

# Mobile Cloud Computing as a Future for Mobile Applications-Issues and Solutions

Tahir Hakim

Department of Management Information Systems

College of Business Administration, Jazan University, Kingdom of Saudi Arabia.

**Abstract :** During the recent years technology of smart phones has developed rapidly, whether in terms of storage capacity or processing power etc. With the connectivity to cloud services, the smart phones are operating under its full potential. Mobile cloud computing integrates the service of cloud with smart phones, where a Smartphone can use cloud service for extra storage, data processing and other mobile applications. However the smart phones still possess disadvantages and a Smartphone user always tends to buy a Smartphone with high specification. This paper will present major drawbacks of a Smartphone and present the band-aid for overcoming drawbacks.

**IndexTerms –Mobile Cloud Computing, Smart Phones, Security Issues, Mobile Applications**

## I. INTRODUCTION

A mobile phone capable of performing many functions of a computer such as operating system, web browsing, downloading and ability to run applications is called a Smartphone. A smart phone provides a user rich experience in internet surfing, larger storage capacity and more processing power than conventional phones. The first smart phone was originally developed by IBM with capability of sending and receiving emails as well as keeping track of calendar events besides making phone calls also. As the technology grew, these devices provided a user with greater memory and more processing power and provided a user with sophisticated services like short range wireless communications such as Bluetooth, Wi-Fi, wireless charging, touch screen, etc. Now-a-days smart phones are found almost everywhere and these devices range from low end to high end specifications. A Smartphone user always wants to buy high end Smartphone so that he/she could run different applications smoothly. However, due to advances in mobile and software applications and operating systems as well, we need to upgrade our Smartphones for providing better performance which is not possible. The key solution is only to buy a new Smartphone with better performance. After some time, a user will need to buy a new device and the process goes on. Therefore, using cloud will solve the above problems and everything will be hosted on cloud computing technology.

## II. MOBILE CLOUD COMPUTING

It is the hybrid technology of mobile phones and cloud where both work simultaneously for rich user experience and a user will use the resources of cloud instead of the smart phone. Smart phones face many issues like limited resources, unavailability of storage, reduced battery life, security issues, etc. Therefore, we need the resources of cloud to overcome these issues.

## III. ADVANTAGES OF MOBILE CLOUD COMPUTING

- We can connect to cloud service anytime and anywhere.
- Smartphone connected to cloud will use the service of cloud, thereby extended battery life and unlimited computational power.
- A user doesn't need to expand his/her storage as cloud shall provide unlimited storage capacity.

## IV. DISADVANTAGES OF SMART PHONES

- According to the new development trends, cloud computing ability and development of new screen technology will lead to development of complex applications in smart phones.

- The Smartphone has reduced battery life due to continuous processing, as everything resides on smart phone whether it is a downloaded application or some files.
- The performance of smart phone depends on faster CPU and more RAM, due to advances in applications, software and operating system; we need to upgrade our smart phone which is not possible. Therefore, we need to buy a new Smartphone with higher specifications to meet our requirements.
- As the user downloads new applications, the memory is utilized and a time comes when a user realizes that he/she is running out of memory.
- One of the major drawback of smart phones are applications are platform dependent, i.e. for android operating system applications are different and for apple operating system, applications are different.

## V. PROPOSED SYSTEM

To address the issues discussed above, I propose a new framework in which the execution of applications shall be on cloud rather than smart phone. In this technique, user friendly mobile applications shall be built which will be powered by the resources of mobile cloud rather than smart phone. A user doesn't need to worry about which operating system he/she is using; instead a simple web browser shall be needed to access cloud services. A browser will open the portal of cloud service with his credentials, and after verification, a user can download applications on his cloud account. A user doesn't need to download native applications on his Smartphone; instead everything including downloaded applications and data will reside and run on cloud. By using this approach, the applications shall be platform independent as a simple web browser shall open on any platform (android os, apple, windows os etc).when a user will login via internet browser on his cloud, he can access data of download applications like whats app, gmail etc.

## VI. ADVANTAGES OF PROPOSED SYSTEM

- Since everything shall reside on cloud, processing shall be done on cloud; therefore, a smart phone will be having extended battery life.
- Cloud will enable user for storing unlimited data.
- The mobile cloud shall enable applications to reside and run on cloud rather than on smart phone.
- The application developer's don't need to build separate applications for separate operating system. Developers will build applications exclusively for cloud, which shall use all the services of cloud for processing and storage of data.

## VII. CONCLUSION

This paper focused on drawbacks of Smartphone and on migration from smart phone to cloud as well. A user shall only need a simple web browser to access applications and data on cloud.

## REFERENCES

[1] Agrawal, Dharma & Gupta, B B & Yamaguchi, Shingo & Psannis, Kostas. (2017). Recent Advances in Mobile Cloud Computing. Wireless Communications and Mobile Computing. 2018. 10.1155/2018/5895817.

- [2] S. Al-Janabi, I. Al-Shourbaji, M. Shojafar and M. Abdelhag, "Mobile Cloud Computing: Challenges and Future Research Directions," *2017 10th International Conference on Developments in eSystems Engineering (DeSE)*, Paris, 2017, pp. 62-67. doi: 10.1109/DeSE.2017.21
- [3] Shravanthi, C & Guruprasad, H S. (2014). MOBILE CLOUD COMPUTING AS FUTURE FOR MOBILE APPLICATIONS. *International Journal of Research in Engineering and Technology*. 03. 253-256. 10.15623/ijret.2014.0305048.
- [4] Johnson, Sophia & Natarajan, Radhakrishnan. (2017). ACADEMIC USE OF SMART PHONES AMONG THE STUDENTS OF BUSINESS SCHOOLS IN UAE -A STUDY. *KIIT Journal of Library and Information Management*. 4. 32-36.
- [5] M. Satyanarayanan, "Mobile computing: the next decade," in Proceedings of the 1st ACM Workshop on *Mobile Cloud Computing & Services: Social Networks and Beyond (MCS)*, June 2010.
- [6] M. Satyanarayanan, "Fundamental challenges in mobile computing," in Proceedings of the 5th annual ACM symposium on *Principles of distributed computing*, pp. 1-7, May 1996
- [7] Abolfazli, Saeid; Sanaei, Zohreh; Gani, Abdullah; Xia, Feng; Yang, Laurence T.(1 September 2013). "Rich Mobile Applications: Genesis, taxonomy, and open issues". *Journal of Network and Computer Applications*
- [8] Abolfazli, Saeid; Sanaei, Zohreh; Ahmed, Ejaz; Gani, Abdullah; Buyya, Rajkumar (1 July 2013). "Cloud-Based Augmentation for Mobile Devices: Motivation, Taxonomies, and Open Challenges". *IEEE Communications Surveys & Tutorials* 99 (pp): 1 –32. doi:10.1109/SURV.2013.070813.00285.
- [9] Fangming Liu, Peng Shu, Hai Jin, Linjie Ding, Jie Yu, Di Niu, Bo Li, "Gearing Resource-Poor Mobile Devices with Powerful Clouds: Architecture, Challenges and Applications", *IEEE Wireless Communications Magazine*, Special Issue on Mobile Cloud Computing, vol. 20, no. 3, pp.14-22, June, 2013.

