主題

A multinational vendor's strategy for NGN softswitches

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차 례

Voice revenues are critical to service providers today as they still make up 60% of revenues. Voice is certainly dominant, but the growth is flat. Wireless & data traffic are increasing, resulting in the need for integrating different networks into a unified platform for network efficiency, cost savings and additional revenue opportunities.

THE BUSINESS ENVIRONMENT

Operating expenses are much larger than capital expenditures for service providers. In fact, for every $1 of capex there are $4-10 spent on operational expenditures. Thus, service providers are very focused on needing to reduce operating expenditures.

End offices are the key to operating expenses. Over 80% of all North American switches are end offices and have 60% of operating expenses associated with them[1].

Service providers are experiencing margin squeeze and are under pressure to drive top line revenues as well as decrease expenses.

With such business challenges, the deployment of the Next Generation

1) Source: Nortel Networks: Arnhold & S. Bleichroeder investment firm report "Global View: Telecom Outlook, Will the Softswitch Market Meet Revenue Expectations" June '01

Networks (NGN) is more critical than before. Not only it helps in improving the margins and business models, but also enables service providers to address tomorrow's business needs. With the trillion dollar investment in current networks, a lot of the NGN adaptors are large carriers who want to leverage their current network when migrating to the new world of packet-based networks.

THE NORTEL NETWORKS PACKET STRATEGY

Nortel Networks is focused on 4 areas in delivering on the NGN strategy

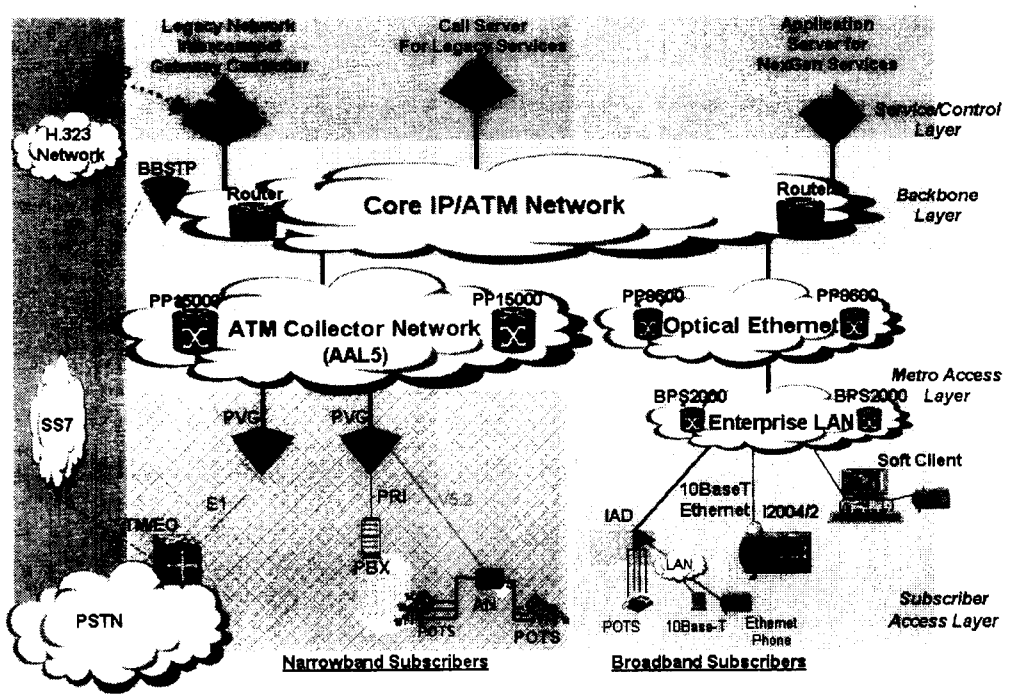
- Simplify voice and data networks with distributed networks and centralized call servers that increase serving territories. This delivers on the service provider need to reduce costs by flattening the network and reducing the number of statically provisioned connections.

- Leverage Nortel Networks' years of experience in delivering DMS & Meridian software and porting that service capabilities into the packet domain. This puts Nortel Networks ahead of competition who will have to create the 3,000 features Nortel Networks has already written and ported to the packet domain. In addition to a full traditional service set, new multimedia services built into Interactive Multimedia Server (IMS), and an exceptional programmability environment, Nortel Networks has the test and implementation experience to ensure these services can be delivered across the network and billed successfully.

- Nortel Networks is moving from being a hardware vendor to integrated solution provider. In this Nortel Networks' hardware systems are moving to general computing hardware base. For example, the softswitch CS-2000 Compact as well as the Interactive Multimedia Server are based on commercial hardware platform. Again, this delivers the desired cost savings service providers are looking for by riding the steeper industry volume and cost curve.

- Leverage Nortel Networks' installed base in both carrier & enterprise. Nortel Networks has over 200 million DMS ports (primarily in North America) as well as 43 million Meridian ports. With a VoP portfolio that supports equipment transition and hybrid TDM/packet environments, Nortel Networks allows reuse of equipment and can leverage the existing footprint and the processes Nortel Networks has installed to support them.

The Nortel Networks NGN solution is an end-to-end



NORTEL NETWORKS' SOFTSWITCH PORTFOLIO

Nortel Networks has 3 soft switches in the NGN portfolio. They are the Communication Server 2000, Communication Server 2000 Compact and the Interactive Multimedia Server.

CS 2000 and CS 2000 Compact share the same Class 4/5 software capability and software load which is based on the DMS 500. The feature set supports a comprehensive set of lines, trunks, intelligent network, and country fit capabilities. Additionally, the CS 2000 transparently supports back-office interfaces which smoothes the transition for customers from a TDM architecture to a packet architecture without requiring redevelopment of OSS systems.

The CS 2000 Compact is an open commercial hardware and software platform that uses compact PCI and Linux technologies. The CS 2000 Compact can scale to small line and trunk sizes cost effectively. North American and International Greenfield deployments are supported using IP and ATM bearer path architectures.

The CS 2000 using the XA-Core processor is a cost effective and seamless way to migrate existing DMS switches. Customers maintain feature transparency with the DMS while gaining distributed

packet architecture advantages such as larger network capacity, greater geographic reach, and greater network efficiency. Additionally, the CS 2000 supports a hybrid office configuration that enables the service provider to continue using existing legacy TDM peripherals while using packet enabled equipment for growth opportunities.

Nortel Networks' multimedia services portfolio is a portfolio of products that enables service providers with new sources of revenues that they desire. The Interactive Multimedia Server is at the heart of the portfolio. It includes many independent software modules including SIP application module, SIP Location module, Programmability tool kit, and others.

The other items that complete the portfolio include the SIP media server, RTP Media Portal & the SIP PRI gateway. These enable conferencing, lawful intercept as well as firewall tunneling. Nortel Networks have filed several patents on the firewall tunneling.

THE END TO END IP VISION

This full product portfolio enables Nortel Networks to serve not only traditional wireline carriers but content & wireless providers as well as Enterprises. A full complement of traditional voice and new multimedia services can be delivered on either ATM or IP networks over any access medium, including narrowband copper and broadband DSL, cable or Optical Ethernet.

In Large public networks, the Succession VoATM solution provides:

- PSTN equivalency
- Cost reduction
- Improved efficiency

In corporate networks, and new carriers, the VoIP Multimedia Business Services solution

- Generates new revenue from multimedia and web-enhanced services
- Reduces network cost through simplified management and a common IP infrastructure

The two deployments are complementary and enhance the total service offering with no stranded investment.

CARRIER BENEFITS FROM NORTEL NETWORKS NGN

Achieving Cost Savings

Voice over IP solutions from Nortel Networks deliver cost savings thru network simplification, network efficiency and operational simplification. All

solutions transform multiple networks into a single network that delivers all services, voice, data, video, and multimedia, replacing costly meshed or overlay networks.

Nortel Networks' distributed architecture and packetized traffic enhance network efficiency, making better use of available bandwidth resources. Only signaling traffic passes through the communications server. All bearer traffic passes directly between gateways, creating a more direct path between the caller and the called party. Trunking facility reductions lead to considerable capital and operational savings. For example, trunk provisioning, translations, design, and maintenance are virtually eliminated.

Nortel Networks' NGN solutions also offer operational simplification. Services are delivered at lower cost, due to simplified administration, centralized network management, and more flexible trunk management.

Nortel Networks simplifies the network by flattening the network. Access devices no longer need to traverse loop carriers, TDM switches, trunk modules, and tandem networks to deliver content. These devices connect directly over the packet network. Without these intermediate points, there is less equipment to buy and less to house and maintain. The Network Intelligence controls the access devices without having to touch the media stream. As networks and services converge, Nortel Networks is providing single solutions that operate in and across cable, wireline, wireless and broadband networks, eliminating the customer need to manage multiple networks and maintain multiple organizations.

Generating New Revenue:

New revenues can be broadly grouped into:

- Revenues from new services which the end-user will pay for, and
- Revenues from today's services which can be delivered in a more competitive manner

With the Nortel Networks NGN, a significant number of new services primarily on multimedia and personalized capabilities are added into the server offer set. Bundling opportunities are also existed with more service choices available today, allowing carriers to be more flexible in the pricing strategies.

Voice over Packet not only makes phone calls cheaper it also enables new high-value services that service providers can add to their portfolio of traditional voice

services. Since all traffic is carried in the same network, voice, video, e-mail, and fax are easily integrated into easy-to-use multimedia services, enabling service providers to offer a host of new services to business and residential users. Nortel Networks' Interactive Multimedia Server enables and delivers a host of new multimedia services with the use of an emerging technology called Session Initiation Protocol (SIP) that allows service providers to realize the full value of multimedia services on NGN networks.

Internet Telephony services will be a $64 billion global market by 2004 (Insight, August 2000). A large part of this will be the services provided by the IMS. IMS services available with the initial release can be classified as "Multimedia Services", "Personalization Services" and "Mobility Services".

Multimedia Services include the messaging and collaboration services of high demand by today's end-users and enterprises. Employees all over the globe can now collaborate in real-time, regardless of their fixed or mobile location — increasing productivity and reducing travel costs.

Personalization Services allow subscribers to personally control when and how they are contacted, and at the same time reduce administration costs for the end users.

Mobility Services will provide the anticipated Services Anywhere, Anytime Experience. They will meet the growing demands of businesses for constant connectivity to the office and customers, and also cost-effectively provide for new needs such as hoteling and plug-n-play office moves.

In addition, Nortel Networks' Application Programming Interfaces (API) enable service providers or third parties to develop services, reducing time to market and enabling providers to focus on their core business.

Carriers can generate new revenues with Nortel Networks' Carrier Managed Services portfolio. The Hosted Services market is expected to experience rapid growth over the next 4 years - about 75% cumulative revenue growth. This is a high margin business and Nortel Networks enables carriers to deliver a solid hosted service evolution.

Under a TDM infrastructure a Carriers ability to address a particular market was dependent on having proximity to a local switch. The overall architecture of Nortel Networks' Carrier VoP networks allows the carrier to reach customers up to 2000 miles from a call server, allowing carriers to target enterprise users in new markets out of territory or serve a larger number enterprise users across a broad geogra-

phic area from a single communication server.

Key Carrier Managed Service Areas include:

PBX and Key System embedded base:

Since the traditional (PBXs and Key Systems) compose 80% of today's Customer Premise Equipment (CPE) market any Carrier Managed Services must address this installed base. As the IP CPE market grows over the next few years (Yankee Group forecasts 97% growth) carriers can increase their enterprise revenues by offering service transparency and inter-working between legacy and IP equipment.

PRI is a critical part of any migration to VoP. In the USA alone an estimated 11,000,000 voice lines terminate on PRI trunks. Nortel Networks plans a number of Media Gateways to support PRI (LAN PRI Gateway, PVG 15000 and PVG 7000 and MG 4000)[2].

Centrex based

Centrex based services are an important part of a Carriers revenue. Large Centrex services for large campuses can be hosted from an MG 9000 or alternatively small business can be targeted with small NGN premise based gateways.

In the SOHO and residential space Nortel Networks' Integrated Access solution provides a new revenue sources for service providers including ISPs and Cable companies.

Naturally, the IMS opens the door to new revenue streams, giving carriers the means to deliver a whole new realm of multimedia services to all of these customers.

NGN also allows service providers to expand faster, address larger markets more economically, and locate their facilities optimally. Providers can serve a substantially larger area (up to 50 times larger) with a NGN network than with a traditional TDM network. All services are ubiquitous across the network.

Delivering Network Resiliency:

Finally, Nortel Networks NGN solutions protect Nortel Networks' customers' reputations by bringing the strength and resiliency of the Carrier Grade Network solutions, to the Voice over packet domain.

Carrier grade implementation starts with the products. Nortel Networks have

2) PRI trunking estimates derived from IDC 2000 ISDN Market Forecast and Analysis

the most reliable products as a result of Nortel Networks' design and testing. In fact, each of Nortel Networks' Succession load is regression tested by more than 150,000 call types.

- Nortel Networks Field Fault Analysis evaluates all field faults and identifies unique and unusual field events for inclusion in future regression tests

In addition, Nortel Networks have people and the processes to support Nortel Networks' customers as well as the redundancies in the PSTN. As you may know, Nortel Networks' response to the terrorist attack included re-homing of switches and back door Trunking allowed for communications to continue. Nortel Networks had new switches rolling on trucks within 24 hours. Dedicated 24X7 resources are in place.

For a tandem in Tampa that normally carriers 250k BHCA and on September 11 was rerouted from New York traffic rose to 1M BHCA and worked without a hitch.

These are the things Nortel Networks can deliver better than competitors.

GLOBAL LEADERSHIP

Nortel Networks has experienced overwhelming success with the Succession NGN portfolio all over the world with virtually every type of service provider in business today. This allows the company to learn more about how Nortel Networks' customers use the NGN technology to improve what Nortel delivers, and to go through that learning curve faster than any other vendor to deliver proven solutions.

Service Providers have chosen Nortel Networks as the vendor of choice for major VoP network deployments:

Quest (Local) - has recently announced a commitment to Nortel Networks, following their successful Boise live network trial, for network deployment of Nortel Networks' Voice over Packet trunking solution

Cable & Wireless Announced plans to transform their global carrier network to a converged multi-service network for Long Distance and Multimedia services

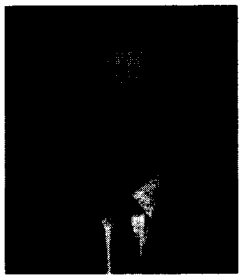
Callahan and Kabel NRW two large German cable properties have committed to the NGN solution for their network wide upgrades.

China Telecom announced a four-city NGN trial with Nortel Networks, a China Telecom's largest NGN commitment so far, deploying full Nortel Networks' Succession portfolio ranging from CS2000-Compact and IMS soft switches to trunk

and access gateways and devices

BT Spain chose Nortel Networks to implement the premier NGN Long Distance network for out of territory market entry

Nortel Networks has announced over US$2.2 billion worth of contracts for the Succession NGN portfolio to date. It is ranked by Synergy Research as the number 1 NGN vendor in the world.



마이크 머피
(Mike Murphy)
노텔 네트웍스 아시아
UMTS 사업부 부사장

마이크 머피 부사장은 노텔 네트웍스 아시아 지역 UMTS 기술 사업부 담당 부사장을 담당하고 있다. 머피 부사장은 아시아 지역 내 차세대 무선 기술 분야에서 노텔 네트웍스를 업계 선두 기업으로 이끌어나가는 총 책임을 맡고 있다. 머피 부사장은 노텔 네트웍스에서 20년간 근무했으며 노텔 네트웍스의 UMTS 프로그램 창립 멤버이기도 하다. 서울 지사로 취임하기 이전 머피 부사장은 3세대 UMTS 솔루션 개발에 역점을 두고 있는 전 세계11개국 2500여명의 연구원을 관리하는 국제 연구 센터를 총괄하였다. 2000년 머피 부사장과 산하의 팀은 유럽 전역에 걸쳐 250억 달러 (미화) 규모의 무선 UMTS 계약을 수주하는 등 성공적으로 회사를 이끌었다. UMTS 팀을 관리하기 이전 머피 부사장은 터키, 중국, 프랑스, 캐나다에 위치한 TDMA, CDMA, 무선 및 데이터 개발 팀에서 근무했다. 머피 부사장은 기혼으로 1녀를 두고 있으며 음악에 조예가 깊어 작곡가로도 활동하며 태권도에도 취미가 있다. 머피 부사장은 캐나다의 워털루 대학 (University of Waterloo, Canada)에서` 수학을 전공했다.