**m-Business and m-Commerce**

Moving e-Business and e-Commerce deployments to take advantage of mobile opportunities.  
**Not just cell phones/tablets, but perhaps other mobile technology.**

Key elements:
- Mobile device characteristics
- Device usage characteristics
- Locational characteristics

Although mobile device can provide similar experience as desktop based e-Commerce, can its unique characteristics create *unique opportunities*?

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**Interesting Attributes of M-Commerce**

- Ubiquity
- Pervasiveness
- Convenience
- Personalization
- Localization
- Synchronization
Mobile Commerce Drivers

Drivers of M-Commerce

- Widespread availability of more powerful devices
- The handset culture
- The service economy
- Vendor’s push
- The mobile workforce
- Increased overall mobility
- Improved price/performance
- Improvement in bandwidth

m-Business Challenges and Opportunities

Primary challenges:

- Bandwidth
- Processor/storage capabilities (in small footprint)
- Display size

Many consumers expect "free" or subsidized device fees.

As technology becomes truly ubiquitous, becomes embedded in other devices (Amazon Kindle, autos).

Automatic Crash Notification (ACN) (OnStar).

Telematics: integration of wireless communications, monitoring systems and location devices.

Opportunity to create purchase opportunities without special consumer effort or extensive forethought.
## Trends and current applications

- HTML conversion to compensate for device constraints
- 3G (4G) broadband
- Mobile payments
- Location-based services
- Mobile television

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## Mobile commerce from the Provider’s point of view

Future development in mobile telecommunication is increasingly heading towards value-added services.

*Analysts forecast that soon half of mobile operators’ revenue will be earned through mobile commerce.*

Consequently operators and third party providers will focus on value-added services.

To enable mobile services, providers with expertise on different sectors will have to cooperate.

Innovative service scenarios will be needed that meet the customer’s expectations and business models that satisfy all partners involved.

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*Mobile Commerce, CMSC 466/666, UMBC*
m-Business Challenges and Opportunities

Geographical Information System (GIS)—system capable of integrating, storing, editing, analyzing, sharing, and displaying geographically-referenced (spatial) information.

Focal points for l-commerce:
- Location
- Navigation/Tracking
- Mapping
- Timing

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EXHIBIT 8.5 Location-Based Applications and Services

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>Banners, advertising alerts</td>
</tr>
<tr>
<td></td>
<td>Road tolling, location-sensitive billing</td>
</tr>
<tr>
<td>Billing</td>
<td>Emergency calls, automotive assistance</td>
</tr>
<tr>
<td></td>
<td>Mobile games, geocaching</td>
</tr>
<tr>
<td>Emergency</td>
<td>Infotainment services, travel guides, travel planner, mobile yellow pages,</td>
</tr>
<tr>
<td></td>
<td>shopping guides</td>
</tr>
<tr>
<td>Games</td>
<td>Buddy finder, instant messaging, social networking</td>
</tr>
<tr>
<td>Information</td>
<td>Facility, infrastructure, fleet, security, environmental</td>
</tr>
<tr>
<td>Leisure</td>
<td>Directions, indoor routing, car park guidance, traffic management</td>
</tr>
<tr>
<td>Management</td>
<td>People/vehicle tracking, product tracking</td>
</tr>
<tr>
<td>Navigation</td>
<td></td>
</tr>
<tr>
<td>Tracking</td>
<td></td>
</tr>
</tbody>
</table>
Implementation Issues

Wireless electronic payment

Secure tools capable of instantly authorizing payments over cellular network.

Microbrowser: wireless Web browser designed for small screens, limited bandwidth, limited storage and memory.

vs. App

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient bandwidth</td>
<td>Sufficient bandwidth is necessary for widespread mobile computing, and it must be inexpensive. It will take a few years until 3G and WiMax are available in many places. WiFi solves some of the problems for short-range connections.</td>
</tr>
<tr>
<td>Security standards</td>
<td>Universal standards are still under development. It may take 3 or more years for sufficient standards to be in place.</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Batteries with long life are needed for mobile computing. Color screens and Wi-Fi consume more electricity, but new chips and emerging battery technologies are solving some of the power-consumption problems.</td>
</tr>
<tr>
<td>Transmission interferences</td>
<td>Weather and terrain, including tall buildings, can limit reception. Microwave ovens, cordless phones, and other devices on the free, but crowded, 2.4GHz range interfere with Bluetooth and Wi-Fi 802.11b transmissions.</td>
</tr>
<tr>
<td>GPS accuracy</td>
<td>GPS may be inaccurate in a city with tall buildings, limiting the use of location-based m-commerce.</td>
</tr>
<tr>
<td>Potential health hazards</td>
<td>Potential health damage from cellular radio frequency emission is not known yet. Known health hazards include cell phone addiction, thumb-overuse syndrome, and accidents caused by people using cell phones while driving.</td>
</tr>
<tr>
<td>Human-computer interface</td>
<td>Screens and keyboards are too small, making mobile devices uncomfortable and difficult for many people to use.</td>
</tr>
<tr>
<td>Complexity</td>
<td>Too many optional add-ons (e.g., battery chargers, external keyboards, headsets, microphones, cradles) are available. Storing and using the optional add-ons can be a problem.</td>
</tr>
</tbody>
</table>
Mobile Entertainment

Mobile Music And Video
Mobile Games
  Technology
  Number Of Players
  Genre
Mobile Gambling

Managerial Issues

1. What is your m-commerce strategy?
2. What is your timetable?
3. Are there clear technical winners?
4. Which applications should be implemented first?
5. Is pervasive computing real?
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