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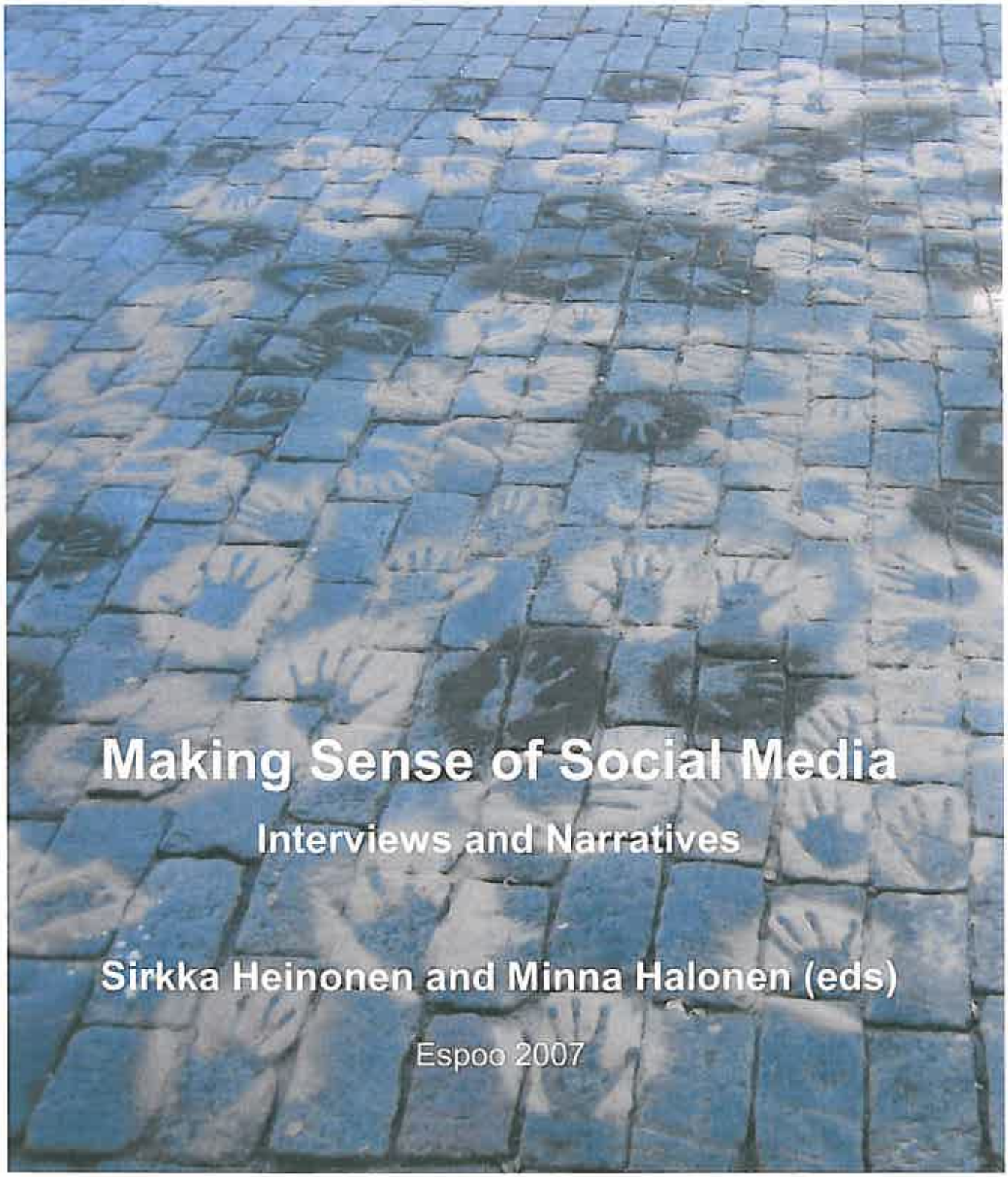

Making Sense of Social Media

Interviews and Narratives

Sirkka Heinonen and Minna Halonen (eds)

Espoo 2007

SOMED Foresight Report 2

TFF Technology Futures Forum

SOMED

VTT

Cover photo © Minna Halonen

Individual handprints of passers-by made with black and white sand. This temporary and participatory piece of art was ideated and realised by HIEKOITUS workgroup (Susanna Peijari, Markku Haanpää, Nea Silavuori and Nunnu Roselli) on the occasion of the second city art event Olohuone held in Turku, Finland, June 6-10, 2007. Heinonen and Halonen also participated by leaving their handprints to this piece of art.

Most photos in the report are taken by Sirkka Heinonen, Minna Halonen, Markus Heinonen, Andrea Di Nicola, and David Gagnebin & Benoît Pointet, dgbp.ch. Some of the photos are by conference organisers.

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Summary

This report presents interviews of nine experts in the field of social media and/or foresight. The interviews were conducted in three international conferences on social media and foresight held in Europe during the period between November 2006 – April 2007. The aim of the report is to open up the concept and phenomenon of social media by inviting personal views and interpretations through various expert interviews in the field.

As a method for exploring the phenomenon of social media and making sense of it, we used an expert interview method augmented by video documentation of the interviews. The questions for each person interviewed were focused on retrieving interpretations of social media and on anticipation of future prospects - applications, opportunities, risks and implications.

The goal of this report is to create a synthesis of personal interpretations of social media and its futures perspectives, making it available for a wider audience to stimulate further discussions on the subject. The results of the interviews and various views expressed as presented in this report will provide valuable data for VTT's SOMED project (Social Media in the crossroads of physical, digital and virtual worlds).

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Preface

This report includes interviews of nine experts in the field of social media and/or foresight. The interviews were conducted in three international conferences on social media and foresight held in Europe during the period between November 2006 – April 2007.

This report is one in a forthcoming series of reports and articles probing the future perspectives of social media. Such foresight approach was first introduced in our SOMED project by an exercise of identifying and analysing weak signals of technology (*Weak Signals in Social Media. Report on Two Workshop Experiments in Futures Monitoring*. VTT-R-03466-07).

This second report opens up the concept and phenomenon of social media by personal views and interpretations of various expert interviews in the field. The third, forthcoming report will embody a roadmap of social media.

The interviews and the methods used were planned, executed, edited and elaborated by Dr. Sirkka Heinonen, chief research scientist, who is also head of the foresight task of the SOMED project and by Ms. Minna Halonen, research scientist. They have also made digital travelogues of the conferences mentioned above.

We wish to thank cordially our interviewees (in alphabetical order): Bruno Giussani, Andy Hines, Stefan Holtel, Sampo Karjalainen, Joshua Kauffman, Jaewong Lee, Nicolas Nova, Lara Srivastava, and Richard Watson for their kind collaboration and for having shared with us their time and ideas on the state-of-the-art and future perspectives of social media.

Espoo October 26, 2007

Asta Bäck

Project Manager
The SOMED Project
VTT's Strategic Technology Theme Programme on Digital World

"No man is an island in itself."

John Donne (1572-1631)

Contents

1 Introduction

The SOMED project (Social Media in the crossroads of physical, digital and virtual worlds) at VTT aims at supporting the development of user-friendly and value-adding applications that are needed in the digital everyday of technology-mediated communities. Social media refers to applications that are based on active user participation and communication. Other characteristics are open content, Web 2.0 technologies, communities and connectedness.[1] Successful social media applications and services are usable, comprehensible and reliable, and most of all enjoyable ways of sharing information, content and experiences with other users.

In this foresight task of the SOMED project we define social media as follows:

> Social media means tools, spaces and *modus operandi* for people interacting with each other, creating, sharing, exchanging and commenting contents in virtual communities and networks.

We have used this functional definition of social media as a starting point and it can be modified during the course of this study.[2]

The key research questions of the SOMED project are the following:

1) What are the human, technical and organisational requirements for future social media applications and services that people need to manage their lives in the crossroads of physical, digital and virtual worlds?

2) What kind of applications and solutions can be developed to help people in this task, and what kinds of business opportunities are present in this environment?

Foresight approach to social media means probing future perspectives of social media. This will be done by identifying weak signals of future digital user cultures and by making a roadmap on the anticipated developments of social media in a post-digital world. The drivers, applications and implications of foreseen developments of social media will be charted and analysed. Milestones regarding technological, business-wise, social, and cultural viewpoints will be tentatively defined.

This report, which includes interviews of nine experts in the field of social media and/or foresight, is one in a forthcoming series of reports and articles probing the future perspectives of social media. Such foresight approach was first introduced in our SOMED project by an exercise of identifying and analysing weak signals of technology (*Weak Signals in Social Media. Report on Two Workshop Experiments in Futures Monitoring.* VTT-R-07466-07). This second report opens up the concept and phenomenon of social media by personal views and interpretations of various expert interviews in the field, elaborated further as conclusions on the sense of social media. The third, forthcoming report will embody a roadmap of social media, continuing on the basis of these two preceding reports on social media.

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[1] It is worthwhile to bear in mind that social media in itself is nothing new. The actual fuss about social media must be seen in the context of historical continuum. The novelty value of social media lies in tools, devices and opportunities made possible in the recent years for the masses, particularly in highly industrialised countries. Social media is a wider concept, and not a synonym for Web 2.0.

[2] Cf. Wikipedia's definition of social media: Social media describes the online technologies and practices that people use to share content, opinions, insights, experiences, perspectives, and media themselves. Social media can take many different forms, including text, images, audio, and video. The social media sites typically use tools like message boards, forums, podcasts, bookmarks, communities, wikis, weblogs etc. (Wikipedia, read August 29, 2007)

Figure 1. The foresight task force of VTT's SOMED project: Asta Bäck (project manager), Toni Ahlqvist (project member), Elina Hiltunen (consultant), Sirkka Heinonen (head of foresight task), and Minna Halonen (project member).

1.1 Background and Framework

The current information society or knowledge society is evolving largely due to socio-technical drivers. The resulting society can be characterised as *Digital Society* where access, connectivity and interaction play a crucial role, or as *Experience Society* where digitalisation is used as a tool within a larger framework of seeking experiences - not necessarily extreme experiences - to expressing one's lifestyle, identity, or enhancing wellbeing and the quality of life.[3] We prefer to talk about a new digital culture in an Experience-Orientated Knowledge Society (Heinonen 2006; Ahlqvist et al. 2007).

The following texts in chapter 2 convey nine interviews of experts in the field of social media, digital life and digital cities, creativity and foresight. The experts invited to be interviewed are (in alphabetical order): Bruno Giussani, Andy Hines, Stefan Holtel, Sampo Karjalainen, Joshua Kauffman, Jaewong Lee, Nicolas Nova, Lara Srivastava, and Richard Watson. The interviews were made on three occasions: in Lucerne, Switzerland, in Geneva, Switzerland, and in Copenhagen, Denmark, during three successive conferences that were dealing with issues relevant for social media.

The conferences were the 2nd European Futurists Conference in Lucerne, Switzerland in November 2006, the LIFT Conference about the challenges and opportunities of technology in our society in Geneva, Switzerland in February 2007, and the Don't Stop Thinking about the Future Conference in Copenhagen, Denmark in April 2007, respectively. The criteria for choosing the conferences to attend were the following. They had to be concerned with 1)

[3] For information society, knowledge society, and network society see Webster (1995) and Castells (2004; 1996-1998). For access society see Rifkin (2000), and for experience society see Jensen (1999). According to Jensen (1999) experience society – or dream society as he calls it – has six major markets to fulfil basic emotional needs: adventure, togetherness, to care and to be cared for, to define ourselves, to feel safe and secure, and to demonstrate our convictions. Pine II & Gilmore (1999, 3-17) concentrate on the experience economy and advocate business as staging experiences. According to them this means engaging customers, not entertaining them in the experience realms. They perceive experiences as distinct from services as services are from goods. Manufacturers must experientialise their goods as service providers must experientialise their services. In such experience economy they see internet as the greatest force for commoditisation known to humans.

social media; as well as with 2) technology foresight; and besides show some 3) innovative or creative modes and elements in their realisation.

The framework for these interviews was provided by the SOMED (Social media in the crossroads of physical, digital and virtual worlds) Project, described above in Introduction (chapter 1).

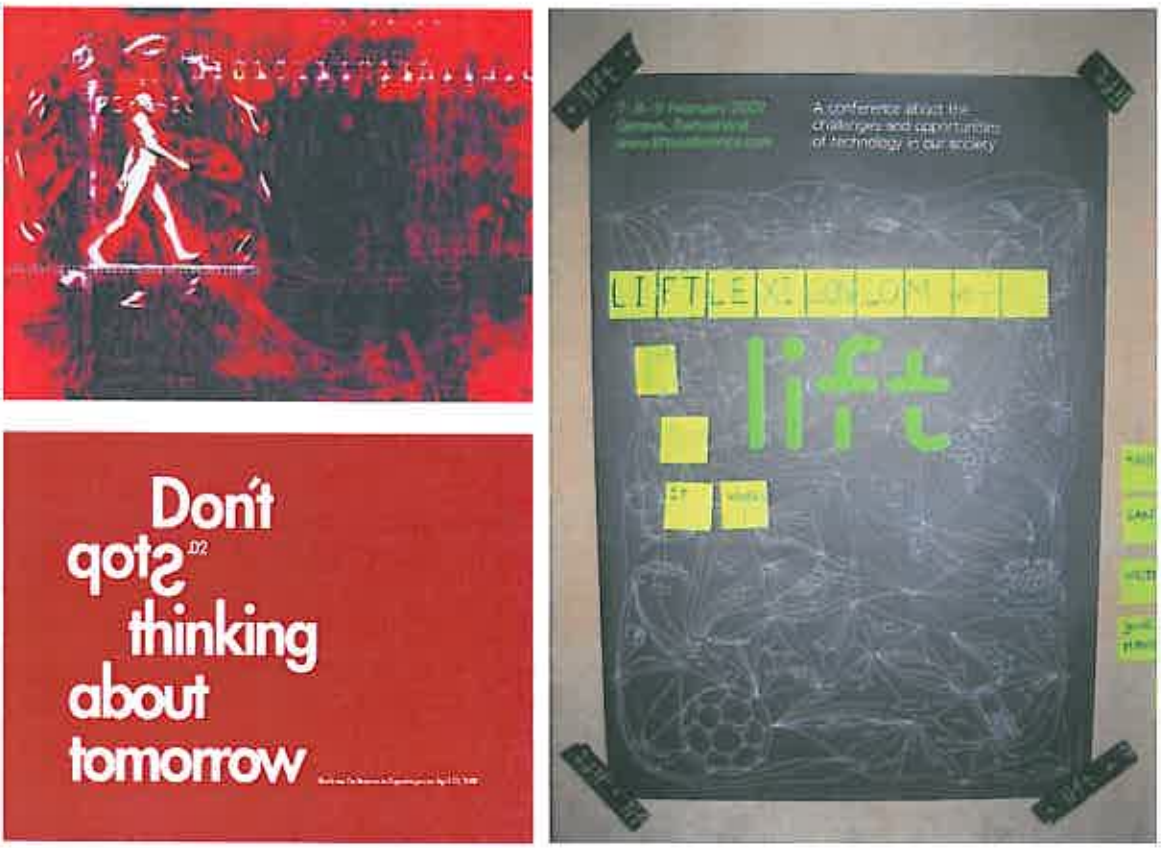

Figure 2. Three conferences dwelling on technology, society and foresight provided the platform for the interviews.

1.2 Methods and Goals for Interviews

As a method for exploring the phenomenon of social media and making sense of it, we used an expert interview method augmented by video documentation of the interviews. The questions for each person interviewed were focused on retrieving interpretations of social media and anticipation of future prospects – applications, opportunities, risks and implications. Some questions were constant for most of the interviewed, while other questions were modified on the basis of the person's background and expertise.

The interview method used here is the one developed and introduced in VTT's Technology Futures Forum (TFF) project in 2006 (www.vtt.fi/tff). Two interviewers are engaged, if possible, for the whole interviewing process. They first make the questions on the basis of the background data on the interviewed experts. Two interviewers make it possible that questions *impromptu* can also be more easily asked during the course of the interview. The interviews are also videotaped. After the interviews the interviewers transcribe the texts and subsequently edit them. The experts interviewed check their texts and have the opportunity to

dynamically modify them, adding for example new elements or correcting the contents according to their wishes. At the end of each interview there are some references and links for readers to get more information and documentation on the theme discussed. All the references are also presented in the end of this report in alphabetical order. As an additional feature, the literature found appropriate within the foresight task of the SOMED project was used to cross-fertilise the interviews. Such discourse can be followed primarily in the footnote texts.

The goal of the interviews and this report is to create a synthesis of personal interpretations of social media and its futures perspectives and make it available for a wider audience to stimulate further discussions on the subject. Another objective is to indicate further research needs through the material and conclusions. The results of the interviews and various views expressed as presented in this report will provide valuable data for VTT's SOMED project at large, as well as for the forthcoming roadmap work of social media, in particular.

The editors of the report welcome any feedback and constructive comments on the contents of the report from readers. Such comments will be added to the preparations of the roadmap work on social media. The report is also intended to be utilised as a starting point and thought-provoking fuel for discussions and workshops on the subject.[4]

Figure 3. Innovative methods were applied in interviews for the SOMED project.

[4] Comments and inquiries for workshops can be sent to minna.halonen@vtt.fi.

2 Interviews in Lucerne

The following two interviews were made during the 2nd European Futurists Conference "Making Sense of the Future"[5] in Lucerne, Switzerland, November 22-24, 2006. The European Futurists Conference Lucerne (EFCL) aims to be the foremost annual gathering of futurists, analysts and decision makers with long-term perspectives working with scientific methods for futures studies in Europe. On that occasion Joshua Kauffman and Stefan Holtel were invited to be interviewed.

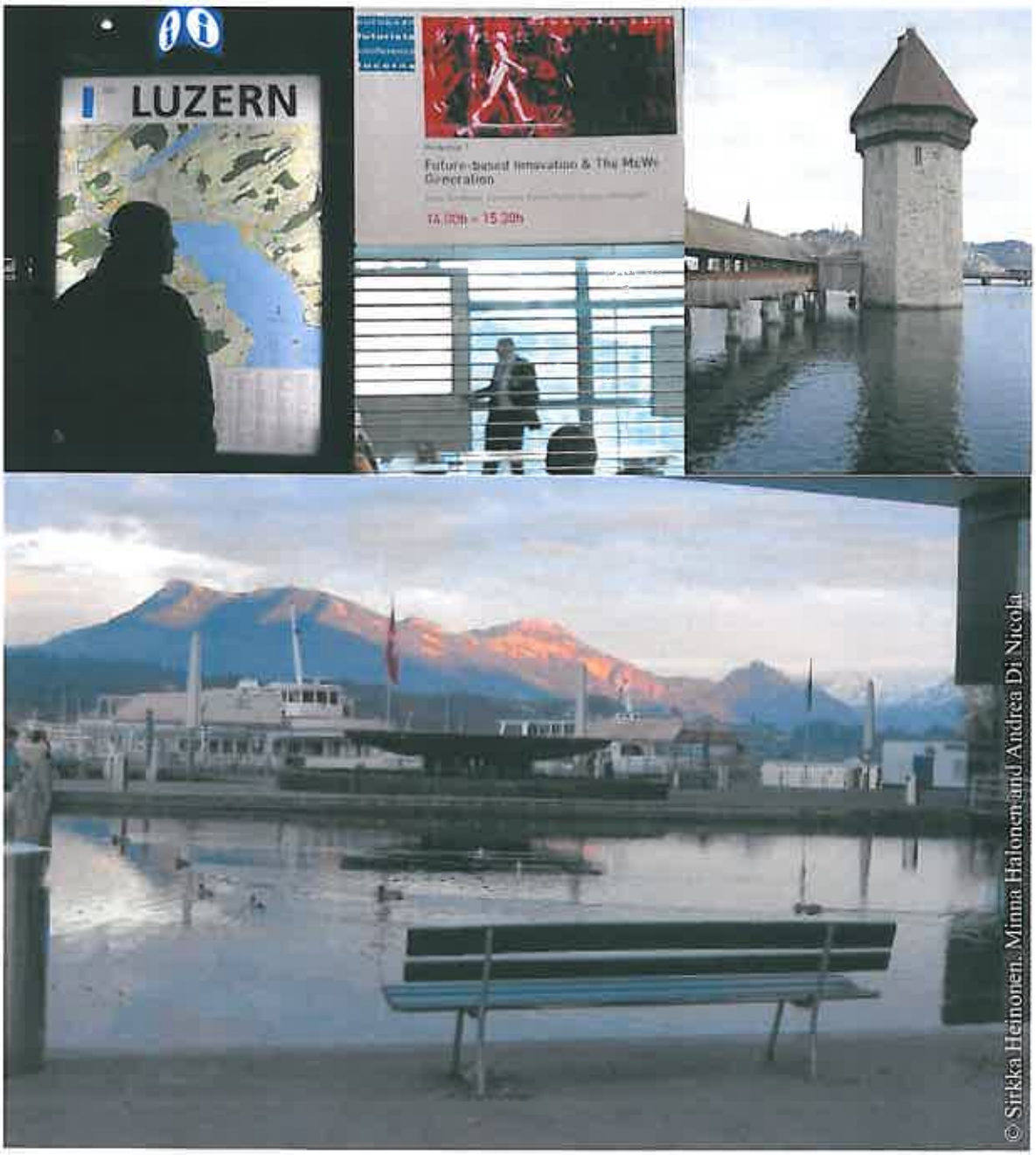

Figure 4. The 2nd meeting of European futurists took place in Lucerne, Switzerland.

[5] http://www.european-futurists.org/

2.1 Judging with Joshua

Joshua Kauffman is an independent consultant and researcher based in Amsterdam and Berlin. He operates as a futurist, socio-cultural researcher and concept developer. As a critical designer, he is now constructing a major installation for the Hong Kong/Shenzhen bi-city Biennale of Urbanism and Architecture. He also writes a blog concerning technology, culture and society.

Joshua Kauffman was interviewed by Sirkka Heinonen during the 2nd European Futurists Conference in Lucerne, Switzerland, November 12, 2006. **Judging with Joshua the changing role of the younger generations in information society revealed both pros and cons of social media in the hands of kids and teenagers.**

How do you define the MeWe generation?[6]

It is the first generation where a critical mass has been reached in the proportion of people present, information acquired/created and activities coordinated online.

The MeWe generation is a temporally defined group of people with a common experience regarding the participative possibilities of the dominant communication technologies of the age. Using the term "MeWe generation" implies a new mode of generational definition that relates to a common condition of technological adoption and use. This should be contrasted to other socio-historical definitions of a "generation" that denote predominant cultural experiences within a given time.

The recent technological conditions of the internet and the access to it that provide the medium for interactions of the MeWe generation mark the incipience of a pop-internet. The internet is less considered to be a separate part of social life – something external that can be spoken of – and more of an unspoken and taken-for-granted public good, a sort of infrastructural entitlement used automatically as part of what is considered to be a 'normal life'.

The MeWe generation is born directly into technologically advanced societies, discovering and identifying the web as a system of social and cognitive extension and as an evolving apparatus for new forms of communication and adaptation.

The modes of cultural production in the MeWe generation offer a flexibility within the participative corridors of the web's structures and formats that effectively unite and integrate communication, expression and output. If social media encourages open interpretation and

[6] One of the workshops of the 2nd European Futurists Conference in Lucerne was dedicated to future-based innovation and the MeWe-generation. The MeWe generation was born in the mid-80s. They are born individualists, who still put relationships first and value collective solutions. They distrust persons and things considered superficial and cry out for authenticity. For them technology is about gadgets used to keep their herd together. According to Lindgren et al. (2005) it seems that MeWe generation girls are taking the lead in the race for the future, while boys are more easily satisfied, striving for a less stressful life. For more information on the MeWe generation see Lindgren et al. 2005.

continued recontextualization of information based on social interaction, leading to varying scales and durations of social cohesion, it gives the MeWe generation the ability and responsibility of governing and orchestrating its own social development. This generation, with common access to shared mediated landscapes and the tools to commonly churn information through that media, have accelerated the socio-informational productivity of networks and produced sensations of continued connectenedness possibly in place of more meaningful behaviours.

To demonstrate the generational gap between the MeWe generation and its predecessors, just yesterday (during the futurists conference) another participant was able to demonstrate a similar knowledge of popular internet culture without us having met before, leading to instantaneous bonding. It is evidence of the virility of the information mediating relationships in the MeWe generation, and shows the role of that information as a facilitator of closeness. The often banal content which may be momentarily entertaining serves as a kind of social grooming for the maintenance of ongoing global relationships, and facilitates a later proper introduction between people of the same generation.

Do you think or see that the young could have more to say in societal decision making through social media or is there some kind of scare that they want to connect with their peers only?

Young people rapidly progress through stages and exercises in identity formation, mostly related to their social existence. Social media gives young people a new tool to play with self-presentation and relationships. The question is whether social media, with its boundaryless structure, crystallized mnemonics and non-physiological acceleration of the appearance of intimacy is too invasive, virtual and imprisoning for healthy self-development. Not to mention the preservation of those things in our society which we hold to be dear.

Social decision-making encompasses the entirety of the material and immaterial world and calls upon people to act and behave responsibly with an idea for the future of their own society. While young people utilise social media amongst themselves they may not appear to be preparing for social decision-making. But what is evolving is a new means for social communication and coordination that complements and potentially surpasses what is available today.

We all hope that young people develop themselves with positive social traits while using social media to learn new modes of bottom-up social decision-making, instead of lacing themselves tighter into each other.

Expressing our identity and digital identity or identities is very important. But do you see any threat in there from the personality point of view? If you are used to having multiple and shifting digital identities, can it shake your personality?

Yes, absolutely. Identity is derived from social relationships, which social media seems to enhance. But many are now questioning the supposed benefits of social media to genuine improvements in the development of a healthy and well-adapted personality.

The constant use of the modifier 'social' needs to be questioned by way of evaluating the types of sociality that are produced. Social technologies and those who promote them prey on this notion that pure connectedness is our natural state. Whereas these socialities are guarantors for the liquidity and velocity of what passes through people. It is true that an aspect of our identities is what we care about, and that social technologies allow us to come to know

each other and be inspired by each other by those cares. Yet just because we can share does not mean that we can relate. Sharing information is very different from sharing wisdom.

Relationships are highly varied in mode and purpose and this is coming into greater light as social media can both proliferate casual connections maintained with shallow transparency for the sake of cordiality and connectivity, and meaningful, compassionate relationships based on the promotion of what is good.

Social networks have always existed; they are only now visible. They can function at varying depths and for varying purposes. We need a better understanding of personality formation through digital mediation. We need to understand the nature and mechanisms of the relationships that promote complete social welfare, and recognize that social media plays only one role in our efforts to improve ourselves.

Coming back in our discussions to your comment on "laggard" email I have noticed the same trend. Many young people do not use e-mail any more. How about you, do you still use it?

I love to use e-mail because it contains a social protocol that allows for a degree of rumination and delay. It is an accepted medium for longer-form expression and explication, which leaves room for thought development.

With the migration to other forms of communication, those of us who use email are fortunate that it is coming to represent something more solid and intentional, akin to hand-writing a letter and delivering by post.

Can you foresee, maybe there is another mode emerging from social media, e-mailing, messaging, chatting?

The most interesting breakthroughs will come from the proliferation of access points to the reception and delivery of our social-media in geo-physical space. I will be closely watching the worlds of pervasive/ubiquitous computing.[7]

[7] Steinmüller (2006, 190-203) characterises highly connected people as growing into *communication virtuosos*. They use the internet as *evernet* (ever + internet): anytime, anyplace, and always on. Pervasive or ubiquitous computing enables this kind of new evernet communication culture where shared attention to parallel communication spaces and resulting hyperactivity will become a normal pattern of behaviour. Ubiquitous computing will eventually be fused with applications of augmented reality. A long-term perspective for 2020 or 2050 is computer-aided and socially mediated dream design, where dreams could be directed to the desired ends, eventually in interaction with another person's dreams. For the already existing applications of ubiquitous computing or ambient intelligence, facilitating people in their daily life see Alahuhta & Heinonen 2003.

Figure 5. Human interaction with technology – old and new – should be seamless. Joshua Kauffman finds interest in the operation of antique Swiss coffee grinding equipment.

References and links

Bandhold, Hans (2006). *Future-based Innovation and the MeWe-Generation.* Workshop 1. 2nd European Futurists Conference Lucerne "Making Sense of the Future. Practical approached, critical insights, emerging business models". November 22-24, 2006. Culture and Convention Centre KKL Lucerne, Switzerland.

Lindgren, Mats, Lüth, Bernhard and Fürth, Thomas (2005). *The MeWe Generation - what business and politics must know about the next generation.* Bookhouse Publishing, Stockholm. 177 p.

http://www.joshuakauffman.org/

2.2 Socialising with Stefan

Stefan Holtel has been working as an IT and telecoms analyst and consultant in various fields since the early 90s. In 2000 he joined Vodafone Pilotentwicklung, the German division of the global Vodafone R&D. For the latter he identifies future technical, societal, and political trends and endeavours to spot early on disruptive technologies with high impact on telecom markets. His main focus comprises visioning and managing trials and demonstrations with unprecedented mobile services in multi-partner project environments.

Stefan Holtel was interviewed by Sirkka Heinonen during the 2nd European Futurist Conference in Lucerne, Switzerland, November 23, 2006. **Socialising with Stefan revealed the importance of facilitating the sharing of social assets.**

In our SOMED project (Social media in the crossroads of physical, digital and virtual worlds) we broadly define social media as a concept for the phenomenon referring to people interacting with each other and sharing contents in virtual communities. How do you define social media?

I totally agree with your definition, however I would like to add something which I call the "glue factor". Let me explain: in one of our projects we are trying to understand the most crucial features of running local suburban communities.

We discovered something that is missing completely in big sprawls: the lack of a typical "village character". People do not know each other any more; they have cut personal links formed by living at the same spot for years. So what is missing today in large cities is getting in touch with someone who shares similar interests, who has something to offer to other people in terms of social assets.

Is it also about trust?

Yes, it is. The core idea of this project is to create a social media platform where you are not dealing with content. It is all about the opportunities, chances and benefits that stem from direct interaction with different people. And that only seems possible by trusting them. We suppose that the real value of social communities resides in people's heads. It is not about identifying and implementing a technology to extract the content out of their heads and codify it for further use.

The more relevant task is to make that content directly available to other people. This implies connecting and linking, finding many channels and opportunities to get in touch with people having complementary knowledge. Thus, this social media platform is not about storing content and making it available by a meaningful directory structure or taxonomy. It is more about finding a technical solution where people can interact over many communication channels like phones, electronic mails, SMS, or even by voice recording. The power comes from the fact that they share a similar mind-set by living near to each other.

For example: I need someone to carry out a kitchen repair. I have pre-registered a group of trusted people. They will get an instant short notice by SMS, by e-mail or by voice recording. This trusted group may consist of five people in the suburban district I am living. I personally trust those people. They receive this request and realise that I need someone to carry out the kitchen repair. They for themselves may not necessarily know how to solve my problem, but they may have their own trusted groups to which they can forward my request.

It is essential that you can rely on them for your own decision-making.

Yes. We would like to enable people to interact with each other directly. We do not ask them how we might be able to extract knowledge from them for further use. We just offer instant access to a network where people share and directly exchange their knowledge.

And we offer a further option: By introducing issue-related interest channels we make it a quick-and-easy experience for people to join a like-minded group. Those interest groups consist of people who share a common topic, let us say "kindergarten". They apply for this interest group and anyone who has something to request, offer or share on this topic sends a message to the system pertaining to the term "kindergarten". We do not classify the incoming requests, answers, and offerings. We just place them on the platform – similar to a web blog. People again have to initialise communication themselves. They are responsible for whether they would like to proceed; it is again not about organising availability and access to "neutral" platform content.

Interestingly, it focuses on the quality of these contacts, not the quantity. It does not help if you have a hundred connections, but the interest is failing.

Yes, it is about encouraging those interest groups to offer and share their social assets.

Let us look at it more closely: Someone relocates to another city and he does not know anyone. There are many people living nearby that the newcomer encounters several times a day when coming and leaving home, doing shopping, or while participating in a social engagement in the evening. But this person would never actually ask strangers: "These are my requests, this is what I have to offer, can we exchange something of value?"

For how long has your project been going on?

We started in the year 2006 when we specified and discussed general usage scenarios. At the moment we are considering running a huge trial. It is necessary to find out the following: can we see something unexpected emerging by introducing a "plain" social media application? How do people use and customise it to their specific needs? How will it reshape the initial platform idea?

It will be crucial to encourage many different user types to interact with the application, e.g. elderly people. Someone in his 70s might not be able or willing to write an SMS. However, the elderly are capable of using a traditional voice phone and recording a voice message which can then be forwarded. It is really important for this idea to include people of all ages and backgrounds: younger people with unorthodox ideas on how to use social media, middle-aged people who might have a need for organising family matters, elderly ones who are often living alone and would like to initialise or remain in contact.

Social media with our focus are not aimed at identifying a special interest group. The goal of our application is to address those few thousands of people who live together in a neighbourhood.

Yes, that is very important because the population is rapidly aging in western countries. If you concentrate just on young people or young adults you leave out a lot of society, humankind and potential[8]*. Do you see any risks or threats in social media applications or services? Will there be any drop-outs or risks concerning digital identity?*

The usual risks for internet application usage are present here too, e.g. fraud or identity theft. This is something we see on other social media platforms like Wikipedia or Flickr as well. The problems will be nearly the same in this regard.

Can you see any solutions we could provide for this problem?

The solution might be that we should not focus on creating trusted systems by introducing a "secure" technology. The people living nearby already represent a group. The most important point for such a platform is for people to build up trust within their own community. It is then up to us to find an appropriate design for the platform to make it easy for users to trust primarily the people – not the technical solutions. For me it is more about the societal and psychological dynamics of such a group rather than creating security by technical enablers.[9]

A major challenges lie in this: You tell people that a platform might be secure, but they are not actually capable of understanding the technical impact or relevance of their behaviour. The real question is whether they will accept that in a real sense it is a very open system where they know what can happen, what will be made public to others and what will not. The trusted environment should evolve as a whole. The fact is, the more you need passwords, pin codes etc. to access, the more people will refuse to use the social media application in question.

So making a platform secure becomes in itself a vicious circle in a way.

Right, and I would not consider a system to be open if a provider creates hurdles to access a system. This is the reason why we would like people to use the system even if they are not fully registered. After a few weeks they will be requested to run a full-fledged registration. The hurdle to initially interacting with the platform should be very low.[10]

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[8] This came also out as a serious need in the discussions during the seminar Youth Go Online (Heinonen 2006). It must also be born in mind that the elderly of the future are today's young people, and therefore there will be a huge difference between their preparedness and skills to communicate as compared to those of today's senior citizens.

[9] This is in line with our conclusions (Ahlqvist et al. 2007) that the core idea of social media seems to be somewhere else than in mere technology. This brings to mind Heidegger's (1977) classical notion that the essence of technology is by no means anything technological. Naisbitt (2007, 109) also emphasises that technology is a great enabler, but only when in balance with needs and skills as well as with our human nature. Technology has to be understood in the framework of human action. One of the roles of technology is to provide tools for acquiring knowledge in a wider sense: technology can then be seen primarily as instrument for learning (Heinonen 2000, 111).

[10] All the interfaces and access processes to virtual communities should be made as user-friendly as possible. This means that the access should be easy, smooth, quick, and simple.

To conclude, could you give a point or observation about the future of social media in general? How will it develop?

People today still do not realise the full impact of social media communities and platforms. My feeling is that we are at a point where people are trying to understand what is possible by just testing the impact of using it.

Let us take a look at Google: Type in a person's name and you find out many personal – and sometimes very intimate – details if you know how to customise Google. It is at the same time exciting and worrying that by just knowing the name of a person you can get that much information. This phenomenon is sometimes referred to as the "Googability" of a person. But the people who are "googled" usually do not understand the impact of this fact. We will be able to retrieve that information for years and decades! Thus, what does it really mean if my personal record has become content of the internet and could be retrieved by my children, grandchildren, and great grandchildren some day?

Our awareness of such threats will rise over time and we will need to develop totally new societal and technical solutions to how to deal with this situation. People will finally have to develop a personal awareness of their digital representation in virtual space. We have to face the fact that at some point in time the whole life of a person will become a part of the collective internet memory – spread among many hosting parties and remaining available as long as providers are willing to host it. This is a very important issue when we look at recently emerging social platforms like Facebook or MySpace. How are we going to deal with this when the often very intimate content of users becomes public for a lifetime of a person?

One of the pitfalls is that information can be misinterpreted in another context.

Yes, this is a very important point. Let us have a look at a celebrity who has a Wikipedia entry: He or she should be the one who knows any fact of his or her life, right? I was once told that a celebrity tried to correct his entry several times and was constantly re-corrected! This is an absurd situation illustrating what kind of problems are coming up with social media and a collective memory of intimate personal issues. The biographies of people are being assimilated by the internet memory - regardless of whether they are based on facts or fiction!

Can you see that there might be a need for basic education for critical literacy for social media?

Certainly. There is a strong need for getting basic social media competence. Take Google's Gmail mailing system: Most people working with a Gmail account do not realise that Google stores every single mail they have – for at least 18 months – and these mails become a piece of Google's huge memory.[11]

The next big challenge in this regard will be to understand the impact of virtual worlds as an extension to the social media platforms we know today. In Second Life, for instance, we for the first time face questions that were already mentioned in William Gibson's *Neuromancer*,

[11] This is directly related to the topic of data mining which can be used, among other things, for tracking consumer behaviour. For example, Amazon.com analyses your buying patterns and utilises the results to give you further book and CD recommendations during your next visit to their website. Data mining can be useful, for example, for checking any discrepancies concerning your credit card use in case it is being violated as Mitchell (2005, 62) points out. However, data mining can also be intrusive as regards privacy issues.

the first science fiction novel of its class to address Cyberspace in the mid 80s.[12] Many aspects and problems of Second Life were already anticipated in this book. We should carefully read this book and interpret its consequences in order to understand what is going to happen in the next few decades with regard to social media.

Figure 6. Stefan Holtel ran a workshop on analysing Web 2.0 applications.

[12] Gibson coined the term cyberspace. Neuromancer tells about Case, an out-of-work computer hacker hired by an unknown patron to participate in a seemingly impossible crime. The novel examines the concepts of artificial intelligence, virtual reality, genetic engineering, multinational corporations overpowering the traditional nation-state and cyberspace long before these ideas became fashionable in popular culture including the internet itself. (Wikipedia, read August 29, 2007)

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3 Interviews in Geneva

The following five interviews were made during the LIFT07 Conference[13] in Geneva, Switzerland, February 7-9, 2007. LIFT is a yearly conference about the challenges and opportunities of technology in our society. It was organised now for the second time. On that occasion Bruno Giussani, Sampo Karjalainen, Lara Srivastava, Nicolas Nova and Jaewong Lee were invited to be interviewed (in chronological order).

The conference itself was arranged encouraging user participation and content creation in "pre-, in- and post-" conference modes. For example, you were able to contact participants before the conference, send your own posters for the conference exhibition, propose a workshop, and vote for speakers in a special open stage session. During the conference many participants kept in touch by twittering via SMS. The whole conference was videotaped.

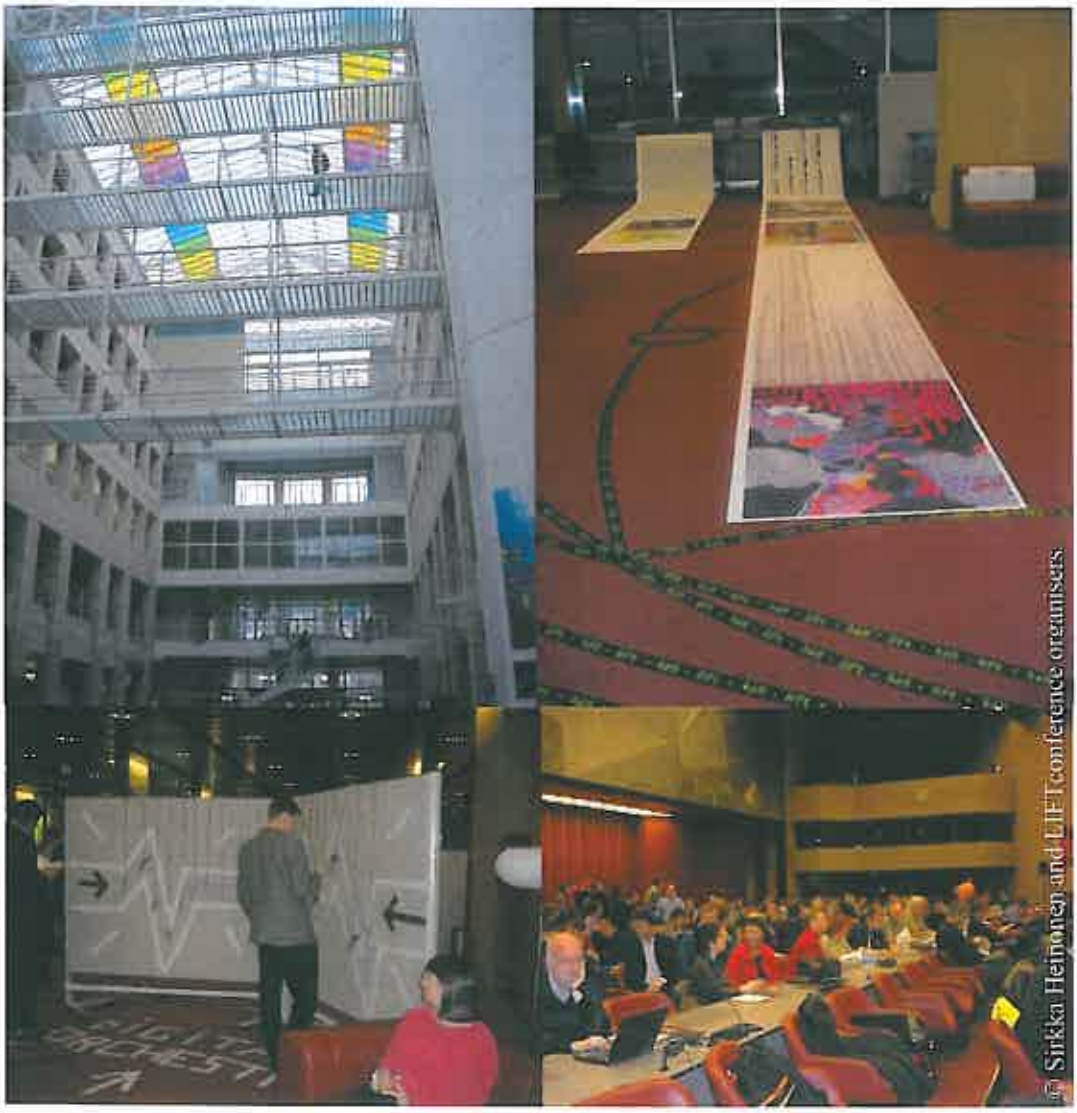

Figure 7. The LIFT conference took place in Geneva, Switzerland.

[13] http://www.liftconference.com/. The videos of individual presentations are available at the conference website also for non-participants.

3.1 Bridging over with Bruno

Bruno Giussani is a well-known media writer and an active blogger on the subjects of media, technology, society and social media. He is author of several books on innovation and society and creator of innovative content formats (in print, online and live). Based in Switzerland, he is European director of TED Conferences. He contributes to various publications such as BusinessWeek Online, IHT, WSJE, NYT, L'Hebdo, Sole24Ore, etc. He is co-founder of three internet companies and Member of the Board of Swiss internet consultancies Namics and Tinext.

Bruno Giussani was interviewed by Sirkka Heinonen and Minna Halonen during the LIFT07 Conference in Geneva, Switzerland, February 8, 2007. **Bridging over the digital gaps with Bruno turned the emphasis on citizen empowerment and on redistribution of power.**

What is your definition or personal interpretation of social media?

I use social media and social tools as synonymous. Probably the best approach to the subject is to mention two things. The first element is tools or spaces that allow and facilitate people's interaction in real life as well as in virtual life. So there is a crossover of these two realities. The second element is that the more people use the tools of social media, the more interesting and useful they become. The participation of each one adds value to everybody else.

You have discussed the citizen centred society. Do you think the new technologies will give power back to the individuals?

They are already doing that. I guess one of the big movements of the last 5-10 years, ever since the web came along and became popular in the mid 90s, has been about going from the centre to periphery; going from hierarchical, centralised, highly structured approaches to society, politic and media to more decentralised, on the edges, collective, participative types of approaches. There is a shift of power from a single source of power (or a few) to a more distributed system. That is happening basically because of connectivity, interconnectedness. This can be seen in the internet, telecommunications, mobile. Mobile has had a big impact on that. The connectivity becomes really the enabler of the shifting and redistribution of power.

Yes, empowerment is emerging through connectivity. It is actually a paradigm shift going on.

Yes, I agree. It has been going on for a while and will still continue for a moment. It is not something that will finish soon and we will find it in a fixed stable, defined situation. It will go on for a long time. It might even never end, just keeping on redistributing itself.[14]

[14] In his studies on the wealth of networks Benkler (2006, 356) also emphasises increased practical autonomy of the individual in the networked information economy.

We are interested in new ways of making working environments more creative and innovative. In your opinion, what could be the most promising social media application to promote creativity and innovation in working environment?

I have seen a few things that are interesting in this respect. They all have to do with online social tools for sharing information, working on collective projects, or contextual design where you can enhance the work of others, etc. Of course social media is a big space. It is concerned with collaborative working on ideas, creativity and basically content. But I think there is something more powerful in linking the digital and virtual environments to what happens in real life. How do you use the tools of the internet, for example, to help people be more creative and more innovative in the physical space, in their real environments, within their companies, government department etc? Some of those instruments allow better sharing of information, or not wasting each others' resources.

A question about the other side of the coin: Do you think there are risks or threats concerning digital lifestyle and the ubiquitous culture?

Well, there are plenty of risks. But if you focus on the risks, you lose the big picture. One risk is the multiplication of the individual identities. Anyone who has been in the internet for a moment has multiple identities: profiles and biographies of yourself across many different sites. In the same time if you search for your name on Google, you cannot control what comes up. You cannot define your Google identity. What comes up is mostly what others have said about you, what they have linked to it, and so on. That defines a little bit what and who you are. To find the way to handle this kind of multiple personas, is one of the things we need to care about.

There is a long list of the risks which have to do with identity theft, copyright and issues like that. We know all those issues. For me the biggest are the psychological and the cultural one. How do we manage to deal with the fact that we are living in a physical space and in a digital and in a virtual space at the same time? Yet we still have to able to identify somehow where the borders are.

What about recognition and peer esteem? How important are they in social media?

They are essential. They have always been the engine for everything, even before this kind of technologies came along. Recognition and peer esteem are very important engines for example for scientific research.[15] One of the key aspects is the peer review process, which is based on the fact your peers certify that your research is good, it adheres to certain standards. The digital tools actually accelerate this phenomenon; take for example the hacker community.[16] The hacker community in the last couple of years has been very much about money. Some hackers turn out as crackers and try to steel your bank account information, to get into your company's database for profit. It is about getting information and reselling it or monetising it. But until a couple of years ago it was all about peers: 'I'm so good that I can do this and you cannot'. So the social media is about mutual recognition. It is a very powerful engine.

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[15] James Surowiecki (2004, 158-172) specifies three essential factors of scientific community: collaboration, competion and reputation. Collaboration with other scientists makes each individual scientist more productive and produces over all better science. At the same time scientists are competing against each others for recognition and peer esteem. The means of digital society is hugely increasing the speed with which the "scientific wheel" of collaboration, competition and reputation turns.

[16] See Himanen (2004) for hacker community and in a positive open source meaning for hacker ethics, in particular.

Figure 8. Bruno Giussani was the moderator for the panel on the user centred society at the LIFT conference.

Let us talk about the future. In your opinion, what are the most promising social media applications in the mid-term (about 1-5 years) future?

Big social media space has a lot of different elements. It is like an ecosystem, which has been growing for a several years now. Look at De.licio.us, at the blogs, at Digg, Wikipedia or other collective information acquisition tools, or things like video and photo sharing à la Flickr and YouTube and DailyMotion. They are all there, but they are not just separate pieces. They are starting to come together somehow. The reason for this is that we have the system to link them. There are systems to grab a picture from one site and an idea from another site and merge them to create something new. So, by taking disparate pieces of digital technology and bringing them together in a different way you are actually doing an act of innovation. Such innovating is made possible by the fact that – for many reasons – the website and the web page are breaking up. The webpage has no reason to exist anymore. It used to be that the webpage would be a page coded and downloaded to your browser and displayed in a specific

way. Now what you see on your browser comes from 10 different locations. You have the main text that comes from the server and the advertisement comes from another one, and the widget comes from the third one, the weather forecast from a fourth one, and then you have a YouTube video embedded in. Data and information are becoming autonomous. That gives you the possibility to recompose and remix them. This is actually a very powerful phenomenon for communication, for innovation, as well as for sharing – social production of ideas. It has to do with the ability of people to share information, to remix it and to work together in order to create something new from pieces that already exist.

The mobile element is very important, too, because it allows us to do these kinds of things; participating in groups and coordinating others and collaborating with others independently from where we are.

Then I go back to what I said before; the tools that link the physical and the digital and the virtual spaces will be very powerful. Somehow the physical is moving into the virtual. So we have spaces like Second Life or Habbo Hotel, where life in the virtual space is becoming the shadow of the reality of the physical space. Soon what happens in Second Life or World of WarCraft or synthetic worlds like that will have an impact on our real life. That is definitely a new phenomenon. People that actually have a social activity in a virtual space and that social activity ends up having impacts in their real life and social space. It is also possible that they will create a circle.

How do you see the future "big picture" of social media in the long run (10-15 years)?

When you look back 15 years, we did not even have the web as a commercial tool. It existed but it was reserved for only a small number of people. If you would have asked anyone, they would not have known what it was. It is really difficult to predict what will be happening in the next 15 years on the basis of what we know and what we are doing today. There are some interesting tendencies. One was already mentioned: the power shift from the centre to the periphery, the empowerment of the individual. This is really happening and will probably be reinforced. Secondly, things that were not possible a few years ago because we did not have the infrastructure in place are starting to become possible now, at least in Europe, the U.S., Japan, South Korea, and maybe in other countries too. You start to have a significant infrastructure and that makes possible things that were failures or were not possible in the past ten years, just because the capacity and the connectivity for distributing digital data was not there. Some elements are in place and you can start to speculate from that. But in terms of – you know, saying that we are going exactly in this direction – it is a very complicated thing to foresee. I could easily guess that one of the real life impacts is that the redistribution of power will also concern governments and the way political power is distributed in society, for example. I am wondering whether big corporations will still be around in fifteen years. Maybe that applies to them too, in the sense that big corporations will no longer be needed because everybody just becomes a part of a smaller group and a smaller entity, and things split up and become networks.[17] It is so easy to connect and to share information.

[17] Peter Csermely (2006) has developed the concept of weak links as stabilisers of complex systems. He applies this concept on a wide scale from proteins to social network. He defines a link weak when its addition or removal does not change the mean value of a target measure in a statistically discernible way. Weak-link-induced stabilisation is not a network property in the sense that it would apply for all networks. This is because networks with very low complexity do not have any weak links. The parallel presence of weak and strong links excludes both fully random and on the other hand fully regular networks. (Csermely 2006, 101; 108). According to him, all networks need both strong and weak links in order to survive. Often the role of the weak links is not

In your presentation here at the LIFT Conference you made interesting observations about the role of motivation in the field of social media and social interaction. You said that people are looking for recognition, but you also emphasised a playful attitude. Do you consider the playfulness as a number one motivation in social media?

Well, open-ended play is an element which has not been discussed or used much so far. In my opinion, many services and products could be evaluated more often from the point of how they support playing. More attention could be paid to pondering how these services and products should be designed and engineered, so that they could be used "right or wrong" in many different ways. Open-ended play is a source of user-generated content, which is a valuable resource for other users.[20] For example in Habbo Hotel, this is what really happens: Users are playing there with different things creating all kinds of events and activities, and that is what keeps the environment interesting day after day. So I was talking about elements with which you can try to build an environment or possibilities for the users to be able to play and create their own content.[21]

You also mentioned that you would not have expected all those horse rooms and beauty and "ugliness" contests organised spontaneously by the users. This boundless creativity has surprised even the Habbo Hotel staff.

Our original idea was to focus on creating tools in order to enable users to create the content.[22] The challenge of developing this kind of playing and building is that you have to do it without any specific use cases on which to rely. We try to create tools and environments which can be used in many different and most creative ways.

We have at VTT a project on social media (SOMED – Social Media on the crossroads of physical, digital and virtual worlds) in which we also consider how these creative tools and social tools and applications could be embedded in working environments.[23] Could you suggest some applications? Let us say for researchers who have a demanding, tight-scheduled job and are responsible for business results. Could they benefit of a physical, innovatively decorated space where they could go (instead of their office room) and connect to Habbo Hotel in order to find creativity and innovations which cannot emerge in the daily working routine?

I have not thought about that aspect directly. What comes to my mind here is that many kinds of tools could be developed for creative problem solving at work environments. These tools should have playful elements with which it would be possible to try different solutions to specific problems, to combine different things and to add some randomness. Tools, that enable a direct play with a problem, could be useful in trying to explore different solutions quickly: Simulations, idea databases or other concrete tools for creative problem solving.

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[20] The importance of playfulness can be expressed by saying "If necessity is the mother of invention (*homo faber*), playfulness is the father of innovation (*homo ludens*)...and playful openness the grandmother of creativity." (Heinonen 2007, 2).

[21] The attraction of building a second home in Habbo Hotel may be based on one hand on showing belonging to a desired community or on the other hand on a possibility to open up your creativity for activities that would not be as easy or affordable in real life. Another aspect that may be of social consequence is that in housing areas where density is high and floor space limited, virtual rooms may enhance your quality of life by expanding your housing space towards the digital world.

[22] User innovation is a huge potential for companies in their product and service development. Agile companies gather feedback and product ideas directly from users. Website comments concerning products are also welcome, saving money spent on user polls as well.

[23] For more details, see Ahlqvist et al. 2007.

Developing several roles as well as adopting different roles in different situations is also related to this playful aspect. Do you think some kind of role play could be useful also for work environments?

Definitely that has already been used quite a lot in creative problem solving; adopting different roles in order to see things from different viewpoints.

Figure 9. Sampo Karjalainen gave a LIFT presentation on open-ended play in Habbo.

Then we would like to ask about future prospects. What kind of development paths do you foresee in social media applications like Habbo Hotel? What is the "big picture" of social media as a whole?

I cannot depict a precise picture of the future, but I believe the same aspects as define the Web 2.0 world such as user generated content, network effect, long tail and so on, will be applied not only in internet services but also in television, in mobile devices, at work, at schools, etc.[24] Some solutions will work, while others will not. However, I believe that in some sectors these aspects will create really significant changes.

As a final question we are intrigued to know what kind of creative elements have you embedded in your own office at Habbo Hotel?

We have recently moved to an old building in Helsinki city centre. We have both open-plan and normal offices. Each meeting room is decorated with a different theme. Instead of classic creative office stuff such as beanbags we have cardboard Habbo Hotel characters fooling around the office!

References and links

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[24] The term Long Tail was first coined by Chris Anderson in October 2004 (Wired magazine) to describe certain business and economic models such as Amazon.com or Netflix. According to the concept of the Long Tail businesses with distribution power can sell a greater volume of otherwise hard to find items at small volumes than of popular items at large volumes. In statistical representations the Long Tail refers to the phenomenon where a high-frequency or high-amplitude population is followed by a low-frequency or low-amplitude population which gradually "tails off." In many cases the infrequent or low-amplitude events - the long tail can make up the majority of the graph. (Modified from Wikipedia, read Sept. 9, 2007).

3.3 Linking with Lara

Lara Srivastava is Senior Policy Analyst and ITU New Initiatives Programme Manager with the Strategy and Policy Unit (SPU) of the International Telecommunication Union (ITU). She has over 10 years of experience in the telecommunication industry. Lara is currently responsible for monitoring and analysing trends in information and communication technology, policy, and market structure, with a particular focus on mobile and wireless communications. In this context, she authors and edits publications produced by the ITU's Strategy and Policy Unit. These include digital.life (2006), The Internet of Things (2005), The Portable Internet (2004), The Regulatory Environment for Future Mobile Multimedia Services (2006), Shaping the Future Mobile Information Society (2004) and Ubiquitous Network Societies (2005). Lara acts as Programme Manager for ITU's New Initiatives Programme, and contributes to programme development for the global ITU TELECOM Forum.

She has published in journals such as Behaviour and Information Technology, INFO and Telecommunications Policy, and in books such as *Mobile Understanding: The Epistemology of Ubiquitous Communication* (2006, Passagen Verlag), *Asia Unplugged* (2005, Sage Publications) and *Thumb Culture* (2005, Bielefeld), on topics ranging from the mobile internet and market regulation to the growing nexus between technology and society.

Lara Srivastava was interviewed by Sirkka Heinonen and Minna Halonen during the LIFT07 Conference in Geneva, February 9, 2007. **Linking with Lara cristallised the idea of the age-old quest of one's identity behind the concept of social media.**

What is your definition or personal interpretation of social media? What is it in essence? Is it a new concept, phenomenon, way of thinking, platform for social interaction?

The words social media represent to me the growing nexus between the media that we use, like communications technology such as the mobile phone, and our individuality and identity as human beings. Analysing social media requires the convergence of technical disciplines and humanities, such as philosophy and sociology. Today we have a growing number of tools at our disposal to represent ourselves to the outside world. We can use different types of networks: mobile, fixed line, internet, and so on. We can use different types of devices: mobile phone, mp3 player, pc. We can use different applications: SMS, instant messaging, social networking sites, chats, blogs, online role playing games. What is happening is that, in essence, much of human relationship is being mediated by technology. I think that is why the term social media is increasingly in use. In addition, the fact that human relationships are increasingly being mediated by technical media also means that our role as social entities is evolving. The effect of communication technologies on how we interact with each other is a growing area of interest, not only for sociologists but also for service providers, who are looking to capitalise on the growth of online community-building through tools from blogs and podcasts, to virtual worlds and social networking. And as new developments, like the

internet of things, RFID, nanotechnology and sensor networks come online, the extent to which digital technologies will pervade every aspect of our daily lives can scarcely be imagined today. What is clear is that communications technology is increasingly personal and intimate, making it a key social tool.

In your presentation you mentioned three important issues relevant in relationship between technology and humans. Would you summarise these three basic concepts?

The subject I chose was very vast. And in order to focus the discussion, what I wanted to do was to highlight three points that I think are quite noteworthy. The first one I called **"connectedness** and **the marginalisation of space and time"**. This is because the constant connectivity we are witnessing today is a symptom of the long-standing human desire to conquer space and time. Our need to have a connection with the past and the distant is the reason we record history, the reason we travel, the reason we look to the stars.

With technology like SMS, people need not worry about space and time for social interaction. Social relations are no longer limited to one geographical space or one particular time. Not only are voice communications, but so too are services like instant messaging or store and forward systems like SMS. So, it is a question of both time shifting and space shifting. With SMS, you may have a group of people just sitting and talking, when in the middle of the conversation SMS is being used to contact others who are somewhere else, physically. This means that relations with the *co-present* can be simultaneously intermingled with relations with the *remotely present.* We are now accustomed to the spontaneous use of mobile phones often without any segue, without any preliminary statement to the effect of "please excuse me, I have an SMS or a call". Many people find it quite normal to answer a call whenever it comes in (some even answer in the toilet). As such, there is always, in any social situation, the possibility of a potential intrusion.

I like to say that there is a new "permeability" between the different social contexts of life. In the physical world, people often keep social contexts separate: they have dinner parties where they invite some of their friends (perhaps close ones from school days) and other parties when "other friends" are invited (perhaps from the bar or work). People have different sets of friends (drinking buddies, family friends, single friends, married friends, friends from work etc...), that they meet at different times or in different social spaces. Online social networks and media have merged these times and spaces, by making "connections" and "friends" publicly visible. This has a number of positive ramifications: it allows people to forge links and friendships with a more diverse set of people than they might meet in their own physical communities. It also stimulates the exchange of information and knowledge among a larger set of minds, and finally, it gives more clues about the personalities of potential friends through whom they might be socialising with. But, at the same time, it also means the marginalisation of privacy – boundaries begin to blur – between work and personal life, between adult and child, between long-standing friends and one-day acquaintances, between the public and the private.

Also, with social media, the number and form of connections we make with others are becoming more and more important in determining our identity and value. This happens in the offline world as well. For example, you might drop a name if you want to impress another person or you might bring to a party "important" friends because you want those friends to reflect positively on you. That is similar to what is happening online. Connectedness is becoming part of our identity. So you have more value if you can show the 8 connections, 20 connections or 80 connections that you have – your 150 friends or 10 000 friends. So, what

can we make of all this? I think this is part of human nature. It is nothing that technology has changed as such. But what it has changed is the extent to which that connectedness is revealed to others in the form of the quantity of connections.

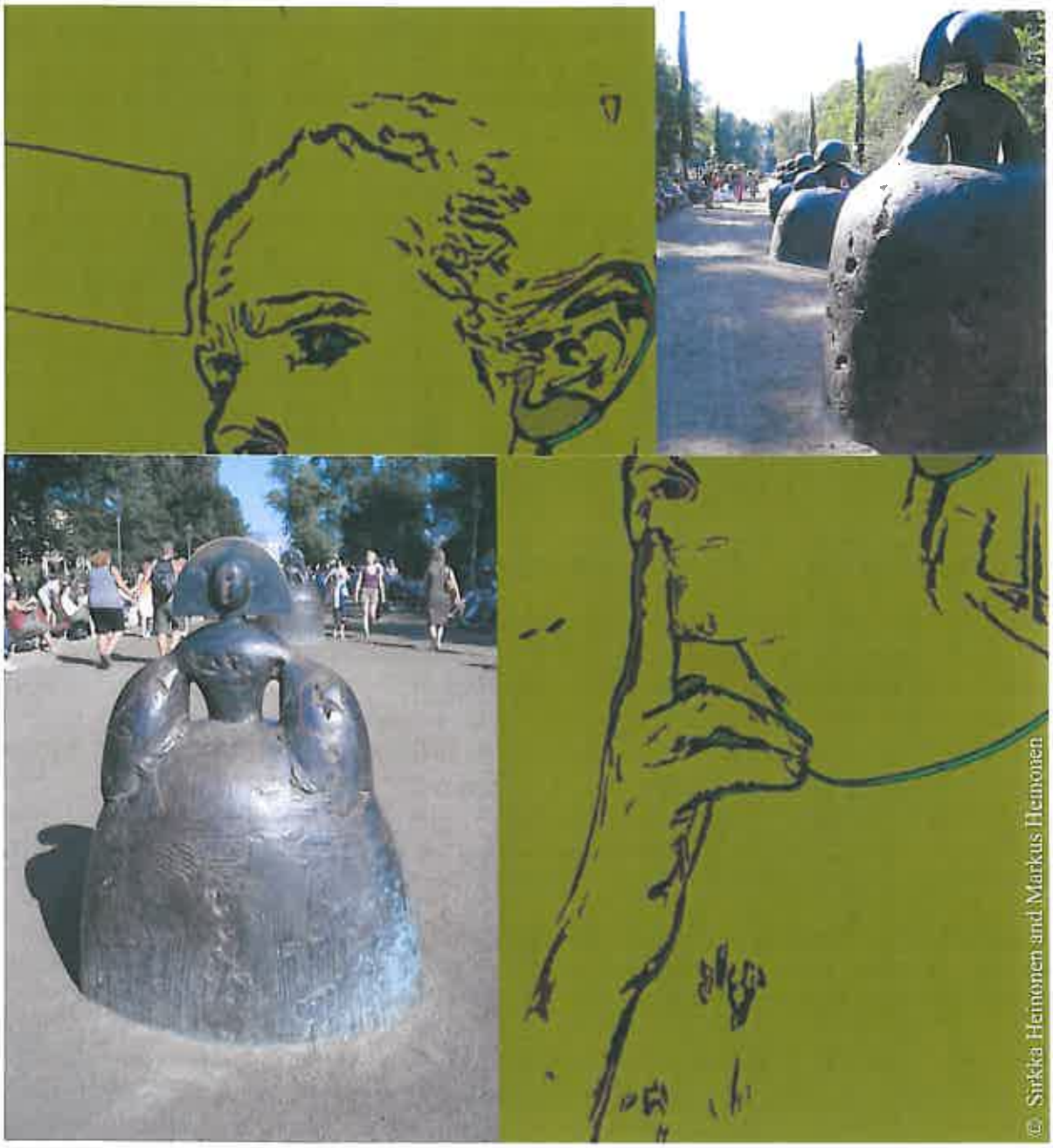

Figure 10. Lara Srivastava points out that we only understand ourselves through the mirror image that others perceive of us.[25]

Jacques Lacan said "Le miroir, c'est les autres", or "you can only know yourself, or see yourself, through the eyes of others". We only understand ourselves through the mirror image

[25] The photos of the sculptures by Manolo Valdés can be touched and approached by citizens and other viewers. They have been exhibited in the park "Esplanadin puisto" in Helsinki, Finland for summer months in 2007. The sculptures that are variations in size and shape of a female figure have previously been on display in other countries as well, to create interaction between physical life and imaginary world through art embedded in city space.

that others perceive of us. And that mirror is increasingly a digital one. The question is does it continue to be an accurate one? Let us think about this for a moment – because online social connections that are publicly displayed are typically "undifferentiated" and "ambiguous", a drinking buddy would appear to be a friend just as much as a close relative. Some sites try to address this by creating private profiles that are viewable only by those with permission. But the problem remains: it is hard to say no to someone if they wish to add you as a friend: it involves "rejecting or ignoring" an invitation, and then possibly having to explain why. Most therefore avoid this by accepting any and all invitations. Connections cannot be qualitatively "all the same" but due to the limits of online interaction, they often appear so.

Thus, and this brings me to my second point – we are an environment which is fostering a certain **ambiguity of communication**. For instance, there is a growing ambiguity in the social meaning of digital gesturing: from the "hi" SMS to the IM "poke" or "nudge". Take the poke, for instance, which is just a sign that can be sent over IM (it can shake the recipient's screen or makes a noise). This shows a desire to be in touch, but without communicating any socially meaningful information. Is the communication postponed, desired, not needed? No one knows – perhaps not even the sender. Of course, as human beings, we often have to deal with ambiguous meanings, because language can sometimes prove insufficient for communication. But we must always try to communicate what is inside us to the outside world, through language, including body language. Online tools are now creating an open-endedness in communication that we have never before witnessed. Does one SMS a day represent true intimacy between people, for instance? What represents a close friendship online and offline?

When looking at the nature of digital communications today (in particular texting, messaging, and social networking), there is also the preponderance of "asynchronous" and "pre-rehearsed" communications. In a way, this means that to a certain extent, there is a contrived expression of thought or feeling. This does not help in determining the level of friendship or intimacy between two people. Gut reactions and spontaneous expressions of feeling are less prevalent. As such an important set of clues or signs that humans need to build relationships and establish trust is missing: as Goffman said, we live by "inference", by clues. In other words, it is difficult to expect human beings to make choices in social relations based solely on statistics – there is a certain "x" factor that cannot be quantified.

In addition, tools today are all about "communication on my own time": when I want, how I want. This has a number of advantages, for instance communication can be planned and managed more efficiently and conveniently. On the other hand, communication is a two-way street and "communication on my own time" can also mean selective response – resorting to voice mail, and the screening of calls. One may wonder: what of the generosity of communication: the generosity towards the communication needs of others and not only one's own?

The third point is **identity**. Speaking of social interaction, how we represent ourselves to others is a significant aspect of "who we are", of our identity. This is also a long-standing human struggle; the struggle to discover oneself. People travel the world in order to do that. Now we travel the internet! But identity has evolved in a much larger sense. In the past, human identity was limited by geography, community, and family relationships. One's geophysical space and one's place in society were inextricably linked. With modern times, arrived greater freedom of movement, and the possibility of gaining, or losing socio-economic status. In today's (post-modern) and networked world, the individual has even more choices, and in many more aspects of life. He/she is at the centre of multiple and often distinct social networks. Sociologists have been arguing for some time now that human relationships are

increasingly short-term and fleeting. Today's technology has meant that change and unpredictability have become commonplace and even expected! Change in the perception of identity is a natural consequence of this phenomenon. And so, we seem to constantly re-write our identities in the digital age.

I find it very interesting how today we have – particularly in this conference – people who are very active online participants. People can have a large number of profiles or identities in digital spaces. They might have one identity on Flickr, one identity on Google, one identity on YouTube. It is very difficult to manage, not only from the technical perspective in terms of handling passwords and usernames, but also on a social level. Who am I online? On a deeper level, do we really understand all these clues we are sending out about ourselves? Can we find where that part of ourselves which is inalienable to oneself is – where it lies? What is happening to identity, in very different way, is that we are fragmenting ourselves. This can be very useful for certain purposes. For example, there are a lot of people who do it intentionally, because they like to participate in different fora, but represent different views in those different fora, or just remain anonymous.

Also, people may have different levels or understanding of privacy. But there are also challenges. We all have a very pressing need at the moment to address, first of all, the intentional and unintentional fragmentation of identity, and second, the increasing commoditisation of identity. Many users simply do not wish to be known online, in order to preserve their privacy. Others might hide their identity. They do so because they want to put across a false identity either for fraudulent purposes. Others still use different digital identities perhaps because they achieve better success than they have in the real world with their real identity. There are a lot of reasons why people may not reveal their true identity online, but the end result is the creation of, if you like, de facto digital "schizophrenics." The key question is how to cope with this sort of fragmentation when it comes to services like banking, for instance, or employer relations or plain old e-commerce![26]

One of the solutions lies in what you could call partial identities, which are the basis of "digital identity management" schemes. Only a selection of the parameters that make up our identity should be communicated at any one time to a service provider or another person, depending on context, choice and requirements. That can perhaps be done on the basis of a scientific method: in which case you might identify or transact with your girlfriend, your boyfriend, your colleague, your friend, your spouse, your mother, your father, your doctor, your bank. However, it must be noted that these are relationships that are very difficult to quantify. It is a tough challenge to establish a simple digital identity system, which will address all of those communication needs, with all of those different people. It must be recalled that many of these communications needs are subtle, because human beings are complex, because the interactions between them are subtle. It is impossible to put up a simple front-end…one which may respond to commands like: if a then b, if b then c, if c not d. This is because that is not how we, as humans, function. Also, we evolve, in our relationships, and as a result, any "identity policy" that governs access or information flow cannot be stuck or static in one point in time.

As identity gets increasingly fragmented and commoditised, it will be a bigger and bigger challenge to manage, not only for privacy and data protection purposes, but also from the

[26] Identity differs from role. New tools and foras of social media give possibilities to develop and play with different roles as well as to search for and develop one's identity or identities. Managing different roles in virtual life can be challenging, but even a bigger challenge is the management of different identities to avoid uncontrolled fragmentation of identities.

point of view of that which remains inalienable to oneself: the age-old struggle to "find oneself" or to be comfortable with oneself continues – we are back to that question "who am I". Are today's communication technologies hampering or facilitating this fundamental human struggle?

As you have said, digital world has transformed our lives and lifestyles. What do you see as the greatest risk or threat in digital lifestyle?

It is difficult of course to name only one threat, because there are a variety of challenges that we are faced with in our transition to a digital society. But in a general sense, I think that the biggest threat is if we operate a step behind the technology. What we need to do is to keep a step ahead of innovation, to understand the wide-ranging impacts before the creation of a mass market. We have not necessarily been able to do that in the past. I think that with new technologies, like RFID, we may be at just the right time to really benefit from understanding the risks and the pitfalls of their many applications.

However, more specifically, I think there is a lot of emphasis today on addressing, and numbering, and we must further examine the impact of what has been called "an internet of things" on society and on human lifestyles. There is a lot of discussion today about RFID tags and about the need for several billion addresses, hence discussions surrounding IPv6 etc. What I worry about is when we number everything from a purse to a bracelet to a ring to a watch, to a car, to a fridge and a mobile phone, how can we prevent every human, too, from having a number allocated in the same way? Is this a desirable outcome, and how should it be managed? Who should manage these resources? And if we do number every human, then how do we protect that very fundamental aspect of human beings, which is individuality? In a society in which everyone is a "number" and everything is connected, there can be a loss of identity, the very thing we are trying to preserve, a loss and disinterest in understanding "who one is".[27]

This would be a dangerous road to take, as it is the basis of identity and individuality, which in turn lies at the foundation of social progress, social responsibility, decision-making and creative genius.[28] Independent and creative individual thinking, together with a healthy dose of collective thinking, are what lie at the basis of human progress.

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[27] Amkreutz (2007) calls a total merger of digital and reality as *Digeality*. According to him, the digital reality may even become more "physical" in its impact on our lives and on our personalities than the physical reality itself.

[28] From the technological point of view digitalisation has been a most decisive driver for information society. As good citizens of the information society we have already been a long time ago organising our daily life around various media. These media are now converging. At the same time digitalisation is extending human personalities. German researchers (see Steinmüller 2006, 188-194) talk about a *digital aura* that is going with us wherever we go. It is a personal *infranet* consisting of small digital devices from mobile phones to wearable computing integrated to our clothes, spectacles, jewellery, watches, and eventually as implants. This digital aura is in constant interaction with the intelligent surroundings in street cyberspace. There is a growing need for this digital aura to handle complex, context-aware identity management. According to one's identity and individual preferences the digital aura should be able to filter oncoming incentives from the environment. There may arise a need for visual representation for this digital aura - as the next generation after the next generation of modern avatars.

Figure 11. Lara Srivastava highlighted communication technologies and new forms of social interaction in her presentation at the LIFT conference.

We are now living in digital society. What do you see after that?

That is the million dollar question! Though we keep talking today about digital lifestyles, digital society, digital technology – who knows maybe 15-20 years from now we will be using a different word. Let us take a step back, what does digital refer to? Digital refers to binary digits, the 0s and the 1s. From the technical perspective that is probably the way it is going to be for some time. However for me, digital, if you like to look at it in a larger, more human sense, is the way we have always been. Let us consider where the word digital comes from. It comes from the digits of the hand. The digits of the hand have always been used to create, to make tools, to communicate, to sign language, to shake hands, to touch. So we have actually always been digital. I like to think the digital society as being one which fosters creativity and connectivity at an individual level, and collective level. So in that respect I think, and would like to hope, that we will always live in a digital and creative, society, whatever word we might use…

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3.4 Networking with Nicolas

Nicolas Nova is a researcher in the Media and Design Lab at the Swiss Institute of Technology, Lausanne (EPFL). Recently he completed a PhD in human-computer interaction at the CRAFT laboratory under the direction of Pierre Dillenbourg. His research focus touches different areas: the effects of spatial and location-awareness on coordination and group cognitive processes (mutual modelling, shared understanding); the study of gaming experiences (location-based applications, virtual worlds, tangible interactions, ubiquitous computing); and the hybridisation of digital and physical environments, as well as the implications of such phenomena in terms of social, cognitive and design research. Nicolas is cognitive scientist by training, and his work has led to publications in areas including human-computer interaction or computer supported collaborative work and learning. In his research, he uses a combination of quantitative methods such as statistical analysis to qualitative methods like ethnography to observe, evaluate and understand the user experience of software, technologies and certain user interface features. He also works as a consultant and is co-producer of the LIFT conference in Geneva. Outside his daytime work, Nicolas blogs at Pasta and Vinegar, a weblog about the use and foresight of emerging technologies. He organised an interactive workshop with Bill Cockayne on redesigning the city of the future at LIFT Conference in Geneva in February 2007.

Nicolas Nova was interviewed by Sirkka Heinonen during the LIFT07 Conference in Geneva, Switzerland, February 9, 2007. **Networking with Nicolas underlined the imperative of "digital city for all" and of pondering the consequences of user-generated participation on city.**

What was the idea of your workshop?

When organising workshops in international conferences, I am interested in gathering together people from different contexts and different backgrounds to meet with each other and to discuss chosen issues. For me it is very important, when thinking about the future of a specific topic, that people from various backgrounds exchange ideas and interactively work together to achieve various objectives. Here at the LIFT Conference in the workshop on "Redesigning the Future" we brought together some architects, designers, researchers, sociologists, interaction designers (because we are interested in technological development), and foresight experts.[29] These people talked together and worked on different scenarios on the city of the future. The topic of the future of the city was chosen because last year in the organising committee of the LIFT conference we felt that this theme could be of interest to the audience here at this year's LIFT Conference. It emerged also from my personal interest given that urban computing is one of the research domains I am addressing.

[29] For more details, see also chapters 5.1 and 5.2.

Could you summarise some of the results from the workshop?

In the workshop we had several groups working on different scenarios of the future of the city, and I would like to highlight some of the results here, even though I will not go through everything we constructed in the workshop. In my opinion, four or five topics discussed in the working groups during the scenario work are of vital importance when considering the city of the future. When doing this kind of foresight exercise the point is to think about a timeless period. It does not have to be a fixed period of time. More importantly, the emphasis of our analysis was on what trends are important over time. One important thing is that the city should be for everybody not just for working people but also for children, aged people, immigrants, as well as for unemployed people. Those people have different needs and interests. Urban planning and city development should take care of the needs of all these groups. Some of the groups addressed this issue on how these different needs will impact the city transportation. For example, one project during the scenario work was about biking in the city: what infrastructure would be needed? What new processes could be re-thought to include biking as a stronger practice. We need to have a sustainable model for a city composed of different people with different needs. We cannot have a transportation system which does not allow people to live in the city all together.

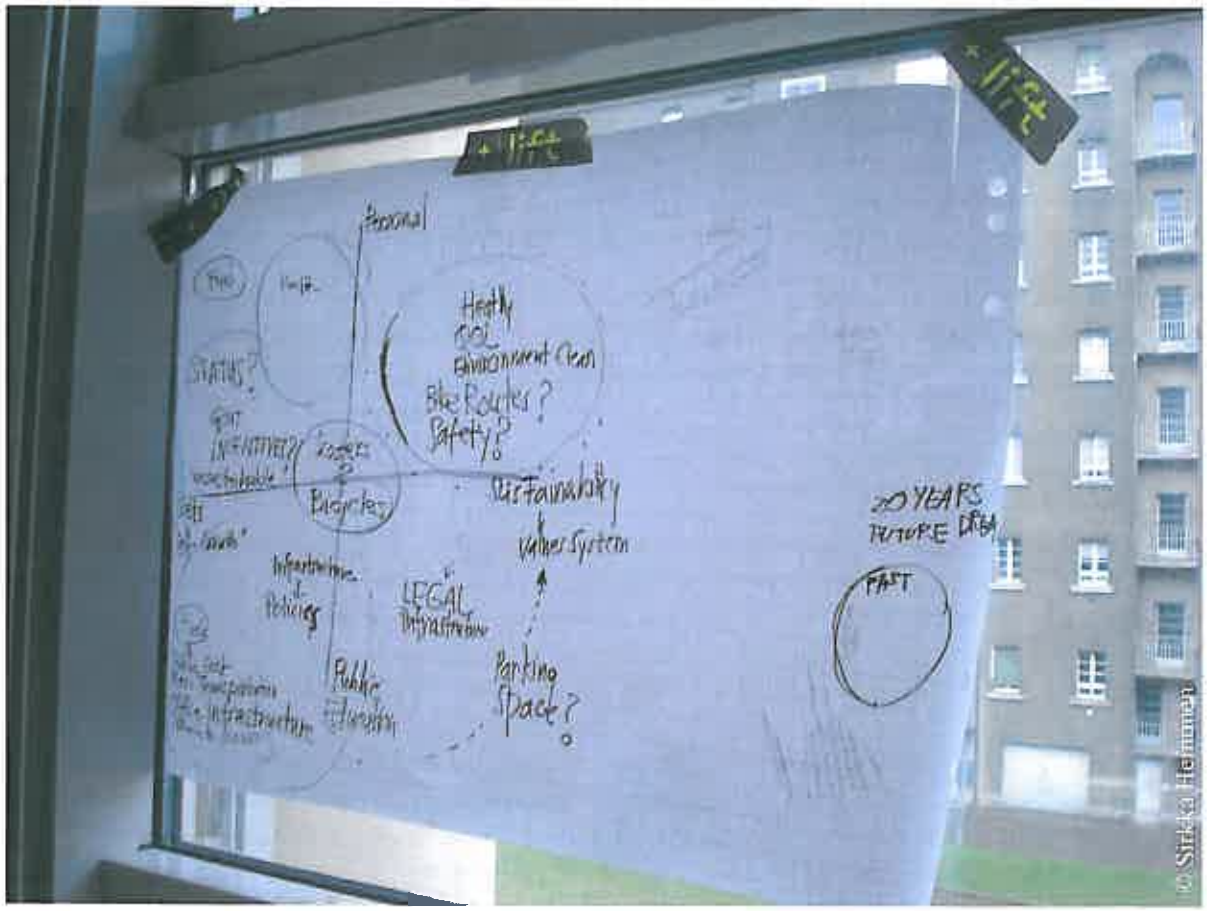

Figure 12. Future of the city as a haven for cyclists, partly owing to environmental constraints and partly to ecological lifestyles as a choice.

Another interesting topic in this workshop was the so-called city literacy. Even if a half of the world's population lives in cities, there is a portion of the population that is not really literate as regards either reading or calculating, but also concerning reading the city itself. Although

this question was not raised as such during the workshop, one of the groups started to work on what is the city for illiterate people. How do illiterate people experience the city? We were lucky to have a researcher from Nokia – Jan Chipchase – who did extensive field studies about this. Since more and more cities are bigger and bigger in developing countries, there is an increasing number of illiterate people moving in big cities. So there should be ways and services (technology-based or not), to facilitate this kind of interaction.

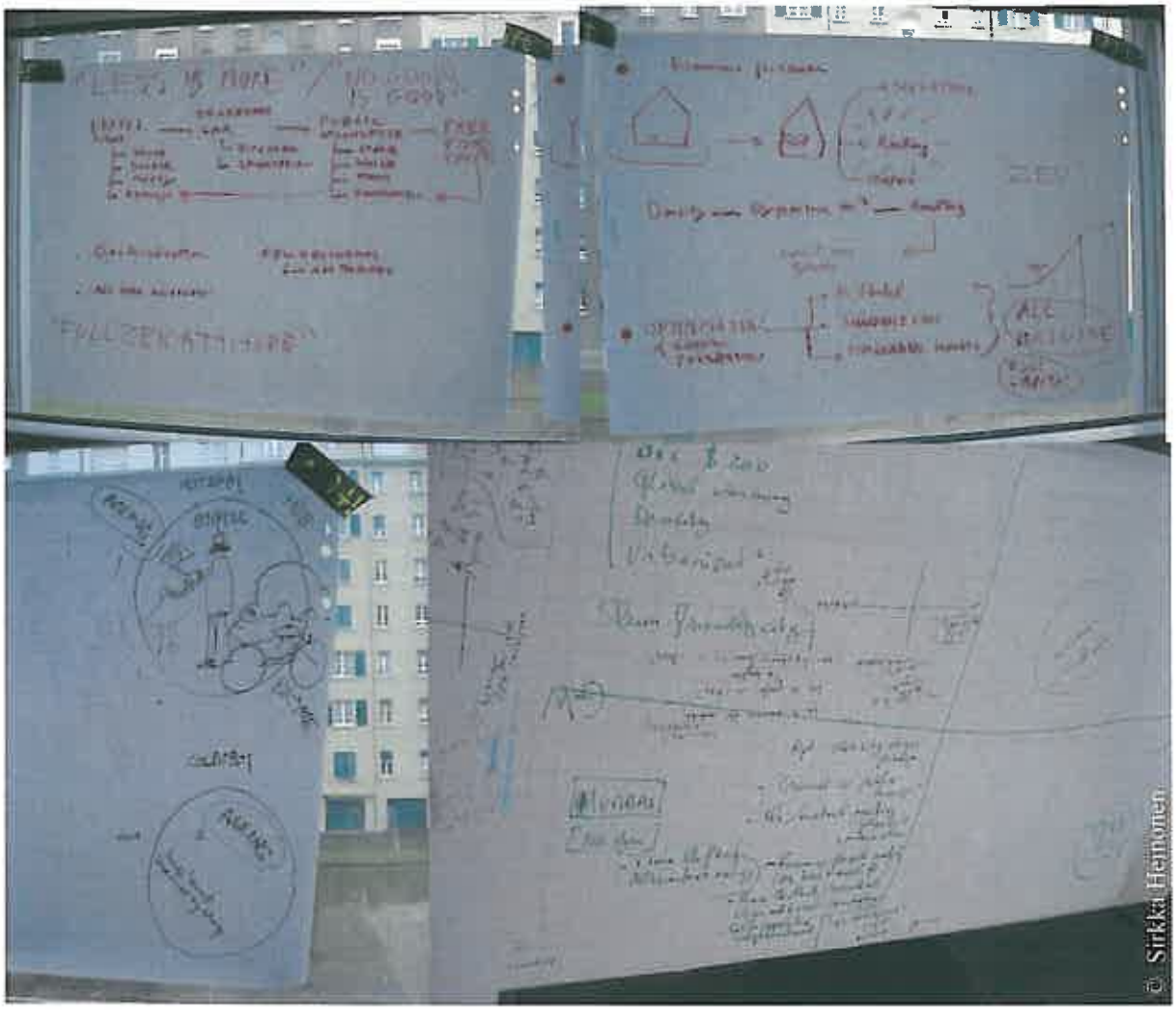

Figure 13. The results of five work groups were presented in the workshop on "Redesigning the future".

Still another interesting issue, especially considering the context of the LIFT Conference which is about technology and society, was about communication networks in the city. One group thought about the balance between digital and physical environment. They figured out three different scenarios about, for instance, having 100 % physical world which might the city of twenty years ago when there was no internet and less radio ways and radio communication. Or it could be the opposite like 100 % digital city. So they came up with ideas like people living in bubbles in the sea and accessing life, the digital world. Second Life could be an example of this (personally I do not agree with this kind of statement). And the third scenario which is the fifty-fifty balance between the physical and digital which may be a more precise account of what it could be, meaning that a part of people's life would be in the physical world. That is because we are human and we have an embodiment in the physical

world. Therefore, we need physical contact and perceptions in order to be human. A part of the people's life could be projected onto the virtual world for working, entertainment, learning but not every activities. Actually this is what we are having today. This could evolve into different types of scenarios.

Figure 14. Nicolas Nova (on the right) was running the workshop on "Redesigning the Future" with Bill Cockayne (centre).

If we go back to what I said earlier about the city for citizens, and consider people living the first life in physical environment and Second Life as a metaphor of virtual environment, the interesting thing is to consider what kind of people would be at ease with this kind of environments. What kind would be the person who could manage to escape from the pressure of going to digital environment and live his/her life in the physical world? One of the groups

considered that there are maybe two kinds of people that can escape from the network. The first group is the rich people because there would be some kind of information support available for them, and they prefer escaping from the digital world in order to keep their lives in the physical space, doing for example hiking in mountains, experiencing their lives in the physical world. The other group, including poor or old people, immigrants etc., will remain outside of the digital world not on purpose, but because they are forced. This is because they do not have the access to the network for the lack of resources. These issues have been discussed by planners and sociologists such as Mike Davis in the U.S. in describing the idea of electronic ghetto. The concept of electronic ghetto refers to people not having the access to the network. Then we have the gated community model, in which people decide not to access the digital world. These kinds of phenomena should be taken into account when planning the city of the future.

The last point discussed in the workshop was that new technologies have social consequences as well. For instance, the history of elevators is evocative for that matter. 200 years ago rich people lived on the first floor and poor people lived in the upper levels of buildings. With the introduction of elevator the situation was reversed completely. This does not mean that technologies lead to certain situation but rather they enable or facilitate certain behaviour. In the U.S. there is the same situation with all the developments and highways, centres and downtowns, deserted by people when suburbanisation began. The advent of telephone and elevators made it possible to erect skyscrapers where all the employees of one company would work. I do not know what the internet or Web 2.0 technologies are creating as social consequences in the city, but this is certainly a topic worth studying. We have to be able to think about new avenues and their impacts: what will be the consequences of user-generated-participation on the city. Maybe there could be different physical spaces where people can drop out their ideas and contribute/participate in the creation of their city. These are things that should be further investigated and with this workshop we tried to sketch out this kind of ideas to think about such new mental avenues.

One reflection of that could be the integration of private and public spaces. What do you think about that?

Yes, that was still another topic discussed in the workshop. In the physical environment there has always been a tension between private and public spaces. This tension has been always redefined in the course of time, especially in connection with diffusion of new technologies. Today we have technology everywhere: it is ubiquitous and pervading the environment. As Adam Greenfield described in his talk yesterday you could be aware of people's position in space or you could be aware of people trying to manipulate digital artefacts, for example, accessing the underground or bus systems. These are some of possible consequences. This leads us to a kind of transparent society in the sense of Michel Foucault. Maybe this is a new paradigm to investigate: what happens in a city in which you can know everything about other persons. There must be some consequences in terms of urban environment and architecture of spaces.[30] In this kind of workshops we try to raise some questions which can be studied in

[30] Mitchell (2005, 62) also underlines the impetus of "things that think". As a consequence, the world of data mining is intersecting that of architecture. He gives PlaceLab - an apartment that thinks - as a case in point. It is constructed so that this kind of implications can be critically explored. PlaceLab is loaded with tags and sensors, harvesting a huge flow of information to be mined for inferences about the current condition and needs of its inhabitants. Hansen (2006, 183) goes further and talks about "wearable space" which emerges out of the interlacing of body and architectural space. What he calls wearable space results from the superposition of two

detail later on. Setting the problem space, mapping the opportunities, these were the endpoints we aimed at reaching.

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poles: space becomes wearable when embodied affectivity becomes the operator of spacing. Castells et al (2007) regard identifiable location and constant monitoring as possible social problems.

3.5 Journeying with Jaewong

Jaewong Lee is founder and CEO of South Korea's leading web service (internet portal) company **Daum Communications Corporation**. Daum is a popular web portal in South Korea. It is Asia's largest internet platform with some 50 million registered members. Daum offers many internet services to web users, including a popular free web-based e-mail, messaging service, forums, shopping, and news. The popularity of Daum is a reflection of the high level of internet use in South Korea. The country has the highest level of broadband users, and one of the most widespread levels of computer and internet access. The popularity of Daum stems from the range of services it offers, but also from the fact that it was the first Korean web portal of significant size. Its popularity started when it merged with the then most popular e-mail service, hanmail.net. After the merging, Daum started the forum service DaumCafe as online community which brought its firm status in the market. The term *cafe* is now used as the synonym for "internet forum" in the Korean language.[31] In 2004 Daum purchased Lycos. Daum has about 1,200 employees as of June, 2006. Daum is a Korean term for both "next" and "variety of sounds".[32]

Jaewong Lee (2007) in his presentation at LIFT conference wanted to figure out what is behind the phenomenon of collective intelligence and collaborative creativity.[33] He likes to refer to the human brain. He studied computer science and especially the domain of computational neuroscience. He found it fascinating to learn about the structure and functioning of human brain. The brain has 100 billion neurons. It is networking with as many as 10 000 neurons. All the layers and complexity raise the question whether an artificial neural network can be accomplished which functions like human brain. That was the basis where he established his company 12 years ago. The leading idea was that perhaps our society could be similar to human brain.[34] As a whole brain is a complex system with different layers specialised on different functions. For virtual networks we should similarly build layers for net services in cyberspace. Lee sees the history of media as an evolving continuum of connections: one to one (ancient story-telling); one to many (performers, writers, singers); one to mass (e.g. printed books); mass to one (Yahoo, Daum); mass to mass (e.g. Google). He is also concerned about bridging up the media divide: how to use media in a smart way. There is a gap between internet-savvy users and normal users. Intelligent layers as web services could help the latter.[35]

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[31] Daum has six million cafés as virtual groups of people exchanging information and ideas. Daum also has an internet search engine DaumSearch, and multimedia content Contents Plug. Daum's Onket is an e-commerce offering that lets users buy and sell products through auction, group buying, and traditional means.

[32] Modified from Wikipedia, read May 21, 2007.

[33] At the LIFT conference there was a workshop on "Collaboration and Innovation in Workspace that Works" run by Clark Elliott illustrating how forward-thinking companies are transforming workspace to truly integrate people, space and technology to encourage better collaboration, increased innovation and staff empowerment.

[34] In a rather similar way, Restak's (2003) idea that thoughts, feelings and actions, rather than mechanical laws, determine the health of our brain, can be applied to society as well. The plasticity of the brain - the capacity for change - is also a feature of many social networks. About the differences between the human brain and virtual networks, Restak points out the vulnerability of the human brain at the onslaught of information overflow or traumatic images: "What you can't turn off is your brain".

[35] Lee is also concerned about the "climate change" of cyberscape due to the growing amount of "garbage" from the low-quality information overflow.

Jaewong Lee was interviewed by Sirkka Heinonen in Geneva on 9th February, 2007, during the LIFT Conference. **Journeying with Jaewong through humans' cognitive fields and mental landscapes revealed that the biggest changes in social media are driven by the changes in our way of thinking.**

What is your definition (as personal interpretation) of social media? What is it primarily, in essence? A new concept, phenomenon, way of thinking or a business model? How would you describe it?

It is a big change in terms of the way of thinking.[36] Society was there at the core, people wanted to form community, to have relations, and communications with their friends. But there was no means before to gather so many people together. Now because of the internet we have a virtual place where people can live together, talk together, chat and exchange ideas. This is bringing the people's behaviour, which was earlier offline, to online and this will change the ways of thinking. It really means to expand the horizon a lot.

You speak about the quantity of information that is increasing all the time, but that brings up the problem of the frequent lack of quality. Did you refer to that phenomenon in your presentation when you talked about the need for community gardeners?

Yes, I think the information people produce is a lot more than it was five or ten years ago and I feel like there is a huge volume of information to read and glance through as well. The concept of a community gardener is based on the need for a person or moderator or gardener who can lead the creativity of the team to produce the information in a better way. Community gardening also means providing more filtered information to the people.

I mean that information cannot actually be filtered at present, because it is more and more distributed. Each community will have a different filtering system and this will make us more often efficient. Still I think a small community gardener will have a lot to do to make the people to produce better information and to make them consume better[37].

That is an interesting idea and isn't it related to this field of meta Web 2.0 services?

The Web 2.0 today is much that people think that it is just about producing and consuming and that's it. Of course inspiration and personal content is the first foundation for Web 2.0.

But I think there is something more than that to make the information not just to garden information. The information has to be gardened into more precise and precious information and that is what we need Web 2.0 services for. But we need to kind of make them to function really as a filtering system. Filtering does not mean just sensoring the information, but also evolving the information in a better way. That is how I am defining the meta Web 2.0 as to have better and more varied and gardened information than just raw information.[38]

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[36] In parallel with futures studies and foresight (see e.g. Naisbitt 2006), social media is a field which requires a new kind of mindset, taking into consideration various things within a holistic framework and through out-of-the box thinking. This allows for developing new perspectives in order to see the forest for the trees. They both require a new way of thinking as well as a new way of holistic seeing (Day & Schoemaker 2006).

[37] One example of collective filtering is Thinglink which is an open database for anyone interested in design founded by a Finn - Ulla-Maaria Mutanen. In Thinglink users can add and publish portfolios with their favourite things. It also works as a social network and referencing system for design enthusiasts. The idea of Thinglink is to make visible the invisible tail i.e. the things which do not exist in internet (cf. long tail). (Jännäri 2007)

[38] Meta Web 2.0 services will have a mass market when they enable "street users" to easily generate contents.

In South Korea you have succeeded in these web applications and services for users and consumers. There has been great enthusiasm. What is the secret of your success? Is it embedded in your culture perhaps?

We have learned a lot from the Scandinavian countries. Finland was kind of a benchmark in providing the infrastructure and this (South Korea) is also a small country.[39] So I think that kind of providing a good infrastructure gave a good playground for the entrepreneurs, industrialists and individuals. The price being paid, they were able to play with the infrastructure and build up something creative and innovative. I think that was the key. We were very successful in a very short period of time building the infrastructure and that helped a lot for the people to make them more creative than other countries and other nations. That really helped to build those services in Korea and worldwide.

Figure 15. Jaewong Lee – one of the keynote speakers of the LIFT conference – suggests "community gardening" for knowledge management.

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www.thinglink.org

[39] Of course, there is a huge difference in the number of population between Finland with some 5 million inhabitants and South Korea with some 49 million inhabitants, respectively.

4 Interviews in Copenhagen

The following two interviews were made during the Don't Stop[02] Conference 'Places to Go'[40] in Copenhagen, Denmark, April 25, 2007. Don't Stop Thinking about Tomorrow 02 was the second "Don't Stop conference" of the Copenhagen Institute for Futures Studies. It was aimed at highlighting future opportunities, trends and directions for companies, governments and individuals. On that occasion Richard Watson and Andy Hines were invited to be interviewed. The conference had also a space preserved for participant-generated content. During coffee breaks participants interested in giving five minutes speech had their opportunity at Speakers' Corner.

Figure 16. Don't Stop Thinking about the Future conference took place in Copenhagen, Denmark.

[40] http://www.dontstop02.com/

4.1 Reflecting with Richard

Richard Watson is a leading international trend watcher and futurist, having established organizations including Now and Next, Global Innovation Network, and Free Thinking. He is a columnist for Fast Company and a regular writer for other global publications. He is interested in the relationship between physical spaces and creative thinking.

Richard Watson was interviewed by Sirkka Heinonen and Minna Halonen during the Don't Stop 02 Places to Go Conference in Copenhagen on April 25, 2007. **Reflecting with Richard meant opening up vistas for creative spaces.**

In what way physical space can inspire creativity and generate innovation?

The main context I am talking about is offices, but the subject is much broader than that. There is some work done by the Roffy Park Institute in the UK 5-6 years ago. They were talking about where the directors of companies had their ideas from. What in essence they found is that they were not having the ideas at work at all. They had ideas everywhere else except at work. So it is going for a walk, it is in the bath, it is in a car. The interesting thing here is that a lot of organisations value creativity and innovation. What they tend to do is to create environments that are quite playful: a lot of colour, bean bags, big thick marker pens, whiteboards and the rest of it. To some extent this research is saying it is a waste of time, because you cannot force the ideas that way. They come whenever they come. They also tend to come to an individual more than to a team, which is completely opposite to how most organisations think, where everything is team related "let's have a brainstorm".

In my opinion for the creativity end of it, which is like coming up with the idea, that is very much the individual, and it happens by accident. It is pumping into people in staircases, it is having lunch; it is informal spaces, and rarely in the offices as such. But when it comes to developing the idea and executing the idea, then yes you need formal spaces, you need teams and groups of people. The two are completely different. I think the companies have got it right that maybe they have gone too far.

How such a physical space promoting creativity should differ from conventional office environment? What is the main difference?

I am not convinced about open-plan offices. I think it is one too far. There are no private spaces anymore, there is no privacy. Also the speed on which the organisations operate does not allow people the time for reflection. It is all about how quickly you can come up with the answer. But really you cannot force that. So some of the questions from the human resource architectural point of view are, if accidents are very important for creative ideas, can you create physical spaces to create accidents, and if not, how else you can create those accidents? And it is not just creating the accidents; it is having the mindset that realises where the accidents happen and appreciates it for what it is and accepting it.

The other thing I think it is important is younger people, and trying to create environments that younger people feel confident and happy in. This is becoming a much bigger problem in

the future simply because there are less young people in the work force. It is going to be soon a shortage. So, how to attract and retain those people is becoming critically important, and that has partly to do with the physical environment and partly culture, mission, beliefs, values and that kind of things.

Where would ideal creative spaces be located? Inside offices? Outside offices? At home?

For the moment we are very much locked into idea of physical spaces. There has been quite a lot of work years ago in terms of the rise of a fast company called the Free Agent. People are working by themselves at home, telecommuting. It has worked up to a point and companies are quite keen to embrace that because they could get rid of a lot of space and save themselves a lot of money. But I am not sure if it is actually working. I think people need somewhere to go. They also need something which is there, not just a third space central meeting point. They want their ID, their desk, their stuff, the picture of their family. They want to personalise that space however they want. They do not want somebody else telling them A) how to do it, B) they cannot have that space.

Then there is the other point: the digital environment. It is a very new thing, and A) I think it is too early to comment on it, and B) I have not thought about it enough to really comment on it. Nevertheless I think, generationally speaking, older people are unhappy in those places, they are not comfortable. Young people are extraordinarily happy in those places. A very interesting example is privacy online. I hold an awful lot of information which I would certainly never put on a webpage, whereas a 14 year old is putting every single thing on there with unfortunate results; people seeing it, you can see it, parents see it, teachers see it. We are even getting in that ridiculous situation where you get a digital immortality, where people are dying and their MySpace pages are still there. There is even a website, MyDeathspace, which has all those pictures and words people have formed before they have died.

The digital space works terribly well in an open innovation sense. If you want to connect with your customers, all of your staff all over the world, your suppliers, your stakeholders, it is a great way to hold conversations very informally and generate ideas. I view those spaces as informal bottom line communities. They are fantastic to generate and filter ideas. They are like giant suggestion boxes. The difference is they are interactive[41]. But as John Naisbitt was saying in his presentation, we should not just chart into this area and forget about physical spaces, because fundamentally people like touching and talking to each other physically[42]. They like to have some kind of interaction; they want to make judgements about people. You know you are not going to hire somebody online for a major project. You want to get the size of them as physical persons. So I think the combination of both would do for the larger projects.

There could even be a swing back towards private offices. There is so little privacy left in our lives that probably a lot of people will go back to offices with doors and you will knock to get

41 Open innovation can be boosted by collective creativity which by our definition means being creative together in a community in which everybody adds value with his/her personal creativity. Social media tools can function as engine for collective creativity. The right combination of digital and physical spaces can generate collective creativity at all levels of interaction: between employees, between management and employees, between employees and customers. For more information see Ahlqvist et al. 2007.

[42] Naisbitt (2007) emphasises the "big picture" of the future as a puzzle where all pieces have to be taken into consideration: physical and virtual, high tech and high touch, visual and verbal. Another important notion in his mindset approach is to remember that while many things change, most things remain constant. There is a risk of going hype and just seeing change in everything. We should also pay attention to those essential things that remain constant.

in. That I think will come back. Open-plan offices have just about reached their maximum of usefulness. The other point related to this is home spaces, because we obviously got the work invading the home and vice versa: we have become digital nomads in the sense that we can take work along and the work can be anywhere we are now.[43]

We are absolutely not limited by the physical location. That is causing also some problems, because people are constantly available. Everything is always switched on. If your phone is on, your boss does not think badly about phoning you at 9 o'clock pm, and if you would pick it up you would even have a conversation about work. Whereas 20 years ago you would never have dreamed of doing that. You can take the entire contents of your office and write your contracts there, it is incredibly easy. Equally it is happening the other way around, the home kitchen is now in the office: you got microwaves, sinks, fridges. The bathroom is coming in. You got the shower. You got the gym. Somewhere in the borderline you got the childcare and the schooling. There is fluidity between the two, which has good sides and bad sides.

What worries me a little bit is that there is not really any demarcation and you do not switch off. I think the way the mind works is that a lot of thinking is done while we are at sleep. It is the subconscious. We need time to be switched off. We need time to sleep and not think about work to process information. If you work at home, it is very difficult, because you never go to work. So your children, for example, think you are at home, but you are not, you are working. You almost need to walk down the garden into a shed and shut the door to signal: this is my workspace. I think there will also be some social problems connected with that.

What are the elements of your own preferred creative space? And where is it located? Where do you feel most creative yourself?

My favourite is the airlines! I like airplanes. I like trains and boats as well, but the airplanes are the best. On the ground I am constantly available to people: the phones going on, people grabbing me, a lots going on. I am disrupted the whole time. On a plane I cannot get off.

In this case you have to be travelling long distance on your own. It does not work in economy with your family, but if you are on your own at business, it works quite well. I think it has something to do with the fact that you are tracked there and you cannot get off. So your mind has a sort of freedom. I think it has an awful lot to do with the fact, particularly when sitting next to the window, that there is this unlimited horizon and you feel slightly dwarfed by physical spaces. It is a bit like going out and being by the mountains or being on a coast looking at the see. Somehow you are going out of perspective and your mind starts to float. For me the worst place to think would be a basement without a window.

Your thinking is confined by the physical space. Where there is an enormous environment like in the airplane window, it is much easier. Little while ago I flew on airplane where the seats were in a 45 degree angle so that I could not look out of the window, and I could not think. I need the window, I cannot think on the aisle. It is bizarre, but that's my space.

[43] Portable working mode of digital nomads requires skills to plan and organise your own work. Besides, it makes special demands for creating at the same time a functional and flexible working space at homes as extension to one's office. See e.g. Virtanen et al. (2004).

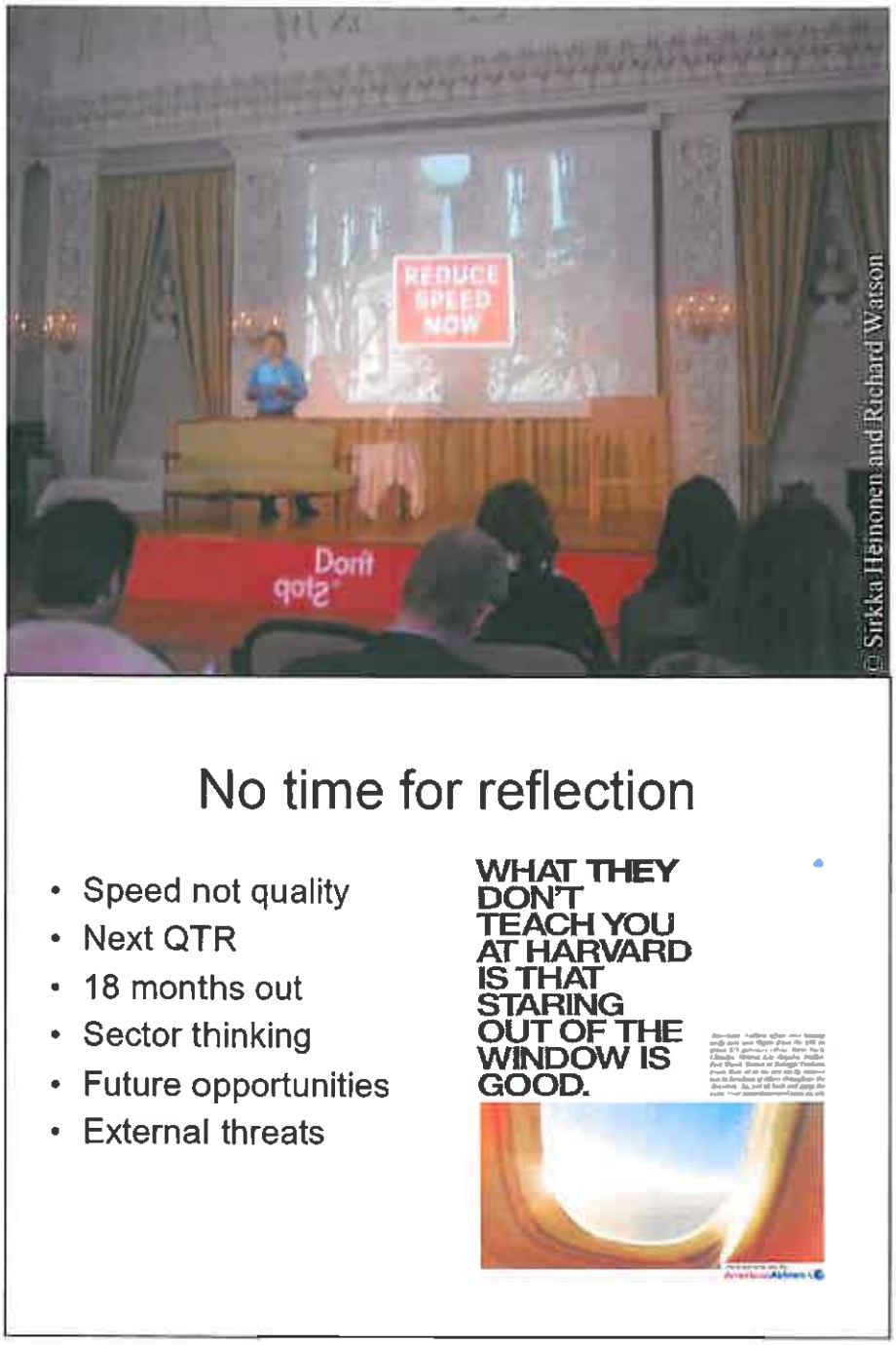

Figure 17. Richard Watson highlighted the prerequisites for creative thinking through smart spaces in his presentation.

I also have a normal office and then I have a home office. Occasionally I go into garage, where there is a work desk, and it is very dusty and messy. Well, I also like mess. I cannot abide clean desks. I think a lot of spaces are highly personal. A certain type of music, very messy desk, – although it is not messy to me, I know where everything is – works for me. Whereas other people do not want any music or they want different music, they want almost nothing on the desk. It is a very personal thing. You cannot dictate people about what their office should look like. I think you have to allow a degree of flexibility and personalisation. To sum up, airplanes and very long distance trains are my preferred working places.

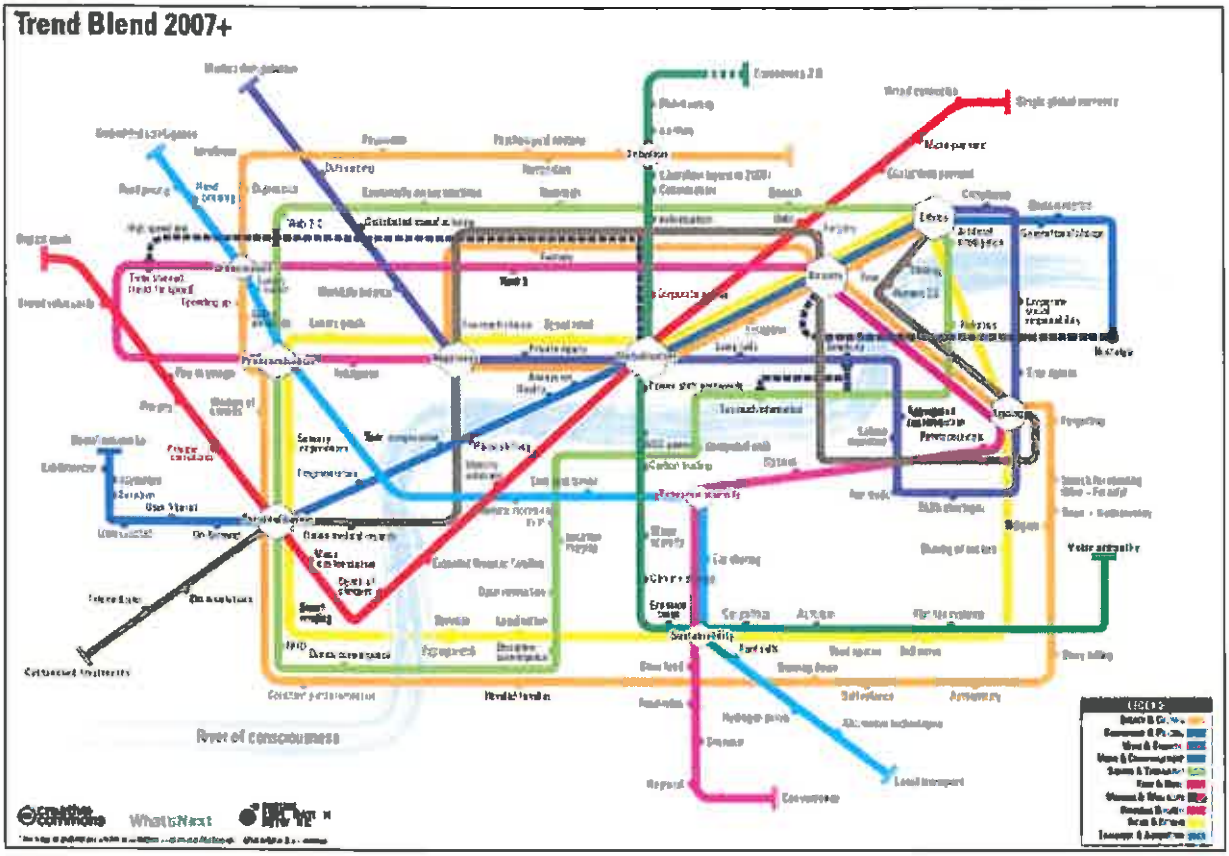

Figure 16. Richard Watson presented an overview of the major trends for today and beyond, across ten segments: society & culture, government & politics, work & business, media & communications, science & technology, food & drink, medicine & well-being, financial services, retail & leisure, and transport & automotive.

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4.2 Analysing with Andy

Andy Hines is director of consulting and organisational futurist at Social Technologies company. It is a company that helps Fortune 500 companies and large NGO's with future foresights. His mission is using futures tools and knowledge to turn ideas into new business opportunities. He has been a partner in a think tank focusing on trends and developments in international organisations. He is active in the futurist community, publishes and speaks widely and he has been editor of the futures magazines The Futurist and Foresight. He holds a degree in Studies of the Future from the University of Houston. He is the co-founder and former president of the Washington DC Chapter of the World Future Society (WFS).

Andy Hines was interviewed by Sirkka Heinonen and Minna Halonen during the Don't Stop 02 Places to Go Conference in Copenhagen, April 25, 2007. **Analysing with Andy showed the importance of connecting foresight exercises to corporate strategy.**

There is a lot talk about technological foresight. So how important do you see the role of social foresight in companies for strategic foresight projects?

I think that one without the other can lead to an imbalanced view of the future. In our company we have two multiclient projects. One is about technology foresight and the other is about global lifestyles.

And we think that the two of them together provide a nice balanced view of the future. If you are looking at the technology alone, you are going to miss the human element. And vice versa, if you are only looking at the lifestyles, you are going to miss important turns and developments of technology and social change of technology.[44]

In your view, what is the most tangible benefit from foresight for companies?

I would say that we see that there are three main application areas for companies to benefit from foresight.

1) We need to identify new windows of opportunities. Where shall we be looking for when we are seeking for growth in the future?

2) How are consumers – and our customers changing in the future? It means trying to understand what the most important topics of change will be in the future.

3) How do we position ourselves – strategically, as we think about the future? This is more directly about the strategy of the companies. It seems to me that there are many kind of questions and topics that people are asking us. The benefit is that we are able to relate that picture of the future with feeling "I know what I need to do tomorrow to start towards the goal

[44] In futures studies, a holistic framework is a necessity for exploring interconnections between different disciplines, as well as between technology and society. Technology foresight should be accompanied by technology assessment: prognosticating futures impacts of technology on society. This is particularly important for managing emerging technologies (see e.g. Day & Schoemaker 2000)

and in order to get there". So the tangible benefit is having the sense of what to do in the present to get to the future.

You emphasise very often thinking about the future as different alternatives. Of course it is one of the main principles in futures studies. What is the best method in your view – if you have to pick one – to identify alternative futures and to anticipate What if? -situations?

I have a story about that. I notice that a lot of times when speaking about methods, especially when you are working with engineers, they always say: give me the best method. But it all depends on the situation. It is really hard to say that there is one method that fits all. I certainly could say that the scenarios are the most popular tool, but they are not necessarily for some problems the right approach. So I would say they are the most common method. You can say they are the most common, most popular, one that we as futurists use the most but I wouldn't say they are the best. Even though they are the best for many situations.

So you have to be context-aware and it is the toolbox of various methods that are available and you will have to know and choose the right one for the occasion.

I could not have said it better, it is the toolkit. I love the toolkit idea. I think that is really what it is. You can talk to your client and discuss and really go back and forth and really understand what the forces at play are.

Then let us talk about this big challenge: How to translate foresight into action? How to institutionalise foresight and strategic thinking in companies?

One thing that we talk about a lot is the leading indicators or guideposts or whatever you want to call them. But in some sense, if we have a vision of what the long-term possibilities of the future are, we either work backwards from the future or work forwards from the present. What would have to happen in order for this future to come into being? And then as we are doing our scanning of the environment, we see something that looks interesting, someone says: hey, you said it would look like this, and it really looks like that and it tells you that perhaps you are on that pathway. I think providing those signposts, it is an exercise that one ought to go through: what would it look like a long way. Not only does it help you to identify future paths, but also to make them more tangible. You can say: "Oh, now I could actually see how that might happen even if it does not". You kind of realise that some of the visions/development paths make sense. So that kind of approach should be incorporated to foresight exercises right from the start.

The other question was about ongoing basis. Continuity is important in foresight activities. If foresight is carried out as one exercise every now and then, it does not probably help as much as it could. It should be an ongoing process.

That is what we believe in, don't we. So it is the question of how you build the culture for foresight within companies. We talked about this earlier in our workshops we ran today. I like the idea of first having successful projects that you can point to how foresight helped to solve problem A or find opportunity B, and that will grant you permission to do more comprehensive project the next time. And if that goes well you get permission to really integrate foresight into the organisation. I noticed that when we have a brand new client who is new in foresight, they often ask us to do something like a trend study. What are the key trends? It is not very integrated, but if we do that well, so they ask maybe you come and run for us a workshop that will help us come up with some idea, e.g. new project idea. If we do

that well then they may ask: can you do us an integrated foresight system where we take all that information and link it into the business processes.[45] However, it is rare that we can jump right to the big system. It is more like "well let us see if these guys are OK". I would actually do the same. I would not just swallow it all in one big gulp. It is more like small sessions growing into more integrated foresight programs.

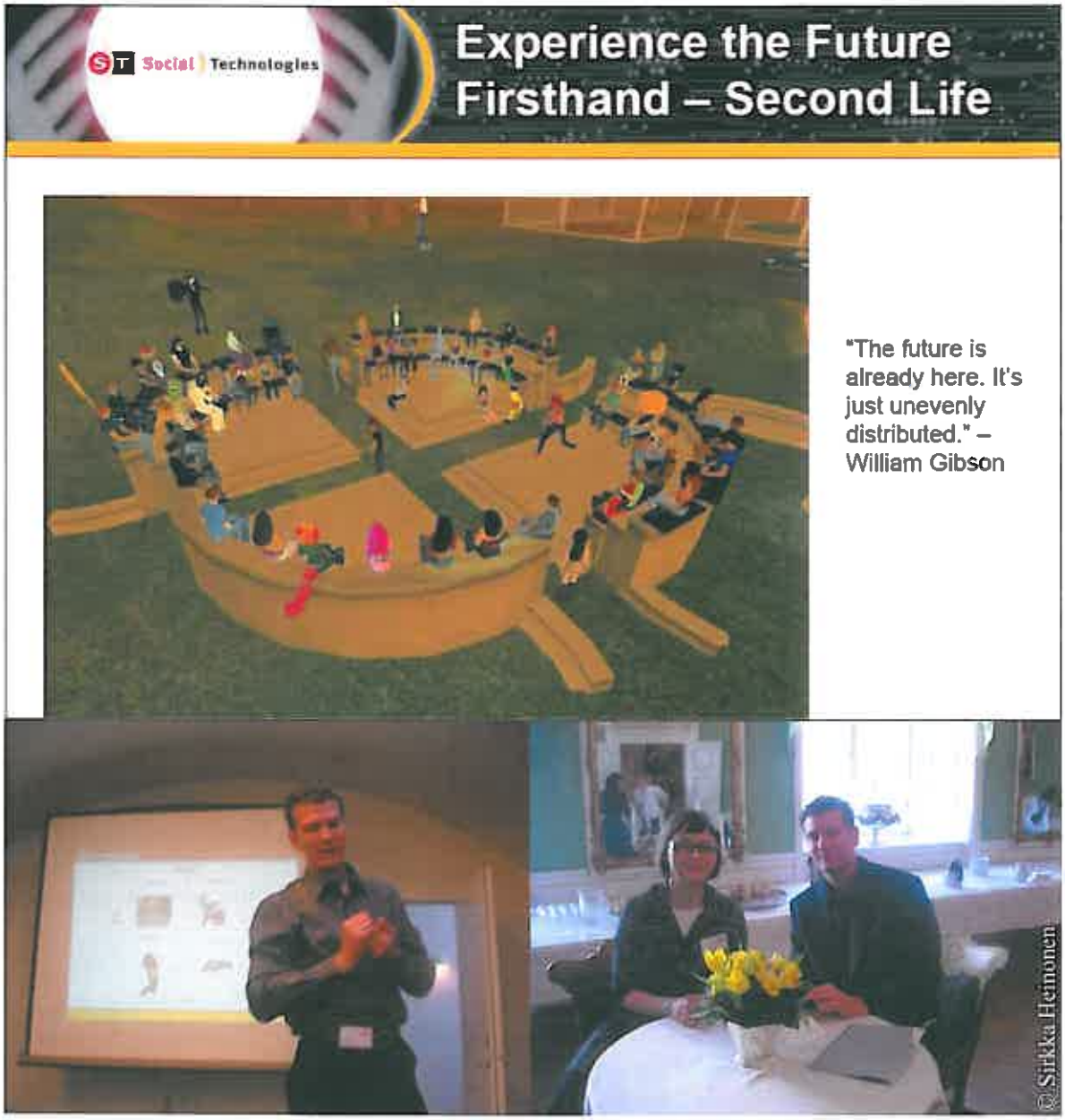

Figure 18. Andy Hines running his workshop on strategic foresight and discussing with Minna Halonen during the conference coffee break.

[45] It is challenging but of crucial importance, with a view to the expected concrete outcome, to introduce foresight into business processes as linked both to the innovation processes and to the strategy of business activities at large in a company or organisation. For a systematic approach for integrating foresight into strategy see Hines 2007; 2006.

In a sense, it can be said that the future is in the virtual worlds and virtual communities, such as Second Life, games, chat galleries etc. You have suggested that people should experience the future firsthand. That is a good recommendation.

The reason why I use that particular example of Second Life in my workshop is that now we are clearly seeing the phenomenon and impact of virtual life getting more momentum. If you can remember that at the beginning of the worldwide web, it took quite a while to unload the first image. But if you think about the time in that very early stage, it was not clear at that time whether this was going to be a major phenomenon. Now we can all say, yes, it was good, but then it was not so clear. If you were the one who was willing to say "Wow, I can see what this might eventually be", it was rare. It gives you a chance and you are starting to think about an option before anybody else has it in their radar.

I think what we are seeing with virtual worlds now is how this future is going to unfold. It is going to give us idea about how to prepare for it. This is really interesting and tells us it is something that is here to stay. We are seeing the introduction of the emerging of the physical and virtual worlds where you can make real money by selling real estates and buildings in a virtual world. The money itself is insignificant but the crossover into mainstream life tells us that it is something that is here to stay.

Are you yourself a member of Second Life?

I am a member, but I would not say I am an active participant. I kind of go in there and just look around and see what they are doing. That is enough, you cannot do everything. You need to be aware, but you do not have to be addicted. Actually that might be fun.

Do you see more opportunities than risks related to this growing emergence of virtual worlds?

There are always two sides. It is all about trade-offs as the famous saying goes. There is rarely an opportunity without risks. And rarely a risk without opportunities. There are two sides of the same coin. We will certainly face problems with the virtual worlds. Absolutely. One of the things that we could be seeing in the future a lot is this: a good example would be what happened with dotcoms. Before that the hype was: "Oh, it is all going to be internet companies!" Then there was the bubble: "Oh, it is all going to go away!" Really the truth in a lot of these is in my view: Don't get too hype and don't get too discouraged. Progress is steadily continuing, do not be fooled by the peaks and valleys, look for the trend line in the middle. That is the way I would look at the opportunities: yes there are opportunities, but there are also threats. But "where is the golden middle" would be a more fruitful approach.

At VTT, we have a project on Social Media in the crossroads of physical, virtual and digital worlds (SOMED). It is concerned with user-generated contents, user-driven applications, and empowerment of the individuals (MySpace, YouTube, blogs etc). How do you see the future of social media?

It is interesting when you talk about the generational identifications that one has really come out. We cannot do that, it is a loss of control, and we want control, and the younger generation thinks, this is completely normal, natural. And we look at it as what is wrong and think how we can get them back to more traditional ways.[46] I think that is a completely failed strategy.

[46] As global forerunners the MeWe generation will challenge old perceptions in business as well as in politics. There is no way of return. For more information on MeWe generation see chapter 2.1 and Lindgren et al. 2005.

People who are actually shaping the future are going to do it the way they want to shape it. And their norm will actually become the norm.

In the meantime when we look at the power structure today, the situation is the following. Older people are horrified that young people do not know how to write sentences any more.[47] But they do not need to. It is not necessarily a bad thing. This is the same with social media. There will be a lot of resistance, but resistance is futile.

What is your personal favourite creative space? What are the creative elements?

My single best place for creativity and for coming up with ideas is when I go out for a run. A lot of times I just come back and write down my ideas.[48] I have note pads and big sweat droplets on them.

Physical exercise can in a way be meditative. How does space support creativity?

I do an exercise on my creativity course where I teach by asking the participants: "What is your favourite creative place?" We then go through the list and I ask: "Is anybody going to say work?" Maybe in the end, something like 26th on the list somebody mentions work. It is amazing: creativity seems to dwell everywhere else but work[49]. So the office seems a definite "No". I work at home and for me it is kind of a shift from formal work surrounding. I like that as my favourite creative space.

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www.socialtechnologies.com

Major societal changes often imply a re-thinking of the existing patterns. For example, as an advocate of a new sustainable mindset for architecture, McDonough points out that the Stone Age did not end because humans ran out of stones. It ended because it was time for a re-think about how we live. (Twist 2005). Social media means a similar re-think in ways we communicate, connect, and create contents.

[47] Naisbitt (2006, 113-155) points out that we are living in a world where visual narrative is overwhelming literary narrative. This unprecedented visual assertiveness in today's world goes from art and architecture to high-end fashion and design of common goods.

[48] In fact, physical exercise is an ancient method for evoking ideas. Aristotle's peripatetic school derived their name from Aristotle walking about with his students as engaged in discourse and exchange of ideas (Gr. word *peripatein* means walking about).

[49] The same result was obtained in a workshop organised in concomitance with the 9th International Conference of Finland Futures Research Centre and Finland Futures Academy (see Ahlqvist et al. 2007). When asked the favourite creative space in physical or virtual world, participants listed nature, home, vehicles, meditation, music, any space with (different) people etc, without mentioning office environment.

5 Narrative of the Digital City of the Future

This chapter provides a brief "user-generated" narrative of the digital city of the future. It is complementing the picture of the social media and technology foresight as approached in the interviews presented in the preceding chapters 2 to 4. Social media dwells in cities, but naturally not only in cities. However, since the global majority of people already live in cities, it is worthwhile considering the future of the city and, in particular, future aspects of the digital city. Digital cities are cities where digital fabric is interwoven into urban structures and virtual networks and where digitalisation facilitates citizens' activities. According to Kelly and Ratcliffe (2006, 45) the digital city perspective means creatively integrating telecommunications into urban policy and planning practices and strategies, in order to develop more inclusive and sustainable urban futures. Telecities instead are cities where the main emphasis is on replacing physical activities by virtual ones, such as telecommuting etc.[50]

The framework for exploring future perspectives of the city is provided by digitalisation which is penetrating into every aspect of urban life. Everything that can be digitalised, will be digitalised. Digital life - DigiLife - emerges and evolves on a socio-technical platform of digitalised cities. However, it is of vital importance that technological premises are seen only as an enabling driver and not as a techno-deterministic driver. This means that the needs of people acting in urban spaces augmented with digital contents are taken into careful consideration when developing technical applications to support such activities. People interacting with each other and prosuming digital contents create something that is larger than the sum of the parts.

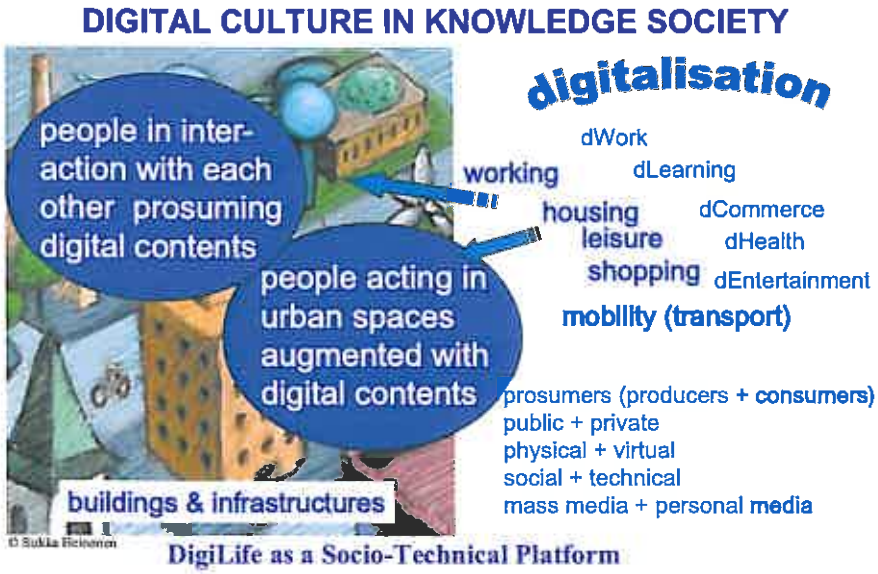

Figure 19. Digital culture in an experience-orientated knowledge society means interacting with digital infrastructure of cities, with prosumeristic contents, and with other people.

[50] Pelton (2004, 117) points out that in the 21st century there will be more urbanisation and greater concentration of people in high-rise urban structures. Models of such a future of high-tech megastructures, with dense concentrations of populations, are visible everywhere. He warns that the rise of overcentralised megacities is exposing millions to potential environmental catastrophe, rapidly spreading epidemics, terrorist attacks, and other threats. Pelton claims that telecities will supersede megacities for several reasons, including the drive for clean air, reducing pollution, energy conservation, more jobs based on services, and coping with the high cost of urban property. It is better to move and concentrate ideas than people.

5.1 Prelude

The narrative of the digital city of the future to be presented in the following chapter was synthesised together from the thoughts of one of the work groups in the workshop on "Redesigning the Future" at the LIFT Conference held in Geneva. It was written down by Sanjay Khanna[51]. He edited the text to provide the narrative of a jointly imagined and authored city – a metropolis of contradiction, paradox, intense change and hope.

The narrative is constructed on the basis of the sentences, insights, conversation, and collaboration of the following working group: Sanjay Khanna, Julian Bleecker, Stowe Boyd, Jan Chipchase, Thierry Crouzet, Sirkka Heinonen, Daniel Kaplan and Joshua Kauffmann. The setting chosen was to anticipate how people will live, work and communicate in the city of the future. How will communication between people shape cities, and vice versa - how cities will shape communication between their inhabitants, was the starting point for reflections.

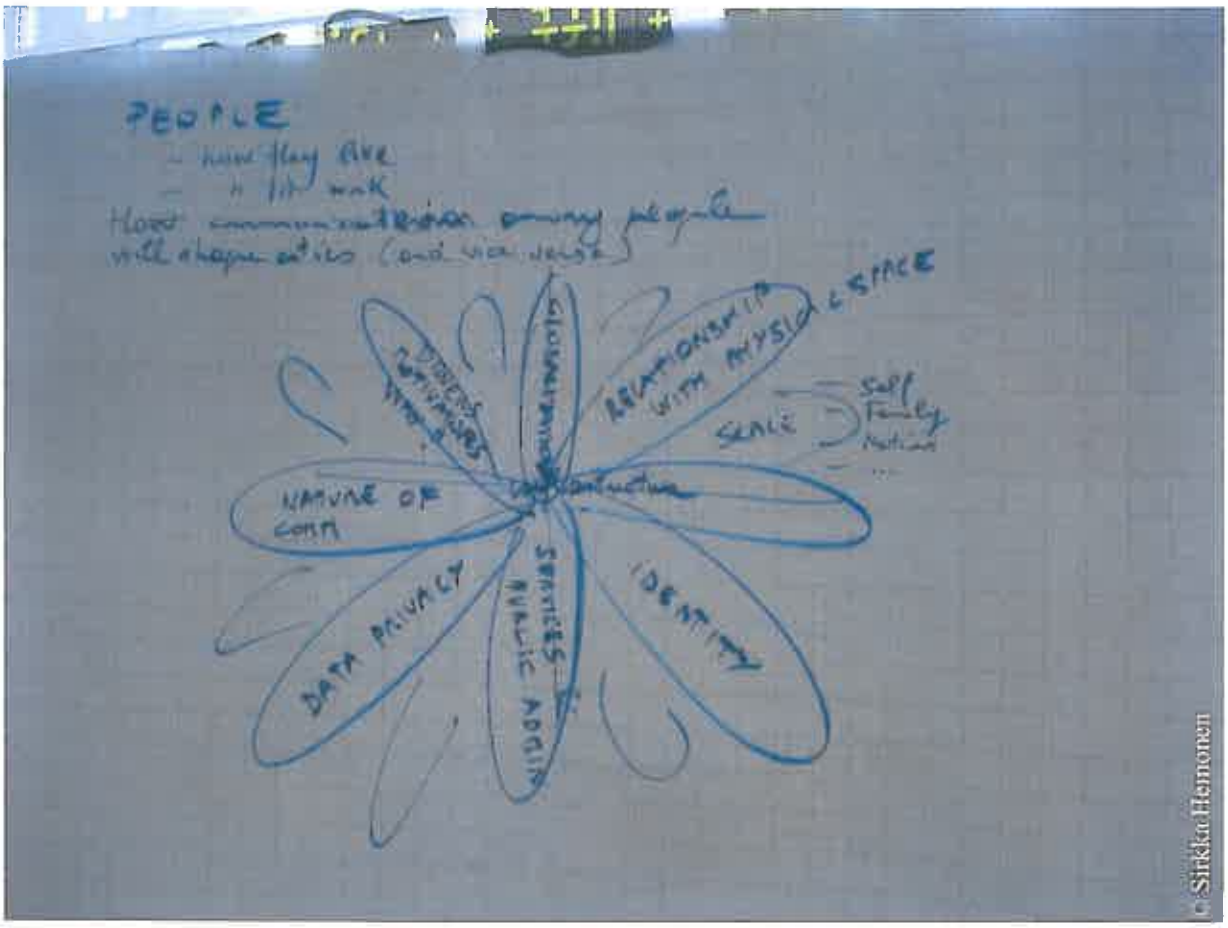

Figure 20. Considerations on important dimensions for people living in cities that came out during the workshop discussions.

The future of the city and observations from the working groups in the above mentioned workshop were also discussed by Nicolas Nova in chapter 3.4.[52]

[51] Principal of Khanna Research + Communications

[52] It is also worthwhile looking at the various visions of the future of the city made in previous decades (e.g. Alison et al. 2006). See also What's Next for Cities? 40 Ideas about the future, containing Charles Leadbeater's question, relevant for social media : "Where are the spaces in cities for self-organisation and conversation?"

5.2 Tale of the City of the Future

This tale of the city of the future is based on Mumbai-type cities. It is narrated by Sanjay Khanna, and it was created collaboratively at the LIFT Conference in Geneva in February 2007 by the working group: Sanjay Khanna, Julian Bleecker, Stowe Boyd, Jan Chipchase, Thierry Crouzet, Sirkka Heinonen, Daniel Kaplan and Joshua Kauffmann.

"In our city, you walk into an apartment and the density of habitation changes one's ideas of privacy. People are sometimes warned that the crowds are so dense, you cannot make your way through it [by force] and can only go with the flow. One of the things urban dwellers do to recreate privacy is to go to places virtually and socially. There are physical and virtual places amenable to social contact, a combination of physical and virtual contact that makes citizens feel interrelated to one another.

Figure 21. A combination of physical and virtual contacts is relevant for the feeling of interrelation in future cities.

While places and locations are important, the city also pays attention in formal and bottom-up ways to match people with resources they need. In this apartment in the city, the ability to sustain oneself is changed because of expensive resources; sometimes there are catastrophes where people die because of starvation, warming, cooling. The explosion of people has changed what you consider to be your community, and certain neighbourhoods become self-regulated entities where people can be shunned based on their behaviours and how they fit in. Kindness and trust become more important as people feel pressured by environmental and social density – kindness becomes as necessary as water.

People in the city begin to design systems to address disorder and benign indifference and, within the high density and diversity, there remains the thrill of unknown experience. In general, the city is responsive to environmental and social changes through economic and technological tools that make the city responsive in a positive way. The city is resilient and gives people access to resources: Individuals find ways to regulate the state through self-publishing media, and individuals' ideas of ownership change as they question what they need and do not need. Social services in our crowded city require individuals to band together to put out fires, police themselves and be first responders.

There are attempts to build common interests. In the tight quarters of the apartment, people live longer so there are many generations in one place – the building needs to support their care because of actual or potential collapse. One of the most important survival tools is the ability to have friends who will share their water and, in so doing, build a social currency."

Figure 22. Group-generated content being processed into a narrative of a future city.

5.3 Ending Note

Perhaps the greatest challenge for the city of the future lies in the imperative for managing sustainability and climate change. Sustainability architect William McDonough argues that we can only think of our future cities if we think about what our intention is as a species on the globe (Twist 2005). Ecological sustainability and social responsibility can indeed be approached through a systematic futures process in a global perspective. Aspirations of humans, enterprises, and nations can be reviewed by tackling 15 global challenges as presented by the annually updated and processed report on *State of the Future*.[53]

McDonough's concept of the Next Cities means designing cities of ecological intelligence and social justice. He sees them as objects of human artifice. They can grow, breathe, and they can be ecologically sound, just as trees, forests, and gardens are. Future cities should be able

[53] The 2007 State of the Future (Glenn & Gordon 2007) gives "an additional eye" on global change and it is produced by the Millennium Project of the World Federation of UN Associations. The project is intended to provide an ongoing networked capacity as an intellectually, geographically, and institutionally dispersed think tank. The publication is composed of two parts: print and CD. www.stateofthefuture.org

to use energy, expel waste, and reproduce in ways that nature intended without destroying everything else around them.[54] Social media could be harnessed to the design and construction of ecologically and socially sane future cities.

"To be or not to be connected" is also an emerging major issue when exploring the rise of the future city and the growing importance of social media.[55] Especially in global perspective, not everyone has access to social media to be used in digital life and in digital and virtual networks. On the other hand, not everyone wants to have it.

Figure 23. Urban literacy means that citizens can read the urban texture.

There are also weak signals of a pattern where technical solutions and individual lifestyle choices allow for a voluntary (and "luxurious") absence from the digital world. A major potential is emerging from the need to manage both physical and digital life. Technical

[54] Future eco-cities could consist of eco-homes that are built on living organisms. There is a design for a house that will grow from a few seedlings into a two-story, water-recycling, energy-efficient home. http://www.popsci.com/popsci/whatsnew/0cb1ec816bc3e010vgnvcm1000004eecbccdrcrd.html. This Fab Tree Hab design is a mix of ancient and ultramodern technology. For a debate and prerequisites for sustainable cities see also Heinonen & Lahti (2002).

[55] Amkreutz (2007, 140) goes as far as saying that the question "To be digital or not to be?" will no longer be a choice. He anticipates that in the future the physicist's vision of virtual reality as a derivative of the "real world" will be reversed: the fabric of reality will be a derivative of the digital one. He (2007, 134) claims that by 2017 "virtual" worlds will be "as real as the milk in your latte". However, we argue that since we are humans, the physical contact will never be totally replaced by virtual communication. Both worlds will become inextricably intertwined. The ideal case is a balanced combination of ambient intelligence and people's daily life (Alahuhta & Heinonen 2003).

solutions to sustain a balance here should be based on socio-cultural considerations in order to be successful. They should reinforce both the connection and the voluntary absence.[56]

The concept of literacy is expanded to include the ability for "reading the city". The future wearable city and digital urban texture make new challenges for citizens. The applications of social media might also include solutions to enable learning to read the digital city. Taking into consideration "places that think" is regarded as the most crucial new issue to emerge in architecture for a very long time (Mitchell 2005, 64).

The concept of the internet of things can be thus directly applied to cities of the future. "Cities that think" place an ever growing emphasis on the interaction between city and citizens (physical world) as well as netizens (virtual world). Rheingold calls this "the era of sentient things" (2002, 83-112) and sees it as a social revolution where the transformation of cultures and communities is driven by information in places, smart rooms, digital cities, sentient objects, tangible bits, and wearable computers.

Mitchell (2005, 64) argues further that this issue is also concerned with democracy and empowerment of the individuals in their relation to city. He (2005, 75) points out the two-way interaction between people and spaces. According to him architects have always understood that the possibility of democracy is dependent on the availability of spaces for political discourse. In a Churchillian tone he reminds us that we make our places for politics, and those places then make us. Consequently, we claim that a major empowering turnpike characterising the city of the future will be placed on the intersections between physical, digital and virtual spaces, as well as between public and private spaces. Here we will come across both new opportunities for new technical solutions and social patterns as well as various threats and risks which may actualise themselves unless sufficient attention is paid to this core.

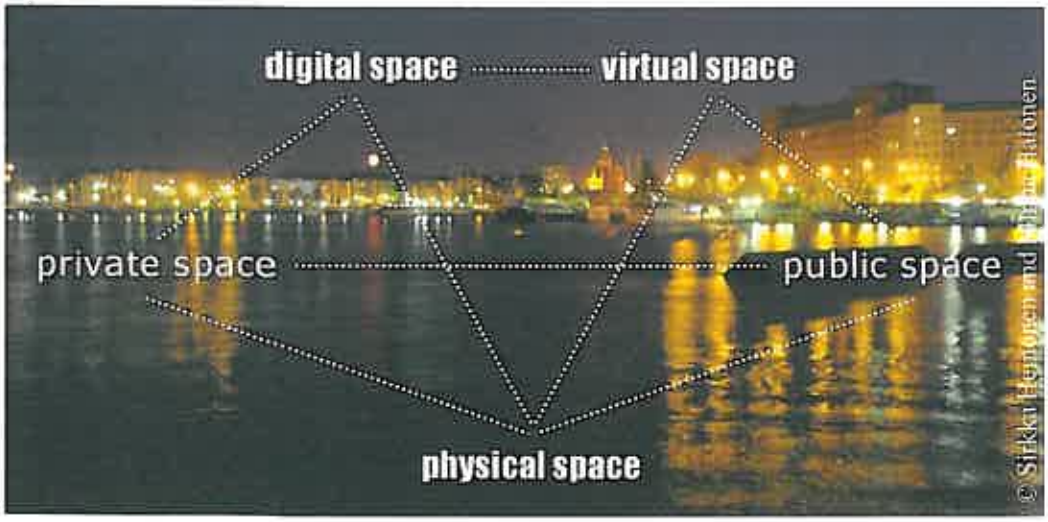

Figure 24. Social media can provide tools for citizens to cope with the intersections between physical, digital and private space, as well as between public and private space.

[56] The social identity of places is expanding. The impact of new media on social behaviour has been interestingly discussed by Meyrowitz (1985). He claims the separation of social place from physical place has occurred with electronic media, namely television. Before electronic media, places defined most social information systems: it took time to travel from situation to situation. The reprocessing of our physical and social environment caused by electronic media is revolutionary. By altering the informational characteristics of place, electronic media reshape social situations and social identities in ways difficult to foresee. The recent development of social media and the emergence of ubiquitous computing are hugely accelerating this process.

6 Conclusions

Personal views – metaphoric, cognitive handprints – of experts on social media and on issues closely related to it are expressed in the interviews documented in chapters 2-4 of this report.[57] A narrative on reflections about the future of the city is also presented in chapter 5. The ideal digital society should be one which fosters creativity and connectivity at an individual level, and collective level.

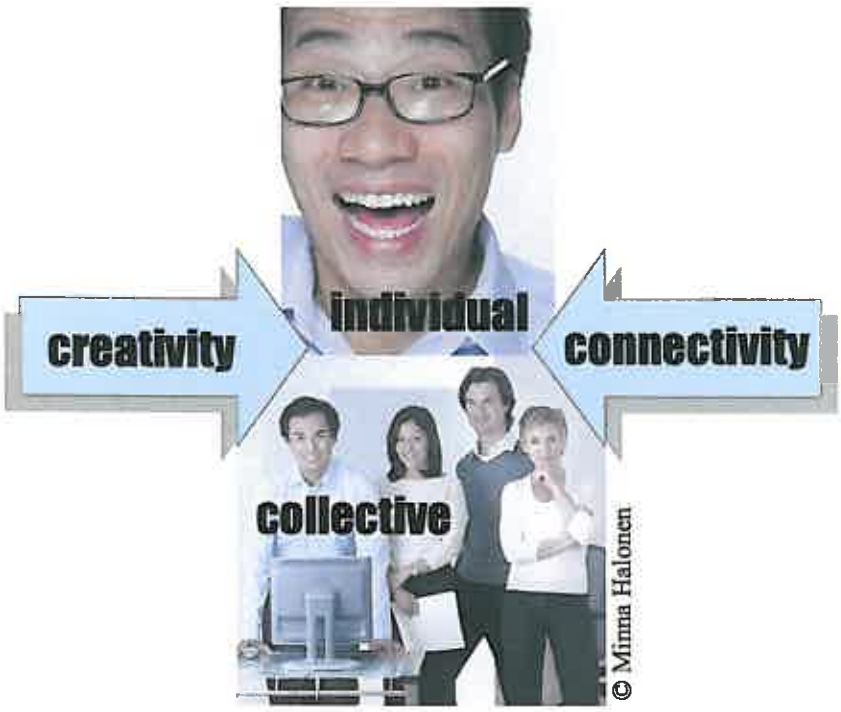

Figure 25. Digital society is one which fosters creativity and connectivity at an individual level, and collective level.

The following figure is an attempt to epitomise some of the leading ideas as interpreted through these exercises and encounters. It is a "mental mosaic for reflecting major lighthouses at the sea of social media" as we perceive it. These lighthouses are core themes that point out the *foci* of functional social media, with a special view to the degree of empowerment of the individual in physical, virtual and digital communities. They also indicate further research needs in the field of social media as derived from the views of the interviews. These conclusions are subjective interpretations on the basis of the interviews.

Digital in a larger, more human sense, is the way we have always been: the word digit comes from the digits of the hand (in Latin finger is *digitus*). Digits of the hand have always been used to create, to make tools, to communicate, to sign language, to shake hands, to touch – so we have always been digital. The core themes that came up during the interviews are presented in the following as a hand – a metaphor of digital society. Each finger of the hand represents a core theme.

[57] Conclusions are principally derived from the interviews and elaborated further by the authors, taking into consideration the previous material worked out within VTT's SOMED project.

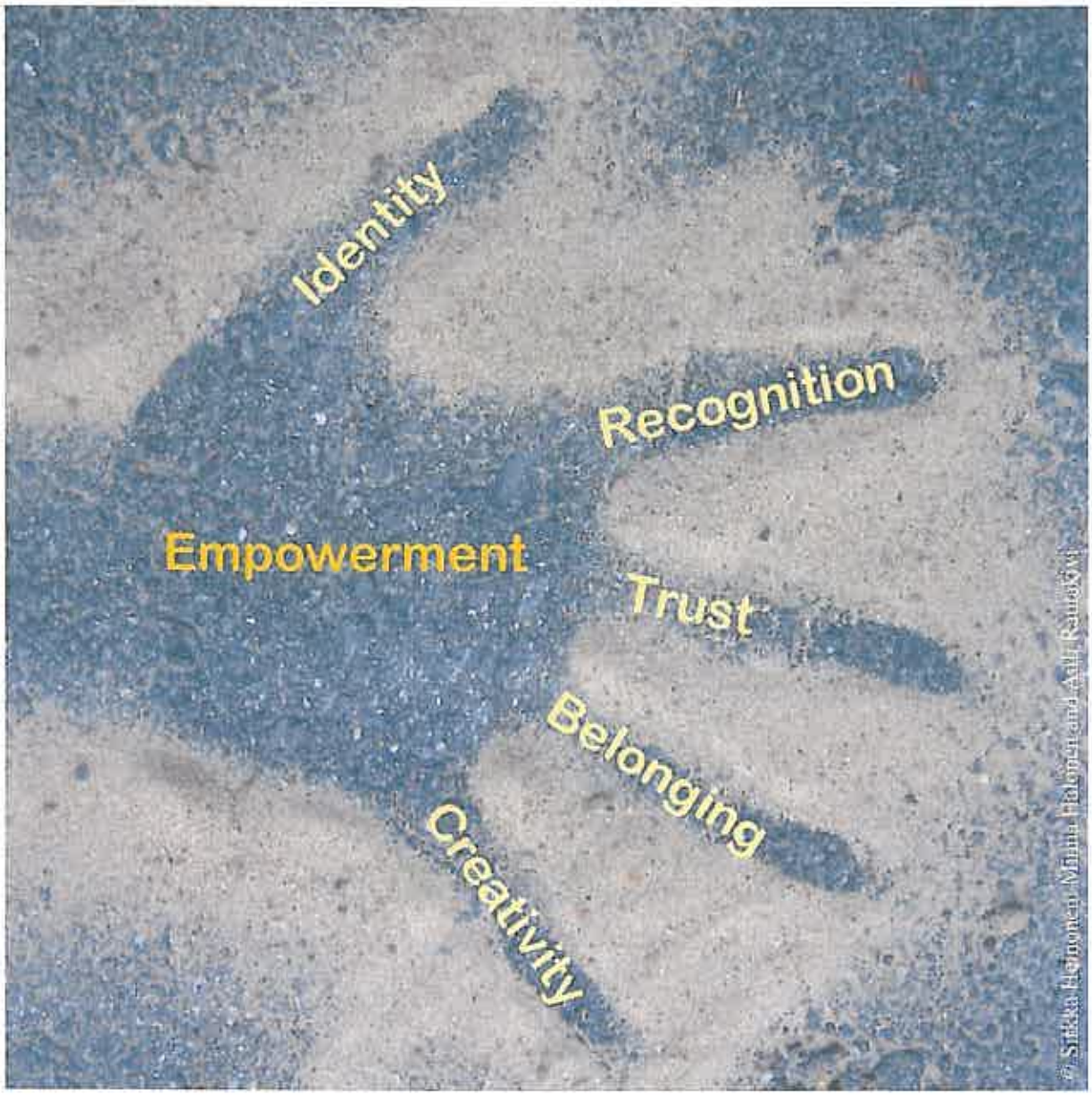

Figure 26. Handprint of our digital life.

The thumb of our digital hand represents **identity**. Big question is how clearly you can perceive your own identity in the combination of physical, digital and virtual worlds. Our identity as human beings is closely related to the media we use. Multiplication of individual identities is a major challenge and threat in this respect. Due to digitalisation we are constantly fragmenting ourselves. If you cannot cope with this kind of fragmentation, "digital schizophrenic" may be the end result on the large scale.

The index finger of our digital hand represents **recognition**. By recognition we mean here the plethora of all positive feedback that an individual receives from being connected to a community. Peer esteem is especially important incentive in participating and generating content. Social media actually is about mutual recognition. One-way communication simply is not enough.

The middle finger of our digital hand represents **trust**. Trust is a double-edged sword in social media. It is a crucial ingredient in all human communication. Trust is not self-evident in

normal physical life, not to mention entering digital sphere. However, it has a growing importance as a factor of attraction for entering new networks. There is rarely an opportunity without risks. And there is rarely a risk without opportunity. This is always reflected in the issue of trust in social networks.[58]

The ring finger of our digital hand represents **belonging**. Belonging includes access, motivation and skills to connect to various networks and communities. Continuity and implications of being connected determine in the long run whether you experience true belonging. Time is limited and in huge digital space you always have to make choices which networks and communities to attend. On the other hand, digital life enables synchronous connectivity to various networks simultaneously. Ambiguity of communication is obligatory companion in belonging and connectivity.

The little finger of our digital hand represents **creativity**. Creativity is much about individual. A single person can have her or his voice heard and creativity easily expressed through social media. However, with social media collective creativity can also be boosted. Playfulness, randomness and combinations and remix of things, ideas, persons and networks are essential in evoking creativity. There could be more open-ended social media tools to enable creative problem-solving or user-generated content production.

All the fingers of our digital hand together form the basis of the emerging **empowerment** of the individual – the central palm of digital hand. The ideal case is that all the fingers contribute to such empowerment to a sufficient degree. Naturally, in reality all fingers are not balanced and there is a great variation according to individual's background, priorities and life situations.

Using the digital hand means concrete participation in digital life. Prerequisite for all human interaction with other individuals in communities and networks whether they are physical, digital or virtual, is the following three-fold MAS setting: motivation, access, skills.[59] Reciprocity is also crucial in social interaction. Each finger represents a quality that has two ways. It is the question whether you on one hand really know or choose your identity, and on the other hand, whether you know the others' identities in social interaction and when using social media. Similarly, it is the question, whether you receive recognition, and – as importantly – whether you give recognition to others. Whether you trust others in a network or community, and whether you yourself can be trusted. Whether you connect to network and whether others are connected, and whether you facilitate others' connecting. Finally, it is the question whether you yourself can express your creativity through social media, and whether you perceive others' creativity and become inspired by it, resulting in developing your own creative contents.

The need for various techniques, services and products that facilitate this struggle for knowing one's identity and managing it in relation to others, could generate new business opportunities.[60] Totally new societal and technical solutions will have to be developed for

[58] According to Csermely (2006, 260), it is not only the links in a network, but also their perception, our trust, which stabilises our mental and physical health and makes complex information accessible. He sees trust as the probability of weak links, the probability of the development of the modern social net. Trust is also a part of social capital.

[59] Viherä (1999) has paid much attention to citizens' communications skills both in theory and in practice. In her doctoral dissertation she developed the MAS model, much as a reflection of empirical data gathered during many years of communication camps organised annually for schoolchildren and young adults in Finland.

[60] Majority of social media services do not have a clear business model. For example Kangas et al. (2007) have identified four social media business models which are: no business model, advertisements, subscription-based

managing digital contents, communities and worlds, and for enabling people to develop a personal awareness of their digital representation in virtual space.

Figure 27. Digital hands contacting each other have diversified implications on physical, digital and virtual levels owing to interconnections between the "fingers" described above.

It is also worthwhile exploring various possibilities how social media can generate creativity. We propose that it might be possible to develop specific Creative Foresight Spaces where not only creativity is promoted but also futures thinking.[61] A similar idea is the concept of community gardening, based on the need for a moderator or "gardener" who can lead the creativity of the team to produce the information in a better way. The wisdom of crowds is hugely empowered by the phenomenon of social media and we have to take advantage of it. As Surowiecki (2005) stresses, we are the products of evolution, and presumably we have been equipped to make sense of the world around us. Collectively, we can make even more sense of the world: We have been programmed to be collectively smart. With most things the average is mediocrity. With decision making it is often excellence. Successful decision making demands more than a picture of the world as it is. In addition a future landscape of the world is needed. Therefore any decision-making mechanism has to cope under conditions of uncertainty. Social media and the internet in itself are at their best when exploring future landscapes and weak signals of what the world will be.

Our evolving role as social entities can be perceived as a continuous process. Digital life gives an extra spice and challenges into that process. The fundamental Socratean exhortation "Know Thyself!" forms the basic inner motivation for social media. How we represent ourselves to others is a significant aspect of "who we are", of our identity. In order to manage with multiplication and fragmentation of identities we might need "digital identity management" schemes. We should be able to develop social media technologies to facilitate this fundamental human struggle to find oneself. This goal has to be kept in mind so that we do not operate a step behind technology. We must be quick to see the potential of technology to enable and increase the search for one's identity. Acquiring information or knowledge as a

services and merchandise. It can also be anticipated that new business models will emerge. Will e.g. internet auctions and games lead into new business models of their own in the future?

[61] Such a Creativity Foresight Space is a combination of physical and digital spaces to promote creativity and proactive futures thinking at the same time (Heinonen 2007; Ahlqvist et al. 2007).

motivating factor for using social media is largely and indirectly subjugated to the above mentioned motivation.[62]

Building upon Benkler's (2006, 473) view we interpret that social media is about creating and exchanging information, knowledge, feelings, experiences, and culture. This offers societies greater opportunities for cultural self-reflection and human connection. Social media is to a great extent produced, shared, and used in communities and networks. Benkler (2006, 212) points out that the capacity of the individuals has been fundamentally altered. They have become active participants in the public sphere. Similarly, as the role of individuals has grown stronger in this sense, the importance of weak links in a network has accentuated. Csermely (2006, 261) is convinced that weak links are an important part of our social capital. As a further research topic we would like to propose exploring the role and impacts of weak links in social-media-related networks.

We in the foresight task force of the SOMED project claim that a whole new digital culture is emerging in Experience-oriented Knowledge Society – a culture of user driven social media. Leadbeater (2006) has also discussed the social media as a kind of new user culture – or even as a new paradigm. Since the concept of "social media" refers to applications where user actions and user generated content play a central role, it should be born in mind that the users not only create digital contents but also build up dynamic dialogues in ever cycling feedback loops. It is a continuum where users make innovations, by choice and by chance, and where cross-pollination of different fields, spaces, disciplines, people, cultures and ideas is essential. More attention should therefore be paid to the randomness: accidental encounters may end up as innovation. Social networking and being connected to virtual communities, at least to the MeWe generation, often means death and life – whether it be First Life or Second Life. (Heinonen 2007, 1). Maybe we will gradually see Third Life where a sufficient palette of technical, social and economic innovations and applications become available to sustain and facilitate people's everyday life, identity management and self-expression in the combined sphere of physical, digital and virtual worlds.

To conclude, the sense of social media is the search for meanings: the search for finding one's identity, the search for expressing one's identity, and the search for knowing other people's identities, as well as their implications for leading your life in the cohabitation of physical, digital and virtual worlds. "Who am I?", "How can I express myself?", "Who are you?", and "What does it mean to me, my family, friends, neighbours and to the surrounding world?" The extreme long tail of social media applications and innovations will be slowly circling around this search for meanings and experiences, and the search for facilitation of context-awareness for managing identities.

[62] Antikainen has studied attraction factors as regards company online communities. She found out 16 attraction factors, such as usability, reputation, knowledge exchange, friends, playing and roles. These attraction factors are based on different kind and level of relationship established by the community members. The variety of relationships goes from member-to-member, member-to-maintainer, member-to-service to member-to-brand.

Figure 28. The long tail of social media circling around in the search for meanings and identities in the complex reality of physical, digital, and virtual worlds.

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