



Ambience Design Notes

Jari Koskinen

Prologue

It is not easy to understand what is happening in the design world at the moment. Accelerating changes and working in-between disciplines create a blurred image on current developments. This article illustrates fragmented notes made during the ServiceD research project and combines the author's conceptual innovation *ambience design* with the findings of the foresight and research project.

Service design and ambience design are close relatives. Ambience design aims to answer some of the questions arising with the emergence of the *ubiquitous society*: it forms a human-centred approach that takes well-being seriously and combines cross-disciplinary expertise with ubiquitous technology.

There are growing expectations to put an end to tech-savvy approaches and concentrate on co-designing a better ubiquitous society and better standards of living for everybody.

Background

Bureaucracy and top-down management are still very much the reality in big companies. Steinberg (1997) notes that some of corporate R&D staff can be seen as corporate rebels – independent thinkers who see old problems with fresh eyes.

Inflexible bureaucracy, top-down management, tightly regulated industries, monopoly – these are the tired remnants of the old corporate world order. The new economy demands new thinking [...].

The early days of the Xerox Palo Alto Research Center (PARC) belong to the Silicon Valley folklore. Howard Rheingold (1994) illuminates those times:

I managed to get a job at PARC writing articles for a Xerox in-house magazine. A year before the first Macintosh computer was sold, I commuted 45 minutes to PARC's rural campus to type on an Alto – the first true personal computer. My job was to interview PARC researchers about their work. They talked about bit-mapped screens, languages. All those futuristic experiments they showed me have diffused so widely (and profitably) during the past ten years that it is easy to forget they were once confined to that building on a oak-spotted hill above Silicon Valley. [...] Having already invented the future twice, then squandering its advantage, could Xerox still have stories to tell? In the fall of 1993, I returned to Xerox PARC for another chance to go back to the future. [...] Video windows and audio communications are built into workstations. Desktop screens have evolved into wall-sized screens, clipboard-size screens, and pocket-size "tabs." The place is still an intellectual wonderland.

Mark Weiser coined the term *ubiquitous computing* in 1988–1989. He was working as Chief Technologist of PARC. It has since become one of the key approaches towards the futures. Ubiquitous computing "is linked to other concepts such as pervasive computing, ambient intelligence, internet of things, and even real-time Web" (University of Tampere 2011). In the near future, ubiquitous society and smart and mediated spaces could be the playground for service designers:

Ubiquitous computing names the third wave in computing, just now beginning. First were mainframes, each shared by lots of people. Now we are in the personal computing era, person and machine staring uneasily at each other across the desktop. Next comes ubiquitous computing, or the age of calm technology, when technology recedes into the background of our lives. (Mark Weiser)²

Weiser was describing the world of computing without computers. In his mind, desktop computers disappear as the tiny, cheap microprocessors fade into the built environment. Adam Greenfield (2006, 11) illuminates the phenomenon: "In this context, 'ubiquitous' meant not merely 'in every place' but also 'in every thing.' Ordinary objects, from coffee cups to raincoats to the paint on the walls, would be reconsidered as sites for the sensing and processing of information [...]."

The ServiceD research project (ServiceD 2011) shows that only few designers are talking about technology and ubiquitous society. There is a serious threat that we are entering the ubiquitous society without understanding what it means to us all or what kind of contents can be created. Technology itself is not enough; we need human-centred approaches.

In any case, ubiquitous society could offer great possibilities to service development. Can you imagine a world without visible technology? Samsung Smart TV already has voice and gesture control, so it is easy to imagine futures of smooth control in smart and mediated build environments.

The discussion around ubiquitous society suggests that *adjustability, modifiability, modularity, and individuality* become the new norms. Stagnant products, services, spaces, and brands are not completely disappearing, but the era of *changing identities* is about to emerge. Ubiquitous society is the narrative of this change: from intelligent windows to interactive screens and from location-based services to interfaces such as *Google project glass* (see Project Glass 2012) where physical spaces, virtual spaces, social (media) spaces, and mobile spaces merge. The development of real-time data and communication leads us to a world where real-time expertise plays an important part of everyday life.

The ubiquitous future of service design could turn out to be ambience design.

Design Discussions

Ubiquitous society could take most designers and architects by surprise. However, there are some very good articles that are preparing the paths for cross-disciplinary approaches. Jacob Voorthuis (2012) writes:

The model offered here as an alternative does not prohibit us to see music and architecture in the old way. That would reinstall the famous paragone, a conversation game based on a playful rivalry between disciplines demanding skillful and opportunistic border controls and military prowess that, however, inevitably partitions the continuity of human experience in order to control and rule. From point of view offered here, that becomes unnecessary. The difference is now constituted in the way that, for example, different

² see <http://www.cs.berkeley.edu/Weiser/bio.shtml> Retrieved 12-06-25

kinds of tools and their particular uses develop to work together at something that is the product in which they all play a part. Tools, material, knowledge and expertise assemble around challenge [...] and are then all used by a person according to their abilities or suggested possibilities.

It is not easy to connect different disciplines. Service design has a cross-disciplinary nature and ambience design goes even further in that direction. My personal experience shows that extra push is needed when, for example, medicine, psychology, sociology, and ethnography are combined in the name of service design or ambience design. One can only imagine what happens when sound environment design, lighting design, scent design, etc. are mixed with ubiquitous technology in order to create a new discipline. The task is difficult but certainly feasible.

Ambient Design or Ambience Design?

The author coined the term 'ambience design' over ten years ago, but has ever since tried to find more collaborative forms of developing the ideas presented over the past years. (Koskinen 2000)³ At first, in 1997, the idea had the name 'ambient design'. Since, the topic has been presented in seminars, articles, books, and on web forums. The name 'ambient design' was abandoned for two reasons. Firstly, it did not describe the contents of the conceptual innovation accurately enough. Secondly, the concept was constantly mixed up with ambient music, ambient advertising, and ambient intelligence. Since 2004, the name has been 'ambience design.' Ambience refers to all-encompassing atmosphere and environment; something that surrounds us.

Ambience design, thus, was under development long before Martin Lindstrom (2004) touched the theme. Internationally, however, the concept was not introduced until the summer of 2005 in a paper presented in the HAAHAMA conference by Karjalainen, Koskinen, and Repokari (2005).

The first comprehensive presentation on ambience design, reminiscent of the contemporary concept, was done by the author (Koskinen 2006) who later presented an even more holistic approach (Koskinen 2009).

One important milestone of the conceptual innovation was a research project conducted seven years ago. The *Ambience Design* research project, originally funded by the Finnish Funding Agency for Technology and Innovation, Tekes, was built around the idea of incorporating the multi-sensory experiences of human beings into comprehensive environmental design. Ambience design has been a cross-disciplinary approach that anticipates a *paradigm shift* in the planning processes related to architecture, design, communication, and marketing.

The development of the concept is an outcome of a series of articles, innovations, experimental work, and literature from various branches of science and business. The basic idea has been to gather a cross-disciplinary team to undertake actual design work and fuse scientific knowledge and expertise from various fields with the design process. The know-how created as a result will be accumulative in a scientific way, presented in scientific articles, and available for further use in similar projects.

³ The article was published in www.m-cult.net in the year 2000, but is now removed.

Ambience design has been influenced by a large number of people from various fields of design and research. Special thanks go to the research community of the Finland Futures Research Centre and the cross-disciplinary development team involved in the project realised seven years ago.

Lately, conversations with ServiceD project team members Jari Kaivo-oja, Tuomo Kuosa, Leo Westerlund, Sam Inkinen, Sami Makkula, Hannu Kaikonen, and Jukka Oresto as well as other experts, such as Mika-Ilari Koskinen, Tuomo Tammepää, Tapio Mäkelä, Minna Tarkka, Marita Liulia, Heimo Langinvainio, Olli Hakanen, Roope Siiroinen, and others have particularly influenced the development of the concept.

The aim is to create a new design paradigm where culture driven merely by aesthetics and emphasising the importance of a designer's personal style is replaced with one that combines various types of expertise. In the first phase of the project, two multisensory spaces were designed in the usability laboratory of Helsinki University of Technology: one that aims to relax and the other to stimulate. Then, using research methods from medicine and psychology, we studied how successful the test subjects felt the relaxing and stimulating ambiences had been. The idea is to develop versatile design expertise so that, for example, relaxing ambiences could be designed based on research data acquired in experimental projects.

The project's degree of difficulty is increased by the requirement of adjustability. According to the informed view of the project team, mediated environments that increase well-being are characteristically adjustable. Since the beginning of the first ambience design project, the aim has been to develop design expertise that enables (with the help of a mobile phone or other terminal device) the adjustment of the mood and communicative identity of the space(s) according to the needs of the individual, group, or context. In addition, the mediated and adjustable environment requires in-depth knowledge of technologies, applications, and user interfaces. Ambience design is a complex form of design due to the interactive element factored in.

Ambience Design Explained

No single part of the following concept is entirely new, but the whole description is a fresh mixture.

Ambience design consists of new combinations of views and skills:

1. *Cross-disciplinary communication with researchers*

Ambience design represents a new kind of design culture; it could even be said that it represents a paradigm shift in design. Ambience design's working culture is *cross-disciplinary*. The one major invention of ambience design is that designers from different working areas *communicate with researchers*. As such, ambience design is not built on the personal touch and style of the designer, but based on *the knowledge of the effects a multi-sensory environment/atmosphere has on people*.

In effect, know-how in an ambience design project is meant to be developed through interaction with professionals and researchers from various fields of science

and business. Then the research results are accurately documented using various types of media.

2. Co-design

Ambience design has a collaborative nature. *Co-creation* with end-users, representatives of clients, cross-disciplinary experts, and researchers is at the core of conceptual innovation. *Co-design, prosumerism, customer-driven innovations, crowdsourcing*, and *DIY* (Do-it-yourself) are important aspects of ambience design.

3. Multi-sensory communication

Ambience design *develops and moves our visually emphasised design culture towards an increasingly multi-sensory design environment*. It does this by using the language of shapes, soundscapes, scent worlds, textured contact surfaces, lighting, colour worlds, and even the world of taste (this is by no means an all-inclusive list). Ambience design also means new forms of distinguishing and recognising: fresh methods utilising our sensing abilities. This involves scent signs, sound logos, and designed lighting and colours as symbols of organisational identity. Ambience design combines spatial design, service design, graphic design, and multi-sensory means of communication.

4. Atmosphere design

Ambience design is about *atmosphere design*, i.e. it affects people through the creation of a psychophysical entirety. In practice this means putting focus on experiences and phenomenality.

5. Capitalisation of ubiquitous technology

Ambience design *utilises smart environments and materials*. The use aims to *increase interaction in mediated and social environments*. We are entering the ubiquitous society where coffee machines and fridges are connected to the *Internet of things*. Ambience design is an alternative approach to the technology-oriented ideas currently under debate. Ubiquitous society needs more good content and human-centred viewpoints instead of high-tech savvy hyperventilation.

6. Adaptive and adjustable

The central themes of ambience design are *adjustability, modifiability, modularity, and individuality*. These themes are connected with the changing and transformable communicational identities of different built environments, products, services, and brands. For example, rooms become more usable when individual people or groups are given the chance to adjust them according to their changing needs (DIY decoration). *Adaptive systems* are part of ambience design thinking.

7. Location-based services

Ambience design has a contextual nature. Real-time information, real-time communication, real-time statistics, and real-time expertise are parts of ambience design thinking. In the near future, physical spaces, virtual spaces, social (media) spaces, and mobile spaces will merge resulting in new kinds of location-based services.

8. Narrative approaches

Some people have difficulties understanding statistical data, but all of us enjoy good stories. Ambience design utilises *narration*, *dramaturgy*, and the *competence of drama experts*. The challenge is how to relate changing narratives to spaces with dramaturgical and multi-sensory applicability, and a link to, say, GIS systems (Geo-graphic Information System).

9. Adaptive, adjustable, and multi-sensory branding

Ambience design can be connected to *brand building*. Multi-sensory marketing which uses things such as distinctive sounds and scents can be employed in brand development more than ever before. The advantage of ambience design is that it connects multi-sensory interior design to multi-sensory marketing and communications. The result could be adaptive, adjustable, and multi-sensory branding with other ambience design qualities attached.

10. Human-centred, ecologically aware, and ethically-oriented: aiming at well-being of the users

Ambience design is ethically and environmentally aware. All activities are guided by an ethical code. A key objective of an ambience design team is to increase the *well-being* of people through cross-disciplinary design and research. The future of design is hopefully *human-centred*, *ecologically aware*, and *ethically oriented*.

The Futures of Design Education

Michael Bierut (2007) wonders *why designers can't think*. Designers have been somehow incapable of communicating literally and their visually oriented language game is not easy to understand:

Nowadays, the passion of design educators seems to be technology; they fear that computer illiteracy will handicap their graduates. But it's the broader kind of illiteracy that's more profoundly troubling. Until educators find a way to expose their students to a meaningful range of cultures, graduates will continue to speak languages only their classmates understand. And designers, more and more, will end up talking to themselves. (ibid., 17)

Bryan Bell (2008, 14–17) thinks of the society at large:

To make design more relevant is to reconsider what "design" issues are. Rejecting the limits we have defined for ourselves, we should instead assume that design can play a positive role in seeking answers to many different kinds of challenges. We have limited our potential by seeing most major human concerns as unrelated to our work.

The core of service design and ambience design lies in *asking the right questions* to find the right answers and therefore the right results. That is why philosophy, aesthetics, sociology, psychology, medicine, and ethnography should be parts of the imaginative syllabus we are currently talking about. To be more precise, *thinking* forms the core of both service and ambience design. Usually recognised truths and ready-made

answers should not be good enough for educated service designers. Our clients pay us for alternative thinking and alternative results. Challenging the socio-cultural atmosphere is not easy, but the most courageous service designers are bold enough to challenge their clients. Inventing the futures should not be distracted by the cultures and procedures of the past.

However, the mindset and tools for our imaginative syllabus come from design. Co-design processes where we move quickly from ideation to evaluation and from concept design to prototyping and testing are the starting point. Increasingly democratic design processes involve representatives of clients, end-users, and cross-disciplinary experts. The best idea could emerge anytime during the process and the inventor could be the least expected voice from the corner of the workshop space. Heading such workshops requires holistic expertise as well as control of design methods (such as instant visualisation of ideas).

The era of omnipotent star designers is slowly coming to an end as more collaborative forms of design gain ground. We are entering a participatory economy and the ubiquitous society. No more stagnant services: adjustability, modifiability, modularity, and individuality are the new rules of service development when designing smart and mediated environments. *Prosumerism, customer-driven innovations, crowdsourcing, and DIY* should be vital parts of service design thinking. The changes discussed here should also be visible in our imaginative service design syllabus.

The results of the ServiceD project clearly show that the futures of service design need to be invented. There is an open mental space for *alternative design thinking*. Ambience design could be one important piece in the enrichment processes currently taking place.

Next steps in ambience design concept development could be:

- alternative design thinking (foresight and design combined: searching alternatives),
- ambience design management (how to manage cross-disciplinary expertise),
- ambience design thinking (holistic approaches and cross-disciplinary combinations, researchers working closely with designers),
- business development (creating content to the ubiquitous society: well-being services, etc.),
- cross-disciplinary research (creating a research base for ambience design: what kind of effects multi-sensory, adjustable, and smart and mediated spaces have on people),
- etc.

Epilogue

Inferno Canto XXIII: 58–81 The Hypocrites

Down below we found a metal-coated tribe, weeping, circling with very slow steps, and weary and defeated in their aspect. They had cloaks, with deep hoods over the eyes, in the shape they make for the monks of Cologne. On the Outside they are gilded so it dazzles, but inside all leaden, and so heavy, that compared to them, Frederick's were made of straw. (Dante Alighieri)⁴

Dante didn't much appreciate people who tried to create self-important brand images. Unfortunately, ignorance mixed with hypocrisy and the culture of star designers often results in such approaches. If you are only familiar with the *usual suspects* in the field of design, the lacking diversity of your knowledge may underline you being a designer, especially in academic circles. Educated design approaches are results of adventurous reading and hands-on expertise.

After such a manifesto-like chapter regarding the author's conceptual innovation, *ambience design*, there is a risk of falling down exactly to the same non-intellectual trap so heavily criticized above. Building a pompous image has not been the goal of this article. Let us leave blatant self-advertising for those who do not mind seeing themselves as stars. However, worst academic articles with endless citations bring nothing new to the design discussions. Indeed, creativity can be the most important asset even in the best academic design articles.

The evolution of design expertise and inventions has been the core of the ServiceD project. That is why having a discussion on design innovation is not prohibited.

This article is meant to be a prologue to further discussion on ambience design and service design development.

This article is based on the notions of my previous article *Ambience Design – Future-oriented Viewpoints, Service Development and Some Notions about Changing Communicational Identities*, published in 2009.

⁴ Dante Alighieri *The Divine Comedy*. Translated by A.S. Kline. <http://www.scribd.com/doc/10849660/Dante-Divine-Comedy-Translated-English>

Bibliography

Bell, Bryan (2008). Expanding Design Toward Greater Relevance. In Bell, Bryan & Wakeford, Katie (eds.). *Expanding Architecture Design as Activism*. New York, Metropolis Books, pp. 14–17.

Bierut Michael (2007). *Seventy-Nine Short Essays on Design*. Princeton, Princeton Architectural Press.

Greenfield, Adam (2006). *Everyware: The Dawning Age of Ubiquitous Computing*. Berkeley CA, New Riders.

Karjalainen, Toni-Matti & Koskinen, Jari & Repokari Lauri (2005). Ambience Design: Creating Multi-Sensory Moods within Built Environments. Conference presentation at HAAMAH 2005 in San Diego, USA 18–21 July 2005.

Koskinen, Jari (2000). *Ambient design*. The article was published in www.m-cult.net in the year 2000, but is now removed.

Koskinen, Jari (2006). *Ambience design*. In Inkinen, Sam & Karkulehto, Sanna & Mäenpää, Marjo & Timonen, Eija (eds.). *Minne matka luova talous*. [Quo Vadis, Creative Economy?] Oulu, Kustannus Oy Rajalla.

Koskinen, Jari (2009). Ambience Design – Future-oriented Viewpoints, Service Development, and Some Notions about Changing Communicational Identities. In *Servicedesign.tv*. Lahti, Lahti School of Applied Sciences. pp. 1–13.

Web: http://www.service-design-network.org/system/files/media/8_Koskinen_Ambience%20Design_0.pdf

Lindstrom, Martin (2005). *Brand Sense. Build Powerful Brands through Touch, Taste, Smell, Sight, and Sound*. New York, Free Press.

Project Glass (2012) = *Project Glass: One day...* Video.
Web: <http://www.youtube.com/watch?v=9c6W4CCU9M4> Retrieved 12-06-25.

Rheingold, Howard (1994). PARC Is Back! *Wired*. Issue 2.02.

ServiceD (2011) = *ServiceD: Interim report for project's work package two*. Service design project. Lahti University of Applied Sciences. (unpublished).

Steinberg Steve G. (1997). Corporate Rebels. *Wired*. Issue 5.05.

Voorthuis, Jacob (2012). Thinking Boundaries in the Production of Architecture and Music. In de Jong, Klaas (ed.). *Music, Space and Architecture*. Amsterdam, Architecture & Natura.

University of Tampere (2011). *Ubiquitous Computing in News Media*.
Web: <http://www.uta.fi/cmt/en/research/comet/projects/ubikkieng.html> Retrieved 12-06-25.