



Mobile@JIT

2012-2013

Creating lasting
impact

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Mobile Life Creating lasting impact!

The Mobile Life Research Centre is a design research centre focusing on how information technology can enrich our everyday lives. The centre's competitive edge lies in doing serious research about what we might normally describe as "unserious" activities. We find inspiration by doing studies on people's creative leisure activities such as horseback riding, hunting, parkour, dancing, or role-playing games. We use those insights to spur innovative design processes, resulting in mobile and sensor-based applications, new mobile media, technical platforms, and design materials available to stimulate creativity of amateurs.

The centre has been active for six years, having begun in 2007 and planned to run until 2017. During its early years, the centre focussed its attention on the mobile revolution: the opportunities generated by Internet access from mobile phones. During 2012 we moved on to examining the rapid development of ubiquitous Internet access, a development that has been called the "internet of things" vision. Briefly put, Internet was first available on computers (at least

in Sweden) and then on phones – now, it is on everything. This new focus is reflected in the partnership setup, with IKEA coming in as a partner with a strong interest in the use of integrated technology in the everyday home, and the Royal Institute of Technology as a new research partner with a strong competence profile in integrated and embedded technology. We see it also in how the centre project has re-focussed its activity towards consumer services that are intended for home use, services that generate and build on massive data sets generated by sensor data, as well as in our increased interest in tools and platforms that support end user creativity in building sensor-based services.

With four years remaining, it has become an increasingly important centre goal to create a lasting impact – and here Mobile Life is at an exciting stage of its existence. The centre has established itself as a leading academic centre on the international scene, unparalleled in Sweden and with few international competitors. It is a well-established research



hub attracting students and guest researchers from around the globe, and it has a proven track record of successful research projects in close collaboration with industry partners. Through the commercial centre partners, results, people and general know-how from the centre have propagated into Swedish industry. Many former Mobile Life members have moved on to industry or started their own companies. Others have moved on to start research groups at universities in Sweden and abroad, and in the process also revolutionised the way interaction design is taught in academia.

This year, Mobile Life has also published a book with a corresponding website; Plei-Plei, which documents research into playful experiences conducted at the centre and with its partners. The Plei-Plei book exemplifies our aim to articulate our results in ways that may reach outside the academic community.

While the research is shifting focus and moving in new and even more ambitious directions, we also see products emerging directly from Mobile Life. The efforts to commercialise Mobile Life results such as Affective Health and the Video Mixer

have progressed further through external grants. A parallel project called "Consumer Oriented Internet of Things" was initiated during the year, with the goal of developing three near-commercial consumer-oriented IoT services over the next two years. The partners in this project largely overlap with the Mobile Life consortium, but with a stronger presence of technology researchers and media companies. Some of the newcomers now share our office space in Kista, effectively expanding the centre into an Internet-of-Things centre, as planned in the Mobile Life operational plan. In all, we are confident that in fifteen years time, we will all be able to look back on Mobile Life and proudly say: *We were there when it all happened.*

Annika Waern,
Centre Director

Introduction

The Mobile Life VINN Excellence Centre focuses on designing for enjoyment using Internet of Things (IoT) technologies.

By IoT-technologies, we refer to sensors and actuators placed in our gardens, in our homes, on or inside our bodies, in our game consoles and in many other places – all connected to the Internet and generating loads of data – big data. By focusing on designing for enjoyment in these materials, the centre breaks new ground in several ways: its researchers invent new services and new interaction models, we create efficient and user-oriented methods for developing IoT- services, we carry out in-depth studies of how people make sense of and have fun with these technologies to further our understanding of what the future entails and we explore the emerging innovation system for mobile services and technology. All projects are carried out in close collaboration with industry partners, with the aim of producing both excellent research and possibilities for commercialisation.

The centre started in 2007 and has funding until 2017. The Mobile Life Centre encompasses about 45 researchers, and the research is interdisciplinary. Researchers in the centre come from as diverse backgrounds as computer science, interaction design, sociology, psychology, game design, art, dance and fashion. The centre's competitive edge lies in conducting serious research on what we might normally describe as "unserious" activities. Our industry partners

include Ericsson, Nokia, Microsoft Research, TeliaSonera, ABB and IKEA, as well as small companies such as Movinto Fun and Company P. We also have a close collaboration with the City of Stockholm. We find inspiration by doing studies of people's mundane leisure and creative leisure activities such as horseback riding, hunting, parkour, dancing, or role-playing. We use those insights to spur innovative design processes, resulting in mobile applications, sensor-based applications, pervasive games, new mobile media, technical platforms, and materials to support amateurs' creativity. Our output ranges from publishing ambitious books and writing public opinion articles, to generating and demonstrating innovative mobile and leisure-oriented applications, and applying new methods for design and evaluation in commercial contexts.

During the last year we published nine journal articles, and twenty peer-reviewed conference papers in highly renowned venues. Our research has an impact on what our partners call strategic innovation, that is, it points to new design domains and possibilities that lie ahead, and thereby influences the partners' strategic decision making. Recently, for example, we have designed for sports, interacting with nature, as well as meditation and bio-feedback interactions with your own



Photo: Petter Hannerfors

body – all of which open entirely new design domains. But our research can also have a more direct impact, such as when the company Movinto Fun incorporated one of our games in their launch of Oriboo. We also occasionally try to commercialise one of our design concepts ourselves, such as with the Affective Health system, a stress management system and the Instant Broad Casting System.

The centre is now at the stage of being well established as a significant research organisation,

and is shifting its focus more and more towards external visibility – towards being more widely recognised even outside the research community – with the overall aim of creating lasting impact.

Centre Partners

The Mobile Life Centre is a joint venture between several research organisations, IT- and telecom industry partners, consumer-oriented product partners, and public sector representatives. The centre is hosted by Stockholm University. Below, we present the partners that are currently active at the centre.

Research organisations

Stockholm University

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

SICS

The mission of SICS is to contribute to the competitive strength of industry residing in Sweden by conducting advanced research in strategic areas of computer science, and to actively promote the use of new research ideas and results in industry and in society at large. SICS is situated in Kista outside Stockholm and in close proximity to the Mobile Life Centre. Many of the researchers at Mobile Life are employed by SICS. The role of SICS in 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 will cooperate with KTH's School of Computer Science and Communication. The school is engaged in education and research within the traditional core areas of computer science

including, robotics, machine learning, robotics, and informatics, as well as more human-centred subjects such as interaction design, media technology, and speech- and music-based systems. Several researchers within the Mobile Life centre are formally employed and/or enrolled at the doctoral program at the department of Media Technology and Interaction Design. The role of KTH in the Mobile Life Centre will be that of a joint research partner together with Stockholm University and SICS Swedish ICT. During the upcoming period, KTH will co-fund a PhD student.

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 provides the centre with extensive knowledge about present and future telecommunication systems as well as concrete technology and access to infrastructure components via Ericsson LABS. 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.

TeliaSonera

TeliaSonera provides network access and

telecommunication services that help people and companies communicate in easy, efficient, and environmentally friendly ways. Its combination of international strength and local excellence is what makes TeliaSonera truly unique, and enables it to provide a world class customer experience from the Nordic countries all the way to Nepal. This combination has resulted in 4G, a groundbreaking fibre network, and the introduction of 3G at Mount Everest. TeliaSonera is one of the founding partners of Mobile Life and has been a partner at the centre since it began in 2007. The centre's current direction fits well with TeliaSonera's objectives, with the centre's forward-looking research into mobile users, applications, and ecosystems assisting TeliaSonera to understand how to act in the future. TeliaSonera brings to Mobile Life its vast experience of mobile access and telecommunication services.

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. Through its focus on social and mobile services, the Mobile Life Centre targets the first of these areas. The researchers at the centre have a well-established collaboration with Microsoft Research Ltd in Cambridge, resulting in particular in a profound understanding of information technology use in everyday life.

Nokia

Nokia is a pioneer in mobile telecommunications and the world's leading maker of mobile devices. Today, Nokia is connecting people in new and different ways - fusing advanced mobile technology with personalised services to enable people to stay close to what matters to them. Nokia also provides comprehensive digital map information through NAVTEQ; and equipment, solutions and services for communications networks through Nokia Siemens Networks. Nokia Research Center contributes to the Mobile Life Research Centre particularly in the areas of user experience research,

novel applications of mobile multimedia, and future interaction models and metaphors for mobile devices and services.

IKEA

Rather than selling expensive home furnishings that only a few can buy, the IKEA Concept makes it possible to serve the many by providing low-priced products that contribute to helping more people live a better life at home. Fundamental activities such as eating, sleeping, storing items, socialising and so on create a demand for furniture and practical products that solve essential human needs. Furthermore, the vast majority of people have limited budgets and limited space in their homes. The IKEA product range meets these needs by offering a wide range of well- designed, functional home furnishing products at prices so low that as many people as possible will be able to afford them. The IKEA range includes products for every part of the home. The IKEA range has a profile that reflects the IKEA way of thinking. It is simple and straightforward. IKEA products are hard-wearing and easy to live with. They reflect and facilitate an easy, natural and unconstrained way of life. They express form, are colourful and cheerful, and appeal to the young at heart of all ages. IKEA of Sweden AB lead product and business development globally and is interested in Mobile Life's focus on the "good home life".

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 in which 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.

The company P

The company P is located in Stockholm, Sweden.

The company P was formed to address the growing demand by audiences to participate and become an integral part of the drama enabled by new digital interactive technologies and social media. The company P is in a pursuit of a form of entertainment that is enjoyable as a product to consume and watch, and as a game and event to dig into as deeply as you choose: entertainment that is broadcast and distributed in the most accessible and effective ways that the new technologies allow: entertainment that uses the new means of storytelling, expression and experiences that new media afford us.

Movinto Fun

Movinto Fun creates innovative interactive entertainment products that make people move and have fun. The company was founded in 2007 as a spin off from interdisciplinary academic research at the Interactive Institute and KTH – research merging dance education and interaction design. Movinto Fun is very interested in Mobile Life, especially with regard to interaction design, bodily interaction, and games. As a partner, Movinto Fun contributes expertise and knowledge about movement-based interaction and movement-based mobile devices, commercial perspectives on game and product development, and experiences of commercialising research results. Movinto Fun can also provide test platforms (hardware and software) for movement-based interaction concepts that might be used in the projects.

Public sector representatives

City of Stockholm Municipality

Within Sweden as a whole, the Stockholm region and Kista in particular play 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 focused on this sector, for example Kista Mobile Showcase, and to participate in the Mobile Life Centre. The City of Stockholm plays a natural central role in the Mobile Life Centre, through 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 ready to serve as test-users representing the public sector in several project domains. Furthermore the city promotes coordination and cooperation regarding the various mobile initiatives in the city.

Kista Science City

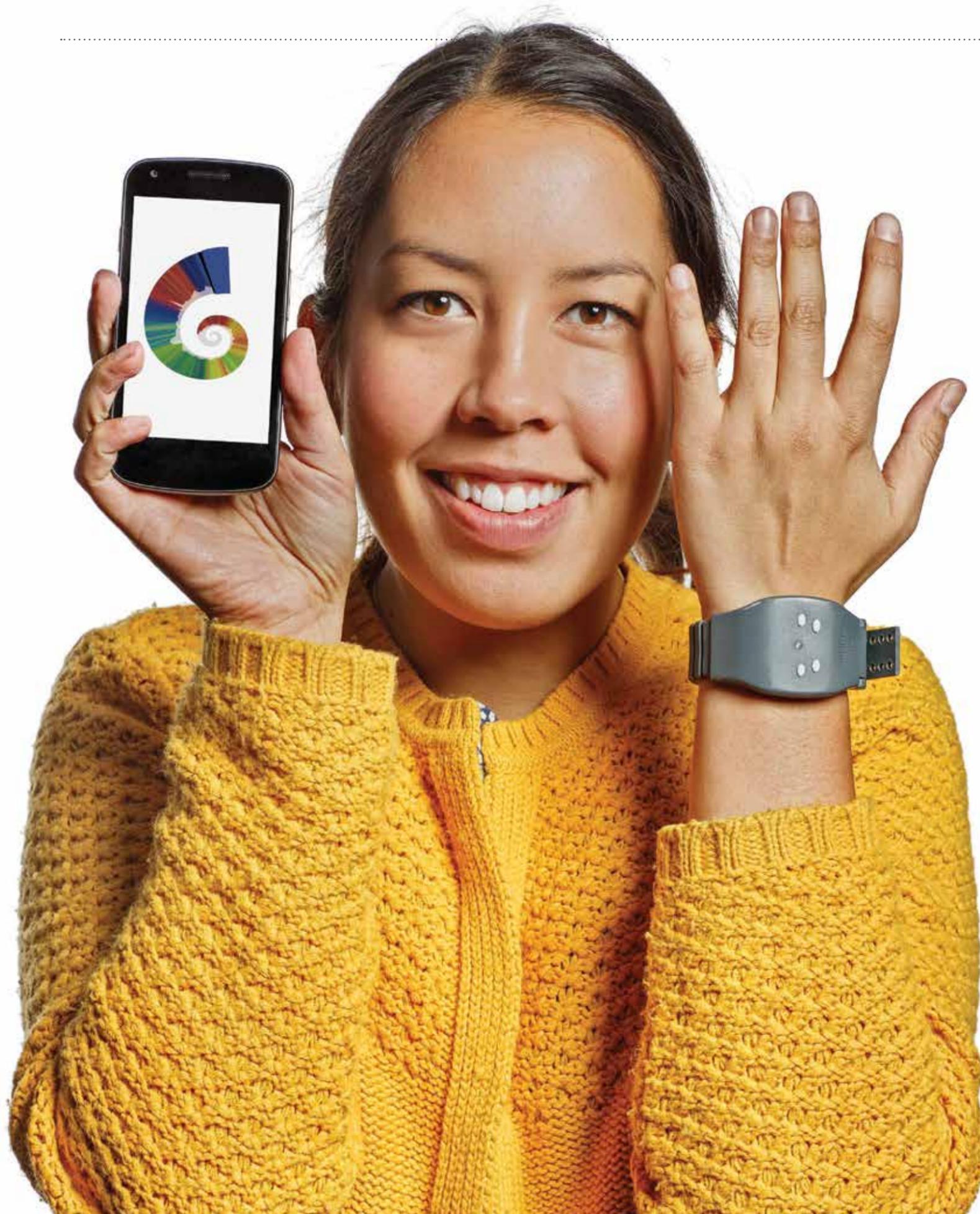
Kista is a science city – a creative melting pot where companies, researchers and students collaborate in order to develop and grow. The foremost sector in Kista is ICT. Figures show that few places on the planet can demonstrate the same high concentration of expertise, innovation and business opportunities within ICT. Kista Science City brings to the competence centre its project “Kista Mobile & Multimedia Network”, an active business-oriented network for people and companies within mobile services and multi-media industry. The network provides a meeting point for researchers, entrepreneurs, and industrial management in an international milieu with a strong focus on business. It contributes an important component of an ecosystem in which government, academia, and industry work together for growth.

Innovation system partner

STING

STING, Stockholm Innovation & Growth, founded 2002, is a world class eco system for innovative start-ups based in Stockholm. This eco system encompasses comprehensive business development support, own financing sources and access to STING’s broad network – all interacting with each other to more quickly 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 at the centre and contributes with its competence as an incubator. STING has been a partner since the start of the centre in 2007.





Research

Emergent technologies in the mobile, ubiquitous and IoT technology sectors have the potential to support a whole range of leisure activities in everyday life. This has challenged the existing design research that has in the past been mainly focused on work settings. Mobile Life's research therefore aims to take the "un-serious seriously". By meticulously studying what people enjoy doing – play, pleasure, entertainment, socialising, fashion – with or without technology, we are better equipped to design for what we could call the good life. Our aim is to design interactions that does not deduct from the current practices or experience rather add to them or innovative for possible novel experiences. By focusing on consumer-oriented Internet of Things services the Mobile Life Centre adds to and strengthens the Swedish innovation system.



LiveNature

It is as if we never really have got used to staying indoors as much as modern life requires. Modern interior design excels in experimenting with ways to turn our homes outside in and make nature meet culture. Windows become larger and the choice of locations for housing and other buildings are chosen with a sensitivity to scenic views. In the same manner, many will flee these interior spaces to instead spend time in some cherished place, which could be a primitive house along a river, a beach or a park in the city.

In Live Nature we invent new mobile media addressing this longing for nature. We have a particular focus on live video broadcasting, combining the video feeds with sensor-data on temperature, tension and acceleration that can be placed in your garden, at your boat or other cherished places. These media feeds are then transformed into new forms of live installations or decorations in the home. Such installations provide access not only to the aesthetics of nature but also to a particular and intimate sense

of meaning related to historical events and promises for the future to come.

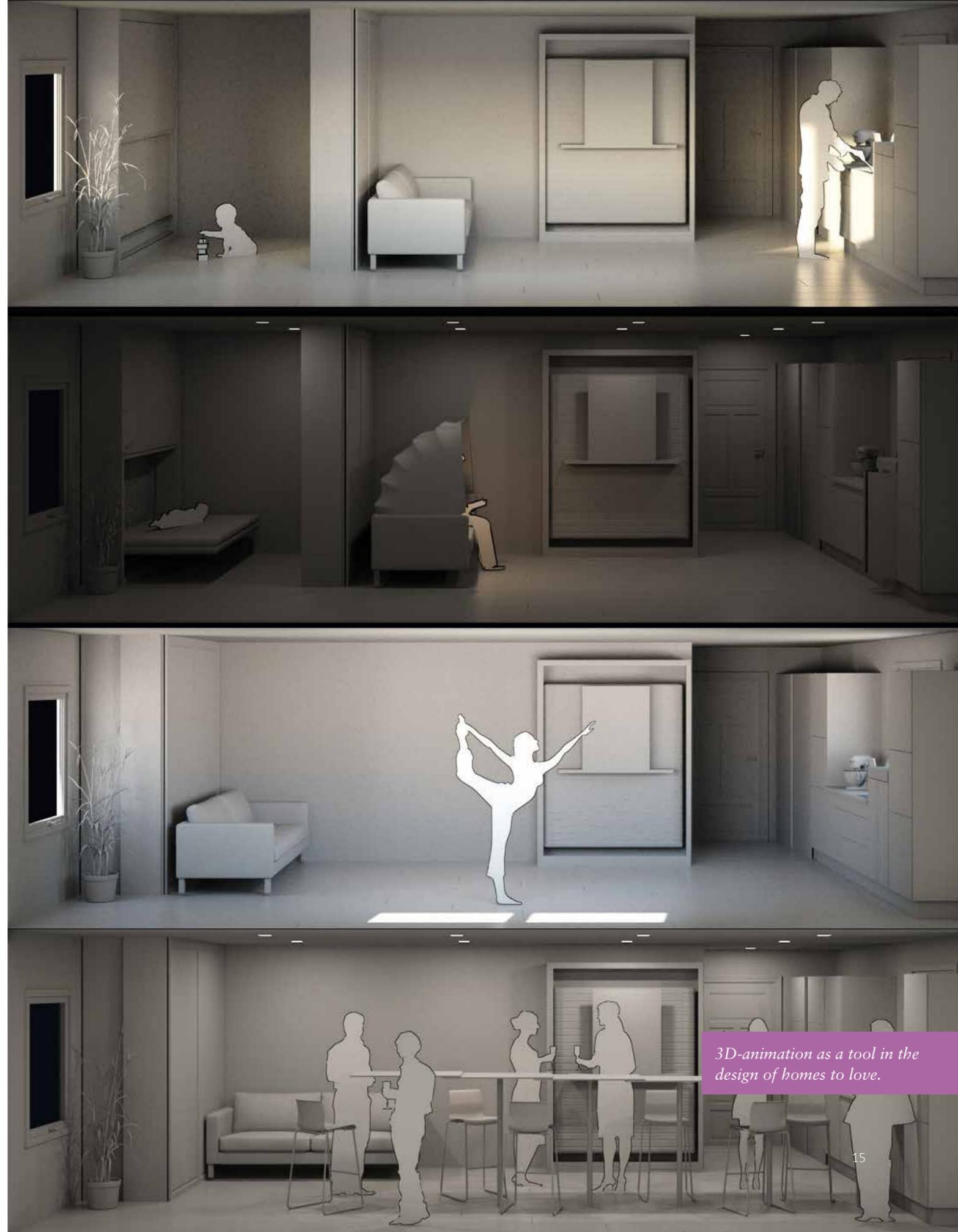
The design challenge posed by this domain is two-fold. First we need to understand the experience of cherished places and what technology could be used and how systems should be designed to be able to instrument these sometimes rough outdoor environments. Second, we need to grasp what it means to decorate your home, accounting both for aesthetical and practical demands.

In recent years, our focus has been on developing the technical infrastructure and providing a “design material” to support the creation of live decorations to be displayed and experienced in many different ways in the home.

Project leader: Oskar Juhlin
oskar@mobilelifecentre.org



Form experiment with trail cameras.



3D-animation as a tool in the design of homes to love.



Testing and suggesting new aspects of mobile phones in relation to the fashion trends.



mFashion

The increasing emphasis on user experiences in mobile phone design puts the selection of colours, materials, and form at the forefront. However, the discussion of such aspects of design research has not yet accounted for how the users themselves, as well as industry, frame some of those aspects in terms of fashion. In fact, the aesthetics of a mobile phone need to be placed in relation to the fashion trends of other parts of people's outfits – clothes, trendy colours and other fashionable of fashion.

We argue that fashion logics are a part of the context in which users select colour and material. Neglecting to understand fashion dynamics might lead to both missed opportunities, and a decrease in the take-up of new applications. Thus teasing out the difference between consumption of mobile experiences as some sort of de facto product and symbolic fashion-oriented experiences is of critical importance for design-oriented research in the mobile area. But how can we account for fashion logics in mobile interaction design? How can we understand the purchase and use of mobile technology as a form of fashion consumption? Where and when does mobile phone design overlap with fashion design and the fashion industry? What unexplored fashion areas would be interesting to combine with mobile design and where do they come from?

During the past year we presented a futuristic and design-oriented approach to fashion and mobile phones. We performed a design exercise to illustrate how fashion practices and the fashion design process can be used to create new

opportunities both in the mobile domain and in product design, as well as in wearable computing. By investigating the concept of an outfit-centric design, we came up with a range of design ideas relating the mobile expressions to other parts of your outfit. We designed a set of mock-up samples using the emerging technology of organic interfaces. Initial user feedback shows how fashion-conscious participants creatively experimented with the samples' variations of shape and colour in outfits created from their personal wardrobes. This in turn revealed the importance of the objects' size and location on the body. It also indicates that a lack of integration with the fashion system's processes reduces the attractiveness of the samples.

*Project leader: Oskar Jublin
oskar@mobilelifecentre.org*



PlaySpaces

The PlaySpaces project develops design solutions, tools and technology assemblies focussed on various forms of play activities in public space. A broader understanding of play (going beyond games) requires that players can establish the rules and conditions of play themselves. Designing for fun in play is not primarily a quest for an optimally designed and balanced game, because design solutions require a level of openness for appropriation that traditional computer games seldom offer. Instead, it is critical that the designs are able to establish a context in which people feel inspired to play, and safe in taking part. They must promote a movement in and out of game that at the same time supports intense engagement and detached reflection.

The main activity during the year has concerned the staging, study and beta level development of one such playful activity in a public space, which we named Codename Heroes. The system was fully developed during May-August 2012. As of the end of March 2013, the game client supported message creation and message passing based on Bluetooth and GPS positions, tracking players' positions, and players creating and activating "magical artefacts" through the use of QR codes and GPS positioning. It also contains server-side quest management functionality for game masters. The server runs on top of a so-called MUD (Multi-User Dungeon) engine and the client runs on Android phones (Samsung and HTC).

The game was successfully staged at Ung'08 in August 2012, with a total of 52 players trying out the system and enjoying the game. The prototype proved to be stable and able to scale to the number of participants we expect during the autumn period. The game trial also proved that this small, scaled-down version of Codename Heroes is a viable game in itself. We collected a plethora of feedback on the game design, mostly positive, from the 52 participants, and are in the process of writing up the results in the form of

conference articles and a licentiate thesis by Jon Back.

During the first week of September, Codename Heroes was staged in collaboration with Stockholms Public Library and the LARP (live action role playing) organisation and design collective Ursula. Towards the end of the week, the players participating in Codename Heroes were invited to visit Ursula's event Understockhom, allowing the players to travel into a truly magic world – the LARP – to complete their final quest and solve the mystery. This week-long adventure was both a success and a failure at the same time. It was a success in that the participating players were very enthusiastic and played rather intensively, which allowed us to thoroughly test the technology and the overall design solutions. We were also pleased to see that the technology was up to the task: we did not have a single breakdown over the week, the automated functions adapted well to player behaviour, and the game mastering functions provided good support for gamemasters.

The failure was that too few players participated in the event. From player interviews as well as responses from people who were unable to participate, we understand that the structure of the trial as a weeklong and rather intense event posed a problem.

We are still in the process of analysing the results from these two trials, with a particular focus on the gender perspective as one of our design goals was to attract young female players. A larger field trial is planned for the summer and autumn of 2013. We have also started a process to spin off Codename Heroes as a separate company.

*Project leader: Annika Waern
annika@mobilelifecentre.org*



The game Codename Heroes played at Ung 08 in Stockholm.

Citizen Dialogue

All over the world, urban areas are expanding rapidly. This rapid urbanisation poses challenges in terms of sustainability, but also in terms of democracy. Established models for planning processes do not ensure that all citizens are given a voice; in particular, young people and marginalised groups are seldom heard. This is not only a democratic problem; it also leads to the risk of overlooking important social and cultural values in a local area, and failing to recognise local, concrete and useful suggestions for its development as well as what makes things make a neighbourhood aesthetic, fun and engaging to live in. In the Citizen Dialogue project, we aim to develop processes as well as prototype tools for an enhanced citizen dialogue.

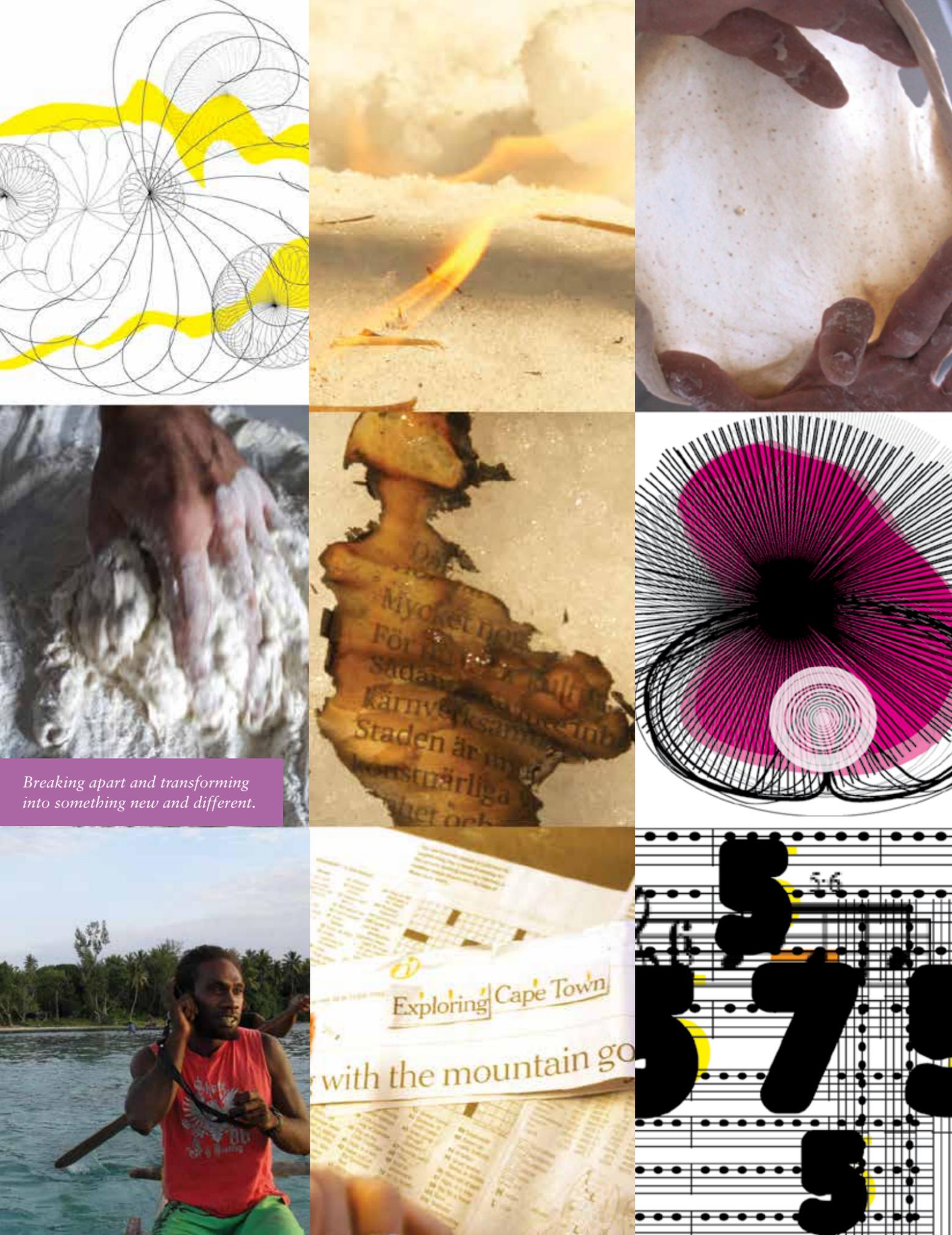
During 2012, Mobile Life collaborated with the Stockholm city suburb of Skärholmen in an experiment connected with a development project called “Västerholmsstråket”, which was intended to become an outdoor recreation area. Together with the faculty of landscape planning at the Swedish University of Agricultural Sciences in, Uppsala, which provided expertise in landscape planning, we managed to generate close and fruitful dialogue with the local inhabitants.

However, during the years of working with issues related to citizen dialogue, it has become increasingly obvious that the core problems in citizen dialogue lies in the established planning processes and not in the tools for executing them. The introduction of new technology often serves as a tool for gathering opinions and information from citizens, but once the planning process is in motion the dialogue halts. The democratic process is slow and to the average citizen obscure, and most of the time it is very unclear to the citizens how their own proposals have affected the outcome. Although interesting and innovative, “Västerholmsstråket” is a case in point, as it is a pure planning process ending with the submission of a proposal to the city. Until that proposal has been discussed and approved, there will be no outcome at all that is visible to the citizens. The slow and murky process is particularly harmful when working with children and young people. More often than not, they will be adults before the results are in place.

*Project leader: Annika Waern
annika@mobilelifecentre.org*



Photo used to spark citizen dialogue.



Re-mobiling

By breaking apart the mobile phone – both in terms of its form and its services – we aim to innovate alternative ways of interacting with basic functionalities. But how can you question the basic functionality and form of the mobile when it has become so engrained within our habits and everyday life? We made a radical departure in two quite unusual studies. The first was an ethnography performed in the Republic of Vanuatu, an island nation where mobile technology was introduced more or less on the same day as we arrived. As many of the social, cultural, and bodily practices of the Vanuatu people were overthrown and changed by the introduction of the mobiles, it was easier to see what we nowadays take for granted with the mobile. For example, they were upset that the mobile saved old text messages and had a call log, as this meant that other people could see what they had been up to. They had to re-learn how to move and how to protect the mobile in their everyday practices of living by the sea, climbing trees, spending time on the beach, fishing, and farming their lands. They also had to prioritise whether to charge the mobile battery at a high cost with their diesel-driven generators.

The second and somewhat unusual study started at the opposite end: we explored the experience of time through the fascinating, time dependent, and embodied process of sourdough baking. The goal was to move beyond standardised representations, such as clock time or mathematically inspired curves, in order to create a larger pool of experience for designing mobile interactions. We learnt, for example, how the temporality in sourdough baking is inherent in the materials and in the movements of the baker. Time is experienced in a rhythmic sense, regulated by the changing structure of the dough. The dough changed from loose to firm, sticky to smooth, soft to tense. Thus, we experienced time through rhythms and a tempo that changed together with the changing characteristics of the material, rather than through a clock or a metronome external to the process.

Based on these two studies we have since developed several design concepts for basic mobile functionality, such as taking care of your battery charging processes or deleting/saving text messages.

For battery consumption, we are now back in a situation where the mobile phone battery only lasts for a day or so before needing to be recharged. We built a mobile application that let us follow users' movements and charging habits relative to position. From the data, we see how users employ a whole range of strategies to manage their mobile batteries, trying to figure out what the crude measurement provide by the battery symbol really means in terms of usage. Their anxieties surrounding their batteries was palpable. Based on our understanding, we have created alternative expressions and shapes for energy movements – inspired by the sourdough baking processes – that focus on the bodily and emotional aspects of taking care of your mobile. The idea is to shift away from some of the anxieties surrounding the recharging of mobiles.

In “Delete by Haiku” we explore how to save and delete personal memories existing in archives of text messages. We focus on transforming different amounts and combinations of data into more compressed expressions. The first phase of our work deals with how to design the transformation of whole threads of text messages into haiku poetry. Our aim is to make the process of deletion visible, beautiful, and available for reflection, thereby making it easier to let go of whole threads of messaging.

*Project leader: Elsa Kosmack-Vaara
elsa@mobilelifecentre.org*

Breaking apart and transforming into something new and different.

Internet of Sports

In connection with sports, people experience a great deal of joy, pleasure, and enthusiasm, sometimes coupled with hard effort and frustration. Technology might augment or even enhance our experience of the sports activities themselves, as well as connect athletes or audiences and thereby enhance the social experience. To explore this design space, we have conducted design workshops with athletes skilled in golf and orienteering to explore how Internet of Things technologies could be used to augment the experience of these sports or improve performance. Two prototypes were built, one that allowed us to explore real-time vibration feedback for cross-country skiers and one that analysed acceleration in golf swings and provided audio feedback.

Our study on real-time vibration feedback for skiers showed that the vibrations were perceived in very different ways depending on muscle tone, speed, and fatigue. For example, the vibration is experienced more strongly against a tense muscle, and more weakly when skiers are fully focused on skiing quickly. The user testing with the golf prototype identified timing as a design theme to explore further and provided a technical foundation for further work with accelerometer data from the golf swing.

Sports technology based on research in disciplines such as biomechanics and physiology has traditionally been motivated by the desire to find ways of improving elite athletes' performance. For athletes to significantly improve their results, effort must be exerted in a range of different areas such as physiological performance, cardiovascular capacity, muscle

strength, technical skills, tactical decision making, mental focus, recovery strategies, etc. Traditionally the analysis of these factors has been based on external observation, e.g., specialised video analysis and motion capture technologies.

Experience, on the other hand, concerns personal and subjective dimensions of human activity. It focuses on issues such as bodily engagement, sociality, context, and surrounding practices. In recent years, consumer-oriented IoT technologies have to a large extent been dominated by services that put experience and sociality at their core, typically exemplified by the joy people experience when logging and reviewing their own bodily data, and their interest in sharing and comparing their data with other people.

In our design work, we argue that models of sports behaviours need to move beyond the use of simple and individual measures (e.g., geospatial position, direction, speed, and time) and instead combine a multitude of heterogeneous measures over longer periods of time to capture all the relevant perspectives needed to enhance performance. We argue that developing novel forms of interaction between individuals and models will allow further advancement of the models, but also that the individuals' interaction with (i.e. their bodily experience of) the models in real-time can enhance their performance to a greater extent than after-action review.

*Project leader: Stina Nylander
stina@mobilelifecentre.org*

Swedish Orienteering Championship.



Clouds and Surfaces

There are two corresponding parts to this project: studying interactive screen use “in vivo” – and matching this up with understanding cloud computing and how it is perceived.

The adoption of “surface” interactions on electronic devices, and the greater dependence on “cloud services” represent two twin radical changes in the format that current computing takes. The first has changed the form of our electronic devices, and if we consider the adoption of smartphones and tablets we can see that already the majority of electronic devices are interacted with through touch “surfaces”, rather than through the mouse and keyboard. Mobile “surface” computing is available everywhere – mobiles, tablets, TV-screens – and supports “micro-mobility”, by allowing information and communication to be threaded into co-present interaction with others in an increasingly dynamic way.

A corresponding subtle, technical shift that goes alongside (and supports) the use of surfaces is the greater reliance on different storage and computing resources connected over the Internet. Coming to be known as the “cloud”, it provides access to myriad cloud-based services and information – anytime, anywhere.

In order to explore what people really do with their mobiles and other “surfaces” when they engage in everyday activities, we developed software to record all their onscreen activity, as well as capturing video of the context in which those interactions took place. Our findings suggest that, contrary to the perception that they divide us from our immediate social surroundings, these screens are often integrated with social interactions in meaningful ways. For example, during a day trip to Stockholm with

a friend, a Google search on a mobile device becomes part of the conversation with those nearby, rather than removing the user from the social context. Future work will consider when and where this happens and how to design interactions to encourage such social sharing rather than prevent it.

In considering the other half of the equation, “cloud-behaviours”, we identified three broad types of cloud users. First, there are “sharers and carers” – these are the reluctant cloud computing users, who are using it mainly for sharing (through Facebook or Dropbox). Then, there are “stomers and hoarders” – these users already have large digital or physical collections and use the cloud as a supplement, but struggle in managing the different formats. Finally, “free for a fee” users pay for cloud computing and feel liberated by it, in particular, because they do not have to worry about managing their media collections.

Building on this work we conducted focused exploration of music media and the cloud, working on a range of design concepts. In one of the developed concepts, music playlists become associated with small, tangible boxes with minimal screens. By placing these boxes next to each other, or next to a mobile or music player, the user can move, merge and change playlists and decide what should be played right now. This concept is presented in an excellent video called “pick up and play”, which has already received almost 3,000 views on YouTube;

<http://youtu.be/p5Q8sbIXWks>

Project leader: Barry Brown
barry@mobilelifecentre.org



The design concept, “Pick-up and play”





Field trial at KVV, the power plant in Västerås.



Bodily Experiences

We aim to design for free-movement interaction that makes use of Internet of Things technologies. The project consists of two parts: (1) general design methods and tools for design, and (2) applications in quite different domains developed using these tools and methods.

One of our domains is control rooms of large factories, where we have been asked to bring enjoyment and fun as previous studies have shown boredom can be one reason for it being hard to attract talented engineers to want to work in these environments. At the outset of this project we conducted ethnographic studies that partly supported this, and partly did not. Not all control room workers we met with agreed that they were bored, while some admitted that their friends preferred to stay on the factory floor than be transferred to the control room, which they believed to be a more constrained environment. But we also found that in order to entertain themselves, many of the control room workers acted out various social games among themselves, such as baking bread to enjoy at breakfast together, playing tricks on one another, and so forth. To explore this further, and to bring these findings closer to interactive systems design, we built three different so-called “one function tech probes” – basically sets of small ambiguous systems that perform only one function without really explaining why to the end-users. One of these picks up on bio-sensor data, sweat related to emotional arousal, translating it into colourful led-displays, publically visible to everyone in the control room. Another picks up on arm movements, translating their movements into vibrations on other people’s arms. A third uses blinking lights to visualise how long people stay at various locations in the control room area. The aim of deploying these probes was to involve the control room workers in the design process – to get them to playfully explore what these probes can offer to enhance their social play at work

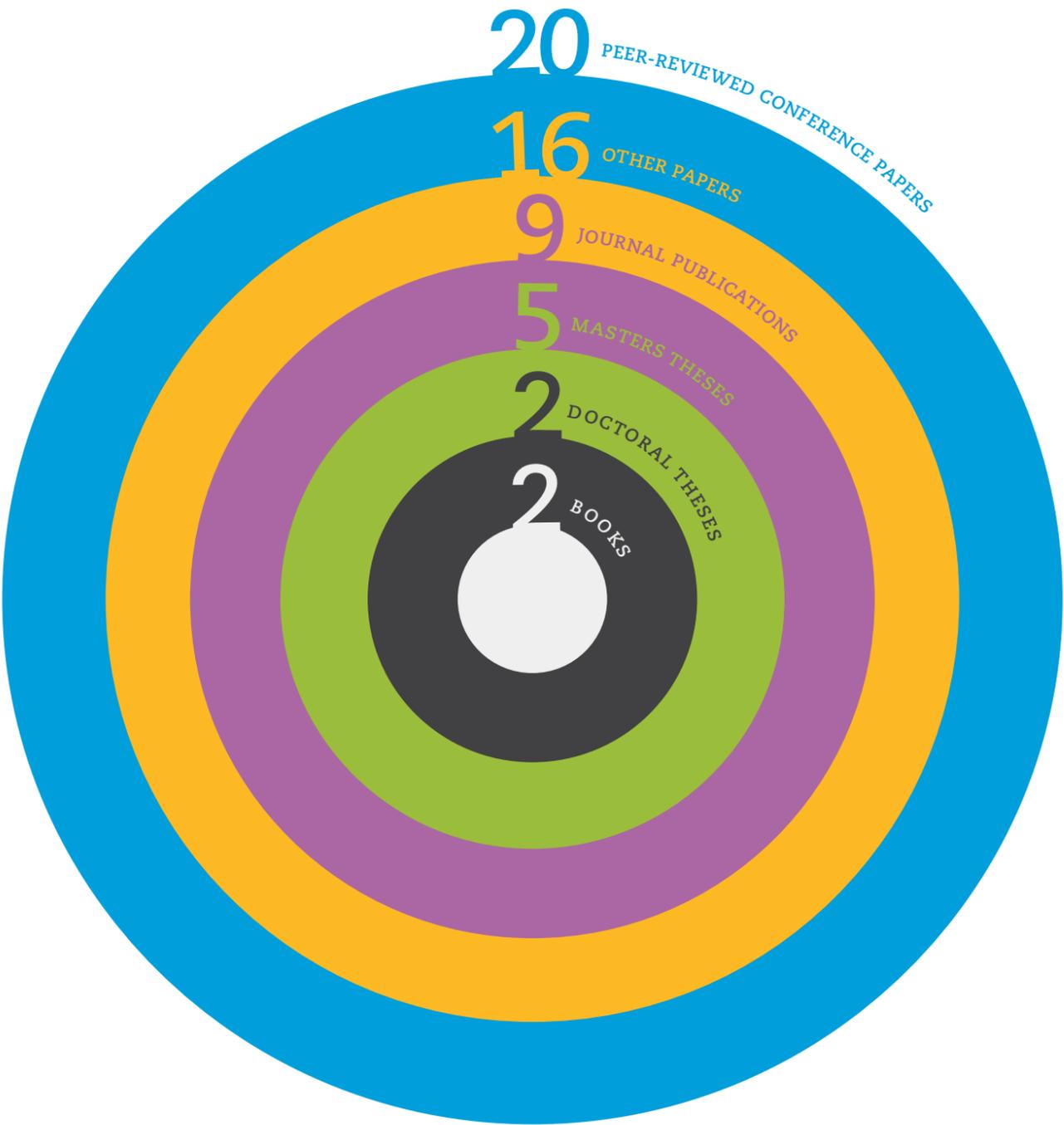
The second domain in which we work is geriatric assisted-living facilities. We created a series of prototypes designed to assist with some of the physiotherapists’ responsibilities, such as

modelling movements, mobilising parts of the patient’s bodies, and correcting and explaining nuances of movements. We specifically researched two different distributions of roles in which the technology takes over some of the physiotherapists’ responsibilities. In one, a small robot playfully demonstrates the instructed movements instead of the therapist. As it turned out, the elderly users started playing with the robot, competing with it and playfully challenging its speed and ability. This in turn led to a much better exercise session, with the elderly performing many more repetitions. Interestingly, this also led to a situation where the elderly teamed up with the physiotherapist to play together against the robot. The dynamics of the entire exercise session were transformed completely.

The last domain where we have designed for bodily interaction during the year is with a tangible interactive toy developed by our partner Movinto Fun: the Oriboo. We researched the kind of play these toys elicited in scenarios with different socio-cultural and economical backgrounds. We were taken to two schools with different resources: an elite private school, and a rural governmental school. The children at the two schools had different socio-economic backgrounds and amounts of exposure to technology and media. They all enjoyed playing with the Oriboo, but the kinds of play that emerged were different at the two schools. The children with more exposure to media and technology were happy to engage in multi-player games in which the device was used only as a tool or part of the game; whilst the children from the other school were fascinated with the technology itself (the device) and enjoyed playing more in a one-on-one relationship: each child exploring and playing with one device. In this case the device was an end in itself, whilst at the other school it was a means.

Project leader: Petra Sundström
petra@mobilelifecentre.org

Publications



Books

- 1 Holmquist, Lars Erik. (2012). *Grounded Innovation: Strategies for Creating Digital Products*. MK Press.
- 2 Ferneus, Y., Höök, K., (Mobile Life Centre) Holopainen, J., (Nokia) Ivarsson, K., Karlsson, A., (Boris Design Studio), Lindley, S., (Microsoft Research Cambridge) and Norlin, C., (Ericsson Research). (2012). *Plei-Plei: A book on how we do play, socialize and have fun with mobile technology*. PPP Company Ltd; First Edition Edition.

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- 4 Höök, K. (2012). Commentary on: Shusterman, Richard (2012): Somaesthetics. In: Soegaard, Mads and Dam, Rikke Friis (eds.). *"The Encyclopedia of HumanComputer Interaction, 2nd Ed."*. Aarhus, Denmark. The Interaction Design Foundation.

- 5 Laurier, E., B. Brown, H. Lorimer (2013) What it means to change lanes: actions, emotions and wayfinding in the family car. *Semiotica, Vol. 191, No. 4, 09.2012, p. 117-135.*

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- 1 Brown, B., McGregor, M., Laurier, E. (2012). Beyond recommendations: Local review websites and their impact. *ACM Transactions on Computer-Human Interaction (TOCHI). Volume 19, Issue 4, December 2012, Article No 27.*
- 2 Höök, K., and Löwgren, J. (2012) Strong concepts: Intermediate-level knowledge in interaction design research. *ACM Transactions on Computer-Human Interaction (TOCHI). Volume 19, Issue 3, October 2012, Article No. 23. Best paper ACM.*
- 3 Höök, K. (2012): Affective Computing. In: Soegaard, Mads and Dam, Rikke Friis (eds.). *"The Encyclopedia of HumanComputer*

- 6 Nack, F. and Waern, A. (2012). Mobile Digital Interactive Storytelling – a winding path. *New Review of Hypermedia and Multimedia. Volume 18, issue 1-2, Taylor & Francis.*

- 7 Nylander, S, and Larshammar, M. (2012). The phone as a tool for combining online and offline social activity – teenagers' phone access to an online community. *International journal of Mobile Human Computer Interaction. Volume 4, Issue 4.*

- 8 Wang, J., and Ramberg, R. (2012) User Participatory Sketching in User Requirements Gathering ICIC express letters: *International Journal of Research and Surveys.*



9 Wiberg, M., Ishii, H., Dourish, P., Rosner, D., Vallgård, A., Sundström, P., Kerridge, T., and Rolston, M. (2013) Materiality matters--experience materials. *Magazine interactions. Volume 20 Issue2*, pp. 54–57.

Peer-reviewed conference papers

1 Aylett, R., Kriegel, M., Wallace, I., Segura, E., Mercurio, J., Nylander, S., Vargas, P. (2013) Do I remember you? Memory and identity in multiple embodiments In *Proceedings of RoMan 2013*, Gyeongju, Korea.

2 Brown, B., McGregor, M., Laurier, E. (2013) iPhone in vivo: video analysis of mobile device use. In *Proceedings of CHI 2013*, Paris, France.

3 Engström, A., Zoric, G., Juhlin, O., and Toussi, R. (2012). The Mobile Vision Mixer: A mobile network based live video broadcasting system in your mobile phone. In *Proceedings of MUM 2012*, Ulm, Germany.

4 Ferreira, P., and Sanches, P., and Weilenmann, A. (2013) Awareness, Transience and Temporality: Design Opportunities from Rah Island. Forthcoming In *Proceedings of INTERACT 2013*, Cape Town, South Africa.

5 Fernaeus, Y., and Sundström, P. (2012). The material move how materials matter in interaction design research. In *Proceedings of DIS 2012*, Newcastle, UK.

6 Juhlin, O., and Önnvall, E. (2013). On the Relation of Ordinary Gestures to TV Screens: General Lessons for the Design of Collaborative Interactive Techniques In *Proceedings of CHI 2013*, Paris, France.

7 Juhlin, O., Zhang, Y., Sundbom C., and Fernaeus Y. (2013). Fashionable Shape Switching: Explorations in Outfit-centric Design. In *Proceedings of CHI 2013*, Paris, France.

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9 Korn, M. and Back, J. (2012) Talking it Further: From Feelings and Memories to Civic Discussions In and About Places. In *Proceedings of NordiCHI 2012*, Copenhagen, Denmark.

10 Ljungblad, S., Kotrbova, J., Jacobsson, M., Cramer, H., and Niechwiadowicz, K. (2012) Hospital robot at work: Something alien or an intelligent colleague? In *Proceedings of CSCW 2012*, Seattle, USA.

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13 Márquez Segura, E., Waern, A., Moen, J., Johansson, C. (2013) The Design Space of Body Games: Technological, Physical, and Social Design. In *Proceedings of CHI 2013*, Paris, France.

14 McMillan, D., Morrison, A. and Chalmers, M. (2013) Categorized Ethical Guidelines for Large Scale Mobile HCI. In *Proceedings of CHI 2013*, Paris, France.

15 Nylander, S. (2012) Changing my life one step at a time – using the Twelve Step program as design inspiration for long term lifestyle change. In *Proceedings of NordiCHI 2012*, Copenhagen, Denmark.

16 Rost, M., Barkhuus, L., Cramer, H., Brown, B. (2013) Representation and communication: Challenges in interpreting large social media datasets. In *Proceedings of CSCW 2013*, San Antonio, Texas, USA.

20 PEER-REVIEWED CONFERENCE PAPERS

17 Zoric, G., Barkhuus, L., Engström, A., and Önnvall, E. (2013) Panoramic video: Design challenges and implications for content interaction. Forthcoming in *Proceedings of EuroITV 2013*, Como, Italy.

18 Waern, A. (2012) Framing games. In the *Proceedings of Nordic DIGRA*, Tampere, Finland.

19 Wang, J., Ramberg, R., and Kuoppala, H. (2012) User Participatory Sketching: A Complementary Approach to Gather User Requirements In *Proceedings of APCHI 2012*, Matsue, Japan.

20 Wang, J., and Karlström, P. (2012). Mobility and multi-modality – An exploratory study of tablet use in interaction design learning. In *Proceedings of the 11th World Conference on Mobile and Contextual Learning*, Helsinki, Finland.

Other papers

1 Aylett, R., Kriegel, M., Wallace, I., Márquez Segura, E., Mercurio, J., Nylander, S. (2013) Memory and the Design of Migrating Virtual Agents. In *Proceedings of AAMAS 2013*, Extended abstracts, St Paul, Minnesota, USA.

2 Corina Sas, Tomasz Fraczak, Matthew Rees, Hans Gellersen, Vaiva Kalnikaite, Alina Coman, and Kristina Höök. 2013. AffectCam: arousal-augmented sensecam for richer recall of episodic memories. In *Proceedings of CHI 2013 Extended Abstracts*, Paris, France.

3 Kerne, A., Webb, A. M., Latulipe, C., Carroll, E., Drucker, S. M., Candy, L., and Höök, K. (2013). Evaluation methods for creativity support environments. In *Proceedings of CHI 2013 Extended Abstracts*, Paris, France.

4 López Recio, D., Márquez Segura, E., Márquez Segura, L., and Waern, A. (2013) The NAO models for the elderly. In *Proceedings of the 8th ACM/IEEE international conference on Human-robot interaction 2013*. IEEE Press, Piscataway, NJ, USA, 187–188.

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7 Márquez Segura, E., Márquez Segura, L., López Torres, C. (2012) PhySeEar. Moving Yourself to Shine and Sound in Geriatric Physiotherapy Interventions In *Proceeding of Designing Pervasive Computing Technologies for Health Care 2012*, May 21–24, San Diego, California, USA

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9 Nylander, S and Tholander, J (2013). Tactile feedback in real life sports: a pilot study from cross-country skiing. In the *Extended Proceedings of HAID 2012*, Lund, Sweden.

10 Nylander, S. (2013) Social media for life style change – social with whom, and why? Workshop on social media for change. In *Proceedings of CHI 2013*, Paris, France.

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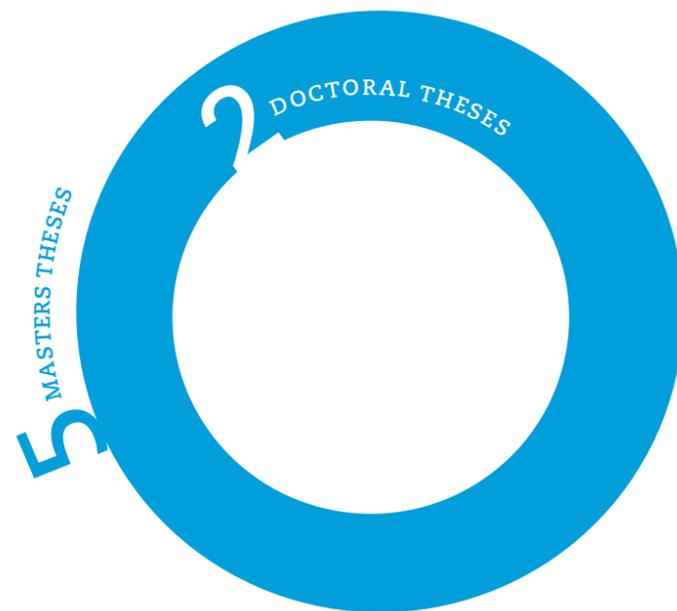
- 11 Rogers, Y., Höök, K., Pyla, P. S., and Frechin, J-L. (2013). Theory and practice in ux research: uneasy bedfellows? In *Proceedings of CHI 2013 Extended Abstracts*, Paris, France.
- 12 Sas, C., Fratzak, T., Rees, M., Gellersen, H., Kalnikaite, V., Coman, A., and Höök, K. (2013). AffectCam: arousal- augmented sensecam for richer recall of episodic memories. In *Proceedings of CHI 2013 Extended Abstracts*, Paris, France.
- 13 Tsaknaki, V. and Fernaeus Y. (2013) Explore wearable music players with focus on subculture and style, In *Proceedings of TEI 2013*, Barcelona, Spain.
- 14 Unander-Scharin, C., Höök, K., and Ludvig Elblaus, L. (2013). The throat III: disforming operatic voices through a novel interactive instrument. In *Proceedings of CHI 2013 Extended Abstracts*, Paris, France.
- 15 Vygandas, S., and Höök, K. (2013). Metaphone: an artistic exploration of biofeedback and machine aesthetics. In *Proceedings of CHI 2013 Extended Abstracts*, Paris, France.
- 16 Zoric G., Engström A., Barkhuus L., Hidalgo J.R., and Kochale A. (2013) Gesture Interaction with Rich TV Content in the Social Setting. Workshop on Exploring and enhancing the user experience for television. In *Proceedings of CHI 2013*, Paris, France.

Doctoral theses

- 1 Engström, A. (2012). *Going Live: Collaborative Video Production After Television*. Doctoral thesis in Man-Machine-Interaction (MMI) at Stockholm University.
- 2 Rost, M. (2013). *Mobility is the Message: Experiements with Mobile Media Sharing*. Doctoral thesis in Man-Machine-Interaction (MMI) at Stockholm University.

Master's theses

- 1 Athina Papadogoula, Fani. (2012). *Codename:Heroes. Designing a pervasive game for adolescent girls*. Master's Thesis at Royal Institute of Technology (KTH), Stockholm, Sweden.
- 2 Jung, Changsu. (2012). *Measuring movement of golfers with an accelerometer*. Master's Thesis at Royal Institute of Technology (KTH).
- 3 Martens, R. (2013). *Designing for hybrid music experiences in the home*. Master's thesis at University of Southern Denmark.
- 4 McGregor, M. (2012). *A video-based study of everyday interaction on mobile phones with advanced functionality*. Master's thesis in Human Centred Systems at the City University, London. Completed with distinction.
- 5 Pais, Miguel. (2012). *Deceitful Robots: The effects of Non-verbal Empathy and Competence on perceptions of a social robot*. Master's Thesis at Universidade Técnica de Lisboa, Portugal.



Doctoral theses

Arvid Engström. *Going Live: Collaborative Video Production After Television*. Doctoral thesis in Man-Machine-Interaction (MMI) at Stockholm University.

This thesis explores social and creative practices that emerge with new mobile video technology. The work frames a design space that spans across both social and technical domains. It associates emerging collaborative practices online with new means for producing and broadcasting media in real time, over mobile networks, and with low-cost consumer technology just as these technologies are becoming widely available in the world. As a premise, we sketch a scenario where groups of non-professional users, enabled by new technology available in their mobile phones, produce live video together. We use detailed ethnographic inquiries into the practices of expert media producers to inform design and spur innovation of new technology. Over the course of the design research process, we have designed and developed two functional prototype systems and produced a number of theoretical contributions to research on video interaction and to the understanding of live video production.



Arvid Engström
Photo: Petter Hannerfors



Mattias Rost
Photo: Joel höglund

Mattias Rost. *Mobility is the Message: Experiments with Mobile Media Sharing*. Doctoral thesis in Man-Machine-Interaction (MMI) at Stockholm University.

This thesis explores new mobile media-sharing applications by building, deploying, and studying their use. While we share media in many different ways, both on the web and on mobile phones, there are few ways of sharing media with people physically near us. Three systems were designed, built, and studied. Push!Music, Columbus, and Portrait Catalog; and a fourth, commercially available system was studied, Foursquare. This thesis offers four contributions. First, it explores the design space of co-present media sharing of four test systems. Second, through user studies of these systems, it reports on how these come to be used. Third, it explores new ways of conducting trials in the changing technical mobile landscape. Finally, the thesis investigates how the technical solutions demonstrate lines of thinking different from how similar solutions might look today. Following the sequence of Human-Computer Interaction methodology – design, build, study, – we look at systems through the eyes of embodied interaction and examine how the systems come into use. Using Goffman's understanding of social order, we see how these mobile media sharing systems allow people to actively present themselves through these media. In turn, using McLuhan's way of understanding media, we reflect on how these new systems enable a new type of medium distinct from the web centric media, and how this relates directly to mobility.

Activities

The centre believes in having open communication of research results within the boundaries of the joint venture. The researchers are regularly invited to hold presentations and talks at various conferences in addition to the major conferences where the centre is represented. Communicating our results and findings is something that we at the centre see as part of our mission. It is our responsibility to transfer this insight and knowledge not only to our partners but also to the wider community as a whole, as a way of contributing to society. Below are examples of such activities.

External activities

May 2012. Oskar Juhlin presented “A future where dogs and cats have cell phones” in a seminar series organised by Kista Science City and Stockholm University. The presentation was held in the Showroom at Kista Science Tower.

May 2012. Annika Waern presented “Playing for real: Street play and role play with mobile technology” in a seminar series organised by Kista Science City and Stockholm University. The presentation was held in the Showroom at Kista Science Tower.

May 2012. Oskar Juhlin will act as programme chair for NordiCHI 2013 together with Kaisa Väänänen-Vainio-Mattila.

June 2012. Yanqing Zhang gave a seminar on “Fashionology of Mobile Technology” at the University of Udine, Pordenone, Italy. She also met with Professor Leopoldina Fortunati.

August 2012. The Play Space project staged the game Codename Heroes at the youth festival, Ung’08 in Kungsträdgården in Stockholm. The festival is organised by the centre partner, City of Stockholm and the centre has often taken the opportunity to conduct user studies during this event. For the Codename Heroes game, players were recruited on the street from the festival participants. In total, 52 players participated in the game during the festival and some also signed up for the subsequent weeklong adventure that was staged during September in collaboration with the Live Action Role Playing organisation UnderStockholm.

August 2012: Lucian Leahu participated in the Consortium for the Science of the Sociotechnical Systems (CSST) in Santa Fe, New Mexico, USA. CSST serves as a trans-discipline community, connecting like-minded scholars from many different intellectual communities. CSST brings together researchers from a wide range of disciplines to develop a common language and scholarly repertoire as they work to understand diverse sociotechnical issues.

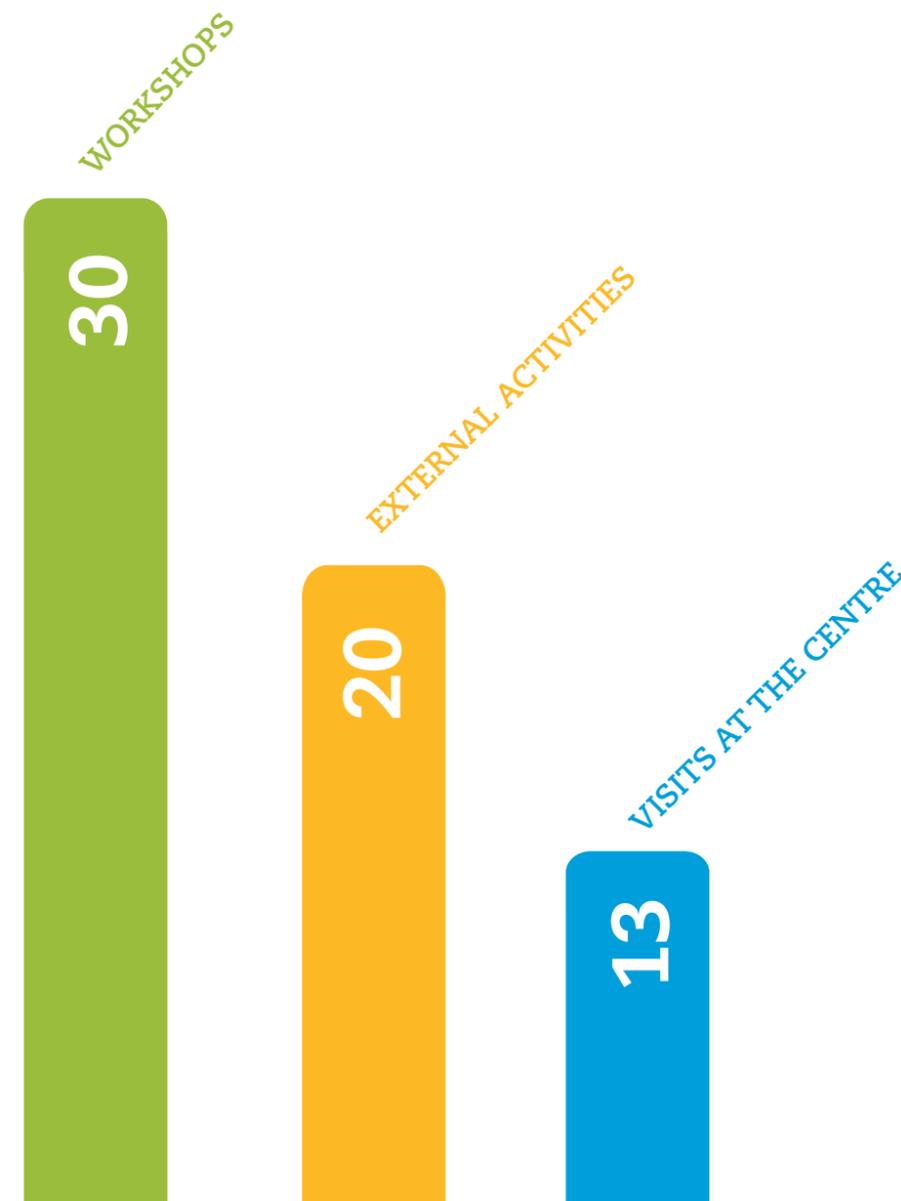
September 2012. Syed Naseh and Jon Back demoed Codename Heroes at the annual event “Forskarfredag” organised by KTH in collaboration with Stockholm University. The event aims to attract new students and present research performed at the two Universities. The event took place at Debaser, on Medborgarplatsen in Stockholm.

September 2012. Kristina Höök was elected to the ACM SIGCHI Executive Council.

October 2012. Oskar Juhlin was guest researcher at Microsoft Research, Cambridge, UK, during the period October 2012 to December 2012.

October 2012. Barry Brown gave a talk at the Huawei Device Summit, Hangzhou, China.

October 2012. Jinyi Wang worked as an intern at IKEA for three months from October to December 2012.



October 2012. Kristina Höök gave a talk at VINNOVA's annual conference in the Waterfront Congress Centre on the theme "Information society 3.0".

November 2012. Elena Márquez Segura participated as panellist at the 2012 Advances in Computer Entertainment Conference (ACE) conference in Nepal.

November 2012. Annika Waern and Maria Holm presented Mobile Life at the Game Innovation lab at New York University Polytechnic, Brooklyn.

November 2012. Annika Waern presented the game Codename Heroes at the Pioneer Valley game studies colloquium, Western Massachusetts.

November 2012. Annika Waern participated in a panel at the Practice conference organised by New York University Game Center.

March 2013. Oskar Juhlin presented the mFashion project at Politecnico di Milano-Dip Italy.

March 2013. At SICS's Open House event on 21st of March, Mobile Life was well represented. Mikael Ydholm, IKEA opened as the keynote speaker giving us the insights into IKEA and their thoughts about future homes. After Mikael, Petra Sundström gave a talk together with Daniel Gillblad from SICS. Their focus was on designing with Internet of Things materials. Mobile Life also had several demos. Since the event, we have been contacted by several companies whose customers ask for IoT-applications of various kinds, such as Daytona and Ångpanneföreningen. They turn to us to get advice on design methods and solutions.

March 2013. Oskar Juhlin was invited as a panellist to MoVid 2013, Oslo, in conjunction with MMsys13.

April 2013. The biggest conference in the Human Computer Interaction (HCI) community is the (Computer-Human-Interaction) CHI-conference that is organised every year. It is an international conference that attracts a major part of the research community in the area with more than 3 000 participants from 52 nations. Mobile Life has major a presence at this conference, presenting nine papers and two exhibit as well as participating in several workshops at this year's CHI in Paris 2013. The centre also actively contributes to the conference by reviewing papers. and at this years CHI in Paris 2013, nine papers and two exhibits were

presented as well as the participation in several workshops. The Centre is also actively contributing to the conference through work with peer-reviewing papers that are submitted. In 2012 Kristina Höök was technical program chair and in 2013 she was a member of the programme committee and the community chair.

Visits at the centre

The Internet of Sports project met with Anders Mellberg (chairman of Swedish Equestrian Federation), Lars Roepstorff (professor of the functional anatomy of the horse at Sveriges Lantbruks Universitet (SLU)), and Göran Dalin (SLU). Possible collaborations around mobile services for horseback riding, horse education, and horse injuries were discussed.

June 2012. The Centre was visited by KONE, the finish elevator company. We presented the Centre and walked through the Centre and looked at demos.

June 2012. The EIT ICT labs research action line, Health & Wellbeing visited SICS and Mobile Life. The centre held a presentation and a the delegates were given a tour of the centre, and researchers presented prototypes and research results. September 2012. The Latvian embassy visited with a group of nine IT companies. The companies included, Tilde, Datakom, SkatSkat, IT-institute, Sets and IT-house. Maria Holm held a presentation about the Mobile Life Centre and gave a guided tour.

October 2012. Ylva Ferneaus visited the centre with a group of KTH students from the interaction design program.

October 2012. Jakob Tholander participated in a presentation of the Internet of Sports project at Jämtland House, an event for marketing the region of Jämtland to entrepreneurs and innovators in Stockholm.

November 2012. The centre organised a presentation, "Design för Kropp, Känsla, och Knopp" and demos for the International Women's Forum. Celia Zhang presented shape switching phones, Johanna Mercurio presented Affective Health, Deniz Akkaya presented a toolkit for technology designers, Goga Zoric presented the

WeatherWiz, Anna Ståhl presented EcoFriends and Syed Naseh presented Codename Heroes.

November 2012. The president of NYU Polytechnic, Jerry Hultin visited Kista and met with industry and academia to discuss the Smart Cities' research centre that will be established at the Polytechnic Institute in Brooklyn. Dr Hultin visited the centre and met with Annika Waern and Maria Holm.

November 2012. Martin Roth from the company RjDj visited the centre to present their technology for sensor-based music-making and interaction. The visit was arranged by Stina Nylander and Jakob Tholander.

December 2012. Sara Mazur, the newly appointed head of Ericsson Research visited Mobile Life and SICS. Kristina Höök presented the Mobile Life Centre and gave a tour at the Centre and demos were presented.

January 2013. The consumer-oriented Internet of Things centre (IoT Centre) held a kick-off with workshops at SICS and at the centre. The seventeen partners in the IoT Centre, participated and were also given a guided tour of the Mobile Life Centre.

January 2013. Mikael Damberg, parliamentary group leader of the Swedish Social Democratic Party, and his press secretary, Ann Wolgers visited the centre. We held a presentation and walked through the centre and looked at demos.

March 2013. Rochelle King and David Griffiths from Spotify visited the centre and met with the management team and researchers to discuss research and future collaboration.

March 2013. The centre was visited by STOKAB to discuss possible collaboration in the upcoming project Homes & Cities. The centre was presented by the management team and researchers presented demos.

Workshops

June 2012. The Bodily Experiences project and Stina Nylander organised a workshop with ABB under the working title "Fight boredom in the control room". The workshop was held at ABB in Västerås.

August 2012. The Bodily Experiences project organised a second workshop, "Fight boredom in the control room". This time at Kraftvärmeverket's control room in Västerås.

August 2012. The LiveNature organised a workshop at Småskär in Luleå archipelago with participants from Mobile Life, Nokia and IKEA.

September 2012. The PlaySpaces project staged the game Codename Heroes in collaboration with Stockholms Stadsbibliotek and the larp (live action role-playing) organisation and design collective Ursula.

September 2012. The Ecosystems project held a workshop with all the partners in the Mobile Life Centre.

October 2012. Stina Nylander and JohannaMercurio held a workshop at Mobile Life with ABB. The theme of the workshop was the working conditions in control rooms and how Mobile Life methods and experience can be applied to improve the experience of operators.

November 2012. The entire Mobile Life met with Nokia research in Helsinki over two days. The workshop focused on technology as a design material, working to establish direct connections to the technology teams at Nokia. A more open-ended workshop on time as a design material was also organised by Pedro Ferreira at Mobile Life.

November 2012. Elena Márquez Segura organised a workshop at ACE'12 at two schools in Nepal, in collaboration with Movinto Fun. Local children got to try out the play tool Oriboo and Elena studied how they appropriated the play tool and experimented with social games.

November 2012. Two more workshops with children and the Oriboo were carried out by Elena Márquez Segura as a follow up of the previous workshop in Nepal. This time it was held at a Swedish school in Stockholm, and at a Spanish school in Seville.

December 2012. The Internet of Sports project arranged a one-day design workshop on future technologies for golfing and golf training.

December 2012. ABB and Mobile Life organised a workshop aimed at coming up with a range of detailed ideas for potential one-function-tech-probes that we will choose from and develop 3-5 ideas

later during the spring.

February 2013. The project Lead Users in Orienteering as Resources for Innovative Sports Products started with a kickoff and planning meeting. Representatives of Silva AB, the Swedish Orienteering Federation, and Mobile Life were present.

March 2012. The Internet of Sports project organised a creative workshop with representatives from the Swedish Orienteering Federation, the Swedish National Team of Orienteering, Silva AB and Mobile Life. Seminars

2012, April 18. Representation without Representationalism. Lucian Leahu, ERCIM postdoctoral researcher at Mobile Life.

2012, June 1. Socio-cultural research into games, play and society. Frans Mäyrä, Professor of Information Studies and Interactive Media, University of Tampere, Finland.

2012, June 7. Science, Art, and Scale in Designing Internet Experiences. Elizabeth Churchill, Principal Research Scientist at Yahoo! Research in Santa Clara, California, USA.

2012, September 12. Movement qualities in interaction - An interactive dance performance. Carolina Johansson, MSc. in Information Technology Engineering, CEO for Solelia Greentech.

2012, September 26. Gendered Meanings of Style – An ethnographic study of sartorial practices in contemporary Stockholm. Philip Warkander, PhD Candidate at the Centre for Fashion Studies, Stockholm University.

2012, October 17. Motionless Bodily Experiences: Games for Backseat Fun. Petra Sundström, PhD in Human Computer Interaction, Senior researcher at Mobile Life Centre.

2012, October 31. Using Video to Study Mobile Device Use. Barry Brown, PhD, Mobile Life Centre.

2012, November 7. Motoco: A roadtrip towards mobile design innovation. Vasiliki Tsaknaki, PhD student at Mobile Life Centre @ KTH.

2012, December 5. Social and Interaction Aspects in

Health Games. Ines Di Loreto. Postdoc at NTNU-Norwegian University of Science and Technology.

2012, December 10. Sharing office, sharing bikes: My research experience at a design firm. Sara Ljungblad. Researcher at LOTS Design, Gothenburg.

2012, December 21. Body-focused Interaction Aesthetics: Reframing Experiences of Self, Embodiment, and Attention. George Poonkhin Khut. Australian artist and design-researcher working in the fields of electronic art, design and health.

2013, January 9. Analysing the work of Multidisciplinary Medical Team Meetings, the Use of ICT and the Potential for Further Technological Support. Bridget Kane. ERCIM Fellow attached to the School of Information and Computer Science at NTNU.

2013, January 16. Supporting Design for Mobile People: Mobile Matters on Sewn Handkerchiefs. Michael Leitner. PhD student at Northumbria University's School of Design, Newcastle upon Tyne, UK.

2013, January 23. The New Mundane. Clint Heyer. Assistant professor at the IT University of Copenhagen, in the interaction design research group.

2013, March 12. Social Substrates: People and the Data They Make. David Ayman Shamma. Research scientist at Yahoo! Labs, and head of the Human-Computer Interaction Research group.

2013, March 20. Tableau Machine: An Artificial Artist in the Home. Mario Romero. Associate Professor in Human-Computer Interaction and visualisation at KTH.

2013, March 27. Two Projects for Designing Effective Learning Games. Iza Marfisi. ERCIM postdoctoral fellow at Mobile Life Centre and KTH.

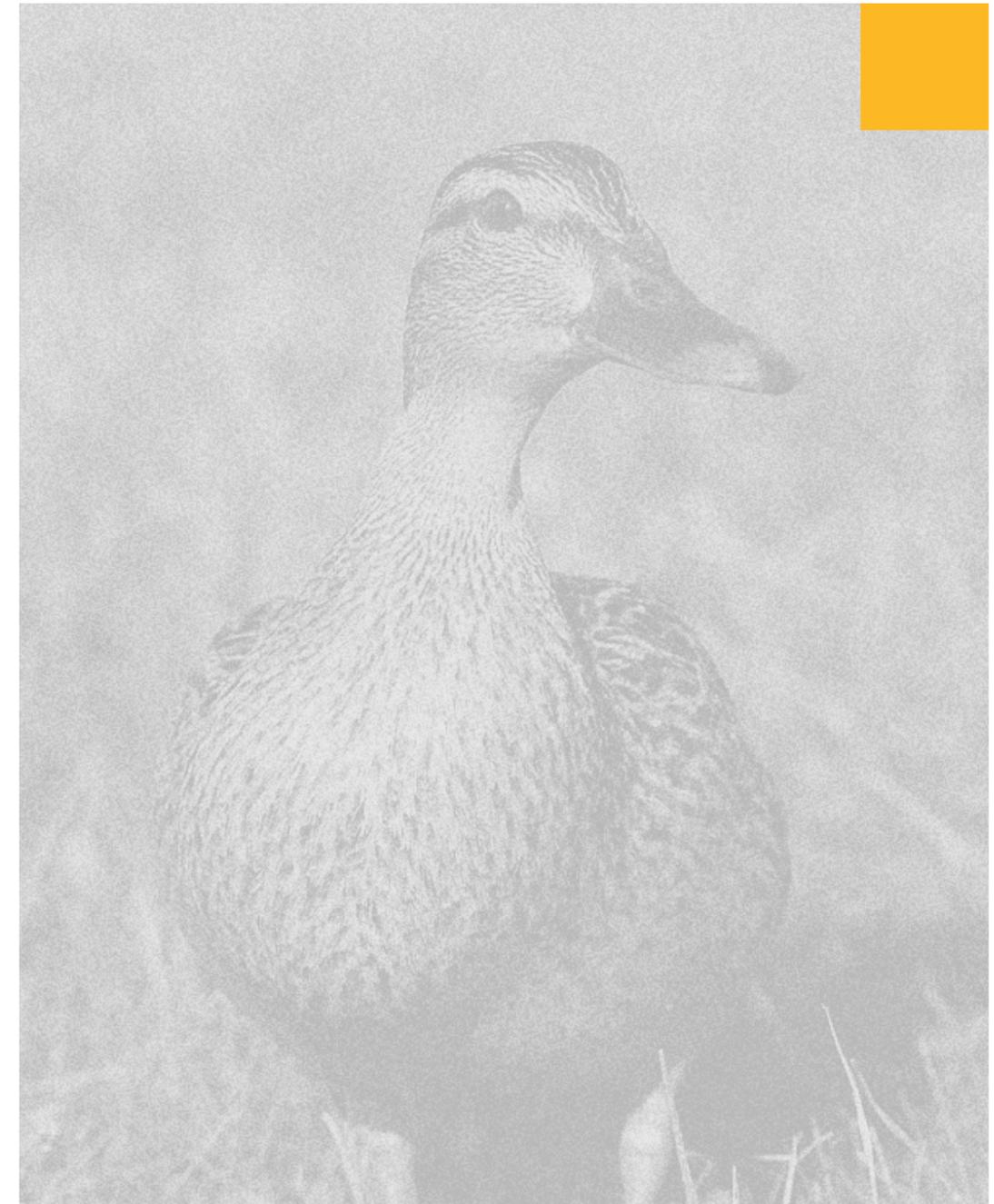


Photo: Petter Hannerfors

Media

April 2012. Yanqing Zhang is working as one of the editors of the special issue of the journal Continuum on the theme of Ubiquitous Digitalization of Urban Life and Auditory Culture.

September 2012. Barry Brown was interviewed for an article in the New York Times on his GPS device use.

August 2012. BuzzFeed interviewed Henriette Cramer, together with Motorola collaborators Frank Bentley and Santosh Basapur about location-based services and a study in which they collected hand-drawn maps from people in Chicago (CHI'12 note) and Stockholm.

June 2012. Mobile Life announced that IKEA, ABB and Movinto Fun joined as new partners in the Centre.

June 2012. Jakob Tholander, associate professor in Human-Computer Interaction at Stockholm University, commented about games and explained that games are not shortcuts: teachers have to consider games as tools just like a textbook. Article in Dagens Nyheter.

April 2012. Kristina Höök, professor in Human Computer Interaction at the school for Computer Science and Communication at KTH, was interviewed by www.Webfinans.se.

April 2012. In connection with Sweden's being ranked by the World Economic Forum as no 1 on the networked readiness index, Swedish public service television SVT 1 News broadcasted from Mobile Life Centre and interviewed Kristina Höök about the ranking.

September 2012. An article about Barry Brown's work on GPS use in cars appeared in the New York Times, and was syndicated into the Sydney Morning Herald

and a range of other newspapers. He also appeared on the Voice of America radio station to talk about his work.

September 2012. Annika Waern discusses Alternate Reality Games with the bestselling authors Anders De la Motte and Johanna Koljonen. The fifteen minute program is part of a series of web TV discussions investigating the pan-European series "The Spiral", a transmedia production consisting of a TV drama series and a game.

September 2012. Kristina Höök comments in an article by Sydsvenskan. "Mobilen är inte alltid tillförlitlig nog" about the well-being apps that are becoming popular on the market.

September 2012. Kristina Höök was interviewed in VINNOVA Nytt.

October 2012. "Words are not enough" says Petra Sundström, who has a doctorate in Human-Computer Interaction from Stockholm University and is research leader at the Mobile Life Centre. Petra comments on the 30th anniversary of the smiley sign in the daily newspaper Dagens Nyheter.

January – February 2013. A special section in the journal interaction published the project EcoFriends

February 2013. Anna Ståhl, Johanna Mercurio and Kristina Höök were interviewed by Ny Teknik about the Affective Health system. http://www.nyteknik.se/nyheter/it_telekom/mobiltele/article3631363.ece.

February 2013. Johanna Mercurio was interviewed on Swedish radio P1 and talked about the Affective Health system.



February 2013. Corina Sas's paper Designing for Forgetting is featured in the New Scientist: <http://www.newscientist.com/blogs/culturelab/2013/02/facebook-break-up.html>

March 2013. Petra Sundström in dialogue with the small IT-start up Protothon on their blog about Internet of Things.

March 2013. Kristina Höök is interviewed by TV4 News about why Mobile Life is an important research centre and why the focus is on the "good life" .http://www.youtube.com/watch?feature=player_embedded&v=4EsxTKWs-LA

March 2013. The Pick up and Play system was covered on STV, and has been extensively blogged about: <http://www.trendhunter.com/trends/pick-up-and-play> http://www.complex.com/tech/2013/03/these-sifteo-cubes-make-music-a-game?utm_campaign=socialflow_complex_twitter&utm_source=complex_twitter&utm_

<https://twitter.com/search?q=http%3A%2F%2Fwww.complex.com%2Ftech%2F2013%2F03%2Fthese-sifteo-cubes-make-music-a-game>
<http://www.yankodesign.com/2013/03/21/hands-on-audio/>
<http://nascentarray.com/pick-up-and-play-makes-music-tactile/>
<https://twitter.com/medialab/status/315561550167560192>
<http://www.psfk.com/2013/03/cube-music-player.html>

March 2013. Vygandas Simbelis is interviewed by KTH about the project Metaphone that paints your emotions: <http://www.kth.se/aktuellt/nyheter/maskinen-som-malar-med-dina-kanslor-1.379985>

March 2013. Yanqing Zhang has published an article about the Swedish fashion industry on one of the first Chinese trend forecasting websites. <http://www.fashiontrenddigest.com/d/12467.shtml>

The organisation



The Centre Board

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People at the Centre

Anna Ståhl, PhD student, SICS
Annika Waern, Centre Director and Professor, Stockholm Uni.
Arvid Engström, PhD, Interactive Institute
Alex Kent, Master's student, Stockholm University
Barry Brown, Co-director, Senior research leader, Stockholm Uni.
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Mert Gunday Karadogan, Master's student, KTH
Moira McGregor, Master's student, City University, London, UK
Mudassar Ahmed Mughal, PhD student, Stockholm University
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Oskar Juhlin, Professor, Senior research leader, Stockholm Uni.
Pedro Ferreira, PhD student, KTH
Petra Sundström, Lab manager, Senior research leader, SICS
Roy Marten, Master's student, University of Southern Denmark
Sayed Naseh, Research assistant, SICS
Sophie Kürth-Landwehr, Master's student, Södertörn
Stina Nylander, Researcher, SICS
Tom Homewood, Research assistant, SICS
Vasiliki Tsaknaki, PhD student, KTH
Vegandas Simbelis, PhD student, KTH
Victor Guerrero Corbi, Master's student, KTH
Vincent Lewandowski, PhD student, KTH
Ylva Fernaeus, Associate Professor, (docent), KTH



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 18 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. One third of the funding for the VINN Excellence Centres comes from VINNOVA; one third from a Swedish University; and one third from industry partners.

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Mobile Life VINN Excellence Centre

Postal Address:
Stockholms University
DSV, Forum 100
164 40 Kista, Sweden

Visiting address:
Electrum Building, Floor B6
Isafjordsgatan 22/ Kistagången 16
164 40 Kista

Mobile Life VINN Excellence Centre at Stockholm University
Partners: SICS and Interactive Institute, Ericsson, TeliaSonera, Microsoft Research, Nokia,
Bambuser, Company P, City of Stockholm, Kista Science City, STING



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