

## MOBILE DEVICE

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Stay ahead of the competition and work smarter and faster. Mobile devices can help your workforce perform their jobs more quickly and accurately, communicate more easily, and better respond to customer needs.

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A **mobile device** is a small computing device, typically small enough to be handheld (and hence also commonly known as a **handheld computer** or simply **handheld**) having a display screen with touch input and/or a miniature keyboard and weighing less than 2 pounds (0,91 kg). Samsung, Sony, HTC, LG, Motorola Mobility and Apple are just a few examples of the many manufacturers that produce these types of devices.

A handheld computing device has an operating system (OS), and can run various types of application software, known as apps. Most handheld devices can also be equipped with Wi-Fi, Bluetooth, NFC and GPS capabilities that can allow connections to the Internet and other devices, such as an automobile or a microphone headset or can be used to provide Location-based services. A camera or media player feature for video or music files can also be typically found on these devices along with a stable battery power source such as a lithium battery. Increasingly mobile devices also contain sensors like accelerometers, compasses, magnetometers, or gyroscopes, allowing detection of orientation and motion.

Early pocket-sized devices were joined in the late 2000s by larger but otherwise similar tablet computers. Input and output of modern mobile devices are often combined into a touch-screen interface.

Smartphones and PDAs are popular among those who wish to use some of the powers of a conventional computer in environments where carrying one would be impractical. Enterprise digital assistants can further extend the available functionality for the business user by offering integrated data capture devices like barcode, RFID and smart card readers.

### Characteristics

Device mobility can be viewed from several dimensions:

- Physical dimensions.
- Whether or not the device is mobile or some kind of host to which it is attached to is mobile.
- What kind of host devices can be bound to.
- How devices are attached to a host.
- When the mobility occurs.

Strictly speaking, many so-called mobile devices are not mobile. It is the host that is mobile, i.e., a mobile human host carries a non-mobile smart phone device. An example of a true mobile computing device, where the device itself is mobile, is a robot. Another example is an autonomous vehicle. There are three basic ways mobile devices can be physically bound to mobile hosts: accompanied, surface-mounted or embedded into the fabric of a host, e.g., an embedded controller embedded in a host device. Accompanied refers to an object being loosely bound and accompanying a mobile host, e.g., a mobile phone can be carried in a bag or pocket but can easily be misplaced. Hence, mobile hosts with embedded devices such as an autonomous vehicle can also appear much larger than pocket-sized.

As stated earlier, the most common size of mobile computing device is pocket-sized that can be hand-held, but other sizes for mobile devices exist too. Mark Weiser, known as the father of ubiquitous computing, computing everywhere, referred to device sizes that are tab-sized, pad and board sized, where tabs are defined as accompanied or wearable centimetre-sized devices, e.g., smart phones and smart cards, and pads are defined as hand-held decimetre-sized devices, e.g., laptops and tablet computers. If one changes the form of the mobile devices in terms of being non-planar, one can also have skin devices and tiny dust-sized devices. Dust refers to miniaturised devices without direct HCI interfaces, e.g., micro electro-mechanical systems (MEMS), ranging from nanometres through micrometers to millimetres. See also Smart dust. Skin: fabrics based upon light emitting and conductive polymers and organic computer devices. These can be formed into more flexible non-planar display surfaces and products such as clothes and curtains, see OLED display. See also smart device.

Although mobility is often regarded as synonymous with having wireless connectivity, these terms are different. Not all network access by mobile users, applications and devices need be via wireless networks and vice versa. Wireless access devices can be static

and mobile users can move in between wired and wireless hotspots such as in Internet cafés. Some mobile devices can be used as mobile internet devices to access the Internet while moving but they do not need to do this and many phone functions or applications are still operational even while disconnected to the Internet. What makes the mobile device unique compared to other technologies is the inherent flexibility in the hardware and also the software. Flexible applications include video chat, Web browsing, payment systems, NFC, audio recording etc. As mobile devices become ubiquitous there will be a proliferation of services which include the use of the cloud.

Although a common form of mobile device, a smart phone, has a display, another perhaps even more common form of smart computing device, the smart card, e.g., used as a bank card or travel card, does not have a display. This mobile device often has a CPU and memory but needs to connect, or be inserted into a reader in order to display its internal data or state.

#### Uses

Handheld devices have become ruggedized for use in mobile field management. Uses include digitizing notes, sending and receiving invoices, asset management, recording signatures, managing parts, and scanning barcodes.

Recent developments in mobile collaboration systems employ handheld devices that combine video, audio and on-screen drawing capabilities to enable multi-party conferencing in real-time, independent of location.

Handheld computers are available in a variety of form factors, including smart phones on

the low end, handheld PDAs, Ultra-Mobile PCs and Tablet PCs (Palm OS, WebOS).

Users can watch television through Internet by IPTV on mobile devices. Mobile television receivers have existed since the 1960s, and in the 21st century mobile phone providers began making television available on cellular phones.

Nowadays, mobile devices can create, sync, and share everything we want despite of distance or specifications of mobile devices. In the medical field, mobile devices are quickly becoming essential tools for accessing clinical information such as drugs, treatment, even medical calculation.

Due to the popularity of Candy Crush and other mobile device games, online casinos are also offering casino games on mobile devices. The casino games are available on iOS, Android, Windows Phone and Windows. Available games are roulette, blackjack and several different types of slots. Most casinos have a play for free option.

In the military field, mobile devices have created new opportunities for the Army to deliver training and educational materials to soldiers around the world.

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