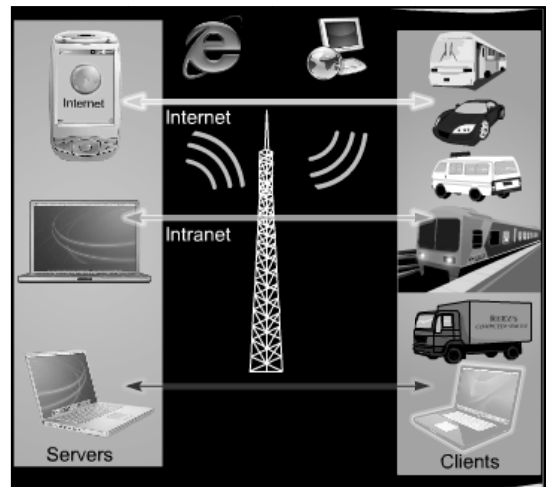


MOBILE COMPUTING

Mobile computing is a generic term used to describe the ability to use technology to wirelessly connect to and use centrally located information and/or application software via small portable and wireless computing and communication devices.

Nomadic computing is another name for mobile computing. Here, users can access the Internet and retrieve data from anywhere in the world, using portable computing devices (such as laptop and handheld computers) in conjunction with mobile communication technologies.



People using such a system are sometimes referred to as technomads, and their ability to use that system is referred to as nomadicity.

Nomadic Computing

A computing environment which offers its user access to data or information from any device and network while he or she is in on the move.

Nomadcity

The tendency of a person, or group of people, to move with relative frequency.

DEFINING MOBILE COMPUTING

Mobile computing is about the new strategies of computing that utilise portable or mobile devices and wireless communication networks. There are various types of mobile computing devices. They include the notebook computer, tablet PC, handheld computer, PDA and smartphone.



Tablet PC

A wireless personal computer (PC) that allows a user to take notes in his/her natural handwriting using a stylus or digital pen on a touch screen.



PDA

Handheld computer device used to organise personal information such as contacts and schedules. Data can usually be transferred to a desktop computer by cable or wireless transmission.

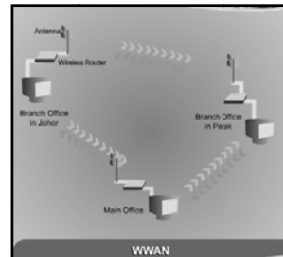
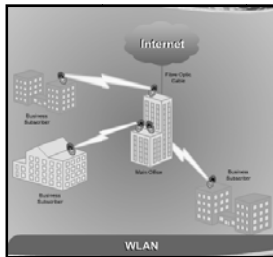


Smartphone

A cellular telephone that provides digital voice service as well as any combination of e-mail, text messaging, pager, Web access, voice recognition as well as picture taking (camera phone).



Wireless communication technologies commonly used for mobile computing include the wireless LAN technology, WWAN technology, Bluetooth and IrDA interfaces.



Mobile computing can be :

- ✚ Wireless and mobile access to the Internet.
- ✚ Wireless and mobile access to private intranets.
- ✚ Wireless and ad hoc mobile access between mobile computers.



LAN

A group of personal computers and/or other devices, such as printers or servers, that are located in a relatively limited area, such as an office, and can communicate and share information with each other.

WWAN

Wireless Wide Area Network (WWAN) is a form of wireless network that uses cellular network technologies such as GPRS, CDMA2000, GSM, CDPD and Mobitex to transfer data.

Bluetooth

A wireless networking technology using radio waves that enables users to send data and voice signals between electronic devices over short distances.

TYPES OF MOBILE COMPUTING DEVICES

NOTEBOOK COMPUTER

A notebook computer or notebook is a small mobile personal computer, usually weighing from one to three kilograms. Using the technology from Symbionics Networks Ltd., a wireless LAN adapter can be made to fit on a PCMCIA card in a laptop or notebook computer to provide mobile computing.



PCMCIA stands for Personal Computer Memory Card Industry Association.

PCMCIA

Personal Computer Memory Card International Association (PCMCIA) is an industry group organised in 1989 to promote standards for a credit card-size memory or I/O device that would fit into a personal computer, usually a notebook or a laptop computer.



TABLET PC

A tablet PC is a notebook or slate-shaped mobile computer.

Its digitising tablet technology allows the user to operate the computer using a stylus or digital pen and a touch screen instead of the usual keyboard and mouse.



Most Tablet PCs offer built-in support for wireless networks.

Stylus

A writing device similar to a modern ballpoint pen to write text or draw lines on a surface as input to a computer or point to menus.

Touch Screen

Display overlays which are typically either pressure-sensitive (resistive), electrically-sensitive (capacitive), acoustically-sensitive (SAW - surface acoustic wave) or photo-sensitive (infra-red). The user selects, moves and draws by pointing to, and touching, the relevant part of the screen.

PDA

Personal digital assistants or PDAs are handheld devices that were originally designed as personal organisers but became much more versatile over the years.

Many PDAs can access the Internet, intranets or extranets via Wi-Fi or Wireless Wide-Area Networks or WWANs.



SMART PHONE

A smart phone is an electronic handheld device that integrates the functionality of a mobile phone and a personal digital assistant or PDA or other information appliance.

This is often achieved by adding telephone functions to an existing PDA or PDA Phone or putting "smart" capabilities such as PDA functions into a mobile phone.



TECHNOLOGIES FOR MOBILE COMPUTING

WIRELESS LAN

A wireless LAN is a technology that allow notebook users to connect to a Local Area Network (LAN) through a wireless (radio) connection.

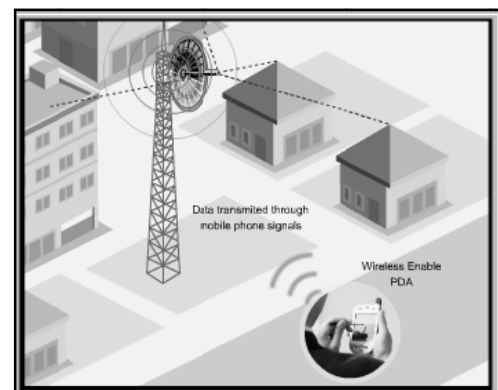
The IEEE 802.11 group of standards specifies technologies to be used for wireless LANs.



WWAN

WWAN, which stands for Wireless Wide Area Network, is a form of wireless network.

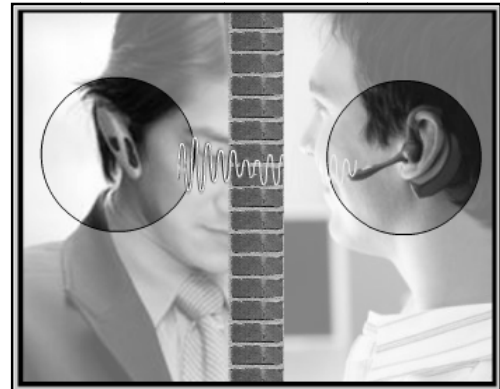
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BLUETOOTH

Bluetooth, also known as IEEE 802.15.1, is a telecommunication industry specification for wireless Personal Area Networks or PANs. Bluetooth devices operate on a radio communication system.

For two Bluetooth devices to communicate, they do not have to be in line-of-sight. In fact, they can even be in separate rooms, as long as the received power is high enough.



Bluetooth transmits and receives data in a frequency band of 2.45 GHz.

THE INFRARED DATA ASSOCIATION

The Infrared Data Association or IrDA defines physical specifications of communication protocol standards for short range exchange of data over infrared light. This is used in Personal Area Networks (PANs).

Among existing uses of IrDA and possible uses are:

- ✚ sending a document from a notebook computer to a printer
- ✚ exchanging business cards between handheld PCs
- ✚ coordinating schedules and telephone books between a desktop and network computers.

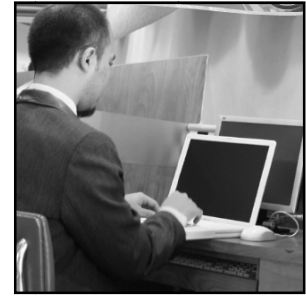


PAN

Personal Area Network (PAN) is a computer network used for communication among computer devices (including telephones and personal digital assistants) close to one person.

COMMON SERVICES FOR MOBILE COMPUTING

To cater to the needs of mobile computing, Wireless Service Providers would seek to provide wireless access points for as many wireless network devices as possible in specified service zones.



Services include:

- ✚ Services include:
- ✚ email capabilities
- ✚ A variety of software applications for secured communications.
- ✚ Print stations
- ✚ Tracking and navigation systems
- ✚ Instant mobile messaging
- ✚ Mobile security services
- ✚ Mobile data, voice and video systems.
- ✚ Access to satellite radio and TV.
- ✚ Remote home premise video monitor.

