

VoIP Migration at Depository Trust & Clearing Corporation

NETWORLD+INTEROP 2005

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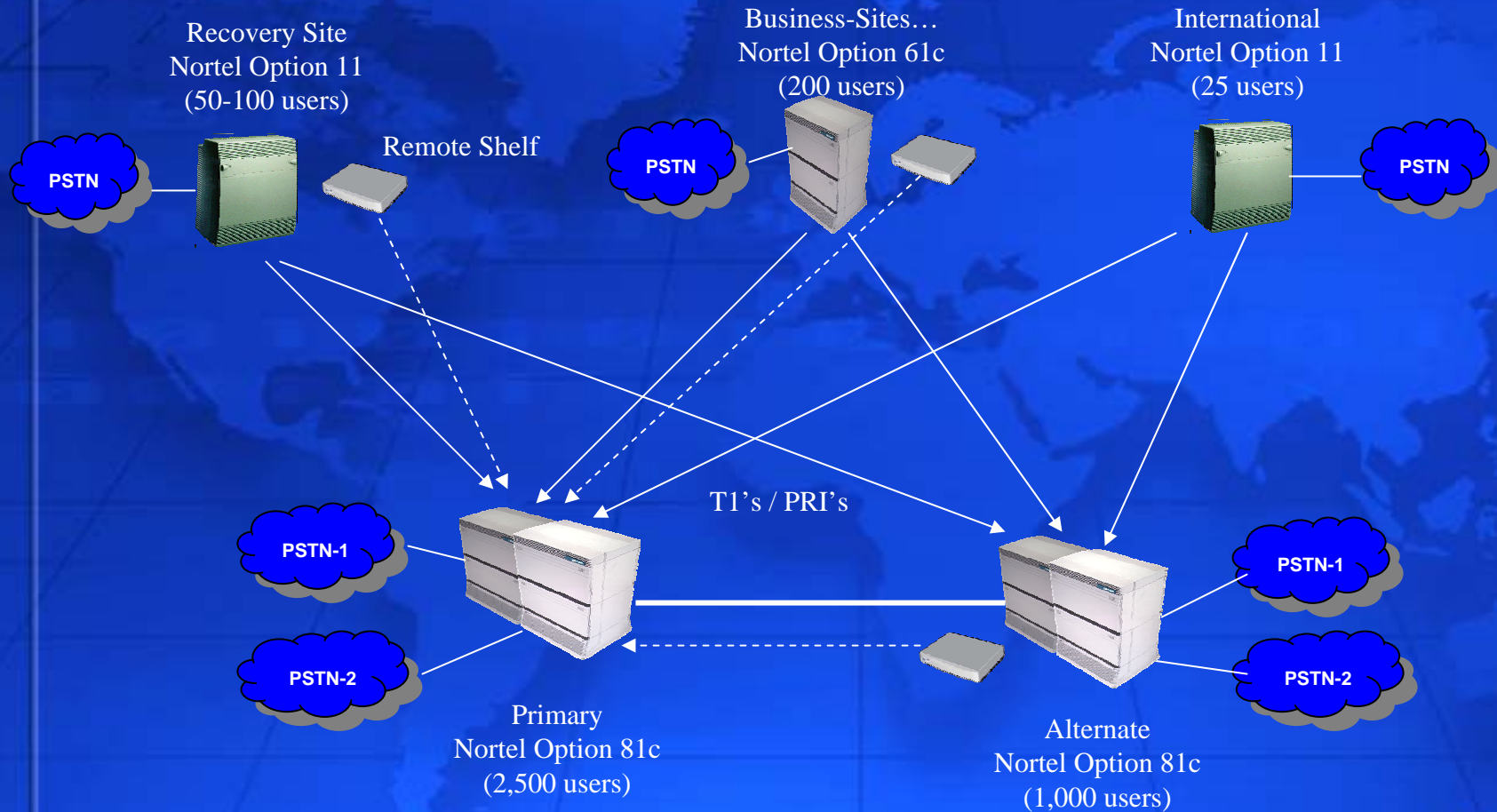
DTCC – background

- World's largest securities depository
- Provide Clearance, Settlement, and Information Services for virtually all securities types.
- Settle over \$900 Trillion each year
- In excess of 20 million transactions / day
- Focus on reliability, stability of services to the Financial Industry.
- Business Continuity is essential.

Existing Environment

- Nortel PBX and DWDM Optical, Cisco LAN
- Existing Nortel customer for over 20 years.
- Nortel environment originally consisted of two Option 81Cs, one 61C, two Option 11s. All migrated to Nortel Succession CS 1000M's
- Support many geographically distributed sites, including data centers, offices
- 2,500 employees, 12,000 ports
- Voice and Data Infrastructures completely separate

PBX Legacy Topology



* Voice and Data circuits on separate infrastructures – costly.

Business Drivers for VoIP

- Distributed staff in Post 9/11 world
- Rotational staff – corporate policy
- Technology evolution vs replacement
- Convergence of Data, Voice, & Video requirements
- Business Continuity & Failover
- Reduced costs
 - Point to point T1's
 - MAC's

Project Methodology - Business

- Obtain Management buy-in for the overall project goals and benefits. Requires CIO approval.
- Establish migration strategy (multi-year, hybrid environment). A key factor for Nortel choice.
- Establish budget expectations for phased approach. Be clear that this is not focused on cost cutting !
- Conduct product comparisons and cost analysis.
- Identify quick win scenarios. (BCP, Branch Office)

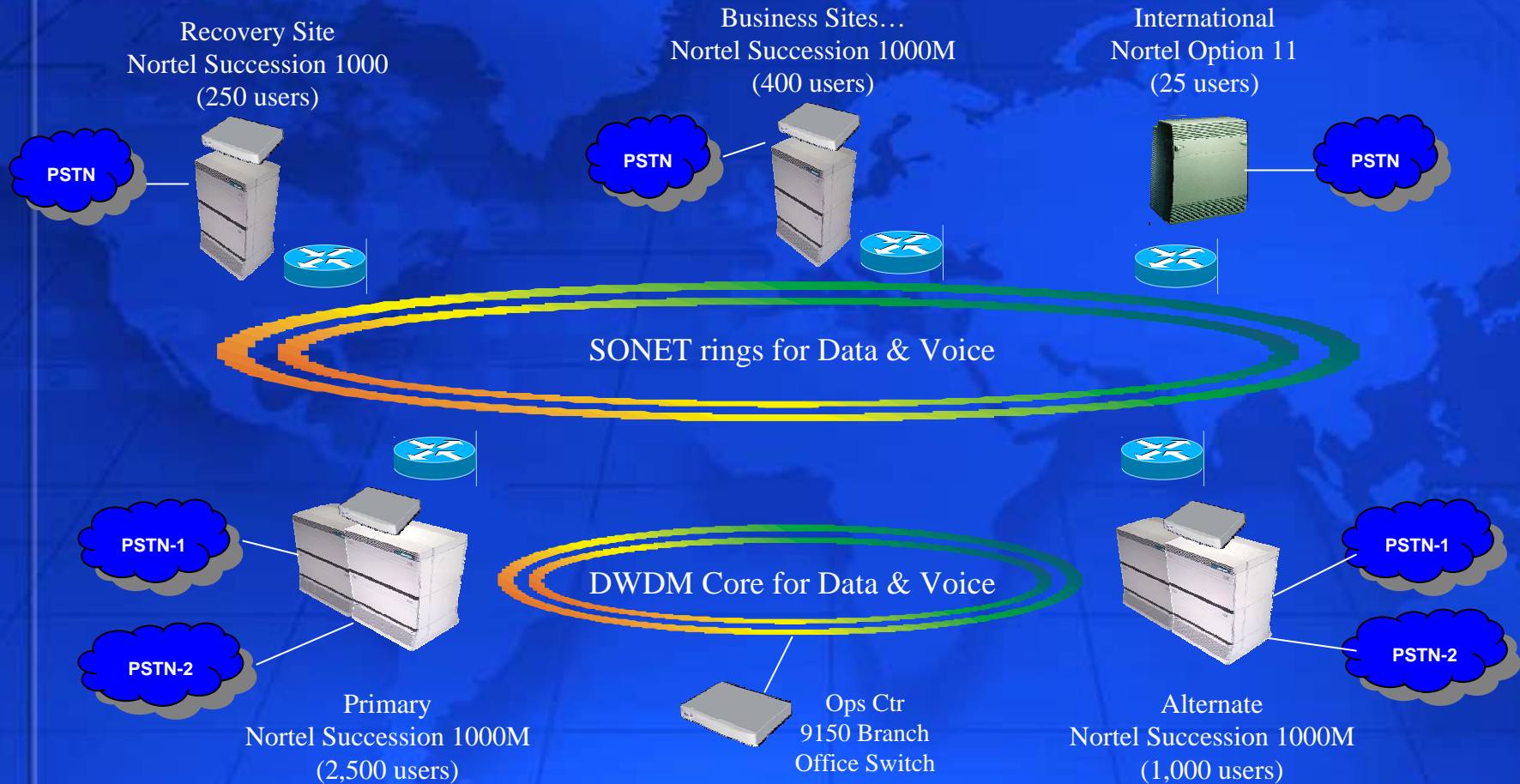
Project Methodology - Technical

- **Baseline Assessment conducted to review local LAN and Inter-Site capacity. Included traffic simulations.**
- **Reviewed LAN Equipment – compatibility, inline power, ios levels, etc.**
- **Establish multi-year project approach**
 - **2003 – Migrate to IP trunking between major sites across DWDM and OC48 links.**
 - **2004 – Upgrade TDM PBX infrastructure to Succession hybrid IP PBX platform. Design and implementation of new business office.**
 - **2005 – Rollout of IP capabilities at existing sites. Strengthen BCP capabilities.**
 - **2006 – Rollout enhanced products and features such as MCS multimedia collaboration server. Phase out digital equip.**

Why we selected Nortel

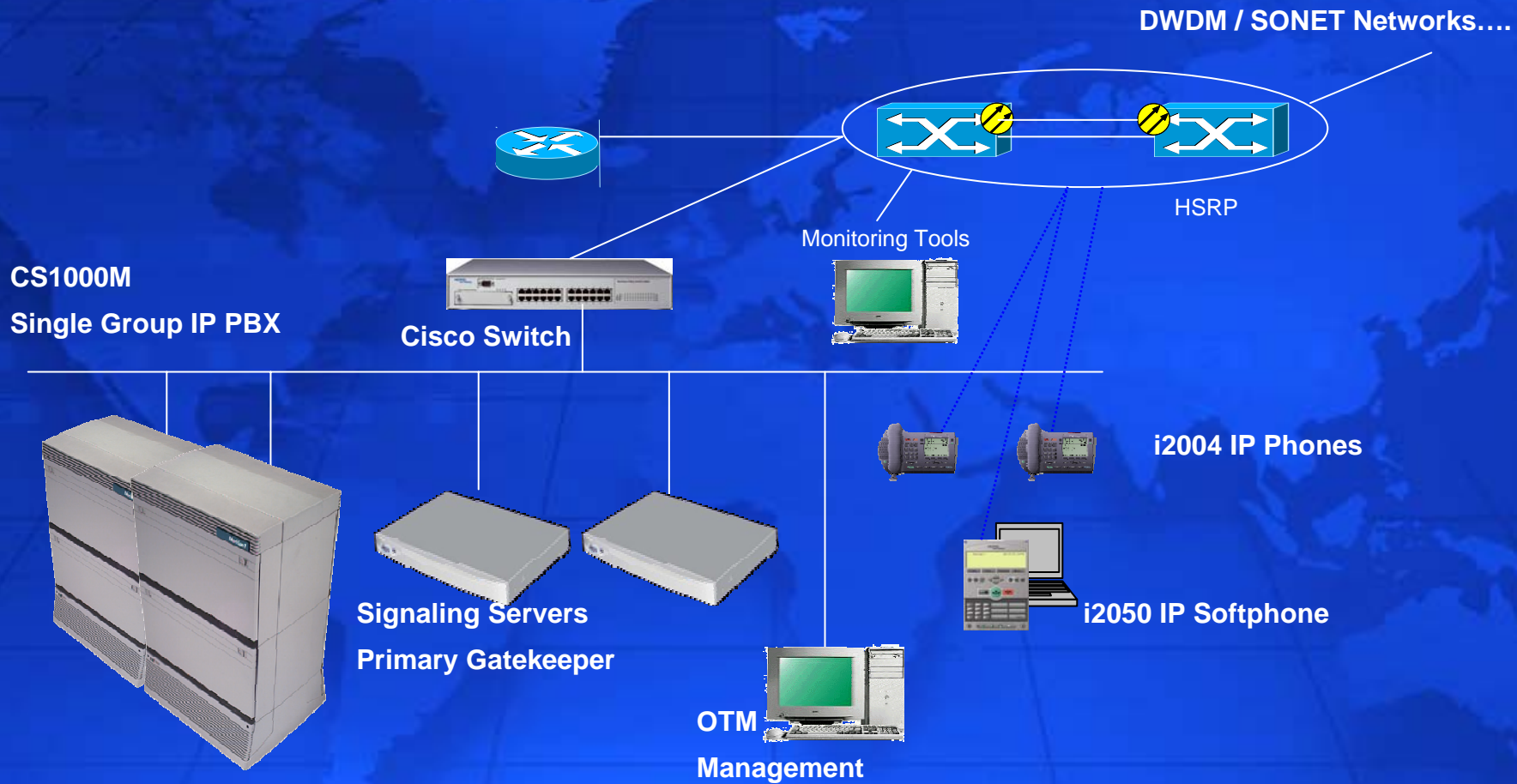
- **Over 100 years of voice experience!**
- **Stability & Local Resiliency of existing platform**
 - **Local CPU, Memory, I/O & ELAN redundancy**
- **Flexibility & Seamless Scalability**
 - **Ability to support Analog, Digital and IP phones**
 - **Deploy IP where we want it and when we want it**
 - **Up to 15,000 users supported**
- **Preserve existing investment**
 - **Reuse of equipment**
 - **No forklift necessary**
- **Breadth of Products and Solutions**
 - **IP hard and “soft” phones**
 - **Survivable branch offices**
 - **WVoIP**
 - **Remote call center agents**
 - **Multimedia & Collaboration with the MCS 5100**
- **Staff knowledge**
 - **Retain intellectual capital**
 - **Minimal User re-training**
- **Smooth migration plan**
 - **Meridian 1 -> Succession 1000m**
 - **Only SW upgrade, media cards and external Signaling Server required**

IP Network Topology



* Voice traffic migrated to data network infrastructure

Typical Succession Configuration



Typical Configuration at Main Locations

Applications for VoIP at DTCC

- Business Continuity Planning
- Distributed Call Centers
- Distributed Operations
- Multi-Site Network Operations
- New Business sites

Business Continuity

Business Continuity



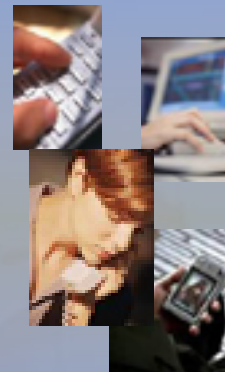
Operation
Resiliency

- **IT Officer rotation to various data centers**
- **Business Officer rotation**
- **Allows Officers to be location independent, maintain NY number, and have proper admin support**
- **Remote or “Virtual Office” support**
 - **Allows users to pull down their personal phone configuration from any IP phone in the network**
- **Disaster Recovery & Failover**
 - **IP phones register to any remote PBX seamlessly in case of local system failure**

Distributed Call Centers

- **Customer Support Center (Technical) is distributed across three locations, expanding to four.**
- **Business Support centers also distributed**
- **Allows site independence**
- **User of I2050 “Soft Phone” from desktop**
 - **Utilizes main PBX resources over the WAN**
- **Support for Call Center agents at “Home Office” via the 9110 or 9115**
- **Remote operations help-desk deployed quickly with 9150 branch office switch**

Service Ubiquity



Anywhere, anytime,
any device

Distributed IT Operations

Geographic Flexibility

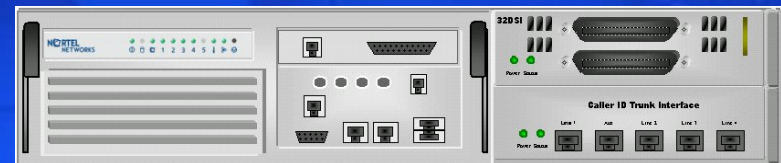


Workforce Globalization
without loss of
capabilities

- **Data Center Operations** staff is distributed across multiple sites
- **Network Operations** is live and active at multiple sites at all times
- **Additional redundancy** through multiple serving switch
- **Remote Ops help desk**

New Business Sites

- In 2004 a brand new Southern Business Office supporting over 400 users was successfully deployed
 - Succession CS 1000M
- Quick turn-up at Metro area office to support Executive Management team
 - Flexibility of options:
 - Survivable branch office
 - Stand alone I2004 IP phones (selected)



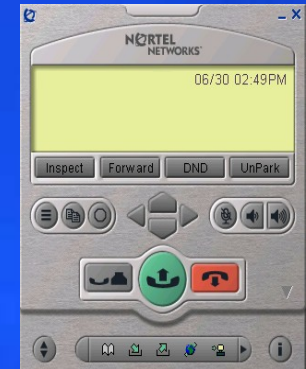
Advantages

- Higher level of redundancy across sites
- Flexibility to support rotating staff
- Cost savings through reduction of Moves, Adds, Changes within Voice group – approx 60% reduction
- Reduction in hardware footprint, hardware maintenance costs
- Common management tools & process
- Reduction of site to site T1's
 - Traffic re-routed over existing data Tie lines
- Positioned for growth and new features



Next Steps

- Complete migration from digital to IP
- Enhance management platforms (network and security)
- Address voice recording for continuous, large volume use
- Support of Softphone over Citrix for remote access vs use of VPN (June 05)
- Integration with Blackberry – Nortel/RIM partnership for softphone & MCS
- Reduce equipment footprints and maintenance



Questions ?

Thank You !