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Primary research interests centers on the
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Paper included in the thesis

Although the thesis is a monograph, one of the sections in the thesis has been published as a paper in *Creativity and Innovation Management*. The paper was selected and developed for the journal after receiving second best paper award at the conference 'Cambridge Academic Design Management Conference 2011'.

The reference for the paper included in the thesis is:

Erichsen, P. G. & P. R. Christensen, 2013, The evolution of the design management field: A journal perspective, *Creativity and Innovation Management*, vol. 22, no. 2, pp. 107-120.

Department of Entrepreneurship and Relationship Management

The Department of Entrepreneurship and Relationship Management is located at the University of Southern Denmark, campus Kolding, and employs approximately 85 people. This location is central to the growth centres within the Triangle Region and offers a unique opportunity to close cooperation with the companies and public authorities in the region in respect to research and educational projects.

For several years the research of the department has been based on learning networks with companies and trade promotion institutions. In addition to this, the department has a long tradition of problembased cooperation across traditional business research areas and very often by means of external funding. The research of the department concentrates on two key areas: entrepreneurship and relationship management and originates from traditional research areas such as marketing, applied economics, accounting, operation management and organization.

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Design to Innovate

My thesis is partly financed by Design to Innovate (D2i). At the heart of design-driven innovation, D2i brings design research and practices to businesses, public authorities and other knowledge-based institutions that are already working with or wish to work with design thinking and design-driven innovation. It is a platform for networking, development and collaboration. D2i delivers the latest research and practices in design thinking and design processes.

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PHD DISSERTATION OF
PIA GEISBY ERICHSEN

AT THE DEPARTMENT OF ENTREPRENEURSHIP
AND RELATIONSHIP MANAGEMENT

**'DESIGN INTEGRATION – A THEORETICAL
AND EMPIRICAL STUDY OF DESIGN
INTEGRATION IN SMALL AND MEDIUM
SIZED DANISH COMPANIES'**

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Design integration – a theoretical and empirical study of design integration in small and medium sized Danish companies

Over the last few years the concept 'design' has changed from being associated with furniture, products, and graphic design to encompass new meanings such as new ways of solving complex problems. Hence many companies are interested in exploring design as a driver for promoting innovation and growth. In an organizational context design is not as simple a concept as it might seem, however. Preliminary studies have indicated that understanding the term 'design' and answering the question 'what is design?' is quite problematic. Furthermore many business leaders have been at a loss when trying to integrate design into their organizations.

Small and medium-sized companies (SMEs) in particular have had problems integrating design. My PhD thesis attempts to answer the overall question: 'Why do SMEs have difficulties understanding and integrating design?'. Two sub-questions are formulated: 'What is design in an organizational context?' and 'What are the barriers and drivers for design integration in SMEs?'

The answer to the first sub-question is found through literature studies within the fields of design management and design. Studies of design management literature only provided tentative answers to the question 'What is design in an organizational context?' The field of design, on the other hand, provided a more nuanced response resulting in a new model – the Design Compass. The Design Compass illustrates different layered patterns and understandings of design extracted from selected parts of the design literature. The Design Compass enabled a more varied analysis of companies' design integration. The two literature studies thus led to a modification of the first sub-question to read 'In what direction(s) are companies turning the compass needle of the Design Compass when integration design into SMEs?'

To answer the second sub-question 'What are the barriers and drivers for design integration in SMEs?' an exploratory study was conducted based on workshops with follow-up interviews of design management consultants as validation. This study indicated that it was relevant to explore barriers and drivers from a dynamic perspective; it also identified the Design Ladder as relevant for the overall research question. However, the study revealed that the Design Ladder had some embedded barriers. Hence the research by Dumas & Mintzberg (1989)

was included to further understand design integration. In addition, the inclusion of a dynamic perspective justified changing the second sub-question to 'What are the barriers and drivers for design integration in SMEs in a dynamic perspective?'

Subsequently the two modified sub-questions were examined based on multiple case studies of five SMEs. The five cases could not only be placed on step 2, 3 and 4 on the Design Ladder but furthermore did four of the cases represent issues on a "design programme" (Dumas & Mintzberg, 1989). Thus, my thesis reveals some of the mechanisms for dedication to the design programmes where aspects such as silent design were relevant.

The barriers identified from the multiple case studies were a lack of resources, an analytical dominance within the organization, a lack of nuances in design interpretation among managers, design being seen as risky, time constraints, and a failure to distinguish design from other disciplines such as marketing or innovation.

My thesis indicates that one of the drivers to overcome these barriers is an expansion of the Design Compass into different directions. The use of form plays a central part as a link between the various directions of design. The thesis also indicates that top management needs to be a driving force in the strategic integration of design. Hence strategy is not only relevant on step 4 on the Design Ladder but may have to be included on steps 2, 3 and 4. The comparative analysis of the case study also indicated that the SMEs that were highly dedicated to the design programme were seeking to differentiate their understanding of design compared to other areas.

The contribution of my thesis to the design management field is a novel way of talking about and understanding design integration. In addition, the thesis contributes with new knowledge concerning the dynamics of design integration and supports design management consultants and SMEs in articulating what happens when a company develops more conscious design integration.

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