The Design Professions in Convergence

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Abstract

This chapter looks at convergence from the point of view of the design professions. As many technologies have increasingly come to incorporate digital components, the design professions have been creating new design objects. However, design disciplines have responded to the convergence in different ways. This chapter explores professional responses to convergence and analyzes the technological, economic, and social background of these responses. Through this analysis, the chapter analyzes the extent of convergence, and identifies some of its limits.

Key words

Convergence, globalization, design, professions
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1. The Political Economy of Convergence

This chapter looks at what has happened to convergence by analyzing how it shows up in several fields of design. By convergence, I mean the once-popular idea that, with digital technologies becoming ubiquitous, technologies would sooner or later converge (for a useful clarification of “ubiquitous”, see Hargraves, 2007). The original technological dreams for convergence, popular at the end of the 1990s, were, if anything, vast. One of the ideas was a New Alexandria: the dream of connecting anything to the digital networks, and being able to access anything from any type of terminal at any time, was like the famous historical library of Alexandria, in which all knowledge was accessible under one roof. Companies like Razorfish created mottos that told us that everything that can be digital will be, and were on a crusade all over the world selling these ideologies. Media houses joined in and, as the mobile industries jumped onto the bandwagon, it seemed that, indeed, the world was about to experience convergence, led by digital technologies.

As we know now, this development has been much slower. Even meager knowledge of the history and sociology of technology could have told industry and politicians that convergence was just one facet of digitalization, another technological change in progress, and one possible competing claim about its direction, rather than a law or even
market-based development that would happen whether people wanted it or not. The paradox of the concept is that, although the term as such is little used today after the dot.com bust and massive failures like WAP and 3G in the mobile domain, the idea still lives, though under different names, including transmedia and – perhaps most notably – ubiquitous computing (one of its meanings denoting technology that is everywhere).

Many types of social processes drive these developments, even though it is questionable whether we can use the word “convergence” to describe their outcome. In writing about media convergence, Graham Murdock distinguished three meanings of the term: media can merge into multimedia products, media systems can merge, and media institutions can merge. Clearly, convergence has been taking place at all these levels, although much slower than in more aggressive forecasts (cf. Negroponte, 1995).

Thus, throwing out the concept altogether would in many ways be like throwing the baby out with the bathwater. For example, just to mention some of the social processes that are still driving convergence: European Union’s 7th framework pushes many initiatives that are in spirit, though maybe not in words, heirs of convergence, and many types of institutional agendas nourish research in the most advanced industrialized nations, their research institutes and universities (http://cordis.europa.eu/ist/about/fp7.htm). And, of course, there are many types of market- and semi-market-driven processes: the media world packs content into many types of devices instead of focusing on one main interface only. The mobile industries have actively integrated many types of multimedia technologies into their products, making it possible for people to create content in one device, edit it on another, and view it on a third.
This chapter takes a slightly different angle on convergence than the one typically written about. My methodic trick is that I approach convergence from a sociological standpoint. Instead of focusing on what has been said about convergence, I will survey how the design professions see convergence in their work around 2005-2006. I focus on those designers who received their training in art and design departments, rather than in engineering. When it comes to this distinction, the English language is more ambiguous than European languages that clearly distinguish engineering from such areas as \textit{formgivning} and \textit{Formgebung} (for instance, see Koskinen, 2006). The design professions provide a good window for studying convergence for two reasons. They tend to be up-to-date technologically, taking action before technologies become available for the common public. They are also fairly small, mostly market-driven, professions. For these reasons, major technological changes take place quickly in these disciplines, and they may shift the balance of the professional field dramatically in the space of only a few years.

\textbf{2. Three Convergences in Design}

As I have argued above, many social processes drive design disciplines towards convergence. However, it is important to realize that, although political economy created conditions for convergence, these function separately from designers and what they do. It is the designers’ definition of convergence that ultimately guides the way in which they take action and make convergence something more real for them.
The best way to see the importance of these definitions is by comparing three different professional strategies towards convergence. In many design disciplines there has been, with a few art pieces aside, little interest in convergence. In such material-bound disciplines like glass and ceramics, and also textiles, there have been precious few attempts to combine digital technologies into the actual design material. For example, even though there has been much exploration in intelligent and smart textiles, most work has concentrated on the new materials rather than on digitalization, or bringing media into textiles (Redström et al., 2005). The most important exception is research, which naturally strives towards more abstract thinking. In research, various technologies and media are, to an extent, converging.

In contrast, two recent design industries, media design and industrial design, have been more receptive to convergence. What explains their receptivity to new ideas and technologies is probably simple: these two disciplines are process-oriented and work routinely with complex problems and content. Of course, these two disciplines differ in terms of their relationship to convergence. In industrial design, the main driver has been production technology that has gone through a revolution during the last 15 years from manual to digital technology. However, even though some industrial designers have been working on issues related to convergence, this has mostly taken place through user-interface design, a field in which many industrial designers have excelled. But, few industrial designers have been working on actual media technologies beyond traditional shape-giving and semantic design. Media designers, on the other hand were certainly working in the very hub of convergence – the Web and digital television – pushing
people to design and management positions in the media industries that were going through several revolutions, some of which were related to convergence.

Naturally, several issues explain the divergence in how the design disciplines have responded to convergence. Perhaps the main issue relates to how subdisciplines in design construct their identities, and how these identities are built into what we can loosely call the founding institutional practices of design, including the way in which design schools and specialties are constructed. For example, people in design disciplines make distinctions between process-oriented and material-oriented disciplines; those disciplines that work on two-dimensional surfaces and those that work on three-dimensional objects; and artistically oriented disciplines and those disciplines that base their identity on technical knowledge, the marketplace, or research. The main institutions of the design world tend to reify these differences through education and the workplace. While industrial designers and media designers tend to adopt new technologies quickly, in areas such as glass and ceramics technological change is grounded in age-old techniques and traditions. Similarly, the workplace realities differ, and management decisions construct environments that variously expose design disciplines to issues like convergence. When visiting an industrial design company, one sees traditional workshops (wood, plastic, metal) but also a lot of new technology (laser cutters, Rapid Prototyping machinery, CAD/CAM, traditional 3D models). If you go to a glass studio or a ceramics workshop, you find pipes, ovens and burners. The connection to digital technology could hardly be more different.
3. There is Far Less Convergence than There Used to Be

Of course, it is media design, which works with the most malleable of materials in
design, which has seen the most dramatic changes. For example, when the Helsinki
University of Art and Design established its Media Lab in 1995, it was supposed to work
on video and digital art, and also somehow get into the Internet. Almost immediately, the
Internet turned into the World Wide Web, giving the Lab a new charter. Knowledge
created for the Internet was not enough to cope with the Web, which needed skills in
multimedia. All of a sudden, the talk of the Lab was file formats, IP protocols,
communication and soon after, other forms of media and media production based on an
increasingly digital production process. When mobile phone industry became prominent
– and this took place in Finland much more than in most other countries – the Lab got a
new reason for living.

The talk of the town was convergence. It seemed inevitable that everyone can fairly
quickly access practically any type of content anywhere at anytime through a multitude
of terminals, the most prominent of which were to be computers and mobile phones.
Even though thought models were not built on the notion of convergence, the argument
was there, giving an almost evangelic spirit to media designers, whose design discipline
would be in the vanguard because they were comfortable with the digital technology that
was supposed to be the way forward for design. Not just development in traditional AV
media – remember how digital TV was supposed to spread because of the Sydney
Olympics in 2000 – but also issues like games and interactive narratives were supposed
to offer new work for those designers who were able to ‘get digital’.

As the first decade of the new millennium is slowly coming towards its end, TV is finally becoming digital, even though the wildest dreams of how narratives and all other types of content would become interactive have turned into much more modest claims about better picture quality, improved text-based TV services, and improved interaction with the program guide. What will happen with downloading movies and video on demand remains to be seen.

In addition to digital TV and games, another area in which media convergence is taking place is the 2nd generation of the World Wide Web, which is driven by user-generated content and interaction between people. For instance, Flickr has become almost synonymous with Web-based photo albums, and there are several software startups that have developed ways to integrate the Web and camera phones. Good examples are Yahoo’s ZoneTag and Jaiku.com, a Helsinki-based startup with a mostly American customer base. Of course, one may accuse YouTube, the most popular video-sharing Web page, for various problems. It is easy to be ironic and join the followers of Theodor Adorno when you find one hit for the classic Case Study 21, an iconic house situated in Hollywood Hills and designed by the Los Angeles-based architect Pierre Koenig, but easily a million hits for “Britney Spears Nude on the Beach”. However, with YouTube, sharing videos has become a part of normal life for millions. Or, take the instance of just how much the Web has eased driving in cities: in what must be the ultimate car culture in the world, Los Angeles, even locals routinely go to the Web to search for driving
directions and maps instead of consulting the Thomas Guide, a hefty map that used to be the bible for anyone who wanted to navigate the megalopolis. This is made possible by the fact that the Web and WLAN are virtually ubiquitous in America’s Southwestern metropolis.

With other design disciplines, we find far less evidence of convergence. Take, as an example, industrial design, which is the design discipline most eager to adopt new technologies. Industrial design has become thoroughly digital over the last decade. However, even though practically the whole design process takes place in the digital domain, and user interface design has become an important subdiscipline, few industrial designers work directly on converging technologies. Although industrial designers have certainly been active in developing applications for embedded technologies, with the exception of interaction design, industrial designers have been relatively slow to work on media. Industrial designers have been getting more work over the years from IT and media industries, but convergence is not in industrial designers’ vocabulary. It goes without saying that in more traditional design specialties like furniture design and ceramics, convergence has been even less on the agenda.

4. Small Convergences That May Get Big

However, this is not the whole picture. What we can call “small convergences” still happen. In particular, there are active research frontiers in which many types of technologies converge with media, mostly pushed by institutional agents such as
technology programs on national and European levels. Take the currently fashionable notion of “ubiquitous computing”: with the main exceptions of RFID (radio frequency identification) and mobile phones, few successful applications have come out of “ubicomp,” despite more than a decade of intensive research work (see http://www.ubicomp2006.org/). However, working largely on public and military funding, researchers have produced many conceptual pieces and technological innovations that illustrate not just the potential of the concept, but also its problems.

As a case study, we may look at “Alavs,” Autonomous Light Air Vessels, designed by Jed Berk at the Art Center College of Design in Pasadena (see http://www.alavs.com/). Alavs are large, helium-filled air vessels – looking like small Zeppelins – that carry a small circuit underneath them, with a few behaviors coded into them, a communication module, and two fans that move the Alavs around.

Alavs are transmedia devices par excellence: they transgress many traditional lines of media and design (Picture 1). For example, they have animistic qualities built into the devices using principles found in biomimetics. Alavs are networked, and are aware of each other’s location; they flock together, and seek the company of other Alavs. They also transgress species boundaries: people can “feed” them with a fiber optic device; an Alav shows with red color when it is “hungry”; when approached with the device they beep; and when approached with this feeding device, Alavs “eat”; when they are full, they change color and disappear from the sight. Finally, humans can connect to Alavs using digital communication devices. By calling a certain number, one gets two
alternatives to choose from: one can either tell the Alavs that he is a friend or a foe. Depending on this piece of information, the Alavs get closer, or flee from the caller.

-- Take Picture 1 in here --

Many ideas typical of convergence are at work here. They break many traditional boundaries that people use to make sense of digital technology. However, they also illustrate many of the problems with this notion. The Alav is a nice art piece, and a good technological demo, but it is difficult to see how it could become a mass phenomenon, which, naturally, it was never intended to be. But how could one use it for useful purposes? Or even as a toy? In fact, the critique that evolved in Pasadena, where Berk presented his design, became a collective effort to make sense of how one can understand Alavs, not as a traditional design critique. Alavs also illustrate another problem in convergence. During the last few years, it has become relatively easy to make things communicate with other things, creating new kinds of behaviors for things that had traditional uses. Also, it has become possible to build networks of things so that these responses were not centered just on individual objects, but also on communities of objects. The problem is that, as it does not fit into mundane categories, technology becomes difficult to understand.

Over the last few years, we have seen many technologies that are ultimately like the Alavs: they are interesting, fun, and initially sound as good ideas, but one doesn’t know exactly how. Even though it has become relatively easy to build new things that break the
boundaries of mundane thinking, it is often difficult to find uses – or any other rationale than art – for them. Industrial designers, with their hard-nosed attitudes and practices geared towards the market, shy away from things like the Alavs. Such attitudes constantly create only small pockets of convergence.

Occasionally, things in these small pockets may grow into something more significant. Take the example of camera phones. Multimedia messages are far less popular than text messages. For example, in 2005 in Norway, about 489,000 multimedia messages were sent daily, compared to the 504,000 text messages that were sent each hour, making over 12 million daily text messages (e-mail from Rich Ling/Telenor, Jan. 2006). However, several pieces of software have recently come out that simplify the process of sharing photos on the Internet. Using Jaiku.com and Yahoo’s ZoneTag, I can take a photo with my camera, track Bluetooth-enabled devices (BT) in the vicinity, and attach cell and even GPS information into pictures. People who browse my Flickr site not only see my pictures, but also know where they have been taken, and which other (open) BT devices have been present when the picture was taken. Picture 2 is a five-picture collage of Jaiku and Flickr images. When browsing the collage, note at least the following things:

- Images 4 and 5 in the collage, cell tagging: I-80, Bay Bridge, Iso-Roba [Stora Robertsgatan], etc. These are named by users.
- Images 4 and 5, geotagging (GPS).
- Image 4, zip code tracking: based on cell information, zip codes have been named by hand by the user.
• Image 4, direction (driving southwest): this tracking is based on calculations from GPS information.

• Images 3 and 5, and below right: Bluetooth tracking. Up, the phone recognized one BT device. Below, two devices were recognized (both images on right).

-- Take Picture 2 in around here --

A good deal of thinking behind these technological developments have come from the design world, including my own work on mobile multimedia, but mostly through design students and researchers like my colleague Esko Kurvinen (see Kurvinen, 2007; Koskinen, 2007). Obviously, it is difficult to know whether these technologies will be smash hits in the marketplace, but, Jaiku.com and Yahoo’s ZoneTag are used by tens of thousands of people worldwide (exact numbers are confidential), showing how experimental work in research laboratories may translate convergence-like ideas into working realities for small groups, if not for a mass audiences.

5. A Reflexive View of Convergence

The last point deserves elaboration. Design, as with any other form of human activity, can be thought of in reflexive rather than causal terms. Technologies are interpretations and statements made by humans, rather than just technical creations. As my argument above implies, there are many types of reflexive processes at work in the design world. Top-end Danish furniture represents the high artistic end, while toy design represents the
most market-driven design in which producing more variation is the key business driver. Similarly, designers work differently. While some designers’ inspiration is artistic, other designers distance themselves from art and artistic imagery, and self-consciously orient to technology or the market instead. Concepts like convergence, and trends they aim to capture, become parts of the designers’ world through their own definitions and decisions.

Thus, for instance, many ideas in the digital literature may have sounded like a good idea in abstract, but not in context. What is the point in selling the idea that digital TV makes it easier for us to order pizza when any modern city already provides plenty of opportunities for ordering pizza? Or given that current locks are safe, who would trust the function of opening the door at home through an IT-based identification system after years of experience with blue screens in Windows? Some ideas have been just naïve. Take the notion of interactive narratives, which gained some popularity about 10 years ago in media labs in Japan, Europe and North America. Where is it now? There are good cultural reasons for not going in the direction that Sony took then, building a movie theater in Manhattan (where else!) in which the movie stopped at certain points, and continued only when people had cast a vote on where it should go. Some narratives cannot be changed. No one in his right mind can write an alternative ending to the story of Jesus Christ. Or what is the point in taking Romeo and Juliet and attempting to “improve” its dialogue by making it interactive? How could people improve its dialogue and characters? Unless smartly rewritten into, say, a game, rewriting, changing a classic is sacrilege. Similarly, there are common-sense limitations that set limits to what one can
do with technology. What would be the production cost of a pack of Alavs? Clearly, it is difficult to build a business case for Alavs.

From the standpoint of this chapter, the important thing is that designers take these – and other – issues into account differently, depending on things like their expertise, work environment, and mindset. For most people in the traditional design disciplines, their expertise, machinery, and ideology directs them to work on traditional topics and ideas. Industrial designers tend to take these limitations, whether based on common sense, the market, or production technology, seriously throughout their work process. In the media design world, it has been easier to play with new ideas and to push at the boundaries of existing reality. The main exception has been the universities, in which researchers have played with many ideas related to convergence. For example, in my university in Helsinki, industrial designers have recently been exploring proactive information technologies, interactive maps, and mobile games. With the exception of user-interface design, the city’s industrial design offices have not gone into these experiments since about 2003.

In fact, given these limitations, it is astonishing that so many new technologies have come to the market in the first place. Again, we come back to powerful social forces. It is possible that without institutions like the Finnish Broadcasting Company, the future of digital TV would be far less certain. When monopolies take action, they change society and technology; as sociologists say, these institutions not only restrict development, but also enable it.
However, it is important to realize that, in research in particular, traditional professional identities stemming from disciplinary differences play a far less prominent role than in key institutions and business. When one looks at one of the most recent developments in design research, the increasing importance paid to “ubiquitous technologies” – meaning information technology that is embedded in our environment rather than in grey boxes called computers (Weiser 1994) – one typically faces an area in which the traditional identities play a small role. The main developers of Jaiku.com have been software engineers, interaction and industrial designers, and sociologists. Or, when space becomes a key notion in interior design, architects have skills that come in handy. For example, Ludvigsen (2007) explores iFloor, an interactive floor system built to Aarhus City Library, and develops terminology for understanding this interaction. Involved in imagining and creating new worlds, research in design breaks traditional identity lines, and makes it possible for people to pursue lines of activity that hardly fit into the traditions of the design world.

6. Discussion

In this chapter, I have outlined a few ways in which designers have responded to convergence. Although the term as such is not a part of designers’ vocabulary anymore, it is obvious that the media in particular have converged at many levels, and the design world has not been untouched by these developments. Traditional design disciplines have largely positioned themselves outside convergence. Industrial design, more fluent with
new technology, has benefited from convergence to an extent. In particular, industrial designers have been important in defining such new specialties as usability and interaction design. In contrast to these orientations, media designers have been in the very hub of action in convergence. In addition to being involved in developing the Web and Web 2.0, media designers have been working on games, mobile technologies, and interactive books, among other new technologies.

As we have also seen, this is not the whole picture. In research in particular, many designers are constantly working on what I called “small convergences” in explorative R&D and research. The example of Alavs, Autonomous Light Air Vessels, illustrates well the ways in which designers create new concepts for exploring the boundaries of existing technologies, and question existing categories, thus opening up possibilities for the future. Alavs also illustrate many types of mundane and cultural problems in convergence which set limits to convergence.

However, as I have stressed, designers are not passive agents in convergence. They are shaping it at many levels through many types of action, all the way from actual product development to explorative, high-risk research. Design, just as any other form of social action, is reflexive. When we understand design as reflexive agency rather in reactive terms – that is, we pay attention to the fact that designers are also shaping society – we begin to see some of the reasons why different design disciplines have taken different paths at the face of convergence. Media designers have been at the heart of convergence, adapting to change, whether technological or content-based, and often even driving that
change. Industrial designers’ work has become increasingly more technological, which has opened ways to work with digital materials. However, their identity has changed more slowly. Finally, at the more material end, there has been little, if any, interest in convergence, with identities ever more firmly rooted in traditional and artistic understandings of the self. However, as I have shown, in some areas of professional action, these lines have been less pronounced. The best example is research in which traditional professional identities – such as being an artist of an industrial designer – play a far less prominent role than in more established areas of design. Thus, even though the main lines of professional identity may explain a good deal of what designers are doing in the face of convergence, the design world also has practices in which these lines of identity are questioned.

7. Acknowledgements

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8. References


Picture 2. A Collage of Camera Phone Use. Images 1-3: capturing tagging and publishing a photograph, as well as information collected by a smart phone using Jaiku.com software. Images 4-5: a camera phone shot on Flickr.com, and a detail of tags in another Flickr image sent to Flickr by Jaiku.com.