Intelligent Transportation System of Beijing, China, and XServices

BEIJING TRANSPORTATION INFORMATION CENTER IMPROVES TRAFFIC IN VIEW OF THE 2008 OLYMPIC GAMES WITH XSERVICES FROM OW2

Key Words:
- ☐ Integration
- ☐ Web Services
- ☐ Internet
- ☐ Transportation

Organization
Beijing Transportation Information Center

Market
Local Government

Status
Government body

Mission
Monitor and improve traffic conditions in Beijing

Objective
To improve traffic condition in view of the 2008 Beijing Olympic Games

Country
China

OW2 Project
XServices

The Beijing Transportation Information Center chose XServices to help integrate heterogenous data sources and create a world-class innovative transportation management system.

Ever Growing Traffic in Beijing

Beijing, with a population of 15 million, is home to more than three million automobiles, and the number is rising by 1,000 a day. Traffic in the street of Beijing is becoming a serious headache. The road construction relatively lags behind and areas with small roads or sparse road network make potential to increase density of the road network very limited. Traffic in Beijing is expected to improve so much that by 2008, the year this city hosts the summer Olympic Games. Every day at peak time during the Olympic Games, Beijing will have to absorb the circulation of over one million persons. As the Beijing transportation infrastructure will be confronted to an ever increasing traffic load it is urgent to implement an intelligent transportation system (ITS) with high efficiency and advanced technologies.

The Need for an Integrated Monitoring System

The legacy transportation information system was desiged and used solely for the needs of the transportation department. At the time, interconnection with other systems was not a priority and data exchange is now difficult to achieve. The difficulties are many, including: lack of information sharing mechanismes and methods, inconsistent data formats and statistics. This results in poor managerial coordination and the inability to cope with unforeseen events.

The Internet ITS Center of Beijing is dedicated to provide the technology platform for the overall transportation system of the capital city.

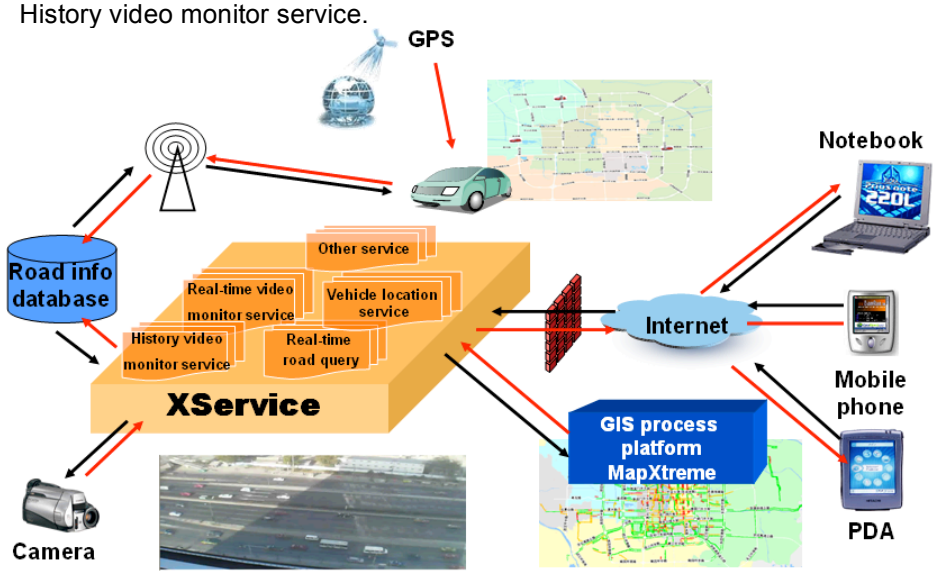
The objective is to build a world-class innovative transportation management system for the citizens of Beijing and the Olympic Games in 2008. The authorities aim at promoting Beijing as a modern and international metropolis with a transportaion system which is altogether smooth and efficient, safe and comfortable, economical and modern.

THE SOLUTION

The Architecture of the Intelligent Transportation System (ITS)

OW2 technology is core in the Publication of traffic information area. The Web Service solution implemented here is called Xservice. Xservoce is a complete environment to support Web Services-based applications. Xservices provides an efficient way to share data and software resource over the Internet. It supports Java Web Service by default; it can also transform many kinds of components such as EJB, CORBA, and CCM into Web Services by a series of adapters.
As detailed in the illustration, in the ITS platform, Xservices provides the interconnection mechanism between:

- ☐ Real-time road query services
- ☐ Vehicle location services
- ☐ Real-time video monitor service
- ☐ History video monitor service.



The ITS technical architecture includes four key functional areas:

- ☐ Information collection and manipulation: this is base on embedded technology implemented by the automobiles manufacturers;
- ☐ Road monitoring and measurement: this is based on the next generation Internet technology ???;
- ☐ Publication of traffic information: this is based on advanced the Web Service technology;
- ☐ Terminal of the intelligent vehicle: development carried by specialist companies.

Key Benefits

Implementing the Intelligent Transportation System already improves traffic conditions:

- ☐ The Beijing traffic management bureau says it will begin issuing daily traffic forecasts, to ensure a smooth flow of traffic during the NPC and CPPCC sessions;
- ☐ Help to the public is brought through the suggestion of alternative routes and special messages displayed on electronic traffic signs.

Professional Support

- ☐ BeiHang University, is the core developer of the XServices platform. It is investing RMB10 million and provides the core technology solution on the basis of its own scientific research and some patents its holds in this particular field.
- ☐ The ITS Center belongs to Transportation Information Center of Beijing City which invested RMB79.75 million in experimental traffic-related projects.
- ☐ China Unicom Ltd. will provide the Internet infrastructure.

OW2

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About OW2

Founded in January 2007 as a result of the merger of ObjectWeb and OrientWare communities, OW2 is an independent industry consortium dedicated to developing open source code middleware and to fostering a vibrant community and business ecosystem. Building on the legacy of ObjectWeb and OrientWare, OW2 federates more than one hundred organizations and 6000 developers in Europe, Asia and the Americas. OW2 hosts over one hundred technology Projects, including Lomboz, Sync4j, eXo Platorm, XWiki, SpagoBI and JOnAS. Several of the OW2 projects are combined into market-driven Initiatives, such as the ESB/SOA Initiative and the Business Intelligence Initiative, which facilitate their implementation by systems integrators, OEMs and end-users. A typical global open-source organization, OW2 aims to bring together grassroots communities across all continents through Local Chapters. More information about OW2 is available at http://www.ow2.org.