**INTRODUCTION**

**What is Mobile Computing?**

Mobile computing is the discipline for creating an information management platform, which is free from spatial and temporal constraints. The freedom from these constraints allows its users to access and process desired information from anywhere in the space. The state of the user, static or mobile, does not affect the information management capability of the mobile platform. A user can continue to access and manipulate desired data while traveling on plane, in car, on ship, etc. Thus, the discipline creates an illusion that the desired data and sufficient processing power are available on the spot, where as in reality they may be located far away. Otherwise **Mobile computing** is a generic term used to refer to a variety of devices that allow people to access data and information from where ever they are.



Structure of mobile computing

**Different types of devices used for the mobile computing:**

1. Personal digital assistant/enterprise digital assistant
2. Smartphones
3. Tablet computers
4. Netbooks
5. Ultra-mobile PCs
6. Wearable computers
7. Palmtops/pocket computers

**Applications of Mobile Computing:**

1. **Vehicles:**

                    Tomorrow’s cars will comprise many wireless communication systems and mobility aware applications.  Music, news, road conditions, weather reports, and other broadcast information are received via digital audio broadcasting (DAB) with 1.5 M-bits/s.  For personal communication, a global system for mobile communications (GSM) phone might be available offering voice and data connectivity with 384 k-bits/s.  For remote areas satellite communication can be used, while the current position of the car is determined via global positioning system (GPS).  Additionally, cars driving in the same area build a local ad-hoc network for fast information exchange in emergency situations or to help each other keeping a safe distance.   In case of an accident, not only will the airbag be triggered, but also an emergency call to a service provider informing ambulance and police.  Cars with this technology are already available.  Future cars will also inform other cars about accidents via the ad hoc network to help them slow down in time, even before a driver can recognize the accident.  Buses, trucks, and train are already transmitting maintenance and logistic information to their home base, which helps o improve organization (fleet management), and thus save time and money.

1. **Emergency:**

                    Just imagine the possibilities of an ambulance with a high quality wireless connection to a hospital.  After an accident, vital information about injured persons can be sent to the hospital immediately.  There, all necessary steps for this particular type of accident can be prepared or further specialists can be consulted for an early diagnosis.  Furthermore,           wireless networks are the only means of communication in the case of natural disasters such as hurricanes or earthquakes.

1. **Business:**

                   Today’s typical traveling salesman needs instant access to the company’s database: to ensure that the files on his or her laptop reflect the actual state, to enable the company to keep track of all activities of their traveling employees, to keep databases consistent etc., with wireless access, the laptop can be turned into a true mobile office.

**Benefits of Mobile Computing:**

* Improve business productivity by streamlining interaction and taking advantage of immediate access
* Reduce business operations costs by increasing supply chain visibility, optimizing logistics and accelerating processes
* Strengthen customer relationships by creating more opportunities to connect, providing information at their fingertips when they need it most
* Gain competitive advantage by creating brand differentiation and expanding customer experience
* Increase work force effectiveness and capability by providing on-the-go access
* Improve business cycle processes by redesigning work flow to utilize mobile devices that interface with legacy applications

**Advantages of Mobile Computing:**

Mobile computing has changed the complete landscape of human being life. Following are the clear advantages of Mobile Computing:

1. **Location flexibility:**

This has enabled user to work from anywhere as long as there is a connection established. A user can work without being in a fixed position. Their mobility ensures that they are able to carry out numerous tasks at the same time perform their stated jobs.

1. **Saves Time:**

The time consumed or wasted by travelling from different locations or to the office and back, have been slashed. One can now access all the important documents and files over a secure channel or portal and work as if they were on their computer. It has enhanced telecommuting in many companies. This also reduces unnecessary expenses that might be incurred.

1. **Enhanced Productivity:**

Productive nature has been boosted by the fact that a worker can simply work efficiently and effectively from which ever location they see comfortable and suitable. Users are able to work with comfortable environments.

1. **Ease of research:**

Research has been made easier, since users will go to the field and search for facts and feed them back to the system. It has also made it easier for field officer and researchers to collect and feed data from wherever they without making unnecessary trip to and from the office to the field.

1. **Entertainment:**

Video and audio recordings can now be streamed on the go using mobile computing. It's easy to access a wide variety of movies, educational and informative material. With the improvement and availability of high speed data connections at considerable costs, one is able to get all the entertainment they want as they browser the internet for streamed data. One can be able to watch news, movies, and documentaries among other entertainment offers over the internet. This was not such before mobile computing dawned on the computing world.

1. **Streamlining of Business Processes:**

Business processes are now easily available through secured connections. Basing on the factor of security, adequate measures have been put in place to ensure authentication and authorization of the user accessing those services.

Some business functions can be run over secure links and also the sharing of information between business partners. Also it's worth noting that lengthy travelling has been reduced, since there is the use of voice and video conferencing.

Meetings, seminars and other informative services can be conducted using the video and voice conferencing. This cuts down on travel time and expenditure.