Challenges of LBS Market Analysis: Current Market Description

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Process of Forecasting

Assumptions and Inputs:
- The environment
- The action taken or planed
- Underlying trends and discontinuities

Modeling:
- Judgmental
- Mathematical
- Statistical

Forecasts and Future:
- New business models
- Market size
...
The environment

- Location Based Services are the delivery of information services where the content of services is tailored to location of the user.
Location Enabled Services
**Environment**

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**LBS Market Worth $39.87 Billion by 2019**

*By GPS World staff* - *Posted on 11 Apr 2013 in Latest News & LBS/Wireless News.*

A newly issued report by MarketsandMarkets focuses on growth in the location-based services market, and says it will be worth $39.87 billion by 2019. The report, “Location Based Services (LBS)… Read more »

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**A Glowing Report Doth Not a Golden Future Make**

*By Alan Cameron* - *Posted on 27 Nov 2013 in GNSS & GNSS Opinions & Newsletter Editorials.*

The tech press and broad public media have both made much ado about a November market report from the European GNSS Agency (GSA). Most accounts have focused on a GSA… Read more »

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**Berg Insight: LBS Revenues in Europe to reach €825 million by 2017**


According to a new research report by Berg Insight, mobile location-based service (LBS) revenues in Europe are forecast to grow from €325 million in 2012 at a compound annual growth… Read more »
<table>
<thead>
<tr>
<th>LBS market report</th>
<th>Revenue/market size (M USD)</th>
<th>The most growing segment / Main revenue generator</th>
<th>CAGR</th>
<th>LBS subscriber</th>
<th>By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berg Insight</td>
<td>4000</td>
<td>LBS Advertisement</td>
<td>16.1 (Europe)</td>
<td>20%</td>
<td>2018</td>
</tr>
<tr>
<td>Frost &amp; Sullivan Analysis (US)</td>
<td>2100</td>
<td>Navigation</td>
<td>25 (USA)</td>
<td>-</td>
<td>2017</td>
</tr>
<tr>
<td>Strategy Analytics</td>
<td>6000</td>
<td>Location Enabled Advertising</td>
<td>-</td>
<td>50%</td>
<td>2017</td>
</tr>
<tr>
<td>ABI Research</td>
<td>7800</td>
<td>Navigation</td>
<td>20.1</td>
<td>-</td>
<td>2017</td>
</tr>
</tbody>
</table>
# Current Markets

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<th>By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pew Research</td>
<td>-</td>
<td>LB Info</td>
<td>30.5</td>
<td>75%</td>
<td>2014</td>
</tr>
<tr>
<td>Marketsand Markets</td>
<td>39870</td>
<td>Navigation</td>
<td>-</td>
<td>-</td>
<td>2019</td>
</tr>
<tr>
<td>Pyramid Research</td>
<td>10300</td>
<td>Navigation</td>
<td>28</td>
<td>-</td>
<td>2015</td>
</tr>
<tr>
<td>Gartner Group</td>
<td>13500 (20 LBA)</td>
<td>Navigation</td>
<td>-</td>
<td>15%</td>
<td>2015</td>
</tr>
<tr>
<td>GSA</td>
<td>70000</td>
<td>Data</td>
<td>40%</td>
<td>-</td>
<td>2022</td>
</tr>
</tbody>
</table>
Actions taken, Challenges and plans

10 years of TomTom GO and 13 million marriages saved
## LBS Applications Segmentation

<table>
<thead>
<tr>
<th>Vertical/Segment</th>
<th>Application examples</th>
</tr>
</thead>
</table>
| **Location-Based Information Retrieval** | • Location-based NEWS  
   • Location-Based Q&A (Query)  
   • Proximity Searching  
   • Tourist Guide  
   • City Sightseeing  
   • Traffic, Weather and Transportation Info. |
| **Safety and Security**            | • Emergency Services  
   • Emergency Units Allocation  
   • Emergency Alert Services  
   • Ambient Assisted Living  
   • Security Surveillance |
## LBS Requirements

<table>
<thead>
<tr>
<th>LBS Segment</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation and Tracking</strong></td>
<td>- Very high availability (seamless indoors, outdoors)</td>
</tr>
<tr>
<td></td>
<td>- Response in real-time or few seconds (in general applications)</td>
</tr>
<tr>
<td></td>
<td>- Accuracy of few meters or less</td>
</tr>
<tr>
<td></td>
<td>- Very high reliability and continuity</td>
</tr>
<tr>
<td></td>
<td>- Medium to low power consumption</td>
</tr>
<tr>
<td></td>
<td>- Reasonable or cheap price</td>
</tr>
<tr>
<td></td>
<td>- High privacy preserving</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>- Medium availability</td>
</tr>
<tr>
<td></td>
<td>- Response in few minutes</td>
</tr>
<tr>
<td></td>
<td>- Accuracy in the order of hundreds of meters</td>
</tr>
<tr>
<td></td>
<td>- Medium reliability and continuity</td>
</tr>
<tr>
<td></td>
<td>- Very low power consumption</td>
</tr>
<tr>
<td></td>
<td>- Almost free or very cheap</td>
</tr>
<tr>
<td></td>
<td>- Medium privacy preserving</td>
</tr>
<tr>
<td><strong>Entertainment</strong></td>
<td>- Medium to high availability (seamless indoors and outdoors)</td>
</tr>
<tr>
<td></td>
<td>- Response in real-time or few seconds</td>
</tr>
<tr>
<td></td>
<td>- Accuracy in the order of tens of meter</td>
</tr>
<tr>
<td></td>
<td>- High reliability and continuity</td>
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# LBS Requirements

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</table>
| **Location-Based Information Retrieval** | - Medium availability  
- Response in real-time or few seconds  
- Accuracy from a few meters (for some applications such as tourist guide and proximity search) to hundreds of meters (for news and weather)  
- High reliability and continuity  
- Low power consumption  
- Reasonable or cheap price  
- Medium Privacy preserving (depending on the application) |
| **Safety and Security** | - Very high availability (seamless indoors and outdoors)  
- Response in real-time or few seconds  
- Accuracy of tens of meters or lower  
- Very high reliability and continuity  
- Low power consumption  
- Reasonable or cheap price  
- Medium or low privacy preserving |
Future Market for LBS

Global Revenue

Year

Global Revenue (Billion $)

Future Market for LBS

Global LBS Market

- Navigation
- Personal Tracking
- Search and Discovery
- Gaming and Outdoor Pursuits
- Enterprise
- Community
Acknowledgement

This work was financially supported by EU FP7 Marie Curie Initial Training Network MULTI-POS (Multi-technology Positioning Professionals) under grant nr. 316528.
Thanks for your attention!
E.g. Galileo Financial success?

- Total cost of Galileo, including development and validation (€2.4 billion), deployment (€3.4 billion) and also 20 years of support, operating costs (20 * €800 million p.a.) and deployment phase of EGNOS (€1.1 billion) is €23 billion.

- The global annual GNSS core revenue (such as shipment of GNSS receivers and devices) of €110 billion in 2022 => Galileo can have an annual market of €5.3 billion.

- The global annual revenue from enabled services and products of GNSS will get up to €240 billion by 2022 => Galileo can have a Europe-wide market of about €30 billion.

- The technical advances that come about as a result of research and development investments in the space industry are transferred to firms in other sectors in the form of “spill-over” effect, which is surprisingly large; the social return of around 70% in long term is expected. If only development and deployment phases’ costs (€2.4 billion + €3.4 billion) are considered as R&D investments, then an increase of €4 billion in long term in other sectors (such as health, transport, computer science) is expected.

- €460 Billion annually by will be saving in “time” and “fuel” by 2020 as a result of use of personal location data captured by either personal smartphones or In-Car navigation systems.

- 6-7% of Europe GDP, which is estimated about €800 billion, currently relies on satellite navigation signals provided by the US GPS. This dependency is increasing since more web and mobile transactions, services and applications have become commonly available.

- …
Galileo

- Accuracy
- Availability
- Civil-based
- ...

GNSS capability of LBS chipsets*

Installed base of GNSS devices by region

- EU27
- North America
- Rest of the World
- GNSS penetration