

# VoIP Management

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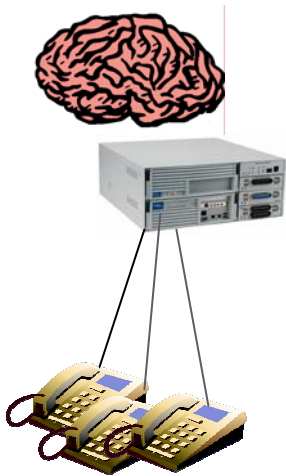
Strategic Technology, Network Management

Nortel

# Evolution of Telephony

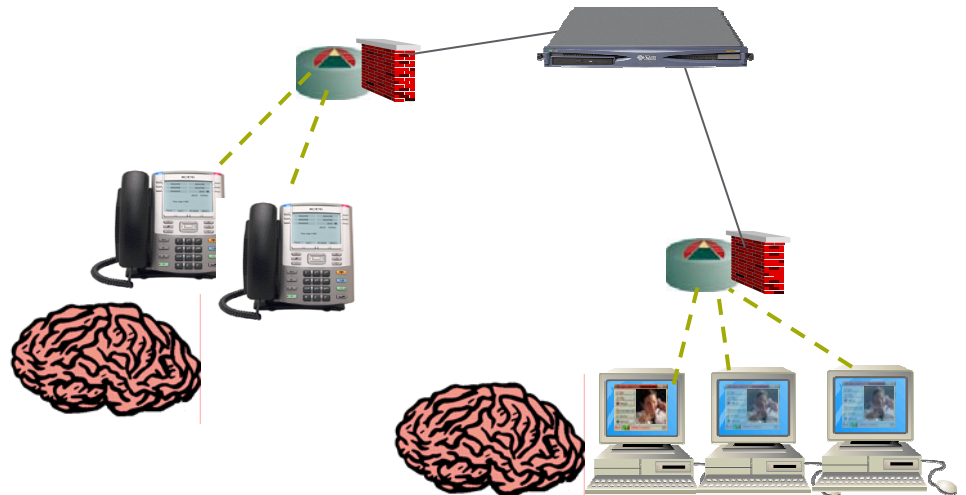
## Traditional Enterprise Telephony

- Centralized services, PBX
- Dumb clients
- Dedicated lines



## Voice over IP

- Distributed services
- Intelligent applications
- NAT's, loss, delay, security issues, etc



# Traditional Telephony Management

- **Voice Quality**
  - Continuity testing prior to session setup
  - OK for PSTN model – dedicated links, years of interoperability testing
- **SLA**
  - Mean-time-to-failure primary metric
  - Rarely is voice/session quality a factor
- **Configuration**
  - Typically involves proprietary protocols due to closed systems.
  - Learned over many years of working with systems.
- **Policy/QoS**
  - Not needed due to dedicated links, voice is the only service offered
- **Billing**
  - Ugh. Only useful for sticking it to customers.
  - But, then again, **SOMEONE** has to make money to offer the service.

# Retrofit into Network Management ?

- **Centralized management systems**
  - **Bad model for VoIP – service/application management is closer**
  - **Slow, tedious manual workflows**
  - **Reliance on SNMP – callhome issue, trust issue**
- **SLA – “SLA’s are Dead!”**
  - **Averaged metrics dilute useful data**
  - **Not tuned to actual user experience**
  - **Not tuned to specific application**

# A Better Approach to VoIP Management



- **Align management with application architecture**
  - **Management within VoIP client rather than centralized system -- auto gain control, echo cancel, adaptive jitter buffers and codecs**
- **Reduce manual process in configuration, use of standardized protocols and automated setup**
  - **E.g. PUBLISH/SUBSCRIBE model for configuration**
  - **Internet resources for configuration – DHCP, LLDP, etc**
- **SLA evolution**
  - **Metrics that reflect actual application performance and user experience**
  - **E.g. RTCP XR**
- **Billing**
  - **Usage of key resources such as PSTN links only.**
- **Priority/QoS**
  - **Yes, sometimes prioritization is helpful (see next slide)**

# Why use QoS?

- **Should be well understood that QoS DOES NOT CREATE BANDWIDTH.**
- **However...sometimes, traffic prioritization is helpful:**
  - **Bandwidth constrained networks e.g. small enterprises or branch offices, network edge, 802.11 Access Point's**
- **Oversold? Absolutely.**
- **Useless? Not entirely.**

**Is the Emperor Wearing Any Clothes?**

- **Undergarments!**