

Summary Thesis 'the architecture of a cyberculture'

Investigating the Interface to Interreality

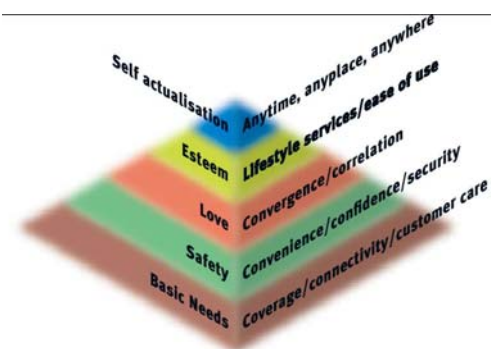


The Internet, the PC and mobile phones have made dramatic changes to society during the past 25 years. Is the way new ICT technologies are launched really changed during this period? How adaptive are interfaces between user and system? Today, we struggle with the same fundamental concerns as researchers Nora and Minc ^{a)} did in 1978: how can we use this technology to bring about positive changes in our society and economy with a minimal negative impact? Since the early 1990s many governments all over the world, including the Dutch, have initiated discussions, debates and reports about the use of advanced means of communication, information and network technologies. This dissertation examines the underlying developments in society and technology, the questions and suppositions that have arisen along the way, and the various studies that are being carried out worldwide.

Men use tools to help themselves and each other. Specific tools, in case communication media, are used to contact each other, to remote communicate and to trade interactive. There are a lot of people on earth, so there is a lot to talk and deal. In 2004, worldwide around 1,4 milliard users of a mobile phone, of which 100 with a camera and 236 million for data transfer. [IDG] More than 300 million of those 1,4 milliard are in Europe, almost 29 million in Russia and more than 200 million users in East Asia. They send daily each other 1 billion SMS-messages. In 2004, more than 700 million people use Internet, of which 233 million in Europe, 178 million in USA en 173 million in Asia. [eMarketer, IDG, Jupiter R] In Europe, 83% of the kids and 37% of the adults is on-line. Together, they use 70% of the Internet traffic [eMarketer]. In 2004, the e-economy expects to reach a turn over of € 1.1 to 4 trillion. [Gartner, Forrester] Those e- and m-commerce summit the balance with approximately € 113 billion wireless.[Visa-Boston Cons] Of that result, 4,1 billion Euros go to the pickpockets of the 'adult content industry' [Datamonitor] and € 55 million to the exploiters of 67.611 WiFi hotspots. [ABI] The active network components like routers, switches, servers, basis stations, are good for € 525 billion. [Synergy] So, Cyberworld isn't a depressed developing country.

Networks and computers support and replace information processes of both man and machine, without much ethical objection. Developers, technicians and entrepreneurs do not ask themselves if something is possible, but how it can be made possible. The conceived applications are so promising and can be so usefully incorporated into the daily life of people that cyberisation is unavoidable. On the one hand, these developments will require an

improved form of management of existing networks, particularly with regard to the contact from device to device (m2m). Self-organising and disruptive networks are being realised which take over and combine the management of fixed, wireless and ad hoc networks. On the other hand, an integral worldwide standard will have to be developed for the physically connected networks enabling the physical networks to keep communicating with the environment and be context aware during a business trip or on holiday.



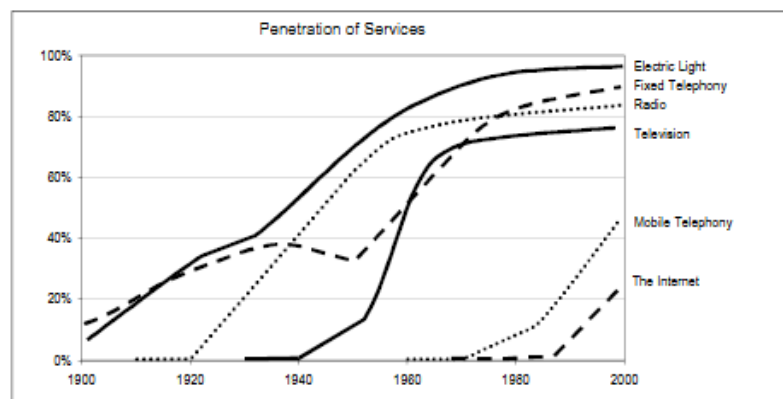
^{a)} L'Information de la Société, 1978, ISBN 2110001577

And this is only the beginning of a bio-revolution in the knowledge society.

My interviews and desk research findings show that the acceptance of a communication tool (by its user interface) mainly lies in the way in which a community uses this tool to exchange information as well as in the experiences and assessments of the members of the community to which the user belongs. Differences in gender and age (group) when using these tools also play a significant role as well as the possibility to switch seamlessly between both worlds. And last but not least the price/performance ratio of the offered services/products. Much less attention is paid by both industry and science to the triangle between users, the group(s) in which they (physically or virtually) participate and the technical communication tools (user interface, network and communication systems). Hardly any attention is paid to the transparent way in which these tools are used in and between the physical and virtual worlds, such as the emergence of personal parallel networks in both worlds and the resulting total hybrid experience. Although there are flaws and indistinctnesses in the so-called virtual world, new ways of making contact and new communication channels have developed, such as SMS. These (im)possibilities and the technical characteristics of a modern communication networks as the Internet enable people, in combination with wireless communication systems, to (anonymously) move around in a virtual society and there by have changing identities, relationships, transactions and habits. Thanks to technologies as the Internet and mobile telephony, there is innovation not only in the contact and channel, but also in unexpected and unintentional new ways of talking, lurking and communicating has developed. This takes place in one-on-one relationships as well as inside and outside groups, although technology in this area does not match up the required functionality (behaviour) of group communications. New forms of anonymity and dissociation (assuming multiple personalities) are cultivated in this virtual society and they lead to different behaviour patterns. Much attention is paid to this phenomenon from a sociological viewpoint in the academic world but less from other single and multi disciplinary research programmes.

Factors such as communication speed, time (as moment of action), identity and short service life of products and services play an important role in the daily life of the average person. They are even more important – or better: self-evident – for the ‘Born Digital: the early-adopting, hyper connected, always on: Children of the Revolution’ (Wired, 2002), the generation that has grown up and therefore accept the speed of communication, firm reaction deadlines, and trends and hypes that influence their identities. The younger world citizens are living in the midst of this tidal wave of innovations. Conceived in synergy and planned time, born with their own mobile phone as a musical box and parent alarm in their cradle. Playing in their playpens with a play station as a box of building blocks and sop. They grow up with the Internet as an encyclopaedia, with MTV as moving wallpaper, with the filled refrigerator as a source of energy and are provided with pocket money that exceeds the child allowance.

Digicam for the on-line photo album, Playback show in kindergarten, PowerPoint in primary school and Personal Exposure in high school. Young people experience progress and innovation faster (counting steps 1, 3, 6, 10 instead of 1 through 10), read faster (teasers and buzzwords) and write faster (all dead weigh in language is left out: 'cu l8r' = see you later).

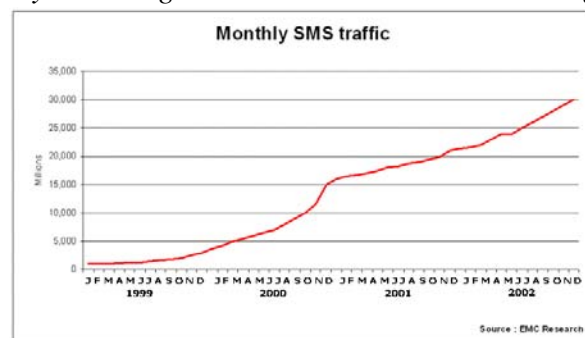


Source: US Bureau of Census (1996)

After all, improvements in communication manifestations take time and then you lag behind in following the continuing process. This next generation thinks fuzzy logical, talks digital, writes HTML, communicates via MSN and SMS, and enters the labour market now. As employees they set up their own on-line contact centre at the workplace, expect the terms of employment to be based on the cafeteria model and use benchmarks as output. They do not live simultaneous but hybridised in both worlds.

New technological tools enable people to communicate in many ways and, if so desired, to break away from gender, looks, origin, culture and prosperity. New ways of communication result in different relationships, both individually and in groups. In companies new relational contacts lead to other ways of working (together) of organising knowledge transfer and exchange of experiences. Likewise transactions change, for example delivery without money being paid physically or by giro (e-banking). In the current physical world all this leads to a different, partly parallel society with different organisations languages, personalities and forms of expression. The regular society has a hard time with this virtual society as shown by incidents, in which the language as means of communications attracts the most attention.

The 'make ability' of people, initially in the form of adornment using clothing and colour, followed in the 20th century by the use of cosmetics, all kinds of lenses, orthodontics, plastic surgery and photomontages, has boomed in the (multi) media and computer technologies. Voices are adapted to people's wishes using Digital Sound Processing & sample technologies. Musical compositions are turned into popular 'easy listening' with notation programs in the computer. Faces are made uniform and attractive to the public using morphing technologies. Images of people captured by means of digital cameras are fashioned into the personalities that at that time get the highest ratings. You can transform yourself into this idol's clone in order to increase your acceptance in cyberworld, for example like the pop star Madonna who cleverly uses the media to get more attention and fans. These technologies are within reach of the general public and particularly the youngest generation is increasingly using them to 'position' their actual and/or desired image of the Young people communicate much more than older people in images. You do not have to learn image language. Interactive television stations such as TMF use technologies that firmly link images and sounds so that the message is transferred multimedially. With the aid of computer design refined photo drawings are on the rise containing the face of a popular person (the hero or idol as role model) but with a body that meets specific fantasies (the celebrity) usually combined with an imaginary world as backdrop'mselves. Manipulation of-to-day starts primary in the medium, not anymore in the mind.



*With the Internet time zones have fallen away and space has become a relative concept. It meant a change in direction in communications and has led to an acceleration of message traffic. The related technologies, such as wireless telephony, enable man to move not only his belongings, but also his contacts and to continue his or her life somewhere else as if nothing has changed. Wireless networks and hotspots are advancing. Internet can now be accessed almost anytime and anywhere. Plug & play has become a dimension of time and space. Up to now man has usually adjusted to this technology by learning how to operate the various buttons and how to deal with all those weird phenomena (having to push the **off** button to switch something **on**). Each time someone replaces (the control of) an electronic device or equipment a new learning path has to be travelled. Before we realise it, we will have a fruit*

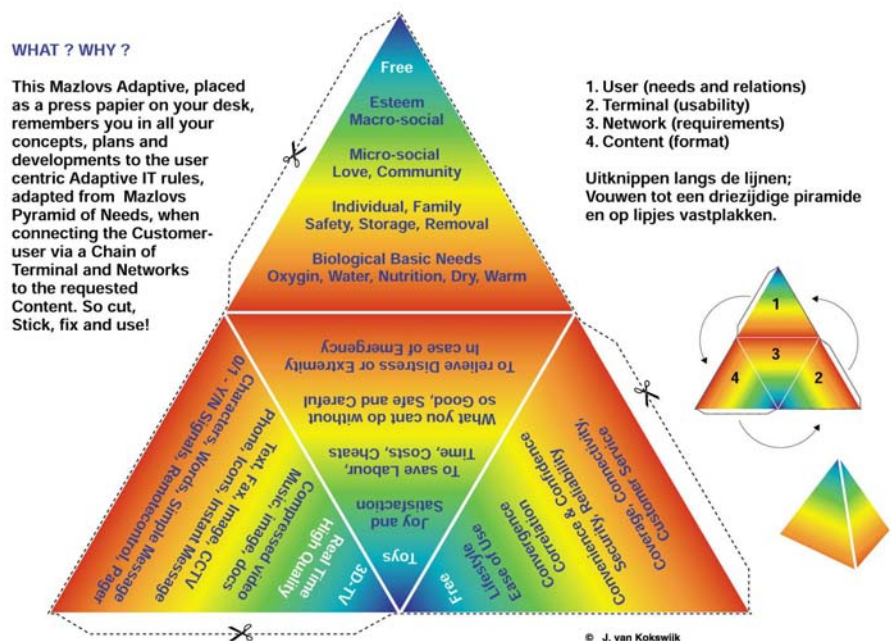
basket full of wireless devices to regulate our lives. In this area users and government are undergoing a broad social change. 'User in the driving seat' is the theme of the European Commission as a reaction to the buyers' strike among consumers. After the pressure to realise new services, all research programmes will be pointed.

It is vitally important to understand the real needs of subscriber with respect to new generation communication networks. More is needed than the instant chat and messaging functionality of the wireless Internet. Devices must better match user habits and expectations. The interface between user and the device should have some kind of empathy, intuition, context awareness, or recognition of emotions. This is not self-evident. Most interfaces are designed on the basis of cognition and perception. In view of the number of studies in this area that have been initiated since 1999 the European industry needs clarity about the needs and expectations of 'the' end user, if there is one. Attention is primarily paid to the interface between man and technology. Both mobile and Internet penetrations are now on the exponential portion of the classic "S" demand curve illustrated in the figure beside, and new services will not be Internet-based - they will be truly unique mobility services. So the new devices should be enabling this mobility.

But how should you design an interface? In any case not primarily from perception and cognition, but mainly on the basis of (group) patterns of people, so that the interface 'recognises' the human behaviour. Such a recognition goes hand in hand with the identification and detection of needs. Many new needs arise from events. Based on the concept that each person has his own course of life, subsequent life stages and varying life styles it seems obvious that a connection can be made with generalisable personal events and the ensuing predictable needs. The motivation to use technology for a needs seems to have a relationship with the importance to people of using technology. By analogy to Maslow's hierarchy of needs you could, after all, also evaluate the need for technology (read: technical aid). In this context the Maslow hierarchy consists of five similar layers (from bottom to top): biological needs, safety/security, social needs, esteem and experience.

Justly so, as it turns out: according to one of these studies the design of the control of the device determined the social impact of the mobile phone. In addition, the relationship of the (end) user with his social environment and be context aware, and the way in which the wireless Internet supports the social life, plays a role as well.

This is also the theme of my evaluation model for telecom services: better coordination between the offered services and products and (the personal needs of) the user(s) by back casting the needs and redesign the developing process backwards, fulfilling need to suitable technology. Getting a comfortable way of living in this world full information and communication implicates a better understanding of personal needs!



Resuming, the primary bullets:

- **What is new?**

We are familiar with the message (content) and the medium as the message (see McLuhan), but when we ponder what is going on in the virtual world, there is also the time of receipt/-taking note of the message (messenger). Manipulation of-to-day starts primary in the medium, not anymore in the mind. Also new is the transparent way in which Internet and these technie tools are used in and between the physical and virtual worlds, such as the emergence of personal parallel networks in both worlds and the resulting total hybrid experience.

- **What is the importance of this information for me as reader?**

From the knowledge that cyberworld, using wireless means of communication, is developing into a fourth dimension of the existing world, instead of into a new foreign world (as 25+ usually see it) ensues that this fourth dimension must be incorporated as such into the company mission, organisation, processes and procedures in order to come to a 21st century business management.

- **What impact does it have on business in the coming years?**

Cyberworld will quickly change the regular business; the triad in consumer segments will be accompanied by a quick consumer turnover, particularly in the segments 25- and 55+ in Europe, in the developing 3rd world countries, and in the booming far east; if businesses do not react to this with an adapted products/services range those client groups disappear for the time being.

- **How can I anticipate it?**

By incorporating cyber communication as such (with the attendant generation of young people, customers and employees) into the company or institute mission, organisation, processes and procedures (including assortment and marketing); cyber is not weird but regular.

- **Which practical tools can I use to this end?**

The provided evaluation model for telecom services will help marketers, salesmen and CEOs (with the decision) to offer the services/products in the right mix; furthermore, it is necessary to exchange knowledge and vision (on an equal basis) between the generations 25- and 25+.

- **How do we manage new networks?**

New networks are disruptive and become self-organising; peer-to-peer and ad hoc networks are integrated in collaborating networks; the jobs of IT, telecom and data managers will disappear;

- **And how do we as researchers approach the cyber kids?**

By learning to think along in counting faster, in following multiple thought scenarios and in selecting by ignoring information; by paying attention to the influence of opinion leaders in the tribes; cyber kids are native cyber-inhabitants and must be approached as adults who in a way were born with cyber; the proved concept of explaining, developing and evaluation has changed.

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Jacob van Kokswijk, LLb, MSc IT, PhD, (1949) is a communications expert, a part-time ICT consultant with Cap Gemini Ernst & Young and a sought-after speaker on IT, telecommunications and CRM conferences. He is also associated with the Fontys University as an imagineer for ICT and education, like virtual classroom. In addition Van Kokswijk had carried out his doctoral research at the University of Twente into the Architecture of the Cyberworld. Before, he has followed several academic courses in Dutch constitutional law, communications, marketing, scientific journalism, and informatics. Jacob is member of the *Next Generation Networks Initiative* and was leader of EU's IST Fp5 Mobile User Requirements Workpack. Furthermore he is author, editor and columnist of several magazines, like *Telecommagazine* and *Management & Information*.

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