Mobile Navigation Services and Devices is the seventh consecutive report from Berg Insight analysing the latest developments on the global PND and mobile turn-by-turn navigation market.

This report in the LBS Research Series provides you with 160 pages of unique business intelligence including 5-year industry forecasts and expert commentary on which to base your business decisions.

This report will allow you to:

- **Profit** from numerous executive interviews with market leading companies.
- **Understand** the dynamics of the navigation markets in Europe, North America and ROW.
- **Benefit** from expert market analysis including detailed regional forecasts.
- **Learn** about the latest mobile navigation propositions from device vendors and service providers.
- **Evaluate** the impact of free navigation applications and evolving new business models.
- **Identify** new business opportunities in connected services and real-time traffic information.

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What are the real business opportunities for LBS on the global market? Berg Insight’s LBS Research Series is a unique series of market reports published on a quarterly basis. Each title offers detailed analysis of the most interesting LBS topics such as handset-based satellite positioning technology, mobile personal navigation services and location-enabled content services. Once per year we also publish a summary of our research with detailed forecasts for the major regions.

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Adoption of infotainment systems with smartphone integration will boost use of navigation apps in cars

Navigation solutions for car and pedestrian navigation can be divided into multiple categories. Car manufacturers offer factory installed in-dash navigation systems as standard or optional equipment on a majority of their models sold in developed markets. Drivers that want to add a navigation system to their existing vehicle can choose among numerous aftermarket solutions, including in-dash navigation and infotainment systems, Personal Navigation Devices (PNDs) and navigation apps for handsets. At the end of 2013, there were 180 million dedicated car navigation systems in use globally, including an estimated 70 million factory installed or aftermarket in-dash navigation systems and 110 million PNDs. Even though the share of new cars fitted with factory installed in-dash navigation systems will grow fast as prices decline, the penetration among vehicles in use will grow slowly. The average age of vehicles in North America and Europe has grown to 9 years. Aftermarket navigation solutions will thus account for a majority of navigation systems in use in the foreseeable future. Since the different solutions are tailored for slightly different use-cases, multiple navigation-capable device solutions can be expected to co-exist in the future. Many consumers are also likely to own and use more than one navigation capable device.

The PND device category is facing increasing competition from low cost in-dash OEM navigation systems, as well as aftermarket products ranging from in-dash systems to navigation apps for smartphones and tablets. Moreover, the penetration rate for PNDs is already high in many markets. Global shipments of PNDs fell 21 percent to 22 million units in 2013, which marks the fourth year of decline from the peak of 40 million units sold in 2008 and 2009. Even though some emerging markets are still showing growth, this will not compensate for the decline in mature markets. Berg Insight forecasts global PND shipments to decline to 10 million units sold in 2018 and 2019. However, there are signs that the rapid ASP declines experienced in the past few years are slowing down.

The intense competition in the PND segment has led to market consolidation. Several vendors have exited the market – either in the most competitive markets or altogether, while others have acquired competitors. On a global level, the PND market is now dominated by the three vendors – Garmin, TomTom and MITAC – that together hold 75 percent market share globally and more than 90 percent market share in Western Europe and North America. These companies have highly integrated operations ranging from hardware and software development to distribution. There are also some vendors that hold strong positions on a local or regional level such as United Navigation in Germany, Prestigio in Eastern Europe and Panasonic in Japan. As the market is declining, the leading PND vendors Garmin, TomTom and MITAC, as well as the leading white-label PND software developers Elektrobit and NNG are increasingly focusing on developing in-dash navigation systems for the automotive industry.

Navigation services for mobile phones have been available since 2002, but have only become a serious threat to PNDs in the last few years as smartphone performance has improved and device adoption accelerated. The global active installed base of smartphones grew to 1.9 billion units at the end of 2013. Smartphone adoption – i.e. the share of all handsets in use – had reached about 35 percent worldwide, 67 percent in North America and about 58 percent in the EU27+2. Berg Insight estimates that the number of monthly active users of navigation apps for mobile phones was 180 million worldwide at the end of 2013. The growing usage of mobile navigation apps has largely been driven by broader availability of free services. Starting in late 2009, all the leading smartphone platform and device vendors have introduced free navigation apps for end-users. Apple, Google and Nokia have developed their navigation apps in-house, while other device vendors such as BlackBerry, LG, Samsung and Sony Mobile cooperate with navigation app developers like Appello, Navmii, NDrive, ROUTE 66 and TeleCommunication Systems. Besides handset vendors, app developers also use distribution channels including app stores and mobile operators. As competition from free apps has intensified, app developers are increasingly focusing on freemium business models where the core turn-by-turn navigation service is free and users have the option to purchase additional content and features. Advertising is also gradually becoming a source of revenues for developers with large active user bases.

This report answers the following questions:

- What impact has free navigation services had on the personal navigation market?
- How are the business models for PNDs and mobile navigation services evolving?
- How are smartphone vendors positioning themselves on the growing mobile navigation market?
- How will PNDs stand up to the competition from in-dash systems and smartphones?
- Which are the leading developers of navigation apps for mobile phones?
- Which mobile operators have introduced mobile turn-by-turn navigation services?
- What will be the winning formula for connected PNDs and associated services?
- How will personal navigation devices and services evolve in the future?
Who should buy this report?

Mobile Navigation Services and Devices is the foremost source of information about the emerging personal navigation market focusing on both PNDs and mobile phone navigation. Whether you are a vendor, telecom operator, investor, consultant, application developer or government agency, you will gain valuable insights from our in-depth research.

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