Location-Based Services

Location-Based Services/Applications

- Examples include:
  - Emergency 911
  - Navigation
  - Vehicle Assistance (OnStar)
  - Child Finder
  - Advertising
  - Local Search
  - Traffic applications
  - Automotive Vehicle Location (Fleet tracking)
  - Asset Tracking
  - Personnel Tracking
  - Social Mapping
  - Self Guided Tours
  - Finding elderly or individuals with Alzheimers

Regular GPS vs. AGPS

Regular GPS is fine when you're in the clear with a strong battery, powerful receiver and a line-of-sight view of the sky. But indoors and with less powerful systems, you need assistance. Another problem is TTFF (Time to First Fix).
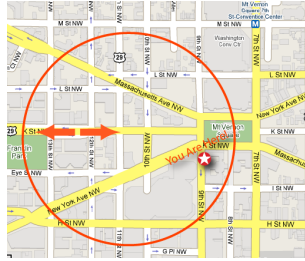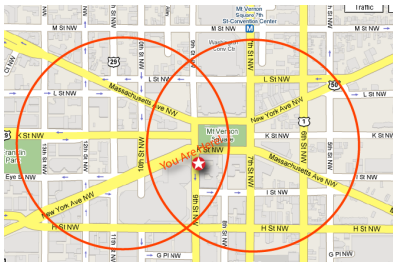
AGPS (Assisted Global Position System)
- The receiver communicates with an "assistance server" that helps calculate position using GPS coordinates and possibly other data such as distance from cell phone tower(s). Computations may take place on remote server.
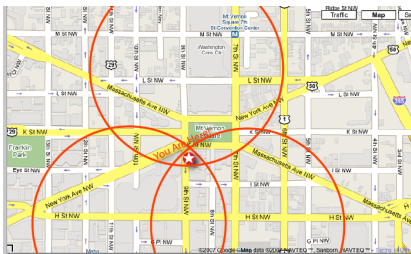
Assisted GPS: Rough Idea

Assisted GPS : Approximate

Assisted GPS : Accurate Fix

AGPS

AGPS systems can also download map data, points of interests, and other data on demand even to a device with limited storage capacity.

- GasBag for example can plot service stations and gas/petrol prices.

The Scope Of LBS Services

Mobile Resource Management	Entertainment	Information Services	Personal Security
Asset/ Salesforce Tracking	Find A Friend	Navigation	Track My Movement

Show Location on Map and Track Movement in Real Time | Locate Another Person Within a Pre-Defined Geographic Area (opt-in) | Turn by Turn Driving/walking Instructions | Show Location on Map and Track Movement in Real Time

Fleet Management | Location Based Games | Traffic/Weather Alerts | Locate My Child

Traffic/weather reports delivered on demand or automatically | Show Location of My Child (no opt out)

Social Networking | POI Look-up | Emergency/ Roadside Assistance

Points of interest located based on location

Enterprise | Text Messaging | Location Based Advertising | Emergency/ Roadside assistance dispatched based on location of wireless voice call

Location is key for application to function

Location is an enhancement to the application

Location Based Commerce

NAVTEQ

Industry Direction

Devices · **Apps** · **Networks/Data**

RIM, NOKIA Connecting People, ANDROID

loopt, SOCIALIGHT, whrrl, Google Maps

Sprint, AT&T, vodafone, at&t, verizon wireless, SKYHOOK WIRELESS, NAVIZON

Location
accuracy, availability, frequency, inexpensive

Self-Reporting & Social Networking

Users tell the system where they are and/or what they are doing

Aka-Aki, Belysio, Bliin, Blumapia, Blummi, Brightkite, Buddy Beacon, Buddycloud, BuddyMob, BuddyWay, buzzd, Carticipate, Centrl, CitySense, ComeTogethr, Dodgeball, Dopplr, Duzine, EagleTweet, FindbyClick, FindMe, Flaik,Footprint History, FourSquare, Foyaje, Fraced, Friends on Fire, GeoMe, GeoSpot, GeoUpdater, Glympse, Google Latitude, Groovr, GyPSii,ICloseby, iPling, Ipoki, IRL, Jentro, LightPole, Limbo, Locaccino, Locatik, Locatrix, Locr, Locle, Loki, Loopt, MapMe, Map My Tracks, Match2Blue,MeetMoi, Meet Now Live, Microsoft Vine, Mizoon, Mobilaris, MobiLuck, Mologogo, Moximiti, My Adventures, MyGeoDiary, MyGeolog, Myrimis, Now Here, Nulaz, Plazes, Pocket Life, Pownce, Quiro, Qlique, Rummble, Shizzow, Skobbler, Skout, Sniff, Snikkr, Socialight, Sparrow, Spot Adventures, SpotJots, The Grid, Toai, TownKing TownQueen, Trackut, Trapster, Tripit, Troovy, Twibble, Twinkle,Twittelator, Unype, weNear, WHERE™, Whereis Everyone , WhereYouGonnaBe, Whrrl, Zhiing, Zintin

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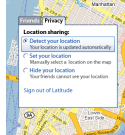
Why phones have location capability

FCC Federal Communications Commission
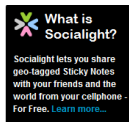
The Federal Communication Commission's Enhanced 911 Rules

- Phase 1 requires carriers, upon valid request by a local Public Safety Answering Point (PSAP), to report the telephone number of a wireless 911 caller and the location of the antenna that received the call.
- Phase II requires wireless carriers to provide far more precise location information, within 50 to 300 meters in most cases.


Geo Tagging

What is Socialight?
Socialight lets you share geo-tagged Sticky Notes with your friends and the world from your cellphone - For Free. Learn more...

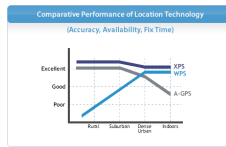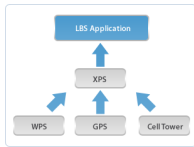**Eye-Fi**
Camera - Always Connected.

WPS: Wifi Positioning System

- Skyhook Wireless has been driving the country mapping out WiFi hotspots in top 2,500 cities. Has database of > 16.5 million access points, public private & encrypted.
- A device can get a fix from a WiFi hotspot
- Increasing number of handheld devices including "Skype Phones" can access WiFi systems
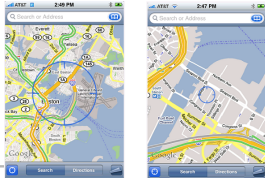
XPS (SkyHook)

Short distance technologies

- RFID – Now used to track assets. Could be used in hospitals to track patient movement within facility

  – Ericsson's Bluetooth Local Infotainment Point (BLIP).
  Bluetooth | coupons as you walk near a BLIP device

2009: The Year of LBS

- 4% decrease in mobile device sales.
- Growth of LBS market from 41 million (08) to 96 million (09).
- Revenue: 1 billion (08) to 2.2 billion (09)

Consumer Location-Based Services, Revenue Forecast by Region, 2008-2009 (Millions of Dollars)

Region	2008	2009
North America	327.2	713.7
Asia/Pacific	327.1	607.4
Japan	268.8	524.7
Western Europe	69.5	303.5
Middle East	4.1	22.7
Eastern Europe	0.2	13.6
Latin America	1.2	12.7
Africa	0.1	2.8
TOTAL	998.3	2,201.1

Source: Gartner (June 2009)