



ZHENJIANG FACT SHEET

By 2020 the Asia-Pacific smart city technology market will be worth \$5.5 billion annually - a cumulative investment of over \$36 billion between 2010 and 2020, according to Pike Research. China represents the largest single market in Asia for smart city technology, roughly 30% of the total opportunity. Consider the staggering facts:

- By 2025, seven of the world's top ten megacities will be in Asia and two-thirds of China's population—an estimated 64%—will live in cities.
- Currently, more than one hundred cities in China plan to build smart cities, an effective combination of information technology and advanced concepts of city operation in which the government will use digital network management to provide more convenient and efficient public administration services.
- The number of cars in China, now 25 million, is growing 25% a year, creating a traffic crises. New roads and expressways across China can't be built fast enough to keep up with the growth.
- By some estimates China is building more public transit systems than all other nations combined. And yet still, that won't be enough.

As part of the city's "Smarter Zhenjiang, Smarter Tourism" project, IBM is helping to transform the city's public transportation system with the IBM Intelligent Operations Center (IOC) – a solution that will serve as the central point of command for the city. A key component of the Smarter Zhenjiang project is a bus scheduling system which will help increase the efficiency of public transportation. The new system will help Zhenjiang manage over 1,000 public transportation vehicles and over 80 city bus routes. The following technologies make up the solution:

- The **Intelligent Operations Center (IOC)**, combined with **IBM Intelligent Transportation**, provides a comprehensive, real-time picture of the city's traffic network to alleviate congestion, improve traffic management, maximize road capacity, rapidly respond to incidents and enhance the travel experience for citizens.
- **WebSphere Sensor Events** are used to collect data from smart devices in buses or at bus stations, then transform the traffic flow data to the Intelligent Operations Center.
- Leveraging IBM's recent acquisition of i2, **Analyst's Notebook** will make the transportation system safer and smarter by analyzing traffic-related issues and helping transit personnel adjust bus routes, frequencies, and bus station locations. Analyst's Notebook allows the city to acquire traffic data easily from disparate data sources via intuitive drag-and-drop and through powerful multiple data source searches. i2 also helps to analyze large data sets quickly with multiple analytical views including association, temporal, spatial, statistical and spreadsheet views.
- As part of Smarter Transit system and services vision, the IBM China Research Lab is creating a IBM Research First of a Kind (FOAK) solution called **Transit Route Network Optimization Planning System (TOPS)** that provides a simulation platform for transit fleet and passenger flow on the network to enable scenario assessments and transportation network optimization. The transit network simulator does spatial-temporal passenger and fleet trajectory analysis to perform a large-scale assessment of public transport systems in a multimodal setting while considering facility capacity constraints for the various modes and accounting for the dynamics and heterogeneousness in fleet and passenger behaviors over the day.



- **A Real-time Bus Monitoring with Route and Dispatch Management System**, based on IBM Global Business Services (GBS) assets including a bus monitoring & scheduling solution and Geospatial Service Accelerator, will be used to monitor and manage the city's bus lines. Bus drivers can be dispatched and bus routes modified based on demand to improve bus service efficiency and lower emissions.
- Powering the IOC will be an array of IBM Smarter Computing technologies including **IBM Power® 570** and **IBM System x3650® M3 servers**. Managing the Big Data will be **IBM System Storage® DS4700 Express** high performance disk storage systems and the **IBM System Storage TS3100 Tape Library Express Model**, for high-performance tape back-up.