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Chapter 6

Applications of mobile products and services in traditional businesses

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The mobile world is moving inexorably towards an increased openness that will benefit all those who are able to adapt to this new landscape, and consumers in particular. As consumers with a high level of expenditure and use of applications, companies will find products and services that are more suitable for their needs.

In fact, they are expected to benefit from higher data transfer speeds, increased bandwidth and innovative business-oriented services provided by operators and third parties. Furthermore, forecasts say that improvements in wireless networks will finally lead to standardized and more reliable wireless access to a vast amount of business applications from mobile devices.

In specific terms, companies in all sectors will be able to enjoy **numerous advantages in their business processes**. The FTF experts believe that the opportunity to personalize the range of products and services thanks to wireless technology will have the greatest impact, followed by the mobility that it will give employees.

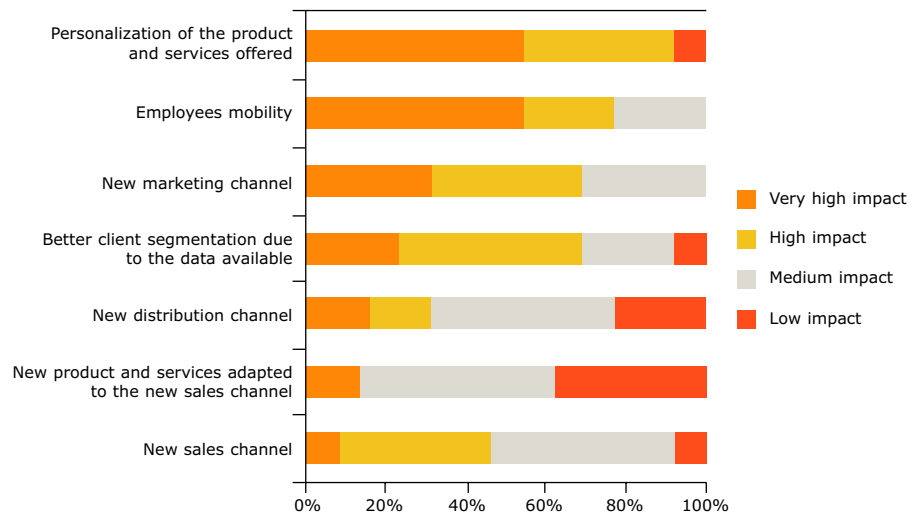


Figure 39. Impact of mobile technology on traditional companies.
Source: drawn from the conclusions within the Future Trends Forum.

The opening of the market will create a virtuous circle of benefits for businesses. It will encourage innovation and the development of business services, which will increase the use of mobile solutions by companies, which will in turn boost innovation and the creation of new services. In the final analysis, this situation will increase the pressure being put on operators to open their networks and facilitate this process.

The FTF experts analyzed the barriers that are limiting the use of mobile solutions by businesses, and came to the conclusion that the main limitations are the failure to meet the expectations generated by the services, and concerns over security, usefulness and complexity of use.

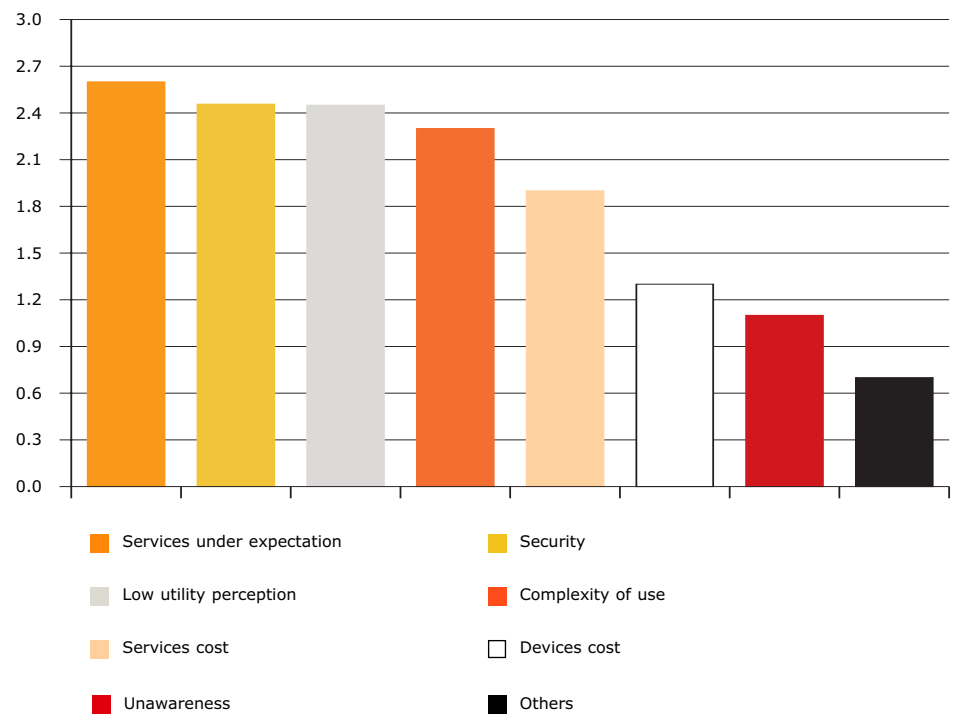


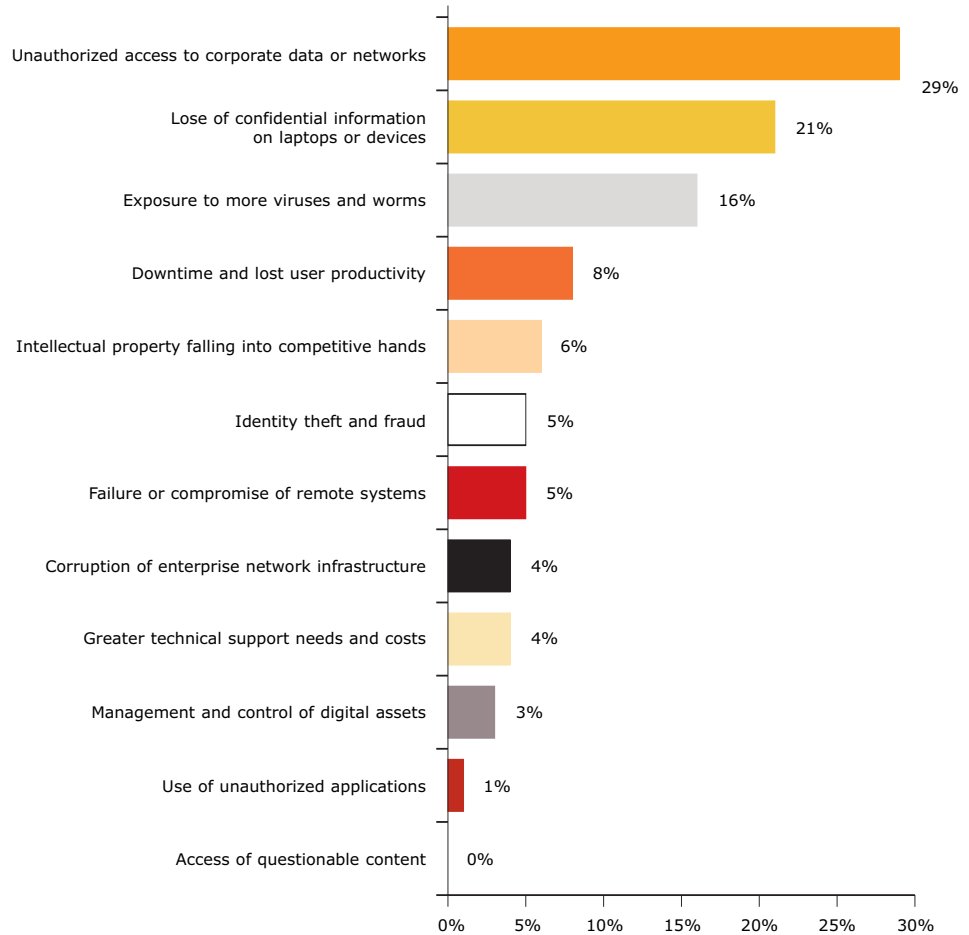
Figure 40. Barriers to the adoption of mobile solutions by businesses. Source: drawn from the conclusions within the Future Trends Forum.

The market opening means that it is foreseeable that these barriers will come up, at least partially, and that use by businesses will increase.

6.1. Privacy and security of information—an essential factor

As the FTF experts pointed out, concern for privacy and information security is limiting the use of mobile solutions by businesses. According to the study conducted by Remote Revolution Studio²²⁹ (see Figure 41), managers feel that the greatest risk in the business area is unauthorized access to the company’s information or its networks, and the loss of confidential information stored on devices or possible exposure to viruses.

²²⁹ Uptime Issues, Implications & Imperatives in the Mobile Workforce. Remote Revolution Studio. December 2005.



Sample: 406 executives from companies in different sectors.

Figure 41. Risks of increased employee mobility and remote access to data. Source: Remote Revolution Studio.

Businesses are also affected by customers' reluctance to make purchases using their mobile devices. According to a study conducted by Forrester²³⁰, their greatest concern is due to the possibility that their data may be distributed without their prior consent, followed by privacy and the loss of a mobile device containing sensitive information. Only 20% are unconcerned about security on mobile devices.

6.2. Nomadic employees need mobile companies

The FTF experts concluded that the mobility being offered by mobile solutions to corporate employees is one of the factors that will have the most impact on their

²³⁰ US Mobile Commerce 2007: Low Reception. Tamara Mendelsohn. Forrester. March 2007.

business (see Figure 39). More than 77% of them thought that employee mobility will have a high or very high impact on businesses.

According to Accenture²³¹, mobility in business can be defined as the capacity to “capture and deliver information at the point of activity.” This is particularly relevant in a world in which it is estimated that 40% of the workforce is mobile (according to a study by The Yankee Group²³²) and opens up significant opportunities for businesses that are able to provide a response to the needs of these groups. Furthermore, it is a trend that is on the increase, meaning that remote work—or telecommuting—will be increasingly common.

In this context, businesses must provide their employees with access to information from anywhere on the planet, thereby becoming not only mobile organizations, but also spaces for virtual collaboration. In this respect, the development of new applications and services that will be boosted by the opening of the mobile market will benefit all sectors of the economy.

Thanks to their ubiquity, mobile devices are the main means for extending a business beyond the office walls, by providing employees with access to applications and to the Internet from their handsets. An organization interested in providing mobility to its professionals should give them access to their email, their schedule, information about the company and the company’s systems, without compromising security.

This mobility in turn makes remote management of the company’s workforce possible, as well as quick and efficient distribution of information to its professionals.

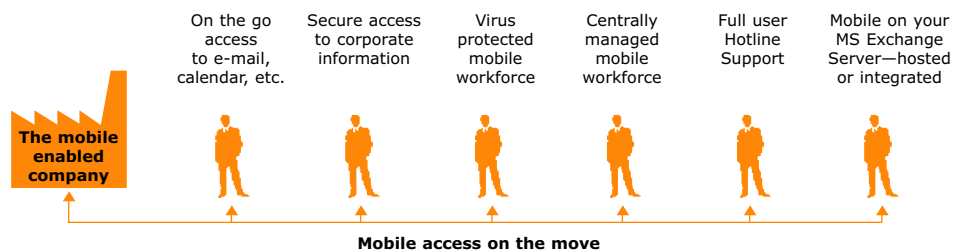


Figure 42. Mobility in the workforce.
Source: The Mobile Enabled Company (<http://www.themobileenabler.com/>).

²³¹ Accenture Mobile Technology Solutions: High-performance mobile solutions for the workforce on the move. Accenture. 2006.

²³² Yankee Group Survey Results Offer a Fresh Perspective on Enterprise Mobility Strategies. Yankee Group Research Inc. November 2007.

As regards the factors that will motivate businesses to adopt mobile solutions, the FTF experts consider that the main aspect will be the opportunity to give employees access to the company’s applications from their mobile devices (see Figure 43).

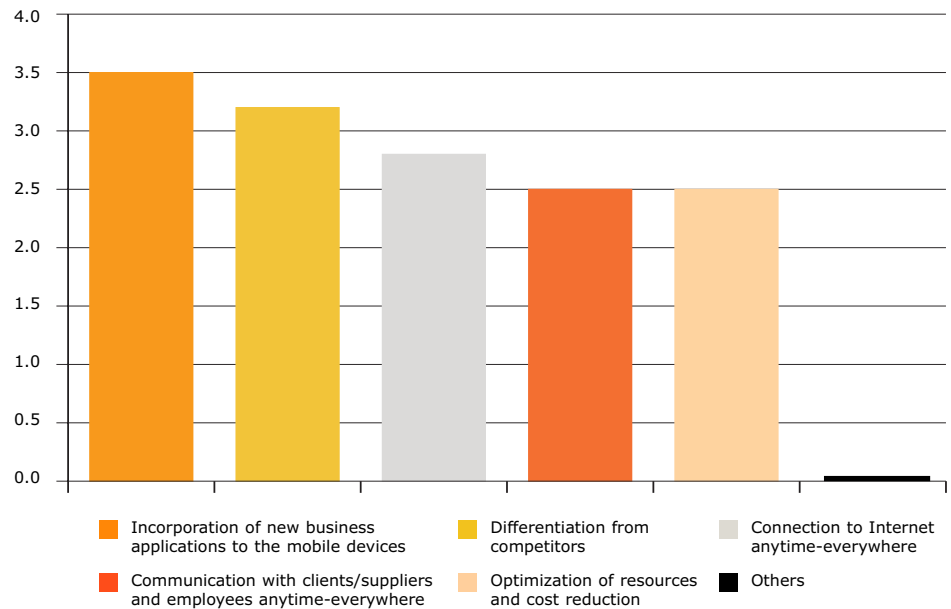


Figure 43. Factors motivating businesses to adopt mobile solutions.
Source: drawn from the conclusions within the Future Trends Forum.

Businesses are working towards supplying the people in their organization with the applications that are most useful to them. According to The Yankee Group²³³, the three main applications are grouped around project management tools (45%), content management tools and service automation tools (44% each).

Although email is an essential application for businesses, the study reveals their preference for investment in vertical applications that boost the productivity of each functional group. As a result, the use of Web 2.0 applications is spreading (see the VIII publication by the **Fundación de la Innovación Bankinter**), although it is difficult to integrate these applications into business infrastructures.

²³³ Yankee Group Research Inc.: *op. cit.*

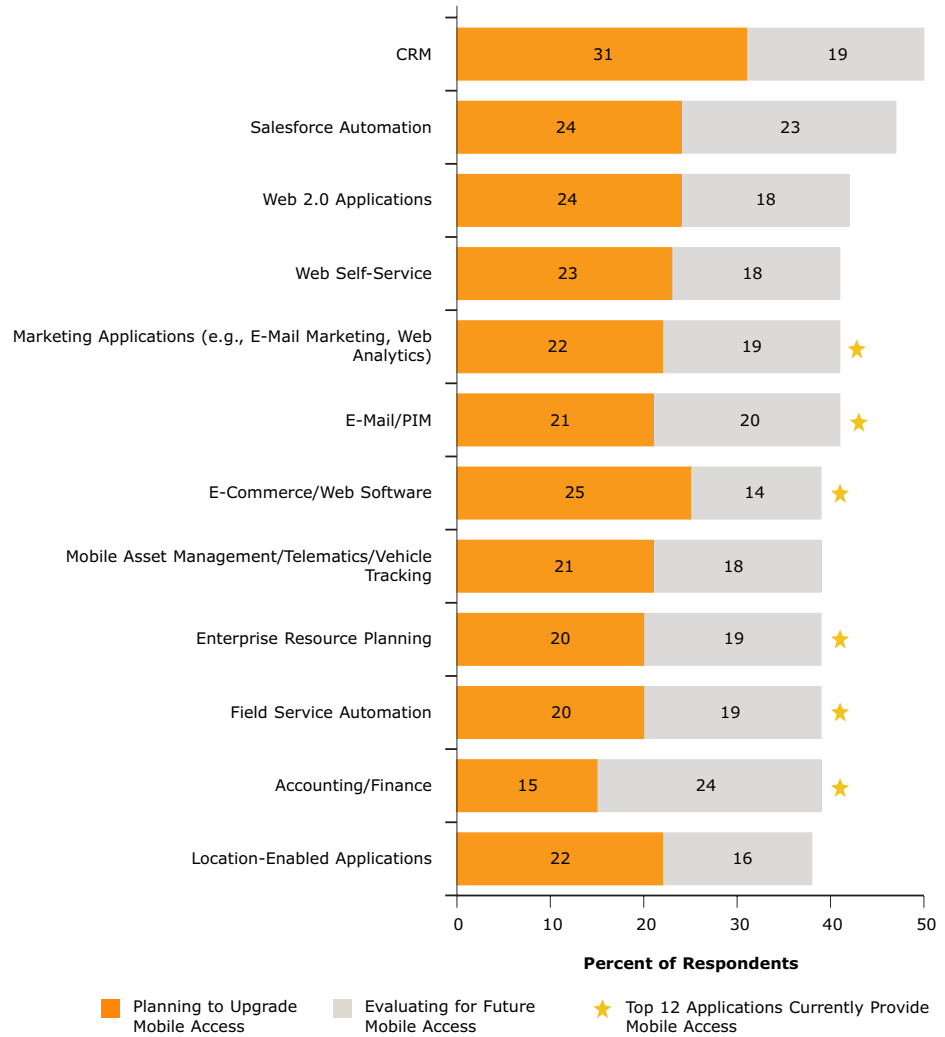


Figure 44. Applications to be given mobile access by companies in the near future. Source: Survey conducted by The Yankee Group.

These applications provide professionals with access to their company’s systems anywhere and at any time, improving their efficiency and becoming a differential value compared to the competition. An example is the case of **Torres Import**²³⁴, which has developed an application for the mobile devices in its sales network that allows orders to be placed directly from the handsets and gives database access with information about customers, prices and offers, all of which is updated in real time. This makes it possible to look up and schedule customer visits using the handsets, as well as managing the expenses for each visit. This is also a differential value for the customers, as they can find out whether the product required is in stock and make the decision to purchase immediately.

²³⁴ Torres Import: <http://www.torresimport.com/>.

6.2.1. Benefits of mobility in the business field

The deployment of mobile solutions among a company's workforce requires a significant initial investment. However, it is relatively easy to obtain a return from it, thanks to these factors:

- **It improves the organization's efficiency due to a combination of the following:**
 - The loss of productivity caused by a lack of real-time connection to the company's applications from any location is minimized. Taking advantage of the times when the only communication channel is a mobile handset may lead to excellent time savings, as well as contributing to an increase in employees' productivity and efficiency (waiting in airports, taxi rides, waiting rooms, etc.).
 - It gives professionals greater flexibility, which has a positive effect on their motivation at work.
 - It improves cooperation between people in the organization, thanks to the mobile networks that are created.
- Mobile solutions make distance management of a company's workforce possible, with quick and efficient distribution of information.
- The **synchronization of mobile solutions** means that processes where information overlaps, which sometimes lead to errors, as well as manual reporting processes, can be eliminated. The latter are replaced by automatic reporting, and so on, all of which leads to a beneficial cost reduction for businesses.
- Companies with the highest mobility levels encourage greater customer focus and, thus improved service, which is a competitive differentiation factor.

6.2.2. Successful cases of workforce mobility

Comercial Herbu²³⁵ has made its sales network more flexible, using a mobility solution that is fully integrated with the company's ERP. This means that any update of customer details made using a mobile device is recorded on the ERP, and that orders sent from mobile devices are shown as being processed in the company's system. With this commitment to innovation, the company is at the forefront in its sector, provides a much more comprehensive service for its customers and ensures more efficient management of its work.

Meanwhile, **Adidas**²³⁶ has developed an application for BlackBerry devices that enables them to be integrated with the company's SAP applications. Sales representatives can use it to make instant checks on stock levels. This information is sent by an email with links to images of the product. Representatives can also check the status of orders, consult the customer's profile and create personalized catalogs.

²³⁵ Comercial Herbu:
<http://www.comercialherbu.es/>.

²³⁶ Adidas:
<http://www.adidas.com/>.

The benefits for **Adidas** are the capacity to close the sale immediately, increased productivity and customer satisfaction, and the expansion of wireless solutions throughout its global network.

6.3. m-Learning: a school in my pocket

When employees become nomads, what method can be used to train them?

The main training programs used to date have so far had a face-to-face or e-learning format. However, these methods do not have the flexibility of a mobile device. m-Learning is defined as any type of training that takes place by means of mobile devices with wireless connectivity—such as a PDA or smartphone—benefiting from the advantages of mobility and the ubiquity of handsets.

Because of the importance of this channel as a training method for professionals, the **MOBIlearn**²³⁷ project has been established. Its main objectives are to define valid training models, develop an architecture for m-learning and establish training strategies using mobile devices. The project involves 24 partners from Europe, Israel, the United States and Australia, and over 250 leading organizations from the telecommunications sector, such as the **Nokia Corporation**, **Telefónica I+D**, **Deutsche Telekom**, etc.

6.3.1. Towards new innovative training

As in the cases above, in order to open the m-learning market it is necessary to establish a series of common standards that guarantee dissemination on various platforms and devices, which in turn must be able to facilitate interaction and visualization of content.

The use of mobile devices for training purposes enables new innovative types of learning to take place:

- **Collaborative m-learning:** with the development of mobile social networks, common spaces for students can be created for sharing information and having access to a tutor.
- **Localized m-learning:** thanks to mobile location-based systems, it is possible to provide students with specific training depending on where they are. For example, if the user is staying in a hotel abroad, the system could provide specific vocabulary for that particular situation.
- **Game-based training:** users will be able to receive training and entertainment at the same time, individually or in a group, thanks to mobile social networks. Some examples of game-based training are **Com2Us** with its game **BusinessMan**²³⁸ and **Air Traffic Control** by **Lunagames**²³⁹.

²³⁷ MOBIlearn:
<http://www.mobilearn.org/>.

²³⁸ BusinessMan:
http://www.midlet-review.com/index?content=review/id=24&rel=j2me#supported_handssets.

²³⁹ Lunagames:
<http://www.lunagames.com/game.asp?game=atc>.

- **Virtual training:** with the new functions on devices—camera, audio, sensors, etc.—it is possible to design training programs that include conversations, text messages, video, photographs, etc.

6.3.2. Successful cases in m-learning

Accenture²⁴⁰ is developing m-learning training solutions for its customers that are adapted to the specific needs of each organization. These are based on small interactive capsules that are complemented by a management and monitoring program for the courses undertaken.

Telefónica Móviles España²⁴¹ has made an m-learning system available to its employees who do not have a computer at home or who do not work with a PC. This gives them access to training courses adapted for mobile devices. In order to manage these users' training, **Telefónica** has implemented the adapted Management System, which managers will be able to use to manage their teams' training needs, to plan activities, etc.

6.4. Marketing goes mobile

Over 60% of the FTF experts felt that the opportunity to use mobile devices as a new marketing channel will have a high or very high impact on traditional businesses (see Figure 39). Mobile devices are shaping up to be a new channel for forging a closer relationship with the user, which does not only increase the number of potential customers, but is also a direct and interactive channel, with a connection time of over 10 hours a day per person, penetration levels of over 90% and with the capacity to make secure payments.

Mobile marketing is in its infancy, and has a long way to go before it can offer new opportunities. According to a study conducted by the Online Publishing Association, 40% of brands have already used marketing on mobile devices and this figure will increase to 89% in 2008²⁴². However, in order to achieve this anticipated growth it is necessary to take into account several barriers that are restricting its development. On the supply side, it is necessary to standardize applications and devices, and to have increased cooperation between mobile operators and advertising companies. As regards demand, it is essential to be sparing with advertising messages so that they are not seen as a violation of privacy.

According to a study conducted by Accenture and the Mobile Marketing Association²⁴³, the most active sectors in Spain in the use of mobile marketing are the financial and telecommunications sectors, although an increasing number of sectors are developing mobile marketing plans, such as the services and food sectors (see Figure 45).

²⁴⁰ Accenture:
<http://www.accenture.com/>.

²⁴¹ Movistar:
<http://www.movistar.es/>.

²⁴² *The Netsize Guide. Mobile 2.0, you are in control.* Netsize. Paris, February 2008.

²⁴³ *I Estudio de inversión en marketing y publicidad móvil. El sector en cifras.* Accenture and MMA. Madrid, October 9, 2008 / Barcelona, October 10, 2008.

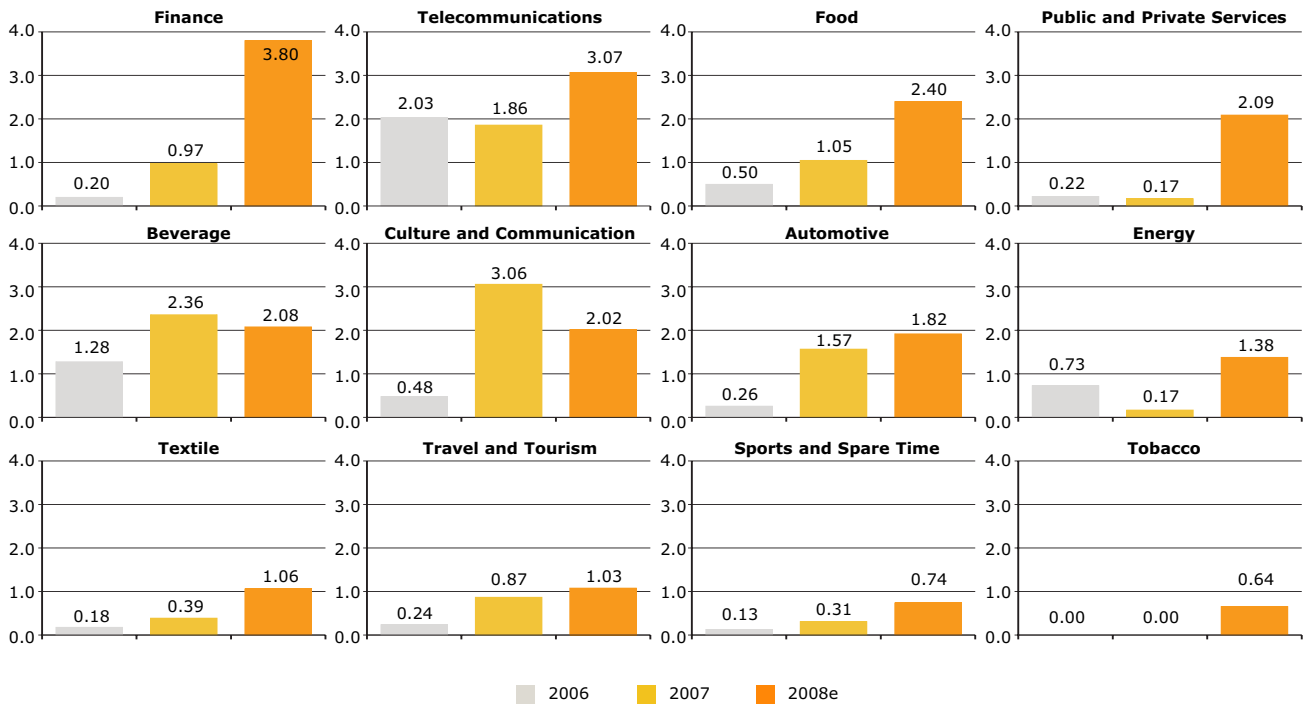


Figure 45. Main sectors investing in m-marketing in Spain: 2006-2008e (million euros).
Source: Accenture and Mobile Marketing Association.

The FTF experts consider that the main barrier to be overcome is users' concerns about the confidentiality of their data (see Figure 46).

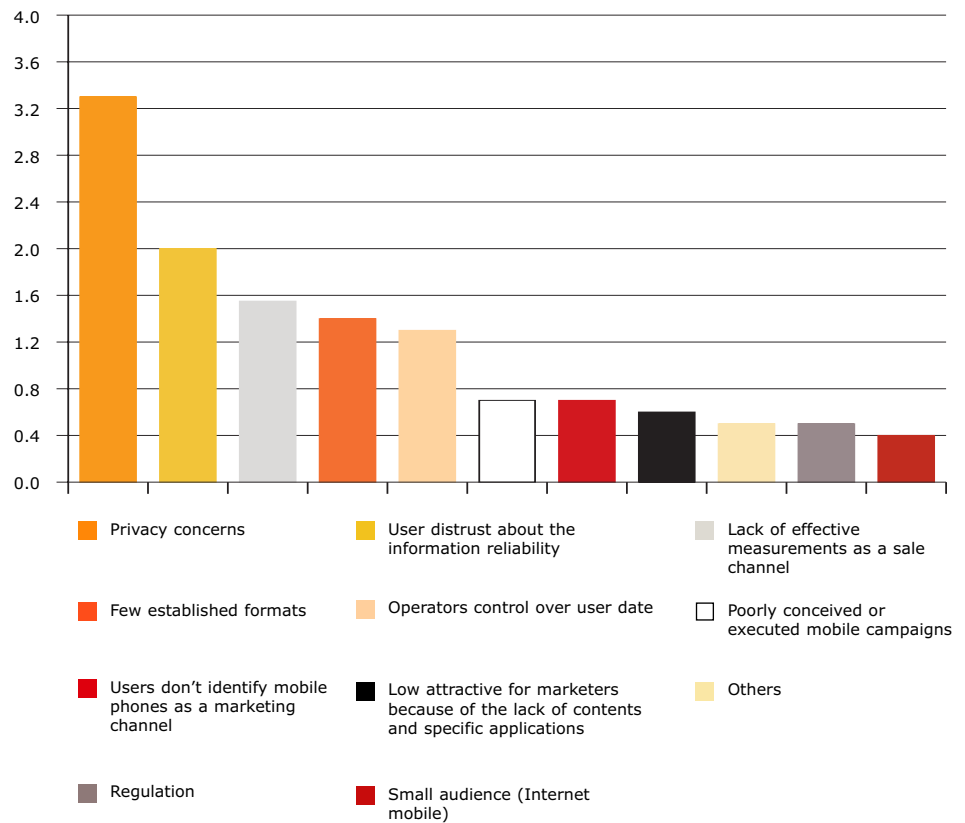


Figure 46. Barriers to the adoption of the mobile phone as a marketing channel. Source: drawn from the conclusions within the Future Trends Forum.

The opening of the market will contribute to these barriers gradually breaking down. Subscribers will use new data services that may include advertising, such as social networks, etc. This creates important opportunities for businesses in all sectors.

The interest in opening and standardization is reflected in initiatives like the Mobile Marketing Association (MMA)²⁴⁴, the main objective of which is to promote and support the development of mobile marketing internationally. These projects address the standardization of platforms and formats, the development of m-marketing strategies that are relevant and nonintrusive, on tools that appeal to consumers (such as **YouTube**²⁴⁵, etc.). Advertising companies are the main interested parties and are establishing policies that aim to promote the development of m-marketing as a means to reduce the costs of conception and implementation of campaigns.

²⁴⁴ MMA: <http://www.mmaglobal.com/>.

²⁴⁵ YouTube: <http://www.youtube.com/>.

6.4.1. Proximity marketing and the personalization of the offer

Proximity marketing is possible mainly thanks to devices that include Bluetooth technology, which enables a consumer's location to be identified and specific advertising to be sent about the services surrounding him or her at that particular moment. At the same time, the operators' data on the usage of their customers will enable them to target consumers with a personalized range of products and services based on their tastes and habits.

For the FTF experts, the opportunity to personalize the range of products and services will be the approach with the greatest impact on businesses in all sectors. Mobile operators have **extensive information** on their users: their profile, consumer habits, age, etc. This information is highly valuable when segmenting, identifying market niches and rolling out offers and promotions. Furthermore, thanks to the development of **m-commerce**, mobile operators will be able to identify what their customers purchase, when they purchase it, the form of payment they use, etc., with the end result being more available data.

Both proximity marketing and the opportunity to personalize an offer based on consumer habits are powerful weapons for attracting customers and gaining their loyalty. For example, a test undertaken by **El Corte Inglés**, which consisted of sending a promotional campaign for Calvin Klein fragrances to mobile devices belonging to the customers in their stores, achieved a download response of 28,000 customers in 18 stores²⁴⁶.

Companies like **MyStrands**²⁴⁷, which was created in 2003 and specializes in the development of technologies for improving the understanding of people's tastes and helping them to discover things they are unfamiliar with, is working on the personalization of supply. MyStrands has developed a social recommendation engine that can offer personalized recommendations for products and services in real time on computers, mobile handsets and other devices connected to the Internet.

Proximity marketing has numerous advantages for businesses:

- It is a **direct communication channel** with consumers.
- It involves **no cost** for the customer or the company.
- It allows **information to be segmented**. For example, it is possible to limit the radius of action or the type of information depending on where the consumer is.
- It is **nonintrusive marketing**, as mobile devices make it possible to "authorize" or accept access to information from the messages received beforehand.

Once again, cooperation between the mobile operators, consumer goods companies and advertising agencies is very important if these innovative advertising and personalization alternatives are to be successful. This will enable **specific campaigns and offers to be implemented for groups of users and make**

²⁴⁶ *El País*. Madrid 12/06/2007. Article: "Las grandes marcas comerciales se lanzan a la publicidad por el móvil." http://www.elpais.com/articulo/economia/grandes/marcas/comerciales/lanzan/publicidad/movil/elpepueco/20070612elpepieco_2/Tes?print=1.

²⁴⁷ MyStrands: <http://www.mystrands.com/>.

it possible for these campaigns to be launched in the right place and at the right time.

6.4.2. Best practices in m-marketing

Advertising on mobile devices is still a market in its infancy, and as such there are no successful experiences that can be used as foolproof plans. This is particularly true if regional differences such as restrictions due to legislation are taken into account. However, some practices that seem to work are the following:

- Including advertisements at the beginning of **mobile videos**, as they generate a less negative reaction than other types of advertising.
- **Using banners**, which must be simple and provide access to one of the brand's websites.
- **Using the mobile Internet as a means of marketing.** The mobile site must give consumers access to relevant information on the brand or the service it is offering. Businesses can advertise their products so that users have the option of copying logos and using them as a screensaver or distributing them among their social network.
- **Designing mobile campaigns that are integrated** in multichannel campaigns (television, press and Internet).
- **Maintaining simple and convincing campaigns.** It is advisable to minimize verbal and visual information, using clear calls on the mobile device inviting the consumer to complete the purchase instead.
- **Employing user location methods** to personalize the offer.
- **Using innovative technology** with advertising systems based on MMS and video on mobile devices.
- **Developing an improved purchasing system using mobile devices.**

6.4.3. Success stories in m-marketing

Etonenet²⁴⁸ is the leader in China's mobile marketing sector. The company focuses on managing the operational details of its customers' mobile marketing, including relations with operators, customers and publicists. The customers can thereby focus on the design of campaigns, and improve their results. An example of their work is the collaboration with **Shanghai General Motors**²⁴⁹. **Etonenet** carried out the first promotional campaign for their new car in China targeted at mobile devices. To do so, it selected the target market and designed an application for collecting users' response and expanding the customer base and their classification.

²⁴⁸ Etonenet:
<http://www.etonenet.com/en/aboutus.html>.

²⁴⁹ General Motors:
<http://www.gm.com/>.

²⁵⁰ FutureLink:
<http://www.futurelink.com/>.

FutureLink (Spain)²⁵⁰ has set up the first Bluetooth network in a shopping center. This network offers visitors to the center a chance to receive a comic on their handsets. The objective of this campaign is to provide a moment of entertainment for consumers and to build their loyalty. The comic's content varies each week, prompting visitors to keep returning in order to complete their collection. A total of 38,000 mobile devices were detected in a week, and 5,500 of them requested the comic.

Daem Interactive²⁵¹ has developed a marketing system based on image recognition technology that works on account of cameras being included on many handsets. The user takes a photo of an advertisement appearing in the press, on a billboard or in a catalog and the company sends information related to the photo to the handset. This system generates traffic for the operators, and is not an intrusive method for the customer, as it is the customer who has shown an interest in the product.

6.5. m-Commerce: on the hunt for consumers

Mobile devices are not only used as a channel for dissemination and advertising, but are in fact becoming a new distribution and sales channel. While the distribution of mobile content (ringtones, music, television, etc.) is evolving rapidly, the sale of other products through mobile devices is in its early stages. Slightly more than 40% of the experts felt that mobile devices will have a high or very high impact as a sales channel for businesses in all sectors (see Figure 39), which will be able to offer customers services such as product searches, purchases and payments using their mobile phones.

The future of mobile **searches** revolves around the use of location-based systems. Businesses will be able to offer their products to potential customers when they are within their radius of activity. For example, **GPSshopper**²⁵² uses its mobile application to help consumers to find products in local shopping centers and compare prices and promotions.

There are two types of products and services purchased directly through mobile phones: **purchases of products for mobile devices and purchases of general consumer products**. The former are relatively successful among consumers, while the latter are still in their early stages. The trend suggests increased cooperation between mobile operators and consumer brands in order to store users' information and speed up transactions. The usability of handsets is also vital for ensuring a good experience for the consumer. The company **Overstock.com**²⁵³ is one of the first to offer products and services by means of a mobile application.

Finally, security must be guaranteed on payments made using mobile devices. Reaching that milestone will require cooperation between mobile operators, handset manufacturers and financial services companies. Many manufacturers now include a chip in their handsets that stores financial information so that it can be used to make automatic payments.

²⁵¹ Daem Interactive:
<http://www.daeminteractive.com/eng/index.jsp>.

²⁵² GPSshopper.
<http://www.gpsshopper.com/>.

²⁵³ Overstock.com:
<http://www.overstock.com/>.

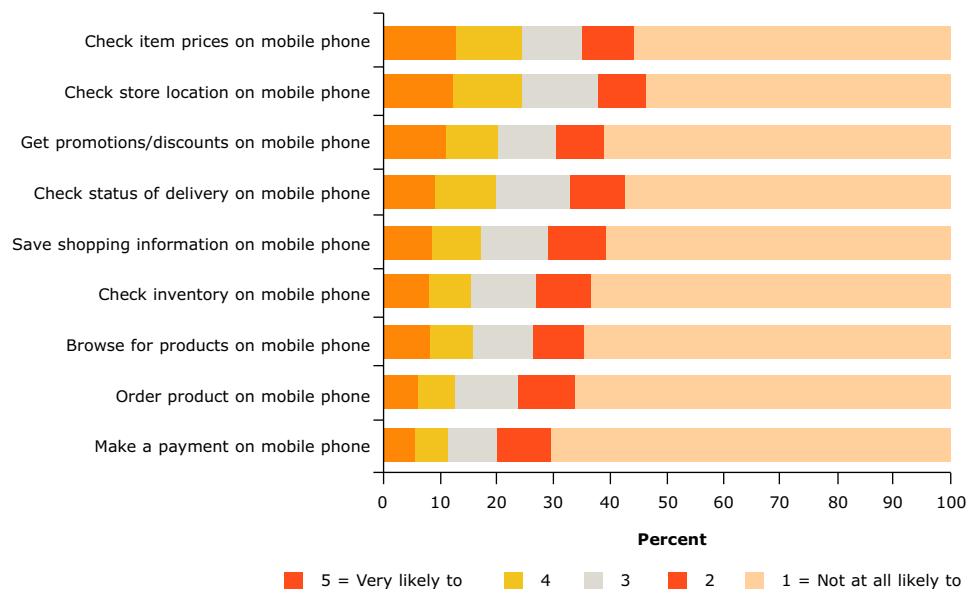
But that is not all: m-commerce will also be used as a means of communication between suppliers and purchasers in order to speed up the purchasing process. The company **Alibaba**²⁵⁴ has developed Trade Manager, a solution that aims to provide communication between both parties using an instant-messaging tool that is free to download and allows voice and video conferences between members.

Due to the meager penetration level of m-commerce, there are no statistical data on the use of mobile devices as a channel for purchasing consumer goods. That is why Gartner²⁵⁵, in its survey *M-Commerce Retail Consumer Shopping Preferences*, has attempted to identify the probability of use of nine purchasing activities on American consumers' mobile devices. The conclusions drawn from the survey were as follows:

- Consumers are more willing to search for products on their mobile devices than to purchase them using that same channel.
- The two most successful m-commerce activities will be price-checking on products and business searches.
- Another activity that has the support of m-commerce users is that of receiving promotions on their mobile devices.

²⁵⁴ Alibaba:
<http://www.alibaba.com/>.

²⁵⁵ *M-Commerce Retail Consumer Shopping Preferences*. Gartner. 7 February 2008.



Note: Based on 1,081 responses.

Figure 47. Likelihood of U.S. consumers to use phone for m-commerce activities.
Source: Gartner.

6.5.1. Recipes for success for the mobile device as a sales channel

The current situation in m-commerce is discouraging, as very few purchases are made with mobile devices, except those involving content downloads. Consequently, few businesses are paying attention to this new channel, and thus it has yet to take off. If the opening of the market leads to increased use of data services, as expected, traditional businesses will invest in this new type of virtual trade, which will open the door to a vast portfolio of potential customers.

Some of the recommendations on how to achieve success in this sector, according to Gartner²⁵⁶, are as follows:

- Work must focus on **developing the m-commerce activities that are most likely to be used**, such as business searches, price comparisons, promotional correspondence, etc.
- The adaptation of the e-commerce site to mobile devices may seem a quick and easy solution for starting in the m-commerce world. However, despite these two channels obviously having certain aspects in common, businesses must establish different strategies for each one. This makes the **development of a specific website** for mobile sales an advisable endeavor.
- Attention should be paid to **emerging markets**, where Internet access mainly takes place via mobile devices (for example, in rural areas in China), which makes them a business opportunity.
- **There must be differentiation among products providing multichannel capabilities.** An example of this is the development of applications that allow customers to go to the store to pick up orders they made using their mobile device.

Some m-commerce success stories

TextBuyIt is the name that **Amazon**²⁵⁷, the well-known online store, has given to its new mobile sales platform. This purchasing option is available to registered users, who can access information on products and purchase them through a simple process.

Kelkoo Mobile²⁵⁸ gives users access to a wide variety of products and services from mobile devices, including price comparisons. This service is based on an adapted interface that includes product images and an easy-to-use format.

6.6. The vast potential of machine-to-machine (M2M) communication in the business world

Another mobile technology application in the traditional business field is M2M (machine-to-machine) communications. Mobile operators see machines as new

²⁵⁶ Gartner: *op. cit.*

²⁵⁷ Amazon:
<http://www.amazon.com/>.

²⁵⁸ Kelkoo Mobile:
<http://m.kelkoo.es/>.

"customers" that will help overcome the saturation of lines that has occurred in developed countries. M2M communications will be a very interesting source of profits for operators who, with the right strategy, will be able to create revenue and attract new customers with minimal cost and effort. In fact, according to figures from the CMT, cards associated with machines registered 220,842 new lines in the first six months of 2008, bringing the total to 1.3 million lines. This is 43.2% more than in June last year²⁵⁹.

Internationally, the number of M2M lines reached 37.5 million in 2007 and will rise to 186 million in 2012²⁶⁰, of which 20 million will be generated in the North American market.

But how do M2M communications work? M2M is a technology that enables machines to communicate with each other by adapting and configuring the mobile network according to the needs of this type of service, and even provides the platforms needed for it to be operated.

One specific example of this technology is machine-to-mobile communications, which consists of using a mobile handset to communicate, check on or monitor the other machine by operating its SIM card. The handset can receive information by a simple SMS or through more complex interfaces.



Figure 48. Machine-to-mobile communications operation.
Source: Accenture, *Machine to Mobile Proposition*.

The machine-to-mobile communication system is based on a series of sensors inside the machine that, upon registering a variation in the standard values (such as a change in temperature, or a pipe's water pressure, etc.), transmit a signal that gets stored in the control center or in the companies' management systems, sending an alert to the mobile handset. However, in order for the message to be sent the machine must first establish a remote connection with the server. Generally speaking, the machine must be equipped with a SIM card, which provides access to the mobile network for establishing the connection. These components involve costs that must be taken into account. One possible solution is to create a community of machines that are connected to each other via Bluetooth and for these to send the information using the same system to a master machine on which a SIM card is installed.

²⁵⁹ 2007 Annual report. Spain's Telecommunications Market Commission (CMT). June 2008. [http://www.cmt.es/cmt_ptl_ext/S](http://www.cmt.es/cmt_ptl_ext/SelectOption.do)

²⁶⁰ Silicom.com. 6/05/2008. Article: "Mobile M2M connections on the up." <http://networks.silicom.com/mobile/0,39024665,39213366,00.htm>.

One example of a machine that has been adapted for M2M operations is **Amazon's** Kindle, which uses its card to connect to high-speed wireless networks for downloading books, newspapers, magazines or blogs onto the device²⁶¹.

In the near future, it is anticipated that M2M communications will be as common as data communications are today, mainly as a result of the development of applications that do not require extensive technical knowledge of mobile networks for use by businesses.

The future of mobile communications between machines is difficult to forecast. Today, there are 6 billion human beings on the planet, of which 1.3 billion are mobile phone users. The number of operational machines worldwide is estimated to be 50 billion and at present only five million are equipped with mobile communication capabilities. In view of the fabulous business opportunities that wireless technologies have created between people, the outlook for the future of this new type of application in mobile communications is impossible to guess at this point in time.

One important aspect of these devices is that they are enabling large manufacturing companies to diversify their business and enter the after-sales services sector. For example, **Pirelli**²⁶² has developed K-Pressure tires, which include pressure-gauging sensors that send notifications to a mobile device.

The main problem with M2M and the reason why this market is not flourishing as it should is its fragmentation (technology, customer diversity, etc.). All of the players in the market must work towards a standardization of this business area in order to take full advantage of its potential. To facilitate the implementation of M2M services, **invoicing models** should be adapted to the type of applications they are targeting. In specific terms, it would be interesting to have SIM cards for M2M with only the necessary data services enabled, as well as being linked to a specific contract and invoicing arrangement.

Operators have a key role in the expansion of M2M communications. Thus it is necessary to establish rate plans and service packages that entice customers, and to market specific SIM cards that offer only M2M-related services.

6.6.1. Uses of machine-to-machine communications

According to Accenture²⁶³, M2M offers traditional businesses a range of possibilities, not only in the form of new services for their customers, but also new possibilities for managing their internal processes. Telemetry is a communication technique that allows **remote control and management** of usage gauges, sites or remote equipment and events (opening and closing of doors or valves), all by means of mobile devices.

In this respect, Accenture identifies four types of M2M telematic services: road transport, security, services and maintenance, and home automation.

²⁶¹ *El Mundo*. 20/22/2007.
Article: "Amazon presenta su 'iPod' para libros."
<http://www.elmundo.es/navegante/2007/11/19/tecnologia/1195488648.html>.

²⁶² Pirelli:
<http://www.sv.pirelli.com/web/car-suv-van/technology-revolution/k-pressure/default.page>.

²⁶³ *Machine to Machine (M2M) over cellular network. Accenture strategy and proposition for CLIENT*. Accenture. February 2005.

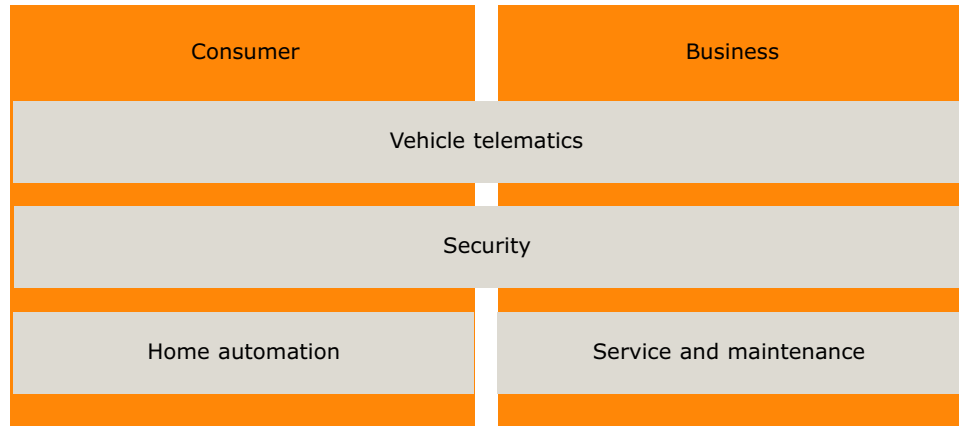


Figure 49. M2M Applications.
Source: Accenture, M2M Proposition.

M2M communications in the business field

The uses that businesses can make of M2M communications are varied, and can help enhance an organization’s business processes, services and internal operations.

Applying M2M communications to the **telematic systems in automobiles** can improve their efficiency:

- **Fleet management:** although fleet management is already possible thanks to GPS, M2M communications provide a more efficient alternative for some applications, as they take place on the mobile network. Among other features, they enable the transfer route information and warnings, record the loss of vehicles and reduce periods of inactivity for haulers.
- **Traffic control and supervision:** there are many devices in this sector (information panels, traffic lights, vehicle capacity meters, meteorological sensor, etc.) that can use M2M services to establish communication with traffic control centers.
- **Logistics:** M2M services provide information on the specific location and the process status of transported goods. For example, they make it possible to send information on the temperature and humidity of the goods.

Security systems can also be more efficient thanks to M2M communications:

- **Access control:** M2M services can automate the control of access to buildings, areas, parking spaces, hotels, toll roads, etc., by becoming a channel for communication with control centers.

- **User identification:** it is possible to identify users through the use of the M2M media provided by the mobile network.

Finally, M2M communications will allow for improved **business services and maintenance:**

- **Vending machines:** product vending machines have a number of characteristics that make them suitable for remote control. Product and coin replacement can be optimized by real-time data on the current level of stock. It is also possible to monitor the machine's cash intake, as well as any technical problems that may arise. **Siemens** has developed an M2M module for vending-machine companies that enables them to count their current stocks, keep tabs on security and maintenance, and distance-manage the machine.
- **Industrial manufacturing processes:** a large number of machines and robots exist in these processes, generally being controlled by automatons. Remote reprogramming of these machines would be useful, whether directly or through their automatons.
- **Meter reading:** distribution companies have staff that go to each meter to read it and input the appropriate data in their systems. Incorporating M2M services in meter reading would make the reading process quicker and more convenient, while also providing a value-added service to customers for the simple fact that they provide information in real time.
- **Environment:** M2M services enable a mobile communication network to be set up for transferring all of the data from environmental monitoring stations (i.e., weather, pollution, noise, etc.), and water-level gauges in dams and reservoirs.

The benefits of M2M communications for consumers

On the demand side, M2M communications will benefit customers, who will be able to enjoy services with increased added value.

Telematic systems in cars will simplify maintenance and improve aspects such as assistance while on the road:

- **Automobiles:** telematic systems based on M2M services allow businesses to perform a remote diagnosis without needing to take the vehicle to a repair shop, thus improving after-sales services. Additionally, manufacturers can set up alarms that send warning signals whenever there is a fault in any vehicle. For example, the Spanish company **Tekel** has very small wireless modules on the market that can be used in vehicles, allowing their route to be monitored in real time, as well as their location in the event of theft. This device is so effective that the stolen vehicle can actually be immobilized by sending a message.



- **Accident notifications:** M2M services can detect accidents and dispatch emergency systems.

Improvements in **security and medicine** thanks to M2M will also lead to major advantages for consumers:

- **Medicine:** in the field of home care, M2M services enable information gathered by various medical devices to be transferred without requiring it to be sent to hospitals manually. Emergency vehicles can also use these services to be connected with hospitals.
- **Alerts:** insurance companies can offer their customers alert services for theft, fire, etc., and it is also possible to send notifications to the user or emergency services. **Siemens**²⁶⁴ and **Securitas**²⁶⁵ have popularized an alarm service based on wireless technology using a device that sends a message to both the central office of the security company and the user's handset when it detects the presence of intruders in the home. The advantage of this system is that criminals cannot cut the telephone cables that are used for other conventional alarm solutions.
- **Safety systems for the sick and elderly:** thanks to sensors using M2M technologies, it is possible to detect a fall or changes in predefined parameters and to send an alarm signal to emergency services. **Alcatel**²⁶⁶, **Sony Ericsson** and other companies specializing in applications, such as **MPO**²⁶⁷, are marketing devices for elderly people, children and the sick that give an alert and location signal at the push of a button.
- M2M systems also enable **remote management of machines, the environment and even people**. For instance, farmers can use meteorological stations to keep up to date with weather conditions and improve their harvests. The systems can also be used for public security, as with criminal surveillance systems.

Finally, home automation services give consumers increased control. Businesses can offer their new customers **remote controls for household uses**, such as kitchen management, heating control, etc. **Fagor**²⁶⁸ has developed the Maior-Domo system, which controls electrical household goods from a mobile handset.

6.7. Trends in business mobility

The FTF experts performed an analysis to see which sectors would potentially be most impacted by mobile solutions, with their conclusion being media and entertainment, followed by software and the Internet, and consumer goods (see Figure 50).

²⁶⁴ Siemens: <http://w1.siemens.com/entry/es/es/>.

²⁶⁵ Securitas: <http://www.securitas.com/es/es/>.

²⁶⁶ Alcatel: <http://www.alcatel-mobilephones.com/sp/>.

²⁶⁷ MPO: <http://www.mpo.es/>.

²⁶⁸ Fagor: http://www.fagor.com/domotica/_bin/cast/que_es.php.

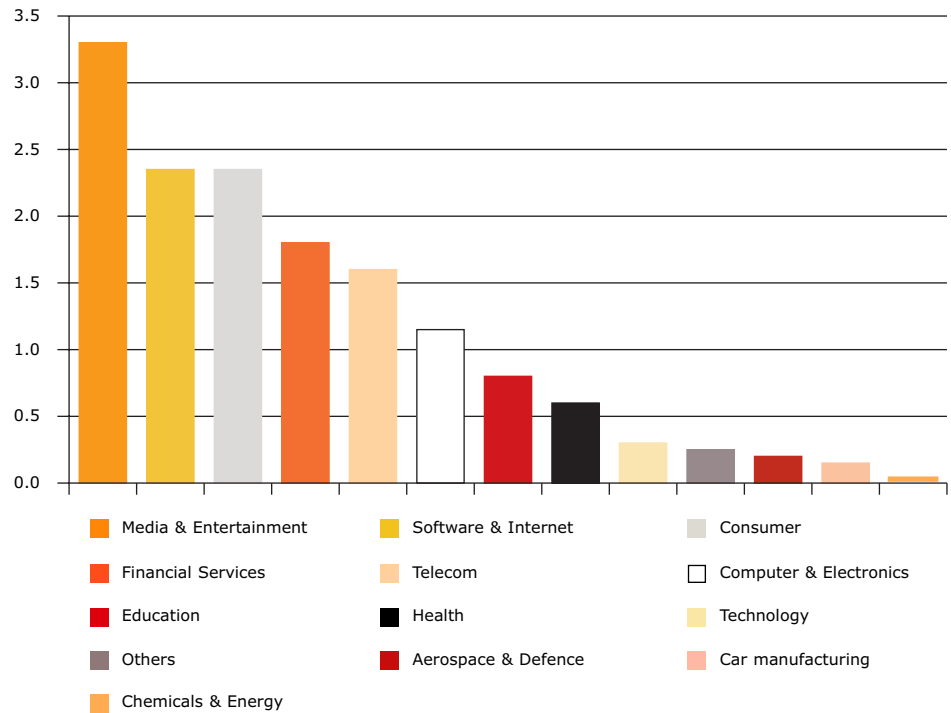


Figure 50. Sectors where wireless technology will have the most impact. Source: drawn from the conclusions within the Future Trends Forum.

As seen in the analysis above, the mobile landscape in 2008 and ensuing years will be characterized by a general opening. Other trends in the business mobility field will include:

- **A focus on increased security for devices.** According to Current Analysis²⁶⁹, a security incident may take place in 2008 related to the use of smartphones, leading to heightened security for mobile devices. Faced with such a situation, not only will managers expect their network operators to take measures, but this will also encourage the appearance of a market for security device software such as SSL, VPN, IPSec, etc. This focus on security will constitute a differentiating factor between operators and their competition, and the mass entry into the sector by major companies such as **Accenture**, **EDS** and **IBM**, who will be looking to offer their own mobile security and management services. For example, **Maverick Mobile**²⁷⁰ unveiled a program that is not installed on the SIM card, but on the telephones themselves, meaning that a device can be tracked and send out an alarm signal if stolen. This program enables a list of contacts to be recovered, and provides any number that is called after the theft and a copy of the SMS sent, which will be payable by the person sending them.

²⁶⁹ CIO España. 15/02/2008. Article: "Siete predicciones sobre el futuro de la movilidad empresarial." Research by Osterman Research and Current Analysis. http://www.idg.es/cio/Siete_predicciones_sobre_el_futuro_de_la_movilidad_empresarial/art188372-.htm.

²⁷⁰ Google News. 1/10/2008. Article: "Tecnología para rastrear teléfonos móviles perdidos o robados." http://afp.google.com/article/ALeqM5i0spUVM1eo0t41Clc_bozo8RnpGw.

- **Towards technology convergence.** There are currently various radiofrequency technologies coexisting in very different stages of evolution. Hence, a global standardization of technology will be necessary. For workers, this will mean being able to use services everywhere without having to carry multiple devices with them, each using a different RF technology.
- **A collision between wireless worlds (local and remote area).** At present, 28% of businesses use remote networks as a medium for their information service; however, there needs to be an evolution towards a system that allows a mix between remote and local networks. According to Current Analysis²⁷¹, an increasing number of device manufacturers are including dual functions in their new handsets, which enables mobile and wireless local area network (WLAN) communications on the same device. There are also increasingly more operators that support this dual technology.
- **More mobile devices being provided in businesses.** According to Osterman Research, the percentage of the United States workforce that uses mobile devices is at an all-time high and will continue to rise in 2008, doubling over the next three years. These devices must include functionality that guarantees access to companies' applications and allow advertising to be received on the user's handset: Bluetooth, Internet access, application download capacity, suitable screen for viewing content, etc. The touchscreen is one of the most convenient features for a user. Some examples include the **Apple** iPhone and its Safari browser, the HTC Touch, and the new handsets from **LG** and **RIM**.
- **Cooperation between mobile operators.** Operators have a broad customer base with information on their consumer habits. These data are extremely valuable to businesses, which could segment their target market and launch campaigns aimed at potential customers. The trend shows increased cooperation between mobile operators, advertising agencies and businesses, so that they not only share information but also responses to advertising campaigns, which can then be used to feed into and expand database.

6.8. Conclusions about the range of mobile products and services for companies

The opening of the mobile market will contribute to broadening the range of mobile products and services for businesses. This new range will have a significant impact on their business models. It will allow them to personalize their range of products and services, while increasing the mobility of their employees and capitalizing on a new marketing channel.

The opportunity to use wireless technology to personalize the range of available products and services based on the consumer habits and tastes, constitutes an important means of enhancing customer service. At the same time, greater employee mobility will allow for improvements in human resources management, help increase their efficiency, and enable businesses to stand out from the competition.

²⁷¹ CIO España: *op. cit.*

At the same time, many peoples' hopes are based on mobile devices being used as a new **marketing channel** for businesses. This would enable them to reach a broader customer base, with more efficient segmentation and the opportunity to locate them at any time. With that new scenario, businesses will be able to adapt their range of products and services to users tastes and habits, and even to their location. However, efforts must be made so that these practices are not perceived as invasive or a breach of privacy.

The use of the mobile device as a sales channel (m-commerce), is practically nonexistent at this point. Improving the user's experience when making a purchase and shoring up security issues will be vital in the effort to reverse this situation.

Finally, M2M promises major opportunities in the medium and long term, along with the development of many applications for companies in areas such as security, road transport and surveillance. It will also lead to improvements in internal processes, such as management of machinery, vehicle fleets, etc.

Mobile solutions will therefore not only help companies improve their internal processes, but will also diversify their range of products and their customer service.