

# Everyday Aesthetics and Design of Information Technology

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## **Abstract:**

In an age very much characterized by information technology there is a growing need understanding the ways in which information technology change and affect human lives. With respects to the great efforts made to integrate information technology by design into social contexts we regard it as necessary and important to take a closer look at the preconditions, problems and significance that information technology creates in the experiences in people's everyday lives. We believe a deeper understanding of the everyday aesthetics of information technology to be vital for the challenge most designer face today, i.e., to design people's everyday experience largely made up by information technology in composition with other designed artifacts that constitutes our everyday environment. In the article we argue that the traditional focus on the functionality, user-friendliness, usability, etc. of the separable individual artifact does not fully capture the richness and influence the information technology artifacts have on people's experience of reality. These approaches all have their benefits but their focus is too narrow. To fully understand the impact of new designs there is a need of capturing the wholeness in how people experience artifacts in their realities. To make the case, we discuss two concepts: the *device paradigm* and the *digital transformation*. As a result we present the notion of *aesthetic experience* as a foundation for a new approach to understand people's lifeworld in relation to technological artifacts. We conclude by arguing that such an approach can in the hands of a designer be of help in dealing with the design of people's everyday lifeworlds.

## **THE DESIGN CHALLENGE**

We are living in a designed world. We are daily experiencing a world almost completely designed and created by humans. In that sense, we are living in an artificial world. The crucial and large designs created by humans, such as the market economy, the religions, national states, governments, the educational systems, and the different professions all have a huge impact on the way our lives are and can be lived. But, it is at the same time important to realize that also every minor design adds to the overall reality that people experience.

When it comes to physical objects we are used to separate things from each other. To most people there is no real connection between the design of a kitchen chair and the payroll system at work. And there is no real relation between the TV in the living room and the form you need to fill in at the bank. All of us, in our everyday life, need to make distinct divisions between particular objects and systems in order to be able to talk, discuss and argue about them. At the same time, at an intuitive level, most people acknowledge the idea that our *lifeworld* is only one, and as such always perceived in a wholistic and immediate way.

This common belief contradicts most scientific ways of describing reality buildt on the assumption that reality can only be understood by through analysis down to its smallest parts. We argue that this is not true when it comes to design since all kinds of designs have to be brought back to and fitted into the analogue reality that people experience as a whole. Meaning making is a process that can only be done in the midst of the whole since it is a fundamental relational activity. This assumption has consequences for the way we understand design of technological artifacts.

The purpose of this article is to make the case that the reality that today make up people's lifeworld is influenced by a combination of two 'forces'; the *device paradigm* and the ongoing *digital transformation*. We also claim that these two forces are based on an understanding of technology that does not fully capture the richness and depth of the way reality appears to most people today. Instead, there is a need for a different way of approaching the designed reality. We propose such an approach based on the notion of the *aesthetic experience*.

In the article we argue that design today, especially of technological artifacts or systems, should not be based on the idea of separability of our everyday experiences. We believe this to be reflected in a growing awareness that the way we presently design our environment is not necessary helping us to live a good life. As a result, technology and technological artifacts are often blamed for this development. It seems as if many people assume technological artifacts to be a bearer of something that contradicts what they see as the core of a good life. Despite the praise of new technology, there is at the same time a growing skepticism against technological artifacts. For instance, information technology is seen as a necessary part of our lives and as practical tools for everyday activities. The technology helps us to communicate with friends and families, to save and manipulate text and images, to simplify our dealings with money transactions, to communicate with organizations and government, etc. At the same time, the same technology is seen as the cause of increased stress, a hectic life, and no time and place for privacy and contemplation. Underlying both the 'good' and 'bad' consequences is the idea of a new technology giving us a world without limits, and with the possibility to be anywhere at any time and still be able to access anything or communicate with anyone. So, while there is a quite acceptance of the new technology, and specifically information technology, there is also a fear that it will push us into a way of living that we can't handle or really want to live.

This relation to technology has consequences. If the purpose of design is to give people an environment that will help them live full and rich lives, based on authentic experiences, we are, as designers, facing a serious *design challenge*.

When we reflect on design in this way, we have to question our basic assumptions concerning technology. Technology reveals philosophical questions that have to be faced and dealt with by all designers. Is this development inevitable? Is it caused by some inherent qualities of technology itself? If not, what is the space of possible actions in design? What is needed from a designer who wants to take the question of the good life as a real concern?

In this article we will explore the idea that designers need a different way of understanding technology and technology use. We argue that the traditional focus on functionality, user-friendliness, usability, etc. does not fully solve the challenge. These approaches all have their benefits but they are not enough. Their focus is too narrow. To fully understand the impact of new designs there is a need to capture the wholeness in how people experience these artifacts in their realities. To make the case, we will first discuss the two already mentioned "forces": the device paradigm and the digital transformation. Then we will present the notion of aesthetic experience as a foundation for a new approach of understanding people's lifeworld in relation to technological artifacts. We conclude by arguing that such an approach can, in the hands of a designer, be of help in dealing with the discussed design challenge.

## THINGS AND DEVICES

One of the two 'forces' we want to discuss is the role of technology in the contemporary society. The idea of technology as a vital part of every human's life is not always recognized. There are several disciplines that have it's own approach to technology studies. Philosophy of Technology has over the last twenty years developed different approaches to problematize, analyze and discuss technological development and its consequences for

society. These approaches often, to some extent, relate to the thinking of Martin Heidegger and especially his thoughts on technological understanding. Heidegger (1977) is by many regarded as the first philosopher to recognize technologies' ontological status and importance, most explicitly addressed in his book – *The Question Concerning Technology and other essays*. Heidegger portrays technology as two folded: In one sense technology is instrumental and advances the human attitude to the surrounding as the purposeful manipulation and control of different tools, instruments and techniques. (ibid. p. xx) Equally, or even more important, is the additional way to approach technology, which in Heidegger's words is *revealing*. In this sense technology is a mode of truth, a sphere, in which things and activities are revealed in certain ways. This latter aspect of technology is important, since it implies that technology must be understood as a whole, as set of rules, conditions or as formative context in which human activity takes on specific forms and structures. 'Technology is a mode of revealing. Technology comes to presence in the realm where revealing and unconcealment take place, where... truth happens' (Heidegger, 1977, p. 13).

In a similar way a contemporary philosopher of technology, Albert Borgmann (1984, 1999) makes a distinction between artifacts that are designed with respect to a larger whole or context, and those that are not. Through this distinction Borgmann wants to make us aware that some of our *ultimate concerns* might be threatened by the design of technological artifacts and systems. In Borgmann's work 'ultimate concerns' presents themselves in focal reality as commanding presence which receives our attention because they possess both depth and significance. 'An ultimate concern can fully engage one's capabilities because it has so many dimensions.' (Borgmann, 1987.176-77).

Borgman (ibid. xx) thus claim that there are *things* designed in harmony with our ultimate concerns, things that contributes to the deepening and signifying of our experiences. Such things are concrete, tangible, and deep and can not be attained through the admittance of some kind of functional equivalents. Rather they are ascribed *focal things* since they have a tradition, structure, and rhythm of their own which makes their meaning and ends interweaved and beyond our complete control. 'They engage us in the fullest of our capacities. And they thrive in a technological setting.' (Borgmann 1987, p. 219.) The word *focal* is used in the sense of 'bringing into focus', 'making things clear and central.' (Borgman 1987, p.197.) As such, focal things are designed with an ability of grounding our lives within a larger whole where presence and continuity of body and mind is allowed (Borgmann 1992, p. 122).

Focal things are in Borgmann's work contrasted with *devices* – designed in a way that is obtrusive to experiences of reality as a whole. *Devices* are designed to take up the world in an instrumental and effective way and are therefore reduced of any unnecessary references to social and ecological contexts. Devices have a clear distinction between its machinery and its function – the machinery is designed to be as intangible and invisible as possible whereas the end should be available instantaneous through its functionality. Accordingly, by using devices people are deprived of a context in which the actualization of ends makes sense. Devices, often glamorous in their appeal, grant our wishes without demanding any patient, skill or effort. But as such, leaves no room for signifying processes beyond their immediate surface. Instead devices are disposable in the sense that they can be replaced by another device. Devices can be very different from each other with respect to their functionality and their structures, but shares characteristics in their form in that they are not designed with respect to being experienced in an active and signifying way. As Higgs, Light & Strong frame it 'The good life that devices obtain disappoints our deeper aspirations. The promise of technology, pursued limitlessly, is simultaneously alluring and disengaging.' (Strong & Higgs, 2000, p.23) This is roughly what is referred to as *the device paradigm* (Borgmann, 1984:35-48). Thus the fundamental difference between things and devices are the different way in which they relate to the world and makes people experience the world.

Heidegger and Borgmann help us to formulate a concern in contemporary design. The message from both these philosophers is that any design of technological artifacts is a design of our actual reality and that these designs will

create experiences and be valued not only as individual objects but as parts of a whole. Their message is also that any technological design will reveal our reality, i.e., it will make us be aware of the environment we live in and what kind of lives we live. Basically, they tell us that there is never the case that technological artifacts can be seen as separable objects and never only as means. Any artifact “points to the larger context of their setting in nature, the community and culture, call for attention, effort, skill and fidelity to regular practice, and invigorate individual and community life’ (Strong & Higgs, 2000, p.32). This conclusion is to some extent enforced by the technological development itself. The continuous digitalization of our environment also brings different contexts and settings together, into a, not only conceptually, but also technically blended wholeness. This development is what we label as the digital transformation.

### The Digital Transformation

New information technology has some very specific qualities. To some extent it is the material without properties (Löwgren & Stolterman 1998, Ehn & Malmberg 1998), and as such, a material that is extremely designable. We all experience this in our everyday lives when information technology is becoming more and more common and present in almost every part of our doings. We find ourselves using IT-artifacts at work, in our homes, and when we exercise our hobbies. The technology is not only manifesting itself through individual IT-artifacts (such as computers, software applications, PDAs, mobile phones, etc.) it also blends itself into most other artifacts. Information technology is increasingly becoming embedded in all other objects. In a not too distant future almost all objects will have embedded IT as part of their design.

This leads to a world that is increasingly experienced with, through and by information technology. What we are witnessing is a **digital transformation**. This transformation is drastically changing the preconditions for design in all its manifestations.

One of the most important changes that come with a digital transformation is that our reality is slowly being more and more blended and tied together. Designed objects will be parts in systems and networks where they will, or at least can, be in constant communication with all other parts and objects. These new reality, new systems, will of course be designed, but, at other level they can be seen as evolving entities, where local designs contribute to systemic changes in a larger network. The notion that every design adds a new part to our reality will have a new and much more ‘true’ meaning. New artifacts will not only be an addition to the already existing, it will become indistinguishable from the whole. There will be an increasing problem of knowing where one design begins and another ends. The digital transformation is in that sense a step towards to materialization of a world where everything is connected, almost in a way that is common in many spiritual understandings of our reality.

Yet another aspect of the transformation appears when digital objects become the basic material in our reality. When this is the case the reality will to some degree become “intelligent”. Designed objects will have to power to inform themselves and the network they belong to about changes and the status of their environment and actions taken upon them by humans and other objects. This **reflexivity** creates a new dimension in design. To understand such designed objects and systems by analyzing them individually and by using reductionistic methods will become more and more difficult.

One interpretation of the digital transformation is to see it as a move from matter to information. In the process of digitalization physical properties and structures are transformed into informational. Borgmann also addresses this specific aspect of the transformation. In his latest book Borgmann (1999) addresses the contemporary tendency to cherish information at the expense of human significance and meaningful experience. ‘Something seems missing in a world consisting only of matter and energy – some principle or structure – and information appears to be the needed ingredient.’ Borgmann (1999:9) begins his analyze by making a reference to the heritage of the meaning of the word information. The Latin word **informare**, which mean to **impose a form on something, particularly on the mind in order to instruct and improve it**.

The problem, as Borgmann (ibid.) frames it, is that information has lost its signifying power due to a profound and irreversible change in its relation to reality (Borgmann 1999, p.220). This claim is supported by a thorough analyze of different kinds information – structural, cognitive, natural, cultural, technological. In all instances of information there is a general tendency that the relationship between the sign and the world has become obsolete and indifferent. Borgmann writes, 'A concept is helpful only when it enable us to make distinctions within reality, not when it levels all distinctions and reduces everything to text or information'. (Ibid. p.11) In the case of technological information, this tendency is all encompassing since information is all there is. That is people ability and capacity of interpretation is unnecessary. Thus when matters of human significance and meaning are concerned the important distance between information and reality is gone.

The crucial task is to find a good balance between information and reality. In this respect Borgmann challenges us to make better room for significance and sense-making processes in technological designs. In Borgmann's words '... we have to become again readers of text and tellers of stories... Thus the culture of the world can card, spin and knit the mass of technological information into a tapestry that is commensurate with reality.' (Ibid. p. 231)

Based on the ideas of Heidegger and Borgmann and the nature of the digital transformation we conclude that two situations arise. First, the digital transformation leads to a situation where focal experiences might be more rare since the transformation is guided by the principles of the device paradigm. Secondly, the transformation puts us in a situation where our traditional ways of developing knowledge about reality will be restricted. The complexity and richness in the designed systems, partly a result of their reflexive character, will far surpass the scope of the traditional ways used to analyze and inquire into their function, structure and behavior. To designers this will create problems. Designers will still need to understand in what way people create meaning of their realities to be able to design new parts and artifacts that will fit into that reality. Both for the designer and the user it is of utmost importance to have ways of understanding technology and how technology forms our everyday lifeworld.

So, we argue that there is a need of an alternative way to approach the new environment that constitutes people's lifeworld. And we propose that one such alternative is to find in the notion of *aesthetics experience*. This notion defines an approach that is not analytical or reductionistic, rather it is an approach that takes the *whole* and the *immediate* into account. While traditional approaches are suffering from the fact that the more complex reality is, the more time is needed for analysis. The aesthetic experience is immediate and makes it possible to deal with complexity and meaning making at another level.

### **Aesthetics and information technology**

So far we have argued that it seems like information technology is increasing complexity at a possible expense of significance in a paradoxical way. We have also suggested that new ways of approaching and understanding technology is needed where a focus on aesthetic experiences might provide us with some alternative. Often, aesthetic experiences are either understood as the mere sensation of physiological perception or as some kind of cultural conventions. But according to Csikszentmihalyi and Rochberg-Halton (1981), focusing on aesthetic experiences can also identify pervasive qualities in an environment. In emphasizing *qualitative immediacy* in a person-object transaction they offer a way to go beyond the usual reduction of aesthetics to social convention and the utilitarian argument that aesthetics only refers to pleasurable sensation. According to Csikszentmihalyi and Rochberg-Halton 'an aesthetic experience involves something more than the projection of meaning from the person to the environment or vice versa. It involves a realization of meaning through interaction with the inherent qualities of the object.' (Ibid. p. 179).

This approach to aesthetic experience is primarily based on John Dewey's view that *meaning and significance can be regarded as a transaction rather than as a subjective projection*. Dewey claims: 'The expressiveness

of the object is the report and celebration of the complete fusion of what we undergo and what our activity of attentive perception brings into what we receive by means of the sense.' (Dewey, p. 103) Dewey seems to account for something left out of most contemporary accounts of meaning, namely, the way something *genuinely new* can arise in experience. (ibid. p. 175)

In a similar way Rafael Ramirez (1991) contends that it is through aesthetics that some substantial knowledge for understanding sensuous, experiential and existential aspects of reality can be attained and understood. Ramirez (ibid) holds that an intrinsic aspect of people's lifeworld is to be and feel part of a larger whole. This can, according to Ramirez, be achieved in two different but interrelated ways – being distinct from and/or belong to. (Ramirez 1991:31)

Ramirez (ibid.) provides an understanding of being a part of a whole, which includes aspects that relates to feelings of wonder, inspiration, moving, touching, striking, emotive and vividness. (Ramirez 1991:28). 'It is through aesthetic experiences that such "belonging to" may in certain situations frame (define or dominate) an "a-part-of" consciousness in our understanding of our being.' (Ramirez 1991:26.)

Ramirez hold aesthetic experiences to be responsive to patterns in reality that connects with the mind's ability to aesthetically apprehend a given form. 'Aesthetic consists of a symbolization process in which, what is symbolized as beauty or expressive form is "*felt life*". It's an expressive form that has an organic character. In other words it is the aliveness that felt life offers which is thus symbolized.' (Ramirez 1991:66)

David Nye (1994) has written about the sublime experiences that people have when confronted with powerful technologies. Sublime experiences are according to Nye, emotional configurations emerging from new social and technological conditions. (1994:9) In Nye's view people have traditionally incorporated every new technology into their lifeworld in a way that fostered a sense of human control and domination. However with larger and more complex technologies and cultural artifacts it is more often the technology and the technological systems that give rise to feelings of the sublime. (Nye 1997:290f)

Another important aspect of people's relationship with information technology that has increasingly become explicit and discussed is the *sensuous* and *experiential* ability of this technology. One of the more early explicit, and hence provocative, discussions of experiential and sensuous aspect of people's relationship with information technology is the description of how sex-workers make sense of their work (Stone 1995:20). Stone (ibid.) interpreted sex-workers to be working within a lifeworld where passion, images and fantasies were very important dimensions. These images and fantasies were generated and represented through telephone conversations. Based on these experiences, Stone (ibid.) criticized traditional human-computer perspectives that based their assumptions on an instrumental and means-end relationship closely related to work practice. Instead she argued that most of people's relationships with information technology would be better understood if we relate our analytical frameworks to play and other aesthetic forms of expressions where emotions like pain and passion plays a vital part (Stone 1995:165).

Even in more mundane and ordinary circumstances there have been a substantial number of claims emphasizing the importance of experiential aspects of computer use. Howard Rheingold, for instance, refers to the experiential realm in his encounters with information technology: "The idea of a community accessible only via my computer screen sounded cold to me at first, but I learned quickly that people can feel passionately about email..." (Howard Rheingold, 1993.). In Markham (1998) study one of the informants expressed that a text-based multi-user environment made it possible to progress beyond the limits of body in experiencing being language and text. 'I choose to exist as myself in language online...I think myself in language is more communicative of who I am... because I'm a good writer. Eloquence make me beautiful online.' (Markham 1998:202-3.).

So far we conclude that the notion of the sublime and aesthetics with respect to people's relationship with technology seems to be a dimension that can be further elaborated. The sublime and beautiful dimension provides notions and concepts that can be used in order to frame this technology as an expressive form with an organic character. As such, an aesthetic relation to technology might be about many different aspects of reality but at the same time be equal. This very different view sets aside traditional inside – outside distinctions such as those between subject and object and between different subjects and different object. Persons and their worlds as well as their aesthetic experiences are emergent 'products' of relational processes in which information technology increasingly is an important part.

Thus, when appropriating information technology in their everyday life, people are themselves important participants of design through subjectively and individually understanding and signification processes. Instead of understanding a technological artifact as quite homogenous, or defined along one single dimension, they must also become appreciated as being a part of, a greater whole. This is also expressed in some recent theories framing technological development as information ecologies, collective intelligence and actor-networks, which are more sensitive to the various ways in which information technology is entering our lives (Feenberg 1999, Latour 1993, Lévy 1998 and Nardi et al. 1999,).

Thus if we want to understand this relational outcome in order to become better at designing such possibilities, one can not search for the possession of the minutiae of factual knowledge of technology. What is needed is a more *reflected awareness of the presence of the interrelated qualities between technology and peoples lifeworld*, which are affecting the quality of the immediate experience. This is of course not an easy way to go and not easy to accomplish. But... keeping the belief that our entanglements in and with information technology might be better understood if we are to use many, diverse, points of view, the sublime and the beautiful might contribute to understanding important aspects of the way people are being-with information technology.

### **The Need for a technological understanding**

The digital transformation as described in this article leads to a situation where almost all kinds of design becomes design of information technology. This means that there is a need for a deep and reflective understanding of the new technology, and especially what the technology brings to its users in the shape of promises and consequences. The ideas of Borgmann helps us to conceptualize some of these consequences. "The device paradigm helps us to understand why people expect so much from technology" (Higgs, Light & Strong, 2000). The device paradigm tells us that technology pushes us to move to an understanding of technology as a mere end. Technological artifacts are only understood as providers. This leaves us with an understanding of technology that is focused on the outcomes that these artifacts provide us with. Borgmann argues that this is a development that removes focal experiences from our reality, since an artifact is not only a provider it is also a placeholder that brings our experience of reality together.

We argue that this development raises two concerns. First, as a consequence, this leads to an everyday reality dominated by 'commodities', i.e., technological artifacts designed based on the device paradigm. And as such, our reality will not be designed in a way that brings forward focal experiences and therefore will not be an environment supportive of a "good life". The other concern is that designers are faced with the challenge to change this development, at the same time, they lack a more reflective understanding of technology. Even more, they lack methods and approaches that will bring forward a deeper understanding of people's everyday experience of technology.

The analytical and reductionistic approach to this new complexity is not a possible way. These methods are sensitive to the growth of complexity, i.e., the approaches takes more time and resources when the complexity increases. What we see today is a situation where complexity is rapidly growing. There is a need of an approach

that is insensitive of the growth of complexity, but sensitive to the way people experience their reality. In the article we argue that one possible answer is to focus on the idea of the aesthetic experience.

An *aesthetically informed technological understanding* cannot be developed using traditional analytical and reductionistic approaches based on a simplified understanding of the subject-object (user-artifact) relation. Technology is to people not a distinct and separable part of their world, it is blended into an analogue experience of the whole. We argue that designers today need to develop an approach, tools, and techniques to the study of technology use that is based on aesthetic experiences. This is a possible way to grasp the richness and fullness of the role technology plays in people's lifeworlds.

At a more practical level this means that designers need to foster an ability to make aesthetical judgments. They need to develop a sensitivity to the way people experience their artifacts and how they make meaning out of these experiences. An aesthetic judgment must be firmly based on the designers self-understanding. The purpose is to use the self-understanding to create understanding of a particular context or concept by way of contrast and embellishment and by way of stretching the imagination. The aesthetically oriented subject (designer) experience her-self as belonging to inter-subjectively shared lifeworlds, as participating in a conduct of life which is constitutive of the technological lifeworld concerned.

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