



Location Based Services: Keys to Success

July 2008

Introduction

What are the success factors driving the rapid proliferation of Location Based Services?

- Assisted-GPS and location based applications are dependent on multiple segments for success.
- Each segment has an impact on the continued growth of location based services
- These include:
 - Awareness
 - Technology
 - Consumer Experience
 - Services

Current Popular Features Have Deep Consumer Roots



Audio

- Recordings >100 years old
- MIDI >20 years old
- MP3 ~7 years old
- 1st MP3 phone in 1999



Video Games

- Video Games ~30 years old
- PC/Console >20 years old
- 1st game on phone in 1997



TV/Video Player

- Movies >100 years old
- TV >50 years old
- Video on PCs >15 years
- 1st video phone in 2003



Camera

- Photographs >170 years old
- Accessible >120 years old
- 1st Digital Camera ~1995
- 1st Camera Phone 2000

GPS Has Much Shorter History, but Already Engaging



- GPS system has been commercially available only ~10 years
- 1st gpsOne enabled phones in 2001
- GPS application market just hitting stride today
- GPS Handheld market in '05 was more than double that of '04
- Market taking off dramatically

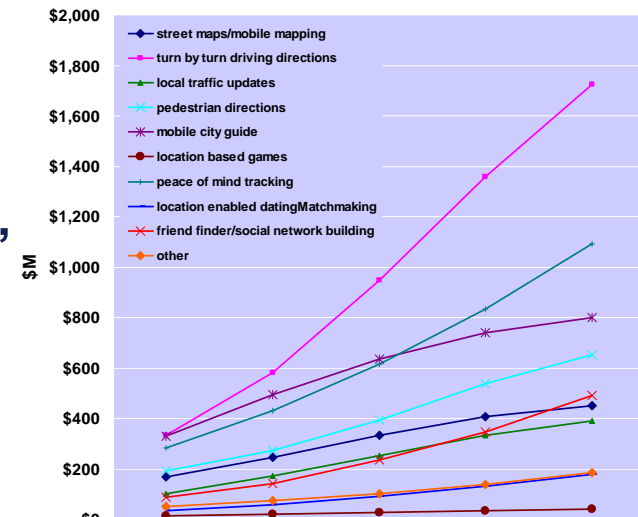
Common Themes:

- Established markets
- Established content
- Value/ Experience well understood

Global LBS Market Trends

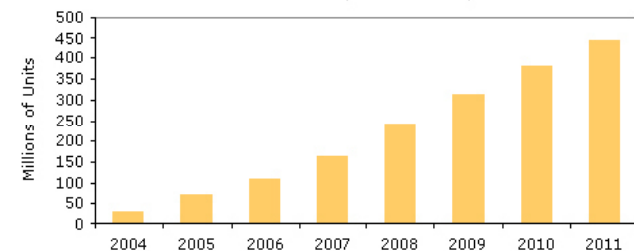
- **Global LBS revenues are growing**
 - GPS-equipped devices growing
- **ASP for LBS applications is approx. “2X” the industry average for other apps** (Telephia Oct 2007)
- **Investment & strategic activities taking place**
 - Navteq purchased for +\$8B, Teleatlas for +\$2.5B
 - Apple Gen 2 iPhone embedded location
 - Google – Introduces Android/MyLocation
- **Higher Integration and Push LBS**
 - Social Networking and Advertising

Global LBS Revenue Forecast



Source: Strategy Analytics, DataModel: Location Based Services (LBS) Forecast, Oct 2007

Global GPS-Equipped Mobile Handset Shipment Forecast, 2004-2011 (Millions of Units)



Source: iSuppli Corp., October 2007

Location Technology Improvements

Technology improvements will drive the adoption of LBS as confidence in performance improves.

- **Cost:**
 - Physical costs: embedded GPS; reduced hardware
 - Battery: improved algorithms reduce usage
- **Performance:**
 - Intelligent Algorithms: add assistance to GPS, filtering, throttle mechanisms
 - Terrestrial Data: incorporate cell tower information into location calculations
 - “Hybrid”: incorporate other measurements such as WiFi into solution

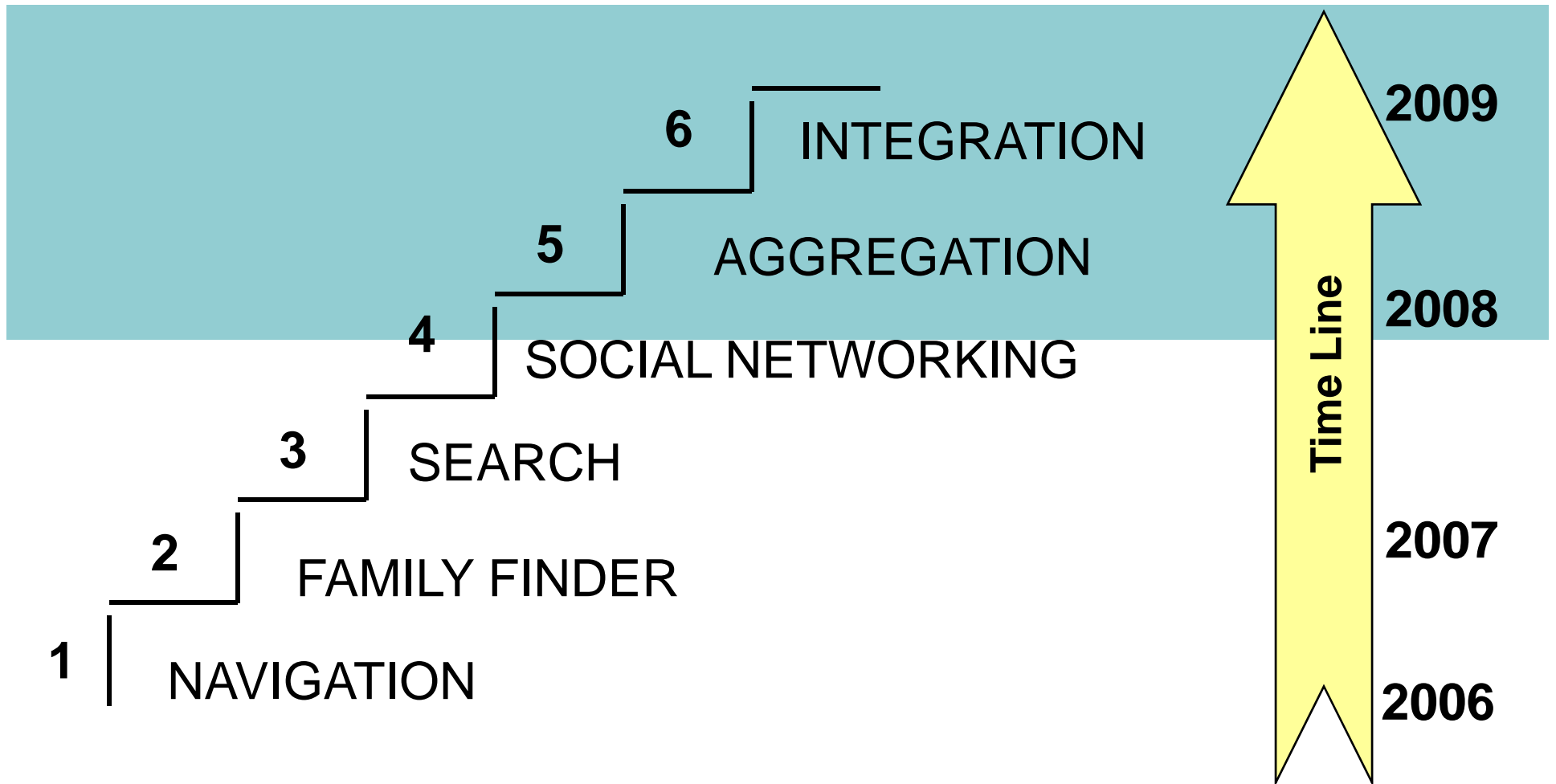
Consumer Experience

What does the consumer want/need to use LBS...every day?

- **Ease of Use:** Apps should be easy to use
- **Discovery:** Apps should be easy to find
- **Privacy/Security:** Logic to insure privacy and security, yet maintain functionality and advantages of LBS
- **“Push”:** Locations should be automatic to enhance the experience
- **Value:** There should be value perceived for the incremental cost of positioning

Mobile Application Genres	Avg. Subscription Price (US \$)
Location Based Services	\$ 9.23
Weather	\$ 3.82
Sports	\$ 4.58
Wallpapers/Pictures	\$ 3.29
Music	\$ 4.99
Maps/Directions	\$ 3.95
Personal Organization Tools	\$ 5.41

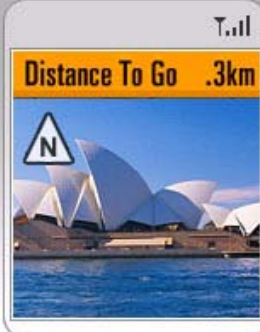
Progression of LBS Offerings



Services – Offered Today

What are services being offered when it comes to LBS?

- **Personal Security:** Emergency and concierge services
- **Navigation:** First and most successful location-based service. Continued growth expected
- **Enterprise:** Use of geo-fencing to increase productivity and secure assets


Personal Security	Navigation & Points of Interest	Enterprise
 <ul style="list-style-type: none">•Roadside Assistance•E-119/E-112/E-911•Weather Warning•Child Finders	 <ul style="list-style-type: none">•City Guides•Mobile Yellow Pages•Traffic Reroute	 <ul style="list-style-type: none">•Fleet Management•Asset Monitoring•Personal Productivity

Services – Up and Coming

What are services being offered when it comes to LBS?

- **Peer-to-Peer:** Privacy and automatic location are key to success
- **Gaming:** Geo-caching, landmarks, location aware groups
- **Targeted Advertising/Search:** Knowing where the consumer is will impact both the business and consumer

Peer-to-Peer




•Buddy Groups
•Dating
•Geo-Marked Photo Sharing

Gaming



•Interactive Gaming
•GeoCaching
•Location Aware Games for Groups

Commerce



•Mobile Coupons
•Customer Service

Expanded Possibilities for Wireless GPS



Thank you