

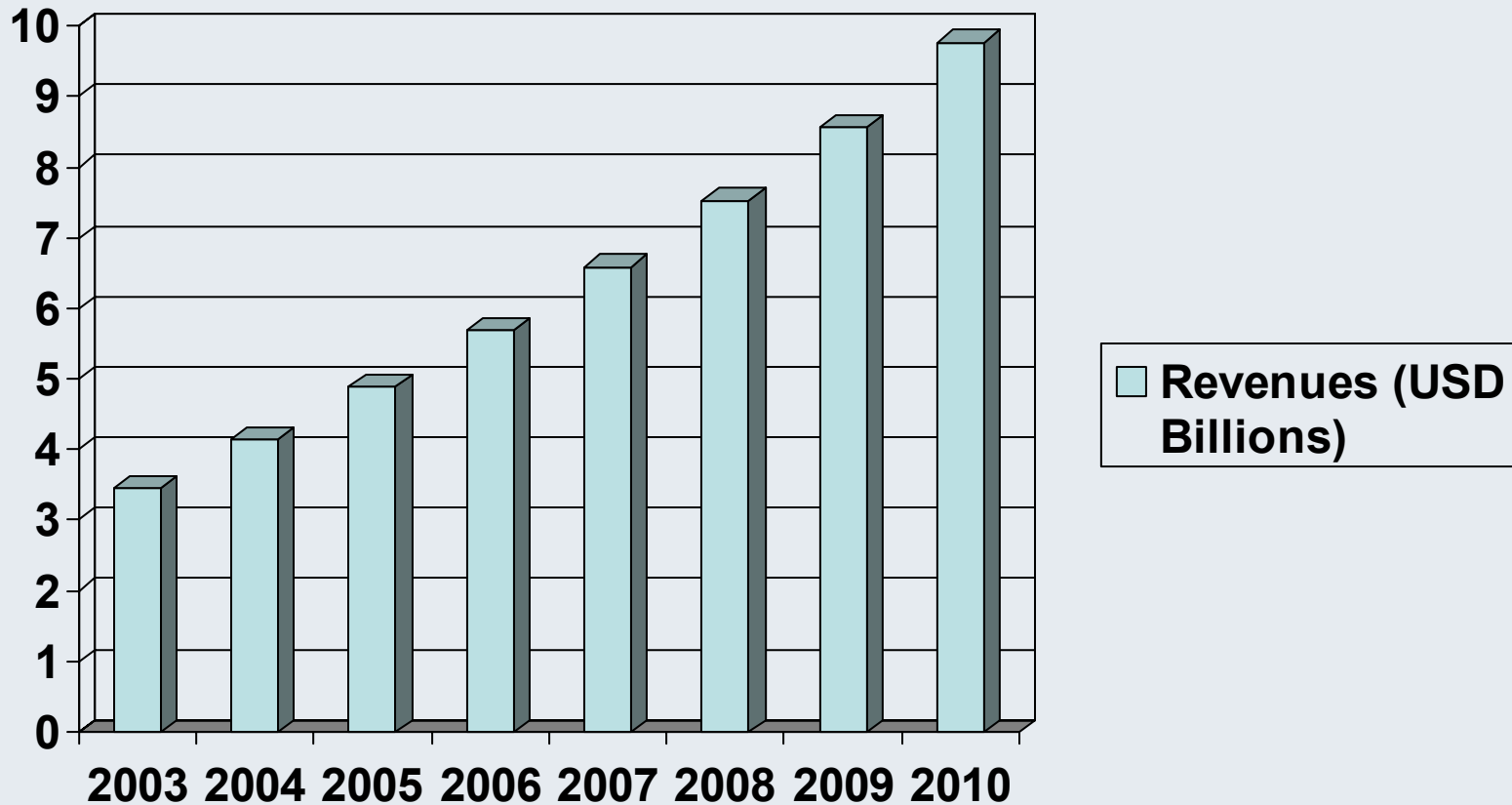
GPS: Military System/Public Utility: Revenue and Application Trends.

**Taken from: Frost & Sullivan's North American GPS Equipment
Markets (Report A601-22)**

Market Definitions

- Frost & Sullivan counts revenues from GPS equipment sold into consumer, commercial and military markets
- Revenues represent end-user costs for GPS equipment
- GPS satellite construction, launch and control segment revenues are not included in this market definition
- GPS Markets are broken out into general aviation, land, marine, military, timing and wireless.
- Major systems where GPS is an input are not included (e.g. flight management systems), as these revenues would skew total forecasts

Total North American GPS Equipment Market Revenues (2003-2010)



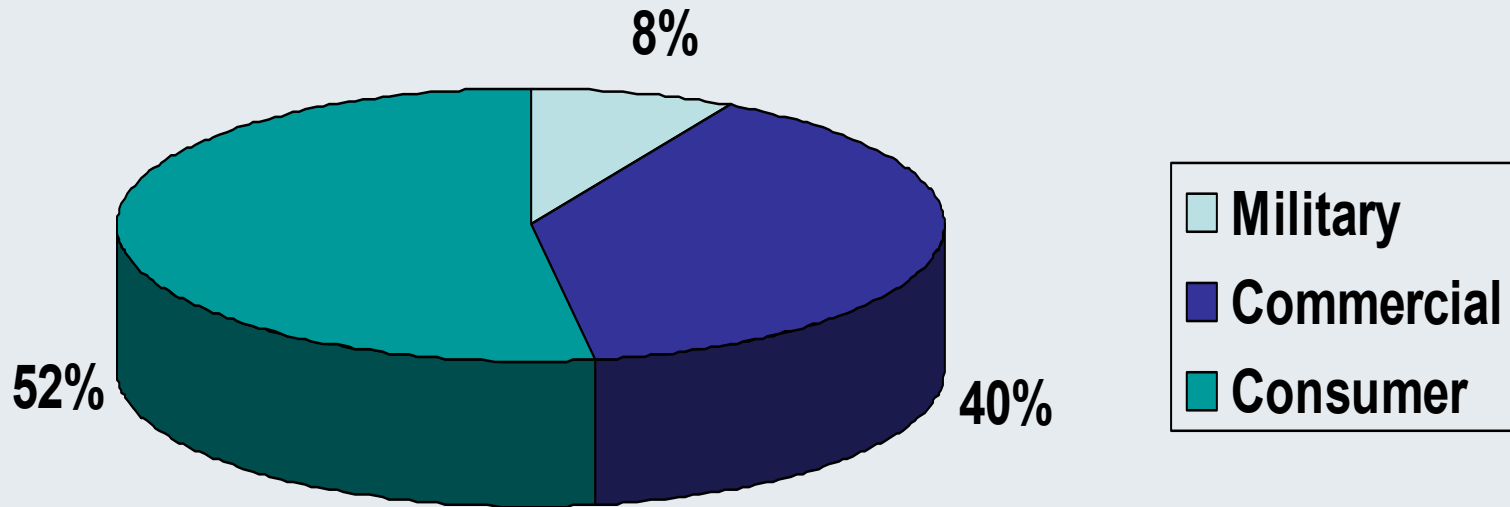
Industry Trends

- **High-volume commercial/consumer applications are truly starting to propel this market. These include: in-vehicle navigation, fleet management, and to a lesser degree recreational land-based and marine users**
- **Prices for low-end consumer GPS hand helds continue to fall, with introductory units at or below the \$100 price point. Marine units tend to be slightly higher**
- **Product development and product runs are becoming shorter in duration. This is leading to more pressure on R&D and manufacturing.**

Established versus Emerging GPS Applications

- **Asset tracking and fleet Management**
- **Land-based survey and scientific**
- **Hydrographic survey**
- **Commercial marine navigation**
- **GPS-enabled timing**
- **Yoke mount and hand held general aviation**
- **In-vehicle navigation**
- **Land-based recreational hand held**
- **Precision agriculture**
- **Recreational marine hand helds**
- **Precision-guided munitions**
- **Wireless GPS markets**
- **Personal tracking**

North American GPS Equipment Revenues by End-User Group (2003)



Modernizing GPS: is GPS really the issue?

- **GPS accuracy and integrity are sufficient for the vast majority of commercial and consumer applications**
- **Marine, survey and agriculture users are accustomed to DGPS accuracies of 1-meter or better**
- **Wireless and in-vehicle equipment is perceived as insufficient due to supporting data (maps), associated infrastructure (wireless) and processor, battery life and display technologies**
- **Commercial and government users will be the biggest beneficiaries of GPS modernization (integrity monitoring, signal strength, availability)**
- **Direct economic benefits must be aggregated on a large scale over time in order to justify GPS modernization - small efficiencies in telecommunications, aviation and automotive add up quickly**

Key Features

Report A601-22 includes:

- **Six market segments: general aviation, land, marine, military, timing and wireless**
- **A total of 19 fully forecasted subsegments**
- **Revenue, unit and average price forecasts at segment and subsegment levels**
- **Market drivers and restraints at total market and segment levels, as well as a tiered market share analysis at each segment level.**

For More Information

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