Mobile Navigation Services and Devices

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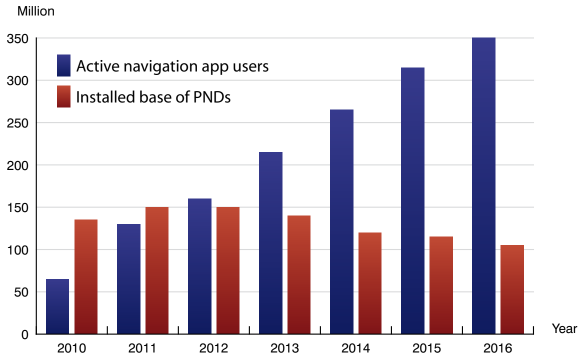
What are the latest developments on the personal navigation market?

Navigation systems and services 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 navigation to their existing vehicle can choose among a number of aftermarket solutions. Examples include in-dash navigation systems, Personal Navigation Devices (PNDs) and navigation apps for mobile phones. New device categories such as Internet tablets are also being equipped with GPS and navigation software. At the end of 2011, there were 340 million navigation systems in use worldwide, including an estimated 60 million factory installed and aftermarket in-dash navigation systems, about 150 million PNDs and an estimated 130 million navigation-enabled mobile phones.

Even though the share of new cars fitted with factory installed in-dash navigation systems will grow fast as prices decline, the actual penetration of in-dash navigation systems will grow slowly. The average age of vehicles in North America and Europe has grown to about 9 years and is even higher in most other markets. Aftermarket navigation solutions will thus account for a majority of navigation systems sold 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 use more than one category of navigation capable device.

In many developed markets such as Europe and North America where the PND penetration is already high, the PND device category is facing increasing competition from handset-based navigation services and low cost in-dash navigation systems. Worldwide shipments of PNDs fell to about 33 million units in 2011, down from nearly 38 million in 2010. Berg Insight believes that PND shipments in Europe and North America have peaked and will gradually decline to about 7 and 6 million units per annum respectively in 2016. New markets in other parts of the world will only partly compensate for the decline in the mature markets. Worldwide shipments of PNDs are forecasted to gradually decline to 23 million units in 2016.

Increasing competition has already forced several vendors to exit the PND segment – either in the most competitive markets or altogether. There is also a consolidation trend among the remaining PND vendors. MiTAC has acquired the PND operations of Navman and the assets of the consumer product division of Magellan Navigation. Garmin completed the acquisition of Navigon in July 2011. United Navigation, which began operations in early 2010, has licensed the rights to use the Falk and Becker brands for navigation solutions. The PND market is now dominated by the three vendors Garmin, TomTom and MiTAC that together maintain a 75 percent market share. These companies have highly integrated operations ranging from hardware and software development to distribution. Moreover, these companies are now increasingly focusing on in-dash navigation systems.



Installed base of PNDs and active mobile turn-by-turn navigation users (World 2010–2016)

The adoption of handset-based navigation apps and services is increasing along with the popularity of smartphones. The global active installed base of smartphones surpassed 700 million units at the 2011, which is approximately 15 percent of all mobile phones in use. Berg Insight forecasts that smartphone shipments will grow from an estimated 450 million units in 2011 to 1,300 million units in 2016. In the future, virtually all GPS-enabled handsets can be expected to have mapping and navigation software as part of the standard feature set.

Today, handset navigation solutions are primarily available as on-board apps with map data stored in the memory of the handset and off-board services that rely on maps stored on a server. Over time, many solutions will converge into hybrid services that store frequently used maps in the internal memory and leverage wireless connectivity to access dynamic content. The main distribution channels for handset navigation apps include mobile network operators, handset vendors and on-device application stores. Free turn-by-turn navigation services have been available for several years from niche players, but the launch of Google Maps Navigation for Android handsets in late 2009 and Nokia Maps with free navigation in early 2010 started a major transformation of the handset navigation market in both Europe and North America. White-label navigation developers are now working with mobile operators to create unique localised offerings and service bundles. Increasingly, navigation service providers are focusing on the freemium business model where the core turn-by-turn navigation service is free and users have the option to purchase additional content and features.

This report answers the following questions:

- How are business models for PNDs and mobile navigation services evolving?
- What impact has free navigation services had on the personal navigation market?
- How are device manufacturers positioning themselves on the growing mobile navigation market?
- Will turn-by-turn navigation services for mobile phones replace portable navigation devices?
- Which are the leading developers of turn-by-turn navigation applications 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 mobile navigation services evolve in the future?

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About the Author

André Malm is a Senior Analyst with a Masters degree from Chalmers University of Technology. He joined Berg Insight in 2006 and his areas of expertise include location-based services, wireless M2M and personal navigation services.

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