

Management Council

**of
the**

OHIO EDUCATION COMPUTER NETWORK

Third Frontier Network

The “Value Add” of ONEnet



What is our “Value Add”?

- This presentation will highlight the advantages of moving to the Third Frontier Network



Why have One Network?

- What are the benefits and advantages of having one network?
- Why would we want to go to all the expense?
- Why do we want to burn our “political capital”?



Value-Add of ONEnet

- High level of support
- Application and Internet services
- Network management
- Security and compliance
- Economy of scale



Value-Add of ONEnet

- Support
 - Close to the customer
 - Understand K-12 environment
 - Dedicated to school district customers



Value-Add of ONEnet

- Caching and content delivery
- DNS Services
- Managed Service Delivery
 - EMIS, INFOhio, other core services
 - Access to ODE and OSN resources



Value-Add of ONEnet

- Engineered converged network
- Network Performance
 - Bandwidth management
 - Limit the “hops” between sites
 - Managed class-of-service
 - Controlled latency and jitter (VoIP)
- Only possible within a private managed network



Value-Add of ONEnet

- Network Security
 - SPAM filtering
 - Content filtering
 - Virus scanning
- Compliance with CIPA, FERPA, HIPA
- Access control, authentication, logging



Value-Add of ONEnet

- Economy of scale
 - “Bulk purchase” of Internet bandwidth
 - Equalize cost and availability across state
 - Maximize return for programs like E-Rate



Why TFN?

- Why does TFN represent our best hope for a future ONEnet?



Background: What is the TFN?

- Third Frontier Network (TFN)
 - Project sponsored by Ohio Board of Regents and Ohio Supercomputer Center
 - High speed statewide fiber network connecting:
 - Ohio academic research institutions
 - Ohio K-12 community (ONEnet)
 - Ohio Colleges and Universities



Background: Current Network

- ONEnet currently consists of:
 - DS-3 (45Mb/sec) connections from DA Sites and large urban districts to Columbus
 - Seven sites have “filled their pipe” and are bandwidth constrained
 - A second group of seven sites are very close to being bandwidth constrained
 - We are being forced to react to problems



What Does TFN Bring?

- Better network design made of several regional hubs (picture Olympic rings)
 - Reduce central bottleneck
 - Increased reliability
- High-bandwidth fiber backbone
 - Initially “lit up” at OC-3 (155Mb/sec)
 - Ability to transition to Gig-E (1000Mb/sec) links on an OC-192 backbone (10Gb/sec)



What Does TFN Bring?

- In layman's terms:
 - It resolves the current network bottlenecks
 - It triples the available backbone bandwidth
 - It gives ample room to grow
- All of these in a coordinated, planned, and managed design
- Proactive, not reactive



Other Benefits of TFN

- Long-term growth plan
- Managed network
 - Security
 - Quality of service needed for converged services (voice, video, and data)
 - Application delivery
 - Content delivery



Alternatives to TFN

- Short-term fix (more of the same)
- Grow your own – each DA Site buys obtains their own Internet connectivity
- Carrier-based plan
- OH1



Concerns with Alternatives

- Short-term fix
 - Same old same-old
 - Continue in reactive mode
 - Does not fix the network design issues
 - Not cost effective
 - Harder to manage



Concerns with Alternatives

- Grow your own – local ISP connections
 - No ability to provide QOS for converged services
 - Security concerns
 - Cost and availability varies by location



Concerns with Alternatives

- Carrier-based plan
 - Less maintenance risk
 - More bandwidth
- But:
 - Does not fix network design issues
 - Dependent on carriers and market to determine what we can afford to get
 - Dependent on state agency negotiations



Concerns with Alternatives

- OH1
 - This is a concept being studied by DAS
 - There is no concrete pricing or network design in place



Risks with TFN

- There are two main risks with TFN
 - Up-front cost -- \$5M
 - Local assumption for last-mile costs
- Minor risks
 - Technical obsolescence
 - Maintenance costs



Thank You

For more information

Please contact your local Data Acquisition Site

WWW.MCOECN.ORG