Mobile Phone Privacy Issues

Călin Gurău
Montpellier Business School, France

INTRODUCTION

Mobile phones have become a normal feature of our social life. People use them in institutions, on the street, in buses or trains, in restaurants, and even while driving, although in many countries this is a forbidden practice. The ringing of a mobile phone has become a familiar sound, and people have grown accustomed to witnessing loud-voice telephone conversations. However, not everybody is happy about this additional noise, which can be considered as an invasion of the personal privacy (Monk, Carroll, Parker, & Blythe, 2004).

On the other hand, the new generations of mobile phones started to incorporate advanced computing and communication facilities, such as location-tracking or position-aware applications, which can be used by mobile phone companies, relatives and friends, or third parties to identify the specific location of a mobile phone user (Broache, 2006). With the introduction of SMS and mobile Web browsers, the phenomenon of spam has also infected mobile phones. A new generation of hackers started to attack mobile devices, creating specific viruses. Recently, a company called Vervata announced the development of the first spyware for mobile phones—FlexiSPY—which is "absolutely undetectable by the user," and which can be used to monitor the SMS messages that are sent and received, or to record the duration and the history of these calls. The data captured is then sent to Vervata's servers, being accessible to customers via a special Web site (Evers, 2006). In some cases, governments have considered the possibility to register and analyze mobile phone conversations in order to track down and prevent harmful activities such as terrorism (Lettice, 2003; Richtel, 2005). All these issues raise important concerns regarding the personal privacy of the mobile phone users.

This article presents an overview of the main privacy problems raised by mobile phones, both for their users and for society in general, and analyzes a series of solutions for reducing their negative impact. After discussing the evolution of private vs. public space in the last decade, the article presents the main privacy concerns related with mobile phone usage. A series of data collected both from mobile phone owners, as well as from people without mobile phones, is analyzed, providing a basis for comparing conflicting opinions related to privacy issues. The article concludes with a series of solutions that already exist or may be available in the near future, and which can solve or reduce mobile phone privacy problems.

BACKGROUND

The use of mobile phones is becoming truly universal. The average mobile phone ownership in Europe is above 55%, with Spain, Norway, Iceland, and the Czech Republic having more than 90% cell phone coverage in the population, and Luxembourg, Taiwan, Italy, and Hong Kong reaching 100% (Kristoffersen, 2005; Plant, 2001).

The use of mobile phones has determined a series of contradictory changes in the social and work environment (Townsend, 2000). The importance of investigating these changes stems from the fact that the mobile phone represents only the first step toward the introduction of ubiquitous computing, a trend demonstrated by the redefinition of mobile phones from 'communication devices' to 'mobile platforms for computing and networking applications'.

Research conducted into the social impact of mobile phones has identified their multiple functionality—mobile phones are perceived as communication devices, but also as identity signifiers and fashion symbols. People can use them not only to communicate with their friends or relatives, but also to express their identity by choosing the color of phone or a specific ring tone. The mobile phone is considered by many people as a part of their personal identity (Hulme, & Peters, 2001).

Social research has emphasized that mobile phones force people to combine different aspects of their life, as for example when a person receives a call with a subject that is totally at odds with their physical situation. In such a situation the mobile phone user looks embarrassed and ill at ease, and often she or he tries to find an isolated place in which she or he can talk openly (Geser, 2004). Other people become experts in managing and dealing with the two conflicting situations simultaneously, for example riding a bicycle and taking at the same a mobile call (Plant, 2001). From this perspective, mobile phone technology has blurred the boundaries between private and public space, creating situations in which the two co-exist and blend their characteristics (Geser, 2004).

The use of mobile phones changes the social relations among people, and the positioning of a person both towards

close friends and relatives, and toward other citizens. It is easier to contact a friend who has a mobile phone anytime of the day, but on the other hand, the mobile phone might increase the isolation of an individual in a crowd, because s/he will be less inclined to ask information or help from a passerby. As a consequence, mobile phone users might lose some essential social skills, such as their capacity to communicate with strangers (Fortunati, 2002).

Despite the increased interest about the privacy problems raised by mobile phones, most of the existing studies attempt to investigate only one specific privacy issue (Hulme & Peters, 2001; Kindberg, Spasojevic, Fleck, & Sellen, 2004; Minch, 2004), without attempting to provide a clear general overview of the perceived privacy threats. This study attempts to fill this knowledge gap, presenting the results of an empirical research about the perception of privacy problems in two groups of respondents—owners and non-owners of mobile phones.

PRIVACY RELATED TO MOBILE PHONE USAGE

Privacy was constantly considered a central issue in relation to the use of information and communication technologies. However, its meaning has evolved in direct relation to the social transformations determined by the evolution of technology. Palen and Dourish (2003) have analyzed the issue of privacy within a networked environment, using the theoretical framework developed by Altman. Altman (1975, 1977) argues that privacy is not a fixed and immutable concept, but represents a selective control of access to the personal self, regulated through a process of dialectic and dynamic boundary regulation. For Altman, privacy does not simply mean avoiding information disclosure, but rather a selective disclosure of personal information which permits reconciliation of the desire for a private life with the maintenance of an accepted social persona.

The realization and maintenance of this equilibrium between private and social spheres are increasingly complex in a networked society, in which the very existence of a person is linked to some form of information sharing. The extreme case of total privacy control will imply an asocial life, which rejects not only the disadvantages but also the advantages of communication and social involvement.

The case of mobile phones is rather symptomatic for this situation: the use of mobile phones provides clear personal and social advantages, together with a series of threats and problems concerning the management of personal information. The solutions to these privacy issues should be identified and applied intelligently in order to eliminate or reduce the problem, but also to maintain the advantages offered by mobile communication and computing.

The first logical step in solving mobile phone privacy problems is to identify the range and intensity of these issues. The studies investigating these dimensions are few and dispersed, usually presenting a theoretical framework for mobile phone privacy issues, which is often unsupported by empirical evidence and data analysis.

In relation to the use of mobile phones, previous studies' threats have identified the following privacy issues for mobile phone owners and/or for the people from their entourage: (1) location tracking (Minch, 2004); (2) mobile phone conversations that are heard by other people (Geser, 2004); (3) data interception by governmental authorities (Richtel, 2005); (4) data interceptions by third parties—spywares (Evers, 2006); (5) the noise of ring tones and mobile phones conversations (Geser, 2004; Plant, 2001); and (6) the use of mobile phones to take pictures (McLeod, 2003).

In order to identify the perceptions of people regarding these privacy issues, a short face-to-face interview was applied to two groups of people, one comprising mobile phone owners (56 people) and another formed by people who do not own a mobile phone (22 people). The interviews took place between April and June 2005 in Montpellier, France, and lasted about 15 minutes. The respondents were asked to rate the importance they attach to various mobile phone-related privacy issues on a scale from 0 (no importance) to 10 (very high importance). The questions focused on the six main privacy issues already identified in the literature, but at the end an open question was added, asking the respondents to specify any other perceived privacy threat related to mobile phones.

The positioning map reproduced in Figure 1 offers an overview of the number of people concerned about a certain privacy issue and of the intensity of their concern, allowing also an easy comparison between mobile phone owners and non-owners. The numbers before parentheses represent the code of the privacy issue being identified and considered by respondents, while the numbers within parentheses represent the number of people from each of the two groups that have indicated a specific privacy issue as important. Finally, the position of each group of symbols indicates the mean importance of each privacy issue calculated on the basis of the importance levels provided by the respondents (from the two groups) who considered the privacy issue as being relevant for them.

Some of the respondents from the non-owners' group have indicated an additional privacy concern, which, in some respects, can be considered as a derivation of location tracking privacy threats, namely availability. These respondents indicated that the ownership and use of a mobile phone directly indicate the availability to be contacted by various people and organizations, contacts that can impact on the structure and content of your private life, and which, in some cases, can restrict your personal privacy. This concern is a good illustration of the fear of conflict between the private