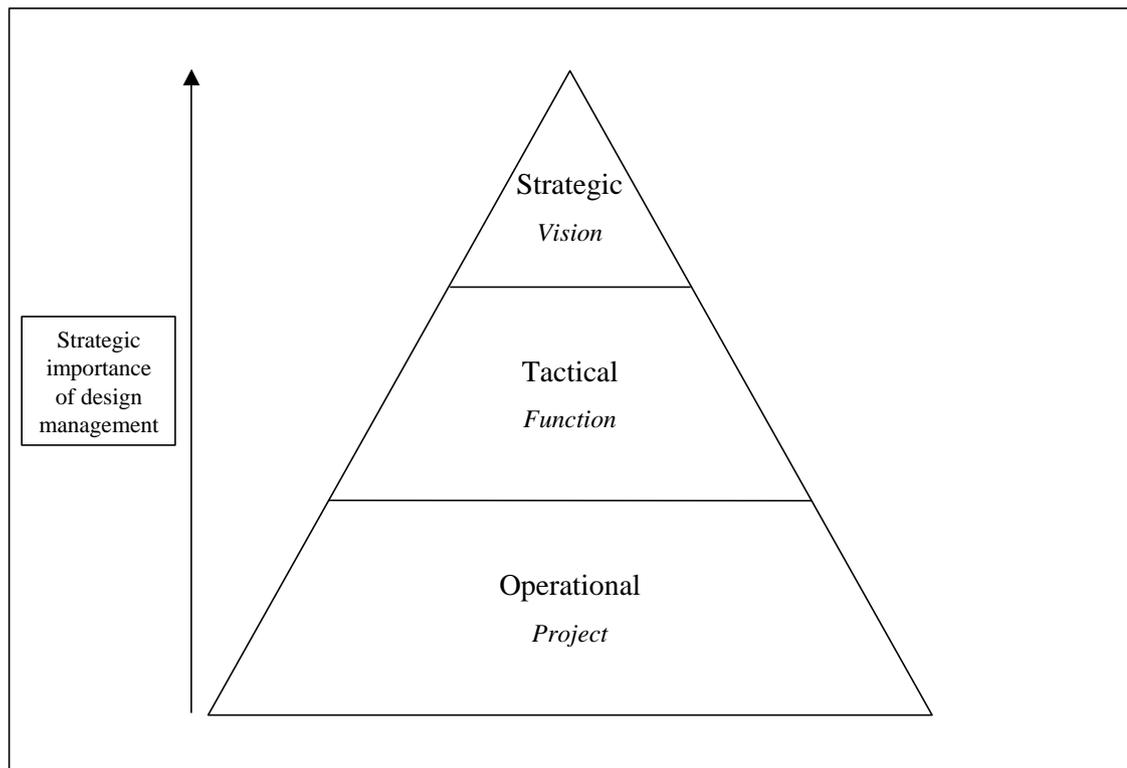
Figure 2   Levels of design management

Starting from the bottom of the pyramid, *operational design management* is design management on the individual project level (Walsh et al. 1992, 8; Borja de Mozota 1998, 244; Joziasse 2000, 39), and thereby focuses on design action (Kootstra 2006, 263). On this level, design manifests itself as physical and tangible products, services and experiences (Best 2006, 17). According to Kootstra (2009), who calls this level design management as project (also: [repeated] design project management), this type of approach to design management is found in companies who deploy design on a limited basis to meet direct business needs. Design is used as a way to add value to the existing product offering for example by ad-hoc style changes or product improvement projects, through appearance, styling, packaging, marketing communications, or visual identity. Design joins the product development process at the end of the process, and it is barely,

if at all, integrated into other business processes. Moreover, there is limited or no collaboration between other departments, such as marketing or R&D. On this level, coordination of design activities is minimal, and the design responsibility is kept on an operational level. (Kootstra 2009, 12–13.) In short, operational design management is about achieving the goals set on the strategic level.

Tactical design management (cf. Joziasse 2000, 39; Best 2006, 17; Kootstra 2006, 248), also called *functional design management* (Borja de Mozota 1998, 244; 2003, 214), concerns creating a structure for design: managing and organizing the design function and the design process on the level of single business units within the organization (Borja de Mozota 1998, 244; Joziasse 2000, 39; Best 2006, 17; Kootstra 2006, 260). On this level, design management also generates unique product concepts and searches for new market opportunities (Joziasse 2000, 39). The company has appointed employees or a department with formal responsibility for the design management in the organization, which acts as an interface between different design specialists, departments, and company management (Kootstra 2009, 13). Tactical design management can be thus said to work as a mediator between the strategic level goals and the operational level implementation.

Situated at the apex of the pyramid, *strategic design management's* focus is on managing the design vision (cf. Borja de Mozota 1998, 245; Kootstra 2006, 258), which means that design is present on the board level (Borja de Mozota 1998, 248). On the strategic level, design is perceived as a source of competitive advantage, and it is used as a catalyst for change to the overall scope and direction of the organization (Borja de Mozota 1998, 248; Joziasse 2000, 39). It is on the strategic level in the company, where the overall policies, missions, and agendas are defined, and strategic design management should ensure that design is connected to those agendas (Best 2006, 17). Strategic design is fully involved in the corporate strategy process (Joziasse 2000, 39). Kootstra (2009, 13), who has called this level *design management as a culture* (also: strategic management of design, or design leadership), states that it is an approach typical for companies that aim at a market leader position through design innovation. These companies are highly design-driven and they have design at the core of their differentiation strategy. In companies on this level, design can be described to be a way of life. In addition to the senior management, the employees are aware and committed to the importance of design. Design as part of the corporate culture is the most successful and broadest use of design (Kootstra 2009, 13.) In short, strategic design management sets the goals for design management in the organization.

This framework proposes that the higher a company makes it up on the pyramid, the greater the strategic importance of design management in the company is. Although Kootstra (2009, 13) himself has suggested that the highest step of the design management levels is not always the aim, since not every company will need to have

strategic design as their driving force, this study sees that ideally, design should be integrated into the total strategy and made equal with other core activities (Korvenmaa 1998, 93). Design is said to be the most beneficial to companies' competitiveness when used strategically. Design decisions should not be separated from the general business strategy, and every design-related decision should be a result of the chosen business strategy (Salimäki & Väkevä 1998, 101).

The commitment of the top management plays a major role in the successful implementation of design in business processes, since without the support of the top management the impact of design can be smaller than intended (Korvenmaa 1998, 69). The reason why design should be on the responsibility of the executive group is that it enables connecting design with strategic planning (Muotoilulla menestykseen? 2007, 7).

Successful design has also been linked with organization culture (cf. Blaich 1993; Cooper & Press 1995; Lockwood 2004). Blaich (1993, 178) has described a corporate culture where design flourishes as "the fertile ground factor". According to Blaich (1993, 179) the fertile ground factor is fundamental to the success of design in any company and it must exist company-wide. Also Lockwood (2004, 39) has argued that the stronger an organization's culture for design is, the greater its commitment to using design as a resource is. He claims that in order to achieve the true power of the idea of design as a business resource, as a means of reaching business objectives, businesses need to develop their own design culture by applying design leadership and effective design management practice, in order to produce effective design and achieve business results. According to Cooper and Press (1995, 240), a creative and design sympathetic climate involves lateral interaction and communications between design and other functions of the firm.

In this study, it is presumed that all design managers in the scope of this study perform at least on one of the three levels of design management, strategic, tactical or operational, since they all have identified themselves as design managers.

2.1.2 Horizontal design management dimension

Previously we looked at one half of the organizational structure, the vertical dimension. The following aims to illustrate the other, horizontal, half: where design can be located in the horizontal structure in organizations. The place the design function occupies in the organizational structure is a good starting point for the examination of the role of design management in the company (Gorb 1990a, 2). Moreover, by understanding the relationship of design to organizational functions and activities, design can be used appropriately to achieve corporate goals (Cooper and Press 1995, 180). Usually design responsibilities are assigned to a department, or it is made its own independent

department (Borja de Mozota 2003, 218). Some companies also choose to divide the design function between different departments (Walsh et al. 1992, 122), i.e. decentralizing the design activities. Most common places for design in the organization are inside the product development or within the research and development staff, as part of marketing department or located directly under the top management (Jevnaker 1998, 24; Borja de Mozota 2003, 218–219). Design can also be organized as part of communications (Borja de Mozota 2003, 218–219). These options are summarized in Figure 3.
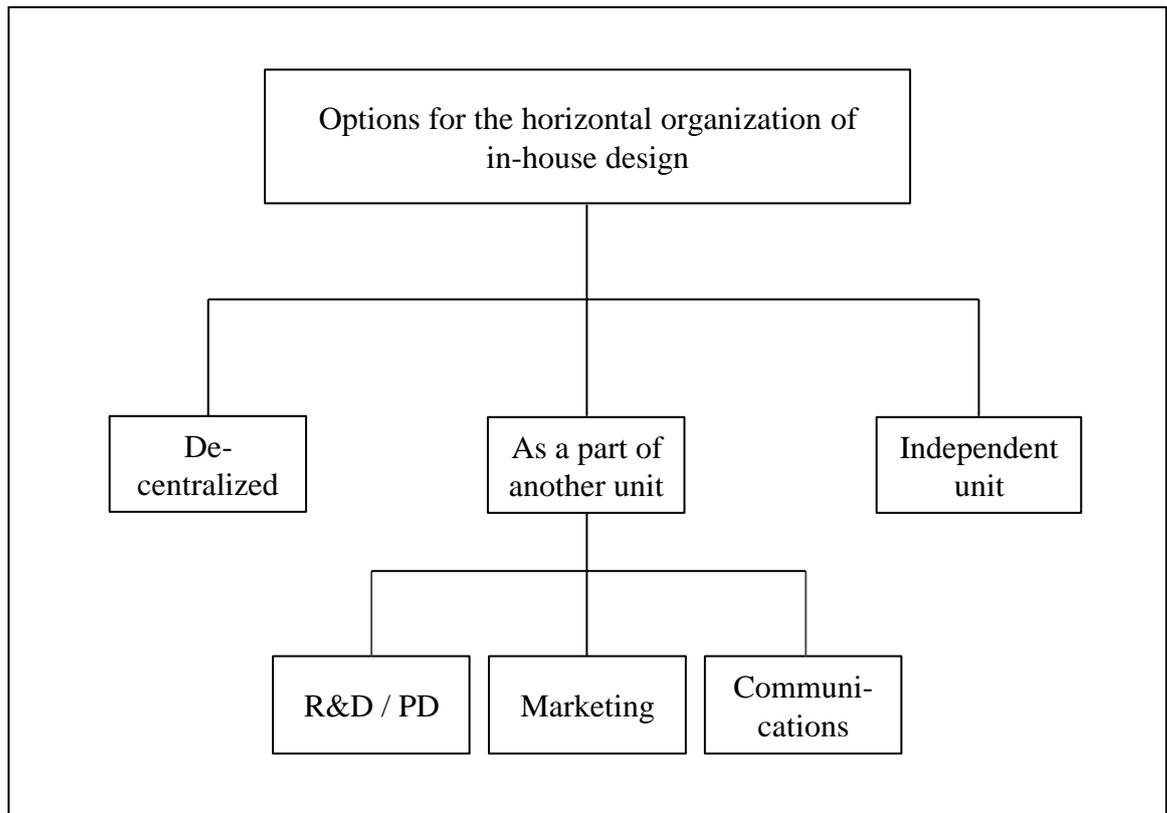
Figure 3   Options for the horizontal organization of in-house design

Design as the responsibility of the R&D department is a solution that is frequent in evolving technology businesses characterized by dominant technological culture and complex products. This kind of a company usually employs a large amount of engineers and technicians, and it expects the designer to possess creative talent that meets the technical constraints of the product. (Borja de Mozota 2003, 218.) In some companies, an R&D department where design is involved is called research, design, and development (Walsh et al. 1992, 122).

Even if design would not be the direct responsibility of R&D, cooperation between them is crucial, since R&D information is essential to designers working on product development: Designers need to know what is happening on the forefront of technology.

R&D should inform design about new materials, machines, and manufacturing methods (Cooper & Press 1995, 148, 180). This kind of knowledge feeds the creative process and enables designers to develop innovative concepts. It also works the other way around: understanding of design activities enables R&D to contribute more effectively to the designers' work. Design can guide R&D on research directions for new products. (Cooper & Press 1995, 148, 180.) The prevailing view in design management literature is that the key to success, regardless of company size, location or field of business, is involving design early on in the product development process or value chain (cf. Kotler & Rath 1984, 19; Blaich 1993, 165; Korvenmaa 1998, 93; Muotoilulla menestykseen? 2007, 7).

Design as the responsibility of the marketing department is a common organization model in businesses that are dominated by commercial preoccupation and operate in highly competitive markets (Borja de Mozota 2003, 219). When design is on the responsibility of marketing, it is likely to focus on industrial design, with an emphasis on style, image and packaging design (Walsh et al. 1992, 122), and the selling power of the product and its attributes in general (Borja de Mozota 2003, 219). The role of design is usually controlled by the brand. This situation is also encountered in service industries, where the focus of design management is, instead of products, on commercial space and signage. (Borja de Mozota 2003, 219.)

In general, design and marketing can be seen as interdependent (Cooper & Press 1995, 181; Bruce & Cooper 1997, 6). A change in marketing usually acts as a trigger for design (Bruce & Cooper 1997, 6), as design has a connection with all the aspects of the marketing mix (Cooper & Press 1995, 149–150, 181; Bruce & Cooper 1997, 3). In *Product*, design is naturally a major factor. Design has an impact on the quality, function, service, usability, and appearance of the product, all the features that differentiate one product from another. Moreover, design can contribute to the product features and to the added value of the product. (Cooper & Press 1995, 149.) In *Price*, design can affect the costs of manufacture and distribution, but design can also add value and margin. In *Place*, design contributes directly to packaging, distribution, designing outlets, such as stores, and stands. In *Promotion*, designers have a key role in e.g. brochures and point of sales displays. (Cooper & Press 1995, 181.)

In service industries, the scenario of *design as the responsibility of corporate communications department* is most commonly used in the management of visual identity. In this scenario, if there is a product design department, it is separate from the communications design department. When design is part of the communications function, it is often viewed as mere signs and graphics. Hence, in this scenario, design is rarely taken seriously in terms of evaluation business performance on the executive level. (Borja de Mozota 2003, 219.)

In the solution *design as an independent department*, design is linked to general management and participates in product concept design and defining product specifications very early on. This solution is most often a preference of directors who consider design a strategic, rather than a subordinate, department. (Borja de Mozota 2003, 219.)

The vertical and horizontal dimensions can be summarized into a grid (Figure 4) that forms the core of the theoretical framework of this study, and through which different design management practices of companies can be recognized and classified. The first dimension is the vertical division of labor, i.e. from operational to strategic level of design management. The other dimension is made up of the horizontal division of labor, i.e. the different functions that can be responsible for design management. The four functions, which were mentioned in the literature as the most common functions where design is located, were chosen to be included in the grid. This does not, however, rule out the possibility of other functions being responsible for design and design management in organizations.
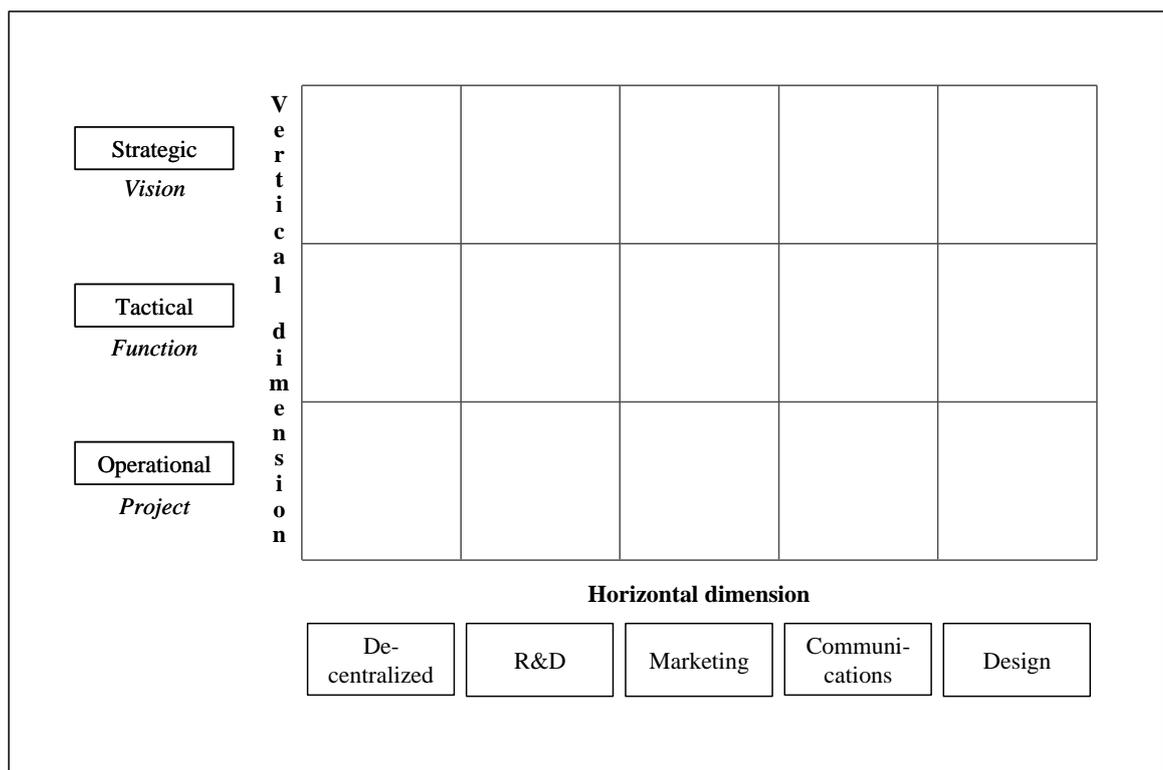
Figure 4   Organizational structure grid

These dimensions realize the organizational practices in design management. Both dimensions of this figure will be developed by adding the managerial practices part in order to achieve the final theoretical framework. The vertical (hierarchical) dimension will be broadened by uncovering the strategic, tactical, and operational nature of design

managers' job descriptions. In addition to studying the hierarchical role of the design managers, the horizontal nature of the design managers' job descriptions, i.e. to which aspect of design is the design manager's job description focused on, will be discussed. E.g. Walsh et al. (1992, 129) have argued that there is a strong correlation between the way design is defined and the department that is responsible for it. The issues related to design managers' job descriptions and the focus of design are handled in chapter 2.2 in order to complete the framework of design management practices.

2.2 Managerial practices in in-house design management

This chapter focuses on the content of the work of in-house staff with design responsibility, their roles, tasks and responsibilities. The horizontal and vertical division of labor, discussed in the previous chapter, illustrate design's mission in terms of the company's business strategy. The horizontal dimension is easy to determine by looking at where the design department is located, but how to determine whether design management is on operational, tactical, or strategic level? This study uses the content, i.e. the job descriptions of the design managers, to determine which level of design management the design manager reaches. The focus of design management, which aspect(s) of design is the design manager focused on managing, are handled in this chapter to further explore the horizontal dimension.

2.2.1 Design manager career levels and job descriptions

As discussed already in chapter 2.1.1, design can be managed on three levels, operational, tactical, and strategic. Thus, there are also design management roles on each of these levels. This makes it reasonable to allocate design responsibility by the levels of design management in the following way: strategic design manager, tactical design manager, and operational design manager. The levels are not to be viewed as isolated: simultaneous communication should pass between each group. The levels can also vary depending on the size and structure of the organization. (Cooper & Press 1995, 224–225.) Moreover, a design manager's tasks can be interpreted and carried out in different ways in different companies (Blaich 1993, 17).

Some earlier studies classify design manager career levels a bit differently: Crump (cf. Best 2006, 17) has classified designer's range of profession to three basic role levels: design leader, who is responsible for the vision, design manager, who is responsible for the process, and designer, who is responsible for the content (Figure 5) (Best 2006, 17).
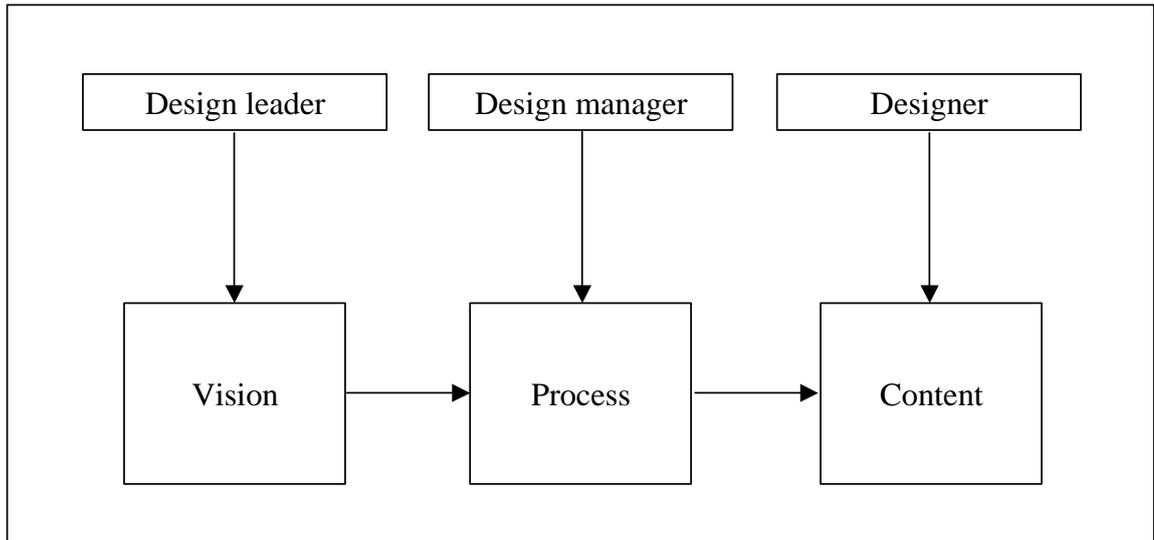
Figure 5   Roles in the design profession (Best 2006, 17)

This differs from the three (strategic, tactical, and operational) levels of design management somewhat: As we have noticed with the three levels of design management, it distinguishes the tactical (function, process) and operational (design project management) levels, whereas Crump's (cf. Best 2006, 17) range of design profession only specifies one design management role (process), in addition to the strategic design leader. The central idea in this framework might be the case that the design manager title covers both the tactical design management and the operational design management, and that there is no separate operational design manager between the tactical design manager, and the designer is the one who does the operative work, i.e. creating the content. Moreover, being a framework that focuses on design management, the three levels of design management framework naturally does not specify any level for just design and designers, but which is a natural part of the range of the design profession.

Anne Haerle (cf. Borja de Mozota 2003, 73) has illustrated design career levels from designer to strategic design manager in the following manner: The career levels start from a designer, then advancing to a design project manager, a design staff manager, a design organization manager, and finally to the last step, a strategic design manager. The design project manager clearly corresponds to the operational level, in which the focus is on managing design projects. The design staff manager could be either tactical or operational, depending on how the job description is defined. However, the design organization manager, who develops the design group or the organization, corresponds to the tactical level, which is focused on the design function, systems, and processes, whereas then the strategic design manager clearly corresponds to the strategic level. This study, however, prefers to use the more simple system of strategic design manager,

tactical design manager, and operational design manager at this point to clearly distinguish the differences between the levels and tasks. This approach is also used in other studies such as Kootstra (2006) and Cooper & Press (1995).

However, it must be noted that this classification does not mean that one person is limited to only one role: this framework does not rule out the option that the same person can be contributing to design management on all the levels of design management. This can be, in fact, far more realistic in real organizations. Nor does it rule out that the same person who started out as an operational design manager could advance to a strategic role for example. It is probable that in organizations where design management is a new a concept and function, there is only one design manager who is responsible for all design management in the company, and hence has roles for instance in both operational and tactical levels. Valtonen (2007) has studied the design manager tasks specific to Finland. Valtonen (2007, 267, 276) explains that if an internal design department has less than ten members, which is almost without exception the case in Finland, the role of the design manager typically consists of two main areas of focus: external / corporate-wide functions, such as representing the design function upwards, coordinating the design road maps and guidelines, and internal functions, such as managing the finance and personnel issues of the design function. Valtonen's (2007) classification corresponds very well to the traditional definition presented by Blaich (1993): promoting and identifying the strategic role of design in the company, and coordinating design resources and the day-to-day interface with colleagues they are working with (Blaich 1993, 13). Let us now look at operational, tactical, and strategic design manager tasks more closely. All the levels and their typical tasks are summarized in Table 2.

2.2.1.1 *Operational level*

Operational design manager's focus is on managing individual design projects (Borja de Mozota 2003, 186–196; Kootstra 2006, 263). The operational design manager works therefore as a project manager, project leader, or team leader (Borja de Mozota 2003, 186–196; Kootstra 2006, 263). These managers manage design, implement, monitor and evaluate design work (Cooper & Press 1995, 226).

The operational manager's key tasks include defining the design brief (cf. Cooper & Press 1995, 267; Borja de Mozota 2003, 186–196; Kootstra 2006, 263). The process consists of brief, research, concept, detail design, and finally, implementation and costs (Cooper & Press 1995, 267). They ensure that the design brief is performed within the agreed schedule and budget (Haerle cf. Borja De Mozota 2003, 73; Borja de Mozota 2003, 186–196; Kootstra 2006, 263). The tasks also include evaluating the design

project outcome against the brief objectives (Cooper & Press 1995, 271; Borja de Mozota 2003, 186–196) and project documentation, archiving, and control (Cooper & Press 1995, 262; Kootstra 2006, 263).

Operational design managers are responsible for finding, motivating, and instructing the appropriate designers, and ensuring there is sufficient skills and experience (such as design skills, presentation, management skills) for the project to succeed (Cooper & Press 1995, 248; Borja de Mozota 2003, 186–196; Kootstra 2006, 263). They are also responsible for providing a good working environment (Kootstra 2006, 263) and team building between designers and with other functions (Cooper & Press 1995, 258). Also this level has to maintain good relationships with internal clients and other stakeholder through the design process (Kootstra 2006, 263).

Operational design managers are responsible for implementing the design policy (Cooper & Press 1995, 224). Their role is also to inform the design policy (that is formed on the higher level) and define design specifics, e.g. colors, shapes, sizes (Cooper & Press 1995, 235). Their work includes maintaining awareness of design trends (Cooper & Press 232). Other possible titles for an operational design manager include, according to Haerle (cf. Borja de Mozota 2003, 73), design project manager, project manager, senior designer, and associate design director.

Design managers, regardless of the level, can also have a hands-on designer role: The designer's responsibility is, in accordance to the brief, on schedule, and within budget limits, to create and deliver a solution to design problem that satisfies customer needs (Haerle cf. Borja de Mozota 2003, 73; Best 2006, 17).

2.2.1.2   Tactical level

Being focused on managing and organizing the design function (Joziasse 2000, 39; Borja de Mozota 1998, 244; Best 2006, 17; Kootstra 2006, 260), tactical design management is responsible for creating the design organization (Kootstra 2006, 261), or management structure (Cooper & Press 1995, 226), and the design manager role (Cooper & Press 1995, 245), and for making management decisions that drive the development of a design group or organization (Haerle cf. Borja de Mozota 2003, 73). The tactical design manager ensures that there is a clear set of procedures (Cooper & Press 1995, 237), working structure, and a good distribution of tasks and responsibilities (Kootstra 2006, 262), and that the design processes, procedures, and internal functions are adding value to the company (Best 2006, 17). The tactical design manager is further responsible for monitoring the processes, progress, and finances (Kootstra 2006, 261), and evaluating the design process, product, and the return on investment (Cooper & Press 1995, 270).

The tactical design manager contributes to the design policy making, and also manages and monitors its implementation (Cooper & Press 1995, 224), and ensures consistency of policy across products, communications, and environments (Cooper & Press 1995, 234), i.e. oversees the coherence of the total look of the company. Sufficient coordination within the department is needed to deliver the required quality and coherence (Kootstra 2006, 262). Furthermore, different quality, legal, and environmental standards relating to design (including materials, safety, service, and design) are defined on this level (Cooper & Press 1995, 234).

Tactical design manager's responsibility area includes managing (providing, allocating) design resources (cf. Cooper & Press 1995, 245, 253, 265; Kootstra 2006, 261), such as human resources, facilities (materials, equipment, systems), and financial resources, and ensuring that they are sufficient in terms of quantity and quality. Tactical design manager makes sure that the design staff has the required knowledge and skills (Kootstra 2006, 261), providing new tools, techniques, and training for designers, regardless of the design being executed in-house or by consultants. The tactical design manager duties also include training staff from other departments, and motivating and encouraging employees, as well as ensuring a good working climate (Kootstra 2006, 261).

Tactical design manager responsibilities further include building up the level of design awareness (Cooper & Press 1995, 256), as well as integrating and coordinating design strategy with other functions (Cooper & Press 1995, 256, 230). They also write program plans for marketing, design, and production on how to achieve corporate goals, in conjunction with the functions (Cooper & Press 1995, 260). They can be also responsible for choosing the suppliers, keeping a list of design agencies, designers and suppliers, and for which activities they can be used for (Cooper & Press 1995, 253; Kootstra 2006, 261).

Tactical design management also maintains good communication with the top management and specialists, in order to allow information flow and avoid conflicts (Kootstra 2006, 261). They also maintain good relationships with internal clients and external vendors (Kootstra 2006, 262).

Managing the design department is in the scope of tactical design management, if the person is responsible for the development of the central policy. However, when it comes to controlling the day-to-day activities, the tasks fall out of the scope of the tactical design management and into operational design management. (Kootstra 2006, 261.) Operational design management is directly responsible for the implementation, whereas tactical management function does not deal with implementation as such, but with the policy for implementation (Kootstra 2006, 261). The tasks of the tactical design manager apply in fact to also other department managers. However, what sets the tactical design manager apart is their key role in understanding the value of design for

the organization and identifying and exploiting new opportunities for design (Joziasse 2000, 39), and making sure that they generate added value for the organization (Kootstra 2006, 262). Other possible titles for a tactical design manager include, according to Haerle (cf. Borja de Mozota 2003, 73), design organization manager, design director, and principal.

2.2.1.3 Strategic level

Design strategy refers to how the company is going to use design to achieve overall corporate goals (cf. Cooper & Press 1995, 228). Strategic design management's main focus being the design vision (cf. Borja de Mozota 1998, 245; Kootstra 2006, 258, 263), the manager's responsibilities includes identifying the strategic role of design in the company (Blaich 1993, 13), defining and developing the corporate strategic objectives and mission (Cooper & Press 1995, 228; Haerle cf. Borja de Mozota 2003, 73; Best 2006, 17), and ensuring that design strategy is connected to the strategic agenda (Best 2006, 17) to help to meet business goals (Haerle cf. Borja de Mozota 2003, 73).

The strategic design manager chooses the best design strategy in relation to the corporate strategy (Kootstra 2006, 258), and sets the strategic or policy direction (Cooper & Press 1995, 224), or vision for how design could be used within an organization (Cooper & Press 1995, 226; Best 2006, 17). The strategic level approves policies, standards, or guidelines on design (Cooper & Press 1995, 232), or develops a comprehensive design program, which includes product portfolio, corporate identity, and brands (Kootstra 2006, 258).

The design manager on this level is responsible for communicating, promoting, and selling the vision to key stakeholders and decision makers (Blaich 1993, 13; Cooper & Press 1995, 259; Best 2006, 17), as well as building up understanding of the value of design, and developing a design and creativity supportive climate and structure (Cooper & Press 1995, 255). Finally, the strategic design manager monitors and evaluates the design policy's performance against the design strategy (Cooper & Press 1995, 224, 268).

This kind of role can also be acted by the CEO of the company, a "design champion" (cf. Dumas & Mintzberg 1989; Blaich 1993, 33; Kotchka 2008, 115), who by using his top position ensures design an essential role in the corporate business activities (Blaich 1993, 33). In fact, according to Haerle (cf. Borja de Mozota 2003,73), possible titles for a strategic design manager include, in addition to chief design officer, chief executive officer, the CEO. Blaich (1993, 33) mentions Apple, Sony, IBM, and Philips as examples of companies, where the presidents were dedicated advocates for design. The top management's commitment plays a major role in the impact of design (cf.

Korvenmaa 1998, 69), and thus, a position of this level should ideally be secured with a permanent and a structured position to ensure the continuation of the leadership of a design program (Blaich 1993, 33). This is due to the issue that when the commitment to design is concentrated to one individual design advocate, what happens after the design champion passes? It is also recommended that the status of the design manager on this level is at peer level with senior managers in marketing, manufacturing, research, and finance. Moreover, the director of design should report directly to the president, CEO, or executive vice president of the company (Blaich 1993, 33).

Table 2   Design manager tasks on the levels of design management

Level (other titles)	Task focus	Examples of task groups
Strategic design manager (chief design officer, chief executive officer)	Vision – setting the strategic design direction	1. Identifying the strategic role of design 2. Defining and developing corporate strategy 3. Ensuring design is connected to the total strategy 4. Selling and promoting the design strategy 5. Approving design policies or guidelines 6. Monitoring and evaluating the policy against strategy
Tactical design manager (design organization manager, design director, principal)	Function – managing design function, processes, and resources	1. Creating, managing, and developing the design organization, processes, and resources 2. Defining design policy and standards related to design 3. Implementing and monitoring design strategy 4. Staff training and building up the level of design awareness 5. Identifying new opportunities for design 6. Evaluating the design process
Operational design manager (design project manager, project manager, senior designer, associate design director)	Project – managing individual design projects	1. Controlling day-to-day activities of individual design projects 2. Implementing the design policy 3. Defining the design brief 4. Ensuring the brief is performed within agreed schedule and budget 5. Managing designers (finding, motivating, instructing, ensuring skills) 6. Evaluating design outcome against brief
Designer (associate designer, assistant designer, designer)	Content	Creating and delivering a solution in accordance to the brief, on schedule and within budget limits

To conclude, there are clear differences in the tasks of design managers on different levels of design management, which define the strategic extent of the design manager's scope. It can be said that the operational level is about managing design in the project level, tactical level is about managing design management and the design policy, and the strategic level about managing the design vision.

2.2.2 Key aspects of design management

Identifying the key aspects of design management, i.e. the areas of design that design managers manage, and by looking at design as a concept that covers a range of disciplines, we will see what different types of design there are and how they can contribute to companies activities, such as marketing and R&D (Cooper & Press 1995, 28–29). Walsh et al. (1992, 129) have argued for the existence of a strong correlation between the way design is defined and the department that is responsible for it. For instance, design seen mainly in terms of engineering and function is likely to be the responsibility of development staff (in an R&D department) or of production engineers, whereas design, which is concerned more directly with customer appeal might be the responsibility of marketing (Walsh et al. 1992, 129). What kind of connection, if any, there is between the focus of design (i.e. which of the key aspects the design manager's work is focused on) and in which department design is located in, is one issue that will be uncovered during this study. *Key aspects of design management*, which comprise the design industry, have been classified in a few different ways in previous literature, summarized in Table 3.

Table 3   Different categorizations of the aspects of design management

Author(s), year	Topic	Aspects by author				
Lockwood & Walton 2008	Design as an outcome	Product design	Communications design	Information design	Environment design	Service design
Borja de Mozota 2003	The disciplines of design	Product design	Package design	Graphic design	Environmental design	-
Blaich 1993	Distinguishing between design activities	Product design	Communications design	-	Environment design	-
Gorb 1990a	Classifying design	Product design	Corporate identity design	Information design	Environment design	-

Gorb's (1990a) classification of design is regarded as the classic approach, and it is cited upon in many subsequent studies, such as in Blaich (1993), Cooper & Press (1995), and Best (2006). Blaich (1993, 8) has modified Gorb's (1990a) categorization of design activities by distributing corporate identity throughout product, communications, and environment design activities. This modification seems appropriate, since Gorb (1990a) himself stated that corporate identity design embraces and shapes all the other three aspects of design (Gorb 1990a, 6). Blaich (1993, 8) believes that corporate identity is not limited to corporate logos and letterheads, which fall under communications design. The same thinking can be seen in Lockwood and Walton's (2008) classification, by the absence of a category for corporate identity design. Olins (1988, 55) has presented the same kind of ideas: identity emerges through three areas of design: products or services (what you make or sell), environments (where you make or sell it), and communications (how you present what you do, and how you do it). According to Blaich (1993, 8), corporate identity is the sum of product, communications, and environment design. Blaich (1993, 10) also believes that this distinction should not mean that the activities should function in isolation from each other. In this study, the main classification that will be used later on is Lockwood & Walton's (2008), for its comprehensive and up-to-date qualities.

Product design is an aspect that all the authors have chosen to take into the classification. Product is usually the most visible and well-known aspect of the company among the crowds (Lockwood & Walton 2008, xii), and is essentially the reason why the company is in business (Blaich 1993, 8). Design management issues in this category depend on the industry and the product in question, but these issues might include for example product innovation, product range, development, and quality (Best 2006, 14). By adding value to the product, design can affect the gross margin performance of the product, a critical measure for all businesses (Gorb 1990a, 3–4; Best 2006, 14). According to Gorb and Schneider (1988, 3), the design value of those products are calculated in the gross margin of the business. Product design is a highly relevant category in design since, as Blaich (1993, 9) has argued, no amount of advertising or corporate identity slickness will make up for substandard product design. Product design is usually a function of either product development and manufacturing, or marketing (Blaich 1993, 10). Industrial designers' nature of work includes creating a coordinated range of products, new product development, product improvements, and product appearance and styling (Walker 1990, 44), and thus falls naturally under this aspect. Product design can also involve production engineering, which does process improvements, and manufacturing specialists, who give specialist advice on e.g. materials and manufacturing (Walker 1990, 44).

Communication design affects all touch-points that rely on visual communications. Those include for example symbols, corporate identity, packaging, advertising,

instructions, and directions. (Lockwood & Walton 2008, xii). Communications design also supports the product in the marketplace directly with advertising, promotional materials, packaging, exhibition design, and logo design, as well as indirectly by communicating the message the company wants to convey about its business to its various stakeholders (Blaich 1993, 9). Blaich (1993, 10) further suggests that most usually the activity of communications design is a function of marketing. However, it would also be safe to assume that communications design can also be a function of the communications department. Borja de Mozota (2003, 7) has distinguished package design and graphic design as their own areas. In the Lockwood & Walton (2008) classification used here, these would be elements of communications design. According to Borja de Mozota (2003, 7), package design constitutes the most of the business for the design profession. Graphic design, as defined by Borja de Mozota (2003, 7), works with graphic symbols and typography that represent the name, brands and products of the firm. The graphic designer creates and updates a graphic system, or completes the visual identity for an item, such as packaging or an invitation (Borja de Mozota 2003, 7). A graphic designer's nature of work can further entail designing retail display, packaging and sales literature, letterheads, logos, and exhibitions (Walker 1990, 44).

Information design (also: interface design) constitutes, for example, the design of web and product interfaces, signage, wayfinding, and information architecture (Lockwood & Walton 2008, xii). Literature does not state under which department the function of information design belongs to, but when it comes to interface design and information architecture, it could be assumed that it is most likely linked to R&D or product development. Gorb's (1990a) view on information design is somewhat different compared to Lockwood & Walton's (2008). According to Gorb (1990a, 5, 7), the term comprises packaging, advertising, and PR messages, which would go under communications design in the Lockwood & Walton (2008) categorization. Best (2006), who has studied Gorb (1990a), describes information design as design of advertising, sales promotion and public relations materials, (design for external audiences), and design for managers, employees and owners (design for internal audiences) (Best 2006, 14). This study, however, adheres to the definition of Lockwood and Walton (2008).

Environment design consists of the planning and creation of a space for a firm and spaces that physically represent the firm (Borja de Mozota 2003, 5)*,* but it can also be described as design of the investment in fixed assets (Gorb 1990a, 5). How, and in what, the company invests in, and manages fixed assets (Best 2006, 14). These fixed assets comprise factories, offices and retail shops, showrooms, exhibitions, and the equipment (machinery, communication equipment, transportation etc.) and furnishings within (cf. Gorb 1990a, 5; Blaich 1993, 9; Best 2006, 14; Lockwood & Walton 2008, xii). Gorb (1990a, 5) argues that describing it this way, environmental design tends to have higher value in the eyes of the management. According to Gorb and Schneider (1988, 4) and

Gorb (1990a, 4–5), the value of environmental design is a contribution to fixed assets, and return-on-capital-employed ratio, that is used by businesses to measure their performance. Blaich (1993, 10) has presented similar ideas. Environment design, i.e. maintaining and improving fixed assets with the consultation of architects and designers makes practical business sense, and has both financial and social rewards: in addition to being involved with the hard values of capital investment (Blaich 1993, 10), environment design also plays a role in creating the work environment for a firm, building up a culture, as well as in the quality of the production and in the communication of the company strategy (Borja de Mozota 2003, 5–6). Environment design is usually managed under a facilities department (Gorb 1990a, 7; Blaich 1993, 10). The design of major buildings or landscapes, which fall under environment design, belongs to the work of architects, and the design of factory, workshop or office environments usually belongs to architectural and interior specialists. This category also includes interior design, which involves the design of retail environments, shop fittings, furniture, and accessories. (Walker 1990, 44.)

Service design is an emerging discipline in the field of design and design management (Lockwood & Walton 2008, xii) and it has been added to the version of Lockwood and Walton (2008) of the categories of design. For instance, a well-designed bank-teller process is an example of service design (Lockwood & Walton 2008, xii).

Out of all the aspects of design management presented above, product design is quite naturally the most traditional form of design in Finland (Valtonen 2007, 280), and the focus of many companies' design activities. However, where design is mainly focused can depend on the industry of the company (Valtonen 2007, 203). Valtonen (2007, 203) further suggests that in B2B products, designers' work is primarily focused on product design and ergonomics, whereas in consumer goods, designers' work area might include marketing, packaging and branding (Valtonen 2007, 203). Together, however, all the aspects form the full spectrum of design management. These typologies are analyzed in this study, since the different categories of design in the company may help to describe and analyze the role and focus of design in the company, and the connection between the role of design and the horizontal location of design.

Coming back to the framework, the horizontal dimension can be completed with the role of design, which according to the theory corresponds to the functions design can be located in. The vertical dimension was also added with the tasks of design managers on the corresponding levels (Figure 6).

2.3   Synthesis

Theoretical framework for assessing the state of in-house design management practices is formed based on the theory. It consists of two dimensions and two layers (Figure 6): the inner layer comprises the organizational practices, i.e. the context where design is managed. The outer layer consists of the managerial practices, i.e. the job content of a design manager. The analysis starts from the managerial practices. The strategic extent of the design manager's tasks, i.e. the role of the design manager, is analyzed in order to determine the level of design management. The focus of design management tells on which aspect of design is the design manager focused. The inner layer is about determining the horizontal and vertical location of design management in the organization. The horizontal dimension illustrates the horizontal division of labor, i.e. where design management is horizontally located, and the vertical dimension, on which level in the vertical hierarchy design management is located.
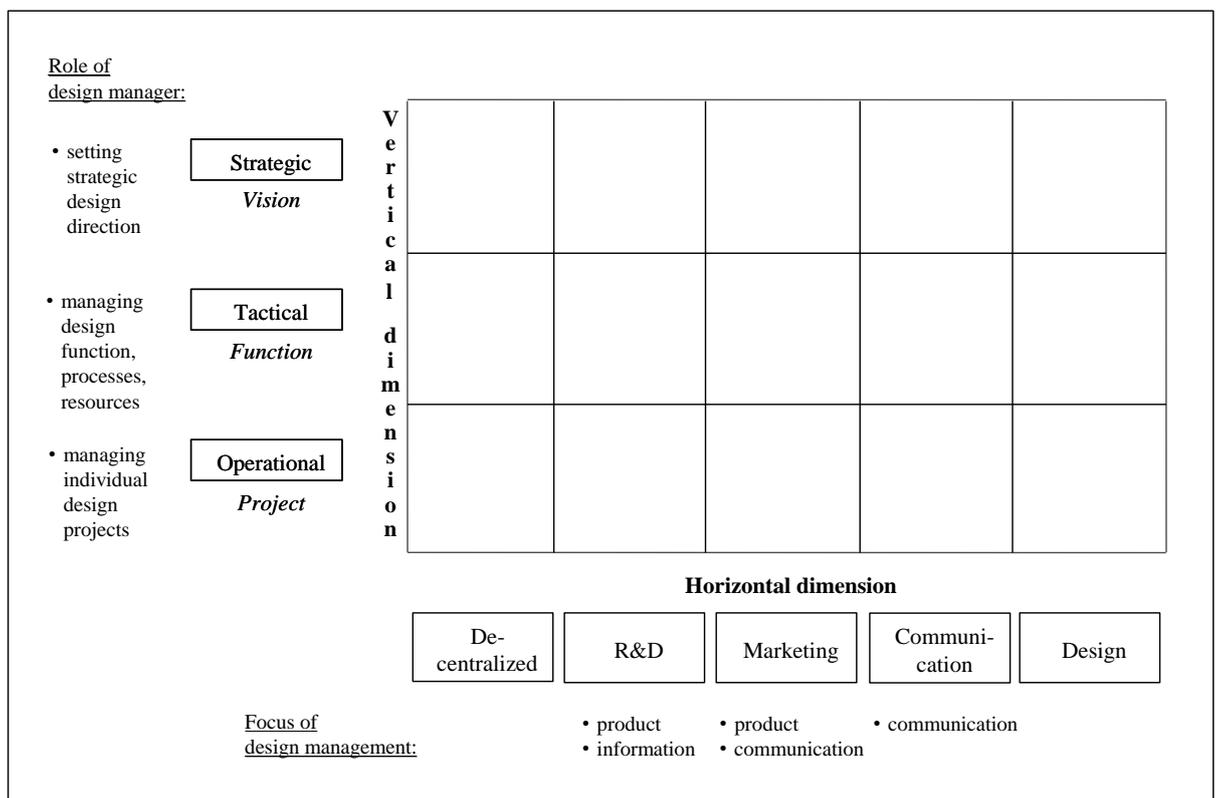

Figure 6   Framework for assessing the in-house design management practices in
                        Finnish companies

This is the literature-based framework of in-house design management practices. The results obtained from the survey and the interviews will be studied against the framework, and it will also be tested and developed along the process of analysis. Based

on the data analysis, the companies studied can be placed on the grid to form an overall image of the current state of design management practices in Finnish companies.

Design and design management maturity models have been presented by several authors (cf. Walker 1990; Järvinen & Koskinen 2001; Ramlau & Melander 2004; Kootstra 2009). The framework created for this study is also in a way a design management maturity model. The maturity models are used to assess or evaluate companies' design and design management practices (cf. Kootstra 2009, 12). Like the framework built for this study, maturity models usually consist of a hierarchical structure, which suggest that as the company matures in terms of design or design management, it moves up in the structure. The concept of maturity in the context of design and design management usually refers to the organization's experience in dealing with design or design management (Walker 1990, 43). It does not imply that an organization would be young or inexperienced in any other ways (Walker 1990, 43).

Examples of maturity models by Kootstra (2009) and Järvinen and Koskinen (2001) can be found in Appendix 1. Like the aforementioned maturity models, the framework of this study also consists of two dimensions, which form a grid on which companies can be placed based on their location in terms of the two dimensions. The operational–strategic dimension is present in many of the maturity models (cf. Järvinen & Koskinen 2001; Ramlau & Melander 2004; Kootstra 2009), although it is in many cases expressed differently. For example, in the Kootstra (2009) design management staircase (Appendix 1), the vertical dimension consists of "no design management", "design management as project", "design management as function", and "design management as culture", which correspond well to the operational, tactical, and strategic levels. However, unlike any of the maturity models mentioned here, the framework built for this study has taken into consideration the horizontal organizational location of design management, and the focus of design management. The design manager job description approach is also something that is new compared to many of the earlier models. The framework by Järvinen and Koskinen (2001) (Appendix 1), has, however, a dimension that handles the aspects to which the designer has control over, which comes closest to the design manager job content approach of the framework of this study.

In general, the maturity models mentioned here have not examined design management from the organizational structure point of view, and rarely also from the design manager job content perspective, whereas this framework assesses design management practices from both the organizational and managerial standpoint. Since there are many different ways for different companies to handle design in practice, developing a simple and coherent framework that would summarize the main aspects of design management has proven to be difficult. Thus, the framework at hand does not try to comprise everything there is to design management, but instead, concentrate on the organizational and managerial aspects that were handled in the theory chapter.

3 RESEARCH DESIGN

Research design is a plan for the collection, measurement, and analysis of data (cf. Gray 2009, 131). The purpose of the research design chapter is to report the methods and design that have produced all the knowledge in this study (cf. Kvale 1996, 255). The specific steps, procedures, and decisions taken during the research are described as precisely as possible so that the procedures of data collection and analysis would be known to everyone who reads this report, and that the readers would be convinced that the material was collected in a systematic and thoughtful way (cf. Rubin & Rubin 1995, 42; Kvale 1996, 256). Information on the methodology is essential and mandatory, not only for reinterpreting or applying the results, but also for evaluating the trustworthiness of the study (cf. Kvale 1996, 255), and that is why a section is dedicated to the evaluation of the trustworthiness of this study in the end of this chapter.

3.1 Research approach

The research approach describes how the researcher will start to answer the research question(s) of the study (cf. Saunders, Lewis & Thornhill 1997, 74). The justification for the choice of research approaches and methods lies in their relevancy and fit to the research question(s), and thus to the purpose of the study (cf. Hirsjärvi, Remes & Sajavaara 1997, 123; Saunders et al. 1997, 74; Silverman 2005, 6; Eriksson & Kovalainen 2008, 27). When looking at the research objectives of this study, this research is both exploratory and descriptive by nature. A descriptive study refers to documenting the phenomenon of interest, for example identifying salient structures or processes that occur in a certain phenomenon (Marshall & Rossman 1989, 78), or presenting accurate descriptions of people, events, or situations, and documenting the central, interesting characteristics of a phenomenon (Hirsjärvi et al. 1997, 130), or showing how things are related to each other (Gray 2009, 35–36). Exploratory studies then again aim at finding out what is happening, seeking new insights and assessing phenomena in a new light (Saunders et al. 1997, 78), in order to investigate and generate hypotheses for further research (Marshall & Rossman 1989, 78), and to explore what is happening and ask questions about it (Gray 2009, 35). Exploratory studies are useful especially when not enough is known about the phenomenon (Gray 2009, 35). The dominant theoretical drive of this study is inductive (cf. Morse 2003, 193; Gray 2009, 14–15), as it attempts to establish patterns, consistencies and meanings and as it does not set out to corroborate or falsify a theory (Gray 2009, 15).

The research approach of this study is a mixed methods approach. The mixed methods approach, which is also called triangulation or multiple methods (cf.

Hurmerinta-Peltomäki & Nummela 2006, 441), refers to combination of methodologies in a single study (cf. Denzin 1978, 291; Creswell 2003, 210; Morse 2006, 318). Methodological triangulation, i.e. the use of different data collection strategies using quantitative and qualitative data collection sources in the same study (Teddlie & Tashakkori 2009, 237), or mixed methods, is, in fact, only one form of the triangulation strategy. Denzin (1978, 295) has identified a typology for four types of triangulation, data, investigator, theory and methodological triangulation, of which methodological triangulation is used in this study and thus focused on from here on.

This study utilizes the mixed methods approach by mixing survey methods with qualitative interviewing. Integrating survey methods and fieldwork, such as qualitative interviewing, is one of the most common and classic combinations in mixed methods research (cf. Jick 1979, 604; Bryman 2006, XLVII–XLVIII; Teddlie & Tashakkori 2009, 35), as quantitative methods can significantly contribute to fieldwork and vice versa (Jick 1979, 604). The mixed methods approach was selected to this study since it is compatible with the research objectives and it can offer multiple advantages to the study. The benefits of mixed methods for this particular study include triangulation, complementarity, and development (cf. Gray 2009, 213–214).

Using two or more different methods in the same study, i.e. between-method triangulation (cf. Denzin 2006, 208), increases the validity of findings (cf. Jick 1979, 602, 603). According to Jick (1979, 604), field methods, such as interviews, can contribute to surveys by validating results, interpreting statistical relationships, and clarifying unclear findings. Collecting different kinds of data on the same phenomenon can also contribute to the confidence in the generalizability (cf. Jick 1979, 604; Johnson & Onwuegbuzie 2006, 39), accuracy (Jick 1979, 602; Teddlie & Tashakkori 2009, 35), and strength (Teddlie & Tashakkori 2009, 33) of the results. The rationale for the between-method triangulation is that by combining methods, the best of each method can be achieved, while overcoming their unique deficiencies, since the flaws of one method are often the strengths of another (cf. Jick 1979, 604; Marshall & Rossman 1989, 103; Denzin 2006, 208; Johnson & Onwuegbuzie 2006, 39; Gray 2009, 213). The assets and liabilities of interview and survey methods will be handled later in their own respective chapters, with other issues relating to interview and survey methods.

Mixed methods can also go further validation and generalizability, it also allows capturing a complete, holistic picture (cf. Jick 1979, 603; Morse 2003, 189; Johnson & Onwuegbuzie 2006, 39), in-depth understanding (Denzin & Lincoln 1994, 2), and new knowledge (Hurmerinta-Peltomäki & Nummela 2006, 454) of the subject being studied, as well as provides an opportunity for a greater assortments of divergent views (Teddlie & Tashakkori 2009, 33). As mixed methods research brings insights and understanding that might be missed when using a simpler, single method research design (cf. Jick 1979, 603–604; Johnson & Onwuegbuzie 2006, 39), a research design employing both

survey and interview methods is the most suitable option for this study, since this research strives for describing and analyzing the design management practices as holistically as possible. Although quantitative and qualitative approaches yield different kinds of data, they often complement each other (cf. Hurmerinta-Peltomäki & Nummela 2004, 175–176), as aptly noted by Teddlie and Tashakkori (2009, 35), one type of data gives greater depth, whereas the other type gives greater breadth.

In the third benefit, development, the results of one method are used to inform the development of the second. This means that for example, a quantitative study can be used to identify important themes that qualitative fieldwork could then deepen (Gray 2009, 208), or a survey can be used to identify meaningful groups of respondents, to follow up with in-depth qualitative interviews (Hirsjärvi et al. 1997, 128; Gray 2009, 213), which was also done in this study, where the interviewees were chosen based on the survey results.

There are a few methodological decisions to be taken into account when designing a mixed methods research (cf. Creswell 2003, 211; Hurmerinta-Peltomäki & Nummela 2004, 165, 176; Johnson & Onwuegbuzie 2006, 42–43). The key components included in most mixed method design typologies are priority (also: role or weight, dominance) and implementation (also: order) (cf. Creswell 2003, 211–213; Morse 2003, 198; Hurmerinta-Peltomäki & Nummela 2004; Johnson & Onwuegbuzie 2006, 42–43).

Priority concerns whether a greater weight is given to the quantitative or qualitative method (Creswell 2003, 212), or whether the researcher wants to operate within one dominant paradigm or not (Johnson & Onwuegbuzie 2006 (42–43). The priority might be equal or skewed towards either method (Creswell 2003, 212). The methods in this study are of equal importance. There is no clear distinction of which method would play a bigger role. Even though the qualitative data will give richer material to work on, it would not exist without the quantitative part. It cannot be said that either one would be the main source of information.

When it comes to order of *implementation*, in this research the phases were conducted in a sequential mode (cf. Creswell 2003, 211; Hurmerinta-Peltomäki & Nummela 2004, 165; Teddlie & Tashakkori 2009, 26), i.e. the quantitative data was collected first and the qualitative data after that. The implementation is sequential because the qualitative strand emerges or is dependent on the previous, quantitative strand (cf. Teddlie & Tashakkori 2009, 26–27, 143), i.e. the companies selected for the qualitative interview were selected on the basis of the quantitative study. The decisions related to mixed methods research design are presented in a matrix in Figure 7.

```
+---------------------------------------------------------------+
|                     Time order decision                       |
|                                                               |
|            Concurrent              Sequential                 |
|         +------------------+------------------+               |
|         | QUAL + QUAN      | QUAL → QUAN       |               |
|  Equal  |                  |                  |               |
|  status |                  | QUAN → QUAL      |               |
|         |                  |                  |               |
| Paradigm+------------------+------------------+               |
| emphasis| QUAL + quan      | QUAL → quan      |               |
| decision|                  | qual → QUAN      |               |
| Dominant| QUAN + qual      | QUAN → qual      |               |
|  status |                  | quan → QUAL      |               |
|         +------------------+------------------+               |
+---------------------------------------------------------------+
```

Figure 7   Mixed-method design matrix (Johnson & Onwuegbuzie 2006, 42)[1]

The research design utilized in this study is located in the upper right hand corner of the matrix, where the two methods have equal status, but they are implemented sequentially. In this case, the design is QUAN → QUAL.

Many mixed methods typologies have other aspects: Creswell's (2003, 211–213) typology includes *integration* of the two types of data, which might occur at several stages in the process of research; the data collection, the data analysis, interpretation, or some combination of places. For example, in data collection, integration might involve combining open-ended questions with closed-ended questions in the survey, like in this study. Integration at the data analysis and interpretation stage might involve transforming qualitative themes or codes into quantitative numbers and comparing that information with quantitative results. (Creswell 2003, 212.) Hurmerinta-Peltomäki and Nummela's (2004) typology includes *purpose*. This study's purpose is topic-related. This purpose can be identified in this case, since there is some information available, but it is insufficient and scattered. Topic-related purposes reflect the researchers need to become familiar with the phenomenon that is yet rather unexplored (Hurmerinta-Peltomäki & Nummela 2004, 166). The quantitative part also has a method-related

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[1] Note: "qual" stands for qualitative, "quan" stands for quantitative, "+" stand for concurrent "→" stands for sequential, capital letters denote high priority or weight, and lower case letter denote lower priority or weight (Johnson & Onwuegbuzie 2006, 42).

purpose since it facilitates the selection of companies to be interviewed. Method-relatedness refers to using mixed methods for technical reasons, such as identifying theoretically interesting cases (Hurmerinta-Peltomäki & Nummela 2004, 167). Next, the data collection issues of this research are discussed in more detail.

3.2   Data collection

The data collection for this research consists of two stages: In the first stage of the data collection, the members of the Finnish Design Management Association were addressed with a web-based survey in order to find out what are the current organizational and managerial practices in each company. In the second stage, five design managers were selected out of the respondents in order to gain a deeper understanding of how design management is organized and managed in few cases. This step was carried out by interviewing the design managers.

Data collection should be related to the type of information sought: the research questions determine the technique to be used (Marshall & Rossman 1989, 108). Suitable data collection techniques in relation to research approaches and questions are presented in Table 4. The collection techniques in italics are the techniques used in this study.

Table 4   Data collection techniques for exploratory and descriptive studies
(Adapted from Marshall & Rossman 1989, 78)

Purpose of the study	*Research question*	*Research Strategy*	*Examples of data collection techniques*
EXPLORATORY to investigate little understood phenomena to identify / discover important variables to generate hypotheses for further research	What are the salient themes, patterns, and categories in participants' meaning structures? How are these patterns linked with one another?	Case study Field study	Participant observation *In-depth interviewing* Elite interviewing
DESCRIPTIVE to document the phenomenon of interest	What are the salient behaviors, events, beliefs, attitudes, structures, and processes occuring in this phenomenon?	Field study Case Study Ethnography	Participant observation *In-depth interviewing* Document analysis Unobtrusive measures *Survey questionnaire*

As the research objective of this study is to analyze the in-house design management practices in Finnish companies, it contains questions similar to the example research questions presented by Marshall and Rossman (1989, 78) in Table 4. Questions, such as

what are the salient themes, patterns, and categories in participants' meaning structures, how are the patterns linked with one another, and what are the salient behaviors, events, beliefs, attitudes, structures, and processes occuring in this phenomenon, resemble the questions related to the objective of this study: what are the existing in-house design management practices, and what are their connections to each other.

As mentioned earlier, being an exploratory and a descriptive study by nature, a survey and in-depth interviewing are examples of data collection techniques well suited for descriptive studies (cf. Marshall & Rossman 1989, 78). In-depth interviewing is an example of a data collection technique that suits exploratory studies (Marshall & Rossman 1989, 78). As the data was collected in a sequential manner, as opposed to simultaneous, the issues related to data collection by surveying and interviews are organized into their own subchapters.

3.2.1   Survey

The first part of the study was conducted using a web-based survey, which is a method where the data is collected in a standardized manner (Hirsjärvi et al. 1997, 182; Gray 2009, 219), i.e. respondents are asked the same set of questions in a predetermined order (Gray 2009, 337). A survey was suitable for this study since the purpose of this survey was not to go into tacit beliefs or deeply held values, which would have limited the use of a survey (cf. Marshall & Rossman 1989, 83), whereas it was used to collect information about the distribution of characteristics (Marshall & Rossman 1989, 83), facts, behavior, actions, and views (cf. Hirsjärvi et al. 1997, 186), for which surveying is a suitable method.

Furthermore, utilizing a survey in the first stage of the study was the most sensible option in terms of resources granted for this study: First of all, interviewing all the design managers in the FDMA database, a number which amounts up to 43 (33 individual companies), while theoretically possible, would have been a largely time consuming task in practice, and thus out of reach of the resources of this study. Even with one interview per working day, it would have taken approximately two months only to collect the information, let alone handling and transcribing the data. Thus, without the survey, there would not have been a feasible way to get such broad overview of the field.

The evidence from a survey can be used to describe, explain, and/or to test a hypothesis (Remenyi, Williams, Money & Swartz 1998, 150). This survey is descriptive, as it was designed to measure the characteristics of particular population (Gray 2009, 220). The assumption behind choosing a survey method was that the design

managers were capable of self-reporting the characteristics of the managerial and organizational practices in their own companies (cf. Marshall & Rossman 1989, 83).

Internet-based surveys have multiple advantages, such as low cost both in terms of time and money: rapid time of data collection (cf. Hirsjärvi et al. 1997, 184; Gray 2009, 338; Teddlie & Tashakkori 2009, 239), and the simplicity analysis of closed questions (cf. Hirsjärvi et al. 1997, 184; Gray 2009, 338). The weaknesses of a web survey, however, include for example that it totally relies on the honesty and accuracy of the participant's responses (cf. Marshall & Rossman 1989, 83). Furthermore, designing a good survey takes time and requires knowledge and skills from the researcher (Hirsjärvi et al. 1997, 184), and it must be kept short (Teddlie & Tashakkori 2009, 239).

3.2.1.1   Population and sample

A sample is a set of individuals who are to provide information, and it comes from a larger group of individuals or objects that is called the target population (Remenyi et al. 1998, 192). This study focuses on design managers that are members of Finnish Design Management Association (FDMA). At the moment, the FDMA database is the most comprehensive database of design managers as it includes all Finnish design managers that have identified themselves as such.

One of the first considerations is to obtain a working definition of the population which constitutes the sampling frame, which is a comprehensive list of individuals or objects which the sample is to be drawn. For example, a membership list of an association can be used as a sampling frame (Remenyi et al. 1998, 193). The sampling frame in this study was the FDMA database of all the people who had identified themselves as design managers in Finnish companies. It was naturally acknowledged that the frame was not perfect. In this research no sample was drawn, because the sampling frame was so small. Hence, the survey was sent to all the people in the FDMA database.

The database consisted of 43 design managers from 33 individual companies. In comparison, the survey of industrial design in Finland 2006 identified a total of 23 Finnish companies with in-house designers at the time the survey was conducted (Holopainen & Järvinen 2006, 10). The population, sampling frame, and the respondents are illustrated in Figure 8.
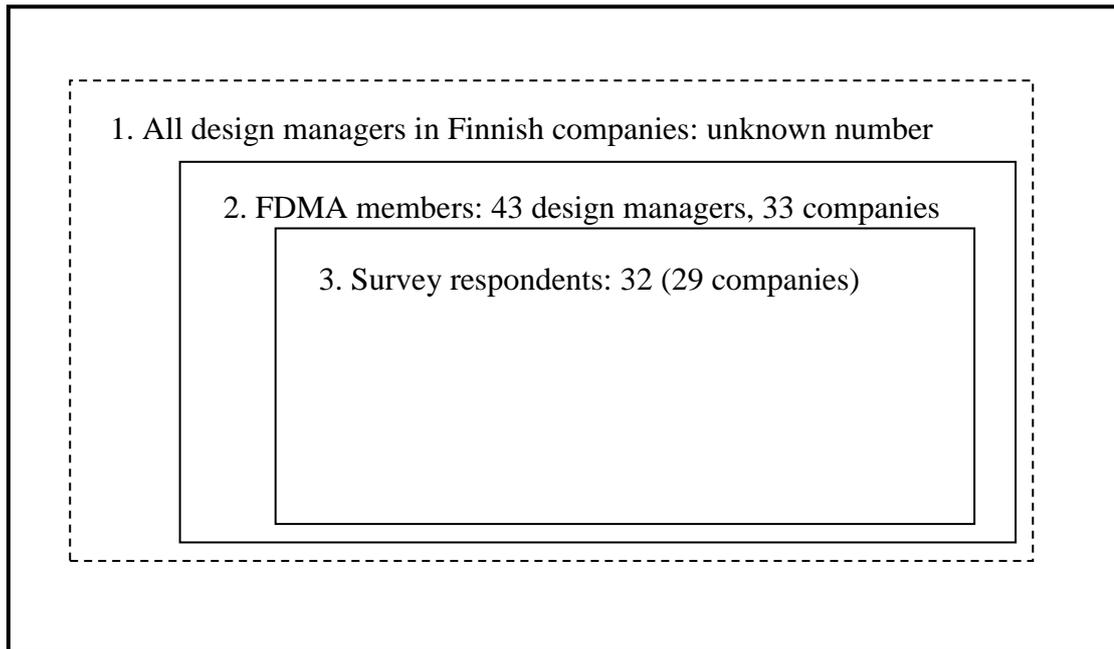
Figure 8   Population and sample

The population (1) consists of all design managers in Finland, which at the moment is an unknown number. Sampling frame (2) consists of all design managers who are members or FDMA, and finally (3) consists of the design managers who responded to the survey.

3.2.1.2   *Survey design and administration*

As it is common, the survey (Appendix 2) of this study was made to consist of sections (cf. Remenyi et al. 1998, 154). The survey started off with a section of background questions, providing information about the respondent and the firm, which most surveys have (Hirsjärvi et al. 1997, 186; Remenyi et al. 1998, 154; Gray 2009, 344). The background questions, also called classification questions, provide a basis for analyzing associations between variables (Gray 2009, 344). Section two, "job description", focuses on the tasks of the respondents, i.e. the managerial aspect of design management. The third section, "organization and resources", presents questions on organizational and resource aspects of design management in the company, and thereby focuses on the organizational aspect. In the final section, there are three open questions to support the other questions.

The survey of this study is a mixed methods survey, which means that it includes both open-ended and closed-ended items (Teddlie & Tashakkori 2009, 235). Since the survey was not intended to measure opinions or attitudes, there was no reason for using

Likert-type scale measurements. According to Hirsjärvi et al. (1997, 186), it is better to ask the kind of questions used in this study directly in simple questions, either as open questions or multiple choice questions. Open-ended questions were used when the researcher did not want to pre-specify the response categories (cf. Remenyi et al. 1998, 152). Open questions provide a potential for richness of responses, and also responses that might not have been anticipated by the researcher (Gray 2009, 348). Open questions also allow the respondent to express themselves in their own words (Hirsjärvi et al. 1997, 190). On the other hand, the data obtained from open questions is varied and more difficult to handle and analyze (Hirsjärvi et al. 1997, 190; Teddlie & Tashakkori 2009, 235). When it comes to closed-ended questions, such as multiple choice questions, answering is easier for the respondent, and they produce answers that are less varied, and easier to handle, compare, and analyze with a computer (Hirsjärvi et al. 1997, 190; Gray 2009, 349). However, closed questions may restrict the richness of answers (Gray 2009, 349). In the multiple choice questions an open alternative (other, please specify) was presented after the ready alternatives, so that points of view can emerge that the researcher did not think of (Hirsjärvi et al. 1997, 188).

The survey language is Finnish, since all of the respondents are Finnish speaking. The English version of the survey can be found in Appendix 2. The purpose of the survey was to collect information from all design managers in the sample frame, and thus the aim of the researcher was to get all members of FDMA to answer the survey. For this purpose, the survey was kept as concise as possible and the understandability of the survey was paid great attention to. In order to make a survey accurate, unambiguous, and simple to complete, piloting the survey is vital. (cf. Gray 2009, 359). According to Marshall and Rossman (1989, 84), surveys are usually tested before sending, in order to determinate their usefulness and reliability and examine them for bias, sequence, clarity, and face validity. The objective was to detect possible shortcomings in the design and administration of the survey, such as the clarity of the of the instructions and questions, the cover letter, irrelevancy of questions, and whether some key issues might have been overlooked (cf. Remenyi 1998, 151). Since the understandability and non-ambiguity of a survey is highly important in terms of research success when it comes to survey that is filled in the unattended, the pre-final version of the survey was tested by a former design manager. The survey was also commented by two supervisors. Based on the comments, a few changes were made concerning question setting and alternatives. Also the cover letter was paid great attention to, since a good cover letter can contribute significantly in increasing the response rate (Remenyi 1998, 156). The cover letter of the survey informed the respondents about the nature and importance of the study, what it will be used for, time it takes to complete the survey, the deadline of the responses, and the benefits for the respondent (cf. Remenyi 1998, 156).

The final, improved version of the survey was sent on 20th of May 2010 via email for 43 individual respondents from 33 companies. A copy of the final report of the study was promised to all completed survey respondents as an incentive in the cover letter. The respondents were first given a week to answer. After that, the initial email was followed up with in total two reminder emails, as recommend by for example Hirsjärvi et al. (1997, 185), first reminder email on 28th of May, then another email on 3rd of June. On 9th–10th of June, phone calls were made to respondents who had not responded. The answer rate resulted in 74% (individual respondents) or 88 % (individual companies), the survey gained 32 responses (out of 43) in total from 29 (out of 33) companies. This can be viewed as a very good response rate: Since the form was sent to a specialty group, design managers, it is often reasonable to presume a higher response rate in these cases, if the topic is interesting to them. The response rate after reminders in these cases might be even 70–80 percent (Hirsjärvi et al. 1997, 185). Based on the responses, it was noted that one of the companies was not Finnish, and hence that set of answers had to be removed from the data. The final number of survey respondents to be analyzed resulted in 30.

Based on descriptive statistical analysis on the survey respondents, it can be said that 71 percent of the survey respondents are male, and 29 percent are female. Respondents are between 32 and 56 years of age, the age average being 42 years. The majority, 71 percent, of the respondents have an art-related education. 16 percent have technical degrees, of which one is an architect. Only one respondent (3 %) has a business education. Other possibilities include high school graduate (3 %) and an MA degree (3 %). 19 percent of the respondents have received education on design management, such as IDBM or IDBM pro, or other courses or seminars. The companies where the design managers come from are listed in Appendix 3.

3.2.2   *Interviews*

As the second stage of the data collection process, five individuals of the survey respondents were approached for further interviews, and thematical interviews were conducted in order to collect in-depth data. The purpose of the interview phase was to obtain rich material and to further explore the descriptive data obtained from the survey among the selected design managers, in order to get full consideration of the topic. Qualitative interview as a method suits this purpose, since it aims at capturing the richness of the matter and explaining it in a comprehensible way, and since it provides deep, detailed and vivid data (cf. Rubin & Rubin 1995, 76; Daniels & Cannice 2004, 186; Teddlie & Tashakkori 2009, 239). Interview was further suitable for this matter, since the topics to be explored required a lot of opportunities for probing, i.e. asking

clarifying questions when needed, and interviews allow this (cf. Hirsjärvi et al. 1997, 194; Gray 2009, 371; Teddlie & Tashakkori 2009, 239). Interview was chosen also because it allows more flexibility and brings more possibilities to interpret results compared to surveys (Hirsjärvi et al. 1997, 194). Interview was further considered appropriate for this study because of its exploratory nature (cf. Daniels & Cannice 2004, 186; Eskola & Suoranta 2005, 85). Interviews also allow a deeper rapport with the researcher and respondent, which may further facilitate honest and accurate responses. The researcher can be sure that there is no possibility that someone other than the target supplies the information (cf. Daniels & Cannice 2004, 187). Although the survey provides a general overview of the research arena, without the interview the data from the surveys would have to be interpreted as such, without rich explaining data gathered through the interviews. In this study, the interview results were used to explain and clarify the survey results. As Jick (1979, 606) has suggested, data obtained by surveying becomes more meaningful when interpreted in the light of the qualitative information.

The interview type utilized in this study is thematical (also: semi-structured) interview, which is something in between the structured, survey-type interview and the open interview (cf. Hirsjärvi et al. 1997, 197; Saunders et al. 1997, 211–212; Eskola & Suoranta 2005, 85–86; Eriksson & Kovalainen 2008, 80–82). In a thematical interview the themes of the questions are known before the interview, but the exact wording and order of the questions do not emerge until in the interview situation (cf. Hirsjärvi et al. 1997, 197; Saunders et al. 1997, 211–212; Eskola & Suoranta 2005, 85–86; Eriksson & Kovalainen 2008, 80–84; Gray 2009, 373).

3.2.2.1 Selection of the interviewees

The interviewees were selected on the basis that they represent a range of points of view (cf. Rubin & Rubin 1995, 66). The goal was to get interviews from design managers that would each provide their own distinguished example of design management practices and represent a certain way of organizing design management. Each interviewee is an expert on design management in their respective companies. The interviewees were chosen since they could provide information that best complement the information from the survey. In addition, purposive sampling, which is a technique primarily used in qualitative studies (Tashakkori & Teddlie 2003, 713), was used to facilitate the selection of the interviewees. Purposive sampling is one form of non-probability sampling, which is based on subjective assessment of the sample as an appropriate approach, and is said to be especially relevant in exploratory research (Remenyi et al. 1998, 194). In purposive samples, individuals are selected with a specific purpose in mind, such as their likelihood of representing best practice in a

particular issue (Remenyi et al. 1998, 194). Within the purposive sampling style, the more specific sampling technique used in this phase can be called stratified purposeful sampling (Gray 2009, 181). In this method, a certain strata is selected and data grouped based on the strata, and cases are purposefully chosen within each (Gray 2009, 181). In this study, the selection of the interviewees was facilitated by clustering the firms based on the location of design (e.g. as part of marketing or R&D), the hierarchical position of the respondent (director-level, manager-level, other), and also their customers (B2C or B2B), and then selecting respondents who represent different ways of organizing and managing design and who might provide interesting cases that most appropriately complement the data from the survey.

3.2.2.2   *Interview design and administration*

The interview guide, which indicates the topics to be covered during the interview, can be found in Appendix 4. Also the interview guide was pre-tested, since it is vital to ensure reliability (cf. Remenyi et al. 1998, 111). The guide was sent to a former design manager and two supervisors for feedback, as suggested by for example Remenyi et al. (1998, 111). The themes of the interview were sent to the interviewees a few days prior to the interview.

The lived interview situation consisted of briefing, the actual interview, and debriefing (Kvale 1996, 128). During the briefing, the interviewer briefly told about the purpose of the interview and asked for the interviewees for permission to use a recorder. Main questions such as "can you tell me about how your design department is organized?" were used to start the topic (Rubin & Rubin 1995, 145; Kvale 1996, 133). These kinds of questions tend to yield spontaneous and rich description (Kvale 1996, 133). Introducing questions were often followed up with probing questions (Kvale 1996, 133), such as "Could you give examples of these?". Probes are used when responses lack sufficient detail, depth, or clarity, to complete or clarify the answer or ask for further examples (Rubin & Rubin 1995, 146). These kinds of follow up questions are a good way to get more depth (cf. Rubin & Rubin 1995, 77). Structuring questions (Kvale 1996, 134) were used to direct the course of the interview, to move to the next topic when it was time to do that. The interview was concluded with a question whether the interviewee had anything more to bring up, which gives the interviewee an additional opportunity to bring up something important (Kvale 1996, 128; Gray 2009, 384). During the debriefing, in most cases, the interviewer told more about the purpose of the study (Kvale 1996, 128) and its schedule, and agreed that if further questions arise from the interview material, the researcher could contact the interviewee.

Basic information of all the interviews is presented in Table 5. Five interviews in total were conducted during the 18th and 26th of August 2010. All the interviews took place in meeting rooms in the company in question and were carried out without major distractions or interruptions. The interviewing language in all cases was Finnish, as it is the native language of both the interviewees and the interviewer. All the interviews were recorded with the permission of the interviewees. In addition to using a tape recorder, the researcher also made notes in the interview guide. The duration of the interviews ranged from under an hour to almost two hours (Table 5).

Table 5   Information about the interviews

Interviewee n:o	Title	Organization	Place	Date	Duration
1	Design Director	Martela Oyj	Martela headquarters, Helsinki, Finland	18.8.2010	1 h 55 min
2	Creative Director	Marimekko Oyj	Marimekko headquarters, Helsinki, Finland	19.8.2010	1 h 44 min
3	Director of R&D	Lahden Autokori Oy	Lahden Autokori headquarters, Lahti, Finland	20.8.2010	58 min
4	Industrial Design Manager	Planmeca Oy	Planmeca headquarters, Helsinki, Finland	24.8.2010	1 h 46 min
5	Design Manager	Lumene Oy	Lumene headquarters, Espoo, Finland	26.8.2010	1 h 14 min

The size of the data, in this case the number and length of interviews, is difficult to decide beforehand. There is no fixed number on how many interviews should be conducted for one study. Usually the amount of data collected is redefined during the research process. Kvale (1996, 103) emphasizes the quality, rather than the quantity of the interviews: qualitative research should not be made with quantitative presupposition, in which more interviews equal a more scientific study. Kvale (1996, 191) suggests interviewing as many subjects as necessary to find out what you need to know. In this study, the number of interviews conducted was five, which seemed large enough to make main differences apart, but still small enough to be feasible within the scope of this study. During the interview number three it was noticed that the job profile of the interviewee did not correspond to that of a typical design manager, and the participation

to the design process was low compared to the other interviewees, and thus the interview could not be used as an example.

As for the final four interviewees selected from the survey and used in this study, interviewee number one is the Design Director at Martela since September 2007, and heads the brand and product portfolio department. He is also part of the executive group. He is a designer by education from University of Art and Design Helsinki, and has done an MA degree in design leadership. Before Martela, he worked at Nokia for almost 15 years, among other things as a designer, and developing the design process. Martela Oyj designs and supplies interior solutions for working environments and public spaces (Martela – Company 2010).

Interviewee number two is Marimekko's Creative Director, heading both the interior and apparel lines, and a member of the executive group since July 2010. She has worked at Marimekko for eighteen years, having had positions as a sales assistant, store manager, and collection manager before her role as a creative director. She is a designer by education from University of Art and Design Helsinki, and has not received any formal education on design management. Marimekko designs, manufactures and markets Marimekko clothes, interior decoration textiles, bags, and other accessories. (Marimekko 2010.) As mentioned earlier, interview number three, Lahden Autokori, could not be used in the study, and thus it is not described further.

Interviewee number four is the Industrial Design Manager at Planmeca. He has worked for Planmeca for twenty three years in total, as a designer and as a design manager. He is a designer from University of Art and Design Helsinki by education, and has not received formal design management education. Planmeca designs, manufactures, and markets dental equipment for private clinics and teaching environments (Planmeca – Company – About Planmeca 2010).

Interviewee number five has worked as the Design Manager at Lumene for over three years, first as a store designer, and now in a design manager role for two years at the time of the interview. She is an architect by education, and has not received any formal design management education. She has worked in design for 15 years, previously as a graphic designer in a design agency. She worked with the Lumene brand also in her previous work place. Lumene Oy is a developer and manufacturer of skin care, color and hair cosmetics solutions based on Arctic raw materials, such as berries, birch and peat (Lumene About Company 2010).

3.3 Data analysis

The purpose of the data analysis process is to bring order, structure, and meaning to the mass of collected data (cf. Marshall & Rossman 1989, 112). A mixed method data

analysis involves processes in which quantitative and qualitative data analysis strategies are combined, connected, or integrated in research studies (Teddlie & Tashakkori 2009, 263). The qualitative strand analysis was planned to confirm and elaborate the analysis of the quantitative part, but otherwise they were not dependent on one another (Teddlie & Tashakkori 2009, 274). The mixed methods analysis strategy in this study was partly a sequential QUAN → QUAL analysis, as the companies were clustered based on survey responses in order to select interviewees, and partly concurrent QUAN + QUAL analysis, since qualitative and quantitative data were analyzed simultaneously in the phase of final analysis (cf. Teddlie & Tashakkori 2009, 276).

3.3.1 Survey data analysis

A part of the survey answers were analyzed already in the data collection phase, since the interviewees for the second phase were selected based on the survey answers. Also an interview guide was created based on the analysis, in order to gain an in-depth understanding of the organizational and managerial practices of design management in the interviewed companies. After both the survey and interview data was collected, the final analysis was embarked by performing analysis on the survey data. As there were both open-ended and closed-ended questions in the survey, analysis of these items were different from each other.

The data was first checked for mistakes and missing data (Hirsjärvi et al 1997, 209–210). For example, one survey form had to be rounded up from a responded who had promised to respond but had not yet responded. The qualitative survey data was reduced by thematical analysis, the same method used in analyzing qualitative interview data: Open-ended items were coded and put into groups to see what kind of structures or practices emerged from the data. The categories included items emerging from the theoretical framework, such as job description, focus of design and the level of design management in the organization. The data is in the form of a narrative, and part of it was analyzed qualitatively, but part of it was converted into a form that is suitable for quantitative analysis (Remenyi et al. 1998, 152). Transforming qualitative data into numerical codes that can be represented statistically (Johnson & Onwuegbuzie 2006, 45) is called quantisizing (Teddlie & Tashakkori 2009, 27, 269). Quantisizing might involve a simple frequency count of certain themes or responses, and simple descriptive statistics used to summarize frequency counts (Teddlie & Tashakkori 2009, 269), which were both used in this study. For example the job content data reported by the survey respondents was allocated into the corresponding levels of design management presented in chapter 2.2.1, strategic, tactical and operational. Judging this data, it was determined to which of these levels does the design managers sphere of tasks best fit to

in general. The respondents were classified into groups, strategic, tactical, and operational design managers by their job content, and based on the grouping, frequency table of the levels of design management could be formed.

A descriptive statistical analysis was performed to the closed-ended items: One way frequencies were calculated of the key questions to better communicate the results (Teddlie & Tashakkori 2009, 258) and to obtain a general picture of the different items of interest. Then, some key variables were cross-tabulated to detect patterns and relationships (Teddlie & Tashakkori 2009, 258). Since no hypothesis is tested in this study, no inferential statistical methods were used (cf. Teddlie & Tashakkori 2009, 258). In this research, a significant goal is the description of typologies and categories, i.e. design management practices, and when this is the case, sampling and counting are more tools of analysis, and not necessarily part of the most important research findings (Marshall & Rossman 1989, 108). Also the quantitative data was partly converted into narrative data, forming qualitative categories and profiles, which can be analyzed qualitatively. This is called qualitizing (Teddlie & Tashakkori 2009, 27, 269).

When the level of design management and the horizontal location of design management were established, all the individual response sets could be clustered on the basis of these two main sets of determinators: the first set consisted of the levels of the vertical dimension, i.e. strategic, tactical and operational levels, and the second set consisted of the horizontal dimension, i.e. design management as part of R&D, or marketing, design as an independent unit, decentralized, and other. The response sets grouped this way could then be utilized for the analysis of each cluster.

3.3.2 Interview data analysis

Informal analysis happens already while interviewing is still under way, which guides the researcher in what to focus on more closely in the coming interviews (cf. Rubin & Rubin 1995, 226). After the interviews are done, begins the formal, more detailed analysis, in which this chapter focuses on, that builds towards the overall explanation (Rubin & Rubin 1995, 226). The goal of the final analysis is to find themes that explain the research arena, integrate the themes and concepts into a theory that offers an accurate, detailed, and yet a subtle interpretation of the research area (Rubin & Rubin 1995, 227, 254). There are several versions resembling one another of what the analytical procedures entail (cf. Marshall & Rossman 1989, 114; Huberman & Miles 1994, 428–429; Saunders et al. 1997, 340–341). According to Marshall and Rossman (1989, 114), for example, analytic procedures fall into five modes: 1. organizing the data, 2. generating categories, themes and patterns 3. testing the emergent hypotheses against the data 4. searching for alternative explanations of the data, and 5. writing the

report. Marshall and Rossman (1989, 114) further explain that each phase entails data reduction, bringing the data into more manageable chunks, as well as interpretations, bringing meaning and insight to the words of the respondents. In this study, the analysis was conducted in the following, iterative phases.

Organizing the data: In order to analyze empirical data, the data collected by interviews was first transcribed word for word. The same procedures were used in transcribing all the interviews in order to facilitate the comparisons among the interviews (Kvale 1996, 170). As a guideline, the transcriptions were done imagining how the interviewees themselves would have wanted to formulate their statements (Kvale 1996, 170). This means for example removing the frequent repetitions. Otherwise, the entire interview transcription was intended to be kept as close to the original as possible. After the transcription, the data was checked for mistakes and missing information (cf. Hirsjärvi et al. 1997, 209). The interview data was also organized by reading it through multiple times in order to insure a closely familiar, general view of matters, to provide a possibility to correct any mistakes, and make the data more manageable (cf. Marshall & Rossman 1989, 114). The interview material was, on the same time, structured and clarified to facilitate the analysis, by for example editing out repetitions, and distinguishing the essential and non-essential (in relation to the research question) parts of data (Kvale 1996, 190).

Generating categories, themes, and patterns: The actual analysis starts to take place after the ground work is done. Several software programs exist for managing, structuring and analyzing qualitative data (cf. Marshall & Rossman 1989, 114; Richards & Richards 1994; Kvale 1996, 173; Gray 2009, 518), but in this study, the data was analyzed by hand. After organizing the data, the material was read again, marking off each time a particular idea or concept was mentioned by the interviewees, and indicating by a code the subject of each topic (Rubin & Rubin 1995, 227, 241; Gray 2009, 496). After the coding process was done, the information was reassembled into logical, relevant themes that were tried to explore in the interviews (Rubin & Rubin 1995, 228; Kvale 1996, 192), by putting together the responses that described the same idea in the same category (Marshall & Rossman 1989, 115–116; Rubin & Rubin 1995, 227). These categories, organizational and managerial practices (with sub-categories of horizontal location, vertical location, job content, and key aspects of design), emerge from the purpose of the study (cf. Saunders et al. 1997, 341). As categories and patterns between them emerge from the data, the plausibility of these were evaluated by searching for e.g. negative instances of the patters, and determined whether the data is useful for shedding light on the research questions (cf. Marshall & Rossman 1989, 118–119). The interview data was then condensed, which refers to a reduction of large interview texts into briefer, more succinct formulations (Kvale 1996, 192). However, the best and most describing quotes were left for further use. As the interviews were

done in Finnish, translations of the quotations were necessary. All quotes have been translated by the author. When translating, the quote was kept as close to the original as possible.

Data comparison: The interview material was then compared first within the category to find variation and nuances in meanings (Rubin & Rubin 1995, 226, 252) and after that, the material was compared across the categories to discover connections and relationships between different themes (Rubin & Rubin 1995, 226–227, 253). At this stage, also the data from the interviews and the survey was compared with each other (cf. Johnson & Onwuegbuzie 2006, 45).

Data integration: In the final stage, both quantitative and qualitative data are integrated into a coherent whole (Johnson & Onwuegbuzie 2006, 45). The connections between the categories and concepts that emerge in the data were looked for (Gray 2009, 496) and implications of the themes where generated by comparing the findings to a broader context of theories in the literature (cf. Rubin & Rubin 1995, 255; Gray 2009, 496), interpreting the data in relation to the research question. These implications will be presented in the conclusions of this study.

3.4   Evaluation of the study

Many different measuring criteria may be used for the evaluation of the trustworthiness of a study (cf. Hirsjärvi et al. 1997, 216). The concept of trustworthiness is an agreement within the scientific community, which means that it is not a static state of being, but a constantly evolving perception. Since there is an abundance of different qualitative research approaches and traditions, one cannot expect a set of unified evaluation criteria to exist (cf. Eriksson & Kovalainen 2008, 291). Being a mixed methods study, this research consists of the survey part and the interview and thus two sets of criteria are used to evaluate the study: reliability and validity (cf. McKinnon 1988) for the survey, and credibility, transferability, dependability, and confirmability (Lincoln & Guba 1985) for the interviews.

3.4.1   Evaluation of the survey

The concept of reliability and validity was chosen as the evaluation criteria for the survey because it is traditionally and frequently used for the evaluation of quantitative research (cf. Rubin & Rubin 1995, 85; Eriksson & Kovalainen 2008, 291–292). Reliability refers to the repeatability of the results (cf. Hirsjärvi et al. 1997, 216; Eriksson & Kovalainen 2008, 292). If a research is reliable, two researchers studying

the same arena will come up with compatible observations (cf. Rubin & Rubin 1995, 85; Hirsjärvi et al. 1997, 216; Eriksson & Kovalainen 2008, 292; Gray 2009, 158). This specific topic has yet to be researched in Finnish companies by other researchers in a similar way, and thus the repeatability of the results is difficult to establish. An additional challenge is brought on by the explorative nature of the study and the newness of the topic: design management as a topic is new to many of the companies, which means that the policies, structures, and roles related to design management can be not only new, but also undefined to many of the companies. However, the reliability of the study was enhanced in several ways.

When it comes to reliability, many fields of sciences have developed internationally tested measuring instruments that enable international comparison and enhance the level of measurement (Hirsjärvi et al. 1997, 216). The field of design management being relatively young, it has not established any measuring instruments which can be seen influencing negatively the reliability of the survey. The survey, however, was built using theoretical concepts presented in chapter 2 to ensure reliability.

Repeatability, and thus the reliability, was also facilitated by describing how the data collection and analysis regarding the survey was conducted and making the survey questions available. They can be found in Appendix 2. The repeatability of the survey was further enhanced by covering the same issues in different questions in the survey form, as well as handling the same issues in a different way in the thematical interviews. There did not seem to be any conflicting answers, which supports the reliability of the survey.

The truthfulness and quality of the responses, and thus the reliability of the study, were facilitated by the following actions: The participants of the survey were informed that the information will be handled confidentially. This was done to convince the respondents that they can answer truthfully. Also sufficient time, one week, was given in order to provide the respondent an opportunity to fill in the survey when the time and place is most appropriate, to avoid the impact of hurry on answers. Moreover, there is always the risk that the respondents have misunderstood some of the research questions. There was one answer where misunderstanding was noted while analyzing the responses: the respondent's answer did not correspond to what was asked. The answer was left out of the analysis, and the information was completed by contacting the respondent separately for the required information. In order to avoid leading questions and misunderstandings, as well as minimize the effect of the researcher, the survey was sent for feedback to one former design manager and two supervisors.

Reliability was also facilitated by eliminating non-participation: all the companies were reached and responding was encouraged by two reminder emails as well as follow-up phone calls. The final response rate was good (see previous chapter).

When it comes to validity, a research is said to be valid if it accurately describes or explains the phenomenon (cf. Rubin & Rubin 1995, 85; Eriksson & Kovalainen 2008, 292), i.e. validity describes the ability of a research method to measure what it is supposed to measure (cf. Hirsjärvi et al. 1997, 216; Gray 2009, 155).

As the nature of this study was to explore a relatively little researched area, there was no existing scale or question frame. Validity was increased by making the questions, i.e. the measuring instruments, correspond to the theory, so that validity, i.e. measuring what it is supposed to measure, would be achieved. The measuring instruments emerged from the key frameworks in the literature, such as the key aspects of design management, levels of design management, and horizontal location of design management. The gathered data should thus correspond to the theory and measurements measure what they were supposed to. Furthermore, the validity of the survey was improved through cooperating with a former design manager when building the survey.

Misunderstanding might weaken the validity of the study. If the respondents have for example understood the questions differently than the researcher, and the researcher continues to analyze the responses obtained in accordance to her own model, it might weaken the validity of the study (Hirsjärvi et al. 1997, 216–217), since the research does not measure what it is supposed to measure. The misunderstandings were mitigated by testing the survey form beforehand with one former design manager, and through consulting two supervisors.

The validity of a study was also enhanced by triangulation (cf. Hirsjärvi et al. 1997, 218; Eriksson & Kovalainen 2008, 292). Methodological triangulation was used in this study, as the data was collected through a survey and interviews. Also the survey contained both quantitative and qualitative items. It can be said that methodological triangulation validates this study.

The traditional criterion of reliability and validity sometimes includes generalizability (cf. Eriksson & Kovalainen 2008, 291). Generalization of the findings is, however, not the goal of the study, but to explore and describe the current design management practices in Finnish companies. Moreover, the research subjects were not randomly selected, the design managers were selected on the basis that they have identified themselves as design managers.

3.4.2 Evaluation of the interviews

Since interviews have a qualitative perspective, applying the concepts of reliability and validity rigidly would not be advisable (cf. Gray 2009, 375). They are not used here because most indicators of validity and reliability do not fit qualitative research, as they tend to distract more than clarify (cf. Rubin & Rubin 1995, 85). Instead, the criteria

developed by Lincoln and Guba (1985) especially for the evaluation of qualitative research, will be applied to the evaluation of the interviews. The evaluation criteria consist of credibility, transferability, dependability, and confirmability.

Credibility corresponds to the traditional concept of internal validity. It measures how well the findings correspond to reality. (Lincoln & Guba 1985, 296.) Credibility refers to being able to demonstrate that the research was designed in a manner that accurately identifies and describes the phenomenon under investigation (cf. Remenyi et al. 1998, 116).

Prolonged engagement (Lincoln & Guba 1985, 301) refers to investing sufficient time to achieve goals, which improves credibility. The data collection phase of this study consisted of two phases that were performed during three months, which constitutes a long engagement. However, the researcher was not involved with the sites longer than couple of hours per company. The time was not long enough for learning the culture in the companies, and to be able to view the answers in the context of the culture, which could possibly result in misunderstandings. However, the researcher tried to mitigate this by asking clarifying questions whenever something was unclear. The interviewees were also given a chance to view and check the ready interview results, and comment in case of any misunderstanding. No major misunderstandings were reported by the interviewees. Performing these kinds of member checks increases the credibility of a research.

Credibility of this study was further facilitated by recording and transcribing the interviews word for word right after the interviews, in order to make sure that all information will be taken into account, to allow the studying the original words of the interviewee, as well as to mitigate the possibility of misunderstandings. The quality of the recordings was good and the interviewer also made notes in the interview guide during the interview. Lincoln and Guba (1985, 313) call this referential adequacy, and it improves credibility. In this case, recording did not weaken the credibility of the study since the subject handled was not a sensitive topic the interviewees had no visible motive to hide anything.

Furthermore, the semi-structured form of questions enabled credibility, since it allows interviewees to answer freely. In the end of the interviews all interviewees were asked if they would still like to add something that they think has not come up during the interview. Credibility of the research was further facilitated by ensuring that the research problem is linked to the interview questions, theory, and thus the results.

Triangulation enhances credibility (Lincoln & Guba 1985, 301–305). This study utilizes triangulation, as handled in the beginning of this chapter, which helps to improve the credibility of this study. The benefits of triangulation for this study were handled already in the beginning of this chapter, but overall, with triangulation, one can counterbalance the weaknesses of one single research method.

Transferability refers to the degree to which the findings can be generalized to other empirical and theoretical contexts in the real world. The researcher can give the reader the tools for evaluating transferability by describing the research process, data, and the conditions to which the findings apply, as carefully as possible, so that the readers themselves can be able to make the generalization to applicable contexts. (cf. Lincoln & Guba 1985, 297–298, 316; Hirsjärvi et al. 1997, 217.)

The context was described in detail earlier in this chapter to enhance transferability: the criteria for selecting the focus of this study was explained in the introduction as well as in this chapter and the selected companies as the research objects were described. This enables the evaluation whether the findings could are transferable to another context. Furthermore, the conditions of the interview situations, as well as the places, time used, and possible distractions were described (cf. Hirsjärvi et al. 1997, 217). Transferability is further dependent upon the research stating the theoretical parameters of the research explicitly. Hence it is important to specify how the phenomenon under investigation ties into a broader case, making clear the specific organizational processes from which generalizations will be made (cf. Remenyi 1998, 117). To enhance transferability, all the criteria used to select methodological choices and the research subjects were described in detail earlier in this chapter. The competence of the interviewees as experts of their field increases transferability. In order to give the reader the tools to make judgments about the interviewees, the criteria for their selection, their backgrounds and competencies, were described earlier in this chapter.

Dependability describes the role of the research process to the results, i.e. the research process or situation should not distort the results (Lincoln & Guba 1985, 299). In non-positivist research, such as qualitative research, it cannot be assumed that the conditions where research is made remain unchanging. However, it is more appropriate to account for changes in the conditions of the phenomenon studied, as well as changes in research design, which are made because of a better understanding of the research setting (Remenyi et al. 1998, 117).

The interview situation and context has been described in the data collection sub-chapter in order to facilitate the dependability of the study. The data was collected in meeting rooms in the company premises, which are considered as neutral and distraction-free ground. All the places were quiet, and protected the interview from distractions. Thus there were no distractions that could have affected the research situation. All of the interviewees were motivated to participate in the study and had reserved enough time for the interview.

Also the effect of the researcher to the study belongs to the sphere of dependability. The effect of the researcher was minimized by preparing questions in advance and getting feedback for the interview, as well as the survey, questions from one former design manager and two supervisors. Moreover, the interviewer took special care in not

affecting the answers of the interviewees. The categories used in the interview analysis emerge from the theoretical background and thus mitigate the effect of the researcher to the results of the study.

Confirmability refers to the repeatability of the study. Confirmability can be considered high if another researcher could repeat the study and have the same kind of results (Lincoln & Guba 1985, 300, 319; Remenyi 1998, 117). Confirmability's concept is used instead of objectivity in phenomelogical research (cf. Remenyi 1998, 117).

To achieve high level of confirmability, the analysis, handling of the data, and all the phases of the research process are described in detail so that it would be possible for someone else to repeat this study. The interview themes can be found in the Appendix 4. The way in which the classifications for the analysis were made was also reported and justified (cf. Hirsjärvi et al. 1997, 217): the categories that were used in the interview data analysis are reported earlier in this chapter. To further facilitate confirmability, the names of the companies that were interviewed are available and also the other sources used are also widely available. The fact that the research is public increases confirmability. Authentic quotes from the interviewees were used in the results, when applicable, in order to back up the key points (cf. Rubin & Rubin 1995, 92) and to show where interpretation is based on (Hirsjärvi et al. 1997, 218). This further increases confirmability.

There are several various factors, both positive and negative, which influence the evaluation of the trustworthiness of the study. Both the positive and the negative factors have been discussed above in order to give the reader of this study the tools to determine whether they believe the results of this study are trustworthy.

4   IN-HOUSE DESIGN MANAGEMENT PRACTICES IN FINNISH COMPANIES

This chapter presents the findings of this study on organizational and managerial practices, i.e. findings on the context and content of design management in Finnish companies today. Examples from the interviews with four companies are used to highlight and further explain the results of the survey. The main variables, the organizational context and the managerial content are applied to the data in order to make the in-house design management practices in Finland more structured and defined.

4.1   Managerial practices

The analysis started from the outer part of the framework, the managerial practices. The outer part is similarly divided into the vertical and horizontal dimensions, job content and focus of design management.

4.1.1   Job content

During the analysis, it was first of all identified that there are design manager roles on all the levels of design management, operational, tactical, and strategic, among design managers in Finnish companies. It seems that 23 percent of the survey respondents have an operational level role, 50 percent have a tactical level role, and 27 percent have a strategic level role (Figure 9).
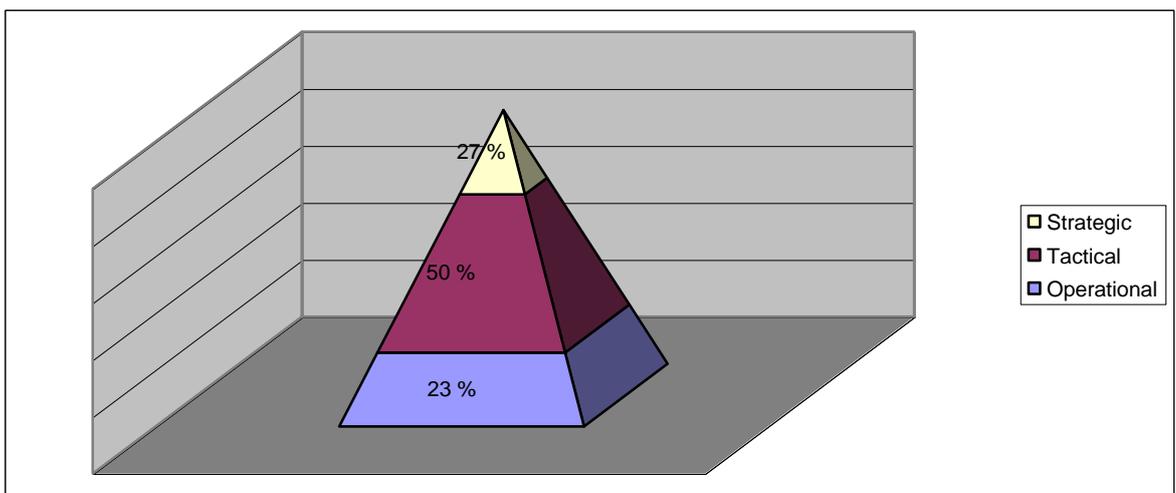

Figure 9   Design managers' tasks in the vertical dimension (n=30)

Second of all, it was found that it is rare that the design manager's job description would purely consists only of tasks belonging to one level, i.e. for example design managers reaching the tactical level can also have operational level tasks, and design managers on the strategic level can have tactical and operational tasks. Thus, in addition to describing the operational, tactical, and strategic design manager groups, all individual tasks are classified in their respective levels regardless of which level the design manager in general was located on.

Examples of design managers from all the three levels can be found among the interviewed design managers. Planmeca's industrial design manager works on the operational level, Lumene's design manager on the tactical level, and Martela's design director and Marimekko's creative director on the strategic level.

4.1.1.1 Operational design managers

Seven design managers from six different companies were recognized as *operational design managers* based on their job content. Typical operational design manager tasks in the respondents' job descriptions were classified into three sub-categories (Table 6):

- controlling day-to-day activities of individual design projects
- managing designers
- implementing the design policy.

As an example, part of Planmeca's industrial design manager's job is to administer the work of the designers. He also defines certain boundary conditions to a design task, which then goes to a designer to be created.

In addition to focusing on individual design projects, working as a project or team leader, and managing design and designers, many of the managers in this group have originally had, or still have a hands-on designer role, but their role has gradually changed towards guiding the design team and the designers. For instance, Planmeca's industrial design manager says that his most central areas, in addition to design management, are design and concept design, but that his role has evolved from working by himself to supporting and encouraging others, i.e. towards the role of an operational design manager. Moreover, it was noted that some operational managers aspire to move up on the levels of design management towards tactical design management tasks, such as developing the design function, as illustrated by a quote by one respondent in this group:

> *I would wipe the table clean of all mishmash and minor designing and would concentrate more on developing the design groups.*

According to the theory, one of the core differences between the job descriptions of operational and tactical design managers is that the operational job description does not include defining a design policy. Planmeca's industrial design manager says there is, in fact, no common perception or policy of design at Planmeca, and due to this, the design guidelines consist of implicit and unwritten values in the back of the industrial design manager's head.

> *Nobody comes to me and says that this is the view that we go with, instead, I have to read it somewhere between the lines and try and see does it go like that. – – Will this pass, or does it have to be rounder?*
> (Industrial Design Manager, Planmeca)

The common view on design is not discussed inside Planmeca the way that he would hope, and he thinks that this issue requires a common view on the subject. This further reflects the operational quality of his role: implementing the design policy, which in this case is unwritten. Based on the analysis, Planmeca's design manager can be described as an *operational industrial design manager*.

4.1.1.2   Tactical design managers

Fifteen design managers of thirteen different companies were identified to belong to the group of tactical design managers, which forms the largest group in this categorization. The tactical design managers' tasks in Finnish companies include four sub-categories (Table 6):

- creating, developing, and managing the design organization, processes, and resources
- defining and managing the design policy / standards
- staff training and building up the level of design awareness
- identifying new opportunities for design.

Lumene's design manager's job content focuses mostly on the second sub-category: she is responsible for the total visual image and keeping everything visually in line with the Lumene brand. She has the main responsibility for making the visual guidelines and monitoring the realization of the corporate visual image in different situations (including point-of-sale material, displays, and packaging). In addition to these tactical level tasks, she also supports the implementation of the guidelines into different things from packaging to shop material and furniture, which belongs to the operational level.

It seems that a common issue on this level is that the tactical design managers tend to do a bit of everything. Tactical design managers' aspirations are related to taking more strategic responsibility, if the work load would allow:

> *Too many things to oversee – I should have a subordinate to whom I could delegate things so that I could concentrate on product strategies and other large/important scale issues.*

Many of the managers on this level are responsible for the tactical design management, e.g. defining and maintaining the coherence of the design policy, but in addition to that, do operational level work by acting as the superior of designers, and finally, also do hands-on design on the same time. Lumene's design manager is no exception: In addition to her design manager role described above, she does also hands-on design. The studied design managers seem to be willing to trade away practical things and a part of hands-on designing in order to concentrate to future development, future challenges and aims, management of larger entities, and strategic planning and design. Many of them suggest that this requires hiring (more) in-house designers as their subordinates.

The in-between quality of the tactical design manager shows in their aspiration for more authority, when asked what they would change in their job, couple of managers straightforwardly aspired for a stronger mandate to influence things, or more authority and power. Lumene's design manager, on the other hand, says she would not necessarily want more authority. However, she would like to see the decision making made clearer. Although the design team's role at Lumene is to be the visual image police, according to the design manager, the division of labor and roles between design, sales, category, and the ad agency are still a bit unclear. She say this has led to a way of working where pretty much everyone at Lumene wants to have their say in design, and it makes her work a bit challenging from time to time.

> *Our category, down to the top management, all have a very great passion towards it [design]. It is of course in a way good, but sometimes it feels that it is a difficult process to control when so many people are participating. When nobody really knows what it is, everybody says their opinion, to be on the safe side.*
> (Design Manager, Lumene)

She thinks that the situation is better now that they have formal control of the whole Lumene visual image, which was not the case before. However, she admits that it is not yet totally happening in practice, despite the intentions.

Lumene's design manager can be classified as a tactical design manager since her principal field of know-how includes managing entities and overseeing the total visual coherence. The key definition of the tactical design manager is that they contribute to the design policy making and also manage and monitor its implementation, and ensure consistency of policy across products, communications, and environments. Lumene's design manager can be described as a *tactical visual image police.*

4.1.1.3 Strategic design managers

Eight design managers were recognized as strategic design managers based on the survey data analysis. All respondents in this category are members of the executive boards in their companies, where they take part in the planning of the total business strategy and ensuring design in part of it. All of them also report directly to the CEO. Three sub-categories of strategic design manager tasks were recognized (Table 6):

- defining and developing corporate strategy
- identifying the strategic role of design
- ensuring design is connected to the total strategy.

The design director at Martela heads the brand and product portfolio unit. The strategic content of his work focuses on managing the product portfolio and the brand. Through the brand and portfolio, the design director sets the strategic vision of design in the company, and by being part of the executive group, takes part in the defining and developing the company total strategy and ensuring that design is connected to it. The design director at Martela is responsible for the collection, and the portfolio is used to manage the collection. His department also includes the business side of portfolio management, profitability, scopes of segments, and stock values are managed by product managers, who report to the portfolio manager, who then reports to the design director. The design director, together with the CEO and the chief designer, makes the final decision of new products entering the portfolio. This was changed from a bigger group of decision makers, by the design director, in order to get sharper decisions. The design director is also responsible for the recent brand renewal in Martela, which he ensured was connected with their vision and mission.

Among the strategic design managers, either no particular dissatisfaction was noted, or it was related to time management and delegating operative work to others. Martela's design director, for example, wants to concentrate on the strategic level issues in his work:

> *What I try to do daily is that I would use my time where it would be most efficiently utilized. I delegate away the operative and routine tasks and*

> *try to concentrate on the essential, big things, through which I can get*
> *the big ship forwards as efficiently as possible.*
> (Design Director, Martela)

Perhaps a bit surprisingly coming from a person with a designer background, Martela's design director feels that in his role, the word design as such is not worth to overly underline and bring out. He feels that in his role, one should think a bit more strategically.

> *If I would only concentrate to product design, getting bigger things*
> *forward might be difficult. Let's take for example this brand renewal.*
> *Putting that kind of projects forward, I feel that I take our company*
> *towards the vision a lot more efficiently than if I would spend all my time*
> *with the design team and we would polish the design of some chair.*
> (Design Director, Martela)

He further states that he could have defined his role to be a designer, and then others would have thought about the brand and portfolio, but he chose to take a more strategic entry angle to be able to affect strategic level issues. The design director at Martela can be described as a *strategic portfolio and brand developer.*

Marimekko's creative director is likewise a strategic design manager, but her perspective is slightly different from Martela's. Whereas design management at Martela seems to have more structured business edge, at Marimekko design management is more about providing a creative environment. According to the creative director, her role at Marimekko is to be an atmospheric design leader:

> *I experience that my role here is atmospheric. To maintain that kind of*
> *free and enriching atmosphere, that good things would be created here.*
> (Creative Director, Marimekko)

The creative director does not tackle business field problems, this role is given to the product director and product managers at Marimekko. Marimekko's creative director role differs from that of Martela's design director in the sense that the creative director is less concerned with business issues. In the design department headed by the creative director, everyone works with design.

Marimekko's creative director's strategic role focuses on setting the design vision, what Marimekko is, and will be in the future. The creative director, together with the product director, makes the final decisions concerning the collection. In her role it is

important to understand the meaning of the designed content, and guiding the designers, as well as managing the whole creative entity.

> *Bringing people together, and as a result of their interactions, something interesting starts to come into being. And that concretizes as products through which generates business. This has been the thinking model of this house.*
> (Creative Director, Marimekko)

Marimekko's creative director also works with the product portfolio issues. However, as described by the creative director, they do not use any concrete models or calculations. Instead, the model is more implicit, and more inside the heads of the creative director and product director. Marimekko's creative director can be described as a *strategic creative atmosphere enabler.*

4.1.1.4 Hands-on designer-design managers

In addition to the different managerial tasks, it could be identified from the survey that at least 10 out 30 respondents also have hands-on designer tasks in addition to their design manager role. These roles are mostly related to product design, communication design (graphic design), and concept or user experience design. Both Lumene's and Planmeca's design managers have a hands-on designer role in addition to their managerial role, whereas Marimekko's and Martela's do not.

Hands-on design at Lumene is divided between the design manager and the designers. The designers are in general responsible for the content, but the design manager's role in the team as a hands-on designer is 3D design, i.e. designing display furniture for shops. She also does a bit of interior decoration, and designs ad layouts.

Marimekko's creative director does not do actual hands-on design work herself anymore, since, according to her, it requires so much time and concentration, that in her position it is impossible. She has also recognized the contradiction of doing operative work in a strategic position:

> *When you work at the top management level, you have to be able to think more strategically, broadly and more objectively. It is absolutely better [not to do hands-on design as a creative director], because there are so many good designers, in my opinion it is worthwhile to raise others. I think that this kind of background support role suits me very well.*
> (Creative Director, Marimekko)

She thinks that in a design manager position (as opposed to a director position) one is better capable of doing also hands-on design. At Marimekko, the design manager for fashion also does hands-on design work. She further believes that to be able to direct design at Marimekko, one must have a designer background. She emphasizes that sensitivity and courageous way of thinking and sensing the surroundings makes it possible to guide and direct the designers.

At Martela, the chief designer and three in-house designers are responsible for the hands-on work. Although the design director does not do hands-on design anymore, he has been a hands-on designer before in his previous work place for several years, and uses the word "sacrifice", as did Marimekko's creative director, when talking about giving up that role for another, more strategic level role. He further feels that it is inappropriate to be designing, when he is the one making decisions about which designs to include in the collection.

To summarize the above results on the job contents of Finnish design managers, it has become evident that in Finnish companies, there are design managers with operational, tactical, and strategic design management tasks. It can be further said that the Finnish design manager is somewhat a multitasker, most usually having tasks from more than one level of design management, and also in many cases handling hands-on design. The typical tasks of each level are compiled in Table 6. Furthermore, it was noted that there is willingness among the operational and tactical design managers to climb up the stairs of the design management levels, i.e. change their job content towards tactical and strategic roles, respectively.

Table 6   Finnish in-house design managers' career levels and tasks

Level	Focus	Examples of tasks
Strategic design manager	*Vision: setting the strategic design direction*	**Defining and developing corporate strategy:** 1. Executive group work **Identifying the strategic role of design:** 2. Design strategy and its realization 3. Strategic collection design 4. Strategic product portfolio management and forecasting 5. Strategic brand management **Ensuring design is connected to the total strategy:** 6. Creating the strategic level of design and connecting it to the company's business goals
Tactical design manager	*Function: managing design function, processes, and resources*	**Creating, developing, and managing the design organization, processes and resources:** 1. Implementing the methods and processes of (user experience) design in the company 2. Establishing the design message and foothold in own unit, increasing design resources 3. Process development 4. Heading the product design unit 5. Allocating design resources **Defining design policy / standards:** 6. Managing and creating the design DNA of the products and communication 7. Developing and maintaining the visual look of the company 8. Overseeing the realization of the total visual look 9. Design coordination and keeping the line coherent 10. Making design guidelines 11. Managing the product brand **Staff training and building up the level of design awareness:** 12. Design training and selling inside the company 13. Acting as a design spokesperson **Identifying new opportunities for design:** 14. Ideation of new business opportunities 15. Consulting the top management with product and service concepts
Operational design manager	*Project: managing individual design projects*	**Controlling day-to-day activities of individual design projects:** 1. Project management 2. Design team leading and managing 3. Defining the goals of the projects 4. Allocating design projects to consultants, interns, thesis workers 5. Design and concept briefing to designers **Managing designers (finding, motivating, instructing, ensuring skills):** 5. Hiring new in-house designers 6. Selection and use of out-of-house specialists **Implementing the design policy:** 7. Support to the implementation of the directions / guidelines

4.1.2   Focus of design management

When it comes to the horizontal dimension of the managerial practices, i.e. which aspects of design the design managers in Finnish companies focus on managing, the product design oriented history of Finland is clearly visible in the results: 80 percent of the respondents report that product design is the most central aspect of design for them. The second largest group, 23 percent, perceives communication design as the most central aspect of design. Equally sized groups, 13 percent each, have information design and environment design as the most central aspect of design. The smallest group, seven percent, views environment design as the most central (Figure 10).
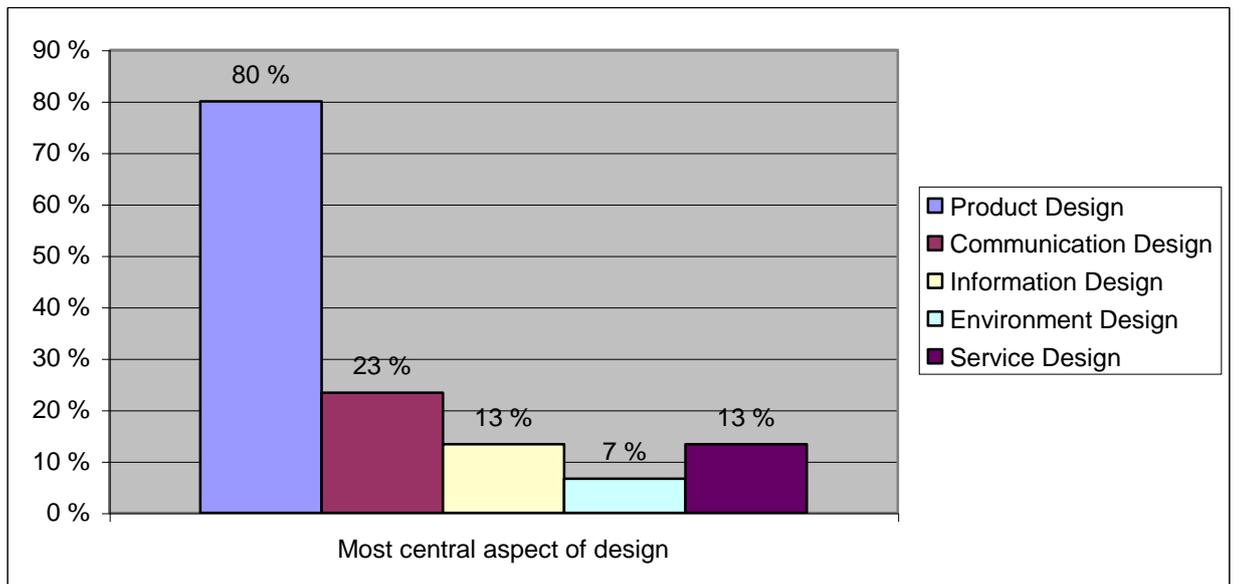

Figure 10   The focus of design in Finnish companies (n=30)

When grouped by the location of design in the company, design's focus stays on product design (Figure 11). There are, however, minor differences between the companies where design is part of R&D or marketing, or where design is its own independent unit. What distinguishes R&D oriented companies, for instance, is that information design seems to be more central in companies where design is organized as part of R&D, product development, or research and technology, than among companies where design is organized as part of marketing. In these companies, information design is the most central aspect of design after product design, and more central than communication design, whereas in companies where design is part of marketing, none of the respondents rate information design as the most central aspect. This can be explained by the more frequent use of e.g. user interface design in R&D oriented companies.

At Planmeca, where design is part of research and technology, the designers take stand on the product design, important parts being ergonomics, usability and testing the product in a real user situation, but the designer also takes part in the design of the software interface of the product, which falls into information design. In compatible with theory, product oriented design is a function of R&D, product development, or research and technology.
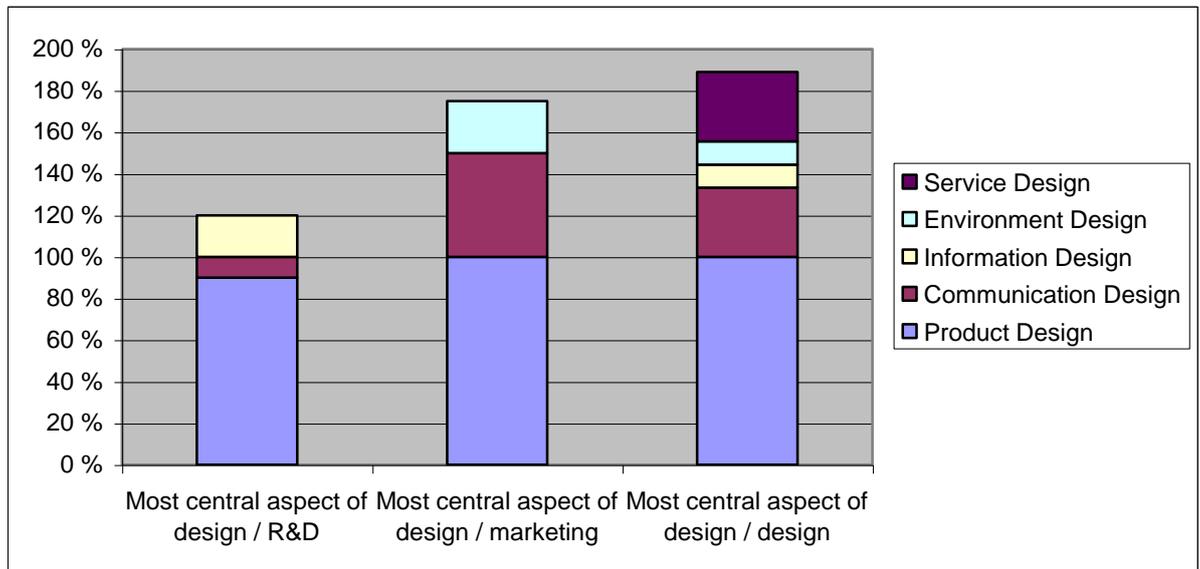

Figure 11   The most central aspects of design organized as part of R&D (n=10) / Marketing (n=4) /Design (n=9)

In the companies where design is managed as part of marketing, product design is viewed among the most central aspects by all the respondents. However, in this group, communication design is viewed among the most central aspects by half of the respondents. This supports the theory that product and communication design are functions of marketing.

Lumene is an example of a company where design is focused first and foremost on communication design, on controlling the building of corporate image, through packaging, advertising, and promotional material. These aspects fall naturally under marketing, where Lumene design is located. Lumene design also does environment design, by designing retail spaces and the furnishings within. This goes also naturally under marketing, since environment design can be seen to correspond with one of the Ps of the marketing mix, place. The design manager, an architect by education, reported to be responsible also for interior design and designing shop fittings and displays.

When it comes to companies where design is its own independent unit, product design is also regarded among the most central aspects by all the respondents. Otherwise, this group is distinguished from the other two by the fact that all the aspects of design got at least some votes to be regarded among the most central aspects. This

might be due to that in companies where design is its own independent unit, design used or viewed a bit more holistically. Moreover, judging by the number of votes for "most central"[2] for each aspect of design, companies, where design is an independent unit, have the most broad perception of what are the most central aspects of design, compared to for example to companies where design is part of R&D. This might further tell that design is viewed more holistically by these design managers in the companies.

At Marimekko, design's focus is on product and communication design, according to the creative director. Environment design is the third most central aspect, including the design of Marimekko stores and showrooms. However, service and information design are not perceived as central. At Martela, there is likewise a strong focus on product design. Although Martela's design director is responsible for the brand management of the company, he is not focused on communication design. That is handled by the marketing department.

When grouped by the levels of design management (Figure 12), the situation does not change much: overall, the most central aspect still seems to be product design with all the levels. Furthermore, it seems that strategic level design managers have more aspects of design that they consider equally most central, compared to tactical and operational level design managers. It can be said that on the strategic level, the perception of most central aspects of design is broader.
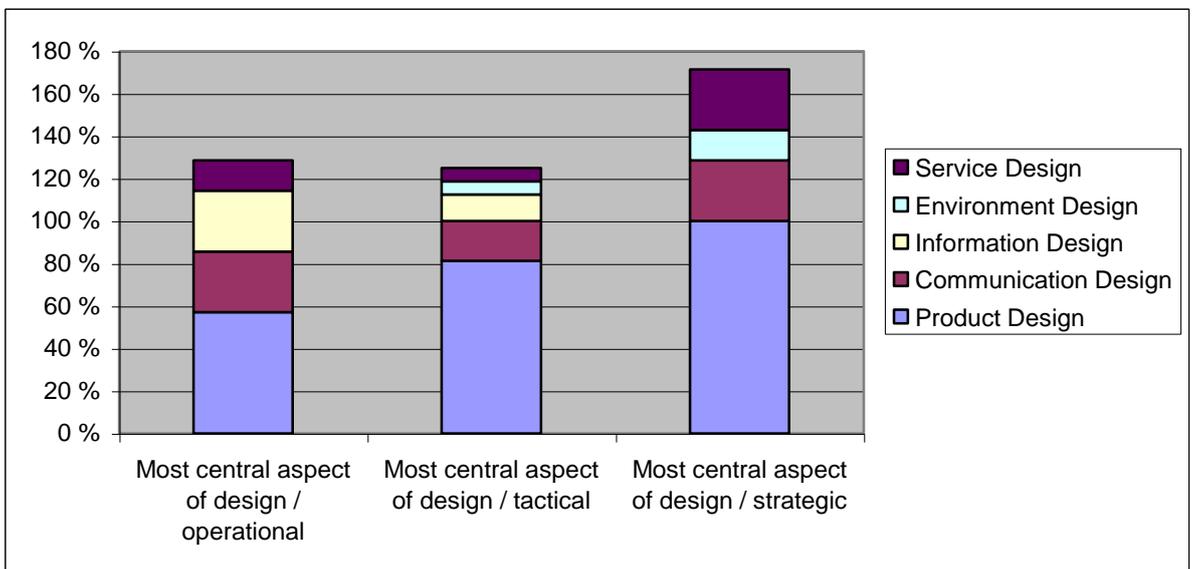

Figure 12   The most central aspects of design by strategic (n=7), tactical (n=16), and operational (n=7) level design managers

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[2] In the survey, it was possible to choose more than one aspect of design to be most central.

To summarize, it can be said that in Finnish companies, design managers are hired to be responsible for product design management, and this reflects that in Finland, for the large part, design still seems to equal product design.

4.2   Organizational practices

The organizational practices can be found in the inner layer of the framework, which consists of the vertical and the horizontal dimension. As presented in the theory chapter, the organizational structure can be divided into vertical and horizontal division of labor. Thus, results on organizational practices are about identifying what horizontal and vertical organizational practices there are, and how companies take their place in relation to the practices.

4.2.1   Horizontal organizational dimension

Based on the survey results, the three most emergent locations of design in the company horizontal organizational structure are part of R&D, an independent department, or part of marketing (Figure 13), of which as part of R&D forms the largest group among the companies of the respondents by 33 percent. The next largest group is design as its own independent department by 30 percent (this category also includes matrix organizations where design is its own department, but also connected horizontally to other departments), and the third largest, as part of marketing, by 15 percent.
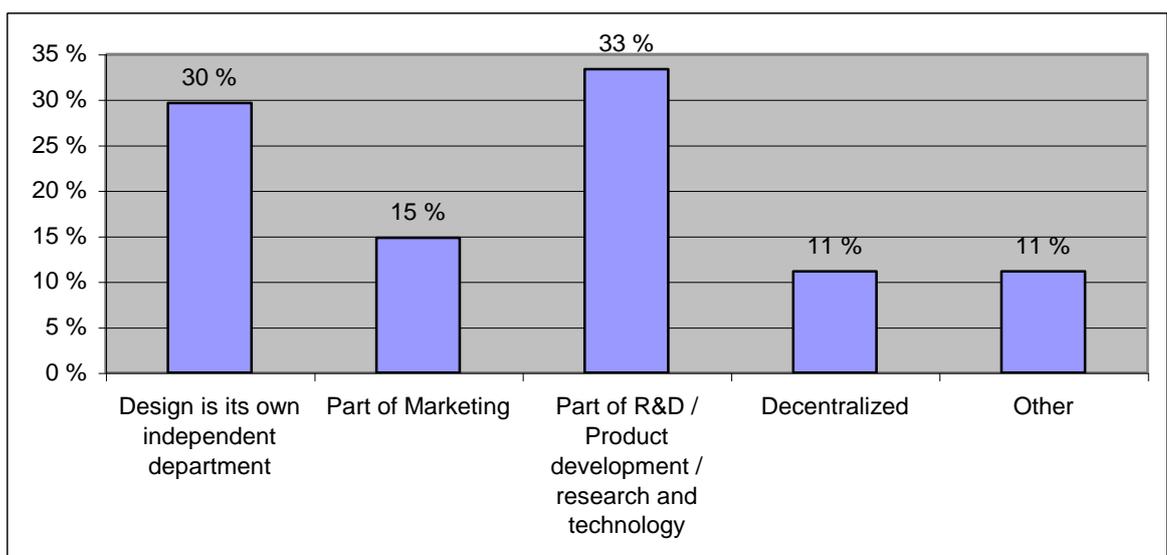

Figure 13   Design's location in the organizational structure (n=27)

Other categories include decentralized and other. In the category "decentralized", design is located in several places in the organization, including both as part of marketing and as part of product design, as part of marketing and communications and in small teams as part of software and services, and as part of development teams but not only as part of product development. In the category "other", design is located as part of purchasing, has no department according to the respondent, or the department has not been established yet. The latter company is working on establishing a design function in the company – they were at the moment in an analysis phase where the design needs of the company were investigated. The project manager reported at the time to product development.

At the interviewed companies, the horizontal location of design follows the results of the survey. At Planmeca, design is part of research and technology, at Lumene, part of marketing, and at Marimekko and Martela, design is its own independent unit. The organizations and where design is located in each company of the interviewed design managers can be seen in Figure 14. The horizontal locations of the studied companies will be handled in detail next.
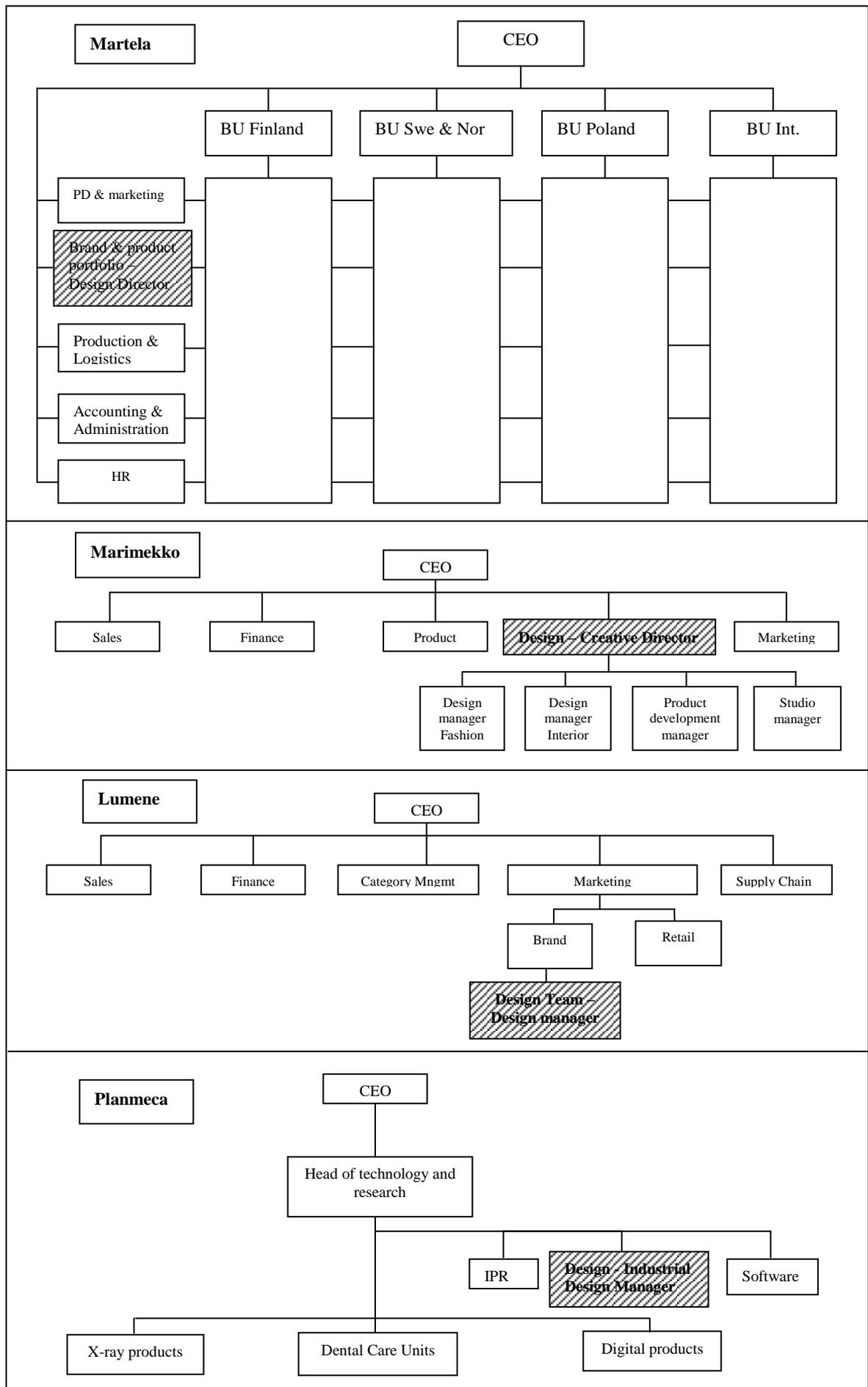
Figure 14   Design's location in the org. structures of the interviewed companies

4.2.1.1 *Design management as part of R&D*

Based on the survey, nine companies and 11 individual design managers were grouped under having design as part of research and development, product development or research and technology. Six out of the nine companies, where design is organized as part of R&D, can be described as technology businesses, which produce industrial goods to B2B markets. It can be said that these are typical examples of companies, where design is the responsibility of the R&D or product development department, since this corresponds to theory, the companies in question being evolving technology businesses. The rest, 3 out of 9, of the companies manufacture products targeted to consumers and are not especially technology-driven. In almost all of the companies in this group, however, design has a significant role in increasing the usability of the product.

In this group we can also find the few design managers that have a technical education background, or both an engineering and a designer education. One design manager from this group describes the recruiting policy in their company this way:

> *We do not get permission to recruit official designers, an engineer who understands something about design is easier to get through than a pure designer-educated person.*

This corresponds to what is stated in the theory: companies with design as the responsibility of R&D employ a large amount of engineers and expect the designer to possess creative skills that meet the technical constraints. Perhaps an engineer with design understanding is seen to meet these needs, and seen as a safer investment, in these types of companies. Another design manager states that his own strong technical know-how enables his design management work in the organization. This might further tell from the technological orientation of the company, and that strong technical know-how is essential when working as a design manager in these types of companies. In this group, couple of respondents, however, mentioned that the conservativeness and the technology-drivennes of the field hinder the design management in their companies.

Planmeca is an example of a company, where design is located in the most typical position in the horizontal organizational structure: as part of research and technology as shown in Figure 14. The design team serves the whole group, i.e. design works with different divisions' product development projects, and it is located under the head of research and product development. Planmeca's design team consists of one product designer and one interface designer, in addition to the industrial design manager. The industrial design manager reports to his superior, who is the head of the technology and research unit, and who is part of the executive board. In addition to design, the

technology and research unit comprises other teams that serve all divisions, e.g. IPR, programming and electronics.

Planmeca as a company corresponds to what is said about companies where design is the responsibility of the R&D department: It can be described as an evolving technology business with a dominant technological culture and complex products. Planmeca's industrial design manager confirms the perception of the culture as quite engineer-driven from time to time.

> *I feel that if we just look at things from a technological point of view, we absolutely can make business with just that, but – – sometimes I feel that we do not always think with a perspective broad enough. – – from time to time, thoughts emerge that do we think, or is our product range, too engineer-driven. Because in our products, even more than before, emerge the kind of values that cannot be measured technically.*
> (Industrial Design Manager, Planmeca)

The company also corresponds to the theory, as Planmeca employs a large amount of engineers and technicians. The industrial design manager and the designers also possess in-depth experience on the technical constraints of the highly complex product range. The industrial design manager says that the product range is so complex that working with out-of-house designers can be challenging due to long time it takes to understand the technical issues that affect the designers' work.

4.2.1.2 *Design management as part of marketing*

Four companies and four individual design managers were identified to have design as the responsibility of marketing. These companies can be characterized as consumer marketing oriented, as they produce consumer products to B2C markets. As consumer markets are saturated with marketing messages, design's role often relates to consumer appeal and differentiation. At the moment, Lumene's design team is part of marketing, or more specifically, the brand team (Figure 14). According to the design manager, although their marketing organization is in constant change, she sees Lumene design very clearly as an integral part of the brand and marketing, and does not see that it should be separated from that.

> *It is part of marketing, because why do we do Lumene design? So that it would be appealing to the consumer – and that makes it marketing. To us at Lumene, the usability isn't like it is maybe to some other firms, that*

scissors have to be ergonomic, to us ergonomics is a nice thing on the lid, but it is more that it is beautiful and appealing.
(Design Manager, Lumene)

Design at Lumene is used to support their central message of natural but effective products. According to the design manager, Lumene differentiates itself from the competitors in Finland and also abroad through design, by using their own design in packaging, which is normally used only by selective cosmetics. Lumene's competitors often use outside purchased standard packaging. This way, Lumene rises to the semi-selective cosmetics competition and differentiates itself.

As can be seen from Figure 14, the marketing department at Lumene consists of the brand team, which is responsible for the campaign planning, and the retail team, which is responsible for implementing the marketing material into stores. Lumene design is located under the brand team and consists of the design manager and two designers. The design manager reports to the head of brand.

Lumene fits the description in the theory of a typical company where design is the responsibility of the marketing function. Lumene is a fast moving consumer goods company that operates in highly competitive markets, dominated by commercial preoccupation. At Lumene, design is focused on communication design, with an emphasis on style, image and packaging design and the selling power of the product and its attributes in general. The role of design is controlled by the brand. The Lumene design team is especially focused of the four Ps on Place, where design contributes directly to packaging, distribution, designing outlets, such as stores, and stands, and on Promotion, as design has a key role in e.g. brochures and point of sales displays.

4.2.1.3   Design management as part of design

Eight companies and nine individual design managers were identified to have design as an independent unit or department based on survey. Companies in this group produce consumer products for B2C markets, with the exception of two companies. Another group of six companies from this cluster have product range that is related either to apparel and textiles, or furniture and interiors, and one that operates in consumer electronics.

As illustrated in Figure 14, at Martela, design management is part of the brand and product portfolio department, which is headed by the design director. In fact, the design director proposed the organizational structure that they currently have. The design director justifies the organization choice by the interconnectedness of brand and products:

My experience from Nokia was that the brand and the products have to be as close to each other as possible. In practice, the products redeem brand promises. It cannot be so that we make some promises in the brand and then it goes directly only to marketing communication, but both products and brand should go together. Then it is credible and goes into the same direction.
(Design Director, Martela)

Martela's design director further explains why design should not be under product development, but should start from the portfolio need.

Often it is product development that is responsible for design in companies. In my opinion, there should be portfolio thinking: a group of people who think about the customer need, and portfolio emphases, it is launched from the need. In the next phase, product development thinks how it could be executed through technical innovations. Instead that products would start from inventing a new type of hinge and then it would be made into a product, and then they would think: to who we would sell this to? Then, in my opinion, it starts from the wrong end.
(Design Director, Martela)

Design director's direct subordinate is the chief designer, and the chief designer has one in-house designer with the title "designer". In addition to the in-house designers, Martela uses freelance designers to a great extent. They have had about 25 freelance designers who have designed something in their collection, of which about ten are active at the moment. Product managers report to portfolio manager, who reports to design director. The design director reports to the CEO of Martela.

At Martela, design director is a position with relatively short history: The current design director is the first Martela has had in general, and also the first in the executive board. According to the design director, it tells from a certain kind of change. Earlier, when design was located under product development, they had a person responsible for the product portfolio. Portfolio management was also different from what it is today: product development reviewed the product portfolio mainly through sales figures. At the moment they do not have anyone with the title design manager. However, their current chief designer, who has been at Martela for approximately 25 years, was previously a design manager.

At Marimekko, design is its own independent unit, located under the creative director, who also sits in the executive board and reports to the CEO of Marimekko. Under the creative director, there are two design managers, one for apparel, which

includes also bags, accessories, and footwear, and another for interior. The design managers take care of the designers, which in Marimekko's case are for large part freelancers. Marimekko has approximately twenty freelance designers, of which around ten to fifteen they work with actively.

Marimekko has gone through a major structural organization change during the last 3–4 years. The creative director describes Marimekko's former organization as very low and unstructurized, and that the CEO of Marimekko at the time, Kirsti Paakkanen, had a highly central role in design decision making. In practice, Paakkanen was the creative director. According to the current creative director, Marimekko's unstructured organization faced its boundaries when they started to expand and internationalize. Marimekko's current CEO, Mika Ihamuotila, started systematically building a more structured organization, during which the first formal creative director was hired, and all design management was moved under that one director. Marimekko's creative director says she feels they are starting to have the pieces in right places. The only development challenge she mentions is related to the design process: marketing should get into the process at the collection kick off stage, that is, in the very beginning of the process, so that when design starts to construct the collection thematically, marketing could be able to start their own process and bring in their thoughts.

> *Through us, products are born and through them communications are born, and they should start to go in the same pace, so that marketing would be able to tell at the pre-final and final stage how this will be brought out with marketing. That we should develop more, it doesn't yet work as well as we would want it to.*
> (Creative Director, Marimekko)

Both Marimekko and Martela match well with what has been said of design as its independent unit. In both companies design is solidly linked to general management, and participates in product conception and defining product specifications very early on. In both companies the top management considers design a strategic, rather than a subordinate, department.

It seems that companies where design is managed under R&D, product development, or research and technology, are often very technology-driven, and produce complex investment goods to B2B markets. There were naturally a few exceptions to this. Compared to the other groups, in these companies' products, design has more often an important role in improving the usability of the product. The companies where design is managed as part of marketing are without exception companies that manufacture products targeted to consumers. In these companies, design has often a considerable role in the products' and the company's consumer appeal. Companies, where design is its

own independent unit, are most often manufacturing consumer products, and from fields where art-based design has a long tradition, such as furniture, apparel, or textiles and decoration. This group also includes a company from consumer electronics, where product design is regarded very important.

4.2.2 Vertical organizational dimension

As the organizational practices consist of two dimensions, let us now move on to the vertical dimension. Through grouping the design managers' tasks in chapter 4.1, it could be identified that design managers' tasks in Finnish companies can appear in all the three levels of design management, strategic, tactical, and operational. As percentages presented in chapter 4.1 cannot, however, in all cases determine the level of design management in the company, these numbers aim only to illustrate the level of tasks of the individual design managers located in the company, not the level of design management in the company per se. We will, however, take a look at how design managers on each level of the vertical dimension of the organizational context perceive design management in their own companies. The interviewed design managers from each level provide a more in-depth description of their perceptions of the level of design management in their positions.

4.2.2.1 Operational design management in the company

Companies of the design managers on the operational level are characterized by unfamiliarity of the design field in the company, superficial impressions of design, and the lack of coordination and long term plans. The operational quality of the level of design management in the company is described by these quotes by two survey respondents.

> In the company culture, design management and developing design are not part of the company's strategy. We wander from a project to another without an internalized, long term plan.

> The lack of structure and strategy, things happen in different contexts and interfaces, and this is not coordinated or followed – they do not see a need for this.

These quotes match well with theory of the nature of operational design management: lack of structure, coordination or formalized design function, design is applied in an ad-hoc way to individual projects only, and there is unwillingness to lift design as part of the strategy.

At Planmeca, design management can be placed on the operational level. The industrial design manager says that at Planmeca, the design management tasks are concentrated on day-to-day operations. This statement clearly reflects the operational quality of design management at Planmeca:

> *We do the job very much hands-in-the-mud. Our perspective isn't necessarily very far-reaching.*
> (Industrial Design Manager, Planmeca)

According to Planmeca's industrial design manager, Planmeca does not have any written or formal design policy or design mentioned in the strategy, which further supports design management's operational level. He states that in order to broaden the perspective to strategic thinking, they should vision further and maybe try something a bit more experimental. However, according to the industrial design manager they currently do not have resources for that. He wishes that they would forecast the upcoming trends a bit more, instead of always aiming for the physical product.

One design manager from this group sets a positive example: they are currently analyzing the design needs of the company, since there is clear aspiration from the top management's side to take design into the organization structure. Due to this, the design manager's job description would change from managing projects to developing design strategy in the future.

4.2.2.2   Tactical design management in the company

On the tactical level, there is an established and formal responsibility of design management, but it has yet to be connected with the strategy. Tactical design managers made comments that are similar to those of the operational managers, on what hinders design management in their companies. Often mentioned issues include the lack of understanding on design, and attitudes and impression of design as only the final touch.

> *The corporation does not perceive design as so "important" part of the core business, as they do inside the brand.*

At Lumene, design is not connected to strategy in an explicit way, according to the design manager. The role of design, according to her, is a good specialist extra that the company does not find reasonable to lift higher.

> *It [design management] is a little bit underrated in a way that they [top management] have not even become aware of it. They do not have readiness to go into any big development work, because they don't find it important in that way.*
> (Design Manager, Lumene)

The design manager evaluates that perhaps the management outlook to design is because of the hectic and ad-hoc way of handling things, and the fact that their packaging design is already "done" and people tend to think what more there is to design. She, however, sees that they should be preparing for the future in order to avoid the packaging design becoming obsolete. On the other hand, the design manager says that design is an issue that everybody seems to be interested in, and find design decision making important, wanting to be part of it. This has, however, led to the situation where decision making is unclear.

Three survey respondents expressed their concern on the lack of a design specialist in the executive group, or a design leader who would head the design of the entire corporation.

> *Design manager with at least some kind of mandate is missing. There isn't a design expert even in the executive group.*

At Lumene, at the moment of the interview, there was no person with a designer background in the executive board. The design manager hopes that their new marketing director, who started at Lumene in August 2010, might bring design management to the discussion on the board level. In her opinion it is part of the marketing director's job to direct the role of design.

Other organizational issues brought out by the respondents include hierarchy, organizational structure, and staff resources. One design manager said that their current organizational structure does not support effective design management.

Among the tactical design managers, there are also positive comments on the perception of design. Some companies report that their company has a design-positive atmosphere, the core management has a positive image of design, or the benefits of industrial design are understood among the top management.

4.2.2.3   Strategic design management in the company

The companies of the design managers on the strategic level are characterized by strong support and commitment to design by the CEO and top management, clear strategic objectives for design, and a formalized executive group presence of design. Based on the in-depth interviews with the design managers, Martela and Marimekko are examples of companies, where design management reaches the strategic level. Martela's design director explains that design is very much connected to the strategic level vision and mission:

> *It shows there very strongly. Our mission is better interiors, and our vision is to be leading Finnish interior brand. It is understood there [in the strategy] that to get there, we have to do quite a lot in design and of course also in brand building.*
> (Design Director, Martela)

The design director's comment reflects well a situation, where design management is connected to strategic level issues. According to him, Martela's "must win battles", that have to be won in order to realize the strategy, include brand building and implementation, and condensing the portfolio. He further describes how design shows in their vision and mission: Martela's slogan, inspiring spaces, is about understanding spaces comprehensively. It can be said that design drives Martela's strategy. When the design director started at Martela, their vision was "leading international design brand". However, he feels that the word design might be a bit misunderstood and overused as a word, and he did not want to bring out the word that much. Their new vision, leading Finnish interior brand, contains brand building, but also the interesting and design-wise appealing product portfolio side, according to him.

Also Marimekko's creative director assures that design is present in Marimekko's strategy because the company's business is centrally based on design.

> *Designers' job is to find the design solutions and the role of the product manager is to find the solutions that the design will come true as it is.*
> (Creative Director, Marimekko)

The creative director states that at Marimekko, decisions are done clearly more design-driven than business-driven, and that their whole process is absolutely design-driven. At Marimekko, it can be said that design is a way of life. Marimekko aims at succeeding first and foremost through good design.

All the respondents on the strategic level are part of the executive boards in their companies. Martela's design director evaluates that it is a sign that design's significance is understood at the company that he was hired to the executive board.

> *I think it was a pretty good solution because we have a lot of business people and engineers there – – the firm is directed based on numbers, which is of course one part of the palette, but companies that go forward with design, they have also the vision side and design management in a large role. And it comes from the very top.*
> (Design Director, Martela)

At Martela, design is involved and connected with the corporate strategy process, and the strategic level agendas, vision, and mission. Although, through his work, Martela's design director has focused the design decision making in the company, he would like to see that the decision making related to all aspects of design would be focused more than it is now.

> *All our communication, how we look like, and all the material what we send out, it could come even more tightly from one source. That is done by firms who are extremely strong at the visual side, they have it centralized, not only [product] design management but also the entire visual world, what does the firm look to outside.*
> (Design Director, Martela)

According to the design director, focused design decision making is the key to establishing a streamlined design policy. He states that the thinking could be taken even further by centralizing all visuals in all their magnitude to one place, so that the design director would also be in charge of the company image, in addition to product design management. When it comes to decision power on the marketing communications at Martela, the design director states that he is responsible for briefing the guidelines, but does not interfere with the daily work. The guidelines consist of the brand renewal that the design director crafted. Communication and marketing communication are difficult to make a policy on, because they are in a different organization with different strategic intent, says the design director.

According to him, however, when companies grow, the number of all visual material, including web sites, social media, and brochures, grows, and keeping it under control and focusing it to one person becomes harder. He states that once the decision making is spread out, it is highly difficult to contract again. Furthermore, all companies seem to have their own political power games, and that makes it difficult to get things

through. These are the reasons why, he says, the strategic intent for that design decisions should start from the very top management, when the goal is to get everyone to march to the same direction. The design director further states that in his opinion it is good that there are plenty of people who are pro design, but it is enough to have just a couple of design specialists, because the decision making should be focused, in order to keep the design policy sharp.

As can be seen, even the strategic level is not entirely challenge-free, when it comes to design management. Some design managers also brought out the challenges related to the difficult interface between design and business:

> *Strong "rational thinking by analysis" –way of working leaves sometimes scarcely room for more visionary leadership.*

This also relates to the difficulty of measuring design decisions, which was brought out by another respondent. Two other respondents further described that, despite the good position of design in the company, design as a strategic concept and its cross-disciplinary nature are sometimes hard to grasp by all instances inside the company. Even though many of these fields where companies in the strategic level of design management operate are quite design-centric, and design is understood as a central success factor, one strategic design manager recognizes the lack of the concept of holistic design in the organization as a development challenge.

To summarize the above discussion, the perceptions of both the operational and tactical level design managers about the design management in their companies were rather similar, clearly distinguished from the strategic level. Companies on both the operational and tactical level seem to suffer from management's lack of support and understanding of design as a strategic resource. Moreover, even though design management would receive the support of the top management, if design responsibility is still is kept at the operational or tactical level, and there is unwillingness to lift it any higher, design management has no changes of being strategic unless the organization of design is changed. Regarding the strategic design management level, it can be summarized that although these companies have strategic design managers, and design is present at the board level, there is still work to do when it comes to the understanding of the holistic, cross-disciplinary nature of design. This means that design would not only be applied to product design for instance, but could have a more holistic presence in the company – affecting all the key aspects of design, product, communication, information, environment, and service.

Throughout the study, four design managers and their companies have been used as examples in different contexts. Table 7 compiles and summarizes all the central attributes of the interviewees handled in this study, and forms a profile based on their

central managerial and organizational practices. The different categories, level of design management, focus of design management, horizontal organization, and design organization development challenge contain results summarized from the four sub-chapters on the findings of this study, job content, focus of design management, horizontal organizational dimension, and vertical organizational dimension.

Table 7   Four design manager profiles

	The operational industrial design manager / Planmeca	*The tactical visual image police / Lumene*	*The strategic brand and portfolio developer / Martela*	*The strategic creative atmosphere enabler / Marimekko*
Level of design management	Operational + hands-on design	Tactical + hands on design	Strategic	Strategic
Focus of design management	*Product and information design*: Implementation of design into physical products and digital product interfaces	*Communication and environment design*: Total image coherency, guidelines, ads, packaging, display furniture	*Product design*: Managing and developing the product portfolio and brand	*Product design*: Maintaining a creative atmosphere in order to ensure good design
Horizontal organization	Part of research and technology	Part of marketing	Own unit	Own unit
Design organization development challenge	More far reaching goals, future concepting	Absolute total control over all aspects of the visual image	Design decision making even more tightly focused	Taking marketing earlier to the design process

Based on the study, four different design manager profiles could be formed: the operational industrial design manager, the tactical visual image police, the strategic brand and portfolio developer, and the strategic creative atmosphere enabler. Each profile is a description of an individual design manager interviewed for this study, and it intends first and foremost show through examples how different design manager roles there can be in Finnish companies, and in which aspects they differ from each other. The table can be used further as a tool for analyzing and structuring the job profiles of any design managers.

4.3 Synthesis on the organizational and managerial in-house design management practices in Finnish companies

Compared to the literature-based framework, the updated framework on organizational and managerial in-house design management practices was changed based on the results the following way: from the horizontal dimension, communication design was taken off since it did not appear on any of the results. Now the horizontal dimension reflects the three most emergent horizontal locations of design management, R&D, marketing, and design as its own independent unit. The focus of design management seemed to hold quite true in each location, but in addition to that, product design, communication and service design (as the second aspects that were perceived as most central) were added under the horizontal dimension of design as its independent unit, due to the results.

Based on the analysis, the survey respondents could be placed on the organizational and managerial design management practice grid. When looking at the vertical dimension, it can be seen that the most populated level is the tactical level of design management. The operational and strategic levels have equal amounts of subjects (Figure 15).
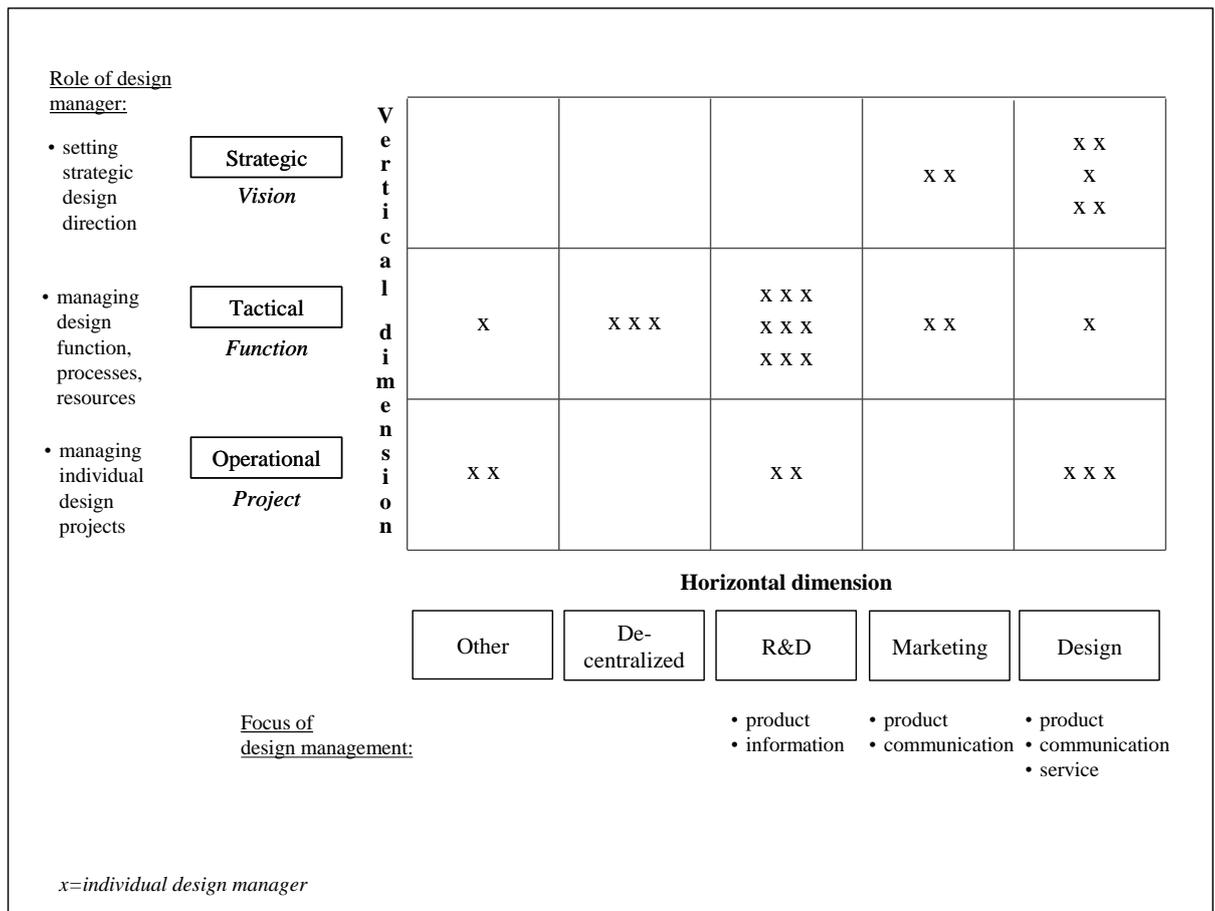

Figure 15   The grid of in-house design management practices

The seemingly small number of operational design managers and the large number of tactical design managers on the grid might be due to the initial definition of the sampling frame: as the design managers in the sampling frame are individuals who have actively recognized themselves as design managers, the design management function is likely to be at least somewhat established in the companies, which implies tactical level scope of tasks. Moreover, the operational design manager role might be played by someone else in the company hierarchy, in addition to having the tactical or strategic design manager role, as discussed also earlier.

It seems that only a fraction of the design managers reach the level of strategic design management. There is, however, a reason to believe that the percentage would in fact be even smaller if all the design managers in Finnish companies could have been known and reached. This is due to the aforementioned initial definition of the sampling frame. A group of individuals who have recognized themselves as design managers is more likely to contain almost the entire small number of design managers in Finland who have strategic responsibility of design, since these individuals probably are aware of their rare position and also well connected within the field. By contrast, it can be presumed that there are more tactical and operational design managers out there who have not recognized themselves as a design manager and are part of the FDMA.

When looking at the horizontal dimension, the most populated horizontal level is design as part of R&D. The next largest group is design as its independent unit, and after that, design as part of marketing. The dominance of design as part of R&D might be due to the fact there are more industrial goods companies in Finland, compared to for example consumer goods companies. The relatively large amount of design as its independent unit might again be explained by the sampling frame definition. If design has its own unit, it usually indicates that design has long traditions in the company, and it is likely that design managers from those companies have recognized themselves as design managers and are part of the FDMA.

The most popular combination is tactical design management that is operated as part of R&D (or product development, or research and technology). The strategic level is reached by only design managers where design management is organized as part of marketing, or is its own independent unit. None of the design managers in companies where design management is part of R&D, have reached the strategic level. The lower left corner (other & operational) contains companies, where design management has not been established yet, and it does not have own location yet. In the future, these companies will likely move from "other" to "decentralized", "R&D", "marketing", or "design" boxes, and perhaps, as they establish design management in their organizations, they would also move to tactical or strategic levels.

When it comes to the difference between operational, tactical, and strategic design management, many design managers seemed to have a dual role, i.e. the job profile

consists of both operational and tactical level tasks. The line between the tactical and strategic level seems to act as a watershed: the most significant difference between the job descriptions in general is between the strategic level managers and the tactical and operational level managers. If one would like to simplify the framework, it might be feasible to merge the operational and tactical levels, so that the difference would be made between strategic level design managers and the rest. After all, the strategic level design management is the level that matters, when it comes to getting the maximum benefits out of managing design. To further analyze the horizontal dimension, it becomes evident that the organizational horizontal location of design is only an indication of something that is rooted more deeply into the organization and its implicit perceptions, i.e. how does the company perceive design. Does design equal only product design or does the organization use the aspects of design holistically, throughout the company's activities? The more holistically a company uses the aspects of design, the more opportunities design has to impact the company's design vision, and thus, succeeding through design.

On a more general level, the framework could be taken further and simplified into the form of a fourfold table, consisting of only two dimensions: the strategic importance of design, and the holistic nature of the use of design (Figure 16).
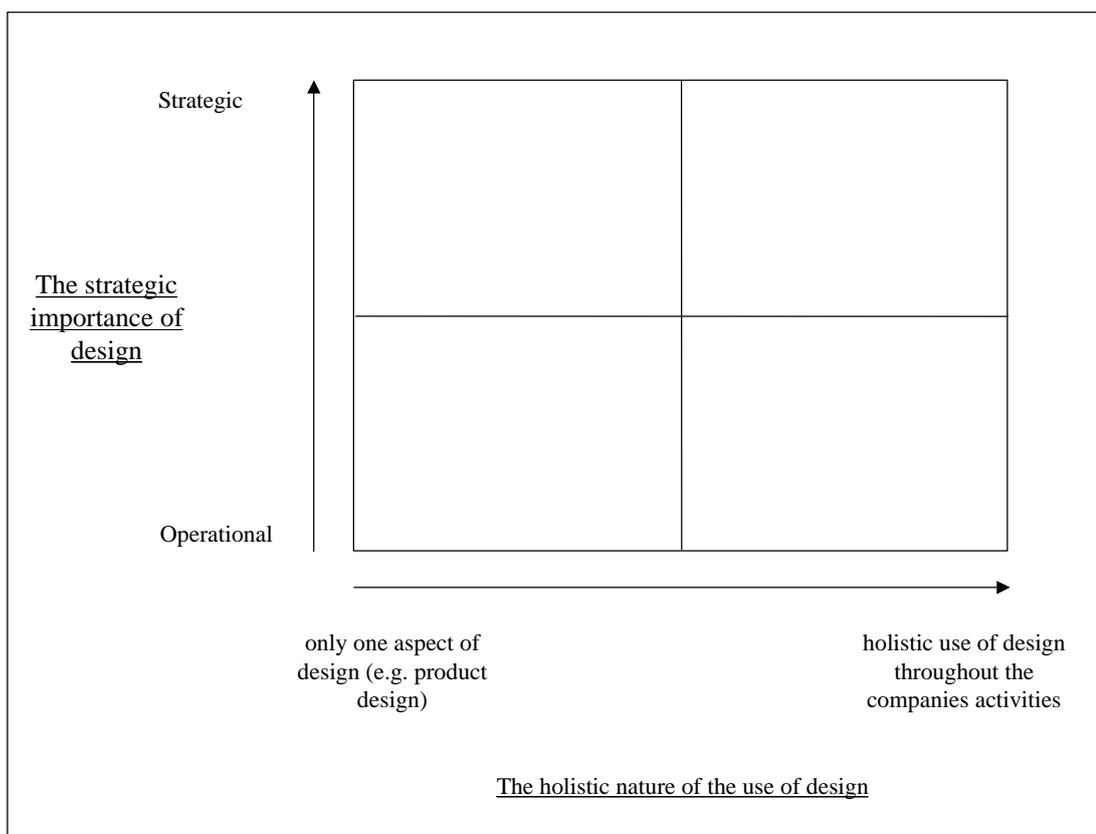

Figure 16   Fourfold table of design management's status in the organization

The vertical dimension ranges from operational to strategic importance of design, and the horizontal dimension ranges from using design on only one aspect of design (e.g. product design) to using design holistically throughout the company's activities. These two dimensions seem to reflect the status of design management in the organization: the more these dimensions grow, the more design has permeated the business. The same dimensions may be used also to examine the issues from the individual design manager's point of view: the vertical dimensions in that case is the strategic extent of the design managers job description, and the horizontal dimension illustrates which aspects of design does the design manager have control over. So far it seems that the companies and design managers studied populate the lower left corner, as not many of them reach the strategic level, and are focused on managing product design.

5 CONCLUSIONS

This study has identified that there are multiple ways and views on how to manage and organize design. The aim of this study has been to make the current practices more tangible and the structures more see-through, and by that, to contribute to the research of Finnish in-house design management, and to organizations developing their design management practices. This has been the first time since the in-house design management practices have been systematically examined through such a broad sample of design managers from different industries in Finland. In addition to enabling further studies on design strategy, the study also informs organizations and design management professionals[3] on how design management can be organized and managed, and provides knowledge for developing the strategic level of design management in Finnish companies. Theoretically and managerially, this study contributes to *managing design management*, which is in fact related to the tactical level of design management.

Regarding the *job content*, it was noted that design managers have a broad range of job contents, ranging from the operational level to the strategic level. This indicates that strategic design management has entered at least some organizations in Finland. In general, though, the field of design management in Finnish companies cannot yet be described strategic. Only a fraction of the studied companies' design managers have an impact on the strategic level. However, it was noted that there is willingness among the design managers to take on more strategic roles, which would indicate that Finnish companies will see an increase in strategic design management in the future. However, it may require some trail blazing from the design managers' part in companies with no existing tradition of strategic design management positions.

It was further noted that the individual design manager's job content is broad. This can be due to the relative newness and unfamiliarity of the design management profession to organizations, due to which the job contents of the design management professionals are still largely undefined. In many cases, the design manager is the only design management professional in the organization, and due to this, the person has multiple roles. It can be seen that the design manager role in companies is quite a new phenomenon: The design management profession and discipline are not established to a great extent in Finland yet. Due to this, the field has also lacked a categorization.

When it comes to the *focus of design management*, which in a large sense is quite limited first and foremost to product design, and partly also to communication design, majority still seems to be using design only on limited array of aspects in the company, as opposed to it being applied holistically throughout the whole company. Although it is noted that the companies participating in this study are the ones who are already

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[3] During the interviews, interviewees stated they did not know how design was managed in other companies

investing in design and managing it – out there are plenty of companies who do not use design at all, let alone manage it – the holistic utilization of all the aspects of design would, however, provide the best opportunities for design to impact the company's design vision, and therefore, succeeding through design.

The *horizontal location of design* could be determined by the industry and B2B/B2C orientation to some extent when it comes to organizing design as part of R&D or marketing. As opposed to restraining design only as part of R&D or marketing, establishing an own organization for design could support its holistic use. However, due to design's nature as a discipline that inherently overlaps with many other disciplines, such as marketing (communications design) and product development (product design, information design), an even better option might be to disperse designers under their appropriate departments based on the focus of design, and appointing a strategic design director in the executive board. The design director would control all those aspects of design as well as lead the designers and tactical and/or operational design managers.

Based on the similar perceptions of both the operational and tactical level design managers about the *design management in the company level*, clearly distinguished from the strategic level, it can be concluded that the support from the top management and the positive perception of design are essential requirements for successful design management. However, it seems, that is not enough. Design management has to have a strategic organizational position to reach the strategic level, because only on the strategic level it can be ensured that design is connected to the business strategy.

Managing design is important for companies because it enables good design, which in turn brings added value. It is especially crucial for Finland and Finnish companies in terms of international competitiveness, since we produce goods and services with expensive costs. Yet, far too small a fraction of Finnish companies have strategic level design management, and far too many companies see it still as the management of individual design projects. If design management is the most beneficial to companies' success when used strategically, the strategic use of design should increase if Finland wants to see design increase international competitiveness. The greatest potential seems to be in the technology-driven companies (design management as part of R&D), among which in this study no strategic level design management was found. The strategic design management level is so far populated mostly only by companies that have a long tradition is using design. It further seems that there are still plenty of underutilized opportunities in the holistic use of design, as currently Finnish companies are quite product design centric, when it comes to the using the aspects of design holistically throughout the company.

Therefore, it is recommended based on this study that companies wishing to succeed and improve their competitiveness through design should have a design manager on the strategic level, affecting the strategic level issues, mission, vision, and strategy of the

company, and through that, making design strategically important in the company. Furthermore, design should be used holistically, not only concentrating for example on product design. The horizontal location of design can be whichever suits the company structure the best, but in order to enable holistic and strategic design, the recommendation would be to have design placed throughout the company's activities, in order to impact product, communication, information, environment, and service design. The strategic level design manager, who is part of the top management, would be responsible for all design in the company in the end. In the future, it would be important to see companies' design management practices organized this way. With these kinds of practices, the companies would populate the upper right-hand corner of the fourfold table, marked in gray (Figure 17).
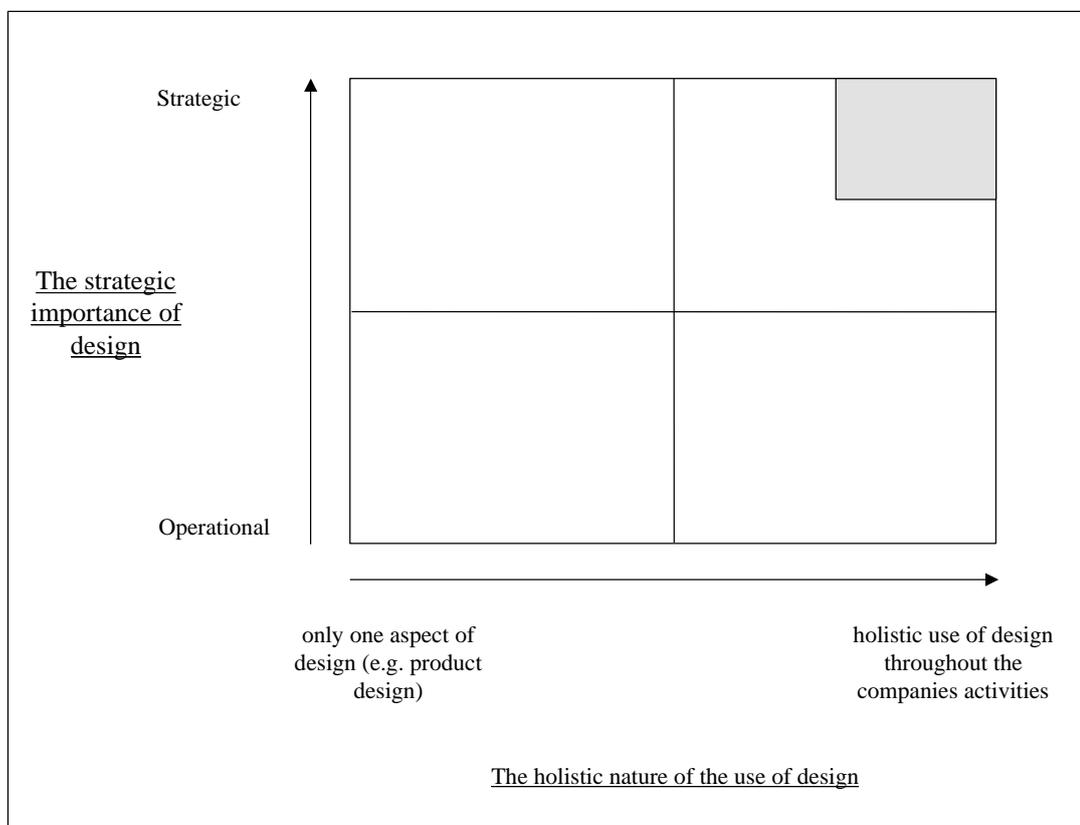

Figure 17   Recommended status of design management in organizations

As stated earlier, attitudes and lack of knowledge on design and design management are the main things standing in the way of improving the state of design management in Finnish companies. The design vision should be presented and sold to the executive boards by convincing them of the benefits of strategic and holistically utilized design, and through that get the designers on the strategic level and facilitate the holistic use of design. Measuring the benefits of design could be one way to improve this, but it is very difficult to do scientifically, since separating other factors impacting competitiveness

and success is difficult. This poses a challenge for the Finnish education policy: The attitudes should be changed the through education by educating designers that could better communicate the benefits of design management and collaborate with the technical and business professionals, and educating business and technology students to understand the benefits of strategic design management and the holistic use of design.

In terms of theoretical contribution, this study has answered to the research gap existing in the field of in-house design management. The Finnish in-house design management practices had not been studied earlier through a broad sample and from the point-of-view of design managers. One of this study's most significant theoretical contributions is the definition of a theoretical framework that examines in-house design management practices through the perceptions of design managers, and recognizing that the status of design management in the organization is always an issue with two dimensions, the hierarchical and the horizontal dimension. The study has provided up-to-date, initial knowledge on the largely uncovered area of in-house design management practices, in order to enable studying design strategies, which in turn enables establishing good design management practices in companies.

These results and their implications might not be surprising for design management professionals and academics, and correspond quite well to what has been stated in earlier design management literature. However, as this is the first time that the field is studied systematically through a broad sample of design managers, there has been little research to support these arguments before. This study has contributed to the field by validating the well-known arguments about design management and bringing general arguments into a more concrete level by generating new, systematic research results on a broad sample of design managers.

The study had its limitations: The database of design managers to which the survey was targeted to could have been larger, in order to get a broader overview. However, the database used was the only one available at the moment. If a larger base would be obtained, it might be feasible to perform more advanced, inferential statistical analysis. In addition, more interviews could have been conducted, so that there would have been an example of each major combination of the vertical and horizontal dimension. The fact that the sampling frame contains several design managers with different level tasks from the same company can be also seen as a limitation: by examining only the highest design manager in the hierarchy of the company, one could draw stronger conclusions on the general level of design management in the company.

There are questions that could not be answered in the scope of this study, which further studies could address. A following study could make use of the categories and ways recognized to build a more comprehensive and structured quantitative survey that could be repeated in a certain time interval, so that at some point a lateral quantitative study could be done to explore the possible change happening in design management in

Finland. The results could be compared with those obtained from other Nordic countries, for instance, to address international competitiveness. Furthermore, since the framework was built for this study, it could be worthwhile to run a new study based on the updated framework, test it and develop it further. For instance, focus groups interviews or thematical interviews with design management professionals could be used to confirm or further refine the initial dimensions. It would further be interesting to examine the in-house design management practices from the point of view of the top business management, by for example interviewing the superiors of the design managers, and to compare these perceptions with the ones of the design managers.

6 SUMMARY

Design could be a significant factor in improving Finnish companies' national and international competitiveness. Good design management is required for good design, and therefore, good business. The purpose of this study has been to analyze the organizational and managerial in-house design management practices within Finnish companies. This topic was chosen to be explored due to the lack of a comprehensive study on the current practices and enabling further studies in design strategy. Secondly, laying the theoretical groundwork would make it easier to implement an effective and appropriate design management strategy on the company level. The selected approach was to examine the topic through the perceptions of design managers, i.e. individuals in Finnish companies who have identified themselves as design managers. Two sub-objectives were selected:

- to analyze the managerial practices of Finnish in-house design managers (consisting of the job content and focus of design management)
- to analyze the organizational practices (including both the horizontal and vertical position of design management in the organization)

A framework of organizational and managerial design management practices was constructed based on the theory in order to pursue the purpose of this study. The framework consists of two layers and two dimensions. The organizational practices form the inner layer and the managerial practices form the outer layer. The vertical dimension consists of three design management levels, strategic, tactical, and operational level. The horizontal dimension consists of the horizontal location and the focus of design management in the organization.

The objectives were explored using a mixed method research design. The data in this study is both quantitative and qualitative. First, a web-based survey, consisting of both closed-ended and open-ended items, was used to collect overall information from all the design managers in the sampling frame. Then, five design managers were selected for further semi-structured interviews. The survey yielded data for a broad overview of the research arena, and the rich data from the interviews was used to deepen and explain the results of the survey.

The main findings of this study are the following:

1. Design management in appears on strategic, tactical, and operational levels, but majority of design managers have yet to reach the strategic level.
2. A typical design manager often has a role that contains tasks from more than one level of design management.
3. There is willingness to move up on the levels of design management, towards more strategic tasks, from the design managers' part.
4. Design management is largely product design oriented.

5. Design management is most often organized as part of R&D, marketing, or part of design that is its own unit.

6. Companies where design is organized as part R&D most often produce industrial goods to B2B markets, or are otherwise very product development oriented, companies where design is organized as part of marketing most often produce consumer goods to B2C markets, and companies where design is its own independent unit are most often companies, where design has traditionally had a very high importance.

7. The most common combination of managing and organizing design is tactical design management organized as part of R&D.

8. Operational and tactical design managers experience attitudes and lack of understanding on design as issues that hinder design management in their companies.

Based on the finding that the role of design management is still far from the strategic level, there is much room for improvement, in terms of achieving competitive advantage through design. Furthermore, design could be applied more holistically to product, communication, information, environment, and service design to comprehensively manage all aspects of design, since design management in Finnish companies is still strongly product design oriented. This could be supported with organizational changes. The greatest potential for improvement can be seen in technology-oriented companies (design management as part of R&D), as these are the companies where, according to this study, design management does not reach the strategic level. If a company truly wishes to improve its national and international competitiveness, it is recommended that design management would be brought to the strategic level, and design would be used as holistically as possible throughout the company. The attitudes toward design inside the companies currently seem to stand in the way of improving the state of design management. Educating designers to better collaborate with, and communicate the benefits of design to, business and technology professionals, as well as changing the attitudes of engineering and business students through education, could facilitate improving the state of design management in Finnish companies. Systematic and concrete research results on the strategic and holistic extent of Finnish companies design management practices would also facilitate the establishing good practices in companies. The theoretical framework built for this study contributes to further studies on systematically examining the practices.

Many of these findings and their implications might not be surprising to design management professionals and academics. However, being a pioneering study on Finnish in-house design management practices on a large scale, the general contribution of this study relates to validating the well-know and often used arguments on design management through research.

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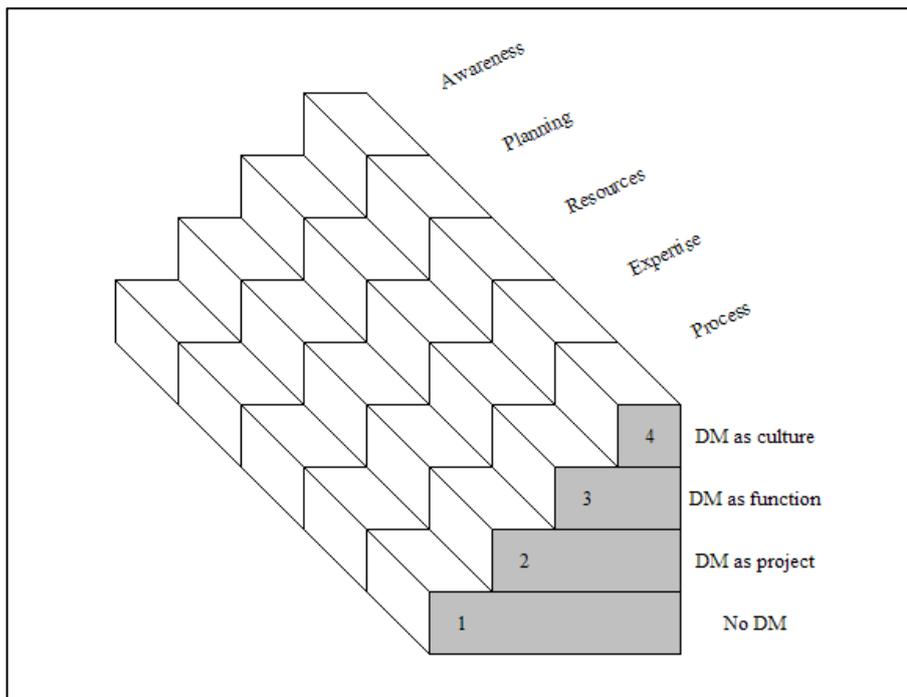
APPENDIX 1 EXAMPLES OF DESIGN MANAGEMENT
MATURITY MODELS

Figure 18 The design management staircase (Kootstra 2009, 12)

Table 8 Activities of industrial design in organizational modes (Järvinen &
Koskinen 2001, 31)

The model of organizing design	*Designers have control over*			
	Aspects of product design	Design manage-ment	Cultural activities other than product design and design management	Strategic framing decisions and key business processes
In linear manufacturing organization	X			
In the design management model	(X)	X		
In comprehensive design organizing	X	X	X	
In the designer organization model	X	X	X	X

APPENDIX 2　　　　　SURVEY QUESTIONS

Background information

1. Company name

2. Company size in turnover

3. Business field / industry

4. Sex
 (4.1) Male
 (4.2) Female

5. Year of birth

6. What is your highest degree in education?
(6.1) doctoral degree
(6.2) licentiate degree
(6.3) higher academic degree
(6.4) lower academic degree
(6.5) higher polytechnic degree
(6.6) polytechnic degree
(6.7) matriculation examination
(6.8) vocational upper secondary qualification
(6.9) other education, please specify

7. The aforementioned degree is of the following field:
(7.1) Business (e.g. Master of Science in Economics, BBA)
(7.2) Arts (e.g. Master of Arts, Bachelor of Crafts and Design)

(7.3) Technology (e.g. Master of Science in Technology, Bachelor of Engineering)
(7.4) Other, please specify

8. Have you received education on design management?
(8.1) Yes, please specify
(8.2) No

9. What is your current job title?

10. How many years have you been working at your current company?

11. How many years have you been working in your current position?

12. How many years have you been working with design?

13. How many years have you been working in design management?

14. From which job did you move on to your current position?

Job description

15. What is your main area of competence?

16. Name the three most essential areas in your job description in order of importance (1.=the most essential 2.=the second most essential 3.=the third most essential).

17. What other tasks might belong to your job description?

18. How has your job description changed inside the company?

Organization and resources

19. What is the organizational structure of your company?
(19.1) Simple structure / entrepreneurial structure
(19.2) Functional structure
(19.3) Divisional structure
(19.4) Network structure
(19.5) Matrix structure
(19.6) Other, please specify

20. How is design management organized in your company?

(20.1) As a corporation-level unit (centralized)
(20.2) In teams by company division (decentralized)
(20.3) In some other way, please specify

21. Where is the place of design department in your company's organizational structure?

(21.1) Under product development

(21.2) Under marketing department

(21.3) Under communications department

(21.4) Design is its own independent department / division

(21.5) Somewhere else, please specify

22. Where do you report to?

(22.1) To the CEO

(22.2) To marketing

(22.3) To product development

(22.4) To production

(22.5) Somewhere else, please specify

23. How many people work with design in your company?

24. Has design been allocated its own budget?

(24.1) Yes

(24.2) No

25. What is the focus of design management in your company? (1 = the most central - 5= not central at all)

	1	2	3	4	5
Product design					
Communication design (e.g. corporate identity design, package design, advertising)					
Information design (e.g. user interface design)					
Environment design (e.g. showroom design, office space design)					
Service design					

26. Does your company use outsourced design services?

(26.1) Yes

(26.2) No

27. If your company uses outsourced design services, which areas of design has your company outsourced?

28. Which factors are barriers to design management in your company?

29. Which factors enable design management in your company?

30. When you look at the development of your job description, what would you change in your own job description?

APPENDIX 3 LIST OF COMPANIES OF THE SURVEY
RESPONDENTS

Company	*Industry*	*Turnover 2009 (MEUR)*
ABB Drives Oy	Electricity power and automation technology	32 000
Artek Oy ab	Design furniture	12
Durat	Interior design materials, countertops, bathtubs	3
ESAB Ab	Welding and metal cutting equipment	1 117
Finlayson	Interior decoration textiles	50
Fiskars Brands Finland Oy Ab	Tools for consumers	667
Halti	Sports and leisure-time clothing and equipment	27
Helkama Forste Oy	Cold storage equipment for professional use	40
HT-Engineering Ltd Marine	Boats for sporting and leisure	1
Iittala	Interior decoration items	237
Isku Koti Oy	Furniture	40
Konecranes	Lifting solutions	1 671
Lahden Autokori	Vehicle bodies	40
Lumene Group	Cosmetics	78
Marimekko	Interior and fashion textiles	73
Martela Oyj	B2B interior solutions	100
Metso Paper	Paper machines	5 000
NansoGroup Oy	Clothing and textiles	70
Nokia	Telecommunication	41 000
Nokia Siemens Networks	Telecommunication	12 574
Planmeca Group	Dental equipment	150
Polar Electro	Heart rate monitors	170
Pukkila	Ceramic tiles	25
Rocla Oy	Forklifts and electric trucks	120
Sandvik Mining & Construction	Mining equipment	3 300
Stockmann Oyj	Retail	2 000
Sulake	Social media and Internet games	49
Suunto	Dive computers, heart rate monitors and outdoor sports instruments.	86
Valtra Oyj	Tractors	600

APPENDIX 4   INTERVIEW THEMES

-The organization of design management at company X

*The resources and organization of design management

*The design management process and its interfaces with the company's
other units and functions

*The development path of design management

*Outsourcing of design

-Design's status at company X

*The awareness of the management and employees of the significance of design

*The status of design in the company strategy

*Decision power of the design manager

*Design management vs. design leadership