

VALUED KNOWLEDGE CAPITAL – THE ESSENCE OF DESIGN COMPETENCE?

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ABSTRACT:

The special knowledge and competence embedded in organizational processes – such as that of designers – can be seen as an asset for organizational strategy and innovation. Knowledge has become one of the key factors sustaining competitive advantage. But how essential part does knowledge play in contemporary design competence? What kind of knowing is valued as a resource for design decisions? This paper presents initial findings of an on-going study on essential aspects in design competence and role of knowledge and knowing in design practice. The analysis has suggested that even though contemporary designers are very used to utilizing varying pools of information in their practice, experiential knowing from personal social practices tends to overshadow information that does not conform to designerly ways of knowing. The essential features of design competence are often seen to grow from the personal capital of experience, and thus knowledge gained through different networks, social systems and communities plays a powerful role in design decisions.

1. INTRODUCTION

During the 1990's, knowledge and competencies of employees as intangible organizational assets became the key enablers of competitive advantage and innovation (Tuomi 1999). During the same time the practices of designers were seen to be changing. In Finnish industrial design this meant that the emphasis of designers' tasks moved from operative activities towards strategic work. In our national context there was simultaneously a trend towards strengthening the industrial competitiveness of the country and the idea of innovation seemed to go well hand in hand with prevailing ideologies in design. (Valtonen 2007) By following the recent changes it has become popularly known that knowledge is evidently present in contemporary design work. Design competence is not anymore purely about artistic individuality if it ever was.

1. 1. THE NATIONAL CONTEXT – LEGACY OF FINNISH DESIGN

Finnish design became internationally recognized decades ago owing to designers and architects such as Alvar Aalto, Ilmari Tapiovaara and Tapio Wirkkala. Present-day practicing designers remould the formed national heritage of Finnish design through their daily work in changed circumstances. Nowadays most of the practicing designers are not renowned international or even national names. Most of the designers work for industry – whether it is textiles, clothing, furniture, ceramics, technological products or other everyday utilities – and their works are mostly labelled with brands and company names instead of their own. They do not often achieve fame for their creations but their works may reach a much wider group of users in global markets than those of the past greats ever will.

The concept of Finnish design however, still rides on the legacy of the golden age. This came to light also in the interviews of contemporary practicing designers; Alvar Aalto is not only a past master but a living metaphor for design competence through his works that are still all around us. In appreciated well designed products design competence can be seen to be represented by sleekness, even austerity in forms. *“I've always said that in my opinion, it is just as demanding to dare to leave out than to put on. - - Maybe we are a bit this Alvar Aalto-like, all of us Finns in a way. So that it appeals to our eye, that line.”¹*

¹ All interview quotes originally in Finnish

Although it is flattering to receive appreciation for one's work; fame and admiration are not necessarily a guarantee of commercial success. As one of the informants phrased: *"For us it is important that 'mrs Smith' recognises that our shovel is good and weeds her yard with our little rake like that (pointing to a rake nearby). That is what is important for us. If a Japanese designer thinks of us as great designers, it doesn't benefit us in the commercial sense at all."*

1. 2. DESIGNERLY KNOWING AND KNOWLEDGE FOR DESIGN

Designers are more widely known to produce ideas than to use ideas from others. This sets qualifications for the information and knowledge that could be appropriate in design practice. Design thinking has been indicated to encompass various elements of human cognitive processes and it can be even seen to represent a particular human cognitive ability that is often dismissed in the cultures of art and science. Contemporary design practice can be often described as an exploratory process: Design tasks are not problems that can be answered with correct or optimum solutions. Instead the design brief is only a partial map for defining, redefining and even changing the problem in order to find the limits of the task and a suggestion for a possible solution. Design practice is considered not so much as a problem-focused but solution-focused process. (Cross 2006)

In design research the quest for designerly knowing is a topic of interest in the area of design thinking research, which is already an established area in the discipline of design. Although even within the discipline there can be recognized an ongoing debate about the role of tradition and innovation in design thinking. (Buchanan 2001) Partly due to this fact elements of designerly knowing have been approached from several perspectives and premised on various methods and approaches. The background of my study lies in the conception of special characteristics of designerly knowing and thinking, concept first developed by Cross (1982).

1. 3. THE DATA; COLLECTION AND ANALYSIS

Initial data for the study was collected 2005-2006 in a research project: *Emergence of Luxury*, funded by the Academy of Finland (grant no. 205608). The data consists of semi-structured interviews with practicing Finnish designers, and design and product managers, representing a variety of design domains and professions. The informants work both with locally and globally known products and brands. The designers represented different domains of Finnish design

which was also the original intention in my planning of data collection. Three of the informants were women and six were men. The informants brought an unintentional emphasis of management perspective into the data, that was not originally expected, but the fact did not actually affect the focus of research. If anything it proved to be helpful so that the informants can be considered to represent experienced professionals who were also used to discuss their work and verbalize their thoughts and actions.

The interview themes addressed among other things following questions: How do these designers of contemporary utility products conceive the essentials in design competence? What kind of products do they value themselves? What are the factors behind their operations – the goals and values they follow in their daily design practice? What kind of emphasis do they put on knowledge and knowing as a resource for design decisions?

The interviews constituted to 7h 30 minutes of recorded material which was then processed to text transcripts. The transcripts were later on assigned to ATLAS.ti qualitative analysis software. The inductive analysis of the interview transcripts is done according to the principles of Grounded Theory procedure applying the process of constant comparative analysis and multi-phased coding (Strauss & Corbin 1991). The insights from analysis are then reflected against relevant literature. The qualitative analysis of the interview transcripts is currently ongoing and the suggestive findings are presented in this paper with a theoretical reflection against previous related research.

The first analytical tool employed in the study, was to focus on the concepts the designers use to discuss about the research subject: how and with what words they refer to knowledge, knowing, practice and competence. What kind of expressions they use and what do these expressions tell about the nature of the subject? A second analytical tool was to examine broader items, such as whole sentences and complete responses, and conceptualize them against the research aims in order to place the findings in a larger context in the perspective of the role of knowledge and knowing in contemporary design competence.

The themes of the designer interviews were structured to reflect my interests and research questions but I also tried to leave room for different ways of thinking about the subject and not to impose too heavily my own conceptions of the subject at the time. Still I found that my way of asking about the subject and the chosen concepts and terms influenced and directed the discussion more than I hoped for and so I will later on need additional empirical material to deepen my understanding and to explore the subject further. Also the initial analysis of the first set

of data has revealed that there are some critical points emerging that I suspect will not be answerable by interview data alone. Therefore I will intend to utilize also audiovisual material from authentic practices of designers to support my existing research data in subsequent phases of the study.

1. 4. EXPLORING THE ANGLE BETWEEN KNOWLEDGE AND CONTEMPORARY DESIGN COMPETENCE

The special knowledge and competence embedded in organizational processes – such as that of designers – can be seen as an asset for organizational strategy and innovation for sure. Knowledge has become one of the key factors sustaining competitive advantage. But how essential part knowledge actually plays in contemporary design competence? What kind of knowing is valued by practicing designers as a resource for practical and strategic design decisions?

The ongoing study focuses on the role of knowledge and knowing in contemporary design competence. In the following, the paper introduces emerging central concepts and definitions from inductive analysis in comparison with theoretical reflection and earlier research. The paper also suggests and develops next operations for further research both in national and international context. The study has drawn from a wide perspective and will yield more focused questions and results as the analysis and research process advances.

2. FOLLOWING THE DESIGNERS INTO THE PRACTICE OF DESIGN

The ongoing study can be described as an endeavour to follow the designers themselves in the quest for the role of knowing in contemporary design competence. The initial interviews have led me to analyze the practice of designers; the knowledge of designers is obviously not only embedded but also embodied in their practice.

Focusing on the practice has also other motives and implications. The concept of practice connotes doing in a context that gives structure and meaning to what is done (Wenger 1998). As such it also opens the doors for interpretation and understanding of designerly knowing in the context of design practice. Practice includes both explicit and tacit; things that are represented and things that are assumed. Practice includes for instance explicit tools, symbols, roles,

procedures and regulations as well as implicit relations, tacit conventions, embodied understandings, underlying assumptions and shared world views – just to mention a few examples. (Wenger 1998) So instead of just discussing about designerly knowing in a philosophical manner, in my research, I will attempt to seek a more productive way of exploring my rather philosophical questions with a down to earth empirical approach.

2. 1. FROM INDIVIDUAL TO COLLABORATIVE EFFORTS

Somewhere in the past the ability to design was seen to exist as an artistic skill in the possession of a talented and creative individual. This perspective has had long-lasting effects on how the practice of design has been studied and understood. However, contemporary design practice is no longer a solitary endeavour but an increasingly collaborative effort.

The interviewed designers told repeatedly one after another that they work in a team, a group, and/or a network – or at least “*with people*”. Even if they worked alone in the meaning of the only designer in the project, they never really worked *alone*. In design practice there always seems to be a lot of other people affecting the project; whether they are managers, clients, users, colleagues or other interest groups and departments like retailing, marketing and research for example. It is a distinctive feature in contemporary design practice that designers work with a variety of people with diverse backgrounds, motives and interests.

In relation to knowledge in designing there is a particular interest group alongside with designers in companies that seems to be arising to a significant role: the researchers. The interdisciplinary collaboration between designers and researchers has also been brought forward in publications talking about innovation and breakthrough ideas (i.e. Squires & Byrne 2002). Design as such is no longer the driving force of competitive edge – it is the central contribution from research that is now seen to bring in the fresh ideas and breaking through the cultural assumptions and limitations that also designers have. This tendency is also directly related to the valuation that knowledge itself has gained as part of product development.

In the interview data there was a noticeable trend in the descriptions of contemporary design practice: “*we have, like, a massive process of analysis running all along*” as one of the informants phrased it. Research in different meanings and forms has cornered a visible space in contemporary product development. And it is not so much a separate activity from design. In fact,

as Friedman (2002) has predicted, the distinction between research and design functions may be fading substantially in the coming years.

The increasing confidence in research and knowledge is not merely a welcome factor in product development however. *“I feel that in our case target group research is an over emphasized resource - - - and now it feels like, should we move back to look at the people and a little bit like trust the instincts”*.

When the informants were talking about research publications and reports they had acquired from outside their companies, such as statistics, test results of different materials, marketing research etc. it was easy for them to conceptualize knowledge as something that is most likely instrumentally utilized information in product development. But when our discussions concerned the processes of research inside the companies and explorations the designers are personally involved in, the line between research and design became fickle. It is obvious that the tasks of designers have changed, but it is still unclear whether this is due to changes in design practice or is it just that designers have relocated themselves also into different roles.

The emphasis in the interviews was not on design research, but as for the examples that came up, it can be said that the kinds of investigations designers engage in within their practices tend to reflect elements of spontaneity and immediate applicability. One of the informants also described how the employing company utilized different types of research processes: the information and knowing gained in relation to design research functions was seen to guide the whole product development in a visible manner, but in some respect it was also characterized opposite to *“risk-free research”* that was needed from other sources. Research related to design was however defined crucial in creating innovative and bold product solutions.

The actual situations of product use seem to be also an important reference for designers to understand the users, contexts of use and vital details for product design. Occasionally the designers were personally involved in testing the products and in some cases they employed particular individuals, groups or communities as their test users. In the mentioned cases the test users could be seen to represent somewhat professional users with whom the company had built partnerships in order to mutually benefit from product testing.

2. 2. COMPLEXITY, COMPETENCE AND EDUCATION

One of the reasons for the growing emphasis on knowledge as a resource for design seems to be the ever more complex and differentiated products. Designers are not anymore capable to judge and make decisions only on the basis of their personal opinions and individual interpretations. The prior experience of a designer may offer nothing to help in a new task; in fact, designers may find themselves working in an entirely unfamiliar territory especially when aiming for completely new product solutions.

For designers – whether they are professionals or novices – the practice of designing is also a process of learning and developing competence. Designers develop their expertise through practice and build their cumulative knowing in projects one after another. A couple of the interviewed design managers mentioned also that their personal development in design profession gained a lot from teaching and supervising design students and young designers of their design teams. Interaction with students was seen to be “*educative*” also for an experienced design manager.

As the practices of design are changing, at the same time there is a recognizable tendency also for the education of professionals to migrate from institutions into organizations. Graduating students have merely passed a “licence for learning” and their actual competence is acquired within the employing organizations. This relates perhaps also to the fact that research has become part of product development faster than expected and education has yet much adapting to do. Designers are not actually professional designers when they are entering the professional life from different design schools and institutions. Their actual competence is built within organizations and in professional work practice.

The organizational training aims also to school the young design graduates into “*corporate designers*”. In big in-house design departments designers are not necessarily appreciated for their individual style and recognizable handwriting. Instead they are expected to learn to communicate corporate values and goals through their designs, as one of the interviewees stated; in “*corporate design*” the designers are not supposed to express their own views but the views of their employer.

2. 3. THE EMPHASIS ON KNOWLEDGE – WHERE IS THE COMPETENCE?

As the practice of design has evolved, also the meaning and content of design competence has changed. For a while ago it was enough that the designer had a “*grand vision*” but now it is essential that he/she is able to control and manage large systems and entities – including different functions of project. Project management is not a straight forward process; it is “*rather a complex living organization and it never proceeds linearly. There are always crossings emerging*”.

At least in Finland, it seems that often good designers tend to get promoted and thus also drift away from the tasks that we usually identify as design. “*In Finland we do the besetting sin by thinking that when someone has excelled in a particular field, she/he is also competent in the way that she/he is able to supervise others*” described an interviewee who also saw his own attitude towards his management career a bit reluctant. Even if the designers becoming design managers feel that their hearts are still in actual design, there is something in their competence that is seen valuable for their organizations to be imported also into management tasks and functions.

The former designers currently design managers depicted their management tasks to be a lot different from actual hands on tasks of design. So their competence must be something that exceeds content knowledge and situational experience accumulated through repetitive variation of approved solutions. The thing that they are actually able to export from design into management is *their way of working, thinking and knowing*. Thus design competence is not something that is in possession of an individual but instead it is performed and generated over and over in interactive practice.

This view receives confirmation also from Orlikowski (2002) who defines that knowing and different human capabilities neither are internal human attributes nor incorporated in external objects or systems. Instead they emerge from situated and ongoing interrelationships of activity, context, intentions, actions and structure. Orlikowski defines knowing as a continuous social accomplishment which is constituted and reconstituted in everyday practice. This conforms to the understanding of designing as a reflective practice where central knowing is reflected, and developed through action (Schön 1991). The knowledge needed in the process also often becomes apparent only as the designer is trying to demarcate the task through developing potential solutions.

Orlikowski (2002, p.253) continues to define also competence accordingly: *'People's ongoing engagement in social practices, and thus their reproduction of the knowing generated in those practices, is how they reconstitute knowledgeability over time and across contexts. Continuity of competence, of skilful practice, is thus achieved not given. It is a recurrently but nevertheless situated and enacted accomplishment which cannot simply be presumed'*.

Seeing the process of designing and learning to design as a social practice has implications also for how we define knowledge and knowing related to design. Seeing design as a social practice implies that designerly knowing involves interaction and active participation too.

2. 4. NECESSARY INGREDIENTS: EXPERIENCE AND PASSION

Even though experience is recurrently defined as the key source of designerly know-how and competence, it does not mean that designers accumulate their knowing repeating similar projects and recycling ideas and information. In fact, it is the fluctuation of tasks and situations that imports an essential incentive for the designers: challenging tasks and status of not-knowing are things that provoke personal emotive investments and passion for work. *"Maybe one dreams about getting a sort of good assignments – the kind of jobs where one can put into play the kind of know-how and emotional flame or a kind of ambition one feels towards this job"* as one of the interviewees described.

Lawson (2004) has noted that expert designers are able to apply ideas from other domains into their current tasks and combine solution ideas that appear to originate from apparently distinct sources. He has also observed that designers seem to rely heavily on knowledge that is not so much theoretical or semantic but more of experiential or episodic origin. Also the analysis of the initial interview data in this study has suggested that even though contemporary designers are very used to utilizing varying pools of information in their practice, knowing originated from personal involvements tends to overshadow information that does not conform to their experience or is not presented in a form that is immediately applicable in practice.

"It is not that easy to tell what has come from where and where things affect each other. You don't always, like, start from a scratch so that the projects would – how do you say – plough their own furrows. Instead they definitely influence each other."

2. 5. WHAT KIND OF KNOWLEDGE – AND WHEN?

Traditional conceptions of knowledge with its connotations as abstract, formal, disembodied and individual do not fit well into discussion about designerly knowing; it is in fact more appropriate to talk about the process of knowing. Blackler's (1995) analysis of knowing in organizational settings presents many similarities to conceptions of designerly knowing. He proposes that knowing is situated, distributed and material. The situated nature of knowledge emphasizes contextual nature of knowing. Interpretation is always related to the context in which designer acts.

Design tasks seem to be built on knowing in its various forms. The intentional acquisition of different kinds of information is described to condense in the very beginning of projects – it is the same phase that is said to determine the whole outcome of project. Thus the resources that get utilized in concept design phases and strategic decisions are also crucial for the project as a whole. Based on the interviews it seems it is not only the task at hand that defines the relevant sources of information. The designers' ways of thinking, acting and knowing determine the form and content of relevant resources in design.

Even though knowing can be recognized as an important reference for design the nature of knowing is partly also left hidden in the interviews. It is obvious that designerly knowing is tacit to a distinguishable extent – at least tacit in the meaning of not verbalised. However, the descriptions of practice and emerging conceptions of knowing also suggest that the knowledge in design may be represented in practice in such a way that it could be within reach by other means of data collection, such as audiovisual data from authentic practices for instance.

The origins of designerly knowing cannot be identified unless one is also able to point out the existence and function of designerly knowing in practice. This relates also very much to generation of original ideas. Moments of creative leap, sudden insight or illumination are stereotypically familiar to any creative practice (Cross 2006). These moments in designing hint that knowing related to the task at hand is not always perceivable even during the process or consciously retrievable. These moments are sometimes characterized as radical shifts of perspective (Koestler 1964).

However, Cross (2006, p.57) has pointed out that creativity in designing comes more often in the form of bridging than leaping. The process of designing often proceeds 'by oscillating between sub-solution and sub-problem areas, as well as by decomposing the problem and combining sub-

solutions'. This means that in practice problem and possible solutions are constructed simultaneously. Cross (ibid.) uses the concept of bridging to refer to recognition of a concept that embodies relationships between problem and solution thus illuminating the crucial factor for the task at hand.

Developing design problem and solution side by side is not only dependant on knowledge but also on understanding of affecting factors and contexts. Designers recognize the importance of following their own field among competing firms and colleagues but also depict "*movies, books, visual arts and other fields that produce emotional experiences*" as important references in the sense that they provide an understanding of what is going on and at the same time they open a way of getting closer to customers/users.

3. CONCLUSIONS AND IMPLICATIONS

The paper has presented emerging aspects and initial findings of a still continuing research that is focusing on the role of knowing in contemporary design competence. In the light of the nine designer interviews under qualitative analysis, different forms of knowledge and knowing have a significant role in contemporary design practice. Yet design competence is not a capacity that rests on knowledge of individual or organized application of information. Instead the essence of design competence can be recognized to exist in the ways of thinking, acting and knowing of designers. Design competence is definitely accumulated in practice but it also exceeds the contexts and content of practice and thus it can be imported and adapted to benefit processes and functions beyond design.

The knowing that lies in the core of design competence is a type of knowing that is performed in design interaction and practice. This essence of knowing as an active form of doing determines also the form and content of relevant resources in design decision making. By understanding the nature of design competence it is possible to develop also design education to better take account of special characteristics of contemporary design practice.

As the analysis of the interview data has advanced, it has also brought up the need for additional data. What has been emerging from the interview data among other things is the fact that designers do not work alone. The contemporary design practice is essentially a collaborative endeavour and I will have to try to encompass this dimension with further data collection. Design competence can be also recognized to hold a performative aspect in the way that participation in

practice constitutes to achievement of competence. These aspects of designerly knowing, as it is represented in and through interaction in practice, pose a particular challenge for empirical research that can be at least attempted to grasp with support of audiovisual data collection.

Another critical point that has become eminent is the perspective of tacitness and explicitness of knowing – knowing embodied and embedded in practice and the importance of experience in development of competence. In the light of the interviews the notion of tacitness seems however a bit misleading in the context of designerly knowing in practice. The practice as a context of design opens possibilities to examine different representations of knowing that do not necessarily have to be verbalized in the course of action in order to be constructive and meaningful.

An aspect concerning the context of research has also implications on the next steps of the study. So far the presented study has focused on designers in national context of Finland. Even though it is possible to continue the study in a purely national context it would however bring depth to the interpretation if it was possible to compare these findings with comparative data from another national context or within a multinational organization for example.

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