Market Analysis

Building NGN Readiness Into China's Network Infrastructure

Abstract: Chinese operators are making bold early moves toward deployment of next-generation switching technologies. A low installed base and China’s market peculiarities are stimulating next-generation network switching market growth.

By Sumit Malik

Strategic Planning Assumption

Beyond 2005, the adoption of universal licensing, a ubiquitous triple play of voice, video and data, and build-out of 2.5G and third-generation (3G) wireless networks will provide a second wave of growth (0.7 probability).

Strategic Market Statements

China is better positioned for early adoption of next-generation equipment than many other developed economies.

Two long-term key success factors for vendors are close relationships with carriers for deployment of next-generation network (NGN) and support during migration.

Publication Date: 26 August 2003
What's Up in 2003?

Against a backdrop of cautious uptake of NGN switching equipment by carriers globally (see “State of the NGN: Moving to the Next Generation,” LE-19-7412), the moves of Chinese operators demand a closer look.

NGN is under trial in different networks, and recent contracts show new momentum for NGN deployment, as shown in the following:

- China Telecom recently announced mainland China’s first NGN deployment for multimedia services based on Alcatel equipment, following an extensive trial that began in 2002. Also, China Telecom earlier deployed a multiservice backbone platform in 10 key provinces.

- China Railcom has been deploying a nationwide multiservice network, starting with a nationwide backbone, and most recently announced deployment of Nortel’s packet voice equipment in one of its provinces following a year-long trial.

- China Netcom announced in the first quarter of 2003 a multiservice backbone network connecting 110 cities to cater to a growing demand for broadband and data services.

- China Telecom and China Netcom have been adopting a softswitch-based solution, iPAS from UTStarcom, to provide a low-cost, low-mobility wireless local loop (WLL) service known as Little Smart.

The strategic issue remains whether the recent announcements represent the start of a wider acceptance and large deployment — or an early boost relating to the short-term infrastructure needs of new carriers and the emerging competitive environment.

Market Developments and Trends

The deployments and new contracts seen in the market are for a variety of applications and reflect specific Chinese carrier requirements.

For the Little Smart service based on Personal HandyPhone System (PHS) technology, China Telecom and China Netcom have been aggressively awarding new contracts to UTStarcom’s softswitch-based iPAS solution. Given the rapid takeoff for this service and a slower growth for new digital switching capacity, these carriers have used softswitch-based solutions in an innovative fashion to augment or build local capacity. Also, wherever they anticipate delays in new switching coverage, or do not intend to deploy a new local exchange, they have gone in for the softswitch-based iPAS for local switching.

The carriers are also using the next-generation technology to generate revenue by offering existing and new services to their customers, including IP Centrex, videoconferencing and Internet Protocol-virtual private networks (IP-VPNs).
A large number of recent carrier contracts are for China Telecom’s and China Netcom’s greenfield expansion into each other’s territories. NGN architecture offers a cost-effective alternative to traditional architecture. As competition between the two fixed-line carriers intensifies, Gartner Dataquest expects NGN deployment to grow.

Other deployments come from smaller service providers such as ChinaSat, which deployed a nationwide NGN on Huawei’s technology platform covering 170 domestic cities.

In an interesting business model, China Unicom has built Internet Protocol (IP) supermarkets in key areas to be able to offer public access to communications for the unconnected masses, using the pay phone with integrated billing application.

NGN Adoption Drivers

Lack of Legacy Infrastructure
For market challengers such as China Railcom, China Unicom and ChinaSat that have little or no legacy infrastructure, adoption of NGN switching is catalyzed. China Unicom has already built the largest NGN in the region for prepaid applications.

China Telecom and China Netcom enter each other’s territory adopting next-generation voice over broadband. They are leveraging the cable or Ethernet infrastructures of local players who have existing customers. This allows them to keep capital costs low without compromising the service offerings to customers.

However, an early interconnect agreement between these players for long-haul traffic carriage in the other’s territory could slow down new network deployment for transit switching.

Lack of Legacy Customers
The lack of legacy customers means lower existing revenue streams to defend. Operators can adopt NGN solutions for corporate data services, including IP-VPNs, video conferencing and video LANs, without cannibalizing existing services. Besides, this also helps the carriers drive new signups through innovative service bundles, while underlying infrastructure remains common.

However, uncertainty over service delivery could impact customer demand, in particular if early experiences don’t meet customer expectations.

Others NGN Drivers
Another factor is the need to lower incremental capital cost per subscriber, in particular for Little Smart service from China Telecom and China Netcom. However, Little Smart growth is expected to slow, and this could impact softswitch deployment directly associated with it.
Meanwhile, smaller regional cable or Internet service providers look at NGN technologies and see a low-cost option to enhance their revenue by introducing newer services. The smaller carriers are adopting a profit-sharing model with the new, larger entrants in their region, who bring with them the technology and resources to provide such services, while the local players provide customer access.

**Vendors and Local Competition**

The key vendors in the Chinese NGN switching market across all segments — softswitches, backbone multiservice switching platforms (BMSPs) and service provider routers (SPRs), among others — include Nortel Networks, Alcatel, UTStarcom, Cisco Systems, Juniper Networks, Redback Networks and the local players including Huawei and ZTE.

Alcatel and Nortel have witnessed significant success in the NGN market. In addition, Alcatel, through its local subsidiary, Alcatel Shanghai Bell (ASB), has been building specific applications for the local market.

Cisco leads the SPR market in China, winning major contracts with China Telecom and China Unicom.

Huawei and ZTE are also developing and evolving their NGN switching technologies. Their prices are as much as half of the foreign vendors' prices, but lack of features and reliability issues have limited their NGN switching installations to a few small test sites and applications in China.

Vendors that are looking to enter the market need a Ministry of Information Industry (MII) certification before deploying NGN equipment. For more details, see "Growing Pains in China's Telecom Equipment Market," TCMC-WW-FR-0137.

**Gartner Dataquest Perspective**

The need to minimize greenfield deployment cost, lack of legacy infrastructure, the ongoing broadband boom and enhanced competition will continue to driving market growth. As a result, China is better positioned for early adoption of next-generation equipment than many other developed economies.

We expect that China will continue to be the fastest-growing and dominant next-generation switching market in the Asia/Pacific region over the next five years. By 2007, we forecast the market to grow more than 150 percent to $509 million, up from $185 million in 2002.

However, as the carriers continue to experiment and measure their success of NGN migration, the next couple of years will be volatile. The incumbents' need to completely depreciate existing infrastructure will also slow adoption until 2005.

Success or failure of the early trials and deployments will play a crucial role in determining NGN switching adoption rates and market growth.
Beyond 2005, we expect growth will be driven by the following:

- Adoption of universal licensing, with entry of wireless carriers into fixed services and vice versa, spur further adoption of next-generation switching solutions.
- The ubiquitous triple play of voice, video and data, together with increasing nonvoice traffic on networks, will also be a driver.
- The build-out of 2.5G and 3G wireless networks will enhance capacity demands between the wireless and wireline networks.

Vendors that are willing to work closely with carriers to deploy these applications and help successfully negotiate carrier migration will emerge as long-term winners in this market.

**Key Issues**

What are the business models that justify and accelerate next-generation technology deployment?

What revenue-generating applications will be enabled or supported by next-generation technology?