

# DIGITAL BEIJING

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## **1. Beijing government further outlines digital Beijing Olympics platform**

The Beijing government further outlined the network that will serve the Olympic games to be held in the city in seven years time.

Beijing has already determined to invest RMB 30 b. (US\$ 3.6 b) for use in information construction during the following 5 years, to establish the foundation of a "digital Beijing".

By 2008, the information build out of Beijing will have entered a new stage of accelerated development, government management and social public service will have established networks by this time, and every information system of Beijing will operate in an integrated network environment, according to the release.

The local government has planned the local network capacity of Beijing will reach 10.53 m. by 2005, and users numbers will reach 7.7 m. Beijing's fixed line telephone subscribers will reach 64% of households and the city's domestic long-distance exchange capacity will reach 130,000 terminals.

The rate of optic fiber installations in Beijing will rise to 50% capacity of households by 2008, serving 10 m. users, mobile communication will have a network capacity of 15 m. Third generation mobile communication technology will be used widely, and IP networks will have replaced the present circuits and exchanges. The re-building of the networks will also make the merge of wireless and Internet more seamless according to the "digital Beijing" plan.

More novel predictions for the Olympics digital platform's value added services include video recording heads integrated in cell-phones, to record memorable sporting events, registration of athletes on arrival by mobile phone-which will immediately be published on the Beijing networks. Audiences will be able to use their cell-phones to surf the Net and book tickets, order VOD products and watch the games via on-the-spot broadcasting hosted on Beijing's networks.

The optic fiber of the Olympic Games communication network will be provided by optical cables currently being installed in the Beijing network; at the to-be-built Olympic Games center the newly-established integrated service telecommunication bureau will offer sound, data, broadcast, Internet transmission and broadband services.

During the course of the Olympic Games various e-business services will be available, including smart cards for discount coupons, identity authentication, and security.

## **2. Beijing government announces second stage build out of city's "digital greenbelt"**

The Beijing government has announced that the second stage of the "Beijing digital greenbelt" project has formally started. More than 240 sq. km of forested and greenbelt areas in and surrounding Beijing will be completely served by an information network and the project is an integral part of the "digital Beijing" project. The "digital greenbelt" plan was put forward in 2000 by mayor Liu Qi, and is defined as a key project in the informatization of the city. The project involves such areas as computer aided planning, construction and management of Beijing's green areas, reports Zhongguo Xinwen She.

The second stage of the project to be built will reflect the goal that it provides a comprehensive data center serving the area defined in the "digital greenbelt" plan. The plan will utilize integrated data, from sources such as municipal facilities, traffic centers and weather stations, as well as specially installed facilities, to

monitor the environment in the city, and automatically direct maintenance of the greenbelt area. After the build up, Internet users will be able to directly access information on the Beijing area, including the location of buildings, and the volume of use of any green space in the city.

By 2008, it is predicted that if visitors want to book a hotel around the Olympic Games village, they only need to access the "digital Beijing" web-site, which will give them a comprehensive outlook of not only the number and location of empty hotel rooms, but also a detailed report of the localized environment.

### **3. Digital Beijing- the build out of China's capital city's information infrastructure - Background**

Beijing, China's nascent capital city has an ambitious plan to digitalize the city by 2005. Looking to other Asian super-wired cities, Tokyo and Singapore, Beijing too hopes to become a technological wonderland of computerized marvels. The speculation exists that by legislation and heavy government investment in infrastructure Beijing will become a smoothly functioning automated model of online efficiency. In the not so distant future, Beijing's citizens will be able review the menus of any restaurant in their neighborhood and order their favorites to be delivered from their home-based network interface. They could search the whole of the National Library for a document or a quotation, they will be able discuss issues with government officials on line; they could make their air-conditioner or micro-wave oven start working before they reach home, just by pressing some buttons on their mobile phones. The optimistic applications put forward for the project are many.

Beijingers are excited and inspired by this project, and are working hard to bring it into life. They want to live in a 'Digital Beijing'; they want to defeat Shanghai and take the No. 1 position in the domestic metropolitan rankings. And they have a fair chance, as the city has certain existing advantages. It has already registered the highest level of informatization in Mainland China. Four national Internet backbone networks and international ports are hosted in Beijing, and the newly constructed or expanded optical fiber backbone networks will also extend from the city. The private information networks run by many ministries or government sectors also headquartered in Beijing. Besides, the city possesses 12.39% of Internet users and 21.8% of the web sites in the country. More significantly, it is supported by a powerful talent tank, which accounts for one third of the senior software talent in China, and half of the senior intelligent system integration specialists and semi-conductor experts. To add to the advantages, it has Zhongguancun, 'China's Silicon Valley.'

According to the Tenth Five-Year Plan for Beijing, in 2005, the capacity of telephone networks in Beijing will be 10.53 m lines, the number of users will be up to 7.7 m, domestic and international long distance exchanges capacity will be up to 130,000, and 50,000 terminals respectively. By 2008, broadband optic fibers are estimated to have 60% coverage of Beijing. Mobile phone users will rise to 10 m. Beijing by 2008 will be the most developed telecommunications center in China.

### **4. What does a Digital Beijing look like?**

At the end of 1999, the construction of 'Digital Beijing' was officially initiated by Mayor Liu Qi. According to Lin Wenyi, vice mayor in charge of the city's informatization drive, it refers to the all-round advancement of the Capital's government information & community communication infrastructure build-out. More specifically, it aims to integrate the information resources in the Capital to build functional systems, including e-commerce platforms, online government agencies, scientific and educational information systems and labor and social security systems based on infrastructure platforms, such as broadband multi-media information systems and GIS (Geographic Information Systems), and to build informatized neighborhoods by developing information household appliances, develop online education, long-distance medical services, etc. The final goal is a comprehensive informatization of the Capital's economy and social development.

The Digital Beijing project has been taking a significant position in the City's growth strategy. Early in 2001, when drafting the list of sixty major jobs to be done for the citizens, the Beijing Municipal Government stressed 'the accelerating of the construction of information infrastructure and to promote an all-round advancement of the "Digital Beijing" drive'. In the City's newly promulgated 'Tenth Five-year Plan Period', more specific and challenging goals are set for the project:

Goals of Beijing Tenth Five-year plan for information and communications

- To popularize neighborhood broadband network connection;
- To improve the household broadband penetration rate to over 60%;
- To start broadcasting digital radio and television programs to the whole city;
- To enlarge the Internet user base to 6 million people;
- To electrify and put online government administrative functions;
- To make the capital the national center for e-commerce industry and electronic financing industry;
- To make Zhongguancun Technology Park a globally leading information base

## **5. The '55216 project', to achieve the goals of the Tenth Five-year plan**

**5** urban information networking projects: municipal infrastructure communication routing project, capital public information project, radio and television broadcasting network, government private transmission network, general radio application project.

**5** functional application projects: e-government, e-commerce, scientific and educational information network, social security information system, and neighborhood informatization.

**2** development and utilization projects on information resources: The 3S information project, a information resource development and integration project.

**1** model district informatization project, i.e. Zhonguancun

**6** information industry bases: North Microelectronics base, Zhongguancun software base, Jiuxianqiao Yizhuang Electronics and Communication products base, LCD monitor base, HDTV base, Computer and network product base.

## **6. A unique implementation scheme: the Capital Mode**

The Digital Beijing project is mainly promoted by the municipal government. However, it is not proper for the government to carry out the project construction function directly. It lacks the professional knowledge and corporate managerial expertise to field out the mega project. The separation of government administration and business operations also prohibits the government from taking all the implementation responsibilities by itself. That is why the firm Capital Information Development Co., Ltd. (Capital Info) is playing a large role in the proceedings of the information build out.

Capital Info was incorporated in 1998 by the Beijing Municipal Government, China Telecom, the State Administration of Radio, Film and Television (SARFT), and some commercial banks. It was established to build and operate the Capital Public Information Platform, a local network integrated with the information resources of the Ministries and national industrial associations. With the debut of the Digital Beijing plan, the company started to shoulder larger responsibilities-to build a digital city based on the Capital Public Information Platform (CPIP) and other infrastructure networks.

Since its establishment, Capital Info has served as an exclusive general contractor for the Municipal Government's informatization initiatives. After contracting a project from the Municipal Government, it will complete the general design, then divide it into several different parts and sub-contract them out. Though the government has injected a sum of startup capital, the company still has to self-finance a far larger sum of capital for the project in the markets. The company has a number of privileges granted by the government to assist the firm in soliciting prospectus investors, both domestic and from overseas. However, in a market economy, it still has to guarantee returns for the investors and its partners.

Besides serving as a general contractor, the company also does some fundamental research and planning jobs for Beijing's informatization program.

To its partners, Capital Info looks like a government body, but to the Municipal Government, the company is a general contractor. So, many people would like to describe the company as a mixture of government and business entities. The key point is that Capital Info operates in a market-oriented manner while being backed by powerful government support. This is the uniqueness of the company and also of Beijing's informatization drive. Such a construction mode commonly known as the 'Capital Mode' in Chinese business circles.

In Capital Info, Mr. Lu Shouqun, the president, plays a significant role. Mr. Lu is an influential veteran in the IT world. As a specialist, he once participated in the establishment of China Unicom, Jitong Telecommunication, and served as informatization advisor for 7 ministries or state commissions and Beijing City. Through its lobbying, CPIP successfully interconnects with various national Internet backbone networks, China Telecom, the radio and television broadcasting network, the private networks of different ministries/commission and the local networks.

## **7. The Infrastructure framework: Capital Public Information Platform (CPIP)**

The digital city is based on the fundamental infrastructure network CPIP. The mega network has already taken its basic structural form. Interconnection has been established with the major network resources based in Beijing. It has connected with the Central Television Broadcasting Tower (the center of the national cable television networks) and Beijing Telegraph Bureau (the hub of the China Telecom network) and has interconnected with the Beijing Telecom network, Beijing Cable TV network, private information networks under various ministries and state commissions, CSTNET, CERNET, Xinhua News Agency and several national commercial banks. Currently, Capital Info is working with Gehua Cable to build a optical fiber broadband backbone network to covering all 18 districts/districts in Beijing, which is expected to complete by the end of this year.

Aiming for a 4-layer network frame connecting the city, districts/counties, streets and neighborhoods, Capital Info is working to reach the grassroots units, the so called 'gene project', in addition to construction of backbone network connection. By June 2001, the CPIP extended to 149 streets and 6700 neighborhoods in the urban area. By the end of 2001, a three-layer network framework, covering all 18 urban districts and

suburb counties, would be completed. By then, over 100 websites will form the largest web-site group in the country. It is estimated this project will cost over RMB 100 m (US\$ 12.05 m).

## **8. E-government**

Beijing e-government aims to provide shared information resources for different government departments and to offer convenient communication between citizens and the government. The project is also based on CPIP. Over 120 government agencies have built their homepages at the portal website Capital Window and their virtual private networks, which are interconnected with each other.

The critical part of the e-government project is to provide interactive and timely-attended online services to Chinese citizens and help to improve the operational efficiency of the government. By the end of this year, 15 departments will handle citizens' applications, conduct examinations and issue approvals online. By the end of 2002, the government will be officially online and start network-based operations, and offer all online application and examination functions to businesses and individuals. Then, in another 3 years, by 2005, a complete, rationally configured and inter-connected high-speed e-government network system will be fully established, and interactive operations will be staged online in an all-round way.

In June 2001, Beijing Local Taxation Bureau started to offer online taxation functions. Currently, 10 enterprises have obtained their CA certification and can pay their taxes online. By the end of 2002, 40% of all the enterprises will be entitled to do so too.

## **9. E-commerce**

After years of development, Capital E-Mall has grown into the largest online market place and payment center in China. Over 3,500 companies, including Legend, Founder, Stone, Sohu, 8848 and Netease, have established operations there or utilize its functions. Due to its popularity, Microsoft started to imbed the e-mall's payment system into its e-commerce solutions for enterprises. Acer even plans to copy this metropolitan e-commerce platform for Taiwan and Hong Kong users.

In five years, the transaction volume at Capital E-Mall is expected to reach RMB 50 billion (US\$ 6.02 b.).

## **10. Scientific and educational information network**

The 1st phase project of the scientific and educational information network has been completed. 15 universities, 10 key middle schools, 5 key primary schools and 100 research institutes are interconnected and connected to CPIP. The on-going second phase project aims to incorporate another 12 universities and 200 middle or primary schools into the network. The network serves as a major venue for the scientific and educational circle to provide online education, results release and collaborative work. Distant medical functions started to support the outlying districts. China Digital Library is another important part of the network. At the library, the online readers can reach all the resources in the National Library and some local ones to locate information more accurately, timely and efficiently.

Social security informatization and electric neighborhood

Currently, network centers are being constructed in 18 districts/counties, 149 streets and 5700 neighborhoods. Street calling centers are under construction too. These jobs are expected to be complete by the end of this year. Within three years, the Beijing Citizen smart-card will be used in an all-round way and, based on the cards, social security information, covering lives from cradle to tomb, will be digitalized. The medical security system will construct a breakthrough point. By Oct. 2001, 6 m. medical insurance participants will obtain their medical card and receive services in 37 hospitals.

To back the city's medical security informatization and electric neighborhood drive, the Capital Information Calling Center is being constructed by the joint efforts of Capital Info and IBM and expected to be complete by this October. The Calling Center will serve all the other 'Digital Beijing' systems.

## **11. 3S information system**

As another fundamental part of the Digital Beijing framework, the 3S information system, mainly based on GIS, provides basic geographical information for other functional applications, such as urban zoning, construction and resources configuration. According to the Tenth Five-Year Period plan, by 2005, the capital 3S data infrastructure and mega data warehouse will be built based on the broadband multi-media information network covering the whole city. The total investment budget is around RMB 2.5 billion (US\$ 0.30 b.), 80% of which will be sourced from non-government investors.

As an application of the 3S system, a project called 'Beijing Digital Green Belt' has been fielded out. It is also a model and pilot project of the Digital Beijing drive. The on-going first phase project will cover the environment information of nearby Guangying Township and Lizeqiao. The second phase, which is at the planning stage, will cover all greenbelt areas in Beijing. Later, other geographical information would be added to the system too, with a view to providing an comprehensive living guide for Beijingers.

Actually, the people have already started to enjoy the convenience brought by the 3S system. A digital mapping system is open to the public at the Capital Window. Users can easily search for any address, geographical location, and phone numbers.

### **12. Payment with one card and the broadband equipped neighborhood**

Though the mega project will eventually transform the residents' lives profoundly, the functions or convenience currently most applauded by Beijingers are 'payment with one card' and the 'broadband neighborhood'.

The interconnected networking information system has made room for a more convenient system of payment. In February 2001, Beijing Municipal and Travel All-in-one Card Co., Ltd. was established. It aims to equip the residents with one IC card for payment, for travel, power, gas, park admission, etc. Currently, it is mainly engaged in the promotion of the urban traveling sector. Recently, the buses started to use All-in-one Travel Card. By the end of next year, the metro trains & taxis will carry the card technology.

Only when connected with the Internet through high-speed access, can the residents fully enjoy the digital city. Capital Info, China Telecom and other broadband operators are devoting great efforts to equip the neighborhoods with hi-speed broadband connections. In April 2001, China Telecom entered into agreement to construct another two model broadband neighborhoods. By applying integrated digital household networking technology, China Telecom will build household LANs and an intelligent neighborhood.

### **13. Some pilot digital districts**

To fully digitalize the whole city, Beijing plans to field out the project step by step, building some pilot digital districts first.

As an information industry base, Zhongguancun serves as a powerful engine for the whole city's informatization drive. Naturally, it is leading in the city's informatization move. Currently, 12 government agencies have started to provide 64 online service functions, including online application, business registration, daily administration, party/group management, etc.

Beijing Economic and Technology Development Zone will be another digitalized district in the near future.

The zone has budgeted an investment of over RMB 200 m. (US\$ 24.1 m.). In last May, Wangfujing Street, a famous commercial district, also launched its digitalization program. In two or three years, it will mainly build four application platforms, namely digital government, digital enterprises, digital neighborhood and e-malls.

### **14. Olympic Games 2008, an opportunity to speed up the Digital Beijing drive**

In July 2001, Beijing won its bid to host Olympic Games 2008. It is committed to hold a technology-strong games. To achieve this, Beijing Municipality announced it will invest RMB 30 billion (US\$ 3.61 b.) into the development of information industry in next five years.

Though Beijing Olympic Games Organization Committee has not started work officially, the telecommunication companies have already started their initiatives. China Telecom, China Mobile and China Netcom are all working hard on their respective 'Olympic Games Plan'. According to Beijing's bidding report, an Olympic Games optical fiber communication network will be constructed to cover all Olympic Games venues, based on the existing Beijing optical fiber network. Besides, a mobile communication system integrating 2.5G and 3 will be at place too.

The newly-established Integrated Service Telecommunication Bureau will oversee Beijing's Olympic Games communications, including voice, data, broadcasting, Internet transmissions and broadband. Also, the bureau is in charge of 2G/3G integration, and the build out of the group of networks for the Games. The network construction includes offering digital cable television networks for all Olympic Games venues; the laying of a new optical under sea cable and a satellite communications earth station.

Included in the plan is the set up of the Olympic Games web-site for Beijing, which will be multi-lingual, and have multimedia functions including a visual conference IP call system, 3G, GPRS and E-commerce applications.