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### **Enterprise Global Network Architecture Trends**

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# **Global Network - Technologies in Transition**

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## **Requests from US Customers (2007 Data)**



# **Global Network Architecture Drivers**

#### Converged applications demand:

- QoS
- Any to any
- Higher and predictable performance and reliability
- Local environment such as regulations, cost, local network quality, technology availability, human resource, and business opportunities.

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- Extranet / Partnership network implications
- Variety of factors demand regional data center deployments. Regionalized data center drives network topology, performance and reliability requirements.



### **Distributed and Consolidated Data Centers**



### **Traditional Flat Network Architecture**

Major Hubs /Locations/Data Centers

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#### Main Benefits: Simplicity and Easy to Manage

### **Regional Data Center -> Tier Network Architecture**

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- Inter-region network(s) connect data centers, major hubs/locations, and regions
- Intra-region networks connect locations in a specific region
- Main Benefit: Take advantage of best available technologies and carriers to achieve the best cost and performance
- Attention needed: Inter-network management (e.g. performance requirements; packet classification; and operation demarcation)



### **Backup Strategy**

- Dual carriers
- Dual networks, e.g. Internet VPN backup
- Dual POPs
- Dual access lines



### Disaster Case Study - Taiwan Earthquake (12/26/06)



### **NTT Com's Recovery**

• Majority of managed services were restored within one hour. Total recovery ratio including IPLC was 90+% by 12/29/06 using China terrestrial route.



Did not implement this plan due to the difficulty in ensuring quality. Implemented as an emergency plan. Data communication quality was reserved, however, the total length of the cables resulted in longer latency. This plan was implemented through negotiation with partner carrier in China. This is the best plan in terms of both quality and latency.

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### Conclusions

- Business requirements and applications are driving the network to support a global/regional managed and local focus architecture
- Local and regional factors play important roles in network design and technology selection
- Backup strategy needs to consider a variety of elements to achieve high reliability to support converged network as well as mission critical applications
- The best architecture is the one that meets your needs





# **Thank You**

