

Beginners Guide to Mobile Technology

A Transformyx Whitepaper

I. MOBILE TECHNOLOGY

Mobile computing allows people to use IT without being tied to a single location. Any business with staff that work away from the office can benefit from using it.

Whether you are travelling to meetings, out on sales calls, working from a client's site or from home, mobile devices - can help you keep in touch and make the most productive use of your time. You can use a range of devices to stay in touch including laptops, tablets, netbooks, personal digital assistants and 'third generation' (3G) smart phones.

Mobile IT devices can also change the way you do business - new technologies lead to new ways of working, and new products and services that can be offered to your customers. This guide explains how mobile computing can benefit your business and introduces the key technologies available.

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What is mobile technology and what are the benefits?

Mobile technology is exactly what the name implies - technology that is portable. Examples of mobile IT devices include:

- ✓ laptop and netbook computers
- ✓ tablet devices
- ✓ palmtop computers or PDA's
- ✓ mobile phones and 'smart phones'

Mobile devices can be enabled to use a variety of communications technologies such as:

- ✓ wireless fidelity (WiFi) - a type of wireless local area network technology
- ✓ Bluetooth - connects mobile devices wirelessly
- ✓ 'third generation' (3G), global system for mobile communications (GSM) and general packet radio service (GPRS) data services - data networking services for mobile phones
- ✓ dial-up services - data networking services using modems and telephone lines
- ✓ virtual private networks - secure access to a private network

It is therefore possible to network the mobile device to a home office or the internet while travelling.

Benefits

Mobile computing can improve the service you offer your customers. For example, when meeting with customers you could access your customer relationship management system - over the internet - allowing you to update customer details whilst away from the office. Alternatively, you can enable customers to pay for services or goods without having to go to the till. For example, by using a wireless payment terminal diners can pay for their meal without leaving their table.

More powerful solutions can link you directly into the office network while working off site, for instance to access your database or accounting systems. For example, you could:

- ✓ set up a new customer's account
- ✓ check prices and stock availability
- ✓ place an order online

This leads to great flexibility in working - for example, enabling home working, or working while travelling. Increasingly, networking 'hot spots' are being provided in public areas that allow connection back to the office network or the internet. The growth of cloud computing has also impacted positively on the use of mobile devices, supporting more flexible working practices by providing services over the internet.

Drawbacks

There are costs involved in setting up the equipment and training required to make use of mobile devices. Mobile IT devices can expose valuable data to unauthorized people if the proper precautions are not taken to ensure that the devices, and the data they can access, are kept safe.

II. LAPTOPS & PDA's

Handheld computers, or personal digital assistants (PDAs), are devices that run cut-down versions of 'standard' office software packages. The small size of handhelds can make extended use inconvenient, but they're ideal for remote access to email, schedules and documents. Some PDAs can also be used as mobile phones.

Laptop computers and netbooks give you the full functionality of a desktop PC and can handle the full range of office software.

If you need to access the internet and check emails while travelling, or connect to your office network, you can connect a laptop or netbook to the internet via a landline, a mobile phone, or wireless data services. Handheld computers can often be linked to a mobile phone for data networking - exchanging information with other computers. Wireless-enabled devices can also be used to connect to the internet, office or email inbox using the wireless 'hot spots' that are often available in public places such as railway and service stations, eg wireless fidelity networks (WiFi).

In the office you can connect mobile devices to the network using cables or wireless technology. Wireless-enabled devices - laptops, PDAs etc - can automatically connect to their 'home' network when in signal range in order to synchronise data with office databases and file servers so that data on all devices is up to date.

Uses

Mobile devices can be used for a wide variety of purposes. Key features include immediate access to data and more flexible ways of doing business. It is often possible to carry out the same tasks that you would in an office while on the move, as many mobile devices operate the same software as office PCs. Examples:

- ✓ salespeople can use laptops and handhelds to make presentations, check stock levels, make quotations, and place online orders while on customer premises

- ✓ laptops are ideal for 'hot desking', and other types of flexible working, like home-working and working while travelling away from the office
- ✓ laptops and handhelds allow users to keep in touch via email while out of the office

Drawbacks

- ✓ PDAs that have keyboards can be small and so can be difficult to use. It is possible to get around this by choosing one with a stylus, which can be quicker than typing or using a touch screen.
- ✓ Laptops, netbooks and PDAs have security issues - eg they are easy to steal or lose. When using mobile devices it is important to ensure that employee's are aware of their responsibilities and the need to keep both mobile devices and business information secure.
- ✓ If using public WiFi to access the internet, it may not always be possible to find a secure and available network for your mobile device. This may prevent you accessing your business information when you need to.

As with all technology, training can be key to delivering the full benefits.

III. Mobile telephony devices

Mobile phones are a familiar feature of business life. The traditional telephony features of mobile phones, such as making calls, receiving voicemail, and call diversion, are important to business users. Mobile phones also offer data transmission services such as:

- ✓ global system for mobile communications (GSM) - allows mobile phones to send and receive data, eg connecting to the internet at a rate similar to a dial-up modem
- ✓ general packet radio service (GPRS) - an 'always-on' data service similar to broadband, but at slower transfer rates
- ✓ 'third generation' (3G) cellular data services, also offering always-on connection at rates comparable to broadband from as little as \$10 per month

Many mobile handsets are capable of accessing these data services, and include functions such as email and web access, and simplified office applications. These handsets are often known as smart phones.

Uses

- ✓ A mobile handset can provide network connection for other devices, such as personal digital assistants (PDAs) and laptops. The handset could connect to the laptop using Bluetooth, a wireless technology. It could then provide data connection to the laptop using GSM, 3G or GPRS. However, most new laptops and PDAs have wireless capability built in making this method redundant.
- ✓ 'Smart phones' such as BlackBerry phones can combine phone and PDA into a single device. This is a versatile business tool - handling email, offering diary functions, providing data connection for a laptop along with conventional mobile phone use.
- ✓ Near-universal availability of cellular networks and the established billing systems between operators, which allow you to use your device outside your service provider's network, make these services very useful for keeping in contact while travelling.

Drawbacks

- ✓ The new data services can be expensive, so it is important to get the right tariff.
- ✓ Although improving rapidly, data transmission rates are not as good as wireless local area networks using wireless fidelity (WiFi).

- ✓ 'Smart phones' can have disadvantages - the keyboard may be small and therefore difficult to use, and their size also makes them easier to lose or damage.

IV. Mobile networking devices

Mobile IT devices can use almost any wired and wireless networking technologies, as long as they are enabled to do so, either by in-built capability or via a network adapter. The options include:

- ✓ dial-up networking, via a modem or a mobile phone
- ✓ use of the global system for mobile communications (GSM), general packet radio service (GPRS) and third-generation (3G) services offered by mobile networks
- ✓ cable connection to 'wired' local area networks (LANs), at office locations and at public internet cafes - Ethernet is the most popular wired LAN technology
- ✓ 'wireless LANs' within office buildings, or offered at public 'hot spots' where internet access is available such as internet cafes - wireless fidelity (WiFi) is the most popular wireless LAN technology
- ✓ Bluetooth or infra-red connection to another mobile device that offers one or more of the above connection capabilities
- ✓ extranets that can be accessed remotely, allowing mobile staff to use limited areas of your business' website and data
- ✓ use of 'smart phones' such as BlackBerry phones to facilitate instant email access

Uses

Sometimes you don't need networking capability on the move. It might be sufficient to download and upload the information required at the start and end of the day from the office computer system.

However, real-time communication with the office can be important in delivering business benefits, such as efficient use of staff time, improved customer service, and a greater range of products and services delivered. Examples include:

- ✓ making presentations to customers, and being able to download product information to their network during the visit
- ✓ quotations and interactive order processing
- ✓ checking stock levels via the office network
- ✓ interacting with colleagues while travelling - sending and receiving emails, collaborating on responses to tenders, delivering trip reports in a timely manner

Disadvantages

There can be issues with maintaining the security of devices and data - for example, these devices are easy to steal. It is also possible for data to be intercepted using some of these mobile technologies - such as Bluetooth and infrared. For more information on this see our guide on securing your wireless systems.

There are also other considerations. Infrared and Bluetooth both have connectivity limitations. Infrared requires line of sight that will not pass through walls or other obstacles, while Bluetooth will pass through walls but only up to a range of 100 metres. As a consequence, many phones and laptops do not have these capabilities.

Managing the use of mobile devices

Do:

- ✓ Look at where mobile devices may be of use in your business.
- ✓ Look at new opportunities that they may open up for you. For example, the advent of 'pay as you go' mobile phones has brought opportunities for other retailers to sell top-ups.
- ✓ Look at the potential for increased flexibility in the way that you work.
- ✓ Ensure that your staff are properly trained to use these devices, and understand the security issues.
- ✓ Draw up an 'acceptable use' policy for your staff so that they are aware of the limits within which they can operate. Ask employees to sign to confirm that they have understood the policy, to prevent any misunderstandings. For more information see our guides on handling discipline and grievance issues and how to introduce an internet and email policy.
- ✓ Assign an ID number to each mobile device and keep track of who's using it.
- ✓ Ensure that data is secure in the event that a mobile device is stolen.
- ✓ Ensure that mobile data is backed up regularly, along with other valuable corporate data.
- ✓ Use secure technologies, for example virtual private networks (VPNs), when connecting to your network from outside locations. For more information see our guide on securing your wireless systems.
- ✓ Use passwords to control access to mobile devices and your business network.
- ✓ Check whether mobile devices - and data - are covered by your insurance.
- ✓ Consider health and safety issues related to computer use - see our guide on how to ensure your employees are operating computers safely.
- ✓ Include your mobile computers in any software audits and updates.

Don't:

- ✓ Allow mobile devices to have free access to all sensitive corporate data, unless strong security measures (VPNs, authentication and encryption) are in place.
- ✓ Leave mobile devices in areas where they can be seen or easily taken.
- ✓ Share or leave password information in places where unauthorized users can find it.