

**WebSphere** software

## Telematics enablement services for application development and support



### Highlights

- ***Supports entire automotive product lifecycle from initial concept to end of life***
- ***IBM supports end-to-end telematics solutions***
- ***IBM services and tools support building and deployment of scalable solutions based on business assessment***
- ***Services and tools support the consult, design, build and run processes***
- ***Open hardware and software standards are used throughout each services engagement***
- ***Comprehensive services contribute to customer success***

### Staying ahead of the game

In today's mobile society, people spend hours upon hours in their cars. Driving to work, driving the kids to school, driving just about anywhere and everywhere. Thus, the demand for in-vehicle information systems that deliver more value to end users on the road is increasing. In order for Service Providers and developers to stay ahead of the telematics game, they must refine their applications to provide a greater variety of services and generate more revenue.

IBM pervasive computing software enables you to respond to these changing market realities and consumer demands. Built from the ground up, our software is designed for the embedded environment. We can provide you with a pervasive device platform based on open standards, making it easier to adapt new devices to any mobile environment, now and down the road.

### IBM offers end-to-end solutions

IBM offers a broad range of services to support deployment of end-to-end telematics solutions. These focus on telematics solutions for vehicles, Service Provider offerings, application and content enablement and design of open technology vehicle platform for electronics and software.

IBM telematics services encompass defining a roadmap of business and technology priorities, prototype development, full-scale production and long term maintenance. Services include the use of Software Development Kits (SDKs)—software deliverables and tools that help a developer get an application up and running on the target hardware in a laboratory environment.

### Support throughout the automotive lifecycle

IBM supports telematics design and development throughout the automotive lifecycle, from initial interest in a new product concept until the eventual end of product life. IBM end-to-end service contracts span both the pre-production and production phases of the product lifecycle.

Open standards and industry partnerships drive the process, which is illustrated in Figure 1. It starts with a pre-production phase, where early product concepts are piloted and beta-tested, and can be as long as two to four years.

During the development period, new telematics client applications are built on top of a pervasive software stack, based on a realtime operating system and a Java™ virtual machine. SDKs, including run time software, are provided free during this evaluation period. Education and training is offered as needed.

When the hardware and software are ready, and the production phase begins, IBM licenses the software run times to the device manufacturer. The new device is then manufactured in quantity and installed in new vehicles, where it is serviced for its entire life span, typically 12 - 20 years.

### A variety of services

During the initial Interest and Awareness phase, IBM enablement services can demonstrate the potential of a telematic solution, based on the current marketplace, enabling technologies, competition and customer needs. Here, software tools may be used to simulate the functions under discussion.

During the Proof of Concepts phase, the solution requirements and design (features and architecture) are determined. IBM can provide education and training for personnel who will be developing the embedded telematics software, and help them prototype the planned applications using one or more IBM SDKs. Business and Technology Consulting and Automotive Telematics Enablement Workshops transform ideas into early programming models.

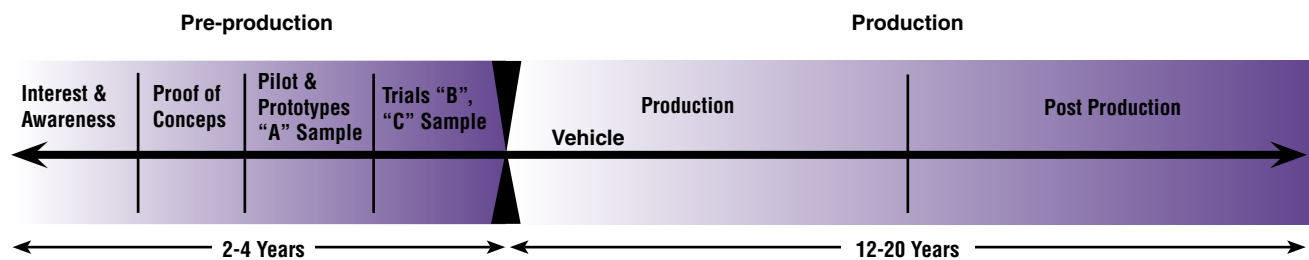


Figure 1—IBM telematics enablement services support the entire automotive lifecycle

The Pilot and Prototypes phase addresses scaling up for production of the first “A” sample embedded application run, and its initial manufacturing and testing. Other aspects of the overall system are planned, including enabling the backend and hosting environments. An IBM Enterprise Support Project Manager is assigned to the project. Third party partnerships (with IBM groups or Business Partners) are formed to provide key components or services.

During the Trials phase, larger “B” and “C” pilot runs are tested and evaluated in actual vehicles. An important design element of an automotive telematics product is the driver interface, which can use touch or hands-free voice technology. Others include data compression, wireless communications, server connectivity and security. Additional IBM enablement offerings include Telematics Business and Technology Consulting and Enablement Workshops.

Once the vehicle enters the Production phase, IBM licenses software run time modules, such as the embedded Java technology. General services are available for the backend solutions. Custom Code Line (CCL) components and defect support are identified. Support is available for the duration of the production cycle.

Throughout the project, IBM Global Services (IGS) can coordinate work across IBM divisions, and with business partners and customers, to catalyze the overall solution value chain. For example, some automotive applications may be of interest to companies in the insurance, financial or petroleum industries.

#### **Software tools for telematics**

While IBM does not manufacture embedded components, it does work with the Original Equipment Manufacturers (OEMs) and tier one companies that do. A key component of a telematics services contract from IBM is the SDK—a toolkit used to create applications for a specific operating platform.

An example of an SDK is one that supports telematics application development for the Intel® XScale PXA250 Application Processor. It consists of a development board containing reference hardware, including the processor and input-output circuitry supporting a variety of automotive solutions such as diagnostic, fleet management, navigation and entertainment applications.

In addition to the Intel XScale platform, IBM automotive SDKs support other processor families, such as the new Hitachi SH4 and Motorola 5100.

In addition, the IBM Object Technology Incorporated (OTI) business unit has demonstrated an excellent track record of getting automotive OEMs and tier one suppliers jump-started in open, standards-based embedded development.

#### **IBM brings it all together**

For leading-edge telematics client solutions, only IBM offers the essential combination of services and long-term support that can span the automotive development and product life cycles, backed with high performance, open standards-based software technologies.

IBM is the world’s leading e-business company, offering a wide range of services, solutions and technologies that help businesses take full advantage of emerging innovation. Through pervasive computing, IBM is extending e-business applications to the new class of connected embedded devices.

IBM offers a full set of software components—from Java device driver abstraction through User Interface (UI) elements (speech, touch, etc.) to server connectivity components. We have a strong background in speech systems and our embedded voice recognition technology is proving to be an effective and safe driver interface.

IBM is among the first companies to offer leading-edge technology, tools and services to its customers and enable them to deliver advanced telematics solutions. With our unparalleled e-business experience, we can help you rapidly develop and deploy your applications. IBM has the unique ability to enable and integrate end-to-end telematics solutions combining the IBM commitment to pervasive computing and years of expertise and research in the automotive industry. IBM end-to-end architecture fully integrates open standards such as Open Services Gateway initiative (OSGi). It links both portable and embedded hardware devices to the Internet via secure wireless networks and leverages Java applications to exchange data to and from the vehicles with wireless telematics Service Providers. And our approach is not only centered around technology, it's about delivering business value at an accelerated pace. As the telematics revolution is now gaining momentum in other established industries, a new ecosystem is forming and is driving changes in core business processes, creating new value.

#### **For more information**

To learn more about IBM voice solutions, please visit our Web site at [ibm.com/pvc](http://ibm.com/pvc). Inquiries can be sent via e-mail to [telematx@us.ibm.com](mailto:telematx@us.ibm.com)



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