

Topic:
Civil Engineering

China – Civil Engineering hotspot?

Despite the Asian economy meltdown experienced in the past few years, application vendors have their sights focused on the few remaining rapidly developing economies in the Asia Pacific region. China offers some of the greatest potential for civil engineering applications.

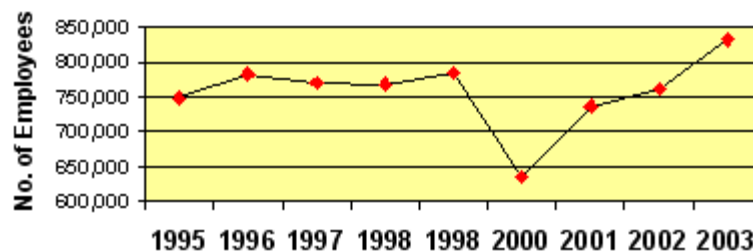
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The civil engineering market includes infrastructure projects involving buildings; manufacturing; power and industrial facilities; roads, railways, ports, airports; water supply and wastewater treatment, reservoirs and dams. Across the globe consulting engineering, procurement and construction firms perform the majority of this work and have been the main users of civil engineering applications.

In China the situation to date has been somewhat different, the main organizations utilizing civil engineering applications have been state run Survey and Design Institutes. The importance of Survey and Design Institutes in the Chinese market should be emphasized; Lizheng a local application provider has developed strong links with these organizations and is now a national CAD brand recognized by the Ministry of Construction. The graph below outlines the recent increase in employees working in these organizations in the last few years, now totaling almost 850,000.

Trend of Employee Numbers in Survey and Design Institutes



Additionally new types of users previously unknown in the region have recently emerged in China in the form of project management and consulting organizations and construction companies.

To date the Chinese construction industry has been very low tech, only 15% of overall growth can be attributed to technological advancement. There is limited usage of high-end civil engineering applications particularly 3D software. According to the Chinese Ministry of Construction the modernization of the construction industry in China planned over the next few years will offer the Government a potential saving of 20 billion RMB (US \$2.4 billion), naturally this has increased interest amongst Government officials.

China is under increasing pressure from foreign firms wishing to enter their lucrative market particularly after China's entry into the World Trade Organization. During the

current 5 year planning period large-scale investment in China is anticipated across a number of sectors requiring the development of civil engineering applications. 1020.9 billion RMB (US \$ 123.3 billion) has been allocated to develop the Chinese transport infrastructure including inland waterways, roads and costal ports.



During 2005 the Chinese railway network will be extended to include 2,000 km of duo rail and 20,000km will be electrified. Investment in water infrastructure is increasing exponentially and according to the Chinese Ministry of Water Resources is estimated to reach 450 billion RMB (US \$54.4 billion). The Chinese demand for electricity is growing at an annual rate of 7% in line with the national economy and by 2010 new power plants will be required to achieve a generating capacity of 550 million kilowatts. All these areas in conjunction with the development of specific infrastructure projects offer the application vendor unrivalled opportunity.

A key problem for the Civil Engineering market in China is a lack of end-to-end solutions from design through to construction. Xian CARD/1 software developed by IB&T GmbH has been successfully implemented to resolve this issue providing end-to-end solutions when competitors are only providing platforms and modules.

During research carried out with user organizations in China, Business Advantage identified specific problems with platform and technical support. These support issues coupled with the ever-present problems relating to piracy necessitate application vendors to have a local presence in China.

International vendors are addressing these issues, Autodesk, for example, has offices in Beijing, Guanzhou and Shanghai. Autodesk software has been widely used in China for infrastructure projects such as bridge and dam development, and the company is working with the Chinese Government in order to reduce software piracy. Moreover, Autodesk software has been tailored specifically for Chinese users and engineering standards, not just translated in language alone.

A good working knowledge and understanding of cultural differences and methods of conducting business are critical to long-term success in China. For example businessmen dealing in the Peoples Republic of China would be well advised to have their business card translated into simplified Chinese, vastly different to traditional Chinese used in day-to-day business operations in Hong Kong.

An understanding of business protocol and form of address is of key importance when seeking local business partners. Chinese surnames for example are often written before given names.

Business Advantage, a specialist market research, marketing and management consulting practice operating in the IT, Telecommunications and Digital Communications sectors, has recently completed a research project within the Chinese civil engineering market.

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