Implementing Cost-Effective Mission Critical Networks (MCN)

Mike Vine, Director of MCN Programs
Provide mission critical, assured communication products, systems, networks and services to meet our customers’ mission critical requirements through design, development, integration, and installation.

Critical communication systems
Network infrastructure weather systems
Secure enterprise network services
Situational awareness systems
Air traffic control
Reliability and Availability

- **Architecture**
  - Availability (9’s)
  - Latency (network delay)
  - Multi-Path Design
  - Path Diversity Verification

- **Controls**
  - Controlled Access
  - Separation between
    - Management and Operations Channels
    - Validation/Test and Operational Environments

- **Service Operations**
  - Network and Security Operation
  - Logistics design
    - Mean time to restore (MTTR)
Reliability and Availability

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# Mission Critical Network Considerations

## Security Continuum

<table>
<thead>
<tr>
<th>Low</th>
<th>RISK Continuum</th>
<th>High</th>
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<tbody>
<tr>
<td><strong>Architecture Choices</strong></td>
<td>Private Network (Total Control)</td>
<td>Managed System Risk Mitigation (Some Control)</td>
</tr>
<tr>
<td><strong>Depth of Monitoring Capability</strong></td>
<td>Total Situational Awareness</td>
<td>Deep Visibility Some sub-component blindspots</td>
</tr>
<tr>
<td><strong>Variability of Infrastructure</strong></td>
<td>Purpose built system Known Traffic Behaviors</td>
<td>“Multi-Tenant” variability Constant Grooming Required</td>
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</tbody>
</table>
Mission Critical Network Considerations

**System Integrator Approach**

- **Private Network**
  - Not Part of Public Internet

- **Mission Critical Support Model**
  - Proactive Event Mgmt
  - Security
  - Field Support
  - Circuit restoration Priority

- **Service Based**
  - Customer Advocacy
  - Vendor Agnostic
  - Customizable

- **Range of Services**
  - Customizable

- **Carrier Neutral**
  - Diverse Interconnect Locations
  - Diverse Circuit Providers
  - Leverage diverse carriers

**Service Provider Approach**

- **Carrier Internet Backbone**
  - Shared with other customers

- **Product Catalog Support Model**
  - Trouble resolution
  - Security
  - Broad customer based
  - Circuit Restoration Priority

- **Carrier Based**
  - Products and services catalog

- **Range of Services**
  - Standardized

- **Single Provider Network**
  - Non-optimal diversity
  - Limited service diversity options

**Integrator**

**Provider**
Total Cost of Ownership

- **Customer procured** networks result in significant investment of capital and staff
- **Managed Services** allow the Customer to focus on their Core Business

<table>
<thead>
<tr>
<th>Total Cost of Ownership (TCO) Considerations</th>
<th>Make/Buy Options</th>
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<td>Dispatch/Break/Fix</td>
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<tr>
<td>Technical Refresh</td>
<td>Technical Staffing Cost</td>
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<tr>
<td>Moves/Adds/Changes</td>
<td>Technical Staffing Cost</td>
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<tr>
<td>Tools, Software to maintain Network</td>
<td>CapEx OH Allocation</td>
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<tr>
<td>Provider Relationship</td>
<td>Program Management Cost</td>
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<tr>
<td>Telco Circuit Provisioning</td>
<td>Achieve Best Value</td>
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<tr>
<td><strong>Customer Focus</strong></td>
<td><strong>Network &amp; Core Business</strong></td>
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</table>
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**Cost vs. Performance**

![Chart showing cost vs. performance over a 15-year contract period. The chart illustrates the cost avoidance and legacy spend with notable sections for Cap-X, Operations & Maintenance, Legacy Solution, and a forecasted legacy spend projection.]

**Cost Effectiveness**
- Consolidation
- Buying Power
- Optimization

**Performance**
- SLA Excellence
- Secured network
- Managed Service
- Risk Intolerance

**Contract Period**
A carefully engineered, optimized, and managed mission critical network architecture can be cost-effectively implemented