Introduction to Mobile Systems

EE1072
By: Alireza Mousavi

(1)

Lecture notes Available on: people.brunel.ac.uk/~emstaam and WebCT

Sources:
Topics

- Electronic and Mobile Business & Commerce
- Opportunities and Constraints
- Applications for Mobile Systems

- How Mobile Systems Work (Present & Future)
- Introduction to enabling technologies (specifically Java Technology)

- Mobile Applications:
  - Games
  - Wireless Organisational and Operational Functions
Why Mobile Systems

- Changes in the Dynamics of Business Operations
- Advancement in Information and Communication Technologies
- Natural continuation of Electronic Business
- Global reach
Mobile Business

Mobile Business is the facilitation of Business Operations such as:

- Marketing
- Sales
- Provision of Information & Services
- Organisational Processes and Procedures
- Exchange of goods (services & products)
- Transaction of Money – m-Commerce

Using wireless and mobile devices i.e. mobile phones, PDAs, pagers, TV Boxes etc.
Mobility and Internet Access

- The original Mobile Devices and Communication was designed for voice applications (2G)

- Internet access via WAP and GSM – Costly

- GPRS and 3G and beyond making Internet access cost effective

- Combination of Mobility and Internet Access causes explosion of applications at present and future

- Games, Multimedia and VOIP

A. Mousavi
Mobile Technology

- **Advanced Mobile Phone Systems (AMPS)**
  - Analogue Cellular network system
  - 1G technology – first mobile phone
  - Limits and was replaced by digital system

- **2G**
  - Digital
  - Compressible – Higher Transmission rate
  - Encrypted and decrypted
  - Diagnostic and error recovery can be applied
  - Segmentation of data made possible e.g. voice, fax, etc.
Mobile Technology Cont.

- **GSM**
  - European Standard introduced early 90s
  - Develop a standard way of communication
  - Adopted more than 70% in the world
  - Springboard for 2.5 (GPRS) and 3G
  - Digital voice transmission
  - Global roaming
  - Subscriber Identity Module (SIM) authentication
  - High security in wireless links
  - Interoperation with ISDN
  - SMS
Mobile Technology Cont.

- **3G**
  - Higher data transfer rate compared to 2G
  - Internet enabled mobile systems
  - Global roaming
  - Personalised handheld devices
  - Introduction of General Packet Radio Services (GPRS) via 2.5G
  - Introduction of Enhanced Data Rates for Global Evolution (EDGE)
  - Introduction of WCDMA/UMTS making m-Commerce a reality
Mobile-Commerce opportunities and limitations

Mobile Commerce is the transaction of funds and services via a handheld device using telecommunication medium
M-Commerce Opportunities

- Changes in the dynamics of Global Business
- Elimination of PC and constraints imposed by wired Internet use
- On-fly access anytime and anywhere
- Access to banking, trading, financial, entertainment, etc.
- Cheaper device, easy-to-use, plug & play and global growth
- Interoperability
- Creation of Solid business models through partnerships

A. Mousavi
M-Commerce Limitations

- Processing capabilities
- Power capacity
- Display limitations
- Intermittent network
Introduction to Mobile Applications for Business

- Electronic and Mobile Shopping: Using Mobile devices to browse and purchase products
- Electronic and Mobile Auctions: Facilitation of bidding and purchase of products
- Electronic and Mobile Value Chain Integrators: Provision of services and products through a value-adding chain
- Electronic and Mobile Content Provider: Provision of information and content for users
- Electronic and Mobile Financial Services: Provides financial services for users
- Electronic and Mobile Entertainment: Provision of games, music, ring tones and other applications