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The end of the beginning!

VINN Excellence Centre
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MobileIT!

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.....The end of the beginning!

Digital technology is everywhere! In all things and devices, on our bodies, in and on our clothes, in our gardens, on the streets, and out in nature. We see how everything that benefits from being connected is being connected. This will have implications for our lives and for how we live in the future. During the past year Mobile Life has critically examined a number of instances of interactions with technology and the digital society surrounding the Internet of Things. We have interviewed thought leaders, studied the effects of novel businesses such as the sharing economy, and together with our partners formed and debated visions of the future. In doing so we have focused on *Comforts* – the need for care and relaxation; *Publics* – our social, interactional and cultural needs and desires; and *Wilds* on our passions and naturalistic needs. In all this we always maintain a special focus on how we can live a good life.

In Mobile Life we have always talked about the *good life*. We design technology for enjoyment – through our passion and engagements with what gives us, and others joy and meaning. During the past year, we have not shied away from applying Internet of Things materials in designing for unusual or provocative aims, such as fashion, meditation, nature, social media for the illiterate, or interactive arts. By doing so, we have challenged the prevailing utility- and solution-oriented views of Internet of Thing.

This utility-oriented view is in fact harmful, not only to our humanistic values but also to industry. In our thought-leader interviews, we learned how companies in Silicon Valley as well as in Sweden are struggling with making this technology meaningful to us. As a UX design consultant in Silicon Valley sarcastically put it, “*It’s so hard to turn on my light switch. I can’t do it.*” Part of what contributes to the frustration of IoT is the focus on technical considerations at the expense of designing objects that add clear value above and beyond their non-networked counterparts. The problem is one of a lack of use cases and compelling visions for these products.

The successful design-fiction IKEA catalogue that we launched in September put a finger on many of the issues we need to solve in the years to come. For example, what if all our data – what we eat, how we sleep, what we do at home – is owned by a corporation? Or what is ownership if the societal norm is to put all your furniture out there

for sharing and recycling? The design fiction also pointed to ideals such as making your bed a wireless-free zone, or filling your bookshelf with subscription-based content delivered by drones.

This critical examination led to a deepened collaboration with Stockholm City, clarifying its vision of being the Smartest City in the world in 2040. This incorporates the values of democracy and inclusiveness, as well as smartness, without violating our privacy or right to live our lives as we please.

During the last year, we have launched some quite unusual Internet of Things applications, that attracted a great deal of attention from both our industrial partners as well as media.

Two examples are the Soma Carpet and the Breathing Light, which we built as part of the *Somaesthetic Design* project. The Soma Carpet warms up under different parts of your body involving you in a relaxation exercise based on your movements while you lie down on the carpet. The Breathing Light hangs over your bed, and follows your breathing by dimming and brightening a lamp in cadence with your breathing tempo. With a Somaesthetic Design perspective we have a better chance to craft user experiences that rhyme with the pleasures and displeasures of the living body, its beats and – the richness of our human condition.

Another topic has been *art*, both in the sense of building interactive art installations to answer some research questions, and also as a means to ask questions of fragility, longevity and care for the materials used to build interactions. We know it does not make sense to continue building devices that only last for a few years before we have to replace them. Can we instead build devices that are as precious as jewellery? Or can we combine digital devices with materials that might be perceived as foreign to the world of digital technology, such as leather, bamboo, wood or silver, to achieve other use qualities? Our design approach here is inspired by the Japanese philosophy Wabi-Sabi, emphasising that *nothing lasts, nothing is finished, and nothing is perfect*.

Over the years we have shown how IoT will be a challenge for businesses in many ways. Industries can no longer work in isolation, and IoT demands that companies work across eco-systems and engage in novel collaborations to find solutions and open new areas. We note that there is a lack of digital competence on the boards of some of the listed Swedish firms, and that Sweden has begun to fall behind in the race of digitalisation. Entire eco-systems that previously were untouched by digitalisation may now be exposed to disruptions. Two industries with major impact on the Swedish economy are Fashion and IT and one initiative for merging the two industries is the newly established network by Oskar Juhlin, *Digitizing Fashion*, addressing the digitalisation of the fashion industry.

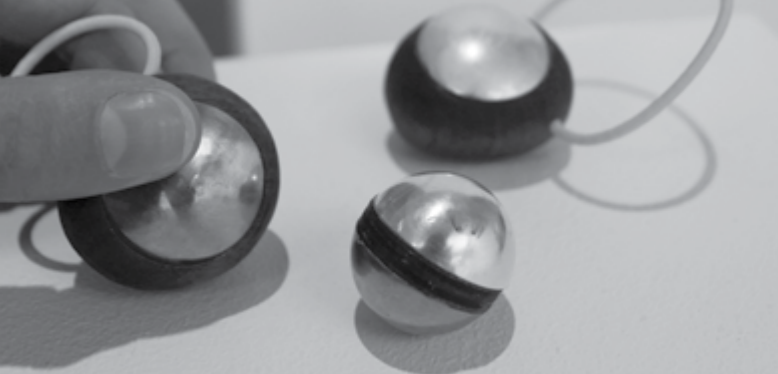
As this has been the ninth year of our ten-year grant period, many of our activities have focused on the future – not only in terms of our research, which is as explorative as always and points out new fruitful research directions, but also in terms of making sure our impact and legacy will last.

Ten years is a long time for a research project to run, and Mobile Life has accomplished very much during this time. We have published more than 180 peer-reviewed academic papers (and there are more to come), filed six patents, and spun-off five companies, three of which are thriving start-ups. We have also appeared in media on numerous occasions. Fourteen PhD students have successfully defended their theses and seven more will complete theirs in the near future. The impact of the centre has been significant, and during the coming year we will summarise all our work, present it in various formats, and celebrate it with a conference in March 2017.

Mobile Life has provided a fertile ground for new activities to arise in the years to come, and for new constellations and collaborations to be formed between partners. In the words of Winston Churchill: *Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.*

Kristina Höök, Centre Director
& Maria Holm, Co-director





Always explore,
Always create,
Always enjoy



Introduction

Mobile Life's research is based on design-led exploration of novel technology. We envision an enjoyment society, where happiness, pleasure and playfulness are key factors. The technology trend that supports this is an emerging consumer-oriented Internet of Things (IoT). To map out and understand this future development, the centre performs strategic innovation by collaboratively creating and evaluating enjoyment services that will make the vision of an enjoyment society a reality.

The Mobile Life VINN Excellence Centre was formed in 2007, and has established itself as an internationally recognised research locus in the area of mobile services. The centre is a joint venture between three research partners, Stockholm University, SICS Swedish ICT and KTH, nine industrial partners, Ericsson, Microsoft research, IKEA, ABB, Telia Company, Ziggy Creative Colony, Rebel & Bird, SparbankenRekarne, and three public sector partners, City of Stockholm municipality, Kista Science City and STING. The centre is funded by the Swedish governmental funding agency VINNOVA and is co-funded by its partners.

At present there are approximately 30 people working permanently at the centre (including those financed by related grants). These are joined by an ever-changing stream of guests from industry and academia. Having the critical mass of a centre of excellence has been crucial to recruiting and retaining core competence, as well as to diversifying the capabilities of the researchers in a way that would not have been possible in a smaller research group.

Through our scale we can act as a centre of gravity that attracts and keeps crucial competence in diverse areas. Our ability to combine diverse skills including engineering, design, sociology and art in a single location is a direct result of this, and has been of crucial importance in generating the adventurous and high-quality research that the centre is known for.

The centre's academic production has continued to be exceptionally high. During the last year we have published one book chapter, six journal papers, 23 full peer-reviewed conference papers, and 15 publications such as short papers, workshops, posters and other contributions. Over half of the conference papers were presented in top-tier venues, and three honourable mentions were received.

Together, these results paint a picture of a centre that is highly successful both in serving its partners with exploitable research results, and in generating scientific research that is of high value to the academic community.



Centre Partners

The Mobile Life Centre is a joint venture with several partners including research organisations, IT- and telecom industry partners, consumer-oriented product partners, and public sector representatives. Read more about our partners in the presentations below.

RESEARCH ORGANISATIONS

Stockholm University – Mobile Life is organised as a unit under the Department of Computer and Systems Sciences (DSV) in Kista. The centre is physically located on the Kista campus in the Electrum building. Through Stockholm University, the research in the centre is well connected with undergraduate and graduate programmes and the general social sciences faculty. Students employed at the centre are enrolled in the master's and doctoral programmes at the university. Senior researchers are actively involved in the creation of such programmes, primarily in this department but also in other university departments at Stockholm University.

SICS Swedish ICT – The mission of SICS is to contribute to the competitiveness of Swedish industry by conducting advanced research in strategic areas of computer science, and actively promoting the use of new research ideas and results in industry and in society at large. SICS is situated in Kista in close proximity to the Mobile Life Centre. Many of the researchers in Mobile Life are employed at SICS. The role of SICS at the Mobile Life Centre will be that of a joint research partner together with Stockholm University.

The Royal Institute of Technology (KTH) – The Mobile Life Centre collaborates with KTH's School of Computer Science and Communication (CSC). CSC is engaged in education and research within the traditional core areas

of computer science – numerical analysis and datalogy – from theory construction and analysis of mathematical models to algorithm development and computerised implementation and simulation. Other core areas of growing importance include technology and methods for sustaining human communication and computer-supported cooperation between users separated in time and space. The role of KTH in the Mobile Life Centre will be that of a joint research partner together with Stockholm University.

INDUSTRY PARTNERS

Ericsson – Ericsson is a leading provider of telecommunications equipment and related services to mobile and fixed network operators globally. Ericsson has extensive knowledge about present and future telecommunications systems, including content and communication oriented services for mobile devices and the connected home.

Ericsson is advancing its vision of the “networked society” through innovation, technology, and sustainable business solutions. In this Ericsson is very well aligned with the focus of Mobile Life VINN Excellence Centre.

Microsoft Research – Microsoft Research is dedicated to conducting both basic and applied research in computer science and software engineering. Microsoft Research has identified three key domains in which

support from Microsoft will enable university researchers to achieve the greatest progress: the emerging computing environment, the transformation of science through computing, and advancement of the computer science curriculum. The centre continues to identify compelling areas of research that strongly resonate with trends in popular culture and, as a consequence, that appeal to the industrial research sector. Its explicit focus on materialising new forms of (digital) mobility along with its emphasis on the playful and ludic qualities of everyday life ensures that the centre's work remains meaningful to consumer orientated technology businesses such as Microsoft. Furthermore, its efforts to be innovative in its theoretical research and its technological visions mean it has a close affinity to what it is compelling about the work done at Microsoft Research. The centre's goal to concentrate its efforts across this spectrum of innovations and scholarly work successfully complements the research at Microsoft and, at the same time, it succeeds in extending what we are able to do by working in areas we do not have the scope or resources to investigate. The researchers at the centre have a well-established collaboration with Microsoft Research Ltd in Cambridge, which has resulted in a profound understanding of information technology use in everyday life.

IKEA – IKEA is a home furnishing company with a fully integrated supply chain, including its own industrial group. IKEA's activities span the areas of product-range strategy and product development, production, supply and retail. IKEA has been a partner of the centre since 2012. For IKEA, creating home furnishings is about understanding people's needs and dreams at home in order to be able to create a better everyday life for the many people. By matching these needs with the possibilities within its supply network, IKEA aims to create a range of well-designed, functional products at modest prices so that as many people as possible can afford them. IKEA of Sweden leads business development at IKEA through the Home Furnishing Businesses i.e. creating the range of home furnishings, supplying the range of home furnishings, as well as communicating and selling the range of home furnishings. IKEA of Sweden is a gearbox that lets the Home Furnishing Businesses and Categories

work smoothly together. IKEA is especially interested in the centre's focus on the “good life” – that which makes people feel good and have fun.

ABB – ABB joined the Mobile Life Excellence Centre as a partner in 2012 and contributes to the centre by sharing its knowledge about user experience and situational awareness in the context of industrial systems. In addition, ABB will collaborate on a wide range of research projects that aim to provide operational efficiency in industrial environments. One main project where ABB will be an active player is “Introducing playfulness in the automation domain”. At the Mobile Life Centre, ABB will collaborate with leading researchers and key players in the mobile industry and gain knowledge about designing experiences, especially for mobile use.

Telia Company – Telia Company provides network access and telecommunication services that help people and companies communicate in easy, efficient and environmentally friendly ways. International strength combined with local excellence is what makes Telia Company truly unique and enables it to provide a world-class customer experience, from the Nordic countries all the way to Nepal. This combination has brought the development of the groundbreaking 4G, a world-class fibre network, and the introduction of 3G at Mount Everest. Telia Company has been a partner since the centre began in 2007.

The centre's forward-looking research into mobile users, applications, and ecosystems fits well with the company's objectives and provides input for future strategies. This was made evident through the foresight report co-published in the Ecosystems project and more recently in the Future of Money project.

Rebel & Bird – Rebel and Bird is a leading agency for growth hacking. Rebel and Bird joined the centre in April 2014. They work with product development and communication to fuel business growth for some of the most recognised brands in the world. Sectors they work in include digital technology, insurance, media, health and culture. Rebel and Bird create a positive impact by using technology, and work with clients and partners around the globe providing both B2B and B2C



services. They innovate, structure and adopt a strategic approach to product development. Rebel and Bird believe that innovation for digital products, new or existing, requires more than just programming.

Ziggy Creative Colony – Ziggy is a leading strategic innovation agency in Sweden, helping clients transform their offers to the market based on opportunities where digital objects meets physical objects. Ziggy currently has offices in Stockholm, Malmö and Bangalore (India), and consists of Ziggy's four departments; brand, experience, change and innovation. Ziggy joined Mobile Life as a partner in 2015, and contributes to the centre by sharing experiences in finding new business models and new customer ecosystems, and putting new products on the market. Ziggy collaborates on projects where their experience and insights can contribute to advancing Sweden's competitive advantage in innovation. Through the Mobile Life collaboration, Ziggy will gain knowledge about cutting edge research and collaborations between research, international businesses and new businesses.

SparbankenRekarne – Sparbanken Rekarne provide the skills, products and services that are needed for private and commercial banking and insurance. Sparbanken Rekarne has certified and licensed financial advisors for both individuals and businesses. With offices in Eskilstuna, Strängnäs and Mariefred, the bank, along with Sparbanksstiftelsen Rekarne, is a contributor to the development of the region of Mälardalen, Sweden. The Foundation provides grants for projects related to business, research, education, sports and culture. On average, nine million SEK are awarded annually. Sparbanken Rekarne is connected to and knows the local market, and puts its relationship with customers first. Dating back to 1827, the bank combines a proud history with a modern forward-looking bank. Together with the partners, particularly Swedbank, Sparbanken stays at the forefront of developments in bank services and technology. In this endeavour the collaboration with Mobile Life VINN Excellence Centre will provide valuable insight into the challenges posed by the digitalisation of the banking industry, with Sparbanken Rekarne taking a leading role.

Slagkryssaren – Slagkryssaren is a high competence software development provider with special strengths

in mobile platforms, back-end, cloud computing, machine learning and software architecture. The company helps its clients to reach high quality results, connected to recent and upcoming technological developments. Slagkryssaren provides its customers with high quality work, sound advice and rapid product delivery. Slagkryssaren works with a number of contemporary technologies such as: Android, iOS, Xamarin, Ruby on Rails, Javascript, Python, Erlang, and multiple dialects of both SQL and NoSQL. Slagkryssaren will bring to Mobile Life its knowledge of existing platforms for software development and will take on an active role as a developer of Mobile Life prototypes.

PUBLIC SECTOR REPRESENTATIVES

City of Stockholm – Within Sweden as a whole, the Stockholm region and Kista in particular are playing a crucial role in the establishment of a consumer-oriented service industry. This role has been recognised by the City of Stockholm, which has chosen to establish and participate in several initiatives focusing on this sector, such as the Urban ICT arena, in addition to participating in the Mobile Life Centre. The City of Stockholm plays a natural central role in the Mobile Life Centre, providing multiple channels for local collaboration, dissemination, and take-up with both small and large companies.

The City of Stockholm contributes to the centre by being prepared to serve as a test-user representing the public sector in several project domains. Furthermore the city strives to promote coordination and cooperation regarding the various mobile initiatives in the city.

Kista Science City – Kista is a science city, a creative melting pot where companies, researchers and students collaborate in order to develop and grow. The foremost sector in Kista is ICT. Figures show that few places on the planet can demonstrate the same high concentration of expertise, innovation and business opportunities within ICT.

Kista Science City brings to Mobile Life its network of researchers, entrepreneurs and industry, in a cosmopolitan milieu with a strong focus on business. The centre is an important component of an ecosystem where government, academia and industry work together to promote growth. Kista Science City has been a partner in the centre since the start in 2007.

INNOVATION SYSTEM PARTNER

STING – STING, Stockholm Innovation & Growth, founded in 2002, is a world-class ecosystem for innovative start-ups based in Stockholm. The ecosystem encompasses comprehensive business development support own financing sources, and access to STING's broad network – all interacting with each other to more rapidly build Sweden's new international growth companies. STING works

primarily with innovative start-ups within ICT, Internet/media, medtech and cleantech – supporting entrepreneurs and innovators from academia, research institutes and the business sector. STING is headquartered in Kista Science City – in the middle of one of the world's premier ICT clusters. STING is a supportive partner of the centre and contributes its competence as an incubator. STING has been a partner since the founding of the centre in 2007.





Nature

Fashion

Arts & Craft

Data Politics

Soma

Reality Mining

Disruption Arena

Research

During the last year, seven research projects have been running at the centre. Our researchers and partners jointly develop ideas for the projects as well as ideate new projects. This takes place in various kinds of creative workshops in which the entire centre, including the partners, meet to discuss new technologies, design processes and future challenges. The companies take an active part in the projects, and the close collaboration creates a flow of knowledge from the research projects into the companies.

The centre's research involves the design, implementation and study of novel, futuristic enjoyment services for real-world use. The main field of the centre research is Human-Computer Interaction (HCI), with the academic flagship publication venue being the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) alongside the journal Transactions on Computer-Human Interaction (ToCHI). Other major HCI journals include the International Journal of Human-Computer Studies, Interacting with Computers and the International Journal of Human-Computer Interaction. The centre's work is also relevant for communities concerned with computer-supported collaborative work (CSCW), mobile human-computer interaction (Mobile HCI), game studies (DIGRA), ubiquitous and pervasive computing (UBICOMP, Personal and Ubiquitous Computing), design of interactive systems (DIS), tangible, embodied and embedded interaction (TEI), and interaction design (International Journal of Design, DRS).

The centre's work is based on design-led exploration of novel technology. At the core lies design thinking,

a human-focused, prototype- and design-driven process for innovation that is fundamentally multi-disciplinary. It draws on a number of competencies to arrive at not only better products, but also better processes, services, strategies and business models. It typically entails opening up new design spaces through the creation of many different example designs, at the same time as the problem space itself is continuously being explored and refined. This can be contrasted with more traditional engineering research that starts from a problem and then, seeks to solve it. Our unique take on design thinking relies heavily on sociological viewpoints.

Competence areas that are represented at the centre include: Interaction Design (IxD); User Studies – both traditional HCI studies and ethnographically oriented methods; Product Design; Hardware Engineering; Software Engineering; Critical Analysis; Critical Design; and Media art.

The projects are presented on the following pages.



Nature



Photo: Proximity sensor camera image



Theorising Multispecies-Computer Interaction: Developing Perspectives on the “I”

Nature, in terms of animals and plants, are increasingly involved in digital technology and interaction design. The growing inclusion of other species besides the human in digital technology and user-computer research opens up new possibilities and forms of interactions. It contests the traditional notions of what a user is and can be. Consequently it also challenges our previous theoretical foundations for understanding interaction. Drawing on ethnographic fieldwork this project explores different theoretical approaches for understanding the sprouting dynamics of these new forms of multispecies-computer interactions, and also how these insights can excite the imagination and be generative for design.

The emergence of Animal-Computer Interaction (ACI) has pushed an agenda of seeing the animal as the new human to design for and with. The most common established forms of interaction within ACI research are direct and dyadic interaction, and are limited to domesticated animals such as working dogs and pets; in other words they are very similar to human-computer interaction. We have contributed to this strand of research by articulating the role of the leash in mediating between owner and dog, and suggesting new forms of design. We also extend how “interaction” can be conceptualised in ACI. Drawing on an ethnography on the use of mobile proximity sensor cameras in ordinary wild boar hunting, we emphasise a strategic, complex, diffuse, and not directly observable form of interaction involving wild animals in a both technologically advanced and natural setting.

Plants have foremost been reduced to a design material or resource that can encourage a more emphatically engaged interaction and lead to new human experiences of technological systems. Something appears to happen with the interaction when the organic and biological is blended with the artificial and technological. We are currently exploring this intersection by drawing on an ethnographic study on peoples’ adoration for the cherry blossom and their social and ritualized photographing practices, and reflecting upon what this is in terms of interaction.

Much of our fieldwork is oriented towards research sites where multiple species meet and where technology already seems to play an important role. We interact with nonhuman species in many different ways. The possibilities of these new fields are ostensibly broader than just designing for working dogs or inviting to more emphatically engaged interactions. In this project we stress the role of empirical investigations and theory to reconsider the potentials of these embryonic fields by developing perspectives on the “I”.

Project leader: Oskar Jublin, oskar@mobilelifecentre.org

Fashion

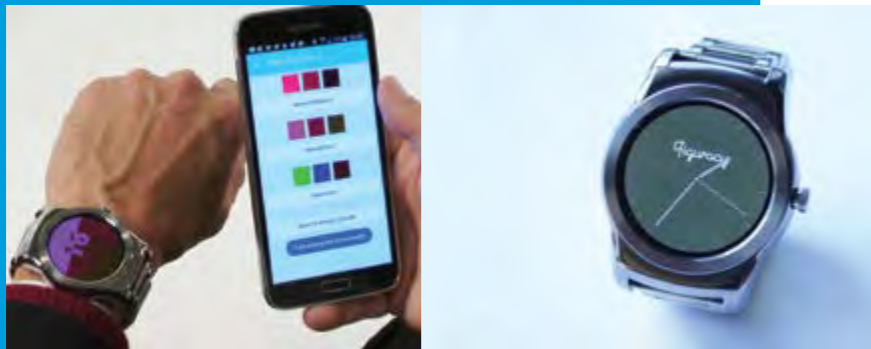


Photo: The app, "Watch for Figuracy"

Design, software and services for wearable devices and smart dresses.

Digital devices today are used in close physical proximity to our bodies, in the same position as our clothes. The question that arises is how, specifically, these devices should vary in their expression.

There is an ongoing trend of digital devices being used in close physical proximity to our bodies, in the same position as our clothes. It started with the success of mobile phones, continues with the emergent use of smart watches and smart eyewear, and is leading to a future of smart textiles and organic user interfaces. These devices provide public visual surfaces with possibilities for endless variation of visual expression. With the emergence of wearable hardware, we foresee a need to develop fashion-oriented software, services, and applications. We need to learn more about the question that arises: How, specifically, should these devices vary in their expression? For that reason, we have developed the service "Watch for Figuracy", which is available for Android Wear's smart watches, and adapts the watch face to match one's current outfit.

Project leader: Oskar Jublin, oskar@mobilelifecentre.org



Arts & Craft

This project aims at studying artistic and crafting practices in relation to novel interactive materials, software and electronics. Its scope ranges from popular culture and folk art to the forms taken by crafted interactivity takes in public exhibitions and in the contemporary art scene. Special emphasis is given to craftsmanship with new interactive technology and traditional materials like leather, silver, wood and textiles, where concepts such as longevity and obsolescence of interactive technology and Internet of Things products are investigated. Following that strand of thought, the concept of “Interaction Design Remake” has been introduced in the project, as a way to take contemporary technology and resources and re-visit old interactive artefacts and demos. This allows for in-depth and critical reflection on the fact that we are striving for longevity with impermanent materials and media.

This topic has also been studied from the perspective of the traditional Japanese design philosophy of *Wabi-Sabi*, which embraces the realities of impermanence, incompleteness and imperfection. We found these three realities to resonate well with our interaction design research practice, since they reflect on crucial aspects of contemporary computing, but we also found them to be a practical resource for guiding the design of new interactive solutions.

The project covers two major areas of investigation: Explorative work combining traditional crafts and new interactive technology. In this strand of work we collaborate with experienced craftspeople to further explore future potential interactions and design challenges.



Photo: Copper & silver buttons exhibited at the Nordes'15 Conference, Stockholm

Interactivity in contemporary art. This theme comprises in-depth studies of selected contemporary artworks produced within and outside of academic research.

The project is now entering its third year and a number of activities have taken place, such as workshops, exhibitions, internal and external seminars, and conference presentations. For example, some of the outcomes from the *Precious Materials of Interaction* project were presented at *Konstfack* (the University College of Arts, Crafts and Design), and the STRATIC installation was exhibited at several events, one of which was the celebration of “Art’s Birthday” at Södra Teatern, in Stockholm. The project has also attracted attention in the educational sector, since a number of master’s students are currently doing their theses in our project. During the last year the project put greater focus on conceptualising crafting in software design, in particular through a PhD course in creative coding, a study on programming practices, and also deeper analysis of crafting aspects in the making of interactive music soundscapes in the STRATIC, Nebula, and Sarka projects. In addition, during the autumn we took part in a three-month collaboration with the interaction design group at IT University in Copenhagen, which resulted in several projects and research studies that we will continue working with during the coming year.

Project leaders: *Ylva Fernaus*, fernaeus@kth.se and *Vasiliki Tsaknaki*, tsaknaki@mobilelifecentre.org



Photo: STRATIC live performance R1 Reactor Hall 2015

Data Politics

This project examines the increasing role of data in everyday life, and the political and social implications of this development: Networked platforms are now used not only for the sharing of digital content but also to coordinate the co-use of physical spaces, goods, and other material resources. Many daily activities generate data as a by-product. While data is widely considered valuable, its importance and implications remain difficult to grapple with. In its first year, the Data Politics project has pursued these issues through two lines of research.

First, we have explored metaphors of data, from the industrial to the embodied, by organising a workshop with our industry partners and reviewing prior literature: What do metaphors reveal about data and power? What might we learn if we took seriously the common claim that “data is the new oil”? What about data as sweat or as toxic waste? Donald McMillan, Arvid Engström, Airi Lampinen, and Barry Brown also finalised a study on how data is produced and used in city organisations. The resulting paper, *Data and the City*, received a CHI 2016 Honourable Mention Award.

Our second line of work engages with platform economies in an effort to examine critically issues of ownership, control, and the distribution of risks and rewards. We have published two conference papers and two journal papers that provide user-centric accounts of different services in the so-called sharing economy, including Uber, Airbnb, Couchsurfing, and Sharetribe. These publications unpack not only experiences of participation and exclusion, but also the roles platforms play in brokering exchange and changing labour conditions. Finally, as a first step in examining the production of such services, Airi Lampinen conducted fieldwork to explore experiences of “the new middlemen” – individuals who set up and run peer-to-peer marketplaces on top of a ready-to-use platform.

*Project leader: Airi Lampinen,
airi@mobilelifecentre.org*



Photo, Johanna Lampinen: Metaphors of data: Smartphones as data factories? Data as exhaust?



Soma

In the Soma project we explore how to design for bodily interaction and enhanced body awareness. The project is based on a philosophy called somaesthetics, an interdisciplinary field grounded in pragmatist philosophy. By joining the two words “soma”, meaning body, and “aesthetics”, our sensory appreciations, we draw attention to the importance of bodily movement as one of our ways of being and thinking in the world.

To fully understand how to design for and from the body, our approach has been to engage with bodily practices aiming at body awareness, such as Feldenkrais and yoga, throughout the entire design process. This bodily engagement throughout the design process is manifested in the design of the prototypes Soma Carpet, Breathing Light and Sonic Mat. These prototypes aim to support a meditative bodily introspection, subtly guiding participants to turn their gaze inwards, to their own bodies. These user experiences can serve several purposes: enhancing body awareness through introspection, enriching somatic sensitivity, and serving as a medium for winding down in our everyday life.

The Breathing Light is a lamp that follows your breathing by dimming a lamp in cadence with your breathing tempo. The light can be used as an aid for reflecting on

your breath and your body. In addition it creates a space for winding down.

The Soma Carpet uses directed heat stimuli to subtly guide your attention to different body parts. The carpet can be used as a support for guided meditation, for body scanning in Feldenkrais sessions, or simply for relaxation. The Soma Carpet and the Breathing Light are preferably used in combination. When lying on the carpet with the Breathing Light module above you, you feel sheltered and taken care of.

The Sonic Carpet measures your pattern of bodily movements when lying down and feeds the results back to you in real-time sonification. It can be used for exploring small bodily movements.

Substantial effort was put into finding the right degree of subtleness, timing, and intensity of the feedback, in order to achieve an intimate correspondence between the perception of the body and the light, heat and sound, so that the prototypes are perceived as an extension of the body creating a deepened experience.

Project leader: Anna Ståhl, anna@mobilelifecentre.org



Photo: Breathing Light - A light that interacts with your breathing pattern.

Reality Mining

Many of our daily activities generate data as a by-product; this project explores the collection, processing, and use of this data in novel systems. This project focuses on two areas; the location data we share with others and the insights into human behaviour that can be gleaned from the audio data we produce through conversation, movement, and interaction with systems and other people.

In exploring the sharing of location data this project looks to challenge the current norms of location sharing applications: the sharing of check-ins or GPS coordinates. The first trial application, called Besties, focuses sharing location to just a handful of friends and instead of sharing any explicit location only exposes a single, non-unique, user specific icon per location. In this way the users are able to share their movements in a lightweight and privacy protecting way, with meaning relying on shared experience and social connections outside the confines of the application.

Our exploration of the information available through audio channel has two threads. The first is to understand how such system-directed audio surveillance would be accepted into homes, offices, and public spaces of its potential users. To this end a functional probe system is being deployed to actively and obviously record audio

in public place, uploaded for the public to listen to. These systems will be mobile, allowing those listened to the opportunity to move them for reasons of privacy or to gain access to the audio they desire. How they are reacted to, relocated, removed, or destroyed will provide insight into the current understanding of audio privacy.

The second thread is to explore the information that can be programmatically exposed as input to systems from such a deployed listening infrastructure. The audio collected from the probes will be combined with that already collected to create a corpus of everyday sound. This corpus will then be used to test the efficacy of machine learning techniques to detect the source of sounds, the actions of people and animals, and the conversations overheard.

In combination these two strands of research will provide a richer view on the social practices around sharing data generated by our everyday activities, the extent to which this data is accessible programmatically, and the varied systems and services that can be built on top of such streams of personal information.

*Project leader: Donald McMillan,
don@mobilelifecentre.org*

Photo: RealityMining



Disruption Arena

Technology is disrupting society, communication, companies and even the forms that leisure and pleasure take. An overarching activity at the centre is to pick up on challenges to society and technology design that arise from the disruptive role of technology. Together with our partners and experts in particular areas, we aim to identify new challenges drawing on existing Mobile Life research as well as challenges facing the digitalisation of industry and society.

We have found that automation is one such challenge, and we have decided to explore it in relation to Internet of Things (IoT) and interactive technology. The concept of automation has been central to many of the visions for how information technology can influence and develop society, starting with early visions of artificial intelligence in the 1970s and 1980s, and continuing with Weiser's notion of ubiquitous computing and current developments in smart home robotics and automatic vehicles. Human Computer Interaction (HCI) has always taken part in this development by addressing, often critically, how humans fit into these visions. Today the development of technologies, including personal assistants such as Apple's Siri and Microsoft's Cortana, self-driving cars, and IoT devices such as the Nest thermostat and smoke detector, makes such perspectives increasingly important. We see that the rapid development of end-user technologies that thrive on IoT and big data places the idea of automation in new contexts and new situations.

To further narrow our focus and leverage previous research at the centre, we decided to focus on technologies related to automation on, in, and close to the body, as the body and designing for various bodily experiences have been a strong theme in the centre. We find this particularly interesting since we currently see an opportunity for addressing questions of interaction with connected technologies that automate aspects of our bodies in various ways, for instance medical equipment such as pacemakers, or interactive health devices such as sports watches and stress management tools. Looking at it from a Mobile Life perspective, one could ask: What would constitute an enjoyable interaction with such a device, and how can we design for that?

Another challenge that we are working on is how to address the City of Stockholm's vision of becoming the

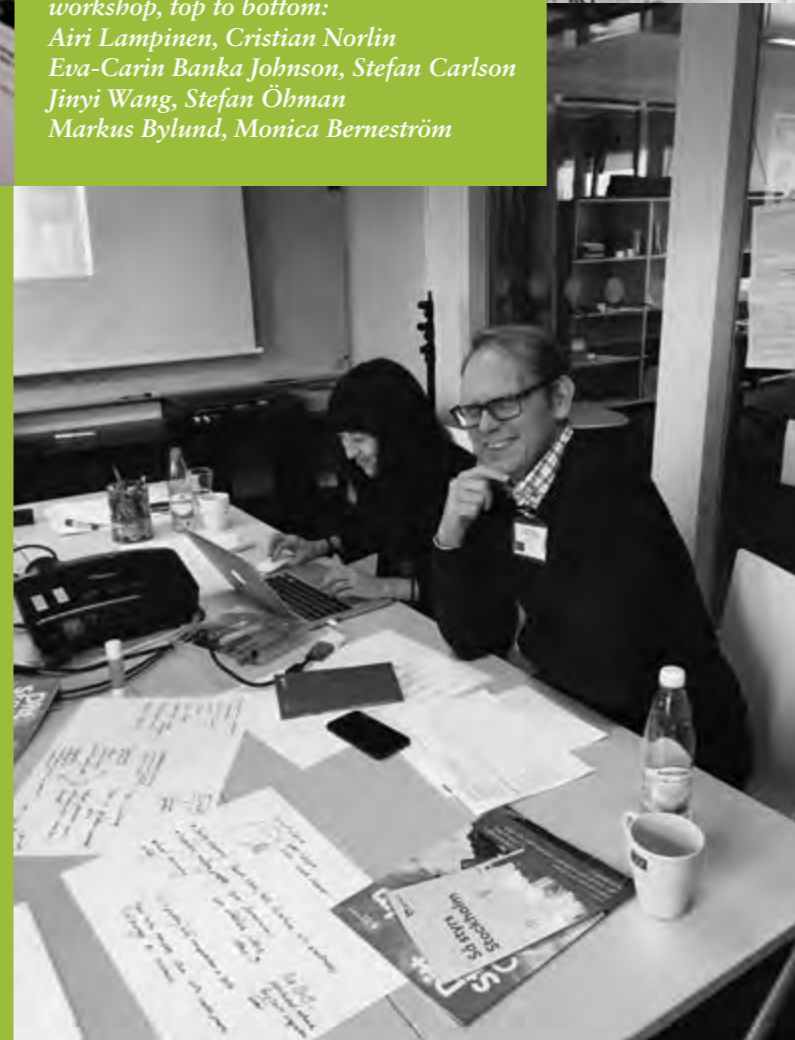


smartest city in the world by 2040. In this strand we apply the concept of design fiction, a method to enable us to think about the future by employing a well-know format, such as for example the IKEA catalogue. We work with fiction and fantasy to visualise future services, technologies and products that ultimately will be presented in a fictive brochure to welcome newcomers to a the city in 2040. The work has been conducted in a series of workshops with the aim to describe and visualise what life will look like in a future Stockholm with Internet of Things and interactive technology. A number of questions are raised within this frame: What is the smartest city in the world? What would such a city be like in terms of sustainability, from economic, environmental, democratic and inclusive perspectives? How can we design for this future city? All of these questions are highly relevant to the disruption arena project with its exploration of how technology will disrupt a society and the way of life in a city.

Project leader: Maria Holm, maria@mobilelifecentre.org



*Photos from the City Design Fiction workshop, top to bottom:
Airi Lampinen, Cristian Norlin
Eva-Carin Banka Johnson, Stefan Carlson
Jinyi Wang, Stefan Öhman
Markus Bylund, Monica Berneström*



Publications

BOOK CHAPTERS

1. Ferreira, P. and Höök, K. (2016). The Case for Play in the Developing World: Lessons from Rah Island, Vanuatu. In *Indigenous People and Mobile Technologies*. Routledge, Oxford, UK.

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1. Aspling, F., and Juhlin, O. (2016). Theorizing Animal-Computer Interaction as Machinations. In *The International Journal of Human-Computer Studies (Special Issue on Animal-Computer Interaction)*. (Forthcoming).
2. Lampinen, A. (2016). Hosting Together via Couchsurfing: Privacy Management in the Context of Network Hospitality. *International Journal of Communication*.
3. Lampinen, A., Huotari, K., and Cheshire, C. (2015). Challenges to Participation in the Sharing Economy: The Case of Local Online Peer-to-Peer Exchange in a Single Parents' Network. *Interaction Design and Architecture(s) Journal - IxD&A*.
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2. Bergsmark M., and Fernaeus Y. (2016). From Patchwork to Appliqué: Reflections from an Interaction Design Remake. In *Proceedings of TEI 2015*, Eindhoven, the Netherlands.

3. Brown, B., Weilenmann, A., McMillan, D., and Lampinen, A. (2016). Five Provocations for Ethical HCI Research. In *Proceedings of CHI 2016*, San José, California, USA.
4. Ferreira, P., McGregor, M., and Lampinen, A. (2015). Caring for Batteries: Maintaining Infrastructures and Mobile Social Contexts. In *Proceedings of Mobile HCI 2015*.
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6. Gloss, M., McGregor, M., Brown, B. (2016). Designing for Labour: Uber and the On-Demand Mobile Workforce. In *Proceedings of CHI 2016*, San Jose, California, USA.
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9. Jonsson, M., Ståhl, A., Mercurio, J., Karlsson, A., Naveen, R., and Höök, K. (2016). The aesthetics of heat: Guiding Awareness with Thermal Stimuli. In *Proceedings of Tangible, Embedded and Embodied Interaction (TEI) 2016*, Eindhoven, Netherlands.
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23. Zhang, Y., and Juhlin, O. (2015). Using Crowd-Sourcing to Solve the Fitting Problems in Online Fashion Sales. In *Proceedings of Global Fashion Management Conference 2015*, Florence, Italy.

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REPORTS, NOTES, WORKSHOPS AND ABSTRACTS

1. Brown, B. (2015). IKEA Design Fiction. Vinnova Final Presentation.
2. Dillahunt, T., Lampinen, A., O'Neill, J., Terveen, L., and Kendrick, C. (2016). Does the Sharing Economy do any Good? In *Proceedings of CSCW 2016*, San Francisco, California, USA.
3. Häkkinen, J., Juhlin O., Boll S., and Colley, A. (2016). The Role and Impact of Aesthetics in Designing Mobile Devices. In *Proceedings of Mobile HCI Extended Abstracts 2016*.
4. Höök, K. (2015). Report: Building Folkhemmet with the Internet of Things. Vinnova Final Presentation.
5. Höök, K., Laaksoaho, J. (2015). Människan och maskinen Museerna och besökarna 2050 : en framtidsantologi från Riksställningar. Volante förlag, ISBN: 9789187419645.
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DOCTORAL THESES

1. Ferreira, P. (2015). *Play as Freedom. Implications for ICT4D*. Doctoral thesis in Human-Computer Interaction at the Department of Media Technology and Interaction Design at KTH, Royal Institute of Technology.
2. Solsona Belenguer, J. (2015). *Engineering through Designerly Conversations with the Digital Material*. Doctoral thesis in Human-Computer Interaction at the Department of Media Technology and Interaction Design at KTH, Royal Institute of Technology.
3. Back, J. (2016). *Designing Public Play: Playful engagement, Constructed activity, and Player experience*. Doctoral thesis in Human-Computer Interaction at the Department of Informatics and Media at Uppsala University.
4. Mudassar A. M. (2016). *Live Mobile Video Interaction*. Doctoral thesis in Human-Computer Interaction at the Department of Computer and System Sciences at Stockholm University.

MASTER'S THESES

1. Asplund, S. and Axtelius, A. (2015). *Designing technology promoting increased user body awareness: Using Microsoft Kinect V2*. Master's thesis at the Department of Machine Design at the School of Industrial Engineering and Management (ITM) at KTH, Royal Institute of Technology.
2. Faraj, Z. (2015). *Playfulness as a motivational tool: Using play to develop for an enhanced perception of swapping reusable goods*. Master's thesis in Media Technology, School of Computer Science and Communication at KTH, Royal Institute of Technology.
3. Hagnell, F. (2016). *Predicting Human Movement Patterns in an Office Environment*. Master's thesis in software engineering of distributed system at KTH, Royal Institute of Technology.
4. Meutlu Cambazoglu, D. (2015). *Role of Mobile Technology in Social Bonds in Playgrounds*. Master's thesis at the Department of Information Technology at Uppsala University.
5. Syahrina, A. (2015). *Tangible interface for interaction with music vibrations*. Master's thesis at in ICT innovation, human-computer Interaction and Design at Université Paris Sud.
6. Virtala, C. (2015). *Neighbourhood Communities: Internet and communication technology in apartment complexes*. Master's thesis at the School of Computer Science and Communication at KTH, the Royal Institute of Technology.

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Activities

In addition to working on research projects together with our partners in the joint venture Mobile Life Centre is involved in many activities outside of the centre. These can include invitations to speak at conferences or corporate events. The centre is also organising a series of open seminars, which are listed below. The research at the centre also attracts media attention both nationally and internationally.

KEYNOTES

September – Kristina Höök. Serious Research On The Unserious: Playfulness, Sociality And Bodily Engagements In The Internet Of Things Era, Keynote presentation at CHIItaly.

December – Kristina Höök. IoT & Design, Keynote presentation at BOWD (Business of Design Week), Hong Kong.

TALKS, PRESENTATIONS AND DEMOS

April – Mobile Life exhibited at the KTH MID open house on KTH Campus.

August – Kristina Höök was invited to give a talk about the Internet of Things at the conference Tylösandsdagarna. The event is organised as a place for politicians and industry executives to meet and discuss future challenges for Sweden.

August – Kristina Höök gave a talk at Alpbach Forum, an annual event in Austria where politicians, researchers and policy makers meet to discuss different topics. One of this year's topics was cyborgs – combinations of technologies and bodies.

September – Kristina Höök gave a talk at the ICT TNG workshop for postdocs at KTH. She mapped out the ideas around Internet of Things.

September – Kristina Höök talked at Konsumentverket in Karlstad, again with a focus on Internet of Things and how it will transform our society.

September – Oskar Juhlin was invited to talk about the Digitizing Fashion project at the Precious Fair held at Stockholmsmässan.

September – The inauguration of Mega Mind took place at Tekniska Museet in Stockholm. Part of this permanent exhibition, which aims to introduce young people and children to technology, is dedicated to research. The Mobile Life projects Affective Diary and the Soma Mat were presented in a video at this exhibition.

October – Oskar Juhlin and Anna Ståhl were invited to give presentations at the World Usability Day organised by STIMDI at ÅF.

October – Oskar Juhlin gave an invited talk on 3d Printing Fashion at the Textile Fashion Center. <http://event.3dp.se/event/3dp-fashion-2015/>

November – Oskar Juhlin demoed the “Watch for Figuracy” app at the Swedish Fashion Council open house day, arranged for national and international press.

December – Barry Brown was invited to give a talk at the Nordic finance and bank company Nordea's office in Oslo, Norway.

December – The Mobile Life project on Somaesthetics was exhibited at Space 10 with the Soma Mat and Breathing Light at an internal meeting for IKEA management. Space 10 is a co-creation space funded by Inter IKEA systems B.V. and is located in the meat-packing district of Copenhagen.

January – The Radio P2 event, Art's Birthday celebration 2016, was organised at Södra Teatern in Stockholm. The Soma project demoed the Soma Mat and the Breathing Light. Anders Lundström and Vygandas Simbelis demoed STRATIC in a live audio/visual performance, and Ilias Bergström demoed the Sonic Mat.



*Advisory Board meeting
2015
at Villa Aske*

*Top right picture, from left:
Paul Luff
Paul Dourish
Masa Inakage
Katherine Isbister*





IKEA Design Fiction

March – Ylva Fernaeus gave a seminar at Konstfack, University College of Arts, Crafts and Design as part of the program “Rethinking Research Practices”.

March – Vasiliki Tsaknaki gave a seminar on wearable technology, materials and design, at Södertörn University.

VISITS AT THE CENTRE

May 26th – Zhengjie Liu, Professor at Dalian Maritime University and Director of the Sino-European Usability Center, visited together with a group of his colleagues.

September 1st – The vocational university Nackademin visited the centre for the second time with a group of 40 digital strategy students. Maria Holm gave an overview of Mobile Life, Oskar Juhlin presented the Digitizing Fashion project, and Barry Brown talked about research in the wild–video analysis. The visit ended with a tour of the centre with demos of LiveNature, with PhD student Mudassar Ahmad Mughal; The Soma Mat and the Breathing Light, with research assistant, Johanna Mercurio; and Sharing Economy, with postdoctoral researcher, Airi Lampinen.

September 15th – Visit by EIT digital and a group of Japanese students with various backgrounds. Maria Holm gave a presentation of Mobile Life and a tour of the centre with demos and meetings with researchers.

September 17th – The new CTO, Ann Helenius of City of Stockholm, came to visit the centre together with Monica Berneström. The discussion revolved around plans for mapping out a new vision for the city and an introduction to Mobile Life research. From Mobile Life, Kristina Höök, Maria Holm, Oskar Juhlin, Barry Brown and Airi Lampinen attended. Petra Dalunde, from Urban ICT arena Kista Science City also attended the meeting.

September 30th – Visit by the I-lab and Rebel Agency from Copenhagen, Denmark. This group is running the Space 10 initiative funded by Inter IKEA.

November 3rd–7th – Richard Harper visited the centre for a week to give lectures and meet with the PhD students and researchers at Mobile Life.

November 27th – Executive MBAs, together with professor Robin Teigland from Handelshögskolan in Stockholm, visited the centre for a day. Maria Holm presented Mobile Life and organised a design fiction workshop on the near future of Internet of Things.

December 3rd – The centre welcomed Yasushi Kusume, newly appointed Innovation & Creative Manager at IKEA, together with Mikael Ydholm and Eva-Carin Banka Johnson.

December 10th – A group of senior researchers from the University of Bergen, Institute of Information and Media technology, visited the centre for half a day. Maria Holm presented the Mobile Life centre and its research, Oskar Juhlin gave a talk about the book “Enjoying machines”, and Arvid Engström presented the work with live video interaction and the start-up Living.

January 13th – Visit by the digital agency Daytona Communication. Maria Holm and Anna Ståhl gave a presentation of Mobile Life and centre research, which included a tour around the centre to look at some demos.

February 10th – Ten undergraduate product design students from Edinburgh College of Art visited the centre. The aim of the visit was to give the students a sense of how digital technology intersects with the physical world and the people in it. Barry Brown hosted the visit by presenting Mobile Life and taking the group for a demo tour in the centre.

February 24th – Barry Brown and Maria Holm hosted a visit by a management team from Swedavia. Swedavia operates airports in Sweden with about 20 million passengers passing through yearly. We discussed the overall opportunities and challenges for the expansion of Internet of Things in business and society from a research point of view.

March 8th – 30 students from the interaction design methods course at KTH visited the centre for half a day. Jarmo Laaksolahti structured the visit as an exhibition where the students presented apps they have built based on the ideas from the project App-jakten. App-jakten was a project led by Jarmo Laaksolahti, Stina Nylander and Jakob Tholander in collaboration with the Nobel Museum.

SEMINARS

April 1st – Andrew Mitchell gave a talk titled: BEING WOLF. With a Master's in Paleoanthropology and Palaeolithic Archaeology as well as Social Anthropology, Andrew's academic interests are trans-disciplinary in nature, exploring phenomena along the boundaries of the social and natural sciences. His doctoral project, Becoming Wolf, aims to continue this trend, exploring the practices that are entangled together with the Scandinavian wolf.

April 8th – Eeva Raita, (M.Soc.Sc.) from University of Helsinki gave a talk titled: It's all about relations – A situated approach to user experience. Raita analyses how interactive computing systems come to be perceived as simple, useful, and desirable. Raita teaches social psychology at the Open University in Helsinki. She has previously been a researcher at Helsinki Institute for Information Technology HIIT and a research assistant at BIT research centre. Raita's further research interests include the bond between technology use and creativity and boredom.

May 6th – Robin Teigland gave a seminar titled: Leading into the 3rd Industrial Revolution – Exploring the future of value creation. Robin Teigland is an associate professor at the Center for Strategy and Competitiveness at the Stockholm School of Economics (SSE) and is caretaker of SSE's island in Second Life. She was also the Program Director for SSE's PhD Program in Business Administration for five years. In 2013 and 2014 she was nominated as one of the Global Top 50 Business Professors on Twitter (@robinteigland), and in 2008 she received the "Researcher of the Year" award at the Stockholm School of Economics. The slides from the presentation can be found at the Mobile Life wiki: <http://deki2.dsv.su.se/Presentations/2015>

May 13th – Rowan Wilkins gave a seminar titled: The Political Economics of Mobile Location-based Services. Dr Rowan Wilken is a Senior Research Fellow at the Swinburne Institute for Social Research, Swinburne University of Technology, Melbourne, Australia. His present research interests include mobile and locative media, digital technologies and culture, theories and practices of everyday life, domestic technology consumption, and old and new media. He has published widely on mobile and location-based media.

August 19th – Gina Venolia gave a talk titled:

Experiencing Remote Events through Multiple Livestreams. Gina Venolia is a senior researcher with Microsoft Research in Redmond. Her research focuses on understanding how knowledge flows among people and building systems to make it flow more freely in both work and personal contexts. Her recent work in rich-media communication has focused on synchronous and asynchronous video and telepresence in real-world environments.

November 6th – During his weeklong visit Richard Harper gave a talk titled: What is intelligence? In his talk he argued that asking the right questions is key to good HCI. Using his own research findings, he showed that selecting the right questions can direct HCI to salient design issues, while asking the wrong ones can lead to dead ends. This was illustrated using examples from reading technologies, communications technologies, and the latest trend in AI systems: speech interfaces.

November 14th – Edward White gave a talk titled: How mobile phones affect the sustainability of the work/life balance of their users. Edward White is a PhD student in psychology at the University of Witwatersrand, Johannesburg, but was on an Erasmus Mundus mobility scholarship completing the studies in the Visual Information and Interaction division at Uppsala University, Sweden.

December 2nd – Cristian Norlin, Master Researcher, and Joakim Formo, Senior Researcher, at Ericsson research gave a talk titled: Common Sense & Sensors. As the Internet of Things is gaining momentum, a world of opportunities for truly exciting innovation is opening up (at least that's what a lot of self proclaimed experts say...). At the same time this development also means that the basic foundation of the relationship between technology, society and culture is changing profoundly. But what does this really mean?

January 13th – Duncan McLaren gave an invited talk titled: Sharing Cities for justice and sustainability. His talk explored opportunities and risks related to sustainability, solidarity and justice in the changing nature of urban sharing. He proposes a new paradigm of sharing – going beyond the "sharing economy" buzz of Uber and Airbnb – shaping approaches that are more communal than commercial, and making sharing the city itself the purpose of urban governance.

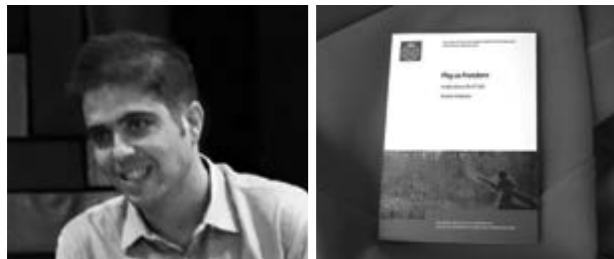


Photo: The wall of fame



Photo: Books, methods and impact

Doctorals



Pedro Ferreira successfully defended his thesis “Play as Freedom: Implications for ICT4D” at the Department of Media Technology and Interaction Design at KTH, Royal Institute of Technology.

Information and Communication Technologies for Development (ICT4D) deals with understanding the relationship between modern technology use and social and economic development. While play may not appear to be an immediate concern of the field, a recent body of work has emerged questioning the role of play in ICT4D and the reasons behind its apparent dismissal. Some have even argued that aspects of pleasure and enjoyment receive only marginal treatment within academic studies of technology more generally. In ICT4D, however, concerns over lack of resources and a sense of urgency in addressing more pressing needs, create in themselves an added set of boundaries which may further limit both the playful activities themselves and their recognition in academic work. The thesis revisits the work done in ICT4D with regard to play in order to frame the contributions that lie herein.



Jordi Solsona Belenguier successfully defended his thesis “Engineering through Designeryly Conversations with the Digital Material” at the Department of Media Technology and Interaction Design at KTH, Royal Institute of Technology.

The role of IT devices and technology in our everyday lives is growing. The commercial availability of sensors and wireless communications technologies has led to an increase in the number of systems utilising these to provide compelling experiences. Designing embedded systems is challenging, as the properties involved are often hard to observe, touch, and experiment with. Given that these technologies can inspire, drive or limit design processes, methods and tools must be developed to create a shared knowledge for multidisciplinary design teams. The thesis focuses on how engineers can better communicate their knowledge of digital materials to non-expert technology designers and multidisciplinary design teams.



Jon Back successfully defended his thesis “Designing Public Play: Playful engagement, Constructed activity, and Player experience” at the Department of Informatics and Media at Uppsala University.

The thesis sets out to explore why people engage in, and how to design for, play in a public setting. It does this by separating design for play from design of games, describing play as a socially and mentally understood activity, and a playful approach to engaging in that activity. It emphasises that while play is voluntary, design can help shape the players’ mode of engagement.

The thesis uses a qualitative and inductive approach to research, with an understanding of knowledge as being constructed in the individual. The research is grounded in human computer interaction and interaction design, and closely related to game studies and design science.



Mudassar Ahmad Mughal successfully defended his thesis “Live Mobile Video Interaction” at the Department of Computer and System Sciences at Stockholm University.

The convergence of inexpensive video-enabled mobile phones, high-speed mobile data networks and ubiquitous sensing devices opens up a new design space called “live mobile video interaction”. It gives rise to a new genre of applications regarding live mobile video production that can be seen as an instance of the said space. This thesis is particularly interested in exploring potential technical challenges and opportunities presented by “live mobile video interaction”.

The results indicate that lack of synchronisation among video streams causes problems for directors in such systems that were not present in professional systems. We also identified two distinct video production modes depending on visual access of the director to the event that is being filmed. Based on our study we propose technical design suggestions and indications on how to solve the synchronisation problems in respective mixing modes.



Media

PRESS AND MEDIA APPEARANCES

April – Oskar Juhlin is mentioned as a “Cool person” in the list of “Cool people” published by Telenor magazine. <http://smartertogether.telenorconnexion.com/2015/04/combining-fashion-and-technology-in-sweden/>

May – Digitizing Fashion-Software for wearable devices was featured in the ACM Interactions May-June 2015 issue. <http://interactions.acm.org/archive/toc/july-august-2015>

June – Motherboard blogged about Enjoying Machines: “One of the biggest surprises about modern technology is not how productive it makes us, or how it has revolutionized the workplace, but how enjoyable it is,” wrote Oskar Juhlin and Barry Brown in their 2015 book Enjoying Machines. Fantasy and pleasure is the great strength of fashion: it makes us feel like we can take on alternate personas at will. In the end, we don’t need performance-enhancing technology or stuff that’s going to make us superhuman. We just want something we can enjoy. <http://motherboard.vice.com/read/wheres-the-wearable-tech-thats-fashionable-enough-to-wear>

July – Somaesthetic design is the cover story in Interactions ACM in the July-August 2015 issue. <http://interactions.acm.org/archive/toc/july-august-2015>

August – Kristina Höök’s gave a talk about Internet of Things in Alpbach that attracted attention in German press:

- <http://diepresse.com/home/alpbach/4808264/Technik-sorgt-fur-neues-Korpergefuhl>
- <http://science.orf.at/stories/1761792/>
- <http://derstandard.at/2000021582944/Wir-sind-alle-Hybride-aus-Organismus-und-Technik>

October – P4 Radio Stockholm broadcasted live with from the centre with Maria Holm talking about the

research at the centre and Johanna Mercurio giving a live demo of the Soma Mat.

November – The Consumer-Oriented Internet of Things project ended in September. The design fiction IKEA catalogue that was the final outcome of the sixth-months project received a great deal of attention in the press including Wired and Business Insider, just to mention a few.

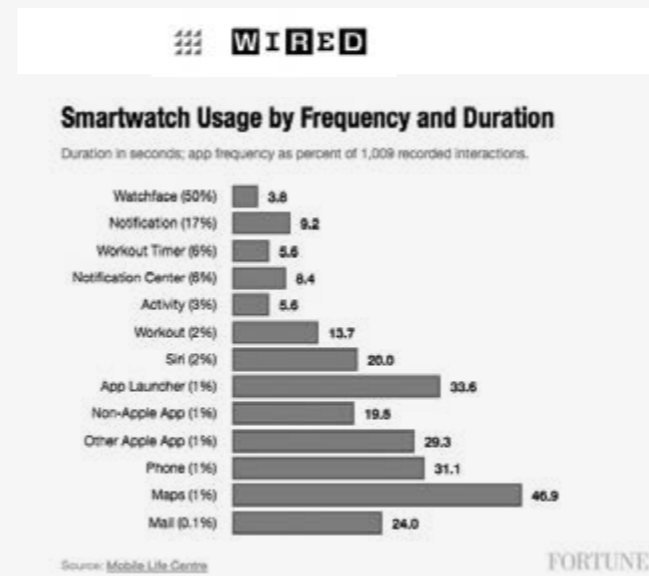
November – The study of how owners use their Apple watches was covered by Fortune and Business Insider, and was published and talked about on over 50 tech blogs! And in TIME magazine!

December – Space 10 published a magazine to present projects that are on exhibit in the co-creation space at Kodebyn, Copenhagen, Denmark. The Soma project is included in the magazine. http://markedsforing.dk/sites/default/files/space10_fresh_living_lab_journal.pdf

March – The design fiction IKEA catalogue is in the Swedish technology magazine Ny Teknik: <http://www.nyteknik.se/tekniknyheter/article3964658.ece#comments>.

March – The magazine Veckans Affärer announced its annual list of the most powerful female digitisers in Sweden. Sara Mazur, head of Ericsson was at the top of the list and Kristina Höök came in ninth place. <http://www.va.se/nyheter/2016/03/07/maktigaste-digitalisterna-2016/>

March – The Swedish minister Mikael Damberg announced that the VINNOVA program will fund projects to support the digitalisation of Swedish industry. Oskar Juhlin’s project Frontrow Forensics was one of the eight projects that were granted for funding. Posted in the business journal Dagens Industri web version: DiGital. <http://digital.di.se/artikel/statliga-miljoner-ska-ge-industrin-en-digital-skjuts>



Design Fiction: Near Future Laboratory's near-future "IKEA Catalog"





Advisory Board
meeting, June 2015



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Funding

VINNOVA – the Swedish Governmental Agency for Innovation Systems – is Sweden’s innovation agency. Its mission is to promote sustainable growth by improving the conditions for innovation, as well as funding needs-driven research.

VINNOVA is currently funding 17 different VINN Excellence Centres for a period of 10 years. These provide a forum for collaboration between the private and public sectors, universities and colleges, research institutes and other organisations that conduct research.

The centres deal with both basic and applied research and work to ensure that new knowledge and technological

developments lead to new products, processes and services. The funding model for the VINN Excellence Centres is that a third comes from VINNOVA, a third from a Swedish University, and a third from industry partners.

The Mobile Centre’s funding follows this model with a third of its funding coming from VINNOVA, a third from Stockholm University together with the research collaborators SICS Swedish ICT and KTH, and a third from industry and public sector partners Ericsson, Microsoft Research, IKEA, ABB, Telia Company, Rebel & Bird, Ziggy Creative Colony, SparbankenRekarne, City of Stockholm, Kista Science City and STING.



**Always explore!
Always create!
Always enjoy!**

Mobile Life VINN Excellence Centre
at Stockholm University

Partners:
SICS Swedish ICT, KTH, Ericsson, Microsoft research,
Telia Company, IKEA, ABB, Rebel & Bird, Ziggy
Creative Colony, Slagkryssaren, Sparbanken Rekarne,
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