

CS8601 –MOBILE COMPUTING

UNIT 5

MOBILE PLATFORMS AND APPLICATIONS

5.2. Special Constrains & Requirements

Design and capabilities of a Mobile OS (Operating System) is very different than a general purpose OS running on desktop machines

Physically Constrained

- ✓ Battery-powered device
- ✓ Small screens of varying shapes, sizes, and resolutions
- ✓ Memory
- ✓ Storage space

Working in Uncertainty

- Networks come and go
- Other devices appear and disappear
- OS need to provide robust methods for handling connections and coping with service interruptions and ad hoc attempts to communicate

Today's mobile devices are multifunctional devices capable of hosting a broad range of applications for both business and consumer use. Smartphones and tablets enable people to use their mobile device to access the Internet for email, instant messaging, text messaging and Web browsing, as well as work documents, contact lists and more.

Mobile devices are often seen as an extension to your own PC or laptop, and in some cases newer, more powerful mobile devices can even completely replace PCs. And when the devices are used together, work done remotely on a mobile device can be synchronized with PCs to reflect changes and new information while away from the computer.

Much like the Linux or Windows operating system controls your desktop or laptop computer, a mobile operating system is the software platform on top of which other programs can run on mobile devices.

A mobile operating system, also called a *mobile OS*, is an operating system that is specifically designed to run on mobile devices such as mobile phones, smartphones, PDAs, tablet computers and other handheld devices.

Mobile OS Special Constraints	
Smaller screen size	Stay focused on the user's immediate task. Display only the information that users need at any given moment. For example, a customer relationship management system can provide a massive amount of information, but users only require a small amount of that information at one time. Design the UI so that users can perform tasks easily and access information quickly.
One screen appears at a time	Use a single screen if possible. If your application requires multiple screens to be open at the same time, use a split screen or rethink the flow of your application.
Shorter battery life	Try to handle data transmission efficiently. The less often the device needs to transmit data, the longer the battery lasts.
Wireless network connections	Try to simplify how your application creates network connections. Compared with standard LANs, longer latency periods that are inherent in some wireless network connections can influence how quickly users receive information that is sent over the network.
Slower processor speeds	Avoid processor-intensive tasks where possible. Slower processor speeds can affect how users perceive the responsiveness of an application.
Less available memory	Free up as much memory as possible. For example, while an application is not being used, try to keep it from using memory.