Location Based Services: From Promise to Reality

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Outline

• Realizing LBS
• How It Works
• Apps and APIs
Google Maps for Mobile with My Location

“My Location opens the road Atlas on the right page.”
“Sure, GPS would have been more accurate, but two blocks off isn't a big deal.”

• Launched in beta in **November 2007**
  – Multiple platforms, multiple countries, no GPS

• Quotes:

  “Wondering how much Redbull are they drinking over at the Google Maps offices? Today we have 'My Location', yesterday we had 'Our Maps' and the new 'Terrain' layer. Go Google Maps Go!”

  [Image of Google Maps interface]
Realizing LBS

2007

My Location (Beta) On Google Maps for Mobile

Android SDK

2008

Mobile Gears Location API

iPhone SDK

iPhone Google Mobile

Android Maps

Android Developer Challenge Top 50

Google Maps
Google Mobile

- Search and much more … (demo)
Important Features of My Location

• Cellid is complementary to GPS
  – Many applications can benefit from cellid-based accuracy
  – No waiting for time to first fix
  – No line-of-sight problem
  – Better battery life

• FREE!

• Worldwide coverage (200+ countries)
• Works across many network types (GSM, CDMA, 3G)
• Works across different carriers
How It Works

• Collect geocontextual information along with a cell-id

• Cell Tower Identifier (cell-id)

• Location signals: GPS vs. center of the map viewport
Challenges

• Area of interest vs. actual location
• Noisy data:
  ➢ Oklahoma points
  ➢ GPS errors
• Towers in the water!
Platform Support

Hey, My Location seems very cool but why is it not working on my cell phone?

None
Partial
Good
Full

Some WinMo devices (e.g. Samsung, MotQ, Palm Treo 700w)
BB V4.0
BB V4.2
neighbor information, average RSSI, TA
Data Collection

<table>
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<th>GPS</th>
<th>non-GPS</th>
<th>Total</th>
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</table>

Graph showing the data collection with line graphs for GPS, non-GPS, and total.

Pie chart showing the distribution of data collection across different countries.
Privacy

• A balance between respecting user privacy and providing good useful functionality to the user

• How does My Location do this?
  ➢ Anonymous: No PII, no session id
  ➢ User has full control
The Coming Wave
Enabling location for 3rd parties via:
Android, Gears (browser)
How can you help?

Build innovative location-based applications

http://www.google.com/gmm
http://code.google.com/android/
http://code.google.com/apis/gears/

THANK YOU