Perspectives on In-Vehicle Infotainment Systems and Telematics

How will they figure in consumers’ vehicle buying decisions?

- Consulting • Technology • Outsourcing
What are the most important trends shaping mobility around the world and in the automotive industry? And how can automotive manufacturers position themselves now to profit from these trends, particularly around in-vehicle infotainment (IVI) systems, telematics, and embedded software?

Accenture recently concluded several studies to address these questions and provide insights into how IVI and telematics systems can be used to improve competitive positions in the coming years. We define IVI as a set of solutions and applications for vehicles that address various customer priorities, such as entertainment, safety, maintenance, communication, and navigation. This paper summarizes key findings of the research.

The most important trends that will impact automotive manufacturers in the areas of IVI and telematics over the next 20 years include these:

**Urbanization:** By 2015, 40 percent of the world's people will live in cities with populations of more than 1 million and 17 percent will live in megacities with more than 5 million. Drivers will need in-vehicle systems to help them more readily navigate congested roadways, and will use their cars as information centers that can recommend and direct them to restaurants and other destinations.

**Climate impact and policy:** An additional 1.9 million tons of carbon dioxide will be emitted annually in developing countries thanks to the rise in individual ownership, assuming there are no changes in global policy. This trend will likely accelerate the adoption of electric vehicles, through government subsidies for the vehicles themselves and through development of charging infrastructure.

To be sure, cars will still be the dominant form of transportation for individual passengers. The strongest regions for growth will come from emerging markets, including China, India, and Russia. These regions will account for 50 percent of new car sales, compared with today's 30 percent. There will also be growth in two- and three-wheel vehicles, along with an increase in bus and rail capacity.
IVI/Telematics market is expected to exceed US$70 billion in 2012 globally and US$80 billion in 2014

**Figure 1: US IVI/Telematics Systems Revenue Growth**

Despite recent slower sales, growth is expected to remain strong.

**Figure 2: Shift to Original Equipment Manufacturer (OEM) In-Vehicle Navigation Solutions**

OEM embedded solutions will gain shares versus PN devices.

**Figure 3: EU IVI/Telematics Systems Revenue Growth**

Speed-up expected in next years.

**Figure 4: Electronics & In-Vehicle Service Share (in %)**

Electronics will be main cost component of the vehicle (40%).
Accenture studies have found, IVI penetration is very low in vehicles at medium and low price points. These systems will grow among all segments in the near future, and will reach almost complete penetration for luxury and other high-priced vehicles.

The cost of IVI systems and their availability at the time of car purchase represent key concerns for buyers in Germany, Italy, and the United States. Few customers choose to add in-vehicle technologies to their current vehicle. There were notable differences among the three countries as well. Italians have a stronger preference than Germans and Americans for info-mobility and communication services, and a weaker emphasis on safety.

Our study across countries found three main trends that will directly contribute to the growth of IVI and telematics systems: eco-efficiency, security and safety, and comfort. Demand for these characteristics will spur innovation and growth in a number of automotive segments:

- **Energy-efficient drive trains:** Alternative engines: Alternative fuels, electric, hybrids; optimization and downsizing; vertical innovations. Energy re-use: Brake-energy and exhaust gas/heat.
- **Eco-efficient bodies and chassis:** Body: Improved aerodynamics, new materials (bionic, composite materials, self healing). Chassis design concepts, steering (x-by wire electronic steering and suspension), braking (electromechanical brake).
- **Security and safety:** Active driver assistance system, passive security, predictive and remote diagnostics. Security: tracking, access control (keyless), predictive and remote failure diagnostics.
- **Comfort:** Connection: Vehicle to vehicle; vehicle to infrastructure; broadband, satellite, sensors. Hardware: Pods and plexes; new display technologies, processing power, bus system. Software: Interior personalization, integrated tracking management systems, automated toll and payment, next-generation location-based service and navigation, Internet and multimedia.

It’s not just IVI systems that will improve through innovation; global infrastructure will also change in ways that benefit IVI and telematics.

- **Traffic flow optimization and control equipment:** With rising ownership of personal vehicles comes rising traffic density. More road systems will feature intelligent, connected traffic-flow and traffic-control systems to mitigate congestion.

- **Energy recharging and refilling infrastructure:** As more cars run on energy sources other than fossil fuel, countries will need to develop electric recharging and range extender stations. In addition, alternative fuel sources (synthetic, biomass, hydrogen, and so on) will need to be produced and distributed. Microsoft Hohm, for instance, a new energy efficiency website, could help owners determine when and how to most efficiently and affordably recharge electric vehicles and plug-in hybrid vehicles.
Over the next decade, our research shows that the in-vehicle services that will drive market growth include security, multimedia, safety, and navigation services.

It makes sense that these areas will dominate in the near future. After all, consumers have been exposed to these technologies for only the past decade, yet they are increasingly connected electronically through email, social networks, and smart phone messaging. Some forecasts call for one-quarter of the world’s population to be connected to the Internet by 2012.

The expectation of being connected anywhere and anytime suggests strong demand growth for IVI.

Although prices for both hardware and software will decline with increased competition in the area, massive unit growth will more than make up the difference.

The functionalities that will see the biggest rise in uptake are:

**Security:** GM’s OnStar is one such roadside assistance service. In the European Union countries, eCall is a project intended to provide rapid assistance to drivers involved in an accident anywhere in that region.

**Connected multimedia:** Consumers will demand in-car entertainment at a relatively low price, including mobile broadband connectivity.

**Safety:** Consumer demand and regulations will promote active driver security technology. As the use of traditional methods of interacting with their mobile devices (keyboard, touch screen), present a safety hazard, the adoption of hands-free communication will increase. Voice recognition, text-to-speech, and Bluetooth are some of the technologies that will continue to be highly beneficial to IVI systems. These technologies will also need to be refined and improved for the consumer to have a truly connected experience in the vehicle.

**Navigation:** The rapid spread of smart phones is already threatening the market for navigation devices, and could encroach on in-vehicle navigation. As a consequence, IVI systems will need to add navigation enhancements such as live traffic and parking updates.

For the interior in-vehicle service segment, innovations in sensor detection, interconnection, and driver interface technology will enable growth opportunities.
In the near future, Accenture studies found, the next wave of enhanced and connected in-vehicle services will not provide one killer application, but multiple big-ticket services. In the future the open platform will allow access to several new opportunities and consumers will be able to download the applications they need and want directly from their vehicle. We see major trends for both embedded and standalone in-vehicle solutions. Automotive manufacturers will need to catch up with other types of companies that compete in these markets. Although most automotive manufacturers have capabilities in the area of info-mobility, such as navigation, few have fully developed commerce capabilities. And they have been slow to create new generations of IVI applications in areas such as safety, commerce, communication and entertainment.

In the European IVI marketplace, Accenture found that, BMW and Mercedes represent the biggest players, while Toyota and Volkswagen are expected to grow rapidly in the next few years. In North America, Ford is viewed as a market leader, with the Ford Sync and Ford myTouch IVI devices generating a good deal of favorable buzz.

Demand for IVI and telematics is accelerating, as the Accenture studies make clear. Car manufacturers have an opportunity now to ramp up their capabilities in this area, in order to achieve competitive differentiation. They and their suppliers need to start building strategic partnerships that will lead to distinctive capabilities. To speed the process, some may want to take a managed approach to IVI, allowing them fast entry into key areas. The three areas that merit greatest consideration are safety, eco-efficiency, and entertainment.
Accenture has deep experience in the automotive industry and a proven track record in the area of embedded software, combined with unparalleled expertise in systems integration and technology consulting. This combination allows us to help OEMs and Tier One suppliers better understand customer requirements and plan a program to release new technology as soon as possible with the highest impact for the end-user.

Accenture also serves the IVI and telematics markets globally, as they enter the next phase of growth.

Our global footprint provides both scalability to meet any challenge and proximity to clients in key geographies. And our flexible engagement models allow clients to structure risk and reward appropriately.

For automotive clients, the benefits of working with Accenture include:

- Improved ROI on R&D spend
- Increased revenue and margins
- Faster and more predictable product launches and ramp up and increased speed to market
- Product and application differentiation
- Access to technology expertise
- Accelerated global product development design efficiency and improved product development processes
- Global knowledge and experience with local presence
- Reduction in time and costs in testing
- End-to-end service
To find out more about the implications of Accenture’s studies on mobility in the automotive industry and perspectives on growth, please contact:

Accenture Global
Marcello Tamietti
marcello.tamietti@accenture.com

Accenture North America
Sean M. Smith
sean.m.smith@accenture.com

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