Mobile Cloud Computing â?? Overview, Challenges and the Future

Description

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At present, mobile applications have reached a level of advancement that seems almost impossible. Individuals can carry out actions like voice commands, face recognition, and more with a simple handheld device. App developers now possess the ability to create applications that have an impressive degree of user-friendliness. This is only because of the massive proliferation of Mobile Cloud Computing.

The Definition of Mobile Cloud Computing

Mobile Cloud Computing or MCC, for short, is a conjunction of three technologies, namely, cloud computing, mobile computing, and finally, a wireless network. All three components act together to create an application that provides extensive computational resources to a user. The use of MCC benefits the user as well as the cloud provider. Users get the benefits of high storage and easy access, while the service provider gets the user fee from a good number of users.

Being a win-win model, MCC has witnessed a rise in demand and has also emerged as a popular option for app developers. This is so due to the lack of restrictions that the mobile cloud offers during app development. A regular app development faces constraints like the limited space that mobile devices possess as well as the operating system. With the combination of mobile and cloud computing, developers can ensure that tasks like data processing and data storage take place seamlessly.

Challenges accompanying mobile cloud computing

Though it may sound that the use of MCC to develop applications is like a walk in the park, it is not so in practice. A few challenges that crop up while using this technology to develop apps include,

Less network bandwidth
Carrying out deployment using MCCs requires the communication to be continuous. This means that a developer may face problems if the network being used is wireless. This is because wireless networks tend to be less reliable or possess low bandwidth. For example, 3G, Wi-Fi, or 4G networks. Therefore, the speed of the applications is much slower in comparison to wired networks. While 5G networks remain a ray of hope, it is much too early to decide its effectiveness.

Service availability
Mobile users may attain a very low-frequency signal, hindering the speed, as well as the storage capacity of the application. Moreover, users also experience issues like breakdown, transportation crowding, and lack of coverage.

Hardware Issues
Mobile phones, even with the latest technology, have a finite source of energy, i.e., batteries. Cloud-based apps increase the use of the battery and would, therefore, drain it much more quickly. This can hinder MCC development as the user base can potentially decline along with an increase of complaints regarding the impact on the battery life.

Operating System Issue
The applications created using MCC will function on different operating systems. Therefore, the application must be compatible with operating system platforms like Android, iOS, and Windows Phone. To do so, the development team must possess knowledge regarding an IRNA or Intelligent Radio Network Access technique.

Security Issues
The management and identification of threats have proved to be a challenging task. This is because MCCs function on a wireless network. Therefore, there are more chances of overlooking or the general absence of network information. Moreover, with multiple hand-offs within the architecture and a general lack of multi-layer security, vulnerabilities are high.

The security related issues stem from vulnerabilities in the MCC architecture. With multiple users accessing the clouds there is a threat to the safety of data. Say if the security of one of the user data is breached then there are risks at other users as well.

The future of mobile cloud computing

Mobile Cloud Computing is a growing industrial space in itself. As per the stats from Mordor Intelligence by 2020 the global mobile cloud computing market registered a total value of over USD 30 Million. The industry growing at a CAGR of 25.28% is expected to reach USD 118.70 billions by 2026.

There would be more scope for startups to rise, as an MCC business doesnâ??t not require the significant investment amount that goes in setting up a brick and mortar office setup. Moreover, the rise of cloud computing as a need by firms only presents a brighter future for firms starting business in the space.

This rise in demand of MCC can be attributed to the following:

Real-time easy data access
The storage of data on the cloud makes it possible for users to easily find their data in a single location, owing to the presence of data synchronization facilities between two devices or a device and a desktop. Therefore, data can be accessed anytime, anywhere on any device in a real-time easy to go manner.

Massive space for storage
As mentioned before, computing takes place on a cloud which is known for its high storage capacity. Therefore, users need not worry about shelling out money for external memory cards or using their internal memory.

Extension of battery life
Since data processing takes place on the cloud, the deviceâ??s battery need not do much of the heavy lifting. Therefore, there is less strain on the device battery as a cloud-based application runs in the background.

Mobile Cloud Computing certainly makes app development easier with its lack of restrictions. Furthermore, it gives users easy access to data and better storage. With these many benefits, there is no surprise that 35% of successful mobile application development projects use cloud-based app development. This demand is only likely to increase in the future as sectors like healthcare and fitness adopt MCC for developing enterprise or consumer-centric applications.

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