The Lack of Technological Development, the principal Obstacle to the Mobile Internet

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At the end of the Nineties the New Economy gambled on a new e-business model using mobile devices, m-commerce or commerce using a mobile phone. Mobile phones, along with electronic agendas, have a greater market penetration than personal computers, in part due to their difference in cost, but also due to their ease and convenience of use at any moment and in any place. This is shown in the figures: the mobile phone has had a penetration amongst the Spanish public during the first quarter of 2001 of 67 percent, compared to 26 percent for personal computers in homes. This high level of penetration of mobile phones will be key to the volume generated by mobile commerce.

WAP (Wireless Application Protocol) technology allows a mobile device to connect to the net. Its functioning is similar to that of any other, using a connection system and terminal. It uses micro-browsers, in other words, small browsers which adapt to the conditions imposed by mobile devices with regards to memory and bandwidth, and develops content and services in an open environment.

This protocol was launched by Unwired Planet, and was successfully accepted by the majority of mobile telephone manufacturers (Ericsson, Motorola, Nokia). Nevertheless, WAP has still not resolved the principal obstacles which impede the development of commerce using the mobile: bandwidth, always on-connections and slow transactions. There have been very diverse forecasts regarding the evolution of WAP users. The most conservative indicates that in 2004 there will be 77 million users in Europe, which represents a penetration of 20 percent with regards to the total population, according to a report by Baquía Inteligencia. Boston Consulting Group is much more optimistic, forecasting 220 million WAP users in Europe for the same year, which would represent a penetration of 56 percent.

The great challenge for mobile device manufacturers is the variety of communication systems developed. Amongst these, the GSM (Global System for Mobile Communications) system is a highly accepted standard in Europe, although it has a very limited data transmission capacity (9.6 kbits/sec), which does not allow files to be downloaded nor complex tasks, except for reading e-mail, to be carried out. Opposed to this system, GPRS (General Packet Radio Standard) now presents a transfer speed of 115 kbits/sec and allows operators to charge in accordance with the data transmitted and not with the time of connection.

The most advanced solution shall come with the so-called third generation (3G). In Europe, this shall be the UMTS (Universal Mobile Telecommunications Systems) system, available in 2002, which allows data transmission speeds of up to 2Mbits/sec.
(more realistic estimates place this figure at 200Kbps). Once UMTS has been implanted, m-commerce will definitively take off.

Stages
According to Nokia, there are four stages in the evolution of m-commerce. The first, in 1999, during which information and entertainment were the principal uses. The second, at the beginning of 2000, when mobile Internet services such as e-mail and agendas appeared. Halfway through 2000, e-commerce operations using the mobile began as an additional service to online transactions. Finally the fourth stage, led in 2001 by the third generation, which includes innovative mobile applications in which the UMTS telecommunications system is necessary, and which allows the integration of voice, video and data.

There are clear benefits for the user. A person in an unknown city can obtain, using a mobile with the necessary technology, information on restaurants or can carry out banking operations. In this sense, a mobile telephone penetration of 85 percent is envisaged for the end of 2007, some 413 million users, according to Baquía Inteligencia. WAP browsing is currently still very limited. There are two types of obstacle: those deriving from the mobile device itself, and technological obstacles. The former refer to the weak processing power, their lack of memory, the small screen and the limitations on the input of data. On the other hand, technological obstacles imply a slow transmission of data, and it is impossible to offer immediate responses to the user. These are currently the principal barriers to the generalised use of mobile commerce.

The Question

"What is the most positive scenario for the future of mobile commerce? Who does reaching this scenario depend on?"

Guillermo Barquin Orbea, Consultant, PricewaterhouseCoopers
In order for mobile commerce to become a reality, it is still necessary for certain critical factors to come about, even despite the efforts of service providers and manufacturers in making the current scenario as positive as possible for this development.

Nevertheless, it is true that the current social and technological situation provides an appropriate scenario for this new medium to be adapted to business processes. An obvious element for the expansion of mobile commerce is the development and introduction of the new GPRS, EDGE and UMTS technologies. These will provide the bandwidth required for the data transfer necessary in m-commerce.

If the manufacturers of mobile devices manage to manufacture a minimum amount of equipment which can support the new technologies, we will be in a favourable situation in which mobile service providers can develop applications for personalised use and content, fully up-to-date and easy to use.

Brian Subirana, IESE Professor
Third generation (3G) can surpass any predictions. Science fiction and the pioneering experiences of NTT DoCoMo could become history. Mobiles in all devices: cars,
fridges, televisions. Mobiles in all people and animals, in the stomach, neck and brain. We will no longer call them mobiles. All sectors could be affected.

Nevertheless, in order to reach this scenario several factors must come about. Manufacturers have to produce terminals for large-scale consumption at reasonable prices. These should coexist with a network of 2Mbits/sec. The network must be prepared for instantaneous recovery of applications should there be a passing lack of signal coverage. Content providers and operators must reach agreements without mutual mistrust. The operators must also ensure compatibility between different application servers. Governments must help the operators and any new initiatives. The whole of society should be involved in this project. Either we all move along together in a co-ordinated manner, or we shall arrive late and unprepared.