

# *Network Reviews*



UNIVERSITY OF MINNESOTA

# Components

- ❖ *Border Hardware – Connection to wider internet*
- ❖ *GigaPop Hardware*
- ❖ *Hardware to filter usage of Internet 1*
- ❖ *Core Hardware - ATM Core*
- ❖ *Building/Area Aggregation Devices - Routers*
- ❖ *Edge Devices – Switch*
- ❖ *End Point Devices -Desktop and Servers*



# ***Background Information - Description of U of M Network***

- ❖ Hybrid Network - Part centrally administered and part administered by individual colleges and/or departments*
- ❖ Coordinate campuses responsible for most network issues associated with their campuses.*
- ❖ Coordinate campuses connected through State of Minnesota lines*



# ***Background Information - Description of U of M Network***

- ❖ Connects to GigaPop, Internet 1, Internet 2, and the State of Minnesota*
- ❖ U of M intends to upgrade network in Next 2 years*



# ***Background Information - Description of U of M Network***

❖ *Each of the coordinate campuses has:*

*Core Hardware - ATM Core*

*Building/Area Aggregation Devices - Routers*

*Edge Devices – Switch*

*End Point Devices -Desktop and Servers*



# *High Level Summary Of Service Offerings*

- ❖ Contracting for communication lines connecting the various campuses and other out-state operations*
- ❖ Support of the University's portion of organizations/relationships like Internet 1, Internet 2, the coordinate campuses, the state of Minnesota, and the GigaPop.*



# *High Level Summary Of Service Offerings*

- ❖ Support of DNS (U of M has 2 servers and relies on a server located in the state of Washington as a backup this service)*
- ❖ Hardware and support of the network infrastructure*
- ❖ Support of emerging network issues such as wireless technology and PDAs*



# *High Level Summary Of Service Offerings*

- ❖ Modems (2000 modems for general use and dedicated modem pools for specific units)*
- ❖ Creation/support of virtual private networks (VPNs).*
- ❖ Support of the Resnet program - about 10,000 ports on the Twin Cities Campus ( Resnet program is for residential connections – dorm connections)*
- ❖ Support of DHCP that provides dynamic IP addressing*



# *High Level Summary Of Service Offerings*

- ❖ Processing network changes to connect individual workstations, servers or private networks (i.e., portions of the network not directly managed by OIT)*
- ❖ Project management services for major network upgrades (e.g., bringing a new building on line)*
- ❖ Support of the QIP system which maps roles and responsibilities for private networks*



# *High Level Summary Of Service Offerings*

- ❖ Intrusion detection and response processes*
- ❖ Network and system vulnerability scanning*
- ❖ Network help line support and problem tracking*
- ❖ Compliance with regulations and laws (e.g. copyright issues)*



# ***Audit Options***

- ❖ ***Security Review***
- ❖ ***Change Management Review***
- ❖ ***Service Delivery Review***
- ❖ ***System Capacity & Upgrade Review***
- ❖ ***Continuity –Disaster Recovery Planning***



# *Security Review Goals*

- ❖ Obtain background information on design of the network (e.g., network diagrams)*
- ❖ Obtain background information on roles and responsibilities within OIT and between OIT and private networks and between OIT and outside organizations.*
- ❖ Evaluate security policies, standards and procedures*
- ❖ Evaluate measures to secure the hardware*
- ❖ Evaluate measures to identify vulnerabilities*



# *Security Review Goals*

- ❖ Evaluate measures to identify intrusions and process for reacting to intrusion attempts*
- ❖ Evaluate the results of ISS scans over time*
- ❖ Evaluate history on intrusion attempts and actions taken after intrusions attempts are noted*
- ❖ Evaluate problems logs for potential concerns*
- ❖ Evaluate the configuration of various components of the network for security issues*
- ❖ Evaluate procedures for assuring equipment software appropriately patched.*



# ***Change Management Review Goals***

- ❖ Evaluate process for implementing hardware and software changes*
- ❖ Evaluate controls to assure changes are made as expected to all intended components*
- ❖ Evaluate processes for testing changes*
- ❖ Evaluate problem logs for indications that changes are effective and timely*
- ❖ Evaluate procedures to assure service calls are being made in a timely*
- ❖ Evaluate procedures to assure customers get service offerings which match their needs*



# ***Service Delivery Review Goals***

❖ *Obtain a list of network service offering and goals of each service offering*

❖ *Obtain information on:*

*How service offerings are added and sunset*

*Annual cost of each service offering*

*Usage of each service offering*

❖ *Determine if owners have been assigned to each service offering*



# *Service Delivery Review Goals*

- ❖ Evaluate the processes in place to define acceptable service for each of the network service offering*
- ❖ Determine what mechanisms are being used to measure the success of each service offering (i.e., accomplishment of goals for each service offering)*
- ❖ Evaluate processes to assure the right sizing of service offerings/investment in network support and technology*



# *System Capacity & Upgrade Review Goals*

- ❖ Evaluate the completeness of upgrade strategy*
- ❖ Evaluate the integrity of the cost projections*
- ❖ Evaluate tools for defining current capacity and projections of capacity needs*
- ❖ Evaluate funding strategies and strategies for retiring current debt*
- ❖ Evaluate strategies for assuring new technology is in place when there is a business need*



# *System Capacity & Upgrade Review Goals*

- ❖ Evaluate processes to assure appropriate technology and vendors are considered during the upgrade process*
- ❖ Evaluate processes to assure the upgrade process stays in budget*
- ❖ Evaluate processes to assure the upgrade process stays on schedule*
- ❖ Evaluate processes to assure expected deliverables result from the upgrade process*



# *System Capacity & Upgrade Review Goals*

- ❖ Evaluate processes to assure assets purchased for the upgrade are appropriated inventoried and recorded on the financial statements*
- ❖ Evaluate processes to assures system upgrades are appropriately and consistently configured and work as intended*
- ❖ Evaluate processes put in place to limit disruptions to business operations during the implementation process*

