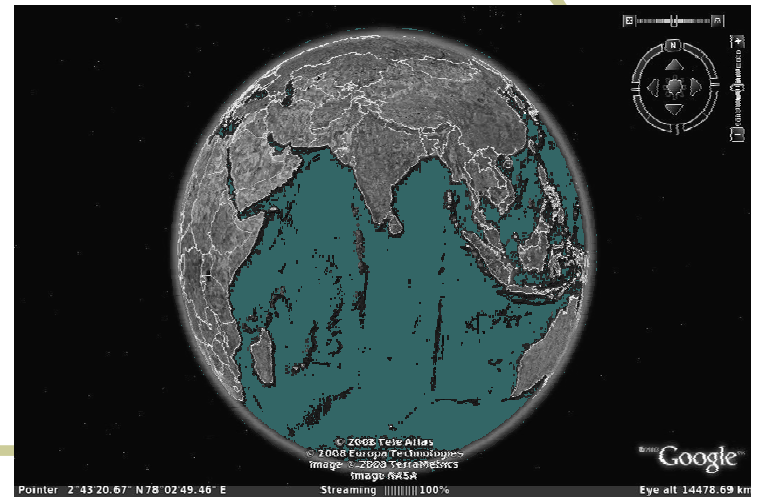


Challenges and Opportunities related to serving GIS via Mobile Phones: Review from a Developing Nation's Perspective

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Will look at..

- Mobile GIS
- Components of a mobile GIS
- Approaches for realization
- What is impressive & what is missing?
- Way forward

Mobile
communication

Mobile computing

GIS



Mobile GIS

More towards LBS



According to Solyman A, 2005

More towards GIS related Field work



Source:

(L) <http://www.nutiteq.com/nutimap.html>

(R) www.esri.com/library/whitepapers/pdfs/arcpad.pdf

More towards GIS related Field work

Mobile GIS = use of
GIS in a mobile
device ?



A utility worker accesses and edits GIS data in ArcPad using a ruggedized handheld computer with a built-in GPS receiver.

Mobile GIS : Limitations



Power, Connectivity,
Memory, display, user
model.....



Data storing,
processing , map
rendering

Mobile GIS: Realizations

- stand-alone client
- client –server
- distributed client-server
- web services
- peer to peer

According to Hassin ,2003

Mobile GIS: Realizations

1. Extension of Enterprise GIS
2. Use of Mobile Computing Technologies
3. Mobile internet
4. 1+2+3 ?

Some highlights : past and present

Mostly on

- smart phones , PDAs ...
- based on specific data sets
- vendor specific applications

4. Less interoperability
5. User scenarios

Realizations



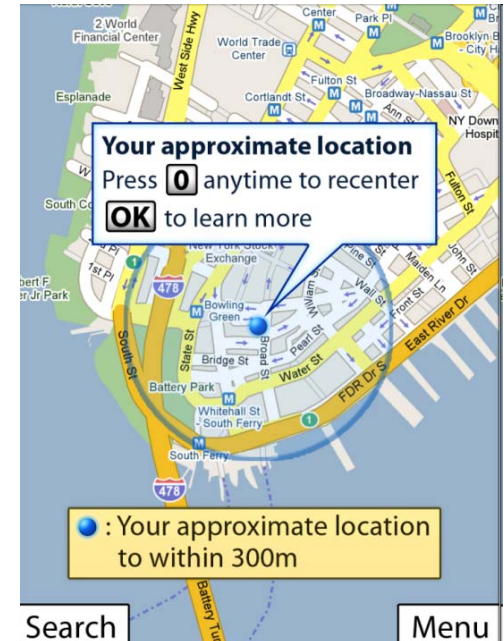
Source:
<http://www.instreamhabitat.org/Documents/mesohabsim/HMUMapping.pdf>

23.10.2009



Source: http://www.skylab-mobilesystems.com/en/products/j2me_wms_client.html

FOSS4G2009



Source:
<http://www.qweas.com/downloads/education/other/scr-google-maps-for-mobile.png>

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Some highlights : past and present

1. High end devices
2. specific data sets
3. Vendor specific applications
4. User scenarios

Examples

- Esri's ArcMap - Windows mobile.
- Nokia Ovi maps - Symbian o/s
- Blackberry Maps - BlackBerry
- iPhone maps - iPhone
- Many research work based on J2ME - Pocket PC / Nokia S60

Some highlights : past and present

1. Smart phones, PDAs
2. Mostly based on specific data sets
3. Many vendor specific applications

4. 1+2+3 -> Lack of interoperability

5. User scenario

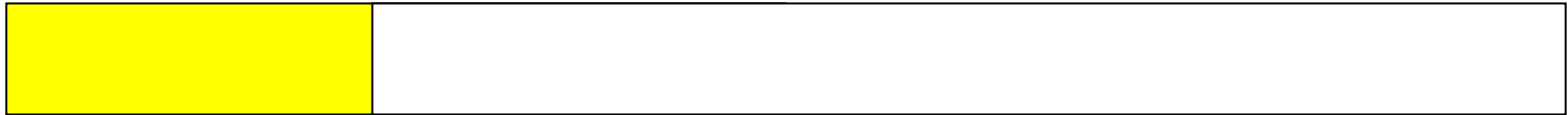
Some highlights : past and present

1. High end devices
2. specific data sets
3. Vendor specific applications
4. User scenarios

Examples

- Where am I ?
- Proximity Search
- Navigation
- Routing
- Utility data management
- Habitat monitoring
- ...

Some highlights : Present



Internet – less than 25% world population ¹



Mobile phones - 50% of world population ¹

¹ United Nations Report 2008

15%



Developed Countries

85%



Developing countries

Source: Human Development Index ,2008

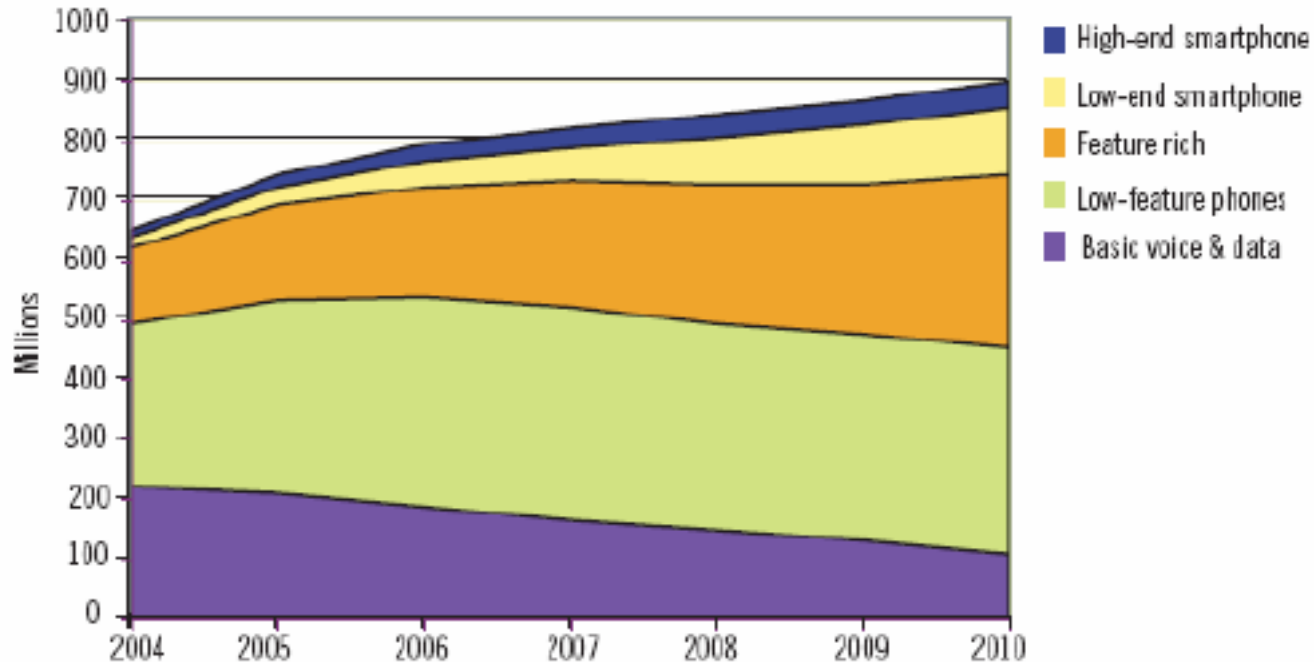


2/3 of mobile phones in developing countries

According to : Miniwatts MKT Group(2009)Internet Usage Statistics :The Internet Big Picture ,World Internet Users and Population Stats (May 2009)

Are we missing something ?

Handset segmentation



Source: Informa Telecoms & Media Future Mobile Handsets
7th Edition

Source : Enabling web access on feature Phones(2006) .W3C Mobile
Web seminar, France.

<http://www.w3.org/2006/11/JataayuSoft.pdf>



Source :

(L)<http://www.news.com.au/technology/story/0,28348,26020929-5014118,00.html> ,Sep 2009

(R) By Nissanka Wijerathne, Oct 2009





(L)<http://www.letsgomobile.org/en/4140/samsung-eternity/> , Nov 2008

(R)<http://www.dailymail.co.uk/news/worldnews/article-1076225/Britains-latest-weapon-Taliban-Video-diaries-filmed-mobile-phone.html>, Oct 2008

23.10.2009



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Source:

(L) http://www.ehow.com/how_5126987_assignment-ringtones-friends-tmobile-dash.html

(R) By Nissanka Wijerathne, Oct 2009





Source :

(L) http://www.globalgiants.com/archives/consumer_goods/index2.html, July 2008

(R) <http://www.crisscrossed.net/2008/11/22/mobile-phone-innovation-may-not-happen-how-you-think-it-does/>, Nov 2008



Mobile GIS : Additional Challenges

- Serve on spectrum of devices?
- Service for low end clients as well ?
- Social/economic sensitivity ?
- community interest driven?
- Use of local data

Some highlights : recent past and present

1. **Emerge of Open Standards useful for mobile GIS**
2. **Adoption of open standards & web services in mobile GIS**
 - WMS clients ,WFS clients, OpenLS implementations
3. **Use of open data**
4. **Development of “mobile web” ideas**
5. **Use of interoperable approaches**
6. **Public Participatory mobile GIS**

Mobile GIS : Future

- Mobile GIS clients
- Progressive enhancement/degrading
- Capture local knowledge
- Maintaining of spatially enabled databases
- Mobile PPGIS?

Mobile phone for reducing digital divide



Source:<http://eppsnet.com/2004/10/into-the-digital-abyss>

Mobile GIS on mobile phones



Source : By Nissanka Wijerathne , Oct 2009

23.10.2009

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