

# Sparing for Availability & Cost Savings

A Discussion with Your Input.



# NLR investigates maintenance costs

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- **What Accomplishments Were Expected**
  - Reduce Maintenance Costs
  - Reduce Mean Time to Repair
- **Summary of Stats 2008/2009:**
  - NLR contracted with Cisco for Next Business Day SmartNet
    - Costs more than \$1 million /annually
    - Impeded Repair Time
    - Can access Cisco TAC and CCO Resources
    - Can access software upgrades and bug fixes



- What NLR took into Consideration for evaluation:
  - Equipment Quantities (In Production and Current Spares)
  - Initial Cost of populating a sparing pool
  - Replacement Cost (per device or component)
  - Maintenance Cost (per device or component)
  - Failure Rate (per device or component)
  - Software Application & Software Upgrade Only SmartNet Cost
- Other Points to be Considered
  - Location and Storage for spares and required shipping material
  - Shipping and associated costs of sparing



## Determine Required Components & Cost of Establishing a Spare Pool

Optical Equipment (WaveNET) Spare pool initial cost is \$166,000

Switching Equipment (FrameNET) Spare pool initial cost is \$76,000

Routing Equipment (PacketNET) Spare pool initial cost is \$357,000

## ■ Formula used:

- List Cost (pro-rate %) per component
- Quantity needed at busiest site
- Determine if current device is EOL and what is its replacement; if so, what all would need to be upgraded.
  - Ex: 6509-NEB-A would be replaced with C6509-V-E. New power supplies and fans required.



xxxx hours / # of specific component/  
8766 = anticipated replacement rate  
Compare “anticipated replacement  
rate” to Actual Failure rate

- Failure Rate Formula
  - Device’s MTBF rate/ # of part(s) in network/8766 (hours in a year) equals expected replacement rate
- This is compared to the Actual Failure rate in the field.
- NLR had less than anticipated failures.



# Component Versus Device Sparing Analysis

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- NLR has two SmartNet maintenance models.
  - Per component
  - Per Chassis inclusive of all components.
  
- Two separate spreadsheets created
  - Each determines the break even point for evaluating a sparing pool versus SmartNet Costs.

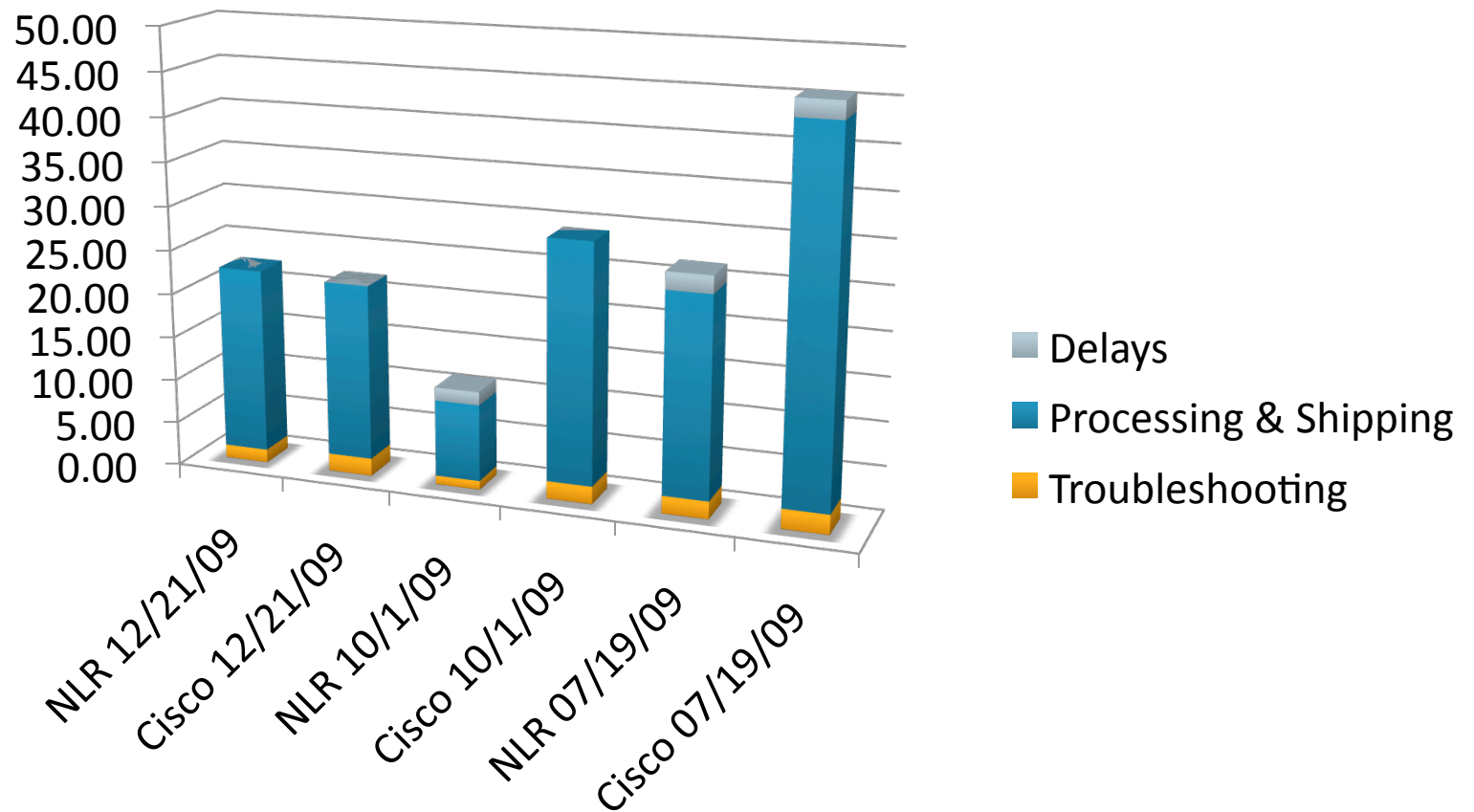


# How Do you Reduce Costs?

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# How do you increase Uptime?





## Future Possibilities. Our Networks.

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- Can your network be more self-sufficient?
- How can we as a community become more self-sufficient?
- What would be beneficial to the NLR Community?
  - Shared Sparing Pool?

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What formulas and spreadsheets would you like to use for your network?

