



CS431 - Mobile Computing and Application Development



Topic 2: Mobile Commerce

TextBook: Asoke K Talukder and Roopa Yavagal, “ Mobile Computing Technology, Applications and Service Creation” , McGraw Hill,2010,



E-commerce and M-commerce

**Electronic
Commerce**

**(E-
commerce)**

&

**Mobile
Commerce**

**(M-
commerce)**

Are they the same or different?

Electronic Commerce (E-commerce)



- E-Commerce usually refers to buying or selling of products and/or services via the Internet.
- Traditionally from a wired terminal (e.g. desktop or PC)
- Benefits include reducing costs, better customer response, better service quality,etc.
- We also have started to see what so called *Virtual Companies* (“An organization that uses computer and telecommunications technologies to extend its capabilities by working remotely with employees or contractors located throughout the country or the world. Using email, faxes, instant messaging, data and videoconferencing, it implies a high degree of telecommuting as well as using remote facilities”) [1].



E-Commerce - Cont.

- Business to Consumer (B2C) - www.amazon.com
- Business to Business (B2B) - www.anx.com
- Consumer to Consumer (C2C) - www.ebay.com
- Government to Consumer (G2C) - www.saudi.gov.sa
- But! Can it happen anywhere at anytime?



E-Commerce - Cont.

- Business to Consumer (B2C) - www.amazon.com
 - is a business model where products and services are sold directly to the consumer.
- Business to Business (B2B) - www.anx.com
 - is a business that sells products or services to other businesses
- Consumer to Consumer (C2C) - www.ebay.com
 - is a commerce model in which one consumer sells his goods or services to other consumers online
- Government to Consumer (G2C)
 - when a government or public sector entity uses ecommerce to sell goods or services to consumers. As an example, at many high schools, parents pay for school lunch, sports fees, and even late library fees via online portals
- But! Can it happen anywhere at anytime?

Mobile Commerce (m-Commerce)




- It is simply e-Commerce using hand-held devices such as smart phones, tablet PCs, netbooks, notebooks,...etc.

In other words:

E-Commerce + Wireless = m-Commerce

Mobile Commerce (m-Commerce)



- M-commerce is the buying and selling of goods and services through wireless handheld devices.
- M-Commerce is the process of paying for services using a mobile phone or personal organizer.
- M-Commerce is the use of mobile devices to communicate, inform transact and entertain using text and data via a connection to public and private networks
- Do you think m-Commerce is useful?Why 

Why m-Commerce is useful?



- It extends the reach of e-Commerce to the billions of mobile users worldwide.
- It allows a ubiquitous access to commerce resources and activities *anywhere at anytime*.
- New opportunities for business (e.g. location-based and personalized services to consumers)

Think about the '*Always on*' lifestyle and *Pervasive Workplace*





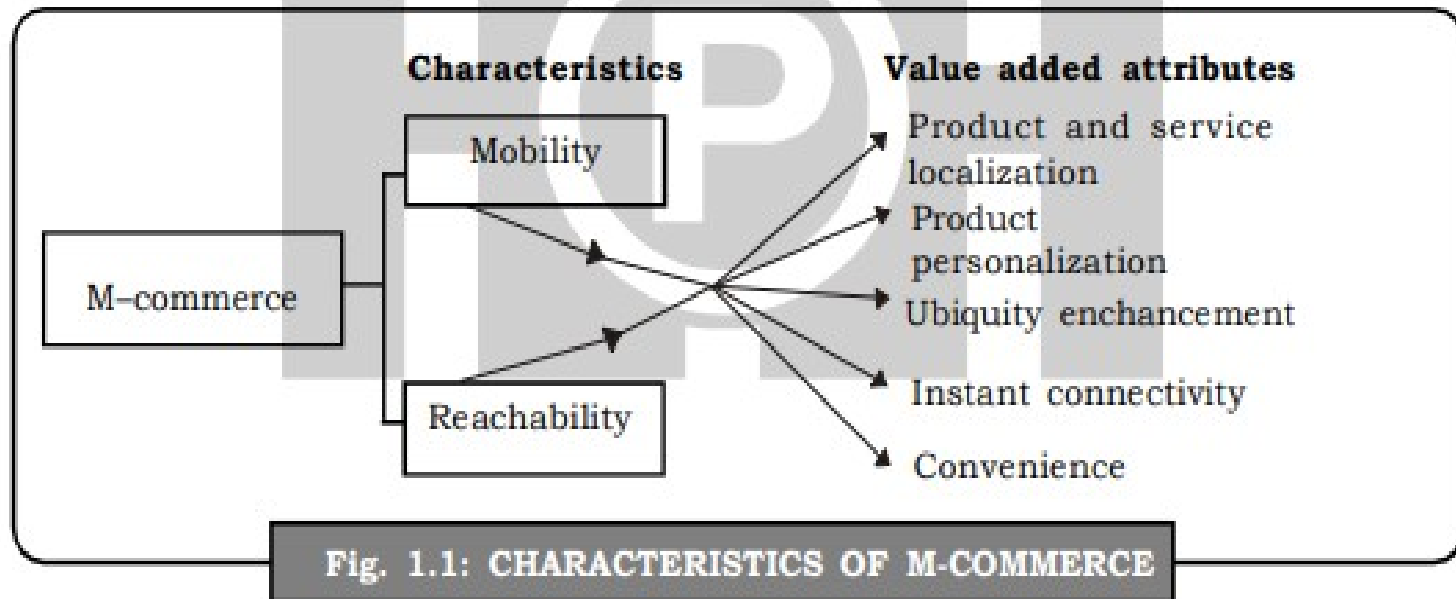
- Anywhere access to corporate resources and people
- Improves customer experience by improving response times



**Enterprise
Productivity**



Characteristics of M-Commerce



Mobile commerce is generally known as, any E-commerce done in a wireless environment, especially via the Internet

- Can be done via the Internet, private communication lines, smart cards, etc.
- Creates opportunity to deliver new services to existing customers and to attract new ones



Examples

- Mobile banking
- Mobile ticketing
- Mobile marketing
- Micro-payment

Think about the following numbers!



“Mobile subscriptions, too, have jumped from under a billion at the beginning of the decade to over 5 billion in 2010.” [2]

“In 2023, there will be 9.1 billion mobile subscriptions, 8.5 billion mobile broadband subscriptions and 6.2 billion unique mobile subscribers. 1 billion 5G subscriptions for enhanced mobile broadband are expected in 2023” [3]

Source:

<https://www.ericsson.com/en/mobility-report/reports/november-2017/mobile-subscriptions-worldwide-outlook>

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Potential Wireless Applications



- Travel applications (e.g. scheduling, reservations, ticket purchasing, price comparison)
- Share trading (e.g. real-time stock prices)
- Shipment/sales updates
- Customer service, payment status
- Location-based services (e.g. parking information, store discounts,....etc)



Can you think of more applications?

The m-Commerce Business Models



m-Commerce has many models, including:

- Business to Consumer (B2C) mobile commerce
- Business to Business (B2B) mobile commerce
- Business to Employee (B2E) mobile commerce
-



B2C Mobile Commerce

Enables customers with mobile devices to:

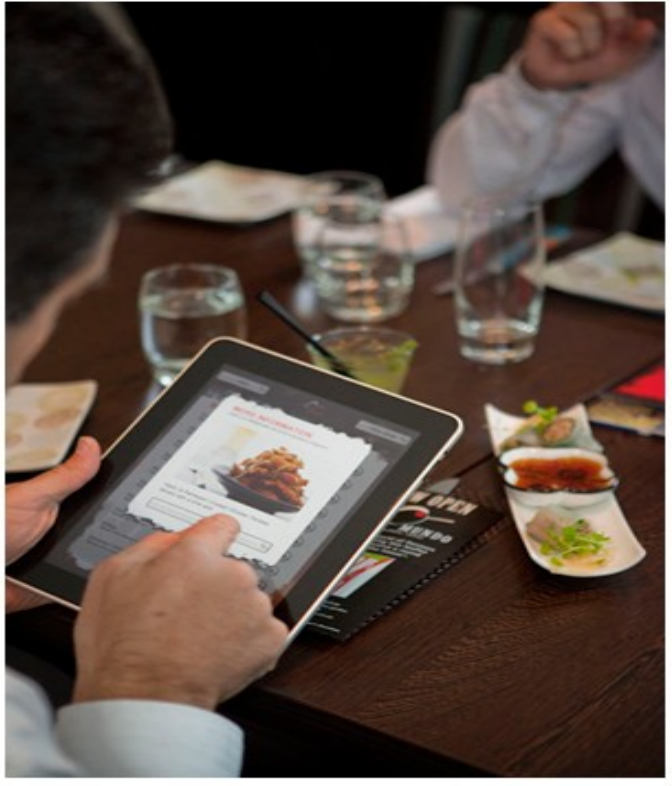
- access their bank accounts,
- pay bills,
- trade in shares (see: <http://commsec.info/mobile/>),
-
- and to place orders!



Interesting examples



In a restaurant...!



iPad restaurant menus at Rydges
North Sydney
Source: http://www.carlsonwagonlit.com/traveller_au/2010_06/supplier_spotlight/rydges.html



Wireless Credit Card Machines
Source: <http://merchant-account-network.com/wireless.html>

Another Example...

Easing customers of the 'checkout burden'



Starbucks stop here: forget cash use your phone to pay

January 20, 2011

Ads by Google

[Looking for a cheap N86?](http://mea.nokia.com/N86) mea.nokia.com/N86

Find out more about the features & specs of the N86 before you buy!



Smart phones now buying coffee

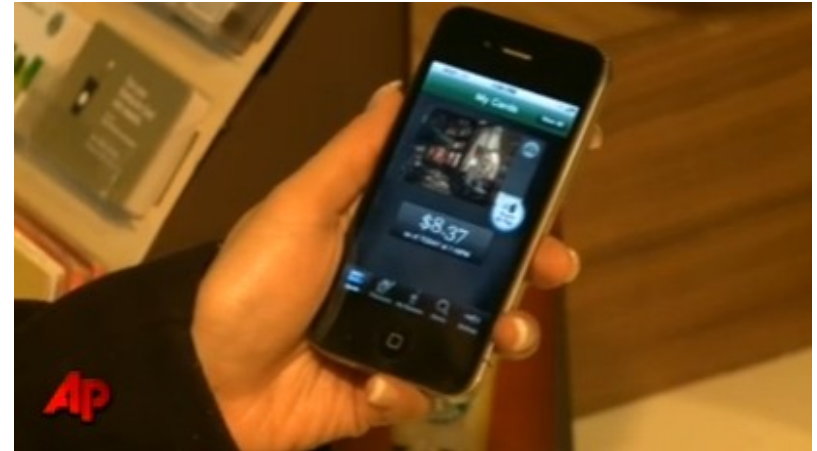
US Starbucks customers with certain mobile devices can now buy their coffee with the wave of their smart phone.

[Video feedback](#) | [Video settings](#)

US coffee chain Starbucks has started allowing customers in its US stores to keep their cash and credit cards in their wallets and pay for their drinks with mobile phones.

Source: SMH: January 20, 2011

Source: <http://www.smh.com.au/technology/technology-news/starbucks-stop-here-forget-cash-use-your-phone-to-pay-20110120-19x9r.htm>





B2B Mobile Commerce

Using mobile devices, assets can be tracked and more responsive service management can be achieved.

Some examples:

- Real time order status updates
- Using RFIDs* to track goods
- Sales force with mobile devices.
-?



Sample RFID

Source:

<http://www.themajorlearn.info/Software/RFID.html>

* Radio-frequency identification (RFID)

B2E Mobile Commerce



B2E m-commerce increases employee productivity and reduces business expenses.

For instance: employees can send information back to their companies from remote locations. This helps marketing staff to place orders for customers and receive confirmations (or instructions) on the go.



B2E Mobile Commerce



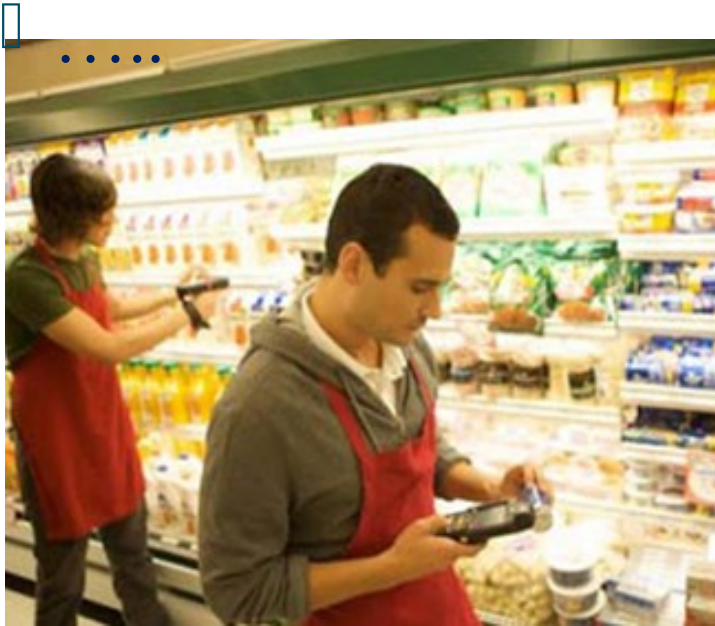
B2E m-commerce increases employee productivity and reduces business expenses.



More examples...



- Taxis (already in Korea, Singapore and Australia)
- Utilities and field service (gas, electricity, phone, water, and office equipment).



Mobile Store Associate Solutions
Source: <http://www.motorola.com/>



Wireless Ordering PDA System for Restaurants
Source: <http://www.eposcompany.co.uk/Wireless-Ordering-System.html>

More examples...!



Data capturing devices from Motorola
Source: <http://www.barcode-store.com/mc3190r.cfm>

M-COMMERCE — BENEFITS



The Benefits from Mobile Commerce Includes:

- Internet offerings are easier and more convenient to access.
- It offers considerable flexibility when conducting business.
- It offers intense customer orientation and high customer loyalty, and this is due to innovative service strategies.
- It offers lower transaction and personnel costs, which is due to the widespread automation.

M-commerce Issues





- Security
- Privacy - legal liabilities
- Usability and user acceptance
- Availability and bandwidth
- Cost: it is still relatively expensive to be online and mobile

M-commerce Issues - Cont.



■ **Device issues:**

- Incompatibility between devices
- Power consumption
- Relatively small screen  ()
- One-handed operator  ()

■ **Who owns the customer?**

- Mobile Network Operators?
- Device Manufacturers?
- Financial Institutions?
- Retailers?

■ **Other issues?**





M-COMMERCE VS. E-COMMERCE

Table 1.1: Difference between E-commerce and M-commerce

Technology	E-commerce	M-commerce
Device	PC	Smartphone's, pagers, PDAs,
Operating System	Windows, Unix, Linux	Symbian (EPOC), PalmOS, Pocket PC, proprietary platforms.
Presentation Standards	HTML	HTML,WML,HDML, i-Mode
Browser	Microsoft Explorer, Netscape	Phone.com UP Browser, Nokia browser, MS Mobile Explorer and other micro browsers
Bearer Networks	TCP/IP & Fixed Wire line Internet	GSM, GSM/GPRS, TDMA, CDMA, CDPD, paging networks

Discussion...



What do you think about the m-commerce status in Saudi Arabia?

What if you are asked to suggest m-commerce applications for TaibahU?

What do you need to start?

Class activity:
Search and discuss in 15 minutes (max!)



References And Additional Resources



[1] <https://www.pcmag.com/encyclopedia/term/53904/virtual-company>

[2] <http://weaseltch.com/1986/itu-2-billion-internet-users-5-billion-mobile-users/>

[3] <https://www.ericsson.com/en/mobility-report/reports/november-2017/mobile-subscriptions-worldwide-outlook>

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Next Lecture...



We will highlight some of the 'Mobile Payments'.

Questions?

