

# Mobile Communication: The Misunderstood User

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## *Abstract*

*With more than 2 billion users in the world, mobile communication has become a global phenomenon. Growing integration with traditional and new media transformed the traditional mobile device into a small multimedia computer. However, while institutions consider converging technologies as the enabler of an Information Society for All, in which user-citizens self-organize, produce and share knowledge, enterprises still develop services only from the consumer perspective. The two attitudes are based on different user conceptualizations; mass media reflect the general orientation towards ICT users and context of use of wireless applications. Therefore, we analyzed 83 articles published by the online editions of the leading Italian and Finnish newspapers. Our results show that there are no significant differences between Finnish and Italian stories, showing positive and negative trends.*

## **1. Introduction**

In the last decades, digital revolution has re-shaped society, leading to the establishment of an advanced service-based Information Society, which has replaced habits and processes born with the industrial revolution. Computers have been crucial in this transformation: in the early days access to computers was confined to skilled and competent users, and its use was mainly confined to the workplace. In order to communicate with the machine, it was necessary to speak its low-level cryptic language. Technological development brought computers outside the workplace, making them necessary for many everyday tasks. This trend has become much stronger with the diffusion of information and communication technologies (ICT), in particular the Internet and mobile phones, which have now converged into a universal global medium, integrating traditional and new media.

The possibility of commercial exploitation of the transition from an Industrial to an Information society asked for easier user interfaces, which could be used by non-expert users for their everyday tasks, including, among others, learning, entertainment, socialization and home productivity. Both academic research and enterprises have answered to this call, providing new paradigms, programming languages, operating systems and procedures developed taking into account human needs and established practices of communication and interaction. The shift from command-line operating systems to visual environments based on the desktop paradigm is a great example of user-centered design.

In the Eighties, Donald Norman introduced techniques and principles of “*bad and good design*” in everyday life [10], leading to the emergence of user-centered design.

Although the paradigm has made great advances since then, the user conceptualization adopted by enterprises in service development takes into account mainly mere consumer aspects. This shortcoming is witnessed by a number of applications which do not fit to real needs or interaction practices, leading to under use of services [5]. The mobile industry provides many examples of great market expectations and poor achievements, such as Wireless Application Protocol (Wap), Multimedia messaging system (Mms) and video-calls, which have not replaced established practices with “older” technology, like text messaging and audio calls. New inventions can lead to better services, but technological advance, by itself, is not a reason to release new applications. It seems quite a paradox that while many new services do not meet the industry expectations, there is a great demand for improvement of existing services and realization of new ones addressing global challenges, like population aging and environmental concerns. Finding even partial solutions to any of these problems require huge investments in research projects, and years of experimentation. Cooperation between public and private sector is necessary, but so far has been too limited to have a real impact on societies. On the contrary, enterprises have chosen to follow the rules of the global market, which demands perpetual economical growth, leading to a consumer-oriented service development and promotion. In other words, although user-centered design is now an established paradigm, the user is often associated only to a profile indicating how profitable he is to the company.

By suggesting a more complete user conceptualization, we aim at reaching a convergence of views on the user role between public and private sector; in this way it should be possible to support at the same time societal and economical development. At European level, the proposed conceptualization aims to the realization of an Information Society for all, where active citizens contribute at any age to its development benefiting of tools to self-organize and innovate by producing and sharing knowledge.

## **2. Data and Methods**

This article focuses on mobile communication and users as described by media. Being ubiquitous, personal and social, mobile devices represent the best possible choice to observe the social impact of the media convergence process and to analyze users’ needs, behavior and social interactions in everyday life. As the cultural dimension plays an important role, we decided to collect data from the online version of “La Repubblica” and “Helsingin Sanomat”, the most popular newspapers in Italy and Finland, two EU member states with very high penetration of mobile devices and different cultural backgrounds. We browsed the online archives of the newspapers searching for articles where mobile communication had a central role. However, as the boundary between phone, television, Internet and radio is blurring, we have often considered as relevant stories where mobile communication represents only one essential aspect of an integrated communication environment. For instance, many Internet bloggers would not be able to publish significant contributions without mobile phones.

Our search was restricted to a period of four months (September-December 2006). The huge number of online articles was reduced to a subset by filtering the archive

with a set of keywords connected to our search. In this way, we obtained around 130 articles, which were then manually filtered, leading to the main corpus to analyze; all together, 83 articles were considered relevant, 18 from the Finnish newspaper and the remaining from the Italian one. The ubiquity of mobile communication in everyday life is clear when considering the topics: 21 (32%) with science and technology, 18 (28%) with chronicles, 9 (14%) dealt with economics, 4 (6%) with politics and 2 (3%) with ecology and environment. Moreover, 6 (9%) articles were included in the entertainment and 5 (8%) in the cultural section.

Our investigation was focused on three main topics: firstly, we tried to identify who were the users described in the story. In many cases, we identified more than one main actor. In addition, we classified them according to the role played in the article (car driver, student, worker, consumer...). The resulting categories are partially overlapping and highlight what seems more interesting for the media to describe. Secondly, we concentrated on the user goal or task to perform. This was not always clearly described in the articles, so we had to interpret the author's point of view. Finally, we linked user goals and ICT use, making use of the classification presented in the next section. A final note concerning the quotations reported in the results: as the original versions of the articles were written in Italian and Finnish, the English text fragments reported there are free translations from the original texts.

### **3. The multifaceted ICT user**

Existing user conceptualizations are either based on individual or social cognitive models [9,15] or tailored to marketing needs [16]. Both approaches are valid, but they capture only one of the several facets of the user. In this article, we aim at a unified user conceptualization, which has its roots on the concept of capital. This approach might result useful for policy makers, enterprises and researchers aiming at understanding ICT use from the perspective of user needs and developing for societal development.

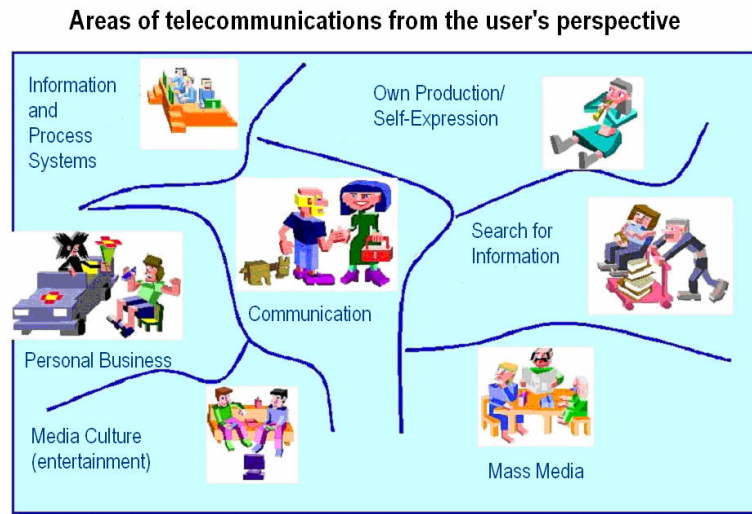
Each individual is a valuable resource for the society, but represents also a cost, which has its peak during youth and in retirement age. Such investment, usually done by institutions, but also by private sector, is paid back by citizens during working years with their labor and voluntary contributions to the development of the society, especially at level of local community. Of course, different positions in society contribute differently to its economical, social and cultural development; nonetheless, they are all equally important. Today, there are less evident differences between male and female contributions, but once the former had an influence on public life, while the latter took care of home management and raising children.

As members of a society represent its capital, it is useful to refer to the original concept of capital, introduced by philosopher and economical thinker Karl Marx in the Nineteenth century [8]. In his conceptualization, capital is part of the surplus value captured by capitalists or the bourgeoisie, who control production means. Workers are paid for their labor with a salary allowing them to purchase commodities to sustain their lives. However, such products are sold in the consumption market at a higher price. Therefore, capitalists make investments in the production and circulation of commodities and expect a return from the marketplace. The concept of capital has been used later in other contexts, but basically it represents an investment with

expected returns. For example, human capital [1] is an investment in education, which provides competences and skills useful in the labor market. In a similar way, social capital [2,3,12,13] is an investment in social relations with expectation of reciprocity from trusted contacts. Sometimes, people share goods and labor with others without expecting anything in return (*generalized reciprocity*). However, the sense of satisfaction and the social closeness that this gift fosters makes this interaction reciprocal. In other cases, people informally agree on an exchange of goods or labor (*balanced or symmetrical reciprocity*). The expectation that the giver will be repaid is based on trust and social consequences, such as sanctions and difficulty of obtaining similar favors in the future.

Considering the nature of the different forms of capital, it is worth to observe that while Marxist capital produces benefits only for the dominant class, human and social capital can be considered both private and public goods, producing benefits to the society in direct or indirect way. All forms of capital are equally important, but in order to develop a sustainable Information Society, providing equal opportunities to its citizens, special emphases should go to the promotion of human and social capital. In this context, policy makers and enterprises are equally important: the former should educate citizens by raising awareness on opportunities and risks presented by new technologies, the latter by supporting Information Society policies and aiming at sustainable development by realizing a more human globalization.

A starting point could be represented by adopting a user conceptualization which fits to public and private points of view. An important contribution in this direction comes from the framework proposed by Viherä et al. [11,17]. With the ultimate goal of building a network-based civil society, it was analyzed the use of ICT from the user needs perspective on the basis of years of experience in a telecommunication company. According to their findings, ICT use could be divided into seven main areas: Communication, Own production/Self-expression, Search for Information, Personal Business, Information and Process Systems, Mass Media and Media Culture.



Sonera/Information Society Unit - Manninen, Viherä, Viukari

*Fig. 1: User needs and ICT use*

This classification, suitable also for enterprises, naturally includes the concept of user-consumer, but it does not forget the multiple facets of the modern citizen of the Information Society. In particular, it highlights the importance of social capital by placing communication as central need and of human capital by leaving place to people’s learning (Search for Information), creativity (Own Production/Self-expression) and desire for good entertainment (Media Culture, Mass Media), which promotes the diffusion of digital culture. In our analysis, we will adopt this classification to understand the orientation of the society by looking at which facets of the user are more discussed by media, reflecting available services and products.

#### 4. Results

##### 4.1 Mobile Users’ Attitudes and Practices in the Italian Media

A socio-semiotic investigation of meaning and practices associated to mobile uses in Italy has been already conducted by Gianfranco Marrone in the early years of mobile telephony [7]. Although the mobile device analyzed by the author was simple and used as wireless version of the landline phone, it was highlighted the double nature of the device, helping the user in some cases or acting in opposition to him. Actually, this finding simply reflects the nature of the human being; from this perspective, technological tools are like weapons, to be used with special care.

Stories of everyday mobile communication found in the Italian corpus show that modern devices, being very powerful, have worsened existing social problems, but also opened great opportunities for business and better quality of life. All together, there were 18 different kinds of users involved in stories of mobile communication. The most popular ones are summarized in Fig.2.

<i>User typology</i>	<i>Articles (%)</i>	<i>Articles Topic</i>
Student	10 (15.4%)	Chronicle
Blogger / Web Surfer	7 (10.7%)	Science and Technology
Consumer	5 (7.7%)	Entertainment
Client / Customer	4 (6.1%)	Economics / Chronicle
Car driver / Train passenger	4 (6.1%)	Science and Technology
Citizen	4 (6.1%)	Politics
Hacker / Cracker	3 (4.6%)	Science and Technology

Fig.2: Most popular types of users and frequency of appearance in the Italian corpus

Surprisingly, students were the main actors in 15% of the articles, usually describing chronicles of school violence, sexual abuses or exhibitionism, which spread around the country thanks to the custom of recording clips with the mobile phone and sharing videos online.

[1] “(Ancona) *Using video-phones (students) filmed violence on a 13-year old girl and sent the images to their friends, celebrating their bullying*” (Repubblica.it, 17.11.2006)

[2] “(Napoli) *Five schoolmates have raped her in a park. A sixth person arrived during the violence, took out his mobile phone and filmed the scene.*” (Repubblica.it, 18.12.2006)

Although mobile devices are not the responsible of such crimes, the discussion is now about banning mobile phones from schools. Obviously, this decision will not improve the situation without additional actions oriented to create certain values in young generations. Instead of promoting a culture of suspect and prohibition, it should be created a society based on trust, respect and mutual understanding. Fortunately, students were also mentioned for their contribution as young innovators in the field of information and communication technology. Every year, the best project is given an award by the Nokia University Program. In 2006, more than one thousand students participated.

[3] “(Roma) *Three students of the University of Pescara invented the holographic mobile phone, which is capable of displaying images, presentations and videos in 3D. [...] Their project in a few years could have a commercial development.*” (Repubblica.it, 1.11.2006)

The last example shows that investing in human capital, in this case represented by young university talents, can lead to important innovations. When public and private sector cooperate in a similar manner, together with citizens, advances in the development of the Information Society are possible.

[4] “(Roma) *Mobile operators have to stop it. Today a kid has to pay 10 euros for 8 euros of actual phone traffic. This mechanism cannot be accepted and has to be eliminated, says Pierluigi Bersani, minister of economical development.*” (Repubblica.it, 10.12.2006)

Another important achievement originating from citizens initiatives and spreading via techno-social networks is the abolition of one tax, existing only in Italy, demanding customers to pay a fee for each recharge of their prepaid mobile subscriptions. A young citizen, Andrea D’Ambra, gathered almost 1 million signatures and sent them to the European Commission. Political discussion followed and finally in April 2007 the tax ceased to exist. This result would have not been possible without modern technologies; Mr D’Ambra, as many other active users, shows that self-organized individuals can and should have an impact on the development of the Information Society. Their essential role has been acknowledged by American media, which has often reported creative uses of ICT, in particular concerning the activity of bloggers and the Web2.0 phenomenon. For this reason, Time magazine has elected the ICT user as “*person of the year 2006*”. According to Time’s editorialist Lev Grossman, this is “*an opportunity to build a new kind of international understanding, not politician to politician, great man to great man, but citizen to citizen, person to person*” [4].

Unfortunately, although the importance of the active user has been recognized, it seems to remain confined a small segment of the population. As matter of fact, commercial offers and advertising proposed by mass media do not match with this

trend, creating in some cases distrust between citizens, enterprises and institutions, rather than supporting awareness and encouraging collaboration.

[5] *“(Bergamo) A thirty year old person will have to pay a 50 thousands bill for three movies downloaded online through a mobile connection. The user was connected for hours to the Internet, certain of having purchased a mobile flat-rate contract with his operator. On the contrary, the contract allowed 600 megabytes of monthly traffic at the fixed cost of 35 euros. Every extra downloaded kilobyte would be charged 0,2 cents.”* (Repubblica.it, 19.12.2006)

## 4.2 Mobile Users’ Attitudes and Practices in the Finnish Media

In the Finnish corpus, there were 23 different types of users involved in stories of mobile communication in total 18 articles. The most common ones are described in Fig.3, which also reports how many times they were mentioned and the most common topic linked to their profile.

<i>User typology</i>	<i>Articles (%)</i>	<i>Articles Topic</i>
Citizen	3	
Client / Customer	3	
Consumer	3	
Special groups <sup>1</sup>	3	
Criminal	4	
Selective consumer	3	

*Fig.3: Most popular types of users and frequency of appearance in the Finnish corpus*

Typically, mobile users were described neutrally as client, customer or consumer, with an implicit reference to the idea that users are seen only as money source. This type of thinking reflects a superficial view of users, who are described as one big homogeneous group of individuals, without different needs, wishes, capabilities or other distinctive features. This orientation towards a ‘faceless’ user was found in 39% of the sample articles. In 11 articles (61%) authors clearly describe the positive or negative user attitude and behavior towards mobile technologies.

[6] *“Finns have got fake bills via SMS. [...] Tricksters have sent fake bills to mobile phone users. [...] They have marked mobile services or other general reason as subject of bills.”* (Helsingin Sanomat, 5.9.2007)

[7] *“SMS loan is senseless expensive money. [...] Consumer authorities are worried about peoples’ ability to understand how expensive loan SMS loans really are. [...] In practice clients are unable to understand real interest because amounts are small and credit times are typically two weeks”.* (Helsingin Sanomat, 13.9.2007)

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<sup>1</sup> People who are unable to communicate in Finnish language, such as deaf, mute or foreigners.

[8] *“Mobile phone is harmless or is it? [...] Consumers are worried of mobile phones radiance. [...] Studies don’t show any marks that radiance could be harmful but worried consumers are advised to use hands-free.”* (Helsingin Sanomat 1.11.2006)

The selected article fragments clearly show users’ attitude: in almost every article one can find them as victim or guilty of some actions. For example, in the case of SMS loans, people are seen unable to make their own decisions. In a similar way, in the fake bills fraud, users are described as easy to cheat. On the contrary, mobile users who are concerned of radiances are advised to use hands-free systems, although studies are quite reassuring. All in all, users are described in a quite negative way, judged as incompatible to do reasonable decisions and to be patronized.

[9] *“An online video shows a guardian hit man lying on ground. Video was recorded by a mobile phone and uploaded to Internet by an outsider in secret and it clearly showed maltreatment. Police used it as evidence.”* (Helsingin Sanomat, 15.11.2006)

People are still unaware of their rights or what is suitable to do. In this case, the video clip helped the investigation of the case. However, this does not justify the secret recording and upload of the video to the Internet. There is an urgent need for clear rules about video recording in public places and suitability to share them online. The article does not tell if the person who recorded the video got any punishment for having shared the clip online without any permission.

[10] *“Consuming service betrays background of products. [...] Ecological and ethical consuming is difficult. [...] A new service is under development to help selective consumers. [...] According to line code, consumers can order products information to their cell phone.”* (Helsingin Sanomat, 20.9.2006)

In the last example, it has been developed a new service, accessible to mobile phones, for those consumers who want to check the background of products they are going to purchase; in particular, users are concerned about ecological and ethical product information. Volunteers collect information in public databases, so knowledge can be shared and spread via word of mouth. This is a good example of how technology can support social innovations and create a sustainable society, where users can self-organize, taking an active role in content creation and promotion.

## **5. Discussion**

The articles show that digital convergence is mature and its social consequences are already happening. For sure, this process can be the enabler of a more democratic Information Society only if its potential is realized finding proper solutions to the major challenges, which are human, not technical. This requires a deeper understanding of end users needs, goals and practices; such knowledge should be utilized by policy makers, enterprises, organizations and community members to fix problems, optimize processes and more generally to increase quality of life and social cohesion in spirit of collaboration and reciprocal support. The scenario we describe is

not impossible, but the articles we analyzed show some positive and negative trends, independent of cultural context, but highly sensitive to the typology of users and context of ICT use.

One of the aims of the analysis was to link stories described in articles to user needs and practices; for this purpose, each selected article has been assigned one the seven areas of ICT use described earlier (Fig.2). The suggested grouping is probably not the most suitable, as each story has several components; however, Fig.4 shows that utilization of mobile devices as tools of communication is now perceived as something natural, therefore not of great interest for the media. This is in contrast with articles analyzed by Marrone in the late Nineties [7], where the novelty of the mobile phone was worth to describe in a variety of situations which today seem ordinary. On the contrary, both Italian and Finnish stories pay attention to combination of different technologies, like Internet and mobile phones, which leads to new applications or social trends. In this context, the discussion is often connected to ethical questions and legal issues.

<i>Areas of ICT Use</i>	<i>Quotation ID</i>
Communication	
Information and Process Systems	[4], [7]
Personal or Company Business	[6]
Media Culture (entertainment)	[5]
Search for Information	[10]
Mass Media	[8]
Own Production / Self-expression	[1], [2], [3], [9]

*Fig.4: Articles and User needs*

In order to open a positive cycle of use of converging technologies two steps are necessary: firstly, identify reasons of misunderstanding and then suggest possible directions to improve the current situation and reach mutual support among all stakeholders. Thus, we take into account three different levels of analysis: misunderstanding between user and direct acquaintances, such as co-workers, friends and family or community members, with institutions and with enterprises.

The basic reason for misunderstanding between users is generally lack of trust and communication, which are also the most important mechanisms of social capital [14]. In an open and trustful environment cooperation flourishes and negative practices are discouraged because one feels appreciated and helped in case of need. Tasks are performed efficiently, making use of problem solving skills and own competences, which include the ability of finding the right source of information and the most appropriate way of using a tool, which acts as a support to the current user activity. According to Viherä [18], communication capabilities are the most important requirement for citizens to have an active role in the Information Society; communication capability has three basic ingredients: motivation, access, and skills (Mas model). So far, public and private sector have achieved great results in building the technological infrastructure and make it available at low cost to citizens (access). In the same way, institutions have promoted lifelong learning paradigm and increased ICT literacy with many initiatives, but there is still a gap of competencies between different generations (skills). Concerning the third important component, motivation, too little has been done, leaving to choice to individual initiative and judgment.

Therefore, mobile culture, which is part of digital culture, should be promoted at all levels by policy makers, with bottom-up and top-down actions and initiatives.

If institutions are likely to contribute towards that direction, enterprises seem not be less sensitive to this problem, especially if we look at the way they describe users' needs and motives in their advertisement campaigns or how they treat customers' personal data. As they have already done massive investments in realizing the technological infrastructure, now global competition demands quick returns. Therefore, mobile operators, device manufacturers, media companies and content aggregators, instead of looking for dialogue with all other stakeholders, are establishing exclusive partnerships, aiming at the control of global market, which is a huge opportunity for economical growth. It follows that their customers are judged only from their consumer habits and preferences; there is no interest in their transformation into evolved customers, who are also more demanding. Even the grassroots innovation of the Social Web, or Web2.0, has not changed radically the way users are considered. As matter of fact, most Web2.0 users are not aware of the value of their data, such as comments and feedback that, implicitly or explicitly, they supply to a service provider. They have become co-creators and co-developers without being paid for that. Actually, the form of payment is the utilization of an advanced application for free, but advanced features are often available only upon monthly subscription to the service. Actually, this model is not so different from the one described by Marx, although it has a much more democratic dress.

An important shift could follow from a change of perspective: users, of any type, should be seen as the capital of the Information Society. Its social, human, cultural and economic dimensions should be all taken into account when discussing a law, designing a service or integrating new technology into an existing practice. In this way, the core of capitalism would not be affected, as enterprises would still aim at economical growth, but at the same time they would act, together with institutions and self-organized active citizens, to the realization of a sustainable civil society [6]. The main actions which should be performed include re-thinking product and service development, including the user in the value chain (enterprises), promoting digital culture at all levels (institutions) and shifting from a society based on suspect and repression to one based on trust and mutual support.

## **6. Conclusions**

In this article, we investigated how the user of converging technologies is perceived by Italian and Finnish media. By using this approach, we have been able to show current practices of ICT use, which allowed a general discussion about user goals and motives. Several typologies of users and context of use were described: in particular, it has been observed that both positive and negative trends are described by Italian and Finnish media, reflecting the dual nature of the mobile device, which matches the orientation of the human nature. The realization of a sustainable civil society depends much on how enterprises and institutions will be able to cooperate, making converging and ubiquitous technologies not only a profitable business, but also a tool to allow citizens to participate and contribute to the development of the Information Society. However, agreement on the user role remains one of the main challenges; so far, enterprises and institutions have adopted two different user conceptualizations:

the former, using models derived from marketing, consider customers mainly for their consumer habits, while the latter has adopted human and social capital indicators to monitor well-being and development of the Information Society for All. It is time for a unified view of the ICT user allowing dialogue and cooperation between public and private sector. The user has been and will always be a value for the whole society: the greater is the investment in human, social and cultural capital, and the higher returns will be for the investors. The utilization of a framework based on user needs and practices, together with the different capital concepts, should be a starting point to build a new user conceptualization, realizing the convergence of interests, which is far most important and difficult than the technical one.

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