

ARCHITECTING FOR MOBILES

Indian Institute of Technology Kanpur
Commonwealth of Learning Vancouver



MOOC4D

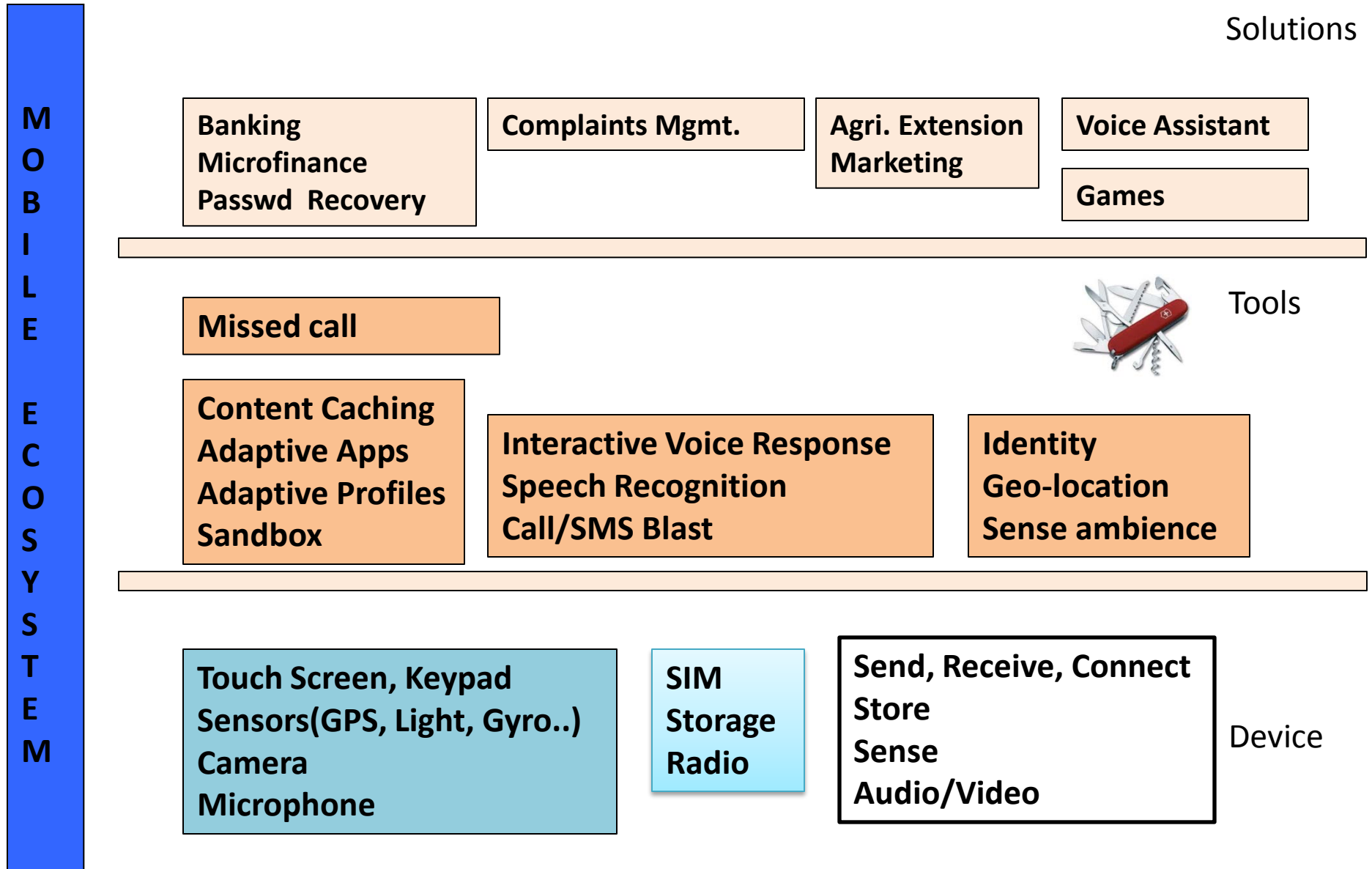
massive open online courses
for development

MOOC on M4D 2013

T.V.Prabhakar

IIT Kanpur

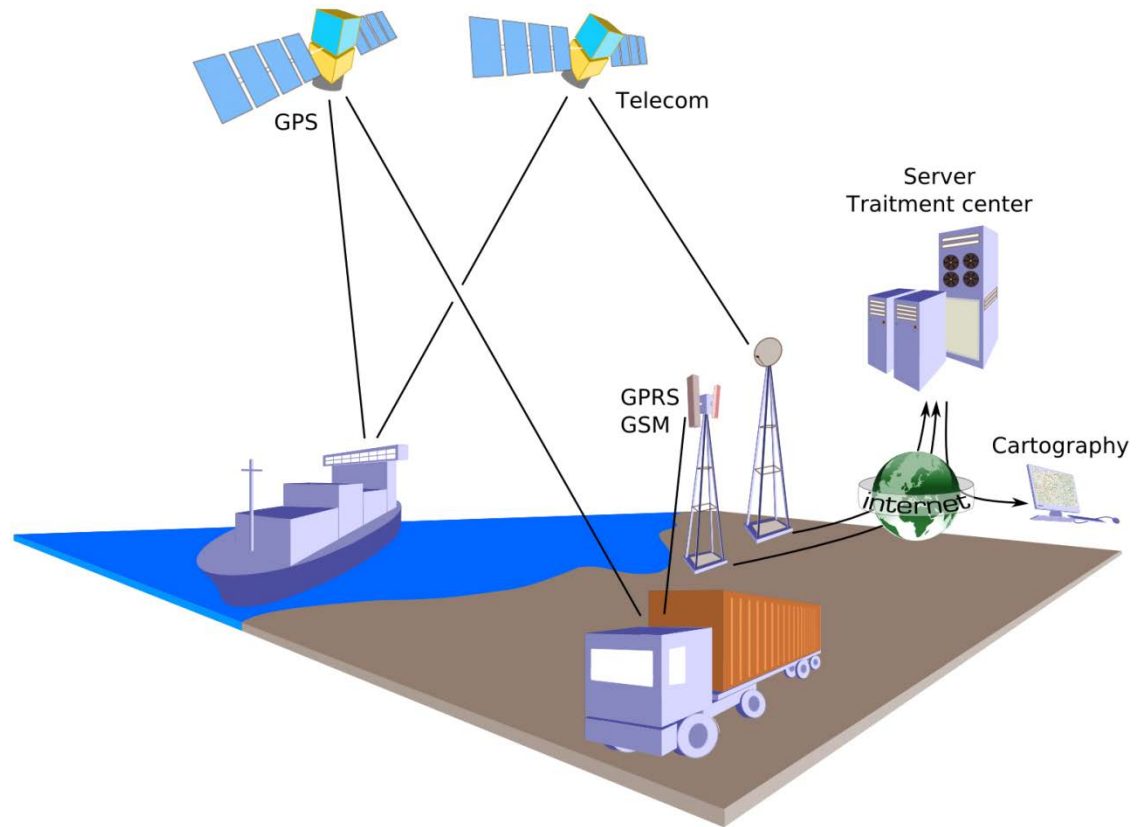
Architecting Solutions with Mobiles





Geo-location

Identify where the mobiles is from the GPS, Cell Towers



Identity Management



- Phone is registered initially - Password recovery through SMS
- SIM card coupled with a National Identity number can become a citizen identifier
- Customer logs into Net banking with his password
 - a separate screen pops up with a landline number
 - One has to give a missed call from their mobile to the landline number within two minutes
 - Software and matches it with the customer's mobile number registered in the bank's database to provide access

Sense the ambience



- How bright is the ambient light?
- Has the phone been moved close to the ear (for talking)?
- Is there a sudden movement(fall)?
- Rotation?

When connected to a backend

- Interactive voice response
- Speech recognition
- Call/message blast



Missed call



- One of the smartest inventions of the common man
- Revenue losses 20% to 30%
- http://en.wikipedia.org/wiki/Missed_call

Not about miserliness



- It is popular just because it is simple
- 'Reached destination' 'Call me back'
- Companies save in call-center charges and telephone bills
- Banks: most common query: account balance
- Cinemas: what movie and seat availability
- To your mother - you had reached college
- To get an SMS of daily prices of about crops
- Farmers get an SMS of daily prices of about crops

Design Patterns



- Content Caching
 - Intermittent connection
 - Load the content on local(device) store
 - Sync when possible
- Sandbox
 - Isolate the apps
 - should not harm performance of other apps
 - should not snoop on other apps.

Design Patterns



- Adaptive Apps
 - Apps to change their behavior dynamically during user interaction
 - Pause of a game/music player while receiving a call
 - Adjusts the resources that it consumes
 - To Improve usability, Reduce energy consumption – turn off Wifi while driving
 - Switch to silent mode on a particular geo location

So what does this all mean?

- A problem is solved using a set of tools that the eco-system provides
- vKVK: Call Blast, Identity(SIM)
- Digital Mandi: Speech Recognition
- Bank Access: Identity(SIM), Missed Call
- Google Now: Geo-location, Speech Recognition

Home Work

For your problem of interest think of how you can use the mobile ecosystem. See which of the 'tools' that we have talked are useful.

Think of more abstraction like this. The tool set we spoke of is not necessarily complete!

THANK YOU



MOOC4D
massive open online courses
for development

MOOC on M4D 2013