NORTEL & 3DTGNT help National Semiconductor bring down spiralling communication costs & provide enhanced customer service with a converged voice and data network

BACKGROUND

Established in 1959, National Semiconductor is a world leading supplier of analog based semiconductor products, including stand-alone devices and subsystems in the areas of power management, display drivers, audio amplifiers, operational amplifiers, communication interface and data conversion.

With headquarters in Santa Clara, California, National Semiconductor employs around 9,500 people worldwide and has six manufacturing plants in the United States, Scotland, China, Malaysia and Singapore. It also has fourteen regional design centers in Europe and Asia, and sixteen based in the United States.

CHALLENGES IN A GROWING MARKET

- ❖ Upgrading network infrastructure
- ❖ Enhancing customer service
- ❖ Improving business communications

In 2003, National Semiconductor embarked upon a project to consolidate its telecommunications systems at a time when growth was happening quickly.

With eleven offices in six countries in the Asia Pacific, (including a head office in Hong Kong) and a new factory in Suzhou, the company had to consider a solution that would allow each office to stay in touch without spiraling communications costs. Added to this, an increasingly competitive environment required National Semiconductor to look for ways to improve customer service.

China has been at the forefront of a manufacturing and technological revolution that helped fuel the remarkable growth of National Semiconductor. At the same time, National Semiconductor has had to face the challenge of staying close to customers whose manufacturing plants are moving into China.

In 2002 the company announced its investment in building an assembly and test facility in Suzhou. Towards the end of 2003, National Semiconductor also made the decision to consolidate its customer service center in Shanghai to serve its growing customer base in China, Hong Kong and Taiwan as well as customers in Singapore and Malaysia.

With its new factory in Suzhou coming online and with business still growing, National Semiconductor realized it needed to modify its network backbone, upgrade its sales and management communications system in Shanghai, and introduce a new customer service centre to stay competitive. This would allow the company to achieve its goals of reducing costs, improving customer service and raising productivity.

National Semiconductor searched for a unified voice and data network solution that enabled efficient communications with its customers but, at the same time, reduced telecommunications costs between its various sites. *"It was a network that needed to deliver scalability, flexibility and reliability,"* points out the company's Network & Operations Manager for Asia Pacific, Stephen Chiu, *"but could allow for new applications, business continuity, and backup in case of disasters."*

Although cost was important, Chiu notes that the solution did not need to be the cheapest option. *"We were more concerned that the infrastructure was able to embrace the new functions, features and techniques we saw coming into the field very rapidly. A network that could grow, change and adapt to new technologies therefore became paramount."*

SOLUTION – GROWTH WITHOUT GROWING PAINS

3D TGNT and Nortel rolled out the solution in the following phases:

Phase 1
Introduction of a voice and data network for Suzhou

Phase 2
Establishment of a new customer service centre in Shanghai

Phase 3
Integration of PABX and networks systems in Shanghai customer service and sales departments

Phase 4
Intelligent call routing linking Shanghai and Hong Kong operations

NORTEL PRODUCTS DEPLOYED:

- ❖ OpTera Multi Service Platform, Baystack 470, Optivity Network Management System, Contivity 1700, Symposium Express Call Centre, Meridian 1 Option 11C, CallPilot Unified Messaging, Business Communications Manager 400, ITG Trunk, Passport 1648 Switches, Passport 8600

National Semiconductor sells its products to clients throughout the world. Running a profitable business means providing a high value service at the lowest cost, so when it recently added a new factory in Suzhou, it looked for a technology solution that would reduce costs, improve service, and migrate the site to a converged voice and data network.

Nortel Networks and 3D TGNT provided a solution that consisted of a unified voice infrastructure and a series of powerful business components. It was a solution that

featured Nortel Networks Passport 8600 at the core. Also of critical importance was an Optivity Network Management System providing visualization, discovery, fault and diagnostic capabilities would enable the company to identify network problems before they occurred.

Nortel & 3D TGNT included CallPilot Unified Messaging solution as a powerful platform for improving productivity and business efficiency. CallPilot combines fax, voicemail and email into a single messaging access point, which is assessable from office or off-site. The ability to check faxes remotely or from any PC in the factory is just one of the conveniences and productivity enhancements that this CallPilot solution provides.

With Suzhou up and running, National turned its attention to an equally pressing matter – the upgrading of its communications infrastructure in Shanghai. A priority was firstly to establish a new customer service center that scaled smoothly as call volumes grew. *"We essentially manage phone calls each day,"* says Chiu, *"We therefore decided to equip our Shanghai office with the right tools to ensure true voice and data convergence."*

As the Nortel & 3D TGNT team had demonstrated an in-depth understanding of its business challenges, the company decided to deploy Symposium Express Call Centre and CallPilot Unified Messaging as its contact centre solution. The solution works by firstly routing calls by language, so services are provided to customers in their dialect of choice. A routing algorithm then sends a request directly to the agent best suited to answer a particular question, with the system matching every call to the customer's history on file.

As a result, the technology has enhanced customer service levels by supporting customer transactions and enquiries, with customers having the value add of a toll free number that connects them directly to the center.

In addition, the system routes, manages, records and reports on customer interactions across a variety of channels including web, email and advanced telephony for

consistent communications, with CallPilot providing the benefits of enhanced unified messaging.

With the customer service center in place, National Semiconductor's next challenge was to connect its Shanghai sales department located on a different floor, with the customer service group. Says Chiu, *"We were looking for a data sharing system on which to standardize where calls could also be easily transferred from one department to the other over the same network. We also foresaw linking Shanghai to our company's Asia Pacific headquarters in Hong Kong and other locations in Asia Pacific as a natural next step so it was essential for the system to be open."*

To meet its needs, Business Communications Manager (BCM) an integrated platform for voice and data that enables high-speed communications and information sharing between sites, was implemented to replace the company's original Norstar Integrated Communications platform. Continues Chiu, *"The fact that the existing network ran over Nortel Networks Norstar was definitely a plus as introducing BCM required no upgrade in terms of the heart of the network, allowing us to gain value add without having to invest in extra hardware."*

As an all-in-one, BCM makes IP telephony, voice messaging and IP routing communications simple and customizable, simplifying network management and providing backups, whilst opening it up to new powerful applications. To take full advantage, National Semiconductor, as it predicted, used the network to integrate its sales and customer service departments in Shanghai with its Hong Kong site. This was achieved via an ITG trunk card that allowed for additions of new IP routes between Passport 1648 switches. The benefit is that traffic is routed over the IP network ensuring the highest cost savings possible.

Its implementation produced immediate benefits for National Semiconductor. *"It's remarkable,"* says Chiu. *"With IP capabilities, Nortel Networks offered dialling plans that made it possible to pick up the phone and dial an extension – just as you would in any office. The added benefits of IP telephony also meant eliminating the need for duplicate voice communications systems."*

"Not only has the network facilitated interconnection of the two sites, but both offices now have access to the same applications, data and services. It has empowered our business to deliver unparalleled IP-enabled voice and data integration without a large price tag. For National Semiconductor, it has meant greater cost savings and, more importantly, the ability to communicate seamlessly in an integrated environment."

RESULTS & BENEFITS FOR NATIONAL SEMICONDUCTOR

- ❖ Enhanced customer service
- ❖ Reduced costs
- ❖ Scalability

Since implementing Nortel Networks converged voice and data architecture, network efficiency has improved dramatically and National Semiconductor attributes much of this growth to the stability and flexibility of the Nortel Networks solution.

Chiu summarizes, "The team have enhanced our flagship site with the capability to administer the entire network. They have enabled a new contact center that provides new features at a reduced cost, and they have extended existing sites by integrating them with the new converged voice and data network. Best of all, Nortel Networks and 3D TGNT tailored the solution to the exact requirements of National Semiconductor and installed it with a minimum of downtime."

The deployment of a converged voice and data architecture has brought the different locations and functions closer together as the same level of service is now guaranteed to all users. It is expected that tighter integration will bring along impressive cost saving, as international telephone bills will be reduced with further reductions anticipated as more locations are added to the network.

Looking to the Future

- ❖   Integration with other Asian locations

It is clear that Nortel Networks technology has provided a road map for National Semiconductor to follow their business opportunities and continues to grow and evolve.

Chiu states that the company has just started to explore the many features and cost advantages of its new converged voice and data network. But in the near term, it intends to implement a solution to link up Hong Kong and other Asian cities using Voice Over IP technology.

Concludes Chiu, *"Nortel Networks and 3D Networks are two very reliable companies. We look forward to working with them to introduce new features and enhance our business with good investment protection."*

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