

Next Generation Mobile Computing

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Abstract: Now a day's Mobile computing is becoming more important due to the increase in the number of portable devices like Laptops, Mobile phones. Mobile Computing is nothing but the interaction between human and Computer devices. The device which performs computer related operations like internet connectivity, data storage, data processing and accessing is known as computing device. Mobile computing is a process in which a computer is expected to be transported during normal usage which includes mobile communication, hardware, software. Next generation mobile computing should increase the performance of receiving useful services and it should also increase the quality of services.

1. Introduction

Mobile computing technology enables the mobile user to perform different operations like create, access, process, store information without being constrained to a single location. Availability of mobile computing is increased due to advances in hardware and software technology. This leads to decrease in cost. The information management capability of mobile platform does not affect the state of users i.e. static or mobile.

1.1. Advanced Technologies In Mobile Computing

- Touch screen technology removes the need of separate keyboard.
- Battery technology reduces the size of batteries and supplies useful power.
- Memory technology makes it possible to build large capacity memory with small size.
- Screen technology provides high resolution and wide color screen.

2. Next Generation Mobile Computing

Mobile computing is used for different applications like to connect with friends, family across states & countries and also for online application i.e. purchasing food, online ticket booking, shopping, watching videos & listening music on our mobile device. The computation system has many challenges when it is expected to move &

interact with users. The challenges like network connectivity including loss in network connection or changes in access point. Such system is expected to improve with coming technology. The 3G, 4G & 5G network is useful for overcome such type of network problem. The touch screen technology is advantage over the separate keyboard but now projection technology is new technology for displaying as well giving input. It displays the virtual image and also takes the input from user. In future we use projection technology in mobile phones for displaying the phones virtual screen & also for operating it as shown in figure 1. The mobile computing is a technology that improves day by day.



Figure 1. Virtual screen.

3. Characteristics of Mobile Computing

Mobile computing is developed using combination of hardware, software & communication medium. Some characteristics of mobile computing are as follows.

- Hardware characteristics are defined by size, weight, storage capacity, size of screen, means of input, battery backup, network capability, etc.
- Software characteristics are defined by operating environment used on mobile device i.e. windows, android, ios etc. Each operating environment is having its own advantage.

4. Challenges for Next Generation Mobile Computing

In future there are many challenges for mobile computing. Research is going on for some of the

challenges. The challenges like display capacity, network connection, application design, Security etc. Some of the challenges are as follows.

4.1. Security

Information which is transferred between server and mobile must be protected. Resources of server must be accessible to only authorized person. Now some techniques are used for authentication i.e. username & password, finger print scanner, face reorganization. Thus improving this security system we get more protection to data.

4.2. Application Design

The application design is important in mobile devices. Application used to handle the hardware resources and also for user interface design. Challenges in application design are to make design which is more users friendly and easy to operate.

4.3. Power Consumption

Increasing the battery life is big challenge. The hardware resources require energy to perform its tasks if number of resources working at a time then battery will decrease in less time. Thus improving battery life is important for mobile device.

5. Advantages

The advantages of mobile computing are as follows.

5.1. Portability

This is one of the best advantages of mobile computing i.e. you are not restricted to one location in order for you to get jobs done.

5.2. Storage

This service is available for saving document on an online server and being able to access them anyplace, anytime and anywhere.

5.3 Entertainment

Mobile devices can be used for entertainment purposes for watching movies, listening songs etc.

6. Disadvantages

The disadvantages of mobile computing are as follows.

6.1. Power Consumption

Due to the use of batteries in these devices, these does not live long, if in situation where there is no source of power for charging then that will certainly be dead.

6.2. Expensive

Mobile devices provide more functions there for it is more expensive that means coast of mobile device is high.

7. Conclusion

It has severe limitations, but the technology improves all the time. It also has lots of challenges, some have solutions but many others are still waiting to be solved. It enables mobile user to effectively communicate and interact with fixed organizational information system. The portable hardware, software application and communication system made mobile computing possible. Mobile computing may be implemented using many combinations of hardware, software application and communication technology.

8. References

- [1] N. Lakshmi Prasanna, DR. R. V. Krishnaian, "NEXT GENERATION MOBILE COMPUTING", IJCSMC, Vol. 2, Issue. 9, September 2013, pg. 41 – 47.
- [2] Devashish Goswami, "Mobile Computing", IJARCSSE, Volume 3, Issue 9, September 2013.
- [3] Prathima Agrawal, David Famolari, "Mobile Computing in Next Generation Wireless Networks",