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Swedish Design Research Journal

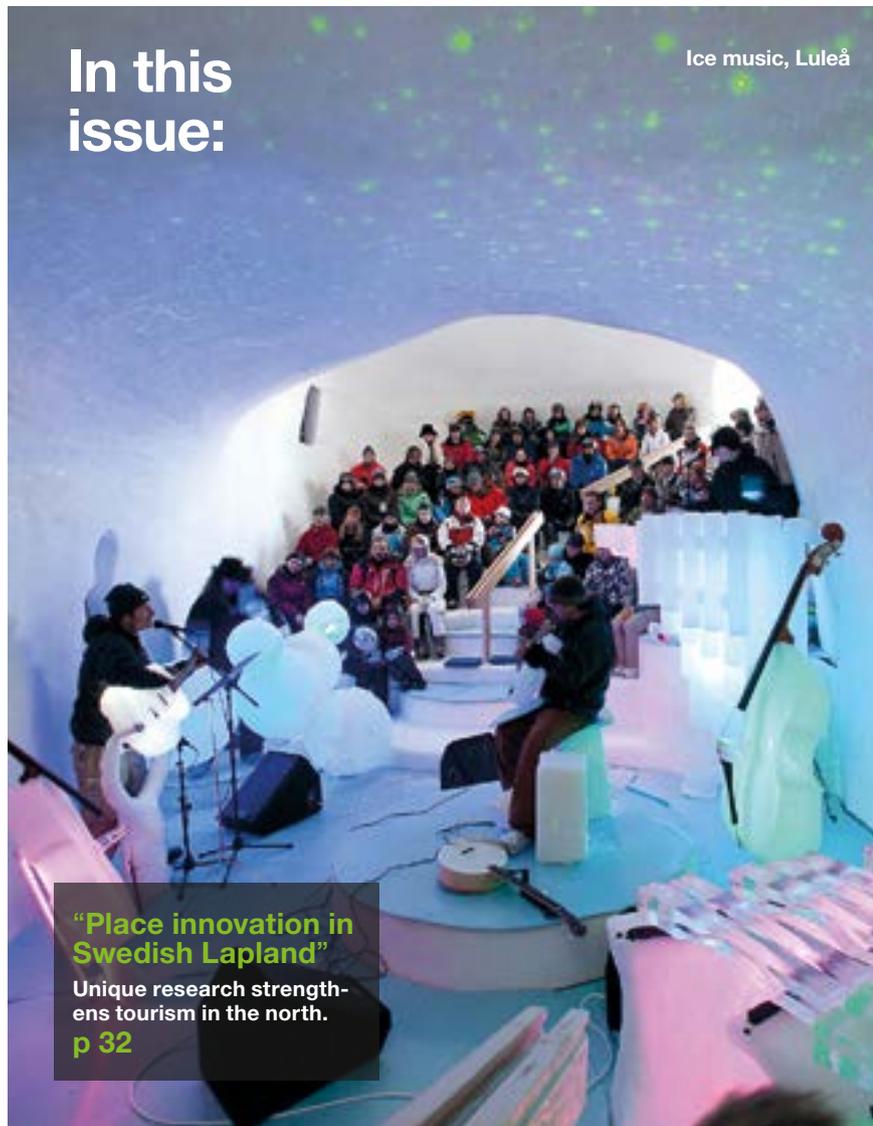
Ezio Manzini

“The first step is to see the individual and ask yourself:

Who is the refugee?”

Design for our common future

Design for people in flight, welfare services of the future, place innovation, digital transformation, norm creativity, Lean...



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Advancement

THIS ISSUE OF DESIGN RESEARCH JOURNAL is my first as editor. I have a good starting position – much work has been done in recent years to turn the journal into the exciting publication it is today in terms of both its contents and form. I would like to thank my predecessors, Eva-Karin Anderman, our previous editor, and Lisbeth Svengren Holm, our previous scientific editor. They have both done fantastic work to make the journal relevant, interesting and, not least, always worth reading. Eva-Karin and Lisbeth have also given me great support to create this issue. Thank you!

My vision for Swedish Design Research Journal is that it will continue to be thought provoking, inspiring and challenging. Space will be given to new ideas and thoughts in scientific and popular scientific form. As a researcher myself, one important goal for me is to develop the journal's role as a platform for scientific work in the field of design. Over the past winter I have therefore collaborated with Linköping University to create a new portal aimed primarily at researchers (www.svid.se/sdrj). There, researchers can submit articles for the journal and easily find, read and cite individual scientific articles.

When I began working on this issue, I did it determined not to have any theme. I want to publish what is important and interesting even if that means it can be difficult to identify a common thread. Now, as I sit here with all the finished articles, I realise that a theme has nonetheless emerged. What ties the various articles together can be summarised with the word “advancement” – how design can play a decisive role in society's development. The world and Sweden are facing many challenges and I am totally convinced that design has a decisive ability to exert a positive influence. The articles in this issue demonstrate this. They present examples of how design can help to create mental wellbeing in a society, to create a future for people who have fled war, to develop a region, to make the health care system more human, to make our industry more innovative and competitive, and to make universities more student focused.

In our field we are privileged to be able to work with so many relevant issues. We should be grateful! ■

Jon Engström Editor. Is there anything in particular you would like to read about? Email me, jon.engstrom@svid.se, or Tweet me @JonEngstrom



Photo: Caroline Lundén-Welden



Thumbs up

Progress, technological and social, is happening faster than ever. I am pleased to see it all emerge – from self-driving cars and virtual environments to the digitalisation of developing countries.



Something unexpected

Migration and design is a combination we did not expect to see a few years ago. Watch for the many initiatives in this field!

The design agency leader who became CEO of the Year

Described as responsive and strategic with the ability to spark enthusiasm in others, after less than two years as a CEO, she was given an award for her leadership. Meet **Pernilla Dahlman**, Screen Interaction's "conductor of innovation" who loves networks, communications, prototyping and digital business development.

By **Lena Lidberg**

LIGHT AND SPACE – BUT STILL A BIG CITY PULSE. Screen Interaction's premises on the 29th floor of Victoria Tower in Stockholm's Kista district offer a magnificent view.

"Down on the street it can sometimes be cloudy while it's sunny up here," says CEO Pernilla Dahlman.

The T-shaped glass building was designed by Wingårdh architects for Scandic Hotels. At 120 metres it is northern Europe's highest hotel, neighbouring the E4 motorway, the railway and the Kista trade fair venue.

The tenants in this internationally renowned skyscraper include a number of companies. The creatively designed tower suits a design and innovation agency like Screen Interaction. On this particular Thursday about 20 employees are present, working to find tomorrow's solutions to everything from energy savings and mobile security systems to user-friendly online services.

The firm's customers are found in both the public and private sectors: from the Swedish Social Insurance Agency and the Swedish Public Employment Service to Ericsson, the Länsförsäkringar group of insurance companies, Swedish TV4 and Assa Abloy.

During the two years that Pernilla Dahlman has led the company, its growth and amount of business have rapidly reached new heights. Screen Interaction's sales revenue has increased from SEK 19m to SEK 70m (EUR 2m to EUR 7.5m).

Among the employees, the proportion of women has increased from 12 to 37 percent and the number of nationalities from 10 to 18. Both customer and employee satisfaction have increased and staff turnover has fallen.

The successes have also had external ripples. When the

Swedish leadership website Motivation.se announced its awards in November for 2015's most outstanding business leaders, Pernilla Dahlman was selected as CEO of the Year in the small company category.

Earlier that same year she was also one of five finalists in the Swedish telecom industry's annual Telekomgalan award for Woman Role Model of the Year.

One of the juries singled out her ability to create an innovation culture and a "we" feeling, and described her leadership as "passionate and responsive". The other jury called her "strategic and analytical, with a great ability to spark enthusiasm in others".

How would you describe your leadership, Pernilla Dahlman?

"I have a strong sense of empathy and believe it's important to be a clear communicator. A leader must be able to single out the goals and overall picture without getting bogged down in the details. Previously I've worked as a project manager and in project organisations. This has made me think in terms of networks, become skilled at dealing with change, and be able to get results quickly. In many ways, a company is like a symphony orchestra where the CEO functions as the conductor. You have to be a visionary but also have good listening skills, be able to mediate and be able to create a sense of security and respect for each other within the group."

What have you done to create an innovation culture?

"I spent my first year being very present at the office in order to get to know the company and the employees. Security and



Photo: Alexander Koste

Pernilla Dahlman

trust are the whole foundation so people can dare to contribute and innovate. The next step was to shape the organisation – to recruit managers and workers, to drive the ‘orchestra’ forward and to start playing the same music. When we recruit we focus on people, not on job roles. We look at their values, personality, ambition and empathy. When you have the right team players, the job roles work out later. The third stage, which I’m in now, is to look outwards more. This involves spending a lot of time building relationships and visiting customers. After winning the CEO of the Year award, I’ve also received many requests to speak in various contexts, which is really fun. It also gives new angles of approach and new contacts.”

What characterises a good innovation climate?

“What you do has to have a higher meaning, one that everyone within the organisation can support. At Screen Interaction our mission is to reach out to many people and to make people’s daily lives easier with the digital solutions we create. Another important aspect is the ‘we’ feeling: instead of closed hierarchies you need open relationship networks in which your staff, customers, suppliers and other business partners are all included and all contribute. For example, here we say ‘relationship manager’ rather than ‘sales rep’. The leadership must be non-controlling – if employees are to have a chance to develop they must be allowed to fail and to learn from that. In a design-driven business it’s about getting everyone to listen, to understand and to generate ideas, and then to prototype and to experiment. Sometimes you also need games and lab work as practice for when you go ‘live’. All innovation work starts with transparency – whereby everyone shares their knowledge and

“When we recruit we focus on people, not on job roles. We look at their values, personality, ambition and empathy (...)”

experience. If a customer grows and becomes successful, my network also benefits. What’s good for you is good for me and vice versa.”

Who are you as an individual?

“I spent my first years in Huddinge south of Stockholm. When I was in second grade we moved to [the Stockholm district of] Bromma. I’m the oldest of three siblings; my brothers are four and ten years younger. We come from an entrepreneurial family, whose business interests have included being real estate agents. That made me interested in buildings and building management. My father comes from a farming family in Axvall outside [the western Swedish city of] Skara, and my paternal grandmother is one of my role models. Many of my characteristics are like hers: down to earth, stable, caring, farsighted, used to solving the problems that turn up.... I have an enquiring mind and was good at school. As a teenager I dreamed of becoming a journalist but I specialised in economics in secondary school and then studied international economics at Uppsala University. I also have secondary-school graduation-level credits in science and languages. I’ve also spent a term in France studying French.”

“The need for digital transformation is huge and there is an almost unlimited amount of work for all those concerned.”

How did you get into the world of design?

“After my studies I was a trainee at IBM in sales plus other fields. I stayed with the company and worked with project management and change management, which I then continued with at the management consultancy Askus. My next job was with Sandvik, where I stayed for about six years. Most of that time I was based in Sandviken but I also spent two years in Germany. It was during my time with Sandvik that I realised that fundamentally I have an aesthetic disposition and that I’m passionate about learning processes, people and communication. After having my two children I wanted to make a change to my professional life.

One day I saw an ad from SVID, which I then didn’t know much about. It was a contract job for Design Open, which was a competition for students in 2009 to 2011 about business development with the aid of design. I got the job – but it required a lot of courage as a new mother of two to leave a permanent job with Sandvik.... But my decision was absolutely right. I got to work with what I had missed, and it was at SVID that I became a design convert and got to know the whole industry.”

What was your first impression of the design industry?

“As someone who came from outside, I felt that the industry needed to become more outgoing and better at packaging its offerings in terms of value. After my time at SVID I therefore founded a limited company and began helping design agencies with marketing and pricing. One thing led to another and at the end of 2011 I was hired as marketing director at Transformator Design. I worked there for almost three years before becoming CEO of Screen Interaction.”

How would you describe the industry’s development in recent years?

“What is good is that more and more Swedish companies and organisations are starting to realise the value of design as a process. The digitalisation and development of social media has meant that customers’ influence is now greater than ever. As a result, products and services must be developed in close collaboration with the customers. The players who are leading the charge when it comes to working in a customer- and design-driven way are not companies but rather the public-sector authorities. The Social Insurance Agency has come the furthest but there are also other examples: the Swedish Companies Registration Office, the Swedish Tax Agency, the Swedish Agency for Economic and Regional Growth.... Here at Screen

Interaction we’ve recently signed a framework agreement with the Public Employment Service, which is terrific. We’re really looking forward to being able to work with design processes in the important issues they are dealing with.”

What industry challenges do you see ahead?

“The need for digital transformation is huge and there is an almost unlimited amount of work for all those concerned. At the same time, an industry shift is occurring whereby design agencies, brand and communications consultants, product development companies and the giant consultancies are operating in the digital arena. One critical challenge for everyone, both agencies and customers, is to attract the skill that’s needed. The need is far greater than the supply. For the agencies I think the challenge can sometimes be to adequately serve their customers. Someone who can support the customer through the entire process – from strategy and concept to product development and management – becomes valuable. It is a plus to be a partner in organisational development and change management simultaneously. The value for the customer lies in manifesting the change, which requires many different skills.”

What are the internal challenges in a fast-growing company like Screen Interaction?

“We’re deliberately striving for a broad base of backgrounds and nationalities, which are good for the innovation climate. But to create a ‘we’ feeling, we must put a little extra emphasis on building a sense of fellowship, for example by trips and by meeting after work. We’ve always worked with global customers and global recruitment, which means we’re staying in regular touch with the Swedish Migration Agency. We’re trying to tackle the lack of housing in Stockholm by buying flats that we can sublet to our employees. Right now we have three or four such flats. We’re also trying to be flexible about the forms of employment and the ability to combine work and family life. If an employee wants to play in another orchestra one day, we will try to arrange that.”

You’ve recently also opened an office in Dubai – why is that?

“It’s a result of our employee-driven way of working. We discuss which customers we want to work with and which problems we want to solve. In this case there were two employees who saw opportunities for us in Dubai, and this led to the current situation where we have about a dozen employees working there. We’re also starting to get local customers and we hope to be able to influence the market with our values and our openness.”

During the interview Pernilla Dahlman often uses small sketches to clarify her thoughts. A pen and A3 paper have become two of her most faithful pieces of equipment at meetings so she can, in her words, “visualise and get a holistic picture.” Beside her is one of her favourite cups in Gefle Porslin’s clas-

sic flow blue Vinranka Grape Leaf pattern. She is also interested in that kind of design and says with a smile that her company's range of coffee mugs has changed since she became CEO. The standard white mugs have been gradually replaced by more colourful, individual alternatives.

What do you do to lead yourself?

"About once a quarter I make an overall plan for how I will allocate my time. Then I take about half a day every other week when I withdraw to work with things like presentations. At a company like ours there are always many ideas being tossed around. So it's important to capture them, validate them, and see how they can be taken further. When there is a high level of activity at work, I have a greater need to reflect and focus inward. Then I try to do things by myself: read, write, listen to music.... I usually get the best ideas when I'm doing something monotonous, such as running or sorting out stuff."

What is your driving force as a CEO?

"This is my first CEO job and I feel no prestige in being a CEO. However, I became a project manager early on and I have always been driven by leading, organising and seeing employees and customers grow – it creates so much joy! Allowing employees to take responsibility for finding solutions means that the result is not always what I had thought – it's often actually far better.... Our business plan is based on us being the drivers of change, and therefore both my colleagues and I need to learn to live with exactly that. I also have a dream of leading a happy company, one that people come to, belong to, thrive, and therefore deliver terrific things. When there is a humanist leadership it is also possible to achieve great successes and free up a lot of energy in each employee."

What are your best leadership tips?

"One of the biggest responsibilities for a leader is to know who they are themselves and to understand their own strengths and weaknesses. Discover your passion and philosophy – they will help you understand where you are suited to be a leader. You must also be able to work with your obstacles and not be afraid of asking for help. Another piece of advice is to acquire a broad knowledge base – it helps you to make better decisions. Cultivate interests outside your professional life."

What will you be doing in five years?

"I'll still be here at Screen Interaction. I am loyal and take a long-term approach. We've just started an exciting sustainability journey, where we will link arms with the goals that the UN has set for sustainable development. We will link the company's vision to measurable goals for everything from finances to equality issues. We will also use various forms of data to trace what effect our services have. I hope and believe that this can become trendsetting for other companies as well." ■

Facts

Pernilla Dahlman



Photo: Alexander Koste

Name: Pernilla Dahlman

Age: 45

Profession: CEO of the design and innovation agency Screen Interaction since March 2014. The company was founded in 2008 by four young interaction designers: Reza Assareh, David Furendal, Petter Olofsson and Martin Kurtsson.

Family: Two daughters, ages 8 and 10. Partner and a bonus child.

Living: About to leave her flat in Bromma for a large turn-of-the-century house in Spånga Solhem.

Leisure activities: Likes to discover new interests: dancing, diving, mountain biking... Trains karate with her children twice a week. Likes to run, pick berries and mushrooms, make juice and grow potatoes. Enjoys visiting the greenhouse at Stockholm's Bergius Botanical Garden.

The jury's comment on its choice of Pernilla Dahlman as CEO of the Year:

"This year's award winner in the small company category has in a very short period of time and with a passionate and responsive leadership succeeded in increasing the company's revenue by an impressive 92 percent. With strategic work for a clear innovation culture and a 'we' feeling, the award winner has brought the company employees to new heights by giving them the freedom to dare to try, fail and learn from their mistakes.

In an age when diversity and heterogeneous workplaces are becoming more and more important, the CEO has taken the lead and become a model for others by hiring people of many different nationalities and a good balance of men and women. The winner has a modern approach to sustainability and weaves it into the company's basic values instead of segregating it in the form of separate activities."

The competition is organised by Motivation.se.



Pople on the run

60 million people are on the run from war and poverty. There is also an increase in climate-refugees who will have to escape uninhabitable locations.

Flight and relocation require design for inclusion

Some 60 million people are currently in flight around the world. Incorporating a design approach into processes and projects can help to facilitate and speed up inclusion, argues Professor Ezio Manzini.

By Susanne Helgeson

THE FACT THAT PEOPLE MOVE between countries for various reasons is nothing new. What is new, though, is today's extreme situation, with about 60 million people in flight from war, repression, natural catastrophes and poverty. They are fleeing within and between countries, across borders and seas. Their number is increasing and will grow: there are already predictions of large numbers of climate refugees who will need to move from places that will become uninhabitable due to the consequences of global warming.

Of course, migrants – in the sense of people on the move – also include people who are moving for other reasons, such as work, studies, tourism and love. But what makes the difference is that these latter ones move by choice, whereas the first ones do it out of absolute necessity.

In Europe “migration” became a widely perceived problem in the autumn of 2015. Though taken by surprise, at that moment many of us realised that migration is, and will continue to be, one of the major issues both for the migrants' original countries and for their desired destination countries.

All this requires not only extraordinary measures but also lasting structural changes. In order to achieve these, political measures are necessary. However, by themselves they are insufficient; civil society's help is absolutely necessary as well.

In this framework, the design world has also focused on migration as an area where applying a design approach to processes and projects can help to facilitate and speed up inclusion. Among other measures, SVID has initiated a resource lab for migration and has held workshops on innovation for migration and design for public-sector collaboration on the issue. The aim is to achieve a more humane process and in the long term more effective inclusion by better understanding the social needs of the new arrivals and in particular those of unaccompanied children.

The components of a reception process include the initial reception, schooling, work, health care and leisure activities. All of these factors can be improved by developing better solutions through better focusing on individuals' needs and expectations. That is, by adopting a human-centred approach.

Opportunity – not threat

Someone who is deeply involved in the topic of design for inclusion (a term he prefers over the sometimes-used alternative “design for migration”) is Professor **Ezio Manzini**. He is a researcher and expert in design for social innovation, the founder of the Desis network, and the author of several design-related books, the latest of which is called *Design, When Everybody Designs. An Introduction to Design for Social Innovation* (MIT Press, 2015). The book describes a development in which everyone – citizens, companies, NGOs and political bodies – is involved in designing for today's highly changeable world. In the book, Manzini differentiates between what he calls “diffuse design”, something that everyone can do, and the “expert design” done by trained professional designers. It is interesting how both these groups interact, how new forms of collaboration emerge, and how design projects can be initiated and contain huge potential for social change if the groups can be persuaded to interact and work towards the same goals with a focus on new forms of cooperation. Examples given in the book include everything from share farming in China and digital healthcare platforms in Canada to interactive storytelling in India and cooperative housing in Milan.

“It was in the summer of 2015 that a mental shift occurred when refugees started to come to Europe via the Balkan route. For some reason, when they tried to arrive in Europe via Italy by crossing the Mediterranean, they had not been so visible,” Manzini says. “Both I and my colleagues in the UK and Belgium realised that social innovations should be able to help facilitate inclusion.”

Migration in itself is nothing new and nor is design for inclusion – just look at the many projects done in Malmö with bodies like Forum for Social Innovation Sweden and Malmö University. As a field, social innovation has always been open to giving forcibly displaced people a better life. And from social innovation the step is not far to thinking in design terms – it is completely logical in a society where services are more important than traditional manufacturing.

Manzini adds that the core of the approach used by him and his colleagues was above all to reframe the issue of migration.

To not regard it as a problem or threat but rather as an opportunity, and to use design measures to create the conditions for a better process and better environment.

See the individual!

Given all this, the first step to reframe the migrant issue is to see the individual and ask yourself: Who is the refugee? What are they willing to do? What resources, in terms of skills and abilities, do they have?

“At first it was very much about creating networks between all the individuals and organisations that were already doing something – to reinforce existing strategies and develop new ones,” Manzini explains. “We saw the reality of society’s complexity close up when some European countries showed their darkest side, so we were forced to switch our ‘eyeglasses’ and seek out all the good examples instead.”

The many small and varied aid efforts were identified and an infrastructure was created that helped to both invent new projects and allow them to grow and flourish.

“Our ambition was then to create a better environment for many people to act in without themselves being designers,” Manzini adds.

He was personally involved in collecting information and creating opportunities for experience exchange among several such individuals. As excellent examples of effective cooperation on inclusion, he mentions sports clubs who opened their door to migrants and various “let’s eat together” initiatives similar to the Swedish volunteer network *Invitationsdepartementet*. Other examples are the ones in which both volunteers and refugees work together for an area clean-up day or other socially valuable activities (giving refugees the same role that “locals” could have).

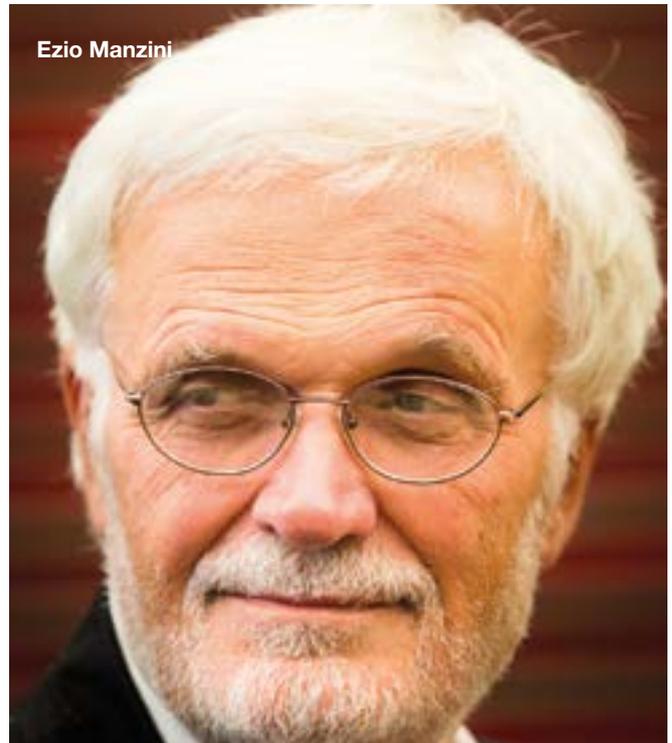
“We are in the same situation,” he says. “These examples are very diverse but they share a common element: they require collaboration between refugees and local communities. Therefore we can consider all of them examples of collaborative inclusion.”

From charity to cooperation

Manzini says that after our attitude has switched to regarding migrants as individuals endowed with capabilities and skills, the second step in the reframing process is to shift the focus of our actions from charity to cooperation. That is, to consider migrants as partners who add value to society. This is where the design aspects clearly come in.

“It’s about seeing beyond the traditional actors, the professionals who normally deal with this issue, and involving new groups who are willing to cooperate. Examples include the above-mentioned one of the sports association including migrants, or the one of private individuals willing to bring a refugee into their home, or craftsmen who accept migrants as apprentices.”

In conclusion, Manzini says that much can be done in the



Ezio Manzini

” Above all it was a question of seeing the individual and ask yourself ”who is the refugee?”

field of design for collaborative inclusion. And that this very much involves designing together with the migrants. And that this must be done at all stages of migration: in the migrants’ homelands, en route, on arrival, and perhaps especially during the unclear situation of waiting – the limbo that many of them end up in, uncertain about what the future holds.

“This is the most acute aspect and here design for social innovation can contribute a lot,” he says. “In particular, it could contribute to formulating a new narrative: the vision of a thriving, younger and cosmopolitan Europe. We need to do this not only because our future society will very much be characterised by migration, but also, and most importantly, because the migrants could be a strong driver of social and cultural change. In fact, the deeper contribution migrants can give us is to better recognise that our modern societies are already far from being the homogenous and stable entities that some political parties are trying to make us imagine. As several philosophers and sociologists have said for a long time now, in modern societies we are all displaced. That is, we are all more or less migrants. Given this, we all must learn how to live – and hopefully live well – with strangers. In this framework refugees/ migrants may help us to better understand our society. And to find a way to live better in it.” ■

! What's on in Europe

Summerschool

Leapfrog Summer School, UK

Summerschool at The Institute of Design Innovation's Highland Studio in Forres, northern Scotland, for junior researchers in arts and humanities.

Here the participants get to take part in researching how to design and evaluate more efficient, inclusive and creative tools for interacting with society and "communities".

The three-year research project Leapfrog is working closely to the private and public sector in Lancashire, the highlands and the islands to examine how to design and evaluate more effective, inclusive and creative tools for cooperation. <http://leapfrog.tools>

Worth a visit

Barcelona Design Week Spain

2-12 June 2016

www.barcelonadesignweek.com

ONE Design Week Plovdiv, Bulgaria

10-19 June 2016

ONE DESIGN WEEK is an international festival for contemporary design and visual culture. With both a professional forum with distinguished speakers from all over the world and a program for the public – exhibitions, workshops, discussions, displays, program for children, book releases, parties and more.

www.onedesignweek.com

Florence Design Week Italy

15-19 June 2016

The theme of Florence Design Week 2016 is "Design United". The festival is devoted to creativity and this year in particular to highlight the communal aspect of design and creativity to encourage exchange between different cultures. This

year's design week is dedicated to those creative cities who integrate people from different cultures through design, those designers who welcome impressions from varying disciplines, and those design solutions who have a strong ethical and sustainable focus.

www.florencecidesignweek.com

Sheffield Design Week, UK

22-30 October 2016

Sheffield Design Week celebrates design in all its forms under the theme "Design City". Displaying all design disciplines from graphic design to architecture, advanced manufacture and technology to fashion, product design and more. During the week the conference MADE NORTH is held featuring speakers and representatives from design, handcraft and production.

www.sheffielddesignweek.co.uk

Stockholm Design Week

6-12 February 2017

Book week 6 in your calendar now! During Stockholm Design Week with

Stockholm Furniture Fair and Northern Light Fair the whole city is bursting with events, gallery openings, exhibitions and parties. Many of the events will be open to the public.

www.stockholmdesignweek.com

Cases

Design for Europe

Are you interested in cases showing the effect of design? At Design for Europe's website are now some forty different cases within varying areas all over Europe. Some examples of cases:

- The Danish company Cimbria Herning which ran at a loss and whose turnover increased by 40% the first year after the design efforts.
- Brussels Airlines increased the number of bookings by 42% after reworking their booking system.
- The Estonian state which remodeled several public services after officials completed a program on service design.
- Eat 17 Bacon Jam whose sales increased by 250%.

Read about these and much more at www.designforeurope.eu/resources



Florence, Italy

Photo: Fausto Lanzetti, Shutterstock



Two studies addressing the importance of combining the efficiency of Lean with design and effectiveness – the ability to produce creative solutions that meet customer needs.

Why Lean needs design

Probably no management concept has ever spread so widely and had so much international influence as Lean. With its origins in Japanese automotive industry it is now used in various types of production and services, globally. But is Lean the miracle cure so many believe it to be?

By Jon Engström

TWO SWEDISH RESEARCH PROJECTS in two different contexts, industry and health care, perceive Lean's possibilities but also limitations. In particular, the studies single out the need to leave space for innovation, creativity and customer experience – aspects often forgotten in Lean work. In this article we meet the researchers behind the studies and ask: Can design be the missing piece of the puzzle in Lean?



Effectiveness at Scania

The truck manufacturer Scania is probably the Swedish company to have worked the longest with Lean. Scania has systematically developed its production system in accordance with Lean principles and has compared experiences with Toyota for many years. Today Scania's production is a role model within Swedish industry but the company keeps striving to do better. Katarina Stetler, who holds a doctorate in innovation management from KTH Royal Institute of Technology and is now a development engineer at Scania, and Magnus MackAldender, head of Scania's transmission department, have written the book *Kreativ när piskan viner – pusselbiten som saknas i Lean* (Creative when the whip is cracking – the puzzle piece lacking in Lean).

In their book they describe how they were very satisfied with the results from Lean but that they also saw a need to allow greater room for innovation.

"Scania chose not only to use Lean in its production but also in its knowledge work," Katarina Stetler explains. "The company wanted to create the same efficient flows that it had achieved in its production. The results were better quality and more efficient information flows but there was no raised level of innovation.

"That's not what Lean is for," she continues. "Lean creates efficiency and ensures that things are done right but not necessarily that the right things are done. One unfortunate and unplanned consequence of achieving better follow-up of our time and budget was that we may not have prioritised more high-flying projects."

The two authors say that what is missing in the Lean concept of efficiency is effectiveness – that is, that what is done achieves the right result. Kodak is one example of this risk of having high efficiency but not high effectiveness. Kodak was a very efficient company with a finely tuned organisation. However, it lacked the innovative ability that would have enabled it to keep up with the competition from Japan when digital cameras hit

the market – even though Kodak actually developed the first digital camera in 1975 but did not dare to invest in the product.

We can therefore ask ourselves why innovation is not paid the same attention as the work to make processes more efficient. Stetler and MackAldender link this situation to what the stock market places a premium on. They write: "There is no message that the stock market would rather hear than that a company will eliminate waste [eliminating waste is an important Lean goal – author's note]. It immediately reduces costs and thereby improve the profit margin. It is this connection that leads the stock market to reward companies via an increased share price if the company shows that it is applying Lean methods. Quite simply, the stock market likes Lean." They add that resisting an excessively shortsighted focus requires a combination of intuition, courage and perseverance.

Stetler and MackAldender argue that design thinking is needed as a complement to Lean. Understanding users' experiences is just as important as understanding one's own business activities because it is the foundation for being able to define problems and for continued concept generation, prototyping and testing. Many forces work against long-term and innovative thinking but innovation has one thing that gives it an advantage over Lean. Whereas Lean to a great extent requires that everyone works in the same way and that the entire business operation works at the same pace to ensure an efficient flow, a handful of innovators and entrepreneurs can create lasting changes to an entire business.



Lean and the hunt for greater patient satisfaction

Today Lean is applied not only within industry but also in other service sectors, not least health care. The hope is that applying Lean will lead to greater efficiency and patient satisfaction. The health care sector does not share industry's tradition of working with quality, flows and teams. The Lean concept has there-



Katarina Stetler and Magnus MackAldender, authors of the book "Kreativ när piskan viner – pusselbiten som saknas i Lean" (Creative when the whip is cracking – the puzzle piece lacking in Lean).

fore been welcomed by many people in the health care sector. But does it create greater patient satisfaction? Together with two colleagues I explored this question.

In American literature it has been called "the hunt for the perfect patient experience" In Sweden the emphasis is on shorter wait times. Associate Professor Bonnie Poksinska at Linköping University was one of the first researchers to study Lean in a health care context. She has studied Lean in practice and the type of leadership it requires.

"People have realised that they can make gains by applying Lean to the health care sector," Poksinska explains. "But they didn't know for sure how Lean was implemented in practice and whether it led to greater patient satisfaction or not, which was frustrating. Most of the existing evidence was anecdotal."

With this background in mind, she launched a study together with me – Jon Engström – and researcher Margot Fialkowska-Filipek. Our goal was to use case studies to empirically explore whether Lean led to greater patient satisfaction and how Lean is being implemented in practice.

The question of Lean's relevance in the health care sector is an interesting one. Lean was developed in the context of product manufacturing. Is it reasonable to use this type of approach in the health care sector? One important difference between the

two environments is that the customer – that is, the patient – passes through the system and is an actor rather than a passive product.

"The health care sector is different from car manufacturing," Poksinska says. "In health care and other services, the value creation occurs within the actual production process and not in the use of the finished product."

To explore whether Lean leads to greater patient satisfaction, we identified 23 health care units that worked with Lean and had done so for at least three years. We also selected 23 health care units that did not work with Lean to be a control group. We then compared these units' results in Sweden's national patient survey, where patients answer questions about their level of satisfaction with their care. We discovered that patient satisfaction at the Lean units was no better than at the non-Lean units. Nor did patient satisfaction at the Lean units improve over time. We concluded that the claims that Lean would lead to greater patient satisfaction were quite simply not correct.

The field studies we did gave us insight into the causes of this. The health care employees were certainly positive about the Lean work.

"They felt more control over what they did and felt that they were more efficient," Poksinska says. "But because the demand for care is so great, this mainly allowed them to shorten wait times and process the patients faster. However, this did not mean that each individual patient received any more time with the health care employees."

The Lean tool that was used the most was the value flow analysis. This involves systematically studying the flow of patients and reducing the stages that do not create value. A critical question then becomes: what is value creating and what is not value creating and who decides? In the cases we studied, the decision was made from within – by the health care employees – and not by the patients.

The patients were not at all involved in the Lean work. Instead, the starting point for the work was the employees' perspective on their activities.

"Lean often leads to a better work situation for the employees," Poksinska says. "They work together better and the health care measures are coordinated better. This creates a better sense of control and allows the employees to focus on their tasks better. But because the employees themselves experience so many problems in their processes, the focus ends up being on those problems rather than on the problems experienced by patients."

When cars are made, which was Lean's original context, such an internal focus is natural. It is in the cars' design that customers can be involved, not in their actual production. But in the health care system, a product is consumed at the same time as it is produced. The patients' role in this and their interplay

with the employees and other actors directly determine the value creation. Our conclusion is that Lean still creates a good starting point for innovation, because it gives employees an understanding of what the patient flow is like and what the structures are for making improvements. At the same time, more good examples of user-centred methods are needed.

“There is a lack of clear examples of how Lean can be combined with user-centred methods,” Poksinska says. “The employees do not know what they should do. It is important for those of us who work with Lean and research it not to create a picture that Lean improves the patient’s experience, because that is not where the focus lies today. This creates false expectations. The current implementations of Lean focus on removing what does not create value for the patient but the next step is to improve what does create value for the patient.”

Our conclusion is that just as Toyota studies and involves its customers in the design of new car models, so must patients become involved in the development work within the health care sector. Those in charge must listen to patients and involve them in defining what is meant by “value”. By combining Lean with design we can create a health care system that is both efficient and that creates greater satisfaction among patients.

What can we learn from these two studies?

Lean has made an incredible impact within many types of activities. As a concept Lean was developed because people doggedly learned to understand the challenges they faced and found ways to deal with them. This is perhaps Lean’s most important lesson: to learn from the problems we face. However, when Lean is directly translated from one context to another and applied as a predetermined formula, there is a risk of things going wrong. Today the challenge in many places is to find new and better ways of creating together with the customers. Those in charge at Scania have realised this and have begun to adapt to the new challenges. In the same way, people wherever Lean is being applied should work with their customers to identify challenges and find new, innovative ways to solve them. In this context, design is an important tool. ■

Read more:

“**Kreativ när piskan viner: Pusselbiten som saknas i Lean**” by Magnus MackAldener, Katarina Stetler, Flex (Roos & Tegnér), 2015

“**Does Lean healthcare improve patient satisfaction? A mixed-method investigation into primary care.**” by Poksinska, Bozena Bonnie, Malgorzata Fialkowska-Filipek, and Jon Engström, BMJ Quality & Safety (2016). For a copy of the article, email jon.engstrom@svid.se

Facts

This is Lean

Lean originated in the Japanese car industry. In the 1980s the European and American car industries were overtaken by car manufacturers from Japan, which succeeded in making higher quality cars at lower costs than their competitors. American researchers went and did comparative studies in the car industry to find out why this was happening. What they found in Japan was a production system that combined a long-term approach and a strong focus on quality work with a new type of pull production flow.

The pull flow meant that the car components were not made in large batches according to predetermined plans but were instead triggered by a chain reaction driven by the customer’s needs on the assembly line. This led to production that was resource efficient and required less capital. This was a prerequisite for the Japanese manufacturers, who did not have the same financial muscles as their Western competitors.

At the same time, this system increased the need for reliability of production because a stoppage anywhere in the chain made the entire production system stop. Strict order and a standardisation of the various work steps were implemented. One of the American researchers, John Krafcik (who now works to develop Google’s self-driving cars) coined the concept of Lean to describe this resource-efficient work system. At the same time as the standardisation reduced the factory workers’ ability to freely influence how they did each work step, they were made participants in designing how these work steps could best be done, and in continually improving their work methods. One important Lean principle is to identify which production steps create value for customers and which ones do not. For example, painting the car doors creates customer value. However, unnecessarily long shipments of the doors between the various production sites, or storing them in a warehouse, do not create value. They are therefore categorised as waste and should be minimised. By identifying and eliminating waste, companies create a production apparatus that is focused on customer value.

In addition to the purely mechanical aspects of Lean, the American researchers also highlighted a number of fundamental values that they found among the Japanese car manufacturers. These included a strong customer focus, respect for people, a long-term approach and a willingness to solve fundamental problems rather than just fix symptoms. Since the American researchers published their book *The Machine That Changed the World* in 1990, Lean has had a massive impact. Lean is the de facto standard in the manufacturing industry. Lean has been adapted to suit various types of activities such as services and health care. Many books have been written about Lean, describing it in various ways.



Photo: Sara Ljungblad

Inclusive design in a broader sense

Include is a conference for Inclusive design. The authors report from the conference, and challenge the concepts and notions used in the design process, which influence how design challenges are understood and addressed.

By Iréne Stewart Claesson and Sara Ljungblad

THE WORLD IS CHANGING and so is the concept of design. In September 2015 we participated in Include 2015, the eighth international conference on inclusive design at the Royal College of Art (RCA) in London. The conference theme of “Disruptive inclusive” aimed at identifying new directions in and perspectives on the field. For instance, inclusive design can involve creating an entrance that gives everyone access regardless of whether they walk in or roll in. People with impaired hearing or sight or a cognitive impairment, or someone who does not know the local language well, should also be able to use a video service. In computer gaming, inclusive design can mean

that women and men can play on equal terms. In addition to “inclusive design”, there are also a number of other concepts with similar meaning. One is “design for all” (Design för alla), which is also associated with the European and Swedish organisation with the same name. “Universal design” has traditionally been linked to physical and cognitive accessibility concerning how we create solutions so that daily life and society in general function well when people have various functional impairments. This concept is commonly used in Asia and North America, whereas inclusive design and design for all are concepts more often used in Europe.¹ At the conference it became

¹ Hedvall, P.O. (2014) “Universell design fungerar för alla” (Universal design works for everyone), in *Forskning om funktionshinder pågående* #1/2014. Published by the Centre for Disability Research at Uppsala University

” How does the use of notions like user, patient and impaired influence a design situation?”

clear how social and cultural dimensions are part of inclusive design. Environments and solutions that signal and reinforce people with an outsider status can be changed, and social design can convey an inclusive perspective. The concept of design and the use of design as a process to find solutions to social needs are continually being developed. This also holds true for the field of inclusive design, which now embraces more dimensions and other groups than it did just a few years ago.

What does the field of inclusive design look like today? What new concepts are being raised in inclusive design? To discover this we organised a workshop. Quite simply, we wanted to get a better grasp of the concepts, here referred to as notions, being used in inclusive design, and to explore them based on current associations and attitudes in academia and society in general. For example, how does the use of notions like “user”, “patient” and “impaired” influence a design situation? Would alternative wording could create another starting point for design and lead to different and better solutions? And what do designers and researchers think about this issue of which notions should be used? Does it matter?

Workshop: New notions in inclusive design

“Do you know of any worn-out, problematic, or simply boring notions that are creating obstacles in inclusive design? Roll up your sleeves and help us to wash, tumble dry and sort old peculiar notions and bring out the high-quality, more democratic and modern notions that inclusive design really needs.”

This introduction attracted 36 people – doctoral students in design and architecture, researchers, architects, a journalist, product designers, marketers, design strategists and graphic designers from a number of nationalities and parts of the world.

The workshop programme involved washing and tumble drying, sorting and then airing various notions. In this way the workshop would clarify various associations, perspectives and potential alternatives to the different notions.

Reflections on notions

The workshop made it clear that the intrinsic meaning of words, concepts or notions changes as society itself changes. A notion that was a norm yesterday can be out of fashion tomorrow or vice versa, and notions that were previously associated with something negative can become something people finally attach positive value to. Take the example of the word “nerd”, which today in Sweden can be associated with a talent

or that the person has special skills. That was not how the notion was perceived a few years ago, when it was seen as negative and deviant.

One notion that arose during the airing session was “target group”, which has been widely used over the past 50 years. It is associated with mass labelling and similarity, and with regarding consumers as a unified mass. This view feels outdated in the more individualistic society we have today, where we strive for unique and individual solutions. The new notion that was proposed was “individual”. The discussion focused on the need for diversity, to understand people in many different situations, and to perceive the continually changing groupings that exist today. Another group suggested “focus” as a more open notion that would make it possible to maintain a direction without lumping people together.

During the exercises, the notion of “normal” caused problems because the participants could not see anything positive about it at all. Some participants associated the word “normal” with meanings like “not unique”, “no one”, “mass culture”, “boring”, “trendy”, “standard” “expected”, “excluding” and “impossible”. This says something about our view of normality today – a view that is equivocal in that most of us want to be perceived as unique but still normal. Someone wrote: “there is no normal”; others suggested “popular” and “typical” as alternatives to “normal”. “Popular” might make it possible to describe something as being desirable to many people, rather than placing people on a scale with an average and a median, which was seen as problematic.

The word “impaired” likewise led to an intense discussion. One group associated it with “excluding”, “different”, “not me”, “tragic” and “limited” but also to some positive notions such as “potential”, “unique”, “specific” and “under-explored”. During the airing session, one group suggested that the word “diversity” be used instead, whilst another group proposed “unique”. Across the board, notions that grouped people together were regarded as problematic. For example, one group felt that the word “patient” grouped people according to their illness, and suggested that the word “individual” or “person” was more inclusive.

One group chose to air the word “diversity”. They associated it with “the right to be unique”, “individual needs”, “representativeness”, “variation”, “difference”, “inclusive” and “all encompassing”. Diversity was understood to be simultaneously specific and general. But it was unclear whether diversity involved an individual focus or a characteristic shared by people within a group. Another group had associated diversity with the words “threat”, “human”, “culture”, “wealth”, “co-existence”, “individuals”, “broad”, “unique” and “differences”. The group suggested “individuality” as a new notion. Yet another group related

“diversity” to notions like “equality”, “empathy”, “multicultural”, “inclusive”, “complex”, “broad”, “chaos” and “global”. Finally, one group discussed “accessibility” and associated it with “human rights” and something that is “added” at the end of the process, but also to “checklists”, “rules”, “laws”, “control” and “giving access”. No new suggestions were made. It was interesting that accessibility was so strictly associated with laws and rights. It was associated with formal and compulsory aspects rather than inclusive ones.

Conclusions and comments

“If we change our notions, that can change what we design. It can create another starting point for design. It is a way to open up new perspectives,” was a comment from one participating designer.

The overall goal of the workshop was not to produce a list of alternative notions but rather to explore what the notions are associated with. A participant from Argentina said the following during the workshop: “In this discussion it felt like I have a cognitive functional impairment just because I don’t have English as my mother tongue.” This is a good example of how limitations and functional impairments are fluid and affect most people, because we are all confronted with situations in which our senses, cognitive abilities or mobility are challenged, temporarily or for a longer period, and caused by internal or external factors.

It was our aim to question notions like “user” and “patient”, which can potentially create distance between the people who use something and the people who create it. However, one participant argued that our workshop format also created distance because the discussion was perceived to have a perspective of “us” (designers) and “them” (the people we design for).

In conclusion, our workshop was very well received both for the questions it raised and for the methods it used. The metaphor of washing, tumble drying, sorting and airing the notions and how we staged this in a purely practical way was felt by participants to be inspiring and helped to put the spotlight on notions that are worn out, unnecessary and limiting. It was an exercise in thinking about hidden stereotypes and discovering both negative and positive connotations. By thereby actively thinking about notions, we can hopefully discover old norms that it is time to rid ourselves of so we can pave the way for alternative viewpoints.

Lecturers with many perspectives

The conference had a number of different speakers who shed light on design as a process based on both inclusive and exclusive perspectives. One of the goals of this year’s Include conference was to rejuvenate the definitions and redefine and question the idea of inclusive design. This aim was manifested in the choice of speakers, who not only came from the research world but who also included practitioners with many differ-

” Long-term care shouldn’t cost us everything that’s involved in being human

Jackie Marshall-Ballock

ent perspectives and examples of what inclusiveness means in practice.

– Who looks forward to moving into a nursing home?

That question was posed by Jackie Marshall-Ballock, Lead Specialist at the Assisted Living Innovation Platform at Innovate UK, who talked about attitudes to old people and the reality of elder care. Jackie is a trained nurse but now works with business-driven innovation for demographic changes in the UK. She described her frustration over injustices and discrimination against individuals, and how groups are formed and associated in terms of chronological age and physical ability. “Long-term care shouldn’t cost us everything that’s involved in being human,” she said when discussing the reality for people who can no longer care for themselves. She gave the example of a man who said he was afraid to move to a nursing home because it also meant being sentenced to a life of celibacy, a perspective that we seldom consider with regard to an older person.

Jackie had been invited to a workshop called “Bring Granny into the 21st century”. To her ears that sounded like an invitation to drag a screaming and kicking grandmother into a new generation. The workshop seemed to her to be totally detached from a wider context and signalled a lack of insight into old people as individuals. She also felt it had signs of sexism and created an exclusive perspective because it excluded men. Jackie herself became a grandmother at the age of 47. She cited Albert Einstein when she described an important concept that she felt is needed within the health care sector – imagination.

Imagination is more important than knowledge. Knowledge has limits whereas imagination encompasses the entire world, stimulates progress and gives birth to development.

Imagination appeared to be needed in politics, too, to find ways to not get stuck in existing structures. Marco Steinberg of the consultancy Snowcone & Haysck in Helsinki was commissioned by the Finnish state to support its innovation work with the aid of design. He spoke about how innovation is being limited by current legislation and organisational structures. He described his frustration over how public-sector organisations have a tendency to think, act and allocate their understanding of problems in “boxes” and therefore allocate their funding according to and within the framework of those boxes. He said that new solutions such as social design tend to move across many boxes. This requires a more holistic perspective that can permit diversity and differences. These challenges mean that

we need to question and change old public-sector organisational structures and the prevailing “boxes”.

Inspiration born of frustration

Two speakers did not even use the concept of inclusive design to describe their own solutions but instead talked about inspiration and frustration. “For us, inspiration is born of frustration. We simply become angry when we see environments that are designed and built without love.” The designer duo of Olsson and Linder were awarded a prize at the conference for innovative inclusive design. Their lighting design and art projects are part of the Social light movement, that aims to increase social and contemporary qualities in environments that now seem to be designed without love. Their work primarily involves reducing experiences of socio-economic inferiority in urban environments.

Another example that touched on inclusive design based on social innovation was Alvin Yp, who leads “The Jockey Club Design Institute for Social Innovation” in Hong Kong. He spoke about and gave examples of the institute’s work in social innovation and how it has succeeded in including local residents in development projects. “The Jockey Club” is the first design institute in Asia to be dedicated to social innovation. The institute focuses on formulating creative and alternative solutions to complex challenges in urban sustainability, an ageing population, for families and young people, and making technology accessible to people with impairments.

What happens next?

The conference for inclusive design shed light on a broad spectrum of social sustainability and the values, perspectives and design solutions that can be associated with this, whether it concerned a lighting project for altering our experience of urban environments, strengthening old people’s rights in a nursing home, or fighting prejudices about people. It is about knowledge, the ability to have insight, and the importance of imagination, inspiration and frustration – and design. The next Include conference will be held in 2017. We’re curious about how this research field will continue to develop! ■

Inadequate accessibility

“Inadequate accessibility: that a person with disability is disadvantaged through a failure to take measures for accessibility to enable the person to come into a situation comparable with that of persons without this disability.” Since 2015 Sweden has a new Discrimination Act, which includes inadequate access. Goods, services and gatherings must not discriminate against people due to age, transgender identity, gender, religion, sexual orientation, disability and ethnicity ².

² <http://www.do.se/other-languages/english-engelska/discrimination-act/>



Photo: Irène Stewart Classon

Facts

Notion cards

A method for clarifying concepts and notions – activities with notion cards: The method aims to clarify associations, perspectives and alternatives to various notions. The various stages are compared to the process of doing the laundry: wash and tumble dry, sort and airing!

Wash and tumble dry: The participants divided themselves into groups and were given a number of cards with different notions on, such as “normal”, “diversity”, “impaired” and “cognitive impairment”. The members of one group chose a card and discussed the notion, sought out associations and alternatives, and wrote them down.

Sort: The discussion led to a proposal for one or more new notions, which were noted on the back of the card. The group members also wrote a short justification of the new proposal.

Air: After discussing several notions and using their associated cards, each group selected the two cards that had led to the most interesting discussions, presented these notions’ associations and alternatives, and explained the reasoning about them.



Integrating design

In this issue we publish two scientific articles. Both deal with the integration of design in organisations – first conceptually and then from a more practical perspective within the context of higher education.

Design management as knowledge integration

The first article, **“Knowledge Integration of and by Design”**, is written by Per Åman and Hans Andersson and deals with the integration of management and design. These disciplines come from different traditions and are partly based on different logical approaches. Simply put, in the field of management there is a tradition of technical and economic rationality, but also attempts to understand and deal with sociocultural phenomena within organisations. On the other hand, a design approach does indeed have an artistic connection in which practical and hands-on experience is emphasised and where it is often seen to be a moral duty to improve people's living conditions, but where industrial design, for example, forms part of a technical, economic and organisational context. The management perspective and the design perspective need to work together.

The authors use knowledge integration as a framework with which to understand management, the design approach, and how these can be integrated. An organisation is defined here as a knowledge bearer in which knowledge is codified and action is coordinated. Management and design are seen as two different but complementary knowledge bases. Knowledge integration deals with which knowledge should be integrated, how to do this effectively, and flexibility in the integration process.

Two types of integration are formulated – to regard design as a resource to integrate in the rest of the organisation, and to regard design as the ability to integrate various types of knowledge. In other words, the integration of design or integration through design.

Design in the higher education system

Universities are one of the oldest institutions in society. As someone who teaches at a university, I know that a university's structures are often rigid. In their article **“Using an Action Research Approach to Embed Service Design in a Higher Education Institution”** Heather Madden and Andrew T. Walters describe a project that combines action research and service design in order to achieve change towards more student-focused teaching.

More specifically, the project studies how service design can influence the culture within an organisation, how service design can help a university to become more innovative and collaborative, and what type of leadership is required to do this. Today universities often lack systematic and ongoing development work. The use of design methods has not currently gained a foothold at universities. For this reason Madden and Walters' contribution is most welcome.

These studies indicate the difficulty of achieving change in large and complex organisations. In a situation where there is no time and space for development, and where an organisation is built in silos according to function, it is possible to achieve minor improvements but difficult to implement major change and cultural change. However, the studies show that by starting to apply design methods, “intrapreneurs” can gain the space to show that they exist and to find each other. A network of development-oriented individuals can then be built and form the basis of more long-term change.

We now have a portal for this journal's scientific submissions: www.svid.se/sdrj. This is where authors can send their articles, where the review process will occur, and where articles will be published separately. This will increase accessibility for researchers as readers and writers. It is my goal to gradually increase the number of published articles per year. The articles will first be published digitally to shorten lead times, and then in paper form in the journal.

I would like to thank the reviewers for their important work and hope that readers will find the articles valuable! ■

Jon Engström Ph.D. Editor



Knowledge integration of and by design

Management and Design need to interplay in organizations. But how? This paper points out two distinct strategies for integration.

ABSTRACT

The purpose of this paper is to explore the possible uses, benefits, limitations and future directions of a formal knowledge integration perspective on design management. The paper develops the concepts of management thinking and design(erly) thinking, and questions the implied contention. With a knowledge perspective, design management may be seen as including the capability to

integrate specialized, distributed and heterogeneous knowledge bases. Consequences regarding the characteristics of scope, flexibility and efficiency of knowledge integration indicate both greater difficulties and greater possibilities.

Regarding the architecture of knowledge, integration of design indicates a functional orientation and a limited role for design, while integration by design may indicate a strategic role.

Design (management) as knowledge integration

The integration of the design function for the benefit of the overall performance of the organization is a crucial issue that has been awarded a considerable amount of attention (e.g. Cooper et al., 2011; Svengren, 1995; Buchanan, 1992; Johansson and Woodilla, 2008). Design is an integrative discipline and designers 'explore concrete integrations of knowledge' (Buchanan, 1992, p. 6). More recently Hobday et al. stated that design ought to be viewed as a 'knowledge creating, generation and integration activity' (2012, p. 18), not just as problem solving.

On a domain-independent level, design is the general human ability to improve existing conditions by creating the artificial (Simon, 1996). Design is a generative process (Hatchuel et al., 2010), the result of human interest, purpose and activity, and generally applicable. However, different domains may lead

to different contents, which may in turn influence the design processes and the processes of integration. For our purposes here, the perspective is inspired by John Heskett:

The deliberate and reasoned shaping and making of our environment in ways that satisfy our needs and give meaning to our lives. (Heskett, 2002, p. 16)

This definition gives prominence to the human actor and the human capacity to create a 'betterment of the human condition' through making tools of increasing complexity and abstraction. The crucial words being 'needs' and 'meaning' where the human being is seen not only as a (boundedly) rational seeker of utilities and satisfaction of material needs, but also as an aesthetic and social being seeking experiences of beauty and sublimity as well as symbolic values in a social context.

This duality is found in many works on design, albeit in different conceptual clothing, for example in Norman and Verganti's (2014) discussions on design and innovation in two dimensions: technology and meaning.

Through capturing, recombining and integrating knowledge about socio-cultural models and product semantics in several different social and industry settings, designers help in creating breakthrough product meanings. (Verganti, 2003, p. 35)

Design may consequently be seen as integrating across 'needs' and 'meanings', while design management may be seen as the managerial capability to make use of design as a strategic and integrative resource. In an often quoted generalized definition:

Design management is the effective deployment by line managers of the design resources available to an organisation in the pursuance of its corporate objectives. It is therefore directly concerned with the organisational place of design, with the

identification with specific design disciplines which are relevant to the resolution of key management issues, and with the training of managers to use design effectively. (Gorb, 1990, from Cooper et al., 2011 p. 14)

From a strategic management perspective, then, design management is about the effective employment of design as resource and the capabilities for that employment. A first issue is that design management contains the organizational need for and capability to integrate 'design' and 'management'. Second, as design is inherently integrative, design management is effectively integrating the integrative.

In this paper, issues pertaining to integration will be addressed with a knowledge perspective, as integration of knowledge bases.

The study of organizations as knowledge-based entities has become a significant stream in organizational and strategy research. A general position is that

A firm is a repository of knowledge that consists of how information is coded and action coordinated. (Kogut and Zander, 1993, p. 626)

One example of a subfield is that of knowledge management (KM), which from a design perspective has been argued to be a rather rationalistic, instrumental set of pragmatic methodologies (Rylander, 2009), opposed to a design process characterized by intuitive and holistic thinking.

Given our interest in the integration of design (and management), we will turn our attention to the structured treatment of integration from a knowledge perspective found in the field of knowledge integration (KI). From the formative contributions of developing a knowledge based perspective on organizations, such as Kogut and Zander (1992; 1996) and Nonaka and Takeuchi's (1995) work on types, locations and transfer (or conversions) of knowledge, the field

of knowledge integration (Grant 1996a, 1996b; Kogut and Zander, 1993) has found its own contours. The list of publications has been increasing (Tell, 2011), boundary conditions have been set, and communities formed (Berggren et al., 2011). KI is in principle neutral in terms of domain, with the advantage of a structured set of propositions on types and characteristics of integration. The defining premise of KI is that knowledge has become increasingly specialized, leading to dispersed and heterogeneous knowledge fields, which, in turn, lead to a need for integration. The objective is not learning in the form that levels differences and lets us all become privy to the other's knowledge, but integration of dispersed, heterogeneous and complementary knowledge bases into a greater whole that employs and leverages the diversity.

The purpose of this paper is to explore possible uses, benefits, limitations and possible future directions of a knowledge integration perspective on design management.

We approach the issues with a strategic management perspective. The present work is about the use of the particular design knowledge in an organized context, for the greater goal of the performance of that organization. The ultimate interest is how the knowledge integration of design contributes to the performance of the organization. With a resource based view (Penrose, 1959; Wernerfelt, 1984; Barney, 1991) to understand design as a strategic resource for the firm, and design integration as strategic capability. Our issue becomes the integration of 'management thinking' and 'design(ery) thinking' (Johansson-Sköldberg et al., 2013), as specialized, heterogeneous but complementary knowledge bases.

Structure of the paper

We posit a straight-forward formulation of our possibly wicked problem: there is the two knowledge bases of 'management thinking' and 'design(ery) thinking', a difference between the two,

” Leadership is a matter of poetry and plumbing’ (March and Weil, 2005)”

a possibly positive effect of combining them, and consequently an issue of integrating the two. Our knowledge integration perspective will eventually, for the purpose of clarity, be rather ‘Grantian’, with a starting point in the seminal contributions by Robert Grant (1996a; 1996b).

We will address the issues in the following manner. Our first set of issues concern the two knowledge bases. First, we will address the idea of management thinking, and second, design(erly) thinking, ending with a discussion outlining some consequences for the contention of the two concepts. Then, the field of knowledge integration (KI) will be introduced as a structured framework for integration, and our particular approach formulated. In order to make sense of the consequences of design management as knowledge integration we will first examine the integration of design in terms of the characteristics of knowledge integration – the scope, efficiency and flexibility of knowledge integration processes (Grant, 1996a), and second, we will examine the location of design in the hierarchy of capabilities (Grant, 1996a). We will end with general observations and implications.

Two knowledge bases

Management thinking

Management thinking has often been perceived and modelled as a purposeful, shareholder value based, instrumental problem solving activity, based on rationalistic argumentation with resource efficiency as guiding principle (e.g. Rylander, 2009). Taylor’s (1911) scientific management has been identified as a possible core of management thinking (Johansson and Woodilla, 2008). The organization,

its employees and activities are means for achieving ends, which are formulated in capital yield terms. It becomes a Tayloristic and Friedmanish stereotype of management thinking, possibly with a detached systems engineering-like perspective to the approach of organizing work, where subsequently hierarchy is a leading principle (Johansson and Woodilla, 2008). A teleological and instrumental view of activities finds all decisions an investment of financial capital and subject to being judged for their contribution to the organization’s overall objective function, through techniques of investment analysis by net present value (NPV) and internal rate of return (IRR). Such an economic rationality is perfectly neutral in domain; whether production systems investments, marketing decision, recruitment decision or design expenses, the decision to go ahead is subject to the same format of calculation.

Like Peter Gorb (2001) observes, the management language remains in the numbers of the profit and loss statements and impact to the balance sheets. The management language treats decisions as investments and if there is a sense of functional beauty (Parsons and Carlson, 2008), it lies in the level of the compound annual growth rate (CAGR), return on capital, and the ability to consistently increase shareholder value.

On the other hand, organization theory, and the part of strategic management that is not wholly formulated within (neo-classical) economics, has evolved considerably from the rationalistic and uni-dimensional perspective somewhat caricatured above. Already the Hawthorne studies introduced management action as symbolic, rationality in decision making became bounded (Simon, 1973), the influential study on ‘excellence’ of

Peters and Waterman (1982) and later post-modern organization theory (e.g. Hassard and Parker, 1993) helped spur an interest in organization culture studies and narratives. A series of works argue for an aesthetic organization theory (Gagliardi, 1996; Strati, 1999; Ramirez, 1991).

Indeed, a limitation observed about strategic management research is that focus has been on the material and the supply side, at the expense of the immaterial and the demand side:

(a) extant research has focused on producer activities and on the cost side of the value-creation equation ... to the neglect of the role of consumer perceptions and practices; and (b) extant research has focused on the importance of technology in value creation to the neglect of cultural and symbolic resources (Dalpiaz et al., 2010, p.176).

In other words, management thinking does have a pragmatic base in the language of numbers and a logic that is derived from a shareholder’s perspective and represents a technical/economic rationality. But strong contemporary voices develop and elucidate a socio/cultural perspective on management work and theory.

Perhaps more intriguing yet are formulations of the two as a duality of technical/economic and socio/cultural perspectives arguing for a paradoxical conceptualization. Most provocative and elegant is perhaps James March’s statement that ‘leadership is a matter of poetry and plumbing’ (March and Weil, 2005). The plumbing being the technical, economic and pragmatic workings of the organization while the poetry contains the aesthetics of work and workplace and the social symbolic values of products, work and ideas.

Summing up; to pinpoint management thinking as an instrumental resource-efficiency discourse is possible and in some ways pragmatically correct, but overly simplistic in the light of advances in the field. Managerial knowledge and practice does contain the



paradoxical nature of a duality of a technical/economic rationality and a socio/cultural one.

Design(erly) thinking

Whereas mainstream management thinking has been argued to be repressive of creative thinking (Johansson and Woodilla, 2008), design is denoted as part of the creative industries in a EU commission report (KEA, 2006), and creativity is one characteristic often recurring in discussing design(erly) thinking. The intuitive aspect of design work is another recurring characteristic. Designers are also empathic (Kelley and Littman, 2005; Brown, 2008), drawing their inspiration from a deep respect and understanding of the human condition. Designers are idealistic, foregoing the instrumental shareholder perspective for an all-embracing stakeholder view, and artsy, bringing a disinterested aesthetic judgment to the work, thereby delivering

experience and meaning to the beholder. All in all, designers are artsy, creative, empathic, inclusive, intuitive and even fun; in short, most of the qualities that management thinking is not. But then again, design in a managed context, e.g. as industrial design, is more complex.

Is design art? In a certainly entertaining but rather poignant remark, design has been seen as ‘useful’, and art as ‘useless’ (Sudjic, 2009). Professional industrial design is not arts in the disinterested, detached way of the romantics (Kant, 1790/2000), but guided by the objective function of the firm (Lovas and Ghoshal, 2002).

Designerly thinking is what designers do and design thinking is that knowledge transferred to other, and most often managerial, contexts (Johansson et al., 2013), and what may then be the core of that way of thinking? Design competence has been identified as the result of three

interlinked characteristics: a holistic view, an ability to zoom between holistic to detail, and a capacity to structure and dissolve structures. This leads to a formulation of design practice rather antithetical to hierarchy and functional boundaries (Johansson and Woodilla, 2008).

As developed earlier, design is a field that inherently incorporates a cross-speciality integrative aspect, stretching across the divide between the rational and the ‘irrational’ of the aesthetic and symbolic. The consequence here being that design(erly) thinking rests in a similar paradoxical state of affairs as do management thinking; technical/economic and socio/cultural. And indeed, the sometimes troublesome relationship of ‘management’ to ‘design’ has been addressed in design research (e.g. Heskett, 2008).

Still, the idealistic legacy of certain waves of design is revered. Already William Morris for instance

believed that beautiful design enriched the quality of life and that the designer had a moral responsibility in his or her work towards the greater good (McDermott, 1992).

Echoes of this ideological, humanistic position have a long reverberation and examples highlight the balancing of a technological and economical logic with an ideological orientation. Design from this perspective is not just an instrumental, industrial activity for the betterment of the industrial process and its economic performance, but an instrument for the betterment of the human condition, processed through industry as the mass production methods democratizes quality. Low cost and industrial processes are not only seen as means to create margins and capital turnover, but means to make good designs available for a greater number of people. Industrial techniques are means, not ends. The ideological stance is not necessarily outspoken or very marked in industrial design, which is, again, a professional and embedded deployment of design knowledge, but

the questioning of rational, technological knowledge as panacea remains.

Placing industrial design within art or technique, however, is an almost impossible task. Industrial design is a combination of both, and it is this combination that is the core of the profession. An industrial designer always takes the beauty of forms into consideration. But he or she never does so regardless of function and the production process, thereby distinguishing themselves clearly from “pure art” and artists. (Johansson et al, 2003, p. 2)

From a knowledge perspective, designerly thinking is arguably more tacit than management thinking. From a practitioners perspective, Chris Bangle argues that ‘artists really only learn to create winning designs by trying over and over again; their professional growth occurs almost invisibly’ (Bangle, 2001, p. 51), indicating the importance of experience based, tacit knowledge.

Summing up, design(erly) thinking is not an obvious counterpoint to management thinking, but may represent a complementary knowledge base, specialized and perhaps dispersed.

The contention

Wherein lies the contention between management thinking and designerly thinking? Wherein lies the contention between management knowledge and designerly knowledge? Is it real, perceived or an illusion? With undeniable experiential legitimacy, Chris Bangle, earlier design manager of BMW, calls it the “inevitable conflict between corporate pragmatism and artistic passion” (Bangle, 2001, p. 47). Given the discussion above we should approach the contention with some caution.

A view of a duality permits us to capture the complexity in the earlier debate and propositions for the difficulty of integration of design. If management thinking and design(erly) thinking can be approached through similar paradoxes, they may be approached as specialized fields of knowledge, but complementary

rather than excluding. Depending on how big – or paradigmatic -the difference, the contention has been seen as a small ditch, a significant stream, ... there’s a huge river of misunderstanding between the design and the business world. (Peter Gorb, 2001, p. 2)

or a wide chasm:

The modern split between engineers and industrial designers or between art and business, therefore, appears not to be a small ditch simply to jump over. Rather, it seems to be of such a magnitude that it is doubtful whether it is even worth trying to overcome it.” (Johansson, Sköldbberg and Svengren, 2003, p. 10)

The potential and difficulties of design integration have been perceived in various ways. In some contributions the integration issues have been addressed as an organization structure issue, as an issue of roles, as issues pertaining to external or internal location of the design function; there is a difference in degree. Or, the contention is seen as an issue of paradigmatic difference between the rationality of business and the wicked problems of the arts and design; as a difference in kind.

Knowledge integration – an integrative framework

The contemporary need for depth of knowledge leads to increasing specialization and subsequently organizations need increasingly sophisticated means for integration. As knowledge is dispersed across individuals and collectives within (and outside) the firm, “the primary role of the firm is integration of knowledge” (Grant, 1996a, p. 377). Thus, knowledge integration has been defined as the combination of specialized but complementary knowledge bases in a goal-directed process aiming to achieve a significant outcome for the concerned organization(s) (Berggren et al., 2011b).

Knowledge integration is concerned with understanding and explaining processes of knowledge integration,

and implications for the design of such processes. Tell (2011) identifies several streams of research, and more particularly one that seems of particular interest to us, concerned with the combination of specialized, dispersed but complementary knowledge. A generative perspective on knowledge creation link to innovation, and indicate that in innovative settings knowledge integration takes place despite knowledge-base dissimilarities (Lindkvist, 2005). On the other hand there are indications that integration of specialized knowledge may not be easy (Dougherty, 1992; Hoopes and Postrel, 1999) or even possible if the common knowledge that may bridge between areas is lacking (Grant, 1996a; Postrel, 2002), or there may be a trade-off between exploiting familiar knowledge and exploring uncharted territory.

Task, knowledge, and relational characteristics have an influence on KI (Tell, 2011). The knowledge characteristics identified are of a rather general character, i.e. internal vs. external, tacit vs. explicit, etc. This, just as the general definition by Berggren et al., does not discriminate between different knowledge bases relevant to the task at hand. KI is in that sense domain-independent. The defining categorization of knowledge that Grant (1996a) employs is that of tacit and explicit, and focuses on the specialization needed on an individual level in order to acquire more – deeper – knowledge. On an individual basis he argues for a necessary trade-off between breadth and depth of knowledge. Hence, in order for the organization to create means for integration between individuals with specialized knowledge, Grant argues that explicit knowledge poses little problems because of its ease of communicability. The coded, stored and retrievable explicit knowledge may easily be accessed by other individuals, given that the language of the code is common to others. On the other hand, tacit knowledge presents more substantial issues, as tacit knowledge not necessarily can be converted to explicit without knowledge loss.

It is reasonable to extend this discussion into the realm of social contexts. Groups of individuals form social communities where common experiential background, e.g. education and project collaboration, comes to form socially bound norms and expectations. Social norms of instrumentality, idealism, and 'artistry' concerns the content of work, while norms of efficiency, linearity, goal-orientation, and rationality influences the expectations on work process. Social communities define identities and peer-recognition.

In the following, we will use Robert Grant's models (1996a; 1996b) of knowledge integration to explore some consequences of using KI as a vehicle to understand the integration of management thinking and design(erly) thinking. Specifically, Grant identifies three characteristics of knowledge integration of importance for competitive advantage.

First, the **efficiency** of knowledge integration is judged by 'the extent to which the capability accesses and utilizes the specialist knowledge held by individual organizational members' (Grant, 1996a, p. 380) i.e., the efficiency is determined by the level of common knowledge and the frequency and variability of task performance. Second, the **scope** of knowledge integration is constituted by '...the breadth of specialized knowledge...' (Grant, 1996a, p. 380), i.e., the scope is affected by complementarities and substitutability as well as causal ambiguity. Third, the **flexibility** of knowledge integration is '...the extent to which a capability can access additional knowledge and reconfigure existing knowledge' (Grant, 1996a, p. 380), where flexibility lies in the ability to encompass new knowledge or reconfigure existing repositories of knowledge.

Grant (1996a) introduces a perspective of knowledge as a 'hierarchy of integration', from the specialized knowledge held by individual members of the organization, successively broadening the scope of fields of knowledge to be integrated until we reach the top of 'wide-ranging functional integration'.

To sum up, KI contains a developed discourse on how the integration of specialized, dispersed and heterogeneous fields of knowledge may be structured, conceptualized and approached, eventually evaluating the contribution to the competitive advantage of the organization.

Integrating the resources and capabilities of design(erly) thinking

We will here first discuss some implications for integrating the resource of design. Second, we will discuss some implications for the capability of design management in order to integrate design. Finally two short empirical illustrations are presented.

Integrating design in terms of scope, efficiency and flexibility

Scope

Design knowledge broadens the scope of what to integrate, in relation to integrating different traditionally technological and managerial knowledge bases. With design as incorporating a humanities dimension, and concerned with human interaction with artefacts in an aesthetic and symbolic way, one aspect of design is to integrate the material with the immaterial.

In the extreme, this scope may be represented by the paradigmatic and classic divide between technology and the humanities (e.g. Snow 1959). Communication may be difficult across such divides. Individuals have been educated and trained in different traditions. In the polytechniques rationality prevails, and an undertext of rationality, progress and materiality emerges – in short a Newtonian based universe of modernity.

Design schools are located either within the polytechniques, or within beaux arts, which has spawned a considerable debate concerning the effects in terms of attitudes, values, work processes.

On the other hand, in the minimum of scope, design is added to fix the appeal of an item, perhaps as 'styling'. Perhaps

with planned obsolescence built-in. At the least, design scope introduces a humanities element in how we perceive the properties of the artefact or process to be designed. The artefact or process is not just about material utility and problem solving, but also and including aesthetic experience and symbolic meaning creation.

Grant (1996a) argues that increasing the span of knowledge to be integrated actually has the potential to be beneficial for the firm, on two accounts. First, up to a point of 'diminishing relevance', different types of knowledge may be seen as complementarities rather than as substitutes. Second, a greater scope of knowledge increases the possibilities of a greater causal ambiguity and thus increases the sustainability through sheltering the firm from imitation. Design increases the scope of knowledge to be integrated and thus carries a promise or potential for increasing sustainability of competitive advantage – given that the two conditions can be met. If the aesthetic and symbolic considerations of design are seen as a poor complement it may stretch beyond the point of diminishing relevance in the eyes of other organizational actors. Given the tacit nature of much of design, it may certainly contribute to causal ambiguity and thus shelter competitive advantage from imitation, but the extreme of causal ambiguity is simply fuzziness and lack of causality.

Efficiency

The efficiency of knowledge integration depends in part on the ability to communicate across functional borderlines, regardless of whether the knowledge is explicit or tacit and thus if the integration mechanisms may be based on direction (explicit) or routine (tacit) (Grant, 1996a). Shared behavioural norms are fundamental and "the wider the scope of knowledge being integrated...the lower is the level of common knowledge" (Grant, 1996a, p. 380)

A prerequisite for communication across knowledge areas has been the level and quality of common knowledge,

” In a dynamic market setting, sources of **competitive advantage have a best-before date**, and the capability for continual renewal may maintain performance”

which rest on common language, commonality of vocabulary and conceptual knowledge. Can we expect the design professionals to speak the same language as technology or management specialists?

Design, in its introduction of aesthetics and symbolic value, risk being problematic on most of these accounts. It widens the scope of knowledge to be integrated; the intra-field languages, concepts and structures are likely to be different; behavioural norms risk being different and intra-field cultural values are likely to be different.

Further, the frequency and variability of task performance influences the efficiency of knowledge integration (Grant, 1996a). This would point to industrial design being successfully integrated in situations where design is part of the routines of a firm, rather than an exception.

Lastly, organizational structuring may facilitate the efficiency of KI. Interestingly, Grant (1996a) uses the automobile industry, from Clark and Fujimoto (1991), to illustrate the possible benefits from sequencing, functional differentiation and product segmentation to overcome knowledge integration barriers, although without paying any special attention to design.

Flexibility

In a dynamic market setting, sources of competitive advantage have a best-before date, and the capability for continual renewal may maintain performance (Eisenhardt, 2002; Teece, 2007). First, a firm's ability to encompass additional fields of knowledge depends greatly on the ability to communicate (Grant, 1996). The more tacit and historically and culturally embedded, the more difficult the

communication process and the more difficult knowledge will be to transfer and to integrate. Socio-cultural patterns of meaning creation (Verganti, 2008) are certainly both path dependent and culturally embedded. Second, an ability to reconfigure existing knowledge through new patterns of integration is a potential capability for renewal.

All of the three characteristics of knowledge integration indicate some difficulties when we introduce the broader set knowledge of design. We posed question marks around the efficiency of integration, partially because of communication issues; the scope of what to integrate may move beyond the point of diminishing relevance; and flexibility of integration may be slow partially because of the tacit nature of design knowledge and practice. However, following the argumentation regarding scope by Grant (1996a), the broader scope of industrial design also carries the potential for creating and sustaining competitive advantage. Great potential coupled with great difficulties.

Design management capability: integration of and by design

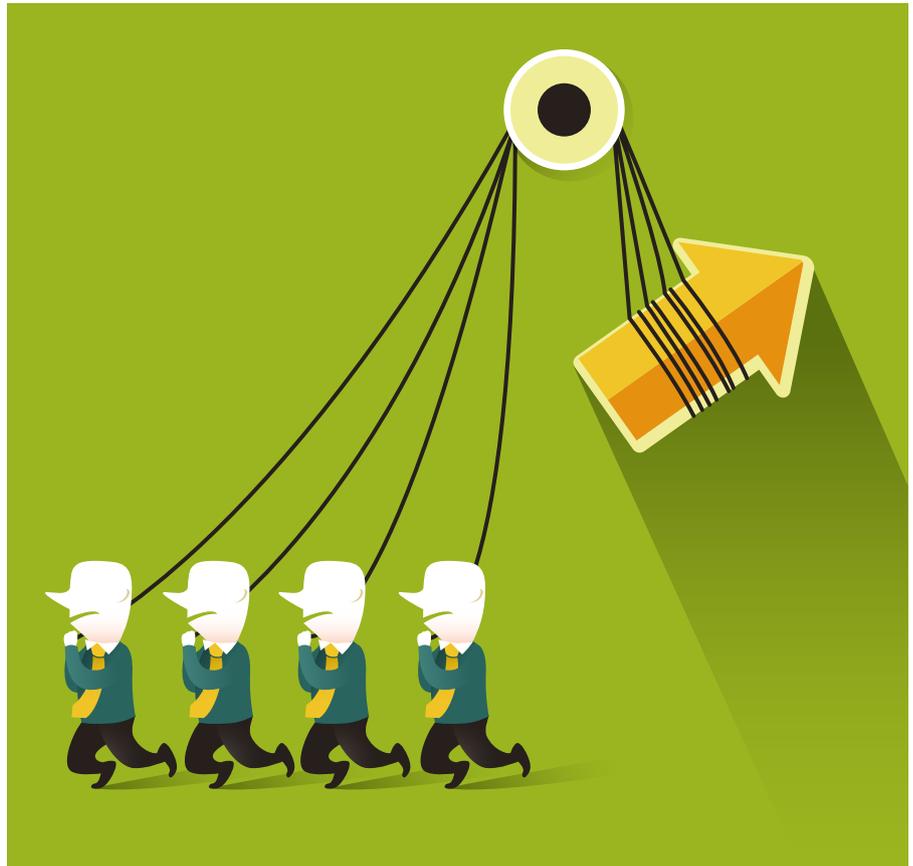
A specific issue of knowledge integration that is highlighted from a design perspective is whether design is being integrated as a function, or itself an agent of integration; in other words whether knowledge integration takes place of or by design.

First, part of design management is the idea of **design as integrated** into the activities of the organization; integration of design. From a mainstream conception of the firm as a technical/economic optimization problem, design then needs to be added to the existing set of

activities. Design is one activity along other activities, one department along other departments. How to structure, organize, place and integrate design with such a perspective is a recurring theme in design research, for example in Lisbeth Svengren's discussion of functional integration (Svengren, 1995). With integration of design, at its most fundamental we are adding a field of knowledge to be integrated. The problem possibly being that we hereby attempt to achieve flexibility through encompassing new knowledge (Grant, 1996), something Grant sees as unlikely to be successful unless the new knowledge is explicit and communication can be found through direction. The integrating mechanism of flexibility would most likely occur through reconfiguration (Grant 1996). Hence we have a paradoxical situation that may be difficult to resolve, and possibly a line of explaining the many reported difficulties in finding success through incorporating industrial design. The design function is placed along other functions and activities and becomes one knowledge area among other knowledge areas. It would represent an 'independent subsystem' (Simon, 1973; Grant, 1996), and design would have a 'horizontal' role. The focus would most likely be to employ and apply known knowledge. In principle, design(early) thinking in this situation does not alter or has any effect on management thinking. The design resource is added to the existing resources of the firm. If so we may arrive at an asymmetrical communication pattern (Johansson et al., 2003) where design need to legitimize itself vis-à-vis a possibly mainstream technical and economic interest and logic, leading to issues of relative importance of design compared

to other functions such as technical development of supply chain management. An investment in design needs to be evaluated in the same manner as any investment. The role of design is functional rather than strategic.

Second, a further step is to see design as an integrating activity, where design is the agent of change; integration by design. Design is the activity that links, or creates links between the activities of the firm. This perspective moves design more clearly into the realm of business strategy, as an overarching process logic that binds value creating and appropriating activities together. This seems to be a growing interest in design research, such as Svengren's (1995) conceptual integration, to the blurred lines between design and management with 'managing as designing' (Boland and Collopy, 2004). Design may, thus, be a higher order capability with a 'vertical' role and responsibility. As such design is a facilitator of knowledge integration processes, with responsibility for creating meaning and order throughout the process.



The technical envelope

An empirical illustration of integration of or by design may concern the attitude towards a technical level or envelope. While integration of design would most likely work within a set boundary of technology, apply that level of knowledge, and work within that envelope, it is easier to see integration by design as stretching that boundary, in order to meet the vision of the design, thus not accepting the given. Design here would be the leading activity, and any specific field of technological knowledge would represent a resource, or a subordinate capability, in the hierarchy (Grant, 1996a). Design would have a 'vertical' field of authority.

Throughout the history of Apple products there are numerous stories of when Steve Jobs refused to accept boundaries of existing technological fields of knowledge. When the iPhone was being developed, the front with one single glass surface was an integral part of the design

vision. The problem being that there was no glass material hard enough for the intended use, which risked stalling or stopping the entire project. True to his style, Steve Jobs phoned the CEO of Corning, flew over and convinced Corning to spend research time inventing the impossible. Within a month Corning had found an unused technology and the glass surface issue was solved. (Isaacson, 2011)

Another approach is illustrated in the example from the Swedish glass works Orrefors (Andersson, 2002). Orrefors recruited its first designer (or artist as they were called back then) in 1916 and has ever since been a company which has relied heavily on its designers for the development of new products with commercial potential, combining an artistic content with cost-efficiency consideration (whether manufacturing is completely manual or mechanical or combinations thereof). An often referred

to expression in the glass works when designers presented their sketches, sometimes drawing with chalk on the floor of the glassworks, was "it can't be done" ("de' gaur inte" in the local Swedish dialect) which was another way of saying "we have never done that". More or less everything in the company centred around the company's eight designers, recruited in order to be different from each other, expressing their individuality in their products, while working under the umbrella of the brand and its tradition. Combining commercial potential by pushing (technological) limits and stretching, but not breaking the tradition of the brand, was thus the essence of integrative design(ers) at Orrefors. The organizational level of where to find 'integration agents' may, as the Apple and the Orrefors examples show, vary.

This is consistent with Grant's (1996a) notion that the hierarchy of integration

is not to be confused with the administrative one of authority and control, and that the two hierarchies, in most organizations, do not correspond closely with each other.

Discussion

By exploring design management with a perspective of knowledge integration, we have elaborated on the scope of what knowledge to be integrated. We have identified a managerial issue that formally encompasses both the material and the immaterial (*Hodder, 1991*), the rational and the 'irrational', use value and user value, functional and symbolic value (*Ravasi and Rindova, 2008*); encompassing the poetry and plumbing of management (*March and Weil, 2005*). Some of the world's most highly valued companies, such as Apple or BMW, are undoubtedly 'design-intensive' firms (*Verganti, 2008*), building their success on a combination of rational problem-solving and meaning creation, of technology and meaning creation into product epiphanies (*Norman and Verganti, 2014*). Whether this combinative capability (*Kogut and Zander, 1992*) is called industrial design, design thinking or design management or something else is in a way secondary. We have here sought to explore some consequences of introducing knowledge integration into the design management discourse, specifically what the consequences may be of knowledge integration of or by design.

Design knowledge represents at its most basic a distinct set of resources. The employment of these resources requires distinct operational capabilities, and the integration of which may require higher order capabilities. The 'designer' uses the input of the resources of knowledge content through the capability of process knowledge to 'design' things and processes as output.

With this perspective, design is inherently integrative, bridging the needs, desires and self-perceptions of the user, and the resources and capabilities of the

firm. Design, in content and process, represents an identifiable and distinct resource and/ or capability for the firm. The placement of industrial design in a hierarchy of capabilities (*Grant, 1996a*) is in fact a critical managerial issue, indicative of whether the integration is seen as integration **of** or **by** industrial design.

Conclusions

First, from a knowledge perspective, design management may be reformulated: design management includes the capability to integrate specialized, distributed and heterogeneous knowledge bases.

Second, when studying integration of design through the lens of knowledge integration what stands out is the increased scope of what to integrate. In order for the design process to provide improvement of the existing situation the process needs to bridge needs as well as meaning.

Third, all of the three characteristics of knowledge integration – scope, efficiency and flexibility – indicate some difficulties; regarding the efficiency of integration, partially because of communication issues; the scope of what to integrate may move beyond the point of diminishing relevance; and flexibility of integration may be slow partially because of the tacit nature of design knowledge and practice. However, following the argumentation regarding scope by Grant, the broader scope of industrial design also carries the potential for creating and sustaining competitive advantage. Great potential coupled with great difficulties.

Fourth, the location of design in Grant's hierarchy of capabilities may help identify critical managerial issues, indicative of whether the integration is seen as integration **OF** or **BY** industrial design. Integration **OF** design indicates that design (with its distinct capabilities) is placed alongside other functions of the firm, and thus could be described as extending the horizontal dimension of organizational capabilities. This calls for efficient integrative capabilities at a higher level; integration is not intrinsic to the design field itself. Integration **BY**

design, on the other hand, refers to the vertical dimension in a hierarchy of capabilities. Design (thinking) – spanning the economic/technological and the socio-cultural – permeates the organization and thus becomes, or constitutes, an integrative capability in itself, wherever its agent(s) reside. If knowledge integration takes place **BY** design, then design is an integrative agent and design becomes part of strategic management.

Managerial implications

To outline some managerial implications, we would first emphasize the knowledge integration aspects of design management. Design management taken seriously means bridging between fields of expertise that might at a glance seem difficult to reconcile.

This bridging will depend on our ability to overcome self-perceptions and identities. If we allow identities of 'rational efficiency' and 'creative artistry' to be left separated or in non-productive conflict, the emergence of a base for communication, the common language, may be impaired. While maintaining experts' specialization, the creation of common language becomes a critical management intervention.

We have suggested two principle approaches to the integration issue: integration **OF** design and integration **BY** design. The more the firm is balancing the 'rationality' vs the 'artistry', the more integration will likely be **BY** design. Design becomes management and as overarching principle becomes strategic management.

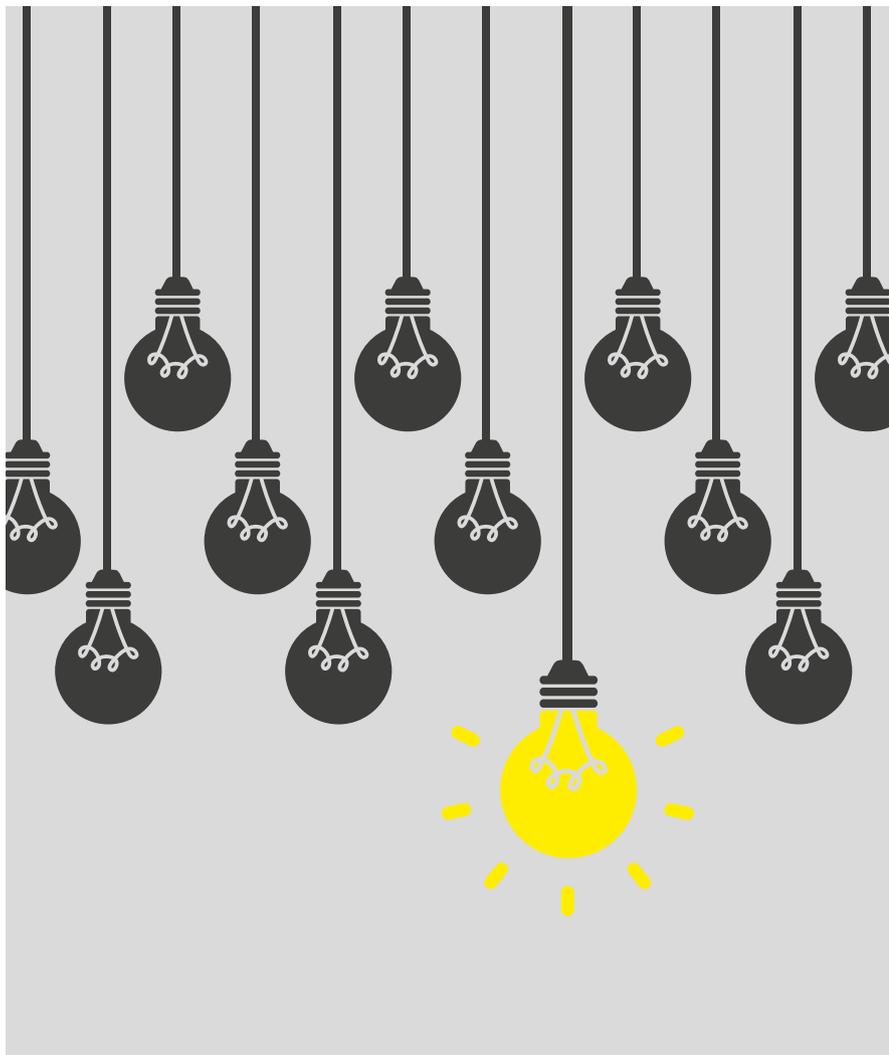
And thereby we have gone full circle and have returned to Simon's original thoughts on design: management is design. To design a productive as well as meaningful common ground for integrating knowledge and expertise.

Design is a capability, not a function. ■

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Design-driven place innovation in the Arctic Circle

Unique research strengthens the tourism in northern Sweden. The project “Place Innovation in Swedish Lapland”, aims to develop tools and knowledge in the subject. One prioritised area is Sweden’s Arctic Circle region.

By **Helena Karlberg**

“**PLACE INNOVATION IN SWEDISH LAPLAND**” is run by Luleå University of Technology and SVID and cooperates with researchers, the business sector and the community. In February a workshop was held in Jokkmokk. Discussions included how place innovation could raise the entire Arctic Circle region in Sweden into an international tourist destination. Forty people took part from both private companies and municipalities and tourism destination companies. No fewer than 21 concepts – ranging from a physical gateway, photo services and culinary experiences to various types of nature-based activities – were carved out. The texts of a children’s book and a poetry book were also created to market the Arctic region.

“An incredible number of concrete ideas emerged which can really raise visitors’ experience of the Arctic Circle region”, comments Malin Lindberg, researcher at Luleå University of Technology and project manager of “Place Innovation in Swedish Lapland”. “For example, the books can inspire visitors and residents, businesses and decision makers to make the most of the region’s potential as a tourist destination.”

An international-class tourist destination

“Place Innovation in Swedish Lapland” explores how places can be developed via an innovative combination of physical configuration, content and marketing in order to achieve a combined attractiveness. All the destination companies in the region are participating in the project, as are about a dozen companies in the tourism industry, including Treehotel and Jockfall Turist & Konferens AB. So, too, are several design and communication agencies, innovation researchers at Luleå University of Technology, all the municipalities of Sweden’s Norrbotten province plus Skellefteå and Sorsele municipalities in Västerbotten province.

“The project is interesting to me but also to our municipality”, says Stig Kerttu, business development manager at Övertorneå municipality. “We get the opportunity to raise interesting discussions about concrete places. I’m glad we’ve launched this dialogue about the Arctic Circle. I hope that here in Norrbotten we can jointly develop our Arctic Circle region into an international-class tourist destination. It can become at least as

well known as Icehotel and Treehotel. Previously I took part in the educational programme ‘Time to Redesign Norrbotten’. It helped to open my eyes to the great opportunities we have in our region.”

Unique in its way

“Time to Redesign Norrbotten” is run by LTU Business and focuses on making the municipalities more attractive and thereby stemming business closures and population exodus. The programme is one of several sources of inspiration for the current “Place Innovation in Swedish Lapland” but is unique in its way. Previous innovation research has highlighted the importance of place with regard to the geographical “clustering” of innovation-promoting actors and activities, for example with the aid of “place-based innovation” – a concept based on the assumption that unique geographical regions contain great innovative potentials. However, innovation has seldom been explored with regard to the innovative development and formation of geographical places, particularly not in a way that weaves together the perspectives of the community, business sector and local residents.

Polar doughnuts with lingonberry jam

The concepts developed during the workshop in Jokkmokk included several about some kind of gateway clearly showing travellers when they had entered the Arctic Circle region. The gateway could be a light installation or bridge with various functions, such as combining the benefit of having a snowmobile, skiing and hiking bridge with a well-designed appearance. At the gateway there could be an automated machine that prints out an “Arctic Circle certificate” and a camera that takes a photo of you as you pass by. The conceptual suggestions also included many nature-based activities, such as “Seven Circles” inspired by “Seven Summits” (the highest mountain tops on the seven continents) and Greenland’s “Arctic Circle Trail”. “Seven Circles” would encourage visitors to hike, run, cycle, ride a horse or take a dog sled ride along the entire Arctic Circle in Sweden.

Many people liked the idea of listing the stories that already

” Local ingredients such as Arctic char, ptarmigan, cloudberry and coffee cheese could be marketed as Arctic Circle food. (...) And why not create a polar pizza or a polar doughnut with lingonberry jam?”

exist about the Arctic Circle in Sweden. These could inspire new stories. It is hoped that the texts of both the children’s book and the poetry book that were created during the workshop will inspire visitors and residents, businesses and decision makers to make the most of the region’s potential as a tourist destination.

“Get a Taste of the Arctic Circle” was yet another idea that was discussed. Local ingredients such as Arctic char, ptarmigan, cloudberry and coffee cheese (pieces of leipäjuusto cheese placed in hot coffee) could be marketed as Arctic Circle food. They could be sold in a mountaineering kit. And why not create a polar pizza or a polar doughnut with lingonberry jam?

Experiences that are out of the ordinary

During the workshop the discussions about concepts were interwoven with inspiring lectures by such speakers as Kai Piippo, Head design at ÅF Lightning, and award-winning architect Mats Winsa. Both men have worked with various projects along the Arctic Circle. The day also included a visit to a new place innovation in Jokkmokk: a hotel room for visitors who want to experience something out of the ordinary. The room is in the form of a snowball and was built by Cecilia Lundin, who runs Jokkmokk’s youth hostel and the eco-tourism company Natu-Life. For many years she has used snow as a building material, including for igloos.

“The room is highly sought after. It creates good publicity for the youth hostel, my eco-tourism company and all of Jokkmokk municipality,” she says. “It feels exciting and interesting to work with the Arctic Circle perspective. I’m planning more fun snow projects in future that are slightly larger. Then I will try to include the Arctic Circle theme.”

Strong power of attraction

Raising up the Arctic Circle into a common tourist destination in “Place Innovation in Swedish Lapland” has been a wish expressed by the participants in the development and research project. The Arctic Circle has a strong power of attraction but few actors have made the most of its potential.

“Now we’ve taken a first step,” says Malin Lindberg, researcher at Luleå University of Technology. “The Arctic Circle is an important piece of the puzzle in the whole experience of Lapland. And the project is a good way to demonstrate the social value of place innovation.” ■



Facts

Place innovation

The concept of place innovation includes three aspects:

Physical configuration / Content / Marketing

Place innovation deals with the innovative development of destinations, cities, municipalities and regions. Starting with the conditions prevailing in a specific location, attractiveness is created so that more people want to live, work, visit and invest there. In order for the unique identity of a place to be identified and effectively conveyed to the outside world, a cohesive experience of the place is necessary. The greatest success is achieved if a common theme is created in the location’s configuration and content. All the events as well as municipal, commercial and volunteer services, including marketing, should contain the same central theme. This makes it possible to create attractive environments that are socially, economically and environmentally sustainable.

“Place Innovation in Swedish Lapland” is run by Luleå University of Technology in collaboration with SVID (the Swedish Industrial Design Foundation) and is funded by BFUF (the R&D Fund of the Swedish Tourism & Hospitality Industry). The aim of the project is to develop practical tools and theoretical knowledge about place innovation for the tourism industry in Swedish Lapland. The method can be used to develop communities in many different places and is now being spread throughout Sweden via lectures/workshops.

The municipality's motto? "We design life"

Design, innovation, entrepreneurship. Those are the watchwords of the Danish municipality Kolding, where innovation characterises everything from nursery school and care of the elderly to university and the business sector.

By **Lena Lidberg**



KOLDING IS LOCATED in southern Denmark on the east coast of Jutland and is the country's seventh biggest city. The municipality forms part of what is called Triangle Region Denmark, a geographical area that is usually described as Denmark's production centre.

The number of residents is just over 90,000 but the goal is to increase that figure to 100,000 in the next six years. That is one part of Kolding's vision for the years 2012 to 2022.

The vision has been adopted to promote growth and development and to strengthen the municipality's international competitiveness. The work is focused on four main areas: innovative ability and design, internationalisation and export, skills provision and effective entrepreneurship.

"The municipality has chosen to become a design-driven community, where design-driven innovation will be the big force for development," explains Tommy Langhoff, CEO of the municipal business development company Business Kolding,

which has 25 employees. "We regard design as the key to all growth and to creating an inclusive society. Our motto is 'We design life.'" He was one of the speakers at SVID's Mission: User conference in Stockholm in March and his presentation included a description of Business Kolding's role as an umbrella organisation.

One of the company's tasks is to bring together companies, public-sector organisations, the educational system and other actors in order to get everyone to work towards the same goals. The aim includes to increase the number of enterprises that are actively using design as an innovation method and business model.

"The idea is that every school, institution and business should consider what design is and how it can make a difference for them", says Tommy Langhoff. "The word itself can be a challenge, so sometimes we use 'development' rather than 'design'."

“The idea is that every school, institution and business should consider what design is and how it can make a difference for them”

“Design can be about both the business area of product design and about the skill of applying design processes. We regard the process itself as an intelligent business development method based on customer insights.”

Involved citizens

One important aspect is to make the vision visible throughout society and to make municipal residents participatory in the design work. Even at the nursery school stage, the children’s creativity and design approach is encouraged; Kolding has an open nursery school where the children themselves can help to design their environment. The results include small workshops and a room filled with balls, swings and climbing ropes.

Similarly, there are design ventures that clearly take into account the needs of elderly residents. At Vonsild Have Plejecenter, which specialises in patients with dementia, both the staff and the residents have become involved.

“Everyone is proud of being allowed to take part in the process and feels like a designer,” Langhoff says.

The results include a small spa that is now at the centre and repeat visits by companion dogs. The floor has sensors that can indicate on a computer if someone has fallen. The centre also has an innovative business model. This is the first Danish old people’s home to be financed by both public and private-sector funding.

In the longer term Kolding wants to develop a “Living Design Lab”, which will be a hub for public-private partnership and innovation.

“We want to find new ways to develop care services,” Langhoff says. Every year he and his colleagues at Business Kolding visit about 800 companies to gain insight into their development needs.

The team is supported by a municipal design secretariat, which includes Europe’s first municipally employed design manager (Ulrik Jungersen). The secretariat is home to the House of Design business incubator, which provides access to design managers, and the House of Innovation, which provides access to innovation managers, premises, advice, courses, toolboxes, mentors and networks.

The third-level educational institution Design School Kolding contributes design research and more than 1,000 students, and each year the municipality organises design competitions and an international design week.

“Of course people can ask why a municipality should work with design,” Langhoff says. “Our answer is that we want to



Foto: Helena Karlberg

Kolding in brief:

In the Danish municipality Kolding, design is used as a support in most areas of activity: to develop municipal services and offerings, to develop the region’s businesses, and to develop the creative and cultural industries.

The municipality’s motto is “We design life”. This approach manifests itself in everything from clear signage systems to how schools and old age homes are designed in collaboration with the citizens.

More information:

www.businesskolding.dk, www.kolding.dk

create more than 3,000 new jobs and be on Denmark’s top ten list in terms of growth. We have limited resources but we have desire to create innovation, welfare and efficiency by taking the creative route.

“At the same time we want our municipal activities to be developed side by side with the residents and, for example, that the schools will be a more open part of society.”

Design thinking across the municipality

The methodical design programmes are arousing interest both in Denmark and abroad. Many study visits are made by both companies and public-sector organisations.

At the end of October last year, SVID organised a study visit to Kolding in cooperation with the Support Association for SVID.

“It was very impressive to follow how the design approach has become anchored within the whole community,” says Helena Karlberg, who organised the trip and who works as Program Manager Destination at SVID. “Now it will be exciting to see which municipality in Sweden will be the first to go in this direction.” ■

Service design will make Boxholm healthier

Depressions, burnouts and illnesses related to psychological problems... Throughout Sweden many people feel psychologically unwell. Can society help to improve this situation? In the small town of Boxholm in Östergötland province a new model based on service design and a high level of community involvement is being explored.

by Emma Patel



Photo: Jon Engström

“**VÄLMÅENDE BOXHOLM**” is part of the Swedish Association of Local Authorities and Regions (SALAR)’s initiative called Flippen, a national venture focusing on innovation at district health care centres. The aim is to support a number of these centres so they can develop their activities and become role models for others.

“Originally SALAR wanted to involve a health care centre from each health care district. Lots were drawn and Boxholm was chosen to represent the southeast health care district in the Flippen project,” explains **Alexandra White**, coordinator for Healthy Boxholm, who is supported in her work by **Jon Engström**, in-house researcher at SVID.

“Lars Karlsson, manager of the health care centre in Boxholm, described the problems, which have clear links to psychological wellbeing,” Engström explains. “I proposed a model whereby the health care centre’s role is changed from reactively treating people who had become ill to also coordinating various health-improvement initiatives. In the work we combine community-based action research with service design. I believe this is well suited to Boxholm as a locality.”

Boxholm is a small municipality and a former mill town with a strong community spirit. Residents are highly involved and many of them have local roots going back generations. The average age is high. There is no college or university in the municipality, so the education level is relatively low compared with other municipalities.

“You are born in Boxholm and you die in Boxholm,” Alexandra White says. “Young people who stay here have quite a low level of education and the ones who go on to get education in other parts of Sweden rarely move back, which increases the average age. At the same time the birth rate is fairly high, which is why the municipality is not dying out.”

More actors in society

Boxholm is a fairly conservative municipality with a classic division in which the men work in industry and the women work for the municipality. Although these two activities are run separately, they are still strongly linked because the municipality is so small. Neither the municipality nor the primary health care system is known for being innovative but the district health care centre has a development-oriented manager who really wants to invest for the future, think in new ways and above all try to understand what residents want.

“After having reviewed the statistics I realised there is a fair amount of psychological ill health in our municipality, mainly among middle-aged women,” **Lars Karlsson** says. “This is a problem that the district health care centre cannot deal with by itself. In order to stop this occurring and help these women, we need help from additional actors in the community. We must understand why this situation has developed so we can find sustainable solutions.”

” ... we need help from additional actors in the community. **We must understand why this situation has developed so we can find sustainable solutions**”

SALAR realised that this situation was not specific to Boxholm but was also a challenge that many other municipalities are also struggling with. SALAR therefore asked Karlsson to involve more community actors and to actively begin working with the issue under the project name of Healthy Boxholm. Alexandra White was employed on a half-time basis to coordinate the initiative.

“I was introduced to service design when I was in Övertorneå, which is also involved in the Flippen initiative,” Karlsson says. “Service design is a good and clear method, which uses many examples and is therefore easily grasped and accepted. It is structured innovative thinking with a lot of heart.”

In all service design the focus is on the clients and the employees. Using in-depth interviews and observations, the project leaders try to understand clients’ and employees’ needs at a deep level. Based on these insights, needs-based innovations are implemented and then tested with clients and employees and adjusted until a new service, activity or community emerges. The method is based on involving the residents so that the people who will be on the receiving end of the solutions help to co-create them. **Sara Tunheden** and **Annette Olovborn** of the design agency Transformator Design were brought in to help Boxholm get started with this new development method.

“I really believe that service design is a good method for solving social challenges and that it can help municipalities prioritise correctly and get closer to their residents,” Tunheden says. Lars Karlsson agrees:

“Even if we have to own the knowledge, it’s important to bring in outside help in the beginning. This is a new way of working and we can’t do it all by ourselves. But the people who train us not only have to be experts in the method – they must also be skilled teachers. It’s also important that someone is given the time to coordinate an initiative like this one.”

Karlsson works mainly with finding key individuals in Boxholm and explaining why the initiative is important and why more community actors must become involved than just the district health care centre. These key individuals then help to spread the initiative further. In this way a grass roots movement gradually emerges. Alexandra White has the task of coordinating the initiative, communicating what is being done and explaining the resulting benefit in the hope that even more people will become involved.

“I organise events like the general meetings,” she says. “The



Photo: Jon Engström

Alexandra White leading and coordinating the work on living conditions in Boxholm.

aim of these is to enable various functions within the community to meet. Just having them sit in the same room and talk with each other is quite new even though their activities affect each other.”

Sara Tunheden and Anette Olovborn functioned as method coaches during the training period.

“We divided the participants into groups based on various life situations”, Olovborn explains. “For example: What does a normal day in Boxholm look like if you are young? Middle-aged? Retired? After we had worked through the various tools of service design methodology, we then encouraged the participants to go out into Boxholm and speak with local residents.”

“At first it was a bit tense but quite soon the tension went away,” White adds. “It’s really rewarding and interesting to talk with the people who live here. It’s so much more heart-based than doing surveys.”

Boxholm will continue to work with service design and the Healthy Boxholm initiative but in future without any expert assistance.

“Now we’re facing the big challenge – to continue the initiative,” Lars Karlsson says. “It’s a continual learning process. To achieve a healthy Boxholm we must continue our work with resident-centred development and create even greater engagement.”

“There’s a huge amount of willingness and many people feel it’s terrific that we’re working to bring together all the community functions and together create a better Boxholm but it’s hard to get everyone to attend meetings just on the practical level,” Alexandra White adds. “We try to meet once a month but don’t always succeed. The last general meeting was can-

celled because too few people registered. The meeting before that, 150 people were invited and just over 30 came but that was still okay. It’s important to persist and not give up.”

“The big challenge is really not to start working with service design but to include a resident-centred approach as a natural part of everyday activities,” explains Jon Engström. “Often a lot is based on volunteer involvement, so it must feel rewarding to everyone who is involved.”

“Achieving a ‘Healthy Boxholm’ will always take time but it must be allowed to do so,” Lars Karlsson adds. “Psychological ill-health is complex and those of us here at the district health care centre cannot solve or prevent the problems ourselves. We must dare to ask other organisations to help without stepping on anyone’s toes.”

Alexandra White says the team is just developing Boxholm’s first resident-centred service, although so far only at the concept level. The service is called “Lånekompis” (Borrow-a-Friend) and is based on the opportunity to book time with a friend via the library.

“Despite or perhaps because of the strong sense of fellowship within the community, there is also clear outsidership here,” she says. “It’s not always easy to be different.” The Borrow-a-Friend concept aims to lessen this outsidership by getting everyone who feels lonely or might otherwise not have met to share their experiences.

“It’s one small step in a difficult problem,” White adds. “But it feels exciting. We hope it will be one long-term way to create a resident-centred community.” ■

Emma Patel Communications Manager at Transformator Design.

Column

I'm coming back, Pippi!

OVER THE PAST TEN YEARS I've been passionate about services and design, in various workplaces, various forms, various ways. Yet all in the same way. Since the start of this year I have been working as head of design at a digital services design agency. Services are everywhere and the best ones can be those we don't even notice, ones that just lead us through a stage of our lives without creaking or chafing. Or they create magic right there in the midst of everyday life. In my world it's hard to see how we develop services without understanding the power of using design, which weaves together the most important innovation forces: the users and the employees who provide the services.

There are countless briefs to implement, fantastic and less fantastic services to further develop with a focus on the users and the service providers – but in most cases the clients do not know this. The big challenge is therefore to get as many people as possible to realise what potential there is in using a design-driven approach. The interfaces where users and service providers meet exist in digital and analogue form, and the design process is what creates the magic at the point where they meet, because although some briefs can appear small or insignificant in everyday life, for the ordinary person they might mean the difference between chafing and magic.

“Pippi, we're going to another theatre now, but we'll come back.”

Pippi looks at the three-and-a-half-year-old child and says: “Do that, I'll wait here for you.”

It is a summer day and I'm in Småland at Astrid Lindgren's World with my daughter. The place is full of children who have just seen the performance about Pippi Longstocking. Pippi is parading around in the garden outside her house and a large flock of children who all want to hug her are following in her footsteps. And there. Right among all the boisterous children, all the longing children, Pippi succeed-

Eva-Karin Anderman Head of design, Usify and former editor of the Swedish Design Research Journal.

ed in creating an event that gave my mother goosebumps when she focused on a little three-and-a-half-year-old and her reality. Magical.

In Sweden today, masses of businesses and masses of development still remain to be helped to create magic in everyday life, but to a large extent the answers that many of them seek are the same answers that worked before. This approach no longer serves, not for the users and not for the employees who provide the services. We must dare to lead the way while uncertain; we must dare to create together; we must see new power relationships be developed, and we

“Services are everywhere and the best ones can be those we don't even notice, ones that just lead us through a stage of our lives without creaking or chafing.”

must dare to realise that we do not always know what the answer is before we have asked the right question.

Magic or not – whether the user is a three-and-a-half-year-old, a parent with neuropsychiatric functional impairments, a patient with breast cancer or an organisation that wants to understand its users better, design and services are central concepts in everyday life for us all. ■



Photo: Eva-Karin Anderman



Using an Action Research Approach to Embed Service Design in a Higher Education Institution

Universities suffer from tired structures, heavy bureaucracy and little incentives for innovative approaches. Can Design Thinking and Service Design help create a more innovative culture?

ABSTRACT

Design Thinking can address the political and cultural divides in higher education and improve the focus on student experience. The challenge is reshaping a traditional organisation into a more modern one and at the same time creating an environment that is favourable towards change brought about by design-led thinking.

In one higher education institution, almost two years into the journey and despite some challenges along the way, Ser-

vice Design methods are demonstrating their capacity to change the processes and procedures that support the delivery of student services in higher education.

An action research approach is currently being used to assess how the tools of Design Thinking are applied to real organisational problems and the consequences of design-led action. This research introduces a new set of tools and techniques to an organisation and analyses the effects of this fresh approach on the organisation via a number of

action research cycles. There are many stages on the road to introduce Design Thinking as a bottom-up approach to changing an organisation into a more innovative, progressive, efficient and user-centred one.

Introduction

Cork Institute of Technology (CIT) is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 15,000

” The collaborative process of co-design immerses participants in new ways of thinking and encourages prototyping and taking risks (...)

registered students. CIT, like many higher education institutions, faces many challenges that come with the day-to-day running of a large organisation. Bringing cross-functional teams together to define problems, brainstorm and design solutions is not always an easy task because of the academic calendar and its cycles of demanding administrative processing. In higher education institutions, things happen because “we have always done it this way” and it can be difficult to introduce a new approach to solving problems.

Service Design is an approach that CIT are investigating to foster creativity among existing employees and teams by allowing more participation in co-creation and co-design workshops. Service Design can help to examine the underlying causes of many existing process bottlenecks which are often a symptom of poor communication, information silos and manual paper-based tasks. Service Design can also help to tackle some of the more traditional barriers to change such as top-down support, complex processes and risk aversion.

As indicated by Parker and Parker (2007) there is not much incentive to adopt innovative approaches in the public sector and few managers are motivated to keep up best practice or make savings. It can be argued that many of the problems that exist in public sector organisations are associated with their tiered structure, bureaucratic nature and management style (Basadur, 2004; Claver et al., 1999) which leads to inaction, rigid methods and a lack of new ideas. Service Design offers the potential to address these problems and this paper seeks to articulate the value of a design-led approach to innovation. Service Design can overcome existing barriers by esta-

blishing trust and building relationships, encouraging a culture of openness and developing a shared understanding of the current situation (Yee et al., 2015). The collaborative process of co-design immerses participants in new ways of thinking and encourages prototyping, taking risks, trying out ideas and making mistakes. Experimentation and failure are welcome in the design process.

At present, in the public sector, Bailey et al., (2014) have found that a great deal of Service Design happens without any professional or practical design input, which is what needs addressing. Some examples of how Design Thinking has been used to solve problems in the public sector include Lewisham Council where a learn-by-doing approach was used and front-line staff were equipped with tools and techniques in order to discover and fix real problems (Design Council, 2013). The cultural change was significant and proved that utilising co-design to engage staff can make them more empathetic with customers. The Alberta CoLab are a team of public servants striving to promote innovation inside a large public sector organisation, Canada’s Department of Energy, and believe that by demonstrating to subordinates about what to do and why, will eventually be a means to overcome bureaucracy (Ryan, 2016). Significantly one that has to be mentioned, as it was the inspiration for research at CIT, is the JISC Enrolment Project in conjunction with University of Derby. They used a Service Design approach to improve the student experience from pre-entry to ‘readiness for learning’. Baranova et al., (2010) discovered that rather than assuming they knew what the student wanted, they ‘actively sought their input as end-user designers and co-producers of their own student experience’.

The aim of this research as part of a larger Professional Doctorate is to assess if Design Thinking can be used as an approach to analyse and improve services at each stage of the student lifecycle and embed this approach as a long-term sustainable change enabler in the higher education service system.

The action research cycles documented in this paper aim to answer the following questions:

1. How can Design Thinking influence existing culture?
2. How can leadership support, or hinder, the design process as a new way of working?
3. In what ways can Service Design tools and techniques help an organisation be collaborative and innovative?

Theoretical Framework

In any organisation, open conversation and communication can often be the essential small strides towards bigger change. Design Thinking can help organisations to innovate; enabling people to think outside the box and become more creative in solving everyday problems. The crux of this research is to discover how to embed a new way of thinking and doing while meeting resistance and challenges. In this paper some of the reasons behind this resistance are uncovered while trying to encourage people to collaborate towards a better student and staff experience and leave organisational politics to one side.

Design Thinking is a common set of design practices that applies across many disciplines including product design, industrial design, information design and of course service design. Design Thinking is an approach to problem solving that requires a natural sense of curiosity, discovery and questioning. It is human-centred and empathetic and the end-users are always involved in the design process. Service Design is a set of tools and techniques that may be appropriate in some design contexts. It is a different application of Design Thinking that

” The problem with Service Design seems to be the difficulty in selling it to the organisation and designers themselves find it difficult to explain what Service Design really is”

focuses on the customer experience of a service within an organisation. There is an area of overlap between Design Thinking and Service Design; both require thinking like a designer and translating ideas into reality.

In the context of this research, Design Thinking will be used to describe a general bottom-up approach to innovation and transformation with the goal of solving problems. Service Design will refer to the set of tools and techniques, such as Service Blueprinting and Customer Journey Mapping, which will help to solve those problems by making the services delivered more useful, usable, efficient and student-centred. There are a number of challenges with introducing a new methodology and Service Design does not happen in isolation. It involves changing mind-set, reframing problems, changing existing work practices, encouraging more collaborative cross-functional activities and ultimately cultivating a more human-centred creative culture.

Traditional improvement methodologies such as Lean, Systems Thinking and Nudge, are more focused on operational improvement while uniquely Service Design involves the user in any embedded innovation. Whicher et al (2013) indicate the high-level differences between these different methods where Service Design occurs at the 'interface with the user' and Lean and Co-production focus on more efficient operations. Snook (2012) emphasise the key differences as process driven versus experience driven. The involvement of the user in the design process is also a fundamental difference and Carr (2012) argues that Lean is too systematic and unfeeling, focused on eliminating waste and cutting disparity.

Fear of Design

The problem with Service Design seems

to be the difficulty in selling it to the organisation and designers themselves find it difficult to explain what Service Design really is. Brown (2009) observed that he spent far more time explaining and justifying to clients what design was rather than really doing it. Kimbell (2011) acknowledges that even those that support the application of Design Thinking have difficulty explaining it. Non-designers feel uncomfortable with the flexible non-linear approach that Service Design brings (Marino, 2011). Martin (2007) maintains that many business leaders find the lack of structure and predictable outcomes hard to deal with and they have difficulty understanding the language of design. The word design can often bring a sense of mystery to a process and the challenge then is to encourage employees not to be afraid of design and eliminate the perception that they have to be highly creative people to use design tools and techniques. Bailey (2012) questions whether a service designer is required to be design trained and argues that the tools and methods available are not unique to designers and most people can embrace them effectively.

Open to change

Akama and Prendiville (2013) articulate that co-designing is not just collaborating using a set of tools and techniques but about an openness to take-on all the influences, challenges, fears and risks that come with a change project in a culturally stuck organisation. They argue that design researchers have a responsibility to tell the 'swampy' (Schön, 1983) stories of what really happens when trying to change and design existing services. Indeed Akama (2009) points out that Service Design 'stories' do not document the complex realities and tend to oversimplify the human-centred and operational

issues that are forefront in undertaking any design project. Ultimately no new tool or technique can 'change the relationship between service providers and users' without considering processes, knock-on effects and outcomes (Maffei et al., 2013). Significantly Hartley (2005) recognises that the innovations which fail are just as important as those that succeed as they help us to understand how innovation is cultivated, supported and embedded. She also recognises that innovators or change leaders more often come from 'bottom-up' or 'sideways-in' rather than top-down perhaps as they are experiencing the failures and inefficiencies first-hand.

Culture: 'how we do things around here'

Much of the existing literature does not demonstrate how to entrench design tools within an organisation, where employees prefer the familiarity of their current way of doing things, even if that current approach lacks efficiency. Buchanan (2007) suggests that an organisation needs more than enthusiasm to embed design as a discipline of thinking and making. The tangible benefits will have to be clear to actors at all levels of the organisation if Design Thinking is here to stay. However, Gouillart (2014) posits the view that it is the compelling enthusiasm derived from using Design Thinking along with bottom-up and outside-in techniques, that motivates senior management to steer a different course.

Cooper et al., (2013) suggest that in order for design to be truly successful, it must focus on both process and outcomes and embedding design in any organisation requires an expansive approach that looks at the whole situation and includes a broad range of stakeholders. Lockwood et al., (2012) agree that an organisation needs to cultivate and encourage positivity and creativity by delegating the process of problem solving to a wide group of employees. Many authors have come across a silo approach where employees are not encouraged to think outside their own specific activities and

in order to change this, Design Thinking will need to 'permeate to the core' while encouraging initiative and risk-taking (Parker and Heapy, 2006; Wechsler, 2012). A number of authors contend that selecting the right people for a design activity is an important feature for success (Von Stamm, 2008; Matthews et al, 2012).

The term Design Thinking can sometimes create mystery and uncertainty, and rather than trying to sell Design Thinking as a new approach, the focus should be on the benefits it brings; the outcomes should speak for themselves. Human needs are fundamental to Design Thinking and these needs should drive innovation. Having the right people involved is essential, people who understand the need for change, and can be empathetic towards the users. This authors approach does not just concentrate on using design as a once-off change enabler but embedding design as a stepping stone towards real change.

Methodology

Service Design tools and methods are well aligned with qualitative research as both are holistic and creative processes that require intense contact within a real-life setting. The researcher is usually interested in analysing people's views, mind-sets and behaviours and the research tends to be subjective in nature. This research is collaborative rather than subjective as the researcher is jointly focused on fostering change with people across the institution.

Action research is a form of organisational learning as it is a process of problem solving that can help a group of employees to improve what they are doing or appreciate it in new ways (Patton, 2014). It is the ambition of this research that people that participate in an action research cycle will learn to question what they are doing, why they are doing it and think more systematically about daily functions and operations. Employees will learn new tools and methods to enable them to look at all aspects of their work within the organisation and become more innovative with

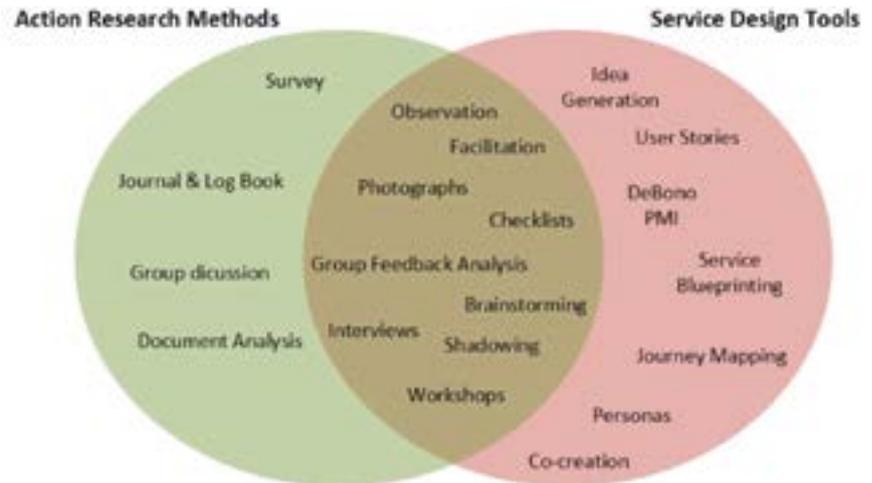


Figure 1:
Overlap of Action Research Methods and Service Design Tools

regard to changing 'how we do things around here', building a bridge between working and innovating (Brown and Duguid, 1991).

Developing one's own practice and the practice of the organisation that one is immersed in is the main focus of action research whilst gaining new knowledge (Candy, 2006). It looks to make collaborative change by means of participation and action. Traditional research is generally conducted from the outside while with action research the researcher is inside the situation and will have an influence on the outcomes. Costley et al., (2010) explain that as an insider, the researcher is in a unique position to study a situation or problem in depth but also has the insider knowledge which puts them in the crucial setting to investigate and make changes.

As this research involves solving existing problems, interventions and then making sense of the outcomes, abductive logic is most suitable as it allows for the generation of new knowledge, understanding and insight. Dorst (2010) maintains that when discussing Design Thinking, the basic reasoning pattern is abduction as the researcher is attempting to create value for others. Abductive logic is necessary for innovation to occur

where creative and intuitive thinkers can use their feeling and perception to deliver valuable outcomes. Charles Sander Peirce who coined the phrase abduction believed that new ideas did not come from traditional forms of logic and he posited that new ideas resulted from a thinker examining data. Brown (2009) concludes that designers use the tools of abductive reasoning to seek a balance between consistency and validity, between discovery and manipulation and between instinct and analytics.

For the purpose of this research paper, three action research cycles are documented to demonstrate how Service Design can influence positive outcomes which then leads to new knowledge and understanding of the consequences and challenges of embedding Design Thinking in an organisation of this kind. A variety of methods were used throughout this action research journey including document collection and analysis, participant observation, surveys, interviews and focus groups. The combination of these methods integrated with Service Design tools provides a powerful way to collect data. An example is that although focus groups may not tap into emotions (Krueger and Casey, 2008), using a tool such as customer journey mapping during a

focus group can help to empathise more with the user journey. In fact Whicher et al., (2013) highlight that Service Design tools allow better insights into customer behaviours, engages the users and provides a more human element to the action research. The diagram in figure one demonstrates the overlap between qualitative research methods and Service Design tools and techniques and although the two approaches are not on equal grounds, they do complement each other.

Findings

At CIT there are many disparate actors, systems and processes involved in service delivery and too often employees work in silos (Parker and Heapy, 2006; Wechsler, 2012) with little or no understanding of the personal impact of the student journey. Problems that exist include issues with data quality & timely availability, lack of online student self-service, isolated enterprise applications, and a disconnect between academic business process and the IT solutions needed to support them. Changing the culture of any organisation is a monumental task and at CIT this requires strong leadership and support along with a fresh approach and a novel original toolkit. An existing mind-set of “we have always done it this way” can hamper any new ideas if not handled in the right way. Employees are stretched to perform their daily activities which leaves little desire or time to experiment with new tools and prototype new ideas. The aspiration of this journey so far has been to evaluate how Design Thinking can be used to help solve internal issues that span several departments in CIT. Whether Service Design tools are exclusively used within an individual project or as part of a larger process, Design Thinking and in particular co-design has the potential to open up conversations. The exchange of knowledge between users of a service and the ‘makers’ of that service creates an opportunity to co-define the right problem or challenge in a collaborative way and make sure the outcome is

truly relevant. Co-design can enable this organisation to improve the efficiency and effectiveness of service operations while at the same time, delivering value to the end users; students and staff of the Institute.

Cycle 1: RECAP – Review and Enhancement of CIT’s Admissions Processes

The problem

Part-time students received no formal induction and an absence of process integration across the various college functions in providing an induction resulted in pain for all involved, in particular front-line employees and students, recognised by Martin (2009). The ‘service’ needed to be redesigned so it was simpler for students and employees alike.

Design of Study

RECAP was a six month pilot project at CIT which proved that Service Design as an approach can help to improve how we do business with regard to the services we provide to customers. Shifting mindset was a key objective of this cycle and demonstrating to the providers of a service, employees at CIT, how their cog and all the other cogs that are part of one cohesive process impact the student who should see a seamless series of touchpoints. The study was co-designed with Jean Mutton from the University of Derby based on their experience of using Service Design to improve the enrolment process for new students.

In preparation for September 2013, a broad range of staff (Cooper et al., 2013; Lockwood et al., 2012) that were involved with new part-time students were invited to co-design workshops to gather data and insights and map the current as-is process. The analysis was designed to be collaborative and inclusive and involve a wide range of staff including department managers, secretaries, and front-line staff from central student services. Part-time students were surveyed to ask them about their experience and then invited

to focus groups in order to contribute to the design process, as guided by Baranova et al., (2010). In fact one part-time student welcomed the chance: “thank you for the opportunity to give feedback, it is the first time I have been asked”.

Actions taken

The part-time student journey was mapped out which highlighted all the fail and wait points in the process and the touch-points were analysed using swim-lanes, all front and back stage operations were identified along with problems, opportunities and user needs. Evidence was gathered, ideas were brainstormed and interviews conducted with key stakeholders. The data was mostly qualitative and included surveys, artefacts, documents and interviews. Many unstructured interviews took place with participants such as the college caretakers who were often the first interaction for new part-time students when they arrived on campus. A number of CIT students were recruited as summer interns to help deliver some of the outcomes and actions.

Improvements included a new campus map which guided students to the right physical location while a QuickStart Guide was used as a step-by-step journey to become in class, ready-by-step journey, with links to online video instructions and who to contact at each stage. New students felt the guide was clear and concise: “we had no issues following the eight steps, it was very straight-forward and the videos were really helpful”. An in-class induction for new part-time students was delivered by student leaders where a Kick-Off @ CIT fold-out guide was handed out containing key calendar dates, contact details, library information and FAQ’s. An obvious efficiency was the reduction of queues at the part-time office by 50 per cent on the previous year; staff revealed “we were wondering if something was wrong as there were no huge queues or volumes of email from students”. Key services extended their opening hours until 7:00pm for the first three weeks of semester as suggested by part-time students.

Results

New tools were introduced to stakeholders and were well received and understood, demonstrating to participants that design is not to be feared (Marino, 2011). Initial interaction at workshops was slow but improved later during the Customer Journey Mapping and ideation workshops when users became more collaborative and focused on the common goal of a positive student experience. The innovative approach to break down barriers was, to engage these stakeholders to draw up a Service Blueprint, viewed entirely from the end-user perspective. The use of Service Design techniques, in particular Service Blueprinting, can support this service view and aid in innovating and transforming the student experience within higher education (Bitner et al., 2012).

As mentioned earlier, collaborative change became possible by means of participation and action as advised by Yee et al., (2015). Not only was the service for part-time students improved but both organisational and individual learning were facilitated by exposing the participants to new tools and techniques. A link between professional and personal learning was created which in turn leads to a positive attitude towards improvement. Workshop participants understood how Service Design tools on one project could be improved or altered for the next project. It was important to build on this momentum and provide suitable Service Design training to the eager participants.

Cycle 2: Service Design Master Class

The Problem

During the first cycle, it was understood that in order to embed Design Thinking within an organisation, the next step would be to get some willing supporters on board (Matthews et al., 2012; Von Stamm, 2008). Although many managers have various ways of delivering change and benefits to students, it is believed that in order to embed Design Thinking as a new method, then a number of de-

sign champions would be instrumental. These design champions would need to be trained to use new tools and techniques. It was deemed important to focus more on the staff delivering the services and improve the back-stage processes which in turn will improve the student experience.

Design of Study

Two brainstorming sessions were held with a number of stakeholders and interested parties in CIT to deliberate the proposed master class and choose the right tools to demonstrate to a new Service Design community on the day. The Service Design Master Class was advertised to a wide Cork community across a range of sectors but it mainly sought to educate a number of CIT employees in Service Design tools and techniques. Many unstructured interviews took place in order to recruit potential champions from different areas across the organisation and to ensure that those attending were interested and open to a new way of working. The workshop was designed with members of the SPIDER European project (2015) who offered their experience of delivering Service Design training workshops to public sector employees. It was clear that participants should not be overloaded at the workshop but get an introduction to a new approach. The design challenge decided on was the purchase of a take-away coffee, which was felt to be generic enough to be understood by a diverse range of people. It was also deemed important to get participants to head out on the streets of Cork to meet potential users of the service, gather data and insights that would then feed into their re-design. As such the venue chosen for the event was CIT Wandesford Quay Gallery which offered inspiring creative surroundings as well as a central location.

Actions taken

The workshop provided a suite of tools to the participants to allow them to exploit their own knowledge, experience and creative potential resulting in the ability to

create relevant, innovative and practical solutions in their own work. The event was a multi-disciplinary creative and collaborative process bringing together all people engaged with a common challenge as suggested in the literature by Brown (2009). The event was also an opportunity to bring ten Service Design experts and mentors together who provided guidance and led the 45 participants in the design challenge. Participants worked in teams to frame the problem, map the user journey, brainstorm ideas and evaluate a solution for a take-away coffee experience.

Results

After the workshop, attendees were surveyed to gather valuable feedback. Participants were asked to identify highlights, low-lights, and suggest ways for improvement to help embed Design Thinking as a way of improving 'how we do things around here'. One attendee described his experience: "I came in with an open-mind, I had no idea what it was going to be like but it has been an eye-opener, it teaches you to take a step back and question why you are doing something".

The aim of the master class was to build on the individual learnings of employees in cycle one and encourage more active participation in change across the Institute. Although there was a great buzz and excitement (Gouillart, 2014) during and after the master class, the gusto generated did not continue back at the office of many participants. Feedback gathered was very positive and it was clear that participants enjoyed the tools and the collaborative experience they brought. They wanted to learn more and contribute to solving problems that not only affected their own area. They liked how Service Design offered a solution to real-world problems. They understood more about how services overlap several departments and need to be designed to facilitate better user experience. They learned about design concepts and enjoyed hearing other people's insights and interpretation of the design brief.

” It is extremely important for the business owner to lead the change in parallel to the service designer facilitating the process of implementing it”

The wish of the researcher was that participants would take ideas and tools back to their day jobs with them to put them into practice, but the reality was very different. Once back in their offices, participants got caught up in the long list of operational duties that left little space for improvement and innovation (*Parker and Heapy, 2006; Wechsler, 2012*).

Cycle 3: RIO (Registration, Induction, Orientation)

The problem

The purpose of RIO was to review the Registration, Induction and Orientation (RIO) experience for all new students. It was an action research cycle that came about as a result of implementation of the first cycle, RECAP, which looked at introducing a better experience for new part-time students. The plan was to influence the organisers and planners (*Hartley, 2005*) and those delivering induction to new students to focus on the experience across the all various touchpoints irrespective of department ownership. It was important to improve cross-silo communication and create a vision of student experience. The ultimate goal was to use co-design methods to improve existing services by means of an iterative process of understanding the student context, observation, stakeholder analysis, building prototypes and designing a new experience as was previously demonstrated by public sector organisations such as Lewisham Council, Alberta CoLab and University of Derby.

Design of Study

In June 2014, a RIO working group was setup to plan, design and implement a consistent experience for all new

students and to review all communications and materials, both printed and online, for all students. The first thing that needed to happen was to organise a collaborative focus group to uncover what employees understood from each of the terms registration, induction and orientation. Brainstorming was used to determine what new students needed to know before they arrived, when they arrived and after they arrived, on campus. A further focus group was held to take that data from the first workshop and organise it into a sequence of events and logical groups, while coming up with new terms or labels and objectives of each category.

Actions taken

During the September 2014 registration, induction and orientation period, data was gathered, processes were observed and discussions took place. DeBono's 'Positive Minus Interesting' tool was used to analyse the September 2014 experience. All aspects of the registration, induction and orientation experience were examined including department talks, IT induction, walking tours and the registration process which included the processing of paper forms and production of CIT smartcards. Key staff members involved across the entire process were interviewed in order to understand their inputs and the expected outputs. It was not surprising to discover that each department had unique procedures and a culture of focusing on their part of the process. One administrator divulged “we try to communicate with them (new students) face-to-face or by phone, we don't trust them to read their emails” while another co-ordinator told how “new students might not check email

so we need to post information”. These findings suggested that the present service needed to be reorganised.

Results

The results and data were analysed and collated and revealed that whatever students needed to know, staff did not have a clear understanding of the existing process. Initially when the RIO working group first met, there was a lot of confusion due to a lack of communication across departments. As RIO was seen to overlap several departments, there was unclear ownership and the first meeting revealed frustration and inefficiency. It is extremely important for the business owner to lead the change in parallel to the service designer facilitating the process of implementing it. It became clear during this cycle that in order for change to stick, it is critical for the front-stage and back-stage staff to be completely engaged with the process. This is not an easy task and visibly employees are so burdened with their day-to-day job, they do not have time to consider broken processes. This is when the business owner or department manager must enable space and time for continuous improvement.

As mentioned by Akama and Prendiville (2013) it is important for design researchers to tell the real stories and the difficulties encountered on the ground. This cycle only reached the discover and define phases and it was obvious that while Service Design tools can open doors, no change could happen when the following barriers existed:

- No obvious process owner
- Lack of management engagement and support for the change
- A working group that lacked steering and direction
- Change of staff and key staff members leaving
- Political and cultural divides that remove focus from the student experience
- Lack of time and resources given to

design and improvement activities

- No incentive to improve the process
- Isolation of various processes & tasks within different departments
- No holistic view of all new students and their first experience

Discussion

The use of Service Design tools and techniques as an investigative approach to discovering, defining and resolving existing problems in higher education administration is in itself a contribution to knowledge. Investigating the practice of how things are done with a Service Design lens is a new approach in this institution and will form a novel way of identifying problems and challenges, the needs of those delivering and owning services, but primarily the requirements of those receiving services from the Institute. The problems being investigated are real-world problems that occur in every higher education institution across the world and the approach of practice-led research to solve real-world problems can lead to genuine change if given enough space.

Three action research cycles were documented and Service Design is having an impact in changing this organisation although that impact is slow and there are a number of limitations that need to be addressed. The change agent in this case was the researcher that was setting out to facilitate a change process using a number of tools and techniques. If the need for change only emanates from the researcher's practical experience and knowledge as opposed to the collective organisation's experience then a number of challenges ensue.

Limitations & Challenges

Can Design Thinking influence existing culture?

Existing Culture: Many authors including Tjendra (2013) tell you what you need to embed a design culture including top-down advocates, front-line employees who are empowered



An important Service Design tool is prototyping.

Photo: Jacek Barcikowski, Creative Commons

and fired-up, and a process champion who has a strong design motivation, but the discussion about how to do this in a higher education organisation is missing. The RECAP cycle struggled to embed a design culture and many of the changes did not stick when the following cycle of part-time registration came around. Although there was no major cultural change, the tools did allow for collaboration and innovation by delivering a number of quick-wins.

Silo Mentality: Mulgan (2007) proposes that 'high walls' in organisations divide people and departments and Snook (2014) identify that Service Design needs to deliver innovation across silos but is often prevented because of separate department strategies and budgets. It has conclusively been shown that organisation silos have a huge impact on change and are a constant stumbling block as iterated by (Von Stamm, 2008; Beckman & Barry, 2007). During cycle one, the ownership of the process was unclear as it intersected departments and this directly

resulted in poor student experience. Changing structures and ownership of services in an organisation can be politically difficult but the hope is that Service Design will influence departments delivering services to work together to focus on the end user. The aim was to move away from a silo-based approach to delivering services and to focus on the whole experience of students. In the short-term, this new methodology will help to deliver improvements in a new way but the aim of changing the culture and embedding a design process is long-term experiment.

Can leadership support, or hinder, the design process as a new way of working?

Getting management buy-in is

difficult: At CIT, the initial requirement for change came from employees who were frustrated with existing processes and the downstream inefficiencies they created. The key problem in higher education is that many managers are under

huge pressure to leap from one operational cycle to another with little time for iterative improvement in between. Most studies have emphasised Design Thinking as a tool to effect change but have not explained how Design Thinking can be used as a bottom-up approach to influence management thinking. Existing literature does not explain how to get senior management on board who have little or no experience in Design Thinking as a methodology.

Design Leadership: Miller & Moultrie (2013) insist that it is the design leader who needs to encourage all within the organisation to embrace the design process as a new way of 'how we do things around here'. Although CIT have a design leader as demonstrated in this paper, this leader is struggling to influence managers, free-up staff and create space for the design process because of a lack of resources, budget constraints and a focus on keeping the lights on.

Process Ownership: The researcher did not emphasise enough the importance of process ownership and as a result some of the actions and changes implemented did not stick when the following year came around. It is important for the researcher to allow the organisation to find its own answers rather than being the one with all the answers; this is essential for change to become embedded.

In what ways can Service Design tools and techniques help an organisation be collaborative and innovative?

Traditional Functional Organisations: The collaborative process of co-design immerses participants in new ways of thinking and encourages prototyping, taking risks, trying out ideas and making mistakes. Experimentation and failure are welcome in the design process. Matthews et al., (2012) use the term design interpreter as a necessary human force to inspire and blend opportunities across the organisation. The Service Design

Master Class was trying to change the traditional way of doing things, and it succeeded in creating conversations but not as many as could have been expected. A number of Service Design meet-ups were organised in the following months but participation was low.

No Space for Innovation: As highlighted in the literature review and identified by Design Council (2013) and Snook and Design Managers Australia (2014), change cannot happen if there is no space for design-led innovation. During all three cycles, a large amount of collective energy was generated but freeing up employees from their day-to-day duties is complex; this is the reality of Service Design implementation and another 'swampy' story (Schön, 1983).

Gathering support & momentum: Demonstrating Design Thinking tools in everyday situations can show employees how to explore their own capabilities to be innovative. There is little evidence of this in the higher education sector and this research is seeking to reveal to both employees and management how everyday problems create a domino effect resulting in inefficient services. During the first cycle, RECAP, it was the first time that Service Design tools were used in a collaborative workshop approach where stakeholders from across the organisation came together to try and solve a problem. This in itself was a big improvement and a change in the right direction.

Learning journey

This is a learning journey and a deep dive into Design Thinking for both the researcher and the organisation. The goal of internalising a new design-led culture in the organisation continues. Certainly Hartley (2005) recognises that iterating through cycles of action will help to better understand the reasons for failures but sometimes 'the organisation may be in inertia and not recognise the need to innovate or improve'. Although all three cycles made an impact in their

own way by bringing people together in a collaborative way, cycles two and three never delivered substantial change or impact because of numerous barriers. At the same time, the tools of Service Design were being experienced by the organisation and a few important champions and sponsors were uncovered. Leadership is essential and leaders need to be put in place that will actively pursue innovation and be open to new ways of working (Liedtka, 2011).

Service Design as a tool has the ability to help an organisation to achieve quick-wins while building a community of like-minded 'intrapreneurs' (Clay, 2013) along the way. There are many existing problems in organisations of this type that do not necessarily require large scale change but need a group of people to come together with the same goal in mind, which is defining the exact problem and then trying to solve that problem. The phrase "we have always done it this way" has come up more than once during this journey and one key aspect of this research will be to see how we can release those employees who are entrenched in the day-to-day firefighting and paper-pushing, in order to begin to deliver cumulative change. Furthermore this research will continue to investigate if Design Thinking can survive if it is only being practiced to solve short or medium term problems, and not a strategic focus of the organisation. In spite of that it is clear is that delivering quick-wins will help to deliver credibility to Design Thinking as a new tool. ■

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” Traditional improvement methodologies such as Lean, Systems Thinking and Nudge, are more focused on operational improvement while uniquely Service Design involves the user in any embedded innovation.”

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A card game for norm creativity

NOVA is a tool from Sweden's innovation agency Vinnova that help organisations become more norm creative. The initiative comes from four design researchers.

By Lena Lidberg

THE NOVA TOOLBOX was launched in February this year and is aimed at everyone who wants to develop accessible and inclusive innovations. The starting point is that there are still many products, services and environments that have been created with too narrow an understanding of users' needs. The result is restrictions on many people's everyday lives.

"The focus is on the norms and values that discriminate but the tool can be used in all sorts of innovation processes," explains NOVA's editor, Marcus Jahnke, a design researcher at SP Technical Research Institute of Sweden. "NOVA is intended to be a support, both to analyse the user's needs and to be able to transform the knowledge into innovative and value-creating solutions."

One of the co-authors is his research colleague Åsa Wikberg-Nilsson at Luleå University of Technology. In March they were both invited to SVID's conference called Mission: User to give a workshop on a more in-depth user perspective.

"The concept of norm creativity was coined by gender experts Rebecca Vinthagen and Lina Zavalia. What has now become NOVA began to be developed a couple of years ago during Vinnova's Diversity Lab project, which focused on norm-critical innovation," explains Åsa Wikberg-Nilsson.

Some of the users that have been involved from the start are the design agency Veryday, the clothing company Snickers Workwear, and the major Stockholm hospital, the Karolinska. The content is continually being developed together with the users of the tool.

During the workshop held at Mission: User some of the groups were given the task of designing a British pub that would be accessible to people who are functionally impaired. Some of the participants were tasked with developing a cordless screwdriver suitable for a broader group of users than strong carpenters. Others considered how the experience of mammography can be improved – regardless of gender.



The NOVA box includes 52 method cards inspired by classic card games. The cards then lead on to challenges and discussions about solutions.

Participants in one of the groups working on creating an inclusive British pub quickly noted that the building itself can often be an obstacle to someone who is functionally impaired. To some extent this can be improved by such measures as wheelchair ramps and better lighting for people who are visually impaired. The group also discussed what defines a British pub and how far various changes can be pushed without losing the pub's traditional core value. Is it a matter of keeping the dark wood, British accent, and a wide selection of beer? Or is it about developing the pub as a "public house", a social extension of the living room open to everyone?

"NOVA is a process that normally takes about six months to implement. Now you've tested a quick version in just over half an hour," concluded Marcus Jahnke when it was time to sum up.

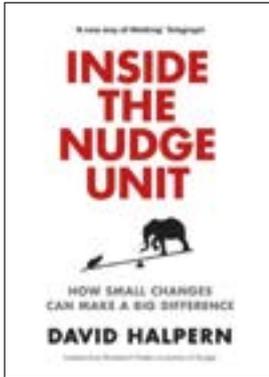
Åsa Wikberg-Nilsson said that the issue of inclusion versus exclusion extends across most areas of society.

"We see girls' clothing without pockets, automatic water taps that don't work with black skin, drugs that are used by women but are tested on men.... There are many examples and we want to show that all true innovation is about challenging all these norms." ■

"NOVA – Tools and methods for norm-creative innovation" was developed by researchers Mariana Alves (the Swedish Centre for Architecture and Design), Karin Ehrnberger (KTH Royal Institute of Technology), Åsa Wikberg-Nilsson (Luleå University of Technology) and Marcus Jahnke (SP Technical Research Institute of Sweden). The starting point of the material is legally prohibited grounds of discrimination such as gender, ethnicity and functional impairment. **More information: www.vinnova.se**



Book reviews



How small changes can make a big difference

“Nudging” is about building a more efficient welfare state by influencing the population’s behaviour. The changes are implemented after randomised tests of various solutions based on a knowledge of behavioural science. **Inside the Nudge Unit** by David Halpern is in many ways a factual book that tries to describe what nudging is but it also has an

exciting narrative framework. The book deals with the creation of the Behavioural Insight Team (BIT), which also came to be called the Nudge Unit.

The Behavioural Insight Team was linked directly to the British prime minister and after a while was located at 10 Downing Street – the prime minister’s official residence. So for everyone who enjoys the House of Cards series, the book offers an exciting but slightly calmer look into the work of what is perhaps one of the world’s most legendary government offices. We get to follow discussions about everything from fighting crime to increased establishment in the labour market and how to get more people to pay their back taxes on time.

The point of nudging is to use behavioural science knowledge to get people to do what they were planning to do anyway but had not got around to doing. For example, why don’t you register with the organ donation programme? Is the threshold just too high even though it only requires a few mouse clicks?

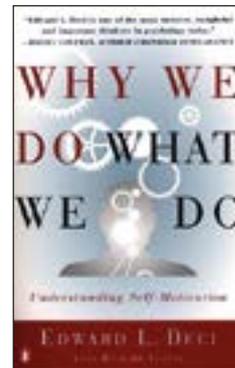
The book presents the framework EAST – Easy, Attract, Social, Timely. We are far more likely to do something if it is easy and involves as little hassle as possible. We are attracted to what captures our attention and what we perceive as being attractive. We want to do the same as other people and we are more easily influenced before a habit has become established. What is new is using these principles as a tool in the government’s toolbox – as a complement to legislation and economic measures. By understanding how people function, the government can drive social development more effectively. Much of the method presented in the book resembles the approaches in service design.

BIT works with behavioural research within a defined area and then use the EAST framework to develop a number of prototype solutions. It then tests the solutions in real-life contexts but in a randomised way. BIT therefore succeeds in producing hard data on the effects of proposed solutions. Here I believe

that the design world has quite a lot to learn. Imagine if behavioural science knowledge could in the future complement the multidisciplinary and co-creative work that often characterises a design process.

I would like to see this book be obligatory reading for everyone who works with development in any way! It is also very exciting reading. All in all, I warmly recommend this book!

Jonas Gumbel, SVID



Why we do what we do

Insight into people’s motivation and wellbeing is important to everyone who works with design. The book **Why We Do What We Do: Understanding Self-Motivation**, by Dr Ryan Deci deals with perhaps the most important theory about motivation: self-determination theory. In the 1980s Deci and his colleague Richard M. Ryan studied the differences between internal and external motivation.

Since then the theory has been developed and has become an established theory about motivation and wellbeing.

The authors question today’s society – the educational system, our work life and social life, which to a great extent focus on external rewards in the form of grades, bonuses and the hunt for status. Placing too much focus on external factors hinders our natural motivation and worsens our wellbeing. The curiosity and creativity we see in small children remain with us all our life but can be inhibited by how society, schooling and work life are designed.

Being engaged and being curious are characteristics that are part of our DNA. To get close to such positive forms of behaviour we should focus on satisfying individuals’ three basic needs: a sense of competence, closeness to other people, and a feeling of autonomy. For example, if we want children to continue to read and learn even after they have taken their exams, then we should ensure that these needs are met and that the children experience pleasure in the learning process. The same applies to adults and in all diverse contexts – at work, in the use of products and services, and in how we live our life

I believe this book can be a support to anyone working with design, because it helps to put into words how people’s motivation and wellbeing are affected by design and design work.

Jon Engström, SVID



Book review:
Service Innovation

In my role as a physician and development leader in healthcare, I have worked many years using various development concepts such as Lean, Six-Sigma, BPR and the break-through methodology. These concepts offer good support in the internal development of and reduction of quality related costs. However, in my view these concepts lack two vital components – how to understand our customers and how we can find new ways of working, instead of just improving upon our old ways of working. The healthcare system has, by and large, focused on product innovations. New medication and technology have dominated the advancements within medicine until today. To meet the challenges facing society however, we need new ways of working. More of the same is not a sustainable solution.

Service Innovation by researchers Anders Gustafsson, Per Kristensson, Gary Shirr, and Lars Witell gives an up to date overview of the field of service and innovation and offers perspectives on the matter that are central to meeting the challenges facing society and healthcare. The book is based on a number of research projects and it is evident that the authors have deep theoretical and knowledge combined with practical experience from working with service innovation in companies and public organizations.

The authors start by defining the concept of service innovation and clarifies the difference to product innovation – and why products today should rather be viewed as platforms for service delivery. A service is something that is co-created with the users, and the authors detail for a number of methods to understand and involve customers in the development of services.

One of my main takeaways with the book is the descriptions of what methods that are useful for incremental improvements and radical innovations respectively. It is clear that healthcare typically applies methods that are suited for incremental improvements, such as complaints data or deviation reports. Surveys and focus groups are used to some extent, but methods for radical service innovations in which the users are involve has only just begun to be used in healthcare.

The book *Service Innovation* has given me a new understanding of how service innovations can be achieved and introduced me into the concepts used in the field, a prerequisite for further explorations of the field. I view the book as a cornerstone for anyone working with development and innovation in both commercial and public contexts – which should be all employees! Those who are directly involved in such activities probably have the most to gain from the book and could directly apply the frameworks presented in the book. The book should also be suitable as course material in courses concerning service and innovation.

I highly recommend this book!

Olof Norin, Physician MD

On the bookshelf

Here are some recommended books and writings in order to better understand how design can be used strategically to drive future innovations.

- 1 Inside the Nudge Unit**
David Halpern
- 2 Service Innovation**
Anders Gustafsson, Per Kristensson, Gary Shirr, and Lars Witell
- 3 Innoliteracy – Fra design thinking til håndgribelig forandring**
In Danish by Steinar Valande-Amland
- 4 Why We Do What We Do: Understanding Self-Motivation**
Edward Deci, Richard Flaste



EVENTS & CONFERENCES

Outlook

13-23 June 2016
Typographics
NEW YORK CITY, USA
www.2016.typographics.com

27-30 June 2016
DRS2016
BRIGHTON, STORBRIANNIEN
www.drs2016.org/#drs2016

30 June-1 July 2016
What Design Can Do
AMSTERDAM, NEDERLÄNDERNA
www.whatdesigncando.com/amsterdam-2016

28-29 July 2016
The 20th DMI: Academic design management conference:
Inflection point – design research meets design practice
BOSTON, USA
www.dmi.org

15-19 August 2016
14th Participatory Design Conference (PDC)

AARHUS, DANMARK
www.pdc2016.org

25-26 August 2016
Service Experience Chicago 2016: Systems of Care
CHICAGO, USA
www.serviceexperiencechicago.com/conference.html

14-16 September 2016
Mayo Clinic Transform Conference
ROCHESTER, MINNESOTA, USA
www.transformconference.mayo.edu

15-16 September 2016
Brand New Conference
NASHVILLE, TENNESSEE, USA
www.underconsideration.com/brandnewconference

26-28 October 2016
Service Design Network SDGC16
AMSTERDAM, NEDERLÄNDERNA
www.service-design-network.org

26-28 October 2016
REVOLVE Conference
CHARLESTON, USA
www.2016.revolveconference.com

22-24 November 2016
15th NORDCODE Seminar
KOLDING, DANMARK
<http://www.nordcode.net>

30 November-1 December 2016
Service Convention Sweden
KARLSTAD, SVERIGE
www.serviceconventionsweden.se

Kolding, Danmark



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Design notices

Export

Swedish design in focus for export and tourism

The Swedish government will invest 28 million SEK over 4 years on a platform for communication for Swedish design. The investment takes place within the framework of the government's export strategy.

The purpose of the investment is to broaden the knowledge of Swedish design and Swedish design experiences internationally and to increase the number of foreign visitors to Sweden. The basis for the investment is a high demand for Swedish design and a potential to increase the Sweden's export of design related services, experiences and products.

Visit Sweden will lead the work in collaboration with the trade associations Svensk Form, the Association of Swedish Brands, the Swedish Association of Architects and Trä- och Möbelföretagen. The Swedish Institute and Business Sweden will also participate.

Migration

What can design do for refugees?

The large refugee flows across Europe is an issue that affects and engages many right now.

The WDCD Refugee Challenge is a collaboration between UNHCR, the IKEA Foundation and the What Design Can Do platform for design. The competition aims to create engagement for the issue and to collect ideas on how to improve the lives of refugees in urban areas. Designers and innovators from more than 30 countries have submitted their contributions.

Now the public is invited to suggest ideas of how the submitted contributions could be further improved. The five best contributions will be rewarded up to 10.000 Euros and receive guidance

by the WDCD on how to implement their solutions.

Migration was also one of the big themes during BEDA's (Beureau of European Design Association) general assembly in May. Representatives from BEDA's member organizations discussed and participated in a workshop on migration related issues. The European Commission has shown interest in developing a collaboration concerning migration.

In Sweden, design companies have taken on the challenges concerning migration and integration, and there are numerous projects that aim to address the challenges. SVID participates in a project on migration concerning how authorities address the needs of the migrants and how they can collaborate with them. Participating authorities are county administrative boards in Kronoberg and Kalmar and the public employment service in Sweden, Arbetsförmedlingen.

Sustainability

EcoDesign Circle

EcoDesign Circle is a three-year project carried out in collaboration between design organizations and universities from Germany, Estonia, Lithuania, Poland, Finland and Sweden, represented by SVID, co-ordinating with Green Leap at the Royal Institute of Technology. The project is led by Federal Environment Agency in Germany and financed through by the Interreg Baltic Sea Region Programme.

The purpose of the project is to increase SME's, designers' and design organizations' knowledge about ecodesign. This will in turn lead to companies creating methods that draws from ecodesign, which will help increase productivity, competency and innovation in an efficient way. The partner organizations will act in the borders between companies, designers, research institutions and public organizations. The goal

is to build a competence network based on circular economy, ecological design and sustainability in the Baltic Sea region.

User-driven innovation

Municipalities and county councils receive support for renewal of their organizations and regions

Municipalities and county councils in Sweden will receive support to renew their organizations through user driven innovation. Through the project the Innovation Guide, SVID (commissioned by the Swedish Association of Local Authorities and Regions) supports approximately ten municipalities, county councils and regions to try out a new model for renewal support and the use of a new model for innovation.

A team with background in design and innovation will lead the work together with key staff in the receiving organizations. As part of the support, the team aims to develop a scalable model for coaching on a distance. The idea is that the coaches then will be able to act as resource persons and train other in how to work with renewal and innovation through user involvement.

The project is financed by VINNOVA, Sweden's innovation agency, and is planned to be completed the 31 of January 2017.





SVID

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