

# Mobile Commerce

## Electronic Commerce



- Code: 008023-01+02
- Course: Electronic Commerce
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- D. of Information & Electronic Commerce

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- 01. Mobile Commerce
- 02. Wireless Telecommunications Networks
- 03. Mobile Financial Applications
- 04. Mobile Shopping
- 05. Mobile Enterprise and Supply Chain
- 06. Mobile Consumer Services
- 07. Location-Based Mobile Commerce
- 08. Limitations of Mobile Commerce

# 01. Mobile Commerce

- Mobile commerce (M-Commerce, M-Business)
  - Any business activity conducted over a wireless telecommunications network or from mobile devices.



<http://dobbie.co/news/uk-businesses-not-ready-for-m-commerce/>

# 01. Mobile Commerce

- Attributes of M-Commerce
  - Ubiquity
  - Convenience
  - Interactivity
  - Personalization
  - Localization



<http://yilin-journey.blogspot.com>

# 01. Mobile Commerce

- Drivers of M-Commerce
  - Widespread availability of more powerful mobile devices
  - The handset culture
  - The service economy
  - Vendors' push
  - The mobile workforce
  - Increased mobility
  - Improved price and performance
  - Improvement of bandwidth



<http://www.mobilemarketingwatch.com>

# 01. Mobile Computing

- (Wireless) Mobile Computing
  - Computing that connects a mobile device to a network or another computing device, anytime, anywhere.



<http://peterrobertsblog3.blogspot.com>

# 01. Mobile Computing

- Mobile Devices
  - Personal digital assistant (PDA)
    - A stand-alone handheld computer principally used for personal information management.
  - Smartphone
    - A mobile phone with PC-like capabilities.



<http://ourlifewithaspengers.blogspot.com>



<http://entertainment-lobby.blogspot.com>

# 01. Mobile Computing

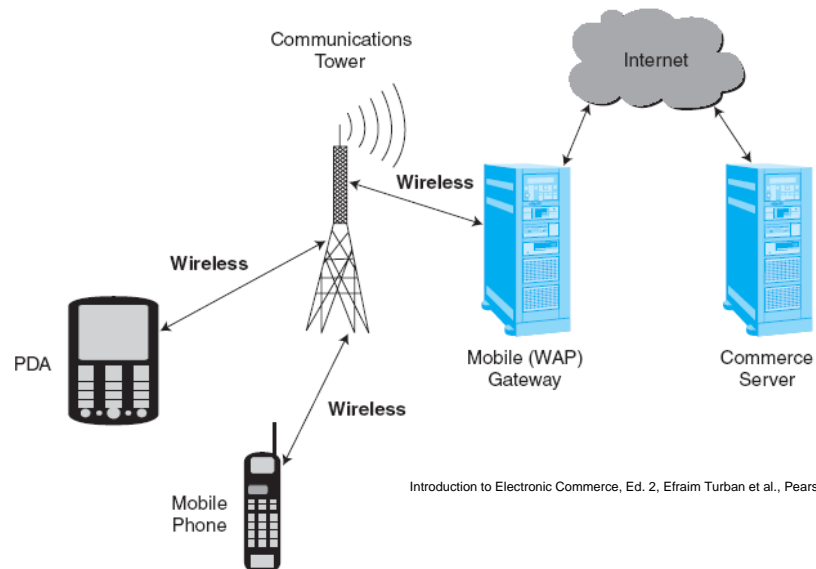
- Mobile Computing Software
  - Mobile operating system
  - Mobile application user interface
  - Microbrowser
    - Wireless Web browser designed to operate with small screens and limited bandwidth and memory requirements.



<http://www.techfuels.com>

# 01. Mobile Computing

- Mobile Computing Software
  - Wireless application protocol (WAP)
    - A scripting language used to create content in the WAP environment; based on SML, minus unnecessary content to increase speed.



# 01. Mobile Computing

- Mobile Computing Software
  - Markup languages
    - Wireless markup language (WML)
      - A scripting language used to create content in the WAP environment; based on XML, minus unnecessary content to increase speed.
    - Extensible hypertext markup language (xHTML)
      - A general scripting language; compatible with HTML; a standard set by W3Consortium.

```

<html>
<body>
  <font size="8" color="#0000FF">
    <small>Something that is worth knowing</small> <br>
  <font size="13" color="#FF0000">
    <small>Something that you need to get</small>
  </font> <font color="#00CC00" size="20">
    And having to know this secret, <br>
  </font> <font color="#FF9900">
    Is a burden that I will have to take <br>
  <hr>
  <font size="35" color="#FF00FF"> <br>
  </font>
</body>
</html>

```

# 01. Mobile Computing

- Mobile Computing Services
  - Short messaging service (SMS)
    - A service that supports the sending and receiving of short text messages on mobile phones.
  - Enhanced messaging service (EMS)
    - An extension of SMS that can send simple animation, tiny pictures, sounds, and formatted text.
  - Multimedia messaging service (MMS)
    - The emerging generation of wireless messaging; MMS is able to deliver rich media.



<http://www.canidoit.org>

# 01. Mobile Computing

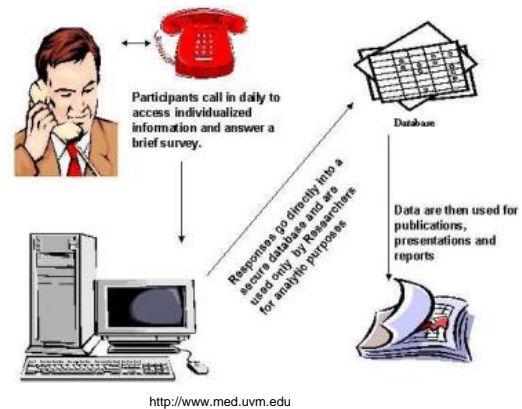
- Mobile Computing Services
  - Location-based services
    - Global positioning system (GPS)
      - A worldwide satellite-based tracking system that enables users to determine their position anywhere on the earth.



<http://www.m3-systems.com>

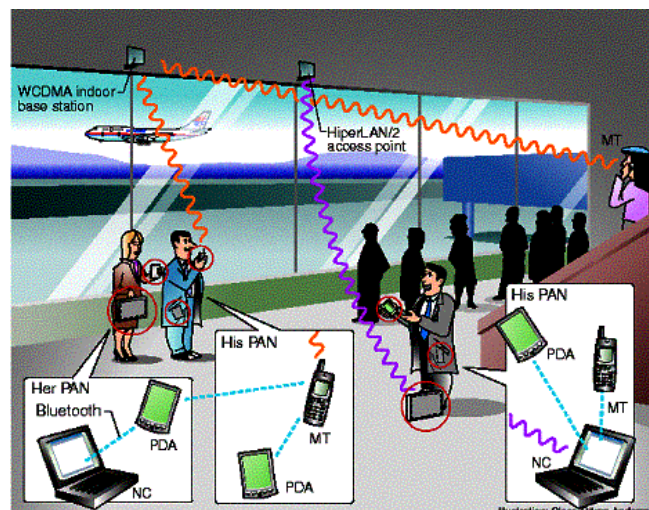
## 01. Mobile Computing

- Mobile Computing Services
  - Voice-Support Services
    - Interactive voice response (IVR)
      - A voice system that enables users to request and receive information and to enter and change data through a telephone to a computerized system.
    - Voice portal
      - A Web site with an audio interface that can be accessed through a telephone call.



## 02. Wireless Telecommunications Networks

- Personal Area Network (PAN)
  - A wireless telecommunications network for device-to-device connections within a very short range.



## 02. Wireless Telecommunications Networks

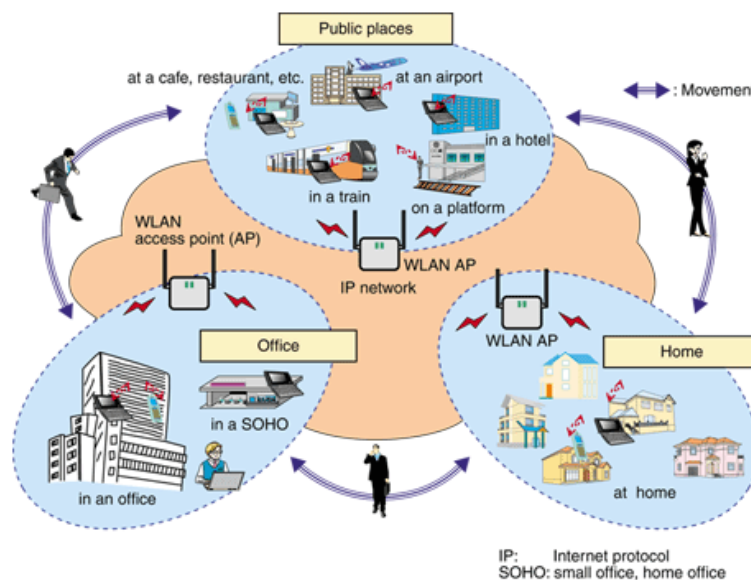
- Bluetooth
  - A set of telecommunications standards that enables wireless devices to communicate with each other over short distances.



<http://www.pwkits.org>

## 02. Wireless Telecommunications Networks

- Wireless Local Area Network (WLAN)
  - A telecommunications network that enables users to make short-range wireless connections to the Internet or another network.



<https://www.ntt-review.jp>



## 02. Wireless Telecommunications Networks

- Wi-Fi (Wireless Fidelity)
  - The common name used to describe the IEEE 802.11 standard used on most WLANs.



<http://spicetelecome.com>

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## 02. Wireless Telecommunications Networks

- Wi-Fi (Wireless Fidelity)
  - 802.11b
    - The most popular Wi-Fi standard; it is inexpensive and offers sufficient speed for most devices; however, interference can be a problem.
  - 802.11a
    - This Wi-Fi standard is faster than 802.11b but has a smaller range.
  - 802.11g
    - This fast but expensive Wi-Fi standard is mostly used in businesses.



<http://spicetelecome.com>

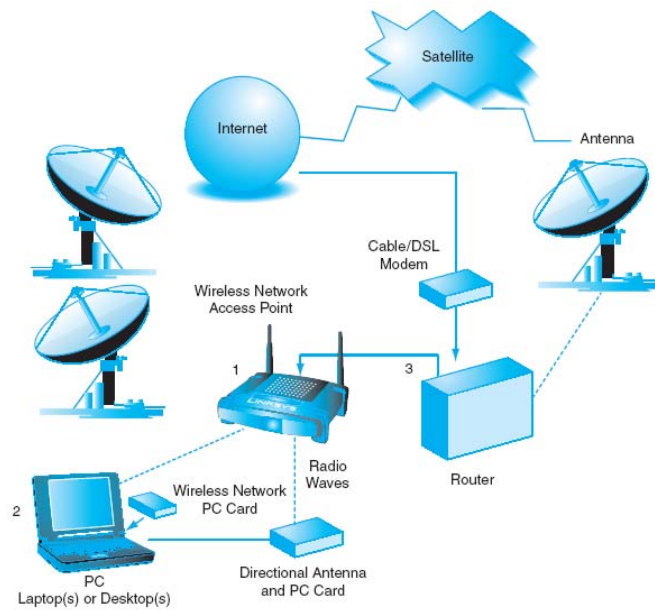
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## 02. Wireless Telecommunications Networks

- Wi-Fi (Wireless Fidelity)
  - How Wi-Fi works



Introduction to Electronic Commerce, Ed. 2, Efraim Turban et al., Pearson



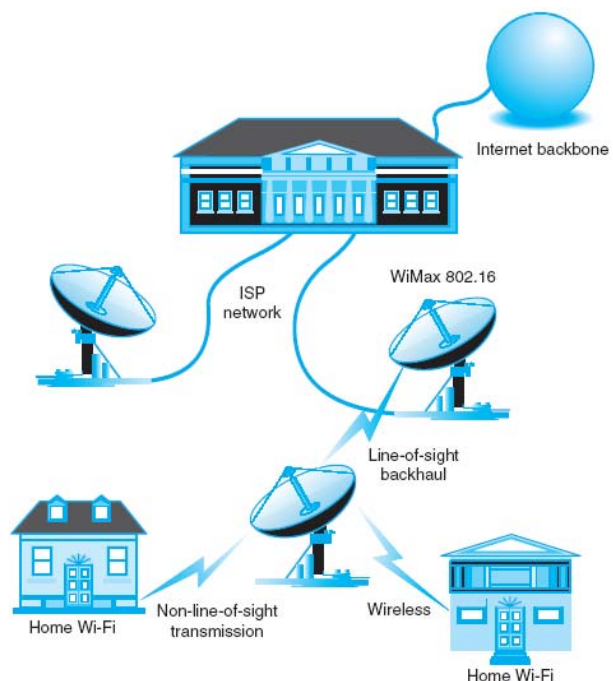
- 1 Radio-equipped access point connected to the Internet (or via a router). It generates and receives radio waves (up to 400 feet).
- 2 Several client devices, equipped with PC cards, generate and receive radio waves.
- 3 Router is connected to the Internet via a cable or DSL modem or connected via a satellite.

## 02. Wireless Telecommunications Networks

- Wi-Fi (Wireless Fidelity)
  - Municipal Wi-Fi network
    - WiMax
      - A wireless standard (IEEE 802.16) for making broadband network connections over a medium-sized area such as a city.

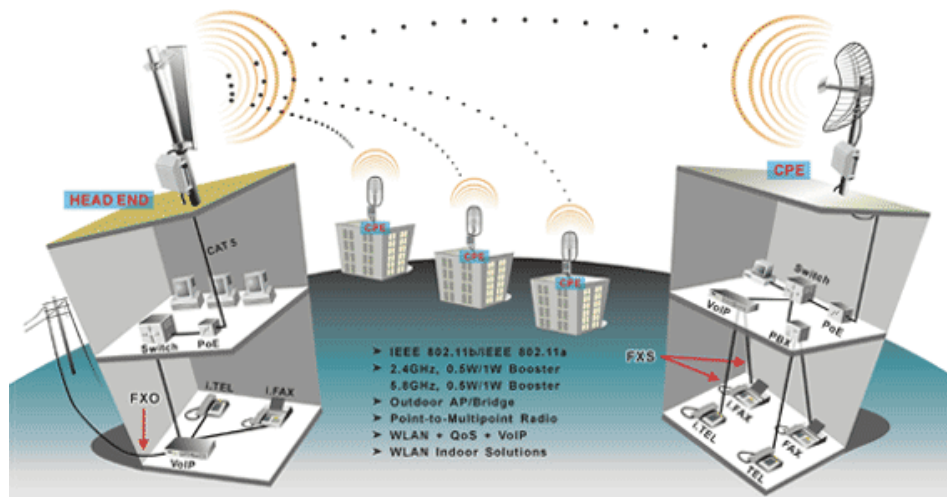


Introduction to Electronic Commerce, Ed. 2, Efraim Turban et al., Pearson



## 02. Wireless Telecommunications Networks

- Wireless Wide Area Network (WWAN)
  - A telecommunications network that offers wireless coverage over a large geographical area, typically over a cellular phone network.

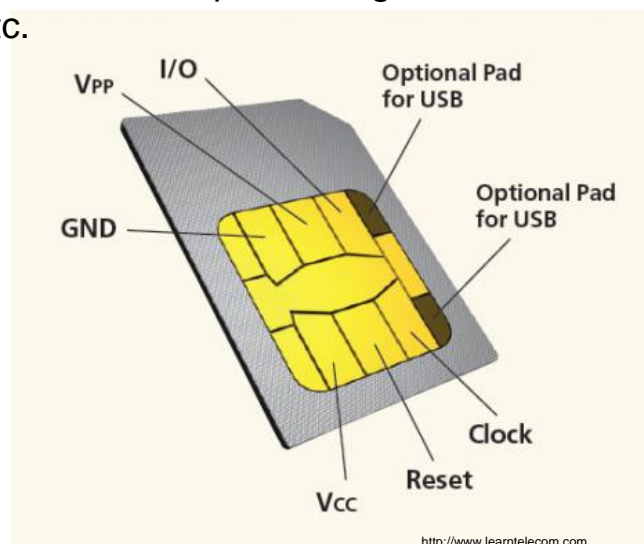


<http://www.mssfw.com>

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## 02. Wireless Telecommunications Networks

- Wireless Wide Area Network (WWAN)
  - Physical topology of a WWAN
    - Subscriber identification module (SIM) card
      - An extractable storage card used for identification, customer location information, transaction processing, secure communications, etc.

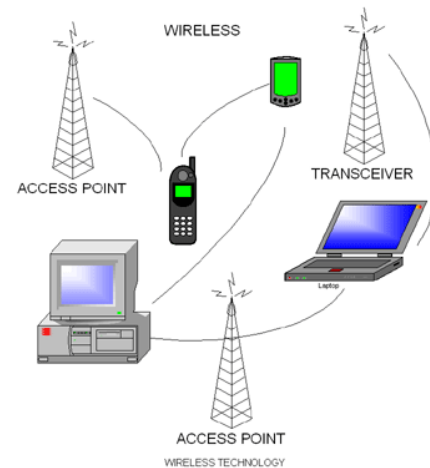


<http://www.learntelecom.com>

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## 02. Wireless Telecommunications Networks

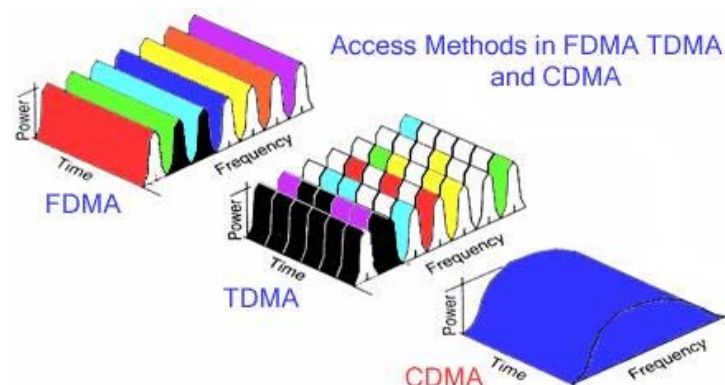
- Wireless Wide Area Network (WWAN)
  - WWAN communication bandwidths
    - 1G: The first generation of wireless technology, which was analog based.
    - 2G: The second generation of digital wireless technology; accommodates voice and text.
    - 3G: The third generation of digital wireless technology; supports rich media such as video.
    - 4G: The expected next generation of wireless technology that will provide faster display of multimedia.



<http://maroun90.blogspot.com>

## 02. Wireless Telecommunications Networks

- Wireless Wide Area Network (WWAN)
  - WWAN communication protocols
    - Frequency division multiple access (FDMA)
    - Time division multiple access (TDMA)
    - Code division multiple access (CDMA)



<http://pbxworld.blogspot.com>

## 02. Wireless Telecommunications Networks

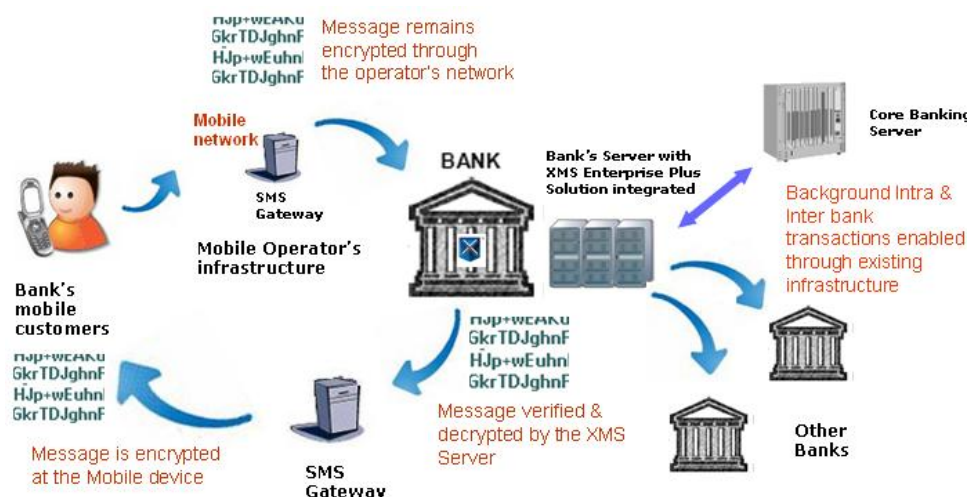
- Wireless Wide Area Network (WWAN)
  - WWAN network systems
    - Global system for mobile communications (GSM)
      - An open, nonproprietary standard for mobile voice and data communications.



<http://www.123eng.com>

## 03. Mobile Financial Applications

- Mobile Banking and Financial Services
- Wireless Electronic Payment Systems
  - Wireless bill payments
  - Closing the digital divide



<http://www.mynetsec.com>

## 04. Mobile Shopping

- Wireless Shopping
- Mobile and Targeted Advertising
- Mobile portal
  - A customer interaction channel that aggregates content and services for mobile users.



<http://www.popherald.com>

## 05. Mobile Enterprise and Supply Chain

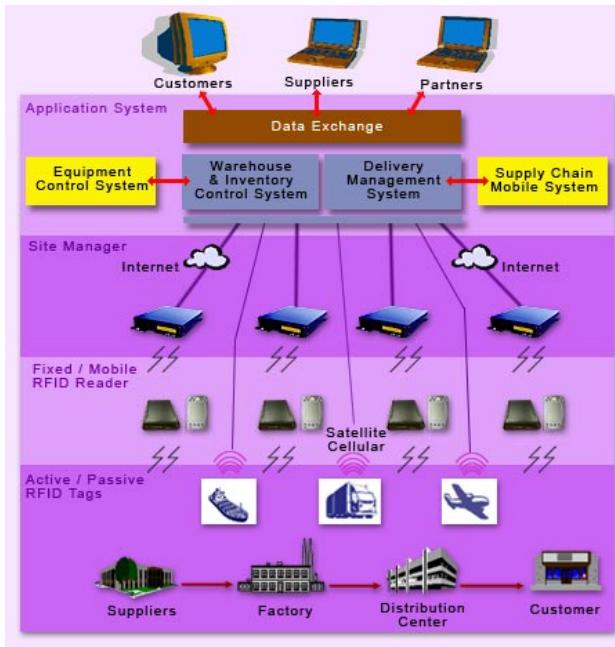
- Support of Mobile Employees
  - Mobile office
  - Sales force mobilization and automation
  - Worker support in retailing
  - Support in operations
  - Job dispatch
  - Maintenance and repair at remote sites



<http://www.docstoc.com/>

## 05. Mobile Enterprise and Supply Chain

- Supporting Other Types of Works
- Customer and Partner Support
- B2B M-Commerce and Supply Chain Management



<http://www.ascentasia.com>

## 06. Mobile Consumer Services

- Mobile Entertainment
  - Music and video
  - Mobile games
  - Mobile gambling



<http://www.teleguru.in>

## 07. Location-Based Mobile Commerce

- Location-Based M-Commerce
  - Delivery of m-commerce transactions to individuals in a specific location, at a specific time.



<http://onemapsg.blogspot.com>

## 07. Location-Based Mobile Commerce

- Five Key Factors for Services Provided
  - Location
  - Navigation
  - Tracking
  - Mapping
  - Timing

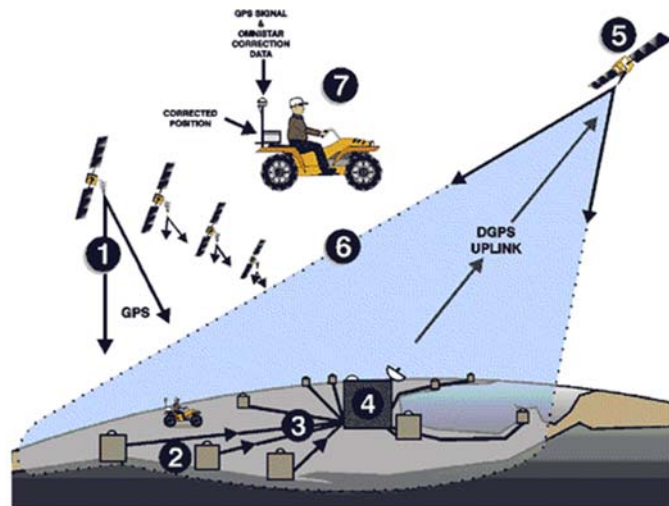


<http://www.whatspotnow.com>



## 07. Location-Based Mobile Commerce

- Technology for L-Commerce
  - Global positioning system (GPS)
  - Geographical information system (GIS)
    - A computer system capable of integrating, storing, editing, analyzing, sharing, and displaying geographically referenced (spatial) information.
  - GPS/GIS applications



<http://fulton.extension.psu.edu>

## 07. Location-Based Mobile Commerce

- Usages of Location-Based M-Commerce
  - Location-based advertising
  - Telematics
    - The integration of computers and wireless communications to improve information flow using the principles of telemetry.



<http://tehgaygeek.blogspot.com>



<http://intelematicstoday.com>

## 07. Location-Based Mobile Commerce

- Barriers to Location-Based M-Commerce
  - Accuracy of devices
  - The cost-benefit justification
  - Limited network bandwidth
  - Invasion of privacy

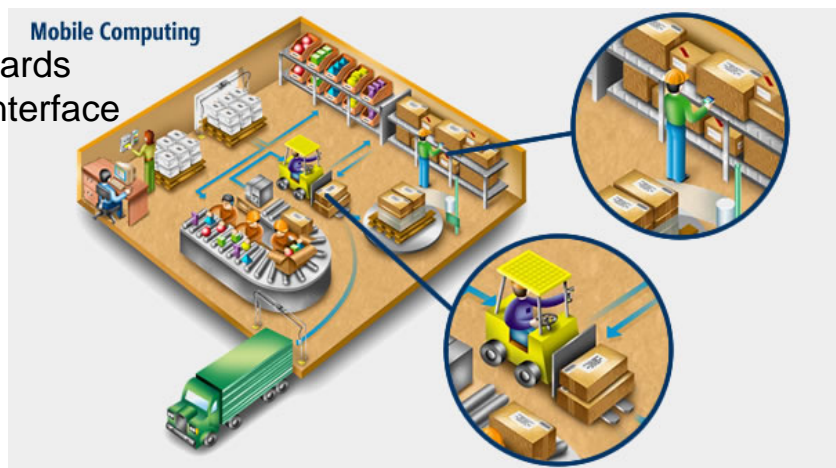


<http://www.forbes.com>

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## 08. Limitations of Mobile Commerce

- Technical Limitations of Mobile Computing
  - Insufficient bandwidth
  - Security standards
  - Power consumption
  - Transmission interferences
  - GPS accuracy
  - WAP limitations
  - Potential health hazards
  - Human-computer interface
  - Complexity



<http://www.alanswarehouse.co.uk>

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