



Mobile cloud services as a public utility to all citizens

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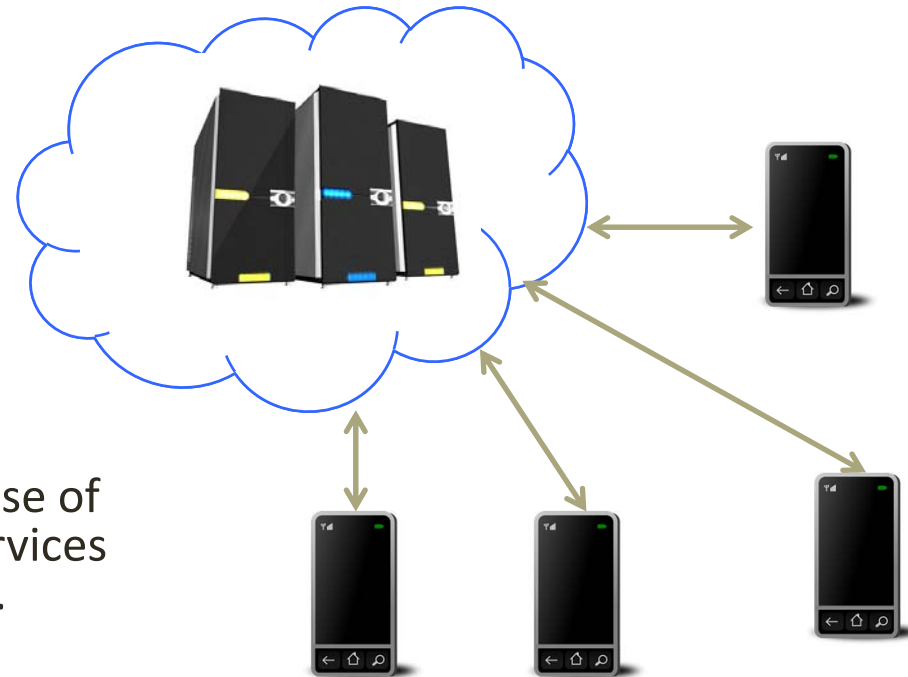


Mobile devices

- Smartphones, tablets are becoming the computing platform of choice
- Used for wide variety of everyday tasks, e.g. web browsing, email, music, gaming
- Users can install apps, either native or web-based
- Access computing resources/services on the move



Mobile Cloud Computing



- Mobile cloud computing: use of cloud-based computing services from smartphones, tablets.
- Can overcome resource limitations
- Demanding applications can execute in the cloud
- Results of execution delivered to mobile device



Application Scenarios

- Company data/services preloaded into the cloud to provide functionality to employee on the move (using employee and client context and history)
- File synchronization to selected service accounts on Wi-Fi networks results in data transfer savings to individual services
- Smart city applications for large data processing to provide traffic/pollution information to smartphone users
- Use of context to automatically book appropriate flight and hotel for next conference (location and price preference contexts)



Crowdsensing

- Defined as “individuals with sensing and computing devices collectively sharing information to measure and map phenomena of common interest”
 - R. K. Ganti, F. Ye, and H. Lei. Mobile crowdsensing: current state and future challenges. IEEE Communications Magazine, 49(11), 2011
- Scenario:
 1. mobile devices allow their sensors to sample the environment, store data locally and then upload it in the cloud
 2. cloud services process data and produce results – pollution map, traffic map, etc.
 3. citizens/administration access and use these data
- Challenges: privacy, protection of sensitive data, incentives.



Conclusions

- The mobile cloud is an enabling technology.
- Any owner of a mobile device can have access to a large range of services/applications, and “pay as you use”.
- It is a new model that can lead to a new city utility, the access to smart city applications – digital utility.
- There are many challenges, not only technical.