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IN SEARCH OF DIGITAL DESIGN

“The methods and tools of art and design are changing, and one of the forces in this change is digital technology. But the contents, targets and aims of design are also changing. Design is moving into a new area: into virtual reality, where the task is to design more or less intelligent logical objects and their interactions with the real world and with each other. In our view, the new media consist of this digital world, which will be the most important means of communication between people and the technological environment and various systems and organizations.”

(KHK, Art2, 1994 (http://uiah.fi/art2/art2_194/khk2.html)).

I

Ten years ago “new media” was a concept that was open for us to define. At that time I thought that the computer as a metamedium, a medium that could imitate all other media, was a good focal point for our work, and that the new media can be understood very broadly as a field related to the utilization of new information technology. In the late 1990s, however, the development of multimedia and Internet applications emerged as a new mainstream activity, and became known as the “new media industry”. This definition of new media started to seem somewhat restrictive; many things that are interesting for the Media Lab may not fit into the narrow scope of what has become the ‘traditional’ new media.

Even though others may define the new media more narrowly than we do, we don’t have to give up the term “new media”; at the Media Lab we are still interested in the new forms of media. We might need some new concepts, however, to describe the kind of design that we at the Media Lab want to study and promote – in order to highlight the productive interaction and synergies between the media and design perspectives at the lab. The use of information technology is still the foundation of our operations, and design and its different forms of expression are at its core. In fact, the Media Lab should perhaps be called the “Department of Digital Design and New Media”.

“Digital design” sounds like something you do on a computer using an image-processing program or by writing software, and something that is distributed as files over the Internet. And it is all that, too. But digital products also live in the social world and change it. Digital design cannot operate outside its social context, because files, systems and media only gain meaning as part of a community’s practices. Effective, meaningful design is also a social activity, in which the designer is only one actor among many. In addition to computers, software, digital information and media, the materials of digital design also include communities, processes, practices and culture, and designers need to be equipped with the right skills to deal with these elements.

I think “digital design” is an expressive and useful term for our field, because it seems that the world is going through a large-scale process of digitalization, which is based on new technologies and – from the perspective of the traditional areas of design – new materials, and which brings forth an operating environment that demands new kinds of competences also from designers.

The word “design” is problematic in the Finnish language. There is no word with an equally versatile meaning in Finnish as the English word “design”. “Muotoilla” ja “suunnitella” (“to give form”, “to plan”) are the verbs and “muoto”, “suunnitelma” and “rakenne” (“form”, “plan”, “structure”) are the nouns that are used to certain extent correspondingly. Because of the lack of a good Finnish word that could express and carry as broad a meaning as the word “design”, it is (for now – until another solution emerges) more sensible to use that word also in the Finnish discourse in spite of its clumsiness. A broad concept of design is essential when operating in a digital environment, and when dealing with the social and societal aspects that the current applications need to increasingly focus on. The everyday designs (structures and practices) that digital design changes, and the processes in which they change, are even more difficult to capture using any other term. For same reasons, I often use the English term “designer” to denote the professional role instead of the less fitting Finnish words.

II

The digitalization process is mainly driven by economic considerations. Computers and information networks can be used to increase the cost-efficiency of a variety of processes by obviating intermediate steps, manual work and middlemen and by creating totally new operating models. Digitalization is an inherent part of the global change processes. Global capital flows, outsourcing, e-business or the media industry could not operate without their digital tools and the communications and software infrastructure.

The emergence of this digital dimension along with its characteristic features – its design – has an impact also on the non-digital side of everyday life. The significance of digitalization for ordinary citizens is usually described in terms of glamorous and exciting new consumption opportunities, but it is also visible in very mundane details of everyday life; soon you won't be able to pay your bus fare in cash. The loss of jobs that may be a result of businesses moving their production abroad, is partly a consequence of the geographically dispersed, networked business operations that information technologies facilitate, and partly a consequence of public policy support for these kinds of applications of digital efficiency.

The design aspects of digital technologies are linked to everyday life in a variety of ways. In addition to the equipment and the software, changes and restructuring are underway in everyday practices, in organizations, and in the rules and conventions of society. Often, such broad social aspects are not considered to belong to the realm of design, but I think it is time to adopt a broader understanding of design. Doing digital design also means designing society, and designers ought to take a stand on how technology is used as a driver of social change, and on what kinds of developments society should promote. One can participate in this debate if one knows what is going on, and is capable to make constructive and realistic suggestions concerning the future designs.

For example, the development of copyrights and other intellectual property rights such as patents, and the application and development of the related legislation, make up a field that has a larger impact on society and the future of citizens than is commonly understood, and one that can be influenced by designers and artists. For example, there are innumerable potential applications for the digital media, but many of the most interesting ones are not available to the man-in-the-street because they are restricted by copyright systems designed for earlier technologies and by behind-the-scenes agreements

between equipment manufacturers and the media industry. However, his teenage children may have learned about the new possibilities through “underground” software that rejects and “routes around” such restrictions.

We may not yet have experienced the full impact of the ownership and regulation of intellectual property on everyday life; it will become more visible as our dependence on software and information increases. In the future, the living standards of each and every one of us will increasingly depend on our opportunities to make use of digital possibilities. When employment in traditional industrial production decreases, it is of course possible to develop other kinds of work opportunities. But these new businesses and livelihoods will need to be able to function in an information society environment, within the digital network, making use of digital efficiencies and social networks – and these resources may be protected by different kinds of licensing arrangements. Digital software is information that can be copied for universal use easily and cheaply, almost for free, and requiring no material consumption – so in principle, everyone could gain access to them easily. We just need to develop the necessary skills ourselves. But will we get the permission to use ideas that were developed by others if they are packaged into software? Will we even have the right to use our own ideas, if someone else has patented them somewhere else?

Unless there are changes and more citizen activism, we may be heading towards a world in which we will have to pay license fees for almost anything we do, in which social debate is stifled by intellectual property protection, and in which software monitors whether we behave according to the license requirements. Digital designers need to be aware of these issues, take a stand, and work to promote solutions that are fair and humane.

III

Developing technology requires solid technical skills, which are provided by technical universities and other educational institutions. But it is increasingly obvious that technical, economic or even marketing skills are not enough to ensure the success of technical innovations. In the final analysis, the success of a product is determined by whether it becomes a part of everyday life; will people adopt the products in their everyday practices and are they willing to adapt their practices to the capabilities of these new products? Understanding these kinds of multidisciplinary developments as whole systems is an important area of knowledge for a design university. We need to be able to reconcile the technical, commercial and practical potentials, and to initiate and direct design processes that are appropriate for the conditions and for the participants’ needs.

In the social sciences it has become common to speak of the domestication of technology by users. From a design perspective, this can be framed as an extension of the design process beyond the production phase. When a product is purchased, taken home and put to use, a new phase of the design process begins, in which the product is adapted to the users’ everyday practices, and in which it gradually becomes a component in the users’ social systems and networks. Even though this happens with all products, this phase is especially important for digital products because of their special characteristics. Digital products are based on software, which can change and which can be endlessly customized and personalized. Even in the case of a piece of physical equipment, its operations are controlled by a program, and even when the hardware doesn’t change, the software, and hence the functionality, can be updated and adjusted.

Programs can also react to their environments, to different situations and to other programs.

In fact, the ability to adapt to new situations, the ability to transform, and the ability to cooperate with other products have gradually become central contributors to the success of digital products. In this respect the digital products of the information age are decisively different from the mass products of the industrial age, and thus it makes sense for designers to broaden their interests toward the everyday lives of the users and to the ways how they design.

For example, compared with the traditional cord phone, a modern digital mobile phone is by no means just a means of communication with no identity of its own. If a cord phone is broken, it can easily be replaced with an identical product. In contrast, my mobile phone is completely adapted to my personal requirements – it has all my phone numbers, my addresses, my calendar entries, my text messages, my contact groups, and more and more of all this every year. Years ago, when I still used cord phones, I remembered the phone numbers of all the people important to me. Now this practice has changed and whether or not I manage to make contact depends on whether I have my mobile phone phonebook with me or not. It is difficult to replace a mobile phone or any other modern, efficient and versatile personalized digital product, if you can't transfer your own settings and usage patterns easily and reliably into the new product.

IV

Many companies already believe that customer orientation is an important factor for success, but customer-centeredness is difficult to realize in practice if the technology enables the product to be different for each customer, and there are millions of customers. A large company cannot react to every customer's desires and customize products for every one of them. That's why it seems that the customers' desires need to be fulfilled somewhere else, closer to their everyday lives.

Thus, with digital products, the emphasis in the design may shift much closer to the users. One of the central future challenges in digital design will be to develop solutions that are very open, that embrace change and support further development, and even allow so-called "end-users" a real opportunity to adapt and combine products into the kinds of designs they prefer.

This tendency is important also because digitalization has such a significant influence in society. There are not enough programmers or designers in the world to meet everyone's digital needs with finished products, now that every possible walk of life is becoming dependent on information technology and software in one way or another. On the other hand, people should have the right and opportunity to make use of the same tools that are changing their lives. It is not enough for people to just be consumers or users. Everyone should be able to take advantage of the new possibilities in designing one's own life and ideas.

Even though this line of thought sounds very idealistic in the current climate, the situation may be totally different in ten year's time. Today the companies developing the products are considered the central players in the digital economy, and the nation's resources are directed at promoting their success. Citizens are viewed as consumers and workers whose welfare is improved by the new products and jobs created by companies.

Unfortunately, this philosophy doesn't work any longer, because globally networked companies aren't tied to their home country or their employees in the same way any more. Thus the benefits of developments may not be experienced by the citizens. On the contrary, the developments may actually speed up the marginalization of employees as they are rationalized out of the now more efficient and more profitable digital business.

Instead of focusing only on the competitiveness of companies, it would be in the interests of the nations, and, in the long term, of companies, to direct more efforts into promoting the competitiveness of citizens; competitive citizens make also competent employees. In practice this could mean promoting the development of products that can be utilized by everyone: for example, open source software and products that are designed so that they can be easily customized into new everyday applications and solutions.

“Open source” sounds abstract, but in practice it simply means the open sharing of ideas for the common good. It means that everyone has the right to see how the open elements are put together, build their own constructions out of them, and change them to suit their own needs. The evolution of mankind and civilization has been based on the open sharing of ideas; the principle dates back hundreds of thousands of years. It is time to consider seriously whether the current foundation that we have put in place during the past two centuries or so for regulating the utilization of ideas is fair and appropriate. Luckily, open solutions and procedures are currently changing the rules of the game in the information industry. They appear to be more economical and efficient, and thus will probably survive in the evolution of the industry.

Do ordinary citizens, then, have digital needs? I am sure that they do, because digital tools are ubiquitous, even though you can't always notice that they are all around you. Each and every field of everyday life or work can be a promising area for digital design, and each and everyone can contribute to it by making initiatives or developing ideas. Many of the important future solutions will most probably be based on new ways of utilizing social networks. For example, lately I have been following keenly the self made digital diary of a family I know, waiting for news about a new baby. Maybe the neighborhood flower shop could serve me better over the web, through the media and with neighbors' recommendations, so that I would not have to drive out to the supermarket. Perhaps in the future we will have digital design services in our own neighborhoods, helping to adapt technology to everyday life in a people-centered way.

V

The “deepest essence of digital design may still be unknown^{*}”, but at least we are trying to grasp it at the Media Lab in a versatile manner and with an international scope.

In the past ten years Finland's position on the global map of information technology has changed radically; when visiting a conference in 1994, you couldn't assume that foreign contacts knew anything about Finland. Today people appreciate and listen to Finnish perspectives and experiences with a more serious interest. Under these conditions, studying digital design here and bringing the design perspective into different kinds of development projects can provide a real opportunity to influence development also elsewhere.

One example of an interesting cooperative process in which designers can play important part is the Wireless World Research Forum, a forum initiated by large technology companies and central players in the industry, with members from hundreds of different institutions around the world. Its aim is to develop a shared vision of the future of wireless technology to guide the global development and its funding. Most of the participants in the process focus on envisioning technological solutions, but the Forum vision building process aims to take its guidance from the needs and priorities of users and everyday life.

Constructing such visions is also a part of digital design. Developing something new always requires that the participants in the development have some kind of vision on where the development is leading. Sometimes the vision is clear, and sometimes each participant has only his or her own speculations to go by. Here design can have a decisive impact by creating views of desirable future developments, and by using the media in interesting ways to illustrate these ideas. Developing such viewpoints is a social process, which also needs to include “ordinary” people in order to keep the ideas in a reasonable relation to everyday reality. Designers have the opportunity to carve out a strategic role for themselves in this development, if they so desire – as specialists in helping everyday needs, broad social developments and technological possibilities to co-evolve and bring forth designs that make sense.

* a reference to a Finnish rock album by Kari Peitsamo