ELECTRONIC COMMUNICATIONS

China to Triple Internet Links With Commercial Hookups

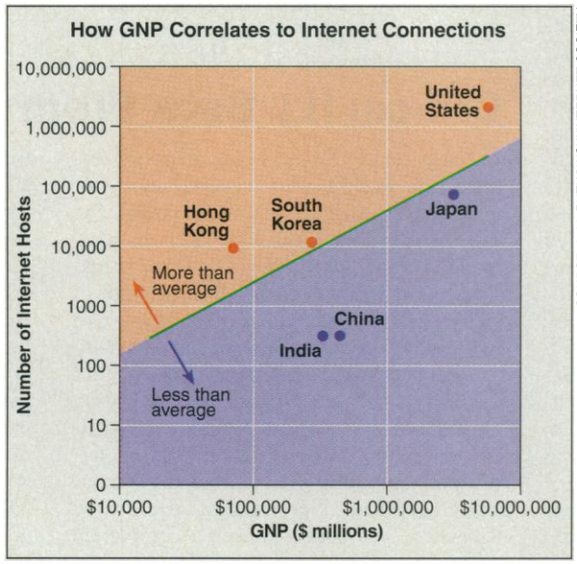
BEIJING—Chinese researchers will soon have greatly expanded access to the global information highway. In the next few weeks, two new direct links will be established with the Internet, supplementing the single connection available since last spring through the Chinese Academy of Sciences (CAS) in Beijing. But that good news—for businesses and the public as well as for scientists—is tempered by the reality of life in a centralized economy. The new links are expected to be much more expensive to use than the academy's connection, because the government's Ministry of Post and Telecommunications (MPT) intends to manage the hookups—from Shanghai and Beijing—as a moneymaking enterprise. And an attempt by the ministry to claim the right to an electronic designation now assigned to the academy serves as a sobering reminder of the government's desire to control communications among China's 1.2 billion citizens and with the rest of the world.

China's first direct link to a U.S. Internet gateway was established last May when the MPT gave the Chinese academy permission to lease a line provided by Sprint, the U.S.-based telecommunications company. The line supports 2000 terminals at three Beijing institutions—CAS and Qinghua and Beijing universities—and the connection time is cheap, thanks to $130,000 a year in joint funding from the World Bank and China's State Planning Commission.

To no one's surprise, the 64-kilobits-per-second line has been an overnight success. On a typical day, for example, Hu Daoyuan, director of Qinghua's Institute of Integrated Information Network Technology, might browse through library catalogs in Hong Kong, exchange data with colleagues in Germany, download software from friends in Korea, or engage in electronic chit-chat with Chinese graduate students in the United States. "Before I used Internet, I could communicate internationally only by fax or express mail" costing up to $35, Hu recalls. And, Hu says, using regular post meant taking more than a month to complete one exchange. "Now I am in contact daily with people all over the world, even when I am on the road."

One consequence of the line's popularity is that Hu and others are finding it increasingly hard to go on-line during normal working hours. "The line is basically saturated," says Qian Hualin, deputy director of the CAS Department of Computer Networks, and an upgrade is badly needed. But greater capacity takes money, which is hard to find for a nonprofit operation like CAS. The final installment of the World Bank's $4.2 million loan, which was spent mostly on hardware, arrives this year, and the loan is not expected to be renewed. The State Planning Commission intends to continue funding the line's operating expenses, but scientists suspect that the commission will not spring for the larger capacity lines that could ease the crunch.

The two new lines are intended to relieve some of that congestion. Leased from Sprint and expected to be hooked up as early as this month, they will be run by MPT as a commercial venture, at market rates. The ministry has yet to set the rates, but Hu and other scientists worry that they will be beyond the budgets of most researchers. They point to a commercial data transmission company run by MPT that now charges 7 yuan (8.3 yuan = US$1) per 1000 bytes for an indirect linkup with Internet that uses a slower, more cumbersome, and less reliable protocol. This is hundreds of times the rate charged by CAS/Internet. On the other hand, MPT will use the Internet's own protocol, TCP/IP, to connect with the new direct lines, allowing the ministry to provide better service at a lower cost.



SOURCE: A. M. RUTKOWSKI/INTERNET SOCIETY

Money talks. China trails wealthier nations in becoming linked to the Internet.

But cost isn't the only potential fly in the ointment for Chinese scientists hoping to interact globally. The new linkup has also upset ministry officials, who believe the ministry is not being shown sufficient respect in its role as supervisor of the new enterprise. The flap involves the country-level domain names—attached to the end of all e-mail addresses outside the United States—assigned by the Internet to its customers on a first-come, first-served basis. The '.CN' code for China has already been given to CAS, which means the ministry will have to apply to CAS for a secondary code to be appended to the country code.

According to numerous informed sources, MPT officials consider it highly inappropriate that the national domain name should belong to anyone else. Researchers are anxious that this petty squabble be resolved amicably, because an unhappy telecommunications ministry has the power to make life miserable for Chinese scientists. It took 8 months for CAS to get approval from MPT for its Internet link, for example, and the ministry would have to approve any upgrade.

CAS officials deny there is any tension between the two agencies and say they expect the situation to be resolved easily. Internet officials say it's not their problem, and that it would be unprecedented for a domain name to be reassigned. "CAS came to us first, and the China name was delegated to them," says David Conrad, the Tokyo-based manager of Internet's Asia-Pacific network information center. "So long as they behave appropriately and do not mess up, MPT will not be able to take it away. So far," Conrad adds, "CAS have been doing just fine with it."

The ministry's unhappiness with the existing arrangement might even disrupt current communications temporarily if MPT decided to ask the CAS-based communications network to sever its direct link to the Internet and instead go through the new ones. "I would not be surprised to hear the MPT make such a request, but I would be surprised if it were granted," said Conrad.

In the meantime, CAS's Qian is spending his time introducing Chinese scientists to the resources available on the Internet. "We are not interested in control or anything else, so if they are cheap enough, or can offer academic users a discount, we will gladly go through MPT," says Qian. "Or," he added, "since our technology and equipment are more advanced than theirs, maybe we can make a deal to manage it for them." In either case, Qian hopes that the new gateways will provide Chinese scientists with a growing presence on the Internet.

–Ted Plafker

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