Personal Navigation Devices gives first-hand insights into the markets for personal navigation focusing on the market segment PNDs.

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A new direction for the personal navigation industry?

The personal navigation market continues to grow rapidly in Europe and North America. Personal Navigation Devices (PNDs), i.e. transferable devices with integrated GPS receivers and digital maps primarily designed for car navigation, have gained mass-market acceptance. In Europe, PND shipments grew to 16.5 million units in 2007, up from 9 million units in 2006. Despite the economic slowdown and weakening consumer confidence, sales can still grow to roughly 20 million units in 2008. In North America, very strong sales during the holiday season contributed to remarkable growth in 2007, to about 11 million units shipped. Moreover, in 2008, sales can well reach about 17 million units if the macro-economic situation does not affect consumer spending too severely.

The rapid growth has gained the attention of numerous actors in many industries. There are over 100 PND brands on the market in Europe and North America. The vendors have a background in various industries, including the GPS device, navigation software, consumer electronics and car infotainment industries. While many of the major vendors, notably TomTom, Garmin, Magellan and Mio Technology/Navman, develop navigation software in-house, others usually base their PNDs on software from white-label developers such as deCarta, Elektrobiet Corporation, Intrinsic Software, NAVIGON and NavNGo.

For consumers, the value for money has gradually improved as performance has increased and cost has declined. However, industry competition has increased substantially in the last few years and lower component costs and product engineering measures have not fully compensated for declining average selling prices. Going forward, the PND industry is likely to see increasing consolidation and exits as fewer and fewer vendors are able to maintain sufficient margins. The four largest vendors Garmin, TomTom, Mio Technology/Navman and Magellan, have managed to increase their combined market shares in Europe and North America to 80 percent in H1 2008.

Increasing competition from handset-based navigation services and low cost in-dash navigation systems, as well as the growing installed base of PNDs, will eventually limit shipment growth for PNDs. Berg Insight forecasts that PND shipments in Europe will peak around 2008 – 2009 at roughly 28 million units per annum and decline to about 26 million units in 2014. North American annual PND shipments will peak at approximately 28 million units, sometime around 2012 – 2013 and decline to 27 million units in 2014. While sales of conventional in-dash navigation systems and PNDs have been lower in North America than in Europe, off-board navigation services for mobile phones have already surpassed 7 million paying subscribers. In Europe, greater availability of GPS handsets have led to accelerated growth in handset-based navigation services and there are currently about 5 million active paying users in the EU 25+2 countries.

However, multiple navigation solutions and device types are likely to co-exist also in the future. Although PNDs and in-car navigation systems often provide a better user experience than many handset-based navigation services, new handset models designed especially for navigation services will close the gap considerably. Moreover, handset navigation services are also well suited as a complement to other solutions, especially for use outside the car. Pedestrian navigation features gradually being introduced include improved map data and multimodal navigation, which will enable users to plan routes taking into account all available modes of transportation, including trains, busses, trams, ferries and airplanes.

PND vendors are increasingly looking at service revenues as device revenue growth slows. In Europe, total device revenues peaked in 2007 and revenues will likely peak in North America in 2008. In order to make navigation services useful in everyday situations for more people, introducing wireless connectivity to PNDs can enable integration of online services such as local search, enhanced traffic information and automatic map updates. Vendors are also adding new features and refining the user interface to facilitate command and control, as well as improve the information presentation. New models will, for instance, gradually introduce automatic speech recognition technology, 3D map features and photo-realistic textures. New features and services will likely be crucial for convincing existing customers to upgrade their existing devices to more advanced models.

This report answers the following questions:

- What are the latest trends on the PND markets in Europe and North America?
- How should the industry adapt to an increasing share of replacement sales?
- What will be the winning formula for connected PNDs and associated services?
- Which navigation related value-added services appeal to consumers?
- How can the latest advances in traffic information technology become a part of the navigation experience?
- How will the conventional PND stand up to the competition from in-dash and handset systems?
- Who are the main challengers to Garmin’s and TomTom’s market dominance?
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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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