




Is your automotive business **people**  **ready?**

Manufacturing and Resources

Microsoft Car IT Solutions: Building the Car of the Future Today

Electronics and Software Transform the Driver Experience

Worldwide, increased car ownership and the failure of public transportation systems to meet personal transportation needs have led to increased traffic congestion and therefore more time spent in cars. Research suggests that total worldwide vehicle usage will increase from 800 million units today to 2 billion units in 2030. This presents an opportunity for automakers to differentiate themselves by making both vehicle ownership and use more painless and the time in the car more effective and tolerable.

Automakers are responding to consumer demand. Electronics and software will represent as much as 90 percent of vehicle innovation through 2010. Additional computing power in, around, and about the car will give customers, manufacturers, and dealers new options never before imagined.

Microsoft Offers Car Information Technology Solutions

Microsoft believes that car manufacturers will have the ability to revolutionize the in-car experience through "Car Information Technology (IT)." Car IT combines advanced in-vehicle hardware and software platforms with remote or "cloud" services that are deployed on standardized platforms—all of which are supplied by automakers, Microsoft and its partners, and third-party providers.

Microsoft has a long history in in-vehicle solutions. Its Automotive Business Unit has been selling software and reference architectures to equipment manufacturers and automakers for more than 15 years. The latest offering—Microsoft® Auto—has established a strong reputation as a flexible, maintainable, cost-effective software platform, and it has become a core brand element for some manufacturers. Microsoft is poised to take this solution further, with new capabilities, a wider range of partners to adapt and extend the platform, and a variety of integrated services that kick-start the new Car IT paradigm.

Car IT is already being deployed sporadically. For example, some service centers call the vehicle if the air bags deploy. Navigation systems—both integrated and portable—are popular and quite effective, but the future for these systems is full synchronization with calendar, address book systems, and real-time and predicted traffic information. This will eliminate typing destination addresses and deliver optimized smart routes for more complex itineraries, saving fuel, emissions, time, and frustration. Routes can

even be optimized for power train type, topography, and fuel types—which is particularly useful as new fuels are introduced. Improved traffic information, along with other insights, will largely be obtained from information provided by the vehicles themselves in aggregate.

Stolen cars will be found through network connectivity. Or a driver might get an alert by phone saying that a vehicle alarm has gone off, and then be able to check vehicle status across the network using integrated cameras or to remotely disable the vehicle to prevent theft. Car IT systems will give drivers feedback on how their car is performing, or advise them that they appear to be sleepy and should rest, while taking proactive action such as lowering cabin temperature.. Car doors can unlock as with keyless solutions today, but using a mobile device as the "key."

Car dealers, automakers, fleets, and cities will also connect with vehicle networks. Knowledge of a vehicle's mechanical health and usage can help optimize service schedules and provide multiple tiers of support in the event of a problem, minimizing downtime and inconvenience as well as containing warranty and recall costs. Safety will be enhanced not only by safety and security services, but also by providing more information on dangerous junctions and unfamiliar areas. In addition, driver interaction will be managed proactively; for example, cars might route incoming telephone calls to voice mail when weather or traffic conditions become dangerous.

Many of these capabilities require significant integration with automakers' existing processes and systems. The strong presence and capabilities of Microsoft in the Enterprise IT space can help here, as well as specific solutions like our Customer Care Framework, software that supports customer service activities such as call centers.

In general, advanced capabilities now on the market have been implemented as add-ons, with commensurate complexity and cost penalty, which has slowed the growth of Car IT. Microsoft believes that the time has come to reduce the barriers of entry to this market for automakers, their partners, and third parties alike. Therefore, our aim is to provide in-vehicle platforms, services platforms, services, and architectural guidance to simplify and accelerate this vision and meet the growing demand in the industry. Microsoft assets such as Microsoft Auto, our embedded operating systems, Windows Live™ Services, Virtual Earth™, Zune™ digital media player, Tellme, MSN® Direct, Xbox® video game system, and partner solutions are already being combined with vehicles in new and exciting ways.

Where do you want to go today?

Key Microsoft Technologies Enabling Car IT:

Microsoft Auto provides a proven, reliable platform on which carmakers can distinguish themselves by building innovative solutions to help drive sales and customer loyalty by offering consumers mobile device integration, speech recognition, and infotainment.

Windows Embedded Standard delivers the Windows operating system in componentized form, helping device makers create smart connected devices.

Windows Embedded CE 6.0 R2 delivers new operating system components that help device makers get to market faster with devices that can more easily connect to Windows Vista® and Windows Server® 2008 operating systems.

Windows Live Services is a set of personal Internet services and software designed to bring together all of the relationships, information, and interests people care about most, in their PCs and devices and on the Web.

Microsoft Virtual Earth platform is an integrated set of services that provides geospatial data, rich imagery, cutting-edge technology, and dependable performance that helps organizations visualize data and provide immersive user experiences.

MSN Direct provides customers with instant access to the information they want, like weather, stock, and news updates, on their device-specific choices.

Live Search for Windows Mobile® helps people get local listings; search for businesses, shopping, restaurants, and cinemas through your mobile yellow pages; pull up maps and driving directions; and integrate with GPS systems.

Tellme is a Microsoft subsidiary that answers millions of requests to get local businesses, driving directions, sports scores, stock quotes, weather, news, movie show times, and more. Businesses use Tellme's voice services and platform to provide customers with voice-access services ranging from banking to package tracking.

Zune media players and software provides a customizable, extensible platform for media purchase, management, and experience that integrates with vehicles.

Xbox is the Microsoft game console that allows automakers and component suppliers to promote their brands through multiple users' online competitions.

The Microsoft .NET Framework is a comprehensive and consistent programming model for building applications that have visually stunning experiences, seamless and secure communication, and the ability to model a range of business processes.

Microsoft Visual Studio® 2008 development system is a suite of development tools designed to help software developers face complex challenges and create innovative solutions, making the work of achieving breakthroughs easier.

Microsoft BizTalk® Server 2006 is used to connect systems both inside and across organizations. This includes exchanging data and orchestrating business processes that require multiple systems, as well as enabling remote diagnostics for in-car services.

Microsoft SQL Server® 2008 data management software provides a solution that organizations can use to store and manage many types of data—including XML, e mail, time/calendar, file, document, and geospatial information—via a rich set of services: search, query, data analysis, reporting, data integration, and synchronization.

Microsoft Azure Services Platform is a set of cloud-based technologies such as storage, identity, and multi-device sync that extend software development for both enterprise server and PC/browser/phone applications with services on the Web. This will provide the key platform for deploying cloud services, whether deployed in Microsoft data centers or elsewhere.

Customer Care Framework is a software solution that supports the rapid, flexible, and cost-effective development and deployment of customer care solutions, especially as they relate to the interaction between the consumer and embedded IT devices in the vehicle.

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About the Microsoft Automotive and Industrial Equipment Group

Microsoft solutions empower excellence in the automotive industry through better collaboration, integration, and dissemination of information across the whole value chain. Microsoft and its extensive partner ecosystem provides solutions addressing accelerated innovation and product development, lean manufacturing operations, integrated flexible global supply chains, and superior sales and customer service experiences. Computer platforms—extending from car to enterprise to cloud—enable transparency and insight, drive faster and better decision making, and empower people to improve business processes and maximize opportunities.

