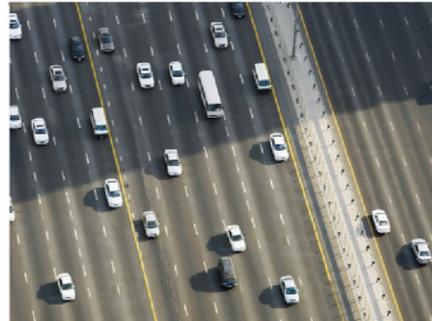


ENTERPRISE GRADE INSURANCE TELEMATICS



Insurance Telematics aims to provide a new set of tools for understanding and quantifying insurance risk, more powerful than anything previously available. In addition, it can be used to provide new services to customers, allowing them to keep tabs on their vehicles, and even assist them in the event of an accident. Oracle has the technology to accomplish this in a very reliable, yet cost-effective manner.

KEY BENEFITS

- Faster time to market
- Short, low risk dev cycles
- End-to-end Architecture
- Built on proven enterprise components
- Scalable and reliable
- Utilizes open technology like Java and Berkeley DB

This solution brief will outline an end-to-end architecture that is designed to leverage proven enterprise technology in the creation of a state-of-the-art telematics system. Such systems will enable insurance companies to be more competitive by providing whole new dimensions to managing risk, while offering exciting and compelling new services to their customers at the same time.

First, let's look at the underlying goals for such a system. They can be broken down into 3 categories: safety, support, and services. These can be visualized as the foundation for a new breed of in-car assistance.

SAFETY, SUPPORT, SERVICES

The first category is safety. These can be active features, including eCall or e911, where authorities can be alerted of a serious crash or carjacking. Passive features are also possible, such as warning the driver about unsafe driving, or for GPS-enabled scenarios warning about hazardous road conditions ahead.

Next is support. This includes innovative new insurance models such as "Pay-Per-Use" or "Pay-As-You-Drive." These new models will offer the ability to adjust premiums based on driver behavior at a much more granular level than was previously possible. The option of using these models should attract reliable low-risk drivers looking for insurance that rewards their good habits. In addition, there are a number of other ways a telematics system could support the driver.



Fig. 1 Conceptual foundation for telematics

Examples include assisting a driver who has been in a minor accident (where the vehicle is still functional), stolen vehicle recovery, or possibly even alerting authorities of a simple break-in.

The last category is services. These “value add” pieces represent opportunities to generate additional revenue from the system, with little or no added cost. Examples would be concierge services, Point-Of-Interest (POI) or navigation. Another example would be a vehicle monitoring service. This would be valuable to parents of teenage drivers, or for small companies who employ delivery drivers, where a commercial telematics system would not make sense.

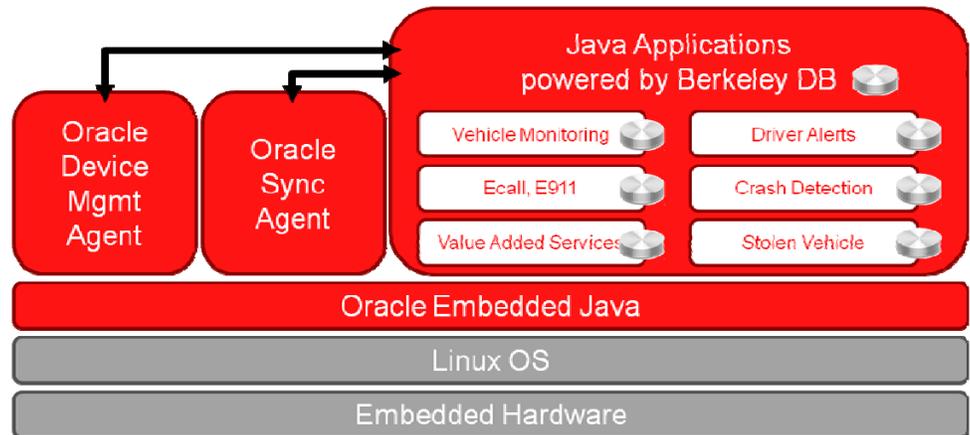


Fig. 2 In-vehicle architecture

TELEMATICS ARCHITECTURE

The in-vehicle architecture is comprised of several pieces. The foundation is the hardware, which should be based on a recent 32-bit platform with ample storage and memory. Another requirement is a true multi-tasking OS with memory management, full network stack, filesystem and so on. Linux is one example of an OS that would meet the requirements, there are others as well.

On top of that is the embedded Java VM, where the applications run. The advantages of using Java are many; they include shorter development cycles, and lower development and maintenance costs. By using Oracle sync agent and device management, two components of the Database Mobile Server product, the system gains several capabilities. These include data sync between in-car devices and the enterprise backend, application management and device management. App management abilities include remote uninstall, upgrade, and status/health check. Device management allows for remote monitoring of entire networks of devices, and remote command execution. The latter can enable things like remote diagnostics, enable/disable a given device, or even remotely activate new features, if the customer chooses to upgrade their service package.

Within the applications themselves, Oracle Berkeley DB provides scalability and concurrency, which ensures the solution will be able to grow to meet future demand for new features or capabilities. A list of potential example applications is shown at left.

EXAMPLE APPLICATIONS

- Driver Alerts
- Crash Detection
- Stolen Vehicle Alert
- Ecall, E911
- Vehicle Monitoring / Geofencing
- Concierge Services
- Point Of Interest (POI) Services
- Turn-by-Turn Navigation

COST, CLAIMS, AND ROI

Cost is always a factor, but in large telematics deployments it is especially important. The cost of both the devices themselves and the backend infrastructure to support them must be considered. Both development and maintenance costs need to be calculated accurately up front. The Oracle solution addresses all these issues. Up-front costs are relatively small compared to the ROI provided, especially when compared against the cost of building something in-house. Maintenance costs are also very low when compared against other solutions that require retaining whole teams of expert-level embedded engineers.

When Oracle’s device platform solution is coupled with our powerful set of backend tools, part of the largest enterprise ecosystem in the world, the result is an unbeatable package. By using a solution built on proven enterprise-grade technology, the Total Cost of Ownership (TCO) can be kept much lower than other alternatives that rely heavily on customized, proprietary solutions.

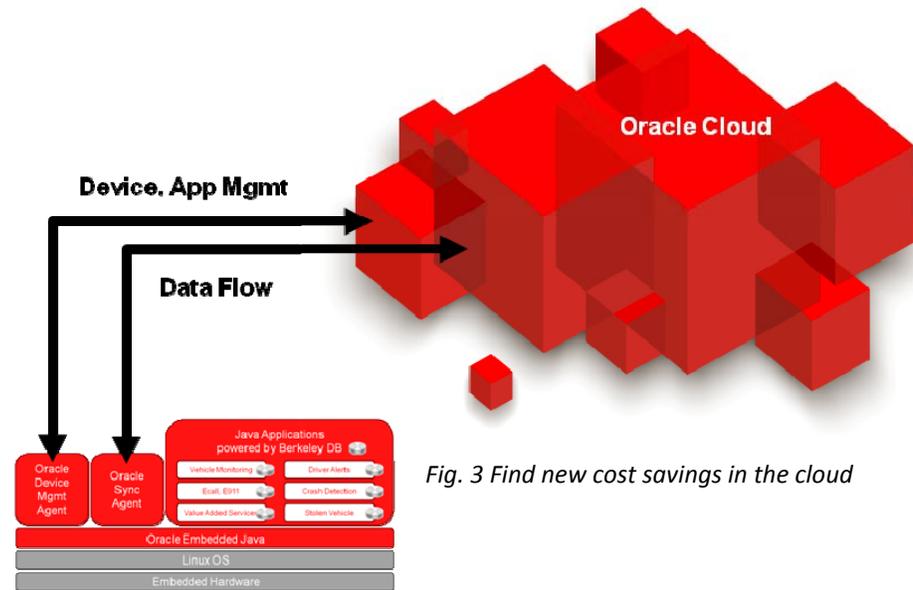


Fig. 3 Find new cost savings in the cloud

Claims processing could be brought to new levels of efficiency using telematics. These systems could generate First Notice Of Loss (FNOL) notices electronically, within the first few seconds after an accident. Important details such as time, date and location of the accident, as well as the state of the vehicle leading up to the accident, could be included in the electronic FNOL from the telematics system. The potential benefits here are huge, fraud prevention being a major one. Finally, the ability to monitor driving habits will enable more proactive risk management, which would result in a reduction in

claims. Those savings could be used to reward safe drivers with lower rates, which in turn would attract more desirable, low-risk customers.

Beyond claims-related benefits, there are multiple other ways for a telematics system to generate ROI. The ability to offer services would lead to entirely new revenue streams for the insurance industry. There are other, less obvious advantages as well. These come from the best-of-breed datacenter apps available through the Oracle cloud. Having immediate knowledge of an accident can result in more efficient claims processing and other business process improvements. Analyzing the data stored in the backend will result in new operational insight, which can be leveraged to achieve greater efficiencies. At the right, you can see some of the key benefits this solution offers.

KEY BENEFITS

- Centralized data, device management
- Integrate directly with Oracle backend tools
 - Business Analytics
 - Event Processing
 - Big Data
 - SOA
 - Service Apps
 - *and more*

CONCLUSION

With more than 1 billion cars in use globally today, there is an immense market for telematics solutions that provide enhanced safety as well as driver support and other services. Considering that they enable greatly improved methods of risk management and innovative new insurance models such as "Pay-Per-Use" or "Pay-As-You-Drive," they become doubly attractive.

This fact is not lost on industry observers, and many companies have plans to develop products and solutions to address this market. Some of these are already available today. It seems very likely that this new technology will change the insurance industry, as earlier adopters gain new competitive advantages.

Whether the goal is market leadership or merely staying ahead of shifting industry trends, selecting the right technology provider is critically important. Oracle's open, proven, enterprise-grade solutions lead the industry in adoption and customer satisfaction. Of the major technology firms, Oracle is the only one that has deep in-house experience with embedded device platforms, as well as a complete suite of datacenter technology. Oracle is the right choice to power your telematics solution.

CONTACT US

For more information about the Oracle Solutions for telematics, visit us at <http://oracle.com/> or call +1.800.ORACLE1 to speak to an Oracle representative.



Oracle is committed to developing practices and products that help protect the environment

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