



Tech Lecture 1: Overview of Mobile Technologies

Pretest Results

Application Technologies

- SMS/USSD
- Mobile Web
- Local Application

SMS and USSD

Short Message Service (SMS)

- GSM Protocol that allows for exchange of short messages
 - CDMA networks also have SMS protocol
- Each SMS messages is 140 bytes (byte = 8 bits)
 - Can encode up to 160 7-bit characters using default GSM alphabet



Multimedia Message Service (MMS)

- Extension to SMS that allows message to include more content:
 - Images, videos, and audio
- Use WAP browser to display the message
- Much bigger payload than SMS
- Problems:
 - Displaying on different phone (content adaption)
 - Access to *MMSC* from provider

Unstructured Supplementary Services Data (USSD)

- Short, *user-initiated* responses (pull)
 - Balance check: Safaricom: *144#
- USSD supported in all GSM phones
- New standards support push messages
 - Balance Transfer
 - M-Pesa
 - Instant messaging
- USSD is not SMS!

SMS Premium Services with Operator Agreement

- Examples: Ringtones, digital content, state updates
- Value-added Service Provider (VASP) has agreement with operator
 - Extra charges are added to SMS to/from VASP
 - VASP and operator share extra charge
 - Revenue share or fixed transport fee
 - Short codes
- Messages transported between operator and VASP via Internet
 - VASP uses Gateway software

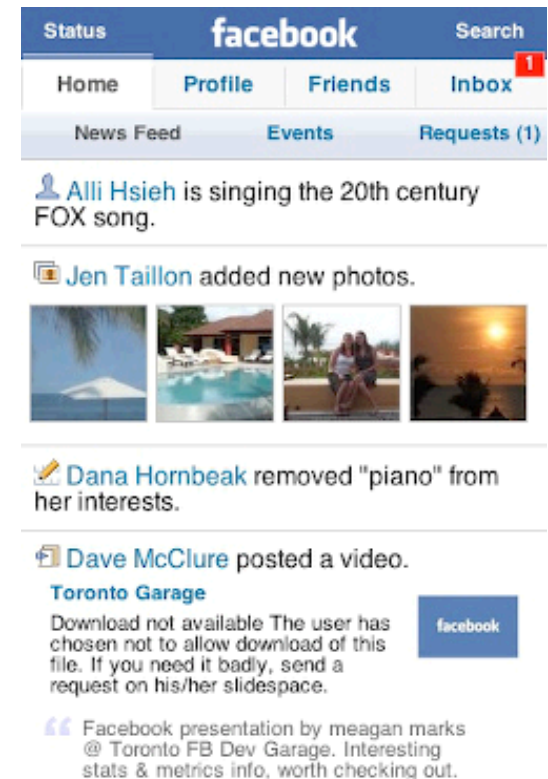
SMS-based Service

- Interaction with service via SMS's
- Types of services:
 - Information push: breaking news, emergency info
 - Interactive: weather given zipcode, voting system, twitter, facebook status update, etc.

For interactive: a protocol must be defined
Ex: send "weather 02319" to 01234

Mobile Web

- Internet on your phone
- Simplified UI for smaller screens
- Many generations of mobile web
 - Started as simple list of links
 - Now, full-featured websites
 - e.g. m.facebook.com



Local Application



Which technology should I use?

Technology Tradeoffs

	SMS/USSD Application	Mobile Web	Local Application
Installed Base	Everyone	Mostly Everyone	Many and growing
Portability	Best	Different Flavors	Phone Specific / Platform specific
Bandwidth Req.	Low	High (nothing local)	Variable (local interaction / cache locally)
User Interface / User Experience	Simple	Adequate	Rich & Responsive
Advanced Features	None	Few	Yes! (GPS, orientation, local networking)
Deployment	VASP	Web	App Store

Choose the technology wisely to
best suit your application's needs