

# The 2011 Ultimate Guide: Location-Based Services and Applications



## **1.0 OVERVIEW**

### **1.1 Objectives**

Location-Based Services, often referred to as LBS, use information transmitted from a device to determine its presence and location. Terminals can be fixed or mobile; both receive and transmit data. They include, but are not limited to, wireless phones, laptops, portable navigation devices, and embedded systems. Amassed with location identification are a host of functions ranging from marketing and payments, safety and security, and social networking and local business search. Usually coupled with LBS are navigation solutions.

In 2007, LBS achieved an inflection point, gaining traction with global industry and financial analysts. The forecasts varied; they still do so. In 2010, Gartner forecasted global LBS revenues to surpass USD \$1.5B in Q4; Juniper forecasts that by 2014 the global monetary circulation for LBS to achieve USD \$13B; and, Global Industry Analysts projects that by 2015 the global LBS market will reach USD \$21B.

Investors of capital and human resources that do not rely on press release headlines to evaluate the profit delivery for LBS will require a deep dive into the ecosystem based upon the insights and analysis of technology executives.

### **1.2 Methodology**

This report is multi-dimensional, providing the audience with technology and business insights, quantitative and qualitative analysis, and case-studies providing oversight of strategy and implementation. Moreover, included are executive tools requested by loyal customers of The MindCommerce.

Further, the report identifies trending opportunities to exploit ahead of market cycles. Examined are intellectual property triggers, which are commonly ignored among one-off product vendors, particularly application and content developers. The merits of supply chain orders are also examined to determine their usefulness in corporate and/or product strategy, marketing partnerships, and sales planning.

### **1.3 Report Structure**

The full report is organized into the following sections:

- Basic and Advanced Location Technologies
- LBS Ecosystem and Value Chain
- Commercial Applications
- Market Modeling
- Appendix



## Selected Companies in Report

AT&T	GEOMIUM	SONY
ACCEL PARTNERS	GLOBAL INDUSTRY ANALYSTS	SPRINGBOARD ENTERPRISES
ACROSSAIR	GOKIVO	SPRINT
ACUITY	GOOGLE	STANFORD UNIVERSITY
ACXIOM	GRANTCLOUD	STARENT
AEPONA	HERTZ	STOP & SHOP
AIRSAGE	HOME DEPOT	SYGIC
ALLTEL WIRELESS	HUMMER WINBLAD VENTURE	SYMANTEC
AMADEUS CAPITAL PARTNERS	PARTNERS	TELEATLAS
AMERICAN NETWORK	IBM	TELECOM EQUIPMENT AND
COMPUTADORES	IEMR	TELECOM REGULATORY
AOL	IGLOBE PARTNER	AUTHORITY OF INDIA
APPLE COMPUTERS	IGNITION PARTNERS	TELECOMMUNICATIONS SYS
AT&T INTERACTIVE	INRIX	TELEFONICA
ATLAS VENTURES	INTEL	TELENOR
AUTOMOBILE CLUB OF SOUTHERN	JASDAQ	TELIA SONERA
CALIFORNIA	JD POWER	THE CIMARRON GROUP
AVANCAR	JUNAIO	TIME-WARNER
AVIS	KOREAN COMMUNICATIONS	T-MOBILE
BELL CANADA	COMMISSION	NETWORKS IN MOTION
BELL MOBILITY	LAIPAC TECHNOLOGY	NISSAN
BLOOMBERG	LAYAR	NOKIA
BLOOMINGDALES	LEROY'S HORSE AND SPORTS	NTT DOCOMO
BLUETOOTH	PLACE	OAK INVESTMENT PARTNERS
BOOST MOBILE	LOC-AID	OMNILINK
BRASILE TELECOM	LOCATIONLABS	OMNITROL
BRAZIL TELECOM	MAGELLAN	OPENSTREETMAP FOUNDATION
BROADCOM	MAPQUESTMOBILE	OPENWAVE
CANTOR FITZGERALD	MECOMO	OPTECH
CENTRE FOR RESEARCH ON	METACARTA	PEER39
COMPUTER-SUPPORTED LEARNING	METROPICS	PLACECAST SHOPALERTS
AND COGNITION	MICROSOFT	POLARIS VENTURES AND DOG
CENTRE FOR RETAIL RESEARCH	MOBILUCK	PATCH LABS
CISCO SYSTEMS	MOCEAN	PRICEWATERHOUSE COOPERS
CLARO	MONEYTREE	TOMTOM
CLEARWIRE	MORGAN STANLEY	TRACFONE
COBRA AUTOMOTIVE TECH	MOTONAV	TRANSACTION MARKETING
COMSCORE	MOTOROLA	TWITTER
COVAD	MSOLVE PARTNERS	UNIVERSITY OF ARKANSAS RFID
CREATIVITY SOFTWARE	NASDAQ	CENTER
CYWORLD	NATIONAL VENTURE CAPITAL	UNIVERSITY OF SYDNEY
DECARTA	ASSOCIATION	UPPER AUSTRIA UNIVERSITY
DEIMOS	NAVIGON	VENTURE DEAL
DELOITTE	NAVINI	VERIPLACE
DEPARTMENT OF INDUSTRIAL POLICY	NAVTEQ	VERIZON
AND PROMOTION	QUALCOMM	VINDIGO
DIGITALMEDIA ACROSS ASIA	QUALCOMM AUSTRIA RESEARCH	VIVO
EBAY	CENTER	VODAFONE WALMART
ELECTRONIC FRONTIER	QWEST COMMUNICATIONS	WAVEMARKET
FOUNDATIONS	RIVERSTONE RESIDENTIAL	WAZE
ENTERPRISE MOBILITY EXPERTS	SALES SENSE	WHERE
E-PLUS	SEQUOIA CAPITAL	WHEREIFY
FACEBOOK	SEVEN NETWORKS	WIFI
FEDERAL HIGHWAY ASSOCIATION	SIMPLE GEO	YELLOWPAGES.COM
FLEXCAR	SIRF	YELP
FOURSQUARE	SK TELECOM	ZIP CAR
GEO-INFORMATICS CENTER	SKYHOOK WIRELESS	ZOOMBAK

## **Table of Contents - 122 Pages**

### **1.0 OVERVIEW. 2**

- 1.1 Objectives. 2
- 1.2 Methodology. 2
- 1.3 Report Structure. 2
- 1.4 Companies Mentioned in the report. 3

### **2.0 Basic and Advanced Location Technologies. 10**

- 2.1 Geo Positioning System (GPS) 11
- 2.2 Assisted GPS. 13
- 2.3 Navigation. 17
- 2.4 Radio Frequency Identification (RFID) 18
- 2.5 Bluetooth. 19
- 2.6 Wireless Broadband (WiMAX) 20
- 2.7 Mapping Technologies. 23
- 2.8 Location Based Services (LBS) 29
- 2.9. Mapping Services. 32
- 2.10 Local Search Services. 33
- 2.11 Navigation Services. 34
- 2.12 Location as a Service. 36
- 2.13 Location Based Services Ecosystem. 39

### **3.0 Applications and Hardware. 43**

- 3.1 Infrastructure Applications (IA) and Hardware. 43
- 3.2 Positioning Determining Equipment/Hardware (PDE) 45
- 3.3 Gateways. 46
- 3.1 Navigation with Human-Machine Interfaces. 46
- 3.2 Location. 47
- 3.3 Safety E 911 and NG 911. 48
- 3.4 GIS Data Applications. 50
- 3.5 Geospatial Server. 51
- 3.6 Network as a Service. 52

### **4.0 Commercial Applications. 53**

- 4.1 MapQuestMobile for the Carrier Supported Mobile Device. 53
- 4.2 VZ Navigator for the Carrier Supported Mobile Device. 55
- 4.3 Navigon Navigation Devices. 56
- 4.4 Garmin Personal Navigation Devices. 58
- 4.5 Bloomberg BMAP for the Energies and Oil Market. 58
- 4.6 Omnilink for Enterprise Social. 59
- 4.7 Google Latitude for Carrier Supported Mobile Devices. 60
- 4.8 Leroy's App for Sports-book Wagering in the State of Nevada USA. 60
- 4.9 TeleNav for Carrier Supported Mobile Devices. 61
- 4.10 Acuity (acquired by NAVTEQ) for Mobile Proximity Marketing. 62
- 4.11 Nearest Subway Augmented Reality Application for Locating Subways. 62
- 4.12 junaio eBay Classifieds Augmented Reality for Locating Goods and Services. 64
- 4.13 FourSquare versus MobiLuck – Which Company Will Win Globally?. 65
- 4.14 Gokivo Navigator for Carrier Supported Mobile Devices. 67
- 4.15 Tele Atlas Local Mapping Tools for Mobile Navigation Applications. 68
- 4.16 IBM Map-based Mash-ups and Cognos 8 Business Intelligence Server. 69
- 4.17 AirSage Real Time Traffic Information. 71



- 4.18 Cobra Automotive Technologies pan-European Luxury Auto-security Supplier. 72
- 4.19 INRIX Real Time Predictive Traffic Solution. 73
- 4.20 TeleCommunication System (TCS) for E911 and NG911. 73
- 4.21 Privacy Laws, Rules, and Guidelines. 75
- 4.22 Skyhook Maps Booster for Nokia Phones. 76
- 4.23 Apple Computers Location Based Services. 78
- 4.24 IBM Cloud Service Provider Platform. 78
- 4.25 deCarta Navigation White Label Mobile Navigation Service. 79
- 4.26 Nokia Acquisitions. 80
- 4.27 NAVTEQ Embedded Solutions. 80
- 4.28 NAVTEQ Media Solutions. 80
- 4.29 NAVTEQ Direct Access. 80
- 4.30 Qualcomm and SiRF GPS Chipsets. 81
- 4.31 Zip Car Mobile Application. 82

## **5.0 Make or Break Challenges for Market Leaders (Modified Porter's Five Forces Model) 85**

- 5.1 Consumer Location-Based Services Applications. 85
- 5.2 Consumer Navigation Applications. 86
- 5.3 Cloud Services. 86

## **6.0 Family and Friends - Locator and tracking.. 87**

- 6.1 Developers. 87
  - 6.1.2 Wherify Wireless Device Hardware and Software. 88
  - 6.1.3 WaveMarket Family Finder for North America and Brazil. 88
  - 6.1.4 Geomium for Social Location of People, Places, and Events. 89
  - 6.1.5 Laipac for Canada and Deimos for Spain. 90
  - 6.1.6 Zoombak A-GPS Car & Family Locator for the United States. 90
  - 6.1.7 MECOMO for Austria, Germany, Switzerland, and Brazil. 91
- 6.2 Wireless Carriers / Operators. 92
  - 6.2.1 Claro / American Movil Group for Central and South America – Guatemala Service. 92
  - 6.2.2 American Network Computadores for Brazil. 93
  - 6.1.7 AT&T for the United States and Puerto Rico. 94
  - 6.1.8 Sprint Nextel for the United States. 95
  - 6.1.9 Bell Canada for Ontario, Quebec, Vancouver, Victoria, Edmonton and Calgary. 96
  - 6.1.10 Vivo (Telefonica) for Brazil. 97
- 6.0 Government Sector – Homeland, Federal, Municipal. 97
  - 6.1 Computer Science Corporation (CSC) 97
  - 6.2 TeleCommunication System (TCS) for E911 and NG911. 98
  - 6.3 OpenWave Failures. 99
  - 6.4 Recent Global Infrastructure Investments. 100
  - 6.5 The Sweet Spot for Partnerships in the Government Sector. 101

## **7.0 Use Cases. 102**

- 7.1 RFID for Retail with Omnitrol. 102
- 7.2 WiMAX Mesh Networks and San Francisco I.T. Breakdown. 103
- 7.3 New York City Taxi Cabs On-Deck PIM System. 104
- 7.4 Veriplace and LocationLabs Proximity Based Services. 105
- 7.5 Visa Peer-to-Peer (P2P) Money Send. 107



## **8.0 Quant Firms Review Location – No Agreement on the Numbers. 109**

- 8.1 Nielsen 2010 - USA. 109
- 8.2 comScore 2010 - USA. 109
- 8.3 comScore 2010 – Europe (UK, France, German, Spain, Italy) 109
- 8.4 Luth Research 2010 - USA. 110
- 8.5 J.D. Power 2010 - USA. 110
- 8.6 TNS Global Research 2010 - Australia. 110
- 8.7 ABI Research 2010 - USA. 111
- 8.8 ABI Research 2010 – Europe. 111
- 8.9 Enterprise Mobility Experts 2010 - Global. 111
- 8.10 Strategy Analytics 2010 - Global. 111
- 8.11 IEMR 2010 – Global (Europe, Asia-PAC, North, South, Central America) 111
- 8.12 Gartner 2010 - North America. 111
- 8.13 Frost & Sullivan 2010 - USA. 111

## **9.0 2011-2012 Top Ten Product Categories to Pursuit. 112**

## **10.0 2011-2012 Top Five Geographic Markets to Enter and Own. 113**

## **11.0 2011-2012 Top Ten CEOs and Executive Teams. 116**

- 11.1 LOC-AID.. 116
- 11.2 Layar. 116
- 11.3 NAVTEQ, a Nokia Company. 116
- 11.4 TCS. 116
- 11.5 WHERE. 117
- 11.6 Twitter. 117
- 11.7 Placecast. 117
- 11.8 Yelp. 117
- 11.9 OpenStreetMap Foundation. 117
- 11.10 Sense Networks. 117

## **12.0 2011-2012 Top Ten Market Development Executives. 118**

## **13.0 2011-2012 Top Ten Product Executives. 118**

## **14.0 2011-2012 Top VCs Seed and Early Stage Funding.. 118**

- 14.1 Multi-stage Market Preparation Executives - advise executive teams on packaging their company for capital funding and IPO.. 119


## **15.0 Centers of Excellence. 119**

## **16.0 Figures and Tables. 121**

## **17.0 Copyrights and Trademarks. 122**

## **18.0 About the Author. 122**

## Order Form

Report Title		
<b>The 2011 Ultimate Guide to Location Based Services and Applications</b>		
License Type		
<input type="checkbox"/> Single User License ..... \$ 1,995 USD	<input type="checkbox"/> Company-wide License..... \$ 6,995 USD	
<input type="checkbox"/> Team License (2-5 people) ..... \$ 3,645 USD	<input type="checkbox"/> Other Licensing options available: Contact Mind Commerce	
Family/Surname	First Name	
Position	Company	
Address		
Country	Post Code	FAX
Telephone	Email	
Order Type		
<input type="checkbox"/>		<input type="checkbox"/> Order by FAX at 1 877 646 3266
Card Number		
Expiration Date (MM/YY)	CV Code	
Cardholder's name	Signature	
Billing Address		
Postcode	Country	
	Signature	Date

### Online Ordering

Customers can order online by visiting reportweb page:

[http://www.mindcommerce.com/Publications/UlimateGuide\\_LBS\\_2011.php](http://www.mindcommerce.com/Publications/UlimateGuide_LBS_2011.php)