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Beyond the Two Cultures Myth

The word "convergence" has a wide variety of meanings in the domain of contemporary human culture. On the most general level, it perhaps recalls C. P. Snow's "two cultures" thesis formulated in the 1950s, referring to the tensions between the technologically-minded approach of the telecommunications engineer and the philosophically-minded approach of the humanities scholar; a thesis, I suggest, that has become obsolete with the digital revolution and the ensuing cultural convergence of the 1990s.[1] More recently, and on a rather more technological note, the expression "two cultures" may refer to mobile versus fixed telephony, where the "two" of course can easily be more than two: from our present perspective, it can also be speech versus data (or voice over internet), it can be the walled garden versus the Web 2.0, and so on. I myself, as a developer engineer in the telecom industry, define the meaning of convergence in various ways. And my definitions may not be the same as the notions of users who are active in the various cultures of technologies and are defining their borders.

[1] "The resentment which the traditional ["literary"] culture feels for the scientific is shaded with fear; from the other side, the resentment is not shaded so much as brimming with irritation. … Neither culture knows the virtues of the other; often it seems they deliberately do not want to know" (C. P. Snow, "The Two Cultures", *The New Statesman*, Oct. 6, 1956). "Literary intellectuals at one pole – at the other scientists, and as the most representative, the physical scientists. Between the two a gulf of mutual incomprehension" (C. P. Snow, *The Two Cultures and the Scientific Revolution*, Cambridge: Cambridge University Press, 1959, p. 4). – "Persons educated with the greatest intensity we know can no longer communicate with each other on the plane of their major intellectual concern. This is serious for our creative, intellectual, and above all, our moral life. ... Between these two groups – the scientists and the literary intellectuals – there is little communication and, instead of fellow-feeling, something like hostility" (C. P. Snow, *The Two Cultures: And a Second Outlook. An Expanded Version of The Two Cultures and the Scientific Revolution*, New York: Cambridge Univ. Press, 1963, p. 59). Compare the editor's preface in Kristóf Nyíri (ed.), *A Sense of Place: The Global and the Local in Mobile Communication*, Vienna: Passagen Verlag, 2005, http://www.socialscience.t-mobile.hu/dok/8_preface.pdf.

The most prominent phenomenon of convergence is that of the fixed and mobile worlds. For decades we used fixed services, but since the 90s the mobile has been becoming more and more popular. The emergence of a wide range of IP applications has allowed the two worlds to come closer to each other: a couple of years ago the only way fixed and mobile networks worked together was via interworking. This meant that calls from each network were terminated successfully at the others' end. But now, real IP-based convergence has opened the world to new services: video calls that are initiated from a 3G mobile phone can be terminated on a desktop PC while we are working, or on a regular ISDN phone on our desk. None of the video services alone (only mobile or only fixed) managed to gain traction, though joint use may be an opportunity for success.

Of course, technology alone will never be enough to trigger usage: users have to find their fair enjoyment in the technology plus they have to be mentally prepared to use it, to play with it. If there are no use cases[2] for the individuals, the chances that a given service will take off is low.

Today's companies of convergence are becoming true "screen companies". No doubt, users are always exposed to some kind of a screen, regardless of whether they are looking at a TV, a mobile screen (which is today far from a simple bulky black and white dot matrix), or sitting in front of a computer. This triangle is the strongest boost for convergence, where user behaviour is setting the development speed.

Traditional fixed operators who provide broadband to homes were limited in their multimedia capabilities to PC screens, PC-based video-on-demand, or games. But the real users are sitting in their living rooms, where a small set-top box, connected to the wide screen, is owned by the cable operators. And the cable operators started to offer telephony and internet on their cable, moving out from the living room into the study or the work areas. Another front for convergence.

Convergence for telecom operators, who own a large installed copper-wire network base, started with broadband capabilities that were able to offer so-called IPTV. IPTV is a fundamental tool for convergence: beside telephone and broadband internet carried by the traditional copper networks, high-quality TV can enter the house, with a wide range of interactivity.

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[2] Useful is the Wikipedia definition (http://en.wikipedia.org/wiki/Use_cases): "A use case is a description of a system's behaviour as it responds to a request that originates from outside of that system. ... Use cases describe the interaction between a primary actor – the initiator of the interaction – and the system itself."

Interactivity is a service which does not yet have a place on our TV screens. Users are rather used to passive selection modes where the number of channels is the only and exclusive measuring factor of TV quality.

Interactivity is one of the strongest features of TV in a world of convergence: users can watch individual movies, upload self-made videos to a community site, or vote, or purchase items during a show. One can say that such items are a commodity over the internet, and millions of dollars of business is already conducted daily over PCs. But the fundamental convergence item is the location of the business: all actions on an IPTV network (or better to say, screens) happen in the living room, removing the entry barrier for millions of users. And when the mass market plays, trends will change quickly. IPTV offers new forms of experience, such as:

- online programme guides
- programmes on hold
- video on demand
- programme recording
- favourite channels
- remote programming capabilities
- programme selections
- programme search
- high definition transmission, etc.

And when interactivity is in play, mobile services again come into the picture. Mobile TV has, as an early convergence item, already been on the service palette of the operators for years.

Survey results from Ericsson and CNN show that more than a third (34%) of respondents rank TV as the most demanded application and almost half (44%) of respondents would like to adopt mobile TV within the next two years.

Mobile TV is a wonderful tool for interactivity: as an example, let us refer to CNN, which launched its iReport service where users can pursue "citizen journalism"[3] (more than 50,000 submissions were recorded by CNN in the last 2 years).

Another battlefield of convergence is the Web 2.0 arena. There are many names for Web 2.0:

[3] Cf. Henrik Schneider, "The Reporting Mobile: A New Platform for Citizen Media", in Kristóf Nyíri (ed.), *Mobile Studies: Paradigms and Perspectives*, Vienna: Passagen Verlag, 2007, pp. 159–167.

- connected web
- improved form of www
- collection of interactive web technologies
- the two-way web
- a la carte, do-it-yourself web...

New kids on the block are challenging the old world of operators, and these kids sometimes have a tremendous appetite. Community services like Skype and Google (Gmail) offer VoIP capabilities, hence converging (moving) towards telecommunications services. User behaviours are not changing rapidly: based on operators' measurements, the effects of such disruptive services at present are not significant, although huge number of concurrent users are connected to them (for example, on a European weekend evening more than 10 million users are hooked up on Skype). But such "converged" services are not content to stay only on the PC screens: large numbers of hardware manufacturers started to offer Skype phones that are able to offer regular fixed-call connections, but while the PC is on, they are connected to Skype as well.

As giants are entering the mobile world, such as Google with its open operating system Android, our perceptions of convergence may change again. A free operating system usually boosts small and large development communities as well, inspiring them to launch innovative services. The cost of an operating licence is sometimes a strong blocking factor to free development. Google is one of the strongest players in the internet world. Combining its power in both mobile and fixed internet will result in a wide range of intuitive services that move into our everyday lives.

A photo published on Flickr of Saint Mark's Square in Venice, uploaded from a stranger's mobile phone, shows me as I shoot a photo of my daughter, which then I myself will have published 30 seconds later. This is the convergence of place, time, and technology.

But the Web 2.0 is more about self-expressions than about operating systems. User surveys indicate that especially teenagers who actively use a wide range of community sites expect nothing less than the same services on their mobiles. For them, bandwidth is not an issue; they are not looking for faster mobile internet – they are, rather, interested in:

- Facebook, where you can share the moment and the feeling of always being close to your friends – anywhere, anytime;
- seeing their friends online and chatting with them in real time;
- adding voice and video to their communication if and when desired;
- sharing pictures, videos, and music with their friends and commu-

nities via their personal web portal access;
- chatting and sharing online presence info (who is online and where)

– and all that on a mobile device.

Only chat that is extended to mobile users can really challenge the traditionally well-positioned SMS. Peer-to-peer SMS and multimedia messaging has for a long time not been growing, while mobile chat traffic undergoes 20% growth per year.

Many expressions have been born to describe Web 2.0 – my favourite one is "socializing the online". While Web 1.0 is "being online", "one-to-many", "institutions moving to the web", "commerce versus people" or "reading and consumption", Web 2.0 is many-to-many, or "institutions are born to the web". Behaviour and content production are the major characteristics of Web 2.0. And all these applications rely on one or more forms of convergence: podcasts on PCs, on mobile devices, or on the screen in living rooms, or Flickr photos shared 2 minutes after shooting the photo.

There is only one problem with Web 2.0, and that is when traditional operators look at it. "This is not a business, so we don't need a business model", say many of the disruptive service operators, made up in most cases of small and young developer teams. They acquire as many users as they can, and decide about the future of such a service when it has reached critical mass. Some social networking services, after being purchased by a professional operator, required a significant amount of "commercialization" (scaling) before being able to further expand. Internet-based services are still far from being on the same level as the "good old telecommunications services".

As the internet moves towards mobility, user demand for quality and bandwidth grows rapidly. As the iPhone changes (or will soon change) the way users utilize applications (especially the mobile internet), mobile operators are facing the reality that either the mobile internet grows into a full-fledged internet, or that users will not use it. This is why technologies like HSDPA and HSUPA (high speed download and high speed upload) are gaining worldwide momentum. For a long time, uploading was not particularly important for users (hence the ADSL abbreviation: asymmetric digital subscriber line), but since the emergence of video uploading, it has become equally important.

And who are the losers of convergence?

Nobody leaves a voice message anymore; if they do, there is nobody to listen to them. SMS still fights the battle, but instant messaging and e-mail attack fiercely, both in their mobile and fixed forms.

Voice moves to IP, consequently its margin diminishes quickly. Mobile VoIP still has a price premium that helps to preserve its value. Only mobility can maintain its premium, but if we look at current price plans, fixed and mobile tariffs are very close to each other. The premium on mobility is losing its value, too. Current 3G video capabilities are rarely used. Modem dial-ups are disappearing fast.

And where are the business users?

Work is dominated by e-mail (push e-mail) and remote office access. Mobile e-mail access is a must: there is a large user community of push e-mail services, and not only among business customers. Sometimes it is faster to write a (mobile) e-mail than an SMS, especially when longer text and more than one user is involved. Business users are not heavy users of social services, apart from ones that offer communication. The virtual office is poised to take off soon: access to colleagues and meetings anywhere, anytime, and to shared applications even on the move. Although bandwidth and technology support it, the mobile video phone is almost entirely ignored.

Possible business models are affecting the usage and the spread of any given converged service. Even if we say that the internet is full of free services, we need to pay attention to the business models that affect usage strongly.

The models in use are:

- *Transaction type* – Most current telecommunications services are of this type: SMS, calls, multimedia messages, mobile payment, etc.
- *Subscription type* – Heavily used on the internet and in telecommunications. Users pay periodic fees.
- *Advertisement-driven* – The content or service is free for users, the cost is covered by third-party owners. Large-volume visitors can be best served with this model. CPC (cost per click), CPM (cost per million [impressions]), CPA (cost per acquisition/action).
- *Licence-based* – Users are charged a one-time fee, and they can subsequently consume as much as they want.
- *Infomediary* – Usage data is sold, and new customer analysis is enabled. Search preferences and buying preferences are examples. From the convergence perspective, this business model is one of the most important. Amazon, Skype, Google, Yahoo, and even mobile and fixed service operators are employing large-scale data analysis. Based on this, services that do not seem to be connected to each other may share usage data, and can generate propositions that generate value. Users may receive on-demand video title proposals

on their IPTV screen, based on their search patterns on Google. Mobile content offers can be linked to call or search patterns.

From the end-user's perspective, convergence is always something practical which has something tangible to do with his or her life. The user may use (write to) a blog portal that is normally updated on the web, via a PC or laptop. When the blog is updated, friends receive a notification on their mobile and parallel to that, in an e-mail. They browse the blog either via their mobile, or again on a PC, and respond to the blog in an SMS, e-mail, or they write directly into the blog. The blog may trigger an event ("let's go to a movie"), with the immediate action of reserving a ticket or seat. The movie trailer is shared online, and is commented upon via mobiles, while the online presence information supports the user experience ("Jeff is abroad in Switzerland"). And, when the fun is over, users may call each other in the evening, while each of them is connected to a mobile or fixed-line phone, or a PC…

The largest convergent battlefield is the home's digital ecosystem. Many homes already have broadband internet (via traditional copper connections, or fibre-to-the-home). Small digital systems, such as alarm and house-automation panels, as well as digital media storage and sharing devices are connected to each other and to the internet. The TV is connected to the network, allowing remote programming while not at home. Recorded programmes are accessed on the mobile, or digital programmes are shared between community users. It is possible to produce printouts from any place in the home system. Fixed (or VoIP) telephony is accessible from any device, regardless of whether they use telephone hardware or something else. Each device shares the same wireless connections, while security is fully guaranteed.

This broad survey of telecommunications convergences has at the same time pointed, I believe, to the wider context of a cultural convergence. When the humanities scholar is totally immersed in a medium that is both created, and of course also exploited, by the engineer, the idea of C. P. Snow's "two cultures" must be seen as an idea that has become entirely irrelevant. We inhabit, all of us, a great variety of subcultures. But it seems that today the overriding culture, the one we are ultimately at home in, is one created by technology: the technology of telecommunications convergence.