Is systemic design the next big thing for the design profession?

Design is increasingly used for tackling large and complex problems and this new systemic design thinking is often interlinked with large societal issues. This paper will give the historic background and context to this development; it will show how the overall economic situation affects the design profession as well as exemplify recent development of the design practice. In order to do this it will describe three case examples of recent design usage in large societal issues: the birth of a new university, the municipal commitment of using design to improve society and the national approach of Finland in pushing systemic changes through design.

Keywords: Design and society, Design Practice, Systemic design

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Economic downturn has tended to bring forth the moral aspects of the design profession in Europe (Author, 2006, article). In a shattered post-war Europe, belief in a new world and modern liberal democracy was largely expressed through consumerism and not many moral considerations of what was designed were raised. During the late 60s and the oil crisis of the 70s, designers sought for moral and ethical stances, and the ethical justification of capitalism was frequently questioned. Victor Papanek turned the ethical blowtorch on the industrial design profession (Papanek 1972, Lewis & Gertsakis 2001,19; Whiteley 1993, vii; Heislinger & Marcus 1993, 249) and many others followed. With the economical upswing in the 1980s, ethics were suddenly again of lesser interest for the designers. Designers no longer aimed to find one ideal product solution or to defend those with disabilities, but to do good business. The postmodernist ideals of the 80s saw the meaning of a product to be the primary criterion in its conception and use, rather than the uses to which it was to be put (Heskett, 2002, 57; Julier 2000, 31). The arrival of the 90s saw an economic downturn in many European countries, and the importance of brands grew for companies. The main focus was no longer purely on the product portfolio, but also on the end-user experience of the corporate and its brand (see Press 2003; Mitchell 1993; Kuniavsky 2003; Shedroff 2001; McDonagh 2004). There was a paradigm shift from the utilitarian, rationalistic-individualistic, neoclassical paradigm, to a new paradigm where people were considered to be able to act individually and rationally but with a very strong moral and emotional underpinning.

In Finland crisis has always been a good cause of change for the design profession. The industrial design profession was born in the aftermath of the Second World War, where the national reconstruction also included rebuilding much of the national identity through design. Many Finnish designers gained great international fame during this era and a vivid discussion on design education with an industry approach flourished. This debate resulted in founding the industrial design education and the first educated industrial designers graduated in 1965. (Korvenmaa 2009; Sotamaa (ed.) 1999)

During the late sixties, seventies and eighties the professional practice of design developed steadily but slowly, becoming a formalized but still very small practice used by pioneering and broad-minded companies throughout the country.

The next major crisis for Finland came fifty years after the war. In the early nineties, Finland experienced an unexpected and exceptionally deep recession (Kiander 2004). The recession, together with the fall of the bilateral trade to the Soviet Union and the opening markets of the EU, which Finland joined in 1995, positioned the Finnish industry in a totally new and more competitive environment. (Kalela 2001) Design was seen as a great way to compete in the tougher markets, and the usage of design grew rapidly (Author 2007, book). The education of industrial designers grew exponentially and companies increasingly founded in-house design departments. This coincided with brand building, strategy and then in the 2000s with building the national innovation agenda.

Economic and social crises have thus been fruitful opportunities for the design profession to change. What has been common for these changes is that it has largely been the designers who have strived to develop their own professional practice forward and to ameliorate their professional standing (see Larson 1977, Abbott 1988). It is most likely that the economic crisis we are currently in will affect the design practice, but it remains to be seen exactly how. To get a proper historic view of the development we will need to wait at least another ten years, but we can already see starting phenomena and start formulating a hypothesis of how the design practice might be developing. In order to do so, this paper will first describe current developments in design and then review and analyse three recent cases in design.

RESEARCH APPROACH

This paper aims at showing recent developments within the design profession and at giving them a historical framework. The topic is reviewed from a profession studies perspective. Among the success factors of the design profession have been aligning the professional practice with the dominant ideological structures, such as the national system of innovation, as well as sharing new knowledge through research (Larson 1977, Abbott 1988, Author 2007, book).

This paper will first show the history of how an economic downturn has tended to shift the approach of the design profession and how the practice is currently changing. To review the very recent changes, three sites of development and some of their projects are reviewed as a basis of illustrating and further understanding the current developments within the design practice. All of the three cases are from Finland: the city of Helsinki and its project for becoming World Design Capital 2012, the Aalto University and the role of design in it, and the Finnish Innovation Fund Sitra and its two projects, the Helsinki Design Lab and the Low2No project. The purpose of presenting these cases is partly descriptive – to illustrate recent phenomena in the professional development – and partially analytic. The case descriptions include objectives of why designers are pursuing current directions, as well as key players and steps in initiating the projects.

In addition to the printed material about the three cases, specialists involved in the development projects have been interviewed or their public presentations have been used. These are Pekka Timonen, Cultural Director and Jussi Pajunen, Mayor, City of Helsinki, Mikko Kosonen, President, and Marco Steinberg, Director of Strategic Design, of the Finnish Innovation Fund Sitra, and Tuula Teeri, President of the new Aalto University.

Similar developments within design are now happening around the world in different scales, and the aim of this paper is also partly to give a Finnish perspective to the recent developments in the design field. Many scholars are currently involved in defining what this change is about, and hence the practical examples from one country can serve as an interesting point of comparison internationally.

APPROACHING COMPLEX PROBLEMS THROUGH DESIGN

Currently we are again facing a new kind of marketplace and a recession. This time, however, the starting point for design in Finland is very different than in the early 1990s. The professional practice of design is now fairly well established, and the usage of design as part of product development has become commonplace in most companies. There are now substantially more designers educated than before the 1990s, and their skills in areas such as marketing and strategic thinking are remarkably better.

Since the 1990s there have been many areas of development within industrial design. More and more focus has been moved from product design to the development of services (for Finnish examples, see Järvinen&Koskinen 2001, Miettinen 2007, 2009), to a user-centric focus (Keinonen 2000, Lindholm et. al 2003, Battarbee 2004, Mattelmäki 2006, Hyysalo 2009) to design discourse and to a more research based approach (Karjalainen 2004, Ryynänen 2009).

In general, there appears to be a shared quest for finding more meaning in design. Some, like Klaus Kippendorf, point on the deeper cultural meaning of the products themselves. Others (such as Jordan 2000, Press&Cooper 2003) focus on the more meaningful experiences that can be created through design. Many others, like Walker (2007) and Fry (2009), look at finding meaningful answers to global issues of sustainability. Increasingly the approach tends to be towards finding solutions to large and complex issues and understanding the relevancy of design to the larger whole.

Designers are not aiming for a more systematic view for the first time in history. Even the first wave design theoretics talked about the rationalist and logical designer (Bousbaci 2008,38). The second and third generation models brought the concept of the designer with a bounded rationality and many of the current theoretics, with the starting point of Donald Schöns *The Reflective Practitioner* (1983) talk about designers as reflective practitioners. Bruce Archer wrote *Systematic Method for Designers* as early as in 1981. He saw design research as a systematic search for and acquisition of knowledge related to design and design activity.

Currently the ability to reflect over practice and to approach large systemic issues is frequently viewed through the concept of wicked problems, originally put forward by Rittel and Webber in the 1960s (Rittel & Webber 1973; 1984,136). The notion is that there is an entire class of social system problems, which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values and where the ramifications in the whole systm are thoroughly confusing. The relationship between these issues and design thinking has been taken forward by Buchannan (see for example Buchannan 1995) and partly also by Nelson & Stolterman (2003).

Many researchers have focused on the creative abilities of designers to view things differently and to make the unforeseen future more tangible. Kippendorf (Mitchel 1993,71) talks about the designers' ability to invent or conceive possible futures and their ability to work with how desirable these futures are. Laurel (2003,17) notes that there is an emerging paradigm where the old working processes are being inverted, where design is seen as a front-end method, aiming at a set of methods and practices for getting insight into what would serve and delight people.

Some push this ability to affect the future even further. Fry (2009, viii-3) wants design to make a standpoint in the field of political action. He claims that the design community should forget design as a territory and practice that can be laid claim of (the drive of professionalization), stop talking to one selves (the internal dialogue of design events), give up repackaging design with design (codesign) and start talking to other people, other disciplines; broaden ones gaze (beyond the design process, design objects and design's current economic positioning), and engage the complexity of design as a world-shaping force and help explaining it as such. He sees the modelling of design problems, design solutions, design experience and creativity all becoming applications of "intelligent systems" for creating and delivering "design tools". (2009,14)

The role of design, and the definition of what design is, is again changing. Design is now seen as a potential contributor to improving our relationships with each other, our communities, our cultures and our democracies. Design is seen as not only serving the needs of our businesses, but also determining and working towards the greater good for society and government, education and the environment. (Lunenfeld 2003,14) Design is no longer considered to be an isolated activity within one profession, but its contribution to the society and larger collaboration is vividly discussed. Focus has moved from design and design activity to the whole world and larger social issues, as Nicola Morelli is asking if designers can "Industrialize" Socially responsible Solutions and is proposing a shift of designers' activities from products to systemic solutions. (Morelli 2007,6)

FINLAND AS A HOTSPOT

In Finland, the rapidly changing environment is once again forcing the society to look for new innovation. The previous recession meant a major competitive shift in the Finnish industry and design was seen as one of the solutions. The usage of design grew rapidly, partly because of the shift in industry, partly because the designers promoted themselves and what they could do and aligned their work with the dominant ideology in order to ameliorate their own situation.

Now we are in the middle of a recession again, but in addition to this we also need to tackle problems like global warming, aging population and failing healthcare systems. This time it is not designers aiming to ameliorate their own situation but the entire society, the government, city and academia, believing that design, or design thinking, might be part of the solution for its complex problems.

The approach to societal development has also changed through time. According to John Kao (2009) several countries now have end-to-end innovation eco-systems and innovation is increasingly becoming the new wealth – and typically comes from blending disciplines. As part of this new approach to innovation, design is increasingly seen as a thinking tool for solving large, indefinable challenges. Kao defines Finland as one of the new hotspots of the world, where a small country with a strong innovation ecosystem and many informal connections among the different players can pioneer large-scale, holistic solution finding.

In Finland, there are currently many activities embracing this new way of design thinking. In this paper, I will cover three initiatives: the inclusion of design in municipal systemic thinking through Helsinki and its Design Capital 2012 approach, the formation of a new university and the relevance of design in a broader cross-disciplinary curriculum at Aalto University, and design as systemic approach to global issues through the activities of the Finnish Innovation Fund Sitra. What is common to all of these is that it is no longer the professional practice of design alone that is promoting new usage of design, but large, social institutions being formed on the principle.

CASE 1: EMBEDDING DESIGN IN SOCIETAL DEVELOPMENT

Design as a new way to think about complex issues has been embraced on municipal level and integrated into the development of society. The Finnish capital Helsinki was recently chosen to become the Design Capital of 2012. Altogether 46 cities from 27 countries applied for the designation. An international jury first shortlisted Helsinki and Eindhoven of the Netherlands and then awarded the designation to Helsinki. Helsinki’s theme in its World Design Capital year 2012 is Open Helsinki – Embedded Design. Embedded design is seen as an enabler of an open city that boosts social, economic and cultural development and as a connector between different disciplines aiming to meet the inhabitants’ needs with desirable solutions. The influence of design is also described in the city’s strategy.

The process of applying for the Design Capital has largely been on the shoulders of the people working in the municipality, most remarkably on its Cultural Director Pekka Timonen. However, the entire design community has participated actively. The original idea for applying came from the Designers association of Ornamo, and individual designers also did some background work before the application process started. Once the city decided to apply, all the work of driving the process further has been done by the city, albeit through the participation of many designers. This may be part of the secret of why this process has been so successful: all players in the design fields have felt that the theme of embedded design is inviting to them and participated eagerly in the development process, but a player outside the field itself has been the one to hold all threads together.

Mayor Pajunen points out that design should be seen from a broad perspective. “Our goal is to build a better city and to improve our quality of life. Among other things, design-oriented thinking can be used to reform public services. The basic values of good design include user-friendliness, sustainable development and enjoyment.”

This approach to design, called embedded design, ties design to innovation from the very beginning whenever solutions to citizens’ needs are sought. Thus embedded design helps to render new innovations, technologies and systems sustainable and brings together human needs, aesthetic qualities and functionality. Helsinki approaches design from a broad perspective, and design underlies all processes that bring about social, economic and cultural improvement. This municipal approach is part of the larger national scheme of Finland’s National Innovation Strategy. The strategy expands innovation policy from traditional innovations to new areas and makes user- and demand-driven needs the cornerstones of the policy.

CASE 2: APPROACHING NEW KNOWLEDGE

Another area where many changes have happened is within the Universities. The whole university system is undergoing a major reform in Finland. According to a Government Programme, the financial and administrative autonomy of universities will be increased. In this connection, university governance and decision-making is reformed. From August 2009, all Finnish universities will be either institutions under public law or foundations under private law and all universities will cease to operate as part of the state budgetary system. Part of this process has been the foundation of the new Aalto University, consisting of the previous Helsinki University of Technology, Helsinki School of Economics and the University of Art and Design Helsinki (TaiK). It started in January 2010 and comprises a total of around 17000 students and 4000 staff. The Government has made a commitment to finance this foundation- based university with an extra 500M€.

The whole concept of combining the three universities was first put forward by the then Rector of University of Art and Design Yrjö Sotamaa, in his speech for opening of the school year in September 2005 (5.9.2005). Since then, a lot of work within different bodies has been done. Within the universities eight transformation groups with various focus, supported by the three existing rectors and the Aalto University Foundation Board, were actively trying to define what the new university should be about. In each of the transformation groups there has been people with a design background, but also specialists from other fields. In total, 400 of staff and students were represented in the working groups. In spring 2009 the university got its first President, Tuula Teeri, who has since then been heading this development process.

Aalto University has a unique combination of knowledge and the university approaches many of its initiatives through design thinking. The mission of Aalto University is to strive to change the world through top-quality interdisciplinary research, pioneering education, surpassing traditional boundaries, and renewal. Aalto University is to educate responsible, broad-minded experts with a comprehensive understanding of complex subjects to act as society’s visionaries.

In order to do so the Aalto University develops strong teaching and basic research in each of its three disciplines, creating professional researchers, designers, artists, engineers and economists. In addition to creating strong professionals the university actively develops new platforms, where different professional competences work collaboratively. One of the most prominent is the concept of Aalto Factories.

The three Aalto Factories, in the area of Design, Media and Services, all use design in grasping complex problems, providing learning, teaching, research, and co-operation environments in which the academic teams, companies and communities work together. The workshops are based on open innovation, an interdisciplinary attitude and new ways of learning and teaching.

Design and design thinking has also been defined as part of the universities focus areas. In order to define and evaluate the different research specialities, a large Aalto University Research Assessment Exercise (RAE) was conducted in 2009. The Research Assessment Exercise was conducted as a peer-review assessment by nine international panels with 62 highly esteemed experts. Altogether the research of 46 units (departments, institutes or equivalent entities) was assessed and the results were published in September 2009. The RAE was complemented by a separate report by the Academy of Finland called Research in Art and Design in Finnish Universities, also published in 2009.

The findings of the Aalto RAE suggest that the most distinctive strength of research at Aalto University is the level of its societal impact in general, and its interaction and cooperation with industry in particular.

The Academy of Finland report sees artistic activities as naturally integrating in nature. They claim that in solving complex problems we need, in addition to analytical research, the holistic way of working and thinking which is typical in artistic activities and design. Art has also a communication dimension, as visualization is needed in understanding many problems. They continue that the artistic activities at Aalto University include the study of societal and cultural heritage as well as formulating a worldview through creating and experiencing art. Art is thinking and its criterion is the skill that is based on the individual's experience and the connection to other people that it makes possible. What is central is the experience that is created through a meeting of the worlds of art and of those who experience it, where new meanings, new adaptations, creativity and innovations are born.

In the Aalto RAE the research on usability, user-centred design, user experience design and domestication of design carried out at the School of Design at TaiK was assessed as being of outstanding international level and comparable to the best international groups in the same field. Integrating this research with a high-quality artistic practice based approach was considered to provide a great opportunity for further development. Moreover, Aalto University was seen as creating brand new possibilities for this area of research to interact with various disciplines. In particular, user-centred design combined with sustainability and technology was seen as forming a starting point for a multidisciplinary engineering design approach, including media technology, within Aalto University and to contribute to economy and society in a new and innovative way.

CASE 3: PUSHING FOR SYSTEMIC CHANGE

A third player to push new thinking in design has been Sitra, the Finnish Innovation Fund. Sitra is an independent public foundation with a mission to build a successful Finland for tomorrow. In Sitra, the aim is to help Finland prosper as a global pioneer in systemic changes that generate well-being. Sitra defines systemic change as broad, far-reaching change that simultaneously affects the structure of the society and the everyday life of its citizens. Sitra engages in foresight activities and advances these changes in cooperation with other actors.

Lately, many of the Sitra programmes and strategic processes have included or consisted of design activities. Two of them will be presented here. The Helsinki Design Lab (HDL) gathered a global community of designers and decision makers interested in using design as a strategic tool to resolve complex challenges

facing contemporary society. Their idea is that Finland as a small, well integrated, forward-looking society is an ideal place to prototype systemic change that may be too difficult to initiate elsewhere.

For three days in June of 2008, a group of 108 people from around the world, each a leader in their respective field, converged in Helsinki to discuss the potential of design. HDL2008 sought to develop a manifesto for design that produces 21st century solutions to 21st century challenges. This manifesto saw design as synthesis; visualization; holistic; human centric; and integrated to provide more effective solutions to "big picture" problems afflicting today's societies. It continued with twenty points of what design should be, including design tackling real problems, real stakeholders, real collaboration, and real resources, design being socially relevant and design as a political tool.

This dialogue is continued at the Helsinki Design Lab 2010 that will in September 2010 convene a global community of designers and decision makers interested in using design as a strategic tool to more effectively resolve the complex and systemic challenges facing the contemporary society. This time the HDL will focus on bridging the gap between thinking and doing, building a more effective link between design and government.

As HDL is moving towards execution, Sitra is also pushing for systemic change in a project called Low2No. The aim of the *Low2No Jätkäsaari City Block for Sustainable Construction* project is to develop and demonstrate energy efficient and innovative solutions in urban design and construction. The solutions developed in the project will serve as examples in Finland and internationally.

With the completion of Vuosaari Harbour in 2008, the urban structure of Helsinki is undergoing its most radical transformation since the industrial era. The city’s cargo terminals and heavy road and rail traffic are now consolidated to the eastern edge of Helsinki in this new harbour facility. As a result, as many as six large logistical spaces (including Jätkäsaari) are being redeveloped to meet the needs of Finland’s modern information economy with office and commercial space, residences and infrastructure. Moving the ports out of the city centre provides the rare opportunity to reconsider the city’s urban structure and systems. The master plan for the Jätkäsaari area covers 100 hectares of mixed-use development and infrastructure. It is expected that by the completion of all phases of the master plan in 2025, Jätkäsaari will house 16.000 inhabitants and 6.000 new jobs.

As part of this development, Sitra is moving its own headquarters to the area and using the building block and its environment as an opportunity to improve sustainable building practices, creating an example of the construction of passive and plus energy buildings. In order to do so Sitra together with the City of Helsinki launched a sustainable development design competition.

More than merely a single design, Sitra has been asking the competitors for a credible strategic framework for change, and the principals upon which the framework was built. With the selection of a team comprised of Arup, Sauerbruch Hutton, Experientia and Galley Eco Capital, the competition is moving from ideas to implementation. This next phase includes not only design development of the architectural and strategic solution, but also many activities targeted at raising the level of awareness and sophistication of Finland's national sustainability discussion.

SO IS DESIGN USED IN SOLVING SYSTEMIC ISSUES?

Economic downturn has made the design profession change and redirect its activities many times, and typically an economic downturn has also made designers more aware of the moral aspects of their work and more concerned about global issues. Now we are in this situation again, as the economy is taking a major turn. Although we cannot yet give the exact results of the current development it is quite obvious that new design thinking is forming. Internationally, a large body of litterature on what this new design thinking is about is appearing, and the current debate and development in rhetoric suggests this type of movement. Design has

moved from the designing of individual products and services to a more holistic approach, and this systemic thinking is generally applied in solving larger issues within the society.

This paper has shown three case examples where large social structures are being established, which clearly support this new approach of design. They show design as a means to solve larger problems, to attack social issues that wouldn't be easy to tackle using more traditional means of science as well as a structural player in thinking about large issues in a more creative way.

The Finnish case examples clearly show that broader societal issues are approached through design. It is also obvious that this time it is not only designers developing their own profession, but a larger societal movement including others than designers. The fact that the development is not in designers' hands alone also makes the potential outcome of this development more difficult to predict, and it might mean that something we cannot predict at all will come out of it. It will change the way we see what a designer is, and challenge how we educate them.

Time will show if the new systemic approach will change the professional practice as strongly as the change caused by the previous economic shift did, but it looks quite likely. The challenge is whether designers really have the competences needed for the work that is now expected from the profession. This time the change is not quantities, about how many designers are educated or how many companies use design, but it is about the whole view of design quality, why the profession is to be exercised and what constructs good design. Or in the words of Mayor Pajunen in the Open Helsinki application: "Design is everywhere, everything is design and design is for all. In the end, everything is just a question of good or bad design - a question of quality".

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