

Joint Venturing in China Telecoms

Introduction

This background briefing paper for the Telecommunications InfoTech Forum does not claim to be comprehensive, but it does aim to give an overview of joint venturing in China's telecoms to date, together with a systemic review of LianTong (China Unicom) and JiTong. It was the appearance of these two corporations in 1994 and 1995 that gave rise to many expectations that China was close to opening the door on foreign direct investment in network building, operation and service provision. The paper divides into three parts.

- Part One: The first experiments looks at the Huamei and First Star ventures, noting the particular corporate structure of their joint ventures.
- Part Two: China Unicom surveys the structure, performance and joint ventures of LianTong.
- Part Three: JiTong concludes that, as in the case of LianTong, projects are really being developed on a case-by-case basis.

The first experiments, 1995

Contrary to its policy banning foreign ownership and operation of telecoms networks in China, Beijing announced in April 1995 that it would allow a few foreign investment experiments to go ahead. Its intention was to open the door to a small amount of foreign capital and expertise, and then, pragmatically, to wait and see what happened. With interest among investors and telecoms watchers reaching fever pitch at that time, many hoped this policy initiative heralded the long-awaited opening of the sector. Not surprisingly, only a few joint ventures have gone ahead since then; though countless more are waiting in the wings in the form of memoranda of understanding (MoUs).

Like its cautious approach to foreign investment in other strategic industries, the State Council seems determined to not give away too much too quickly in telecoms services. It may want some foreign money and technology to enter China, but only on its terms. Telecoms minister Wu Jichuan told an international conference in Beijing last April: We are experimenting with new ways of using foreign capital. That is, foreigners will not possess share (voting) rights and will not participate in the management. We will allow joint investment on specific projects where the foreign investors will get a return on their capital on a mutually agreed basis. Many saw this as a particularly unattractive offer, since it meant financing projects over which foreign companies had very little control. Few foreign banks would lend to a foreign investor in this type of joint venture.

Another drag on rapid change is disagreement within the Chinese government over the role foreign investors should play. The erstwhile monopoly, the Ministry of Posts and Telecommunications (MPT), was understandably against allowing foreigners in until quite recently. Hence, its initial opposition to the Huamei joint venture in Guangzhou (more on this below). Once it realised it could not stop the foreign investment, however, it did an about turn and took a small stake in the venture's Chinese partner! Other parts of government, such as the Ministry of Electronics Industries (MEI), a principal founder of LianTong, and the People's Liberation Army (PLA), has an interest in taking a far more relaxed line on foreign investment. Meanwhile, as Minister Wu also said last year, the telecoms sector is closely connected to issues of national sovereignty and national information security. China was aware of the international debate over whether or not this concept was still valid, but at present there was no consensus within the Chinese government on this issue, he said.

Huamei

Two of the first trial joint ventures to go ahead were Guangzhou Huamei Communications Company and Beijing Asia Pacific First Star Communications Technology Company.

Huamei is a 50/50 joint venture between two American companies—SC&M International, a Chicago investment bank, and Brooks Telecommunications, a St. Louis-based builder of advanced telecoms networks—and Galaxy New Technology, a company controlled by COSTIND, the manufacturing, research and development arm of the PLA and the key agency overseeing China's aggressive defence conversion effort. The MPT and MEI hold small stakes in Galaxy.

Huamei (which means 'China America' in Mandarin) has built a US\$7m prototype, state-of-the-art broadband network in Guangzhou. First announced in 1993, the joint venture became partially operational in April 1995 (its official launch was June 15, 1995). The network, which uses ATM switches and the SDH optical transmission standard, will initially carry a range of voice, data and multimedia services to government and business customers in Guangzhou (though some services are linked to other cities in China). The joint venture's owners hope to extend the network throughout Guangdong province at a later stage. (How this will work in practice, and whether permission will be given, appears uncertain at this stage.)

No commercial services have as yet been offered. Huamei is still doing performance testing on its ATM switches and running trials of potential services, such as video-on-demand and tele-medicine, an audio-visual platform for sharing information between hospitals (Beijing and Shenyang are involved in this trial as well as Guangzhou). The company hopes to launch phase one of its commercial services in the latter half of this year. It has lined up three hotels in Guangzhou as trial customers for standard broadband

fare such as video-on-demand, interactive games and video-conferencing. It also wants to offer what must be a world multi-media first—karaoke-on-demand.

The story behind the equipment Huamei uses is of some historic significance. Until a couple of years ago, China was one of several so-called 'non-market' countries that was banned from importing high technology that could have military applications (the COCOM restrictions). One of the principal reasons SC&M International is involved in the joint venture is its president, Adlai E. Stevenson, a former senator in the US Congress (1971-81) and chairman of the sub-committee which oversaw the law which governed the export of high technology (the Export Administration Act). Mr Stevenson understood better than most how anachronistic the COCOM restrictions had become by the 1990s. By doing the rounds in Washington to seek approval for the export of the ATM switches and SDH fibre optics, he contributed to the dismantling of COCOM.

First Star

First Star is a joint venture between Singapore Telecom (35%) and subsidiaries of the MPT and the Beijing Municipal Government (as the principal local shareholders). Small stakes are held by the Hong Kong-listed ING Beijing Investment Company and Asia Pacific (China) Electrical Company.

First Star is financing and constructing China's first nationwide paging network. After the deal was announced in mid-April, 1995, the network began a six-month phased rollout in late May. The aim was to cover, by the end of 1995, 45 major cities in provinces such as Guangdong, Fujian, Zhejiang, Jiangsu, Shandong, Hebei and Liaoning, as well as Beijing, Shanghai and Tianjin. However, the starting date has since been pushed back to the end of June 1996, when services will be offered in only 21 cities. The Singapore government's strong connections in China were clearly a factor in getting this project started at such an early stage.

Ownership, operations and revenue sharing

Where Huamei and First Star are similar is in the corporate structure of their joint ventures. The foreign parties involved in both ventures say they have equity stakes in companies that are financing and building networks—they therefore claim part ownership in the physical assets of these networks. However, the same foreign parties insist that these companies will not be involved in the actual running of the networks, the marketing of services and the collection of customer payments (although they will help to maintain their networks to ensure everything works properly). Instead, the operations side will be handled by local state-owned firms or entities.

In Huamei's case, the operating company in Guangzhou will be the city's posts and telecoms bureau (PTB). If the network expands throughout Guangdong, then this job will

fall to local PTBs. In First Star's case, the operating company will be Beijing Asia Pacific Telecommunications Technology and Development Company (BAPT), which is also the subsidiary of the MPT that owns a stake in First Star. BAPT won the first licence to run a nationwide roaming paging network in China.

In principle, the networks will be leased by the owners to the operating companies (hence, they are referred to as 'build-lease', 'build-lease-service' or 'build-own-transfer' projects). But instead of being paid a flat fee in return, both Huamei and First Star will receive a share of the revenues generated by their networks. This gives both a greater stake in the long-term viability of their ventures.

Will the experiments continue? The short answer is yes. In recent weeks, further joint ventures have been announced, including for example Singapore Technologies, another Singaporean government company. Yet in the uncertain telecoms policy environment in China, disagreement among central government ministries on the value of these experiments will no doubt continue as well. The countervailing force here will be provincial and local governments. Fed up with the MPT's inability to keep pace with the telecommunications needs of the growing economy, these groups are pushing for faster change. The fact that Huamei is in Guangzhou, far away from Beijing, is not insignificant.

Paradoxically, another cause of friction could be the local posts and telecoms authorities themselves. In Guangzhou, for example, some telecoms officials are allegedly unhappy about the idea of leasing the Huamei network—they want to buy it. The Shanghai Posts and Telecoms Administration was also allegedly unhappy when Pudong authorities went over its head to the State Council last year in seeking approval for a foreign-run network in its zone. Investors in China telecoms may need eyes in the back of their heads.

LianTong or China United Telecommunications Corp (Unicom)

China United Telecommunications Corp—more commonly referred to as Unicom, and sometimes as LianTong, the transliteration of its Chinese name—was formally established in July 1994. Its initial reason for being—at least its publicly stated reason—was to promote the development of China's telecommunications network by introducing a second major player alongside the Ministry of Posts and Telecommunications.

Nearly a year and a half after its foundation it has succeeded in getting some operations off the ground. But it is struggling to find a role for itself and the large number of disparate organisations and bodies have jumped on board. The main reason for this is the branch structure it has adopted, which while offering flexibility has made the company impossible to control and direct.

□ Structure: Ever since its foundation, Unicom has been referred to as the operator, or potential operator, of China's second telecommunications network. Certainly this is what it is allowed to do according to the licence granted it by the State Council, China's cabinet, which allows it to provide wireless and value-added services, public telephone services in areas where the MPT's coverage is insufficient (ie just about everywhere) and long-distance communications. Unicom's announced long-term goals fit into this framework. The company has stated that it wants:

- By 2000 to be operating 10% of China's fixed line telephone services and 30% of its mobile phone services. It estimates its fixed-line volume will be the equivalent of 10 million local lines.
- By 2005 to be operating a nation-wide fixed-line network with switching centres across the country.
- By 2010 to be a "large-sized" telecommunications enterprise.

However, militating against these eventual long-term goals is the structure Unicom has adopted. Its three founders were the Ministry of Electronic Industries, Ministry of Railways and Ministry of Electric Power Industry. Of the three the Ministry of Electronics Industry is by far the dominant partner, which had long been scheming, especially under minister Hu Qili, to expand from its base in manufacturing electronic equipment of various kinds, including telecommunications equipment, into operating telecommunications networks. The main reason for the participation of the other two ministries were the "private" networks they already operated to co-ordinate their work across China. Despite this discrepancy, all three ministries hold equal equity of Rmb100m.

In addition, with Rmb80m equity, Unicom has a host of other stakeholders, including:

- China International Trust and Investment Corp (CITIC)
- China Resources Holdings
- China Everbright International
- Huaneng Group (subsidiary of the Ministry of Electric Power Industry)
- China Merchants Group (controlled by Ministry of Communications)
- China National Technology Import-Export Corp
- China National Chemical Import-Export Corp
- Shanghai Science and Technology Investment Corp
- FOTIC (Ministry of Foreign Trade and Economic Co-operation trust and investment subsidiary)
- Catch Communications Group
- Dalian Vestone Telecom and Cable
- Fujian Provincial Trade Centre Group
- Unicom Guangzhou (Unicom's Guangzhou branch)

In order to handle the demands of its various stakeholders Unicom is built around a branch structure, with each shareholder holding its interests in the company through a branch. Thus the three ministries have their own branches (ChinaCom, RailCom and ElectriCom), CITIC has another (CITIC Telecom), as do the more than two dozen other corporate, provincial and municipal interests. Cities holding stakes include Beijing, Shanghai, Tianjin and Guangzhou. The number of branches keeps growing as more shareholders buy into Unicom Tong, but at the last count, the company had a total of 32 branches across China.

From the headquarters point of view, the branch structure has the advantage of allowing shareholders to become involved in projects without losing central control of them. For example, four branches are involved in the first part of Unicom's GSM mobile phone projects—one from each of the four cities concerned—but headquarters selected the Siemens and Motorola equipment purchased for the networks.

The branches have no independent legal identity. As such, no branch can act as a counterparty in individual joint ventures. By denying branches certain powers, headquarters is seeking to maintain central control over the financing of local projects. In response, shareholders have independently established wholly owned telecommunications subsidiaries to administer their respective branches.

□ Operations: Unicom officially entered the telecommunications operations arena in July 1995 with the launch of GSM networks in China's four most important cities: Beijing, Tianjin, Shanghai and Guangzhou.

As of late 1995, only Unicom's Shanghai network appeared to be developing smoothly. Problems with interconnection to local PTAs, which had hindered the networks from their very inception, were still seriously affecting the networks in Beijing, Tianjin and Guangzhou. Disagreements reportedly centred on interconnection fees, with local PTAs looking to control the entrance of a new competitor backed by a rival ministry. But other difficulties have also occurred: in Guangdong, the Guangdong Radio Regulation Commission had to order the Guangdong PTA's GSM system to stop using certain frequencies because of frequency crossover problems this caused Unicom's network.

GSM Networks: In September 1995 Unicom signed contracts worth US\$20m with Siemens, Motorola and NEC to buy equipment for a GSM network in Fujian province. The network is scheduled to be in operation by the end of 1996. It will span Fuzhou, Quanzhou and Xiamen, plus eight other cities and four counties. Unicom has said it also intends to build GSM systems in Jiangsu, Zhejiang and Hebei provinces, while Unicom companies in Shandong and Nantong have both said they have signed contracts to buy mobile phone equipment from abroad.

Paging networks. Unicom Radio Paging Co, established in July 1995, has been assigned a frequency to operate nation-wide paging services across China. The first services are scheduled to be operated in Beijing, Shanghai, Tianjin, Guangzhou, Wuhan, Fuzhou, Hangzhou, Shijiazhuang, Nanjing and Shenzhen in the first six months of 1996.

Undersea cable. The Ministry of Electronics Industry's Unicom branch, ChinaCom is the prime contractor in the building of a undersea fibre-optic cable from Liaoning province to Guangxi, linking 16 coastal cities along the way.

□ **Agreements with foreign companies and organisations:** In its first year of operations Unicom signed 38 memoranda or letters of intent with companies from the USA, Canada, Britain, France and Japan. It has announced it would like to explore the possibilities of build-operate-transfer schemes. The agreements known to have been reached so far are:

- Memorandum of understanding with Singapore Telecom to work on the development of fixed line networks in Shanghai and fixed-line and mobile networks Suzhou's Singapore Suzhou Township. It is prepared to invest US\$300m in the Shanghai scheme and US\$75m in Suzhou.
- Memorandum of understanding with Daewoo Group for the development of GSM networks.
- Ameritech Corp signed an agreement for a 80:20 joint venture with Unicom branch ChinaCom to build GSM mobile and fixed-line networks in Shanxi province. The GSM network, to be operated by Unicom's Shanxi branch, will have a 10,000-subscriber capacity in Taiyuan by mid 1996. Total investment will be around US\$20m.
- Telstra Corp is negotiating for a role in the development of a fixed-line and mobile networks in Henan province.
- BellSouth has signed a memorandum to develop GSM networks in Shandong.
- Pacific Link Communication is negotiating over GSM projects in Fujian.
- GTE is discussing network technology and management for projects in Beijing.
- NTT has signed a memorandum of understanding to develop and maintain GSM networks in Jiangsu and Zhejiang provinces.

- Mitsui is planning a joint venture with Unicom to manage mobile communications marketing and maintenance in Shanghai.

Bell Atlantic is reported to have withdrawn from a GSM project in Shanghai in which it had been set to invest up to US\$26m.

□ Prospects: *Unicom's branch structure gives it flexibility, but also makes it hard to direct and control.* This means it is likely to proceed on a case by case basis, rather than working to a grand strategic plan. A consequence of this is that, given its present structure, its goal of building a nation-wide fixed line network is unlikely to succeed.

Finance will continue to be Unicom's biggest headache. In order to turn itself into a rival to the MPT, Unicom needs to consolidate funds at the centre. Certainly revenue/cashflow was one of the main reasons for moving into mobile communications so rapidly. However, its branch structure means that partners at the local level will be more interested, especially in the short- and medium-term, in ensuring that they get a return on their investment rather than contribute to expansive but ill-defined plans for growth. Unicom's headquarters probably would get more respect from shareholders if it had independent access to long-term capital, but the State Planning Commission has consistently denied Unicom this privilege. Any Unicom project requiring funding of more than Rmb60m (about US\$7.2m) requires State Planning Commission approval.

The MPT has proved a far tougher adversary than many imagined. Since Unicom's establishment, the MPT has thrown up obstacle after obstacle to its growth. It will continue to do so, despite attempts to hive off its operations into the Directorate-General of Telecommunications (China Telecom) leaving the ministry responsible for regulation. Granting Unicom its licence injected fresh vigour into the ministry, to protect its dominant position as China's public telecommunications provider.

Unicom lacks experience. A major reason for the proliferation of branches is the inability of Unicom headquarters to make projects happen. One reason for this is simply a lack of experienced managers and technical staff — a situation which has been aggravated by high staff turnover at the centre.

Mixed motives for getting on board. Many of Unicom's stakeholders are not interested in Unicom but in getting access to the rights to operate telecoms services offered by its licence.

Key personnel

Chairman	Zhao Weichen
General Manager	Li Huifen
Deputy General Manager	Lu Jianguo

Ji Tong Communications Co Ltd

Under the guidance of the Ministry of Electronic Industries, Ji Tong was originally to be a shareholder in LianTong (Unicom) but has since been developed as a separate corporate entity to focus upon national information network building and network integration. Its current plans focus upon providing private access to medium-speed data communications networks.

□ Operations: Ji Tong's business scope is enormous, ranging from domestic and international electronic information and communication systems to cable television. However, despite initial announcements that it planned to move directly into just about every area it was allowed to, it has since narrowed its focus to concentrate on specific electronic information projects, all of which have been given the designation "golden". Some 16 of these projects have been announced so far, all involving different agencies which have a need to link sites across the country into national networks. Several of the schemes appear to be little more than names, but progress has been realised in three key projects, namely:

Golden Bridge. This, a VSAT network, is the principal backbone network for all other golden projects to operate on. The network, using GM Hughes equipment, will initially link 24 cities. The network is to be managed out of a centre at the Ministry of Electronics Industry in Beijing. It will be connected to a transponder leased from Panamsat. It will interconnect with the Ministry of Posts and Telecommunications' Chinapac and DDN packet switching networks.

Golden Card. Although the principal agent of this project is the People's Bank of China, Ji Tong has the major build-out responsibility. This project will be a nationwide network mainly linking automatic teller machines. Although many references in the Chinese media suggest it will principally be a credit card verification network, this does not appear to be accurate. One of the key roles envisaged for the network is ensuring greater control over the cash economy—allowing people greater use of credit would clearly militate against this. Instead the network is aimed at ensuring people only spend money they have already deposited in bank accounts. Foreign companies involved in the project include Visa International, IBM and Tandem.

Golden Customs. This will link customs offices across the country to allow the exchange of trade and customs-related information over an e-mail/electronic data information network. The first phase of the project was launched in March 1994, with trial operations in August 1994 of a network to inspect VAT invoices across counties and districts in 50 cities. The second phase of the project, involving an investment of several hundred million renminbi, will extend the network to 300 cities.

Another project that is moving ahead is Golden Macro. This scheme was officially started in mid-1995 with Rmb1.65 billion worth of loans from Japan's Overseas Economic Cooperation Fund. Its goal is the construction of database of national economic statistics that will provide the government and public with information on the Chinese economy. Trial operation is due for the end of 1996.

• Structure: Ji Tong is a joint stock company, owned by a consortium of 26 shareholders. It is officially affiliated to the Ministry of Electronics Industry, which holds a controlling stake in the company through several organisations it controls, including ministry-controlled research institutes and manufacturing companies. See below.

Ji Tong Shareholders

1. China Electronic Leasing Co
2. Beijing Economic Development & Investment Co
3. Shenzhen Guoye Trade Co
4. Dongguan Tongpai Telecommunications Industry Co
5. Nanjing Radio Factory
6. Tianjin Optical and Electronic Communications Co
7. China Electronic Appliance Corp
8. Beijing Wire Communications Corp
9. Guangzhou United Communications Corp
10. China National Electronic Import-Export Corp
11. China National Electronic Device Industry Corp
12. China Zhenhua Electronic industry Corp
13. Zhuhai Dongda Stockholding Group
14. Changzhou Electronics Development Corp
15. Shenzhen Sangda Communications United Corp
16. Beijing Kanxun Electronics Co
17. The 54th Research Institute of the Ministry of Electronics Industry
18. China International Trust & Investment Corp (CITIC)
19. Tianjin Communications & Broadcast Co
20. 7th Research Institute of the Ministry of Electronics Industry
21. 34th Research Institute of the Ministry of Electronics industry
22. 1st Research Institute of the Ministry of Electronics industry
23. Wuhan Zhongyang Radio Factory
24. China Electronic System Engineering Corp
25. China Tong Guang Electronics Corp

Agreements with foreign companies and organisations

1. Visa International (agreement date, November 1994). Draft cooperation agreement related to the Golden Card project. It is understood to be playing a major role in providing finance.
2. Pacific Century (agreement date, October 1994). Cooperative agreement to apply satellite resources and develop international communications services via satellite.
3. Intel Corp (agreement date, October 1994). Cooperative agreement to establish the Ji Tong-Intel Exhibition Center for the promotion of Proshare Personal video-conferencing Products. The centre opened in March 1995 in Beijing.
4. IBM (agreement date, August 1994). To set up a Research and Development Center for information networking. IBM and Ji Tong formed Xun Tong, a 50-50 joint venture whose scope includes hardware and software development for the Golden Card Project. IBM's total planned investment is US\$5m.
Ji Tong also signed a contract with IBM and China Great Wall Computer Group to participate in the Golden Card project pilot study, providing front-end equipment (Tandem is providing back-end equipment). IBM has also reportedly committed US\$1m to the development of hardware and software for Ji Tong, mainly for the Golden Card system.
5. BellSouth (agreement date, September 1993). To undertake large, sophisticated and comprehensive communication projects. BellSouth committed to a US\$15m contract with Jilin Broadcast Bureau to upgrade the provincial CATV network in Jilin province in northeast China. The venture will complete the 25,000km, 140 Mbps digital microwave network in December 1995. Ji Tong BellSouth hopes to use the Jilin project as a model for Henan and Zhejiang provinces by the end of 1995. BellSouth hopes as many as ten or more provinces and municipalities will permit the venture to construct CATV networks. BellSouth's investment was US\$29.5m as of year-end 1994.
6. Excellent Malaysia (agreement date, 1993). Joint venture to develop wireless terminal network systems (WTNS) for communications between multi-user 386 (486)/UNIX (XENIX) systems and remote terminals. Excellent has reportedly invested US\$520,000.
7. Pacific Link (Hong Kong) (agreement date, 1993). Joint venture through which Hong Kong wireless provider PacLink provides Ji Tong with contracts and consulting on its dealings with foreign suppliers.
8. Hong Kong Electric Co. Fenghua-Ji Tong Bird Co is a joint venture between HKGE, Ji Tong and Fenghua Technology Research Institute to manufactures Bird pagers and related products.
9. Motorola (USA)/Matrix (Australia). Joint agreement to develop wireless data communications networks for China. The three companies plan to jointly develop a pilot programme in several Chinese cities.

10. Champion Technology (Hong Kong) has a US\$1.5m manufacturing joint venture with Ji Tong to manufacture and sell trunking radio, cellular radio, and paging systems.
11. Hughes Network Systems has been selected to provide VSATs for the first trial phase of the Golden Bridge Project. Hughes signed a contract in December 1993 for the 10-site pilot network, which will have both data and voice transmission capacity. The network will cover the Beijing area and is slated to be installed in late summer 1994.
12. InterDigital Communications Corporation announced the sale of its CDMA equipment to Ji Tong for a mobile network in Beijing. The company will provide 17 base stations over the next two years. InterDigital officials expect that Ji Tong will use CDMA for intra-city connections for data and/or voice transmissions, and then link these networks with the Golden Bridge Backbone network by 1997. The company also hopes to install a CDMA network in Guangdong province in the near future. InterDigital expects fax and 64 Kbps data transmission will be the primary uses of the network initially. It is also providing 35,000 handsets under the terms and contract, indicating that the Beijing network will be used for voice transmission at some point.

☛ Prospects: Ji Tong is making better progress than Lian Tong, mainly because it has clearer, albeit less grandiose, goals. The main reasons for this are a mixture of the company's structure, China's data communications goals and the economic possibilities telecommunications appear to offer in the next century.

China wants to have some kind of "information superhighway". Part of the drive for this is a desire on the part of the central authorities to secure greater control over their huge country. They appear to believe—and certainly this is how leading figures in the Ministry of Electronics Industry have presented the outgrowth of an information infrastructure—that greater control will be possible if organisations across the country can be linked into nationwide networks which can be accessed at the centre. Financial markets, for example, will be united and so subjected to greater central control, unlike the situation in the early 1990s when currency swap centres across China were buying and selling US dollars and renminbi at significantly different rates.

Another reason for wanting to build out infrastructure is quite simply to make money. In China, as in most of the rest of the world, moving material along fibre optical cables—be it financial services, home shopping, video on demand, the Internet, or whatever—is seen as a potentially enormous source of money-making opportunities in the next century. Certainly this is one of the main reasons why the Ministry of Electronics Industry has been attempting, through Ji Tong and Unicom, to move into operating as well as building out telecommunications-related networks, instead of building the hardware it had previously restricted itself to.

Given the Ministry of Electronic Industry's lack of experience in network operations, both technologically and managerially, plus the lack of capital needed to build out a nationwide information infrastructure by any single body, Ji Tong's project by project expansion makes sense. But there is little coordination from the centre as each scheme relies on using resources available at a local level. In the case of the Golden Card project, for example, deals are being negotiated one by one with banks and local companies around the country rather than in a consolidated national manner.

Ji Tong's decision (or rather acceptance) that it will rely on the networks of the Ministry of Posts of Telecommunications rather than try to create alternative ones is a good example of this. It means that the company will concentrate mainly on discrete projects, on a one-by-one basis, developing schemes with local bodies in which it will be able to offer some sort of coordinating role as its experience grows. Foreign companies can or will be brought in to participate at this level, as the list above suggests, very much on a case-by-case basis.

By surrendering most of its early grandiose visions and replacing them with a series of concrete projects Ji Tong has emerged as a viable developer of data communications projects. It has realistic a view of what it can achieve and an awareness of the many technologies and skills - both technology-related and management - that it lacks. This means it offers opportunities to foreign telecommunications companies looking for opportunities to gain a foothold in China - though its lack of capital and very inexperience also means that many of these opportunities may prove illusory to those who set out in search of them. The exceptions lie in the three main projects Ji Tong is involved in developing, the Golden Bridge, Golden Card and Golden Customs.

Key personnel

Chairman Lu Shouqun