

MOREnet FY06 Year-end Report



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Executive Summary

MOREnet began FY06 with the challenge of a 30 percent cut in our state funding, representing more than \$4 million. This challenge was met through a combination of additional expense reductions, renegotiation of rates with selected service providers and increases in member fees. This challenge also set the direction for justification of our funding request for FY07, by focusing on demonstrating our value to the state.

With the involvement of many of our members, FY06 ended with news that the final FY07 budget passed by the General Assembly included a 1 percent increase, over \$100,000, for MOREnet. While this increase does not make up for a \$4 million reduction, it does indicate a stabilization in our state funding for the immediate future.

In spite of operating under a significant budget cut, member needs continued to remain first priority, and the organization was able to accomplish some exciting things.

1. Planning for the “Next Generation Network” was launched. In order to continue to meet member demands, MOREnet worked diligently to upgrade the existing backbone in early calendar 2007. With input from member representatives, UM and external consultants, implementation plans were developed to replace the current backbone in 2007.
2. Videoconferencing Events increased in FY06 by almost 300 percent. This overwhelming statistic is due to the outstanding work of MOREnet’s Video Group, an increased interest in members delivering and receiving distance education and a significant increase in the operations of the Cooperating School District video interest group.
3. Springfield’s Riverbluff Cave, one of the oldest known caves in North America, is off-limits to the general public. But thanks to MOREnet and others, the cave gained online capabilities with a fiber connection and video technology. Workers in the cave were able to share its treasures in real time with students and researchers anywhere via the Internet!

MOREnet also increased contact with members in an effort to better understand member initiatives and service priorities. Regional member meetings and a member survey provided input for service revisions and research activities for FY07. At the Missouri State Fair in August 2006, MOREnet’s efforts to reach out to our stakeholder communities and raise awareness of our services and the value of services provided were recognized.

MOREnet started FY06 with an organizational restructure that better aligned our internal operations to reflect a stronger member-oriented focus. Along with other changes to address operational efficiency and effectiveness, a new Member Services unit was implemented to enhance focus on service related issues.

The year opened with one of the organization’s E-rate applications having been denied by the School and Library Division of the Universal Service Company. The application was denied for what amounted to non-compliance with an unpublished administrative regulation change concerning the format of an annual authorization letter our members sign. This application represented in excess of \$5 million in E-rate reimbursements for Internet access provided to our members and would have had a devastating impact on the ability of MOREnet to continue to operate. The organization filed a timely appeal of the denial with the Federal Communications Commission, and the year ended with the original denial being set aside and a resumption of processing of this application.

These highlights represent only a small part of the successes accomplished by the organization and its members. The pages that follow provide a detailed description of operating and program highlights for the fiscal year 2006.

Infrastructure

Tail Circuit Capacity Growing

Demand for bandwidth increased significantly in fiscal year 2006. The three main programs (DESE TNP, REAL and MERC) have added more than 850 Mbps of tail circuit capacity to the network.

DESE is again leading the way with a 44 percent increase. REAL and MERC have increased 29 percent and 30 percent, respectively.

By comparison, the growth rates for DESE, REAL and MERC were 19 percent, 14 percent and 9 percent, respectively for FY05 while the number of connections remained nearly constant.

The demand for bandwidth was driven largely by the members increasing the number of computers and the availability of additional hosted applications such as Student Information Systems and other online resources.

The University of Missouri, excluding the four campuses, increased its total capacity by 56 percent. This increase was driven by Telemedicine with the addition of 32 sites.

Overall, total bandwidth increased by 937 Mbps, or 36 percent, for the fiscal year. In contrast, the increase for FY05 was only 325 Mbps, or 14 percent.

Network Reliability

- Core Network Uptime: 99.983 percent
- UNIX/Windows Server Uptime: 99.917 percent
- Application Server Uptime: 99.997 percent

Note: Availability information provided is the daily average for FY06 and may not be related to "service" uptime.

Network Services

Network Services upgraded two 12000 GSR core routers, five 10000 ESR aggregation routers and more than 150 customer edge routers. Router upgrades were needed to refresh and update the technology while others were needed to support higher capacity circuits.

Network Services also renewed, replaced or upgraded 372 tail circuits this past year. This includes more than 60 Ethernet circuits. Ethernet proved to be a more cost-effective technology and enabled us to reduce our total monthly circuit cost even though bandwidth increased.

Next Generation Network (NGN)

New Initiatives is exploring the use of a fiber-optic backbone for increased research capacity and future cost avoidance. MOREnet has contracted for assistance in designing an optimum statewide fiber backbone as well as assistance in locating and procuring fiber to build the network. The Southeastern Universities Research Association (SURA) GridFiber project with AT&T donated fiber along I-70 for use in MOREnet's backbone.

Renewed Focus on Research

MOREnet members utilize results from staff research activities in their own planning and decision making and benefit from enhancements MOREnet implements from these activities. During the past fiscal year, it became clear that the membership was not aware of many research activities taking place within MOREnet. As result, a plan was implemented to focus on communicating research activity to and with the membership.

MOREnet's FY07 Research Communication Plan calls for enhancing the input gathering methods used to determine research topics and increasing the communication aspects of research results. In April the first of a new series of newsletters was published. To be produced quarterly, *MOREnetworking: Research* will be delivered electronically and will include topics about recent and current research projects. References to additional online information will be included. Ideas for research topics will be specifically requested during site visits, town hall meetings as well as at informal conference gatherings.

The result of this renewed focus will be a membership better informed about the research topics in progress at MOREnet as well as input into the research determination process.

REAL

Network Assessments

The Missouri State Library from the Gates Staying Connected grant funds contracted with MOREnet to provide a new service to selected Missouri public libraries. By the contract term end, 45 libraries will receive comprehensive on-site computer network audits. A MOREnet network consultant will conduct an in-depth network analysis and perform network diagramming to document the existing network. The network consultant will then work with the library staff to explain the results. A detailed written report is then provided on the library network's strengths and weaknesses with recommendations. Follow-up technical support via phone is then available for additional help and support. Thirteen libraries have been completed with an additional four in process by July 31, 2006.

Summer Reading Program Videoconferences

In support of the Missouri State Library and the Collaborative Summer Reading Program, MOREnet facilitated four videoconferences reaching approximately 555 library patrons through eight different libraries. Russell Walks, a professional illustrator and Star Wars fan, presented twice about his career as a professional artist. The St. Louis Zoo presented at St. Louis Public Library two sessions that highlighted unique characteristics of mammals, birds and reptiles with hands-on activities and a story time where children listened to stories about animals. Both videoconferences showed live animals.

Online Resources Mailing

All public, higher education and K-12 buildings that housed libraries received an information packet highlighting the online resources. The packets contained brochures highlighting the content of the databases, tip and search cards that provided information on how to successfully search the databases and table tents for placement at public and student computers.

Site Visits

During this past year, twelve site visits were made to REAL members. These visits were a chance to have a face-to-face meeting between the members and MOREnet staff. The members were asked about their future plans, how well MOREnet was meeting their needs, and about current and potential MOREnet services.

Affiliates

Membership

During this past year, three community information networks (CINs) withdrew from the Affiliate Program. The withdrawals were a result of dwindling members paying for dial-up access. The three CINs were: TACnet, Clinton, MO; WIN, St. Charles, MO; and COIN, Columbia, MO.

One additional Affiliate member, Genesis Charter School in Kansas City, was designated a school district by DESE and will be transferring to the K-12 TNP program.

MERC

During FY06, the Missouri Education and Research Consortium (MERC) continued initiatives supporting its purpose to “advance the collaborative use of networked technology and applications in higher education, research, public service and work together to share resources for the benefit of all consortium members.”

MERC Advocacy Initiative

The MERC Board of Directors approved an advocacy program for MOREnet that included the involvement of higher education institutions, public libraries and K-12 schools to develop a methodology to coordinate and educate MOREnet member groups on the importance of the MOREnet line item in HB3 funding. This unified advocacy effort was instrumental in the positive outcome in FY07 HB3 funding for MOREnet.

MERC Goals

A subcommittee was formed at the fall 2005 MERC Institutional Representative meeting to revisit a MERC Goals draft document that was originally drafted in 2002 but never implemented. The committee produced a final document that focuses on the areas of collaboration, policy/leadership, higher education best practices and services.

HELIX 2006

Attendance at HELIX 2006 was slightly down from the prior year. Despite the reduction in the number of participants, there was a good representation across the three MERC sectors (public two-year, public four-year and independent institutions). Collaboration among members was once again demonstrated through the jointly planned and hosted Web Development and Teaching track and Learning with Technology track. The keynote presentation by Dr. Paul Hagner, Associate Director of the EDUCAUSE Learning Initiative, focused on the characteristics of digital age learners and how institutions need to prepare for their arrival.

New MERC Member

Urshan Graduate School of Theology became the 67th MERC member institution in FY06. Ushan is located in Hazelwood, Missouri.

Site Visits

During this past year, six site visits were made to MERC members. These visits were a chance to have a face-to-face meeting between the members and MOREnet staff. The members were asked about their future plans, how well MOREnet was meeting their needs and about current and potential MOREnet services.

K-12 TNP

MOREnet continues to meet the bandwidth demands of its public K-12 members. Districts are using this bandwidth to access online resources such as United Streaming, which provides on-demand access to 50,000 content-specific segments from 5,000 full-length educational videos. The increase in videoconferencing events is another service area that has led to increase in bandwidth. In the St Louis area alone, school districts are taking advantage of the content available through Cooperating School Districts (a MOREnet Affiliate) through their New Links To Learning Videoconferencing program (<http://csd.org/csdrpdc/virtualllearningcenter/nlnlhomepage.html>).

MOREnet has assisted with introducing virtual field trips into two districts at the elementary school level; these districts had not yet taken experienced videoconferencing. Park Hill (Kansas City area) and Putnam R-I (north-central Missouri) have experienced their first virtual field trips. Park Hill participated in a virtual field on the Civil War while Putnam R-I participated in a character education videoconference.

MOREnet is regular participant the Education Technology Association (ETA) of St Louis. The Education Technology Association provides a forum for collaboration on educational issues, information about hardware and software and a means to communicate with other members on best practices. Attendance at these meetings keeps MOREnet informed on the educational technology issues these districts face as well as keeping the districts informed on pertinent MOREnet issues.

Contracted Services

UM Healthcare

MOREnet currently supports 88 TeleHealth hospital and clinic sites.

MOBIUS

MOREnet continues to provide financial services as well as internal and system support services.

Great Plains Network (GPN)

MOREnet provided both administrative and network operations management for the Great Plains Network (NGN). During FY06, GPN's Abilene Internet2 capacity, shared by Missouri, Kansas and Nebraska, was upgraded from an OC-12 (622 Mbps) to gigabit ethernet, or GigE (approximately 1,000 Mbps), with plans being developed to upgrade to a 10 gigabit per second connection in FY07. GPN also began focused efforts to increase research initiatives during FY07 to increase member involvement and benefit.

Member Services

Videoconferencing

Videoconferencing events increased from 5,147 in FY05 to 15,435 in FY06 and participants increased from 18,908 in FY05 to 51,334 in FY06. The increase in video usage in FY06 was primarily due to the transition of two K-12 consortiums with their events to MOREnet's video bridging service and the enabling of member-controlled video event scheduling (remote conference management).

Internet Content Filtering

As of June 30, 2006, there were 225 MOREnet members subscribed to the service, with more than 49,000 workstations. Servers were upgraded in June 2006 to the SmartFilter Bess edition for MOREnet-hosted subscribers. Member-hosted subscribers were assisted in upgrading their own servers.

e-Conferencing

This service experienced several cancellations that are not being offset by new subscribers. The service will be re-evaluated to determine whether it should be continued or phased out.

SLAs and Video Conditions of Use

MOREnet revamped the Network Service Level Agreements and replaced the Video Service Level Agreement with a conditions of use statement. Members can now use a MyMOREnet application to manage their own SLAs. Changes made via the MyMOREnet application are also automatically made in our other systems, including the network monitoring tools.

Firewall Pilot

A pilot project was conducted with 11 sites and market research conducted to determine the feasibility of a managed firewall service. It was determined that there was insufficient interest to support the cost of providing the service.

Security

In December 2005, the Security team hosted the Fifth Advanced Technical Security Symposium. The event keynote speaker was Martin Roesch, the author of SNORT, the wildly popular open-source IDS software package. The success of this event has required us to change the venue for the 2006 event to a larger facility and we anticipate another great symposium.

The annual Spring/HELIX conference saw security fill our breakout sessions to overflowing. Security worked with the Conferences and Events staff to pilot the Ed Tech classroom, in which we used video conferencing to provide overflow access for our most popular sessions.

Remote Vulnerability Assessment

Thirty three members utilized the RVA service in FY06. The State Library has funded assessments for FY05 and FY06 and will continue for FY07. In addition to the 28 libraries, two higher educational institutions, two K-12 schools and one Affiliate member utilized the service in FY06.

Web and E-mail Hosting with *kinetic*

As of June 30, 2006, 133 organizations had subscribed to *kinetic*. These organizations had more than 13,000 accounts and used more than 130 gigabytes of disk space.

E-mail Virus and Spam Filtering

As of June 30, 2006, MOREnet's E-mail Virus and Spam Filtering (EVSF) service had 92 customers, double the number from one year ago. The EVSF service has blocked over 1.3 million viruses and 320 million spam e-mails in FY06. The new service resulted in very few support calls in FY06 and has spared our members many hours of frustration dealing with spam.

DNS Blacklist Servers

Beginning late in FY06, MOREnet made available five new DNS servers that blacklist known spyware/malware servers. These servers are free to use and provide MOREnet members another layer of security in the battle with spyware/malware infections. The potential impact is enormous in the number of hours it will save local technicians cleaning up infected computers. Due to the late summer rollout, the number of members impacted is difficult to determine. However, it appears that more than 25 members are already using the service to reduce the attack opportunities presented by spyware/malware.

Good Network Neighbor

MOREnet continues to provide the highly-valuable, free Good Net Neighbor (GNN) service. The service prevents unwanted access to member networks by blocking all in- and out-bound NetBIOS traffic, the default protocols for Microsoft Windows. By blocking these protocols, member networks are safe from the constant scanning that occurs, looking for Windows computers that may be vulnerable to an attack. Currently, 261 members take advantage of this free added layer of security.

FY06 Year-end Results (\$ millions)

	Shared Network	Shared Online Resources	K-12 TNP	Public Library Related	Higher Education	Affiliates	Other Fees and Restricted	Pass Through	Total
HB3 (Net Withholding) ¹	\$ 5.669		\$ 3.143		\$ 1.037				\$ 9.849
HB12		\$ 1.238		\$ 1.721					\$ 2.959
Other State			\$ 0.050						\$ 0.050
E-rate ²	\$ 0.009		\$ 0.001	\$ (0.004)				\$ 0.049	\$ 0.055
FY06 E-rate Accrued Early ³	\$ 1.923		\$ 2.891	\$ 0.960					\$ 5.775
Membership Fees			\$ 2.204	\$ 0.415	\$ 1.065	\$ 0.323			\$ 4.006
Shared Network Support	\$ 1.725		\$ (0.756)	\$ (0.197)	\$ (0.627)	\$ (0.145)			
Other Fees and Misc.	\$ 0.214		\$ 0.021	\$ 0.009	\$ 0.033	\$ 0.189	\$ 1.578	\$ 1.418	\$ 3.462
Transfers ⁴	\$ (1.672)		\$ (0.005)	\$ (0.038)	\$ (0.007)		\$ 0.269	\$ (0.046)	\$ (1.500)
Total Revenue	\$ 7.868	\$ 1.238	\$ 7.549	\$ 2.866	\$ 1.501	\$ 0.367	\$ 1.846	\$ 1.421	\$ 24.655
Telecommunications	\$ 6.016		\$ 4.269	\$ 1.340	\$ 1.037			\$ 1.421	\$ 14.083
Salaries and Benefits	\$ 2.254		\$ 2.237	\$ 0.819	\$ 0.514	\$ 0.357	\$ 0.869		\$ 7.050
Operating Expenses	\$ 0.139		\$ 0.299	\$ 0.109	\$ 0.068	\$ 0.048	\$ 0.121		\$ 0.784
Online Resources		\$ 1.238							\$ 1.238
Other Expenses	\$ 0.003		\$ 0.071	\$ 0.086	\$ 0.026	\$ 0.009	\$ 0.570		\$ 0.765
Total Expenditures	\$ 8.412	\$ 1.238	\$ 6.876	\$ 2.353	\$ 0.026	\$ 0.009	\$ 1.561	\$ 1.421	\$ 23.921
Revenue over Expenses	\$ (0.544)		\$ 0.673	\$ 0.513	\$ (0.144)	\$ (0.048)	\$ 0.285		\$ 0.735
Fund Balance Start FY	\$ 4.243		\$ 2.110	\$ 3.090	\$ 0.474	\$ 0.037	\$ (0.356)		\$ 9.598
Fund Balance End FY	\$ 3.699		\$ 2.782	\$ 3.603	\$ 0.330	\$ (0.011)	\$ (0.071)		\$ 10.333

Note: Changes to these numbers are possible until University of Missouri financial information is final for the fiscal year.

Color codes: Pink = State funds; Green = E-rate; Yellow = Member fees for services

1. The HB3 appropriation is subject to the governor's standard three percent withholding.

2. E-rate benefits are allocated according to community, K-12 and Public Library are based on their tail (local loop) circuit benefits, while Shared Network benefits are from Network Backbone and Internet access circuit benefits.

3. E-rate receipts originally budgeted to be received in FY06 were accrued in FY05 consistent with UM Accounting guidance. This adjustment moves the early accrual of FY06 E-rate receipts in FY05 to actual FY06 receipts so as not to distort FY05 ending balances or FY06 revenues.

4. FY06 transfers are as follows: transfer to Plant Fund Reserve \$1,500,000; the final MOREnet subsidy for eConferencing of \$166,666; \$6,000 for MOREnet employee attendance of Sans Forensic Seminar; TNP payment to kinetic for program email of \$5,000; REAL payment for RVAS of \$36,400; REAL payment to kinetic for program email of \$2,000; MERC subsidy of HELIX conference of \$7,487.

MOREnet FY06 Year-end Statistics by Member Group

Type of Statistic	Measurement	Higher Ed.	K-12 TNP	REAL	Affiliate	State Agency	Other	Total	
Members¹	Participants as of 06/30/2006	67	514	129	21	6	0	737	
Member Connections²	Total connections as of 06/30/2006	98	527	231	126/96	0	0	1078	
Remedy Help Desk (Number of tickets created during this period and closed by Service Family.)	Application Service Provider	48	789	161	147	146	4	1295	
	Conferences	0	0	0	0	0	0	0	
	Connectivity	426	1535	440	226	265	12	2904	
	Online Learning and Meetings	829	429	76	837	43	33	2247	
	Online Resources	32	82	51	3	2	1	171	
	Security	326	1050	291	110	17	4	1798	
	Training and Support	218	1778	380	88	18	6	2488	
	Total Tickets	1879	5663	1399	1411	491	60	10903	
	Training	Total no. of attendees ³	483	2173	439	44	21	127	3287
		Sessions attended ⁴	109	227	116	27	17	51	285
	Topics offered ⁵	95	95	96	95	95	95	96	
	Contact hours	2348.5	7719.5	1541.5	409.5	89	2868	14976	
Conferences⁶	Conferences with MOREnet participation	2	3	3				8	
	Missouri Educational Technology Conference (October 2005)							570	
	2005 Advanced Technical Security Symposium (December 2005)							132	
	MOREnet Spring Technical Conference (April 2006)							288	
	Higher Education Learning and Information eXchange (HELIX, April 2006)							166	
	Video Users Group Conference (August 2005)							37	
EBSCOhost⁷	Number of EBSCOhost searches	4,561,452	2,450,300	697,650	31,977	29,959	N/A	7,771,338	

1. **Member:** Organizations that have been approved to receive services through a MOREnet program structure. These organizations may have multiple sites. The programs are defined based on sponsoring state agencies or non-profit business affiliation. Member totals reflect the total number of distinct organizations that receive MOREnet services.
2. **Member Connections:** The number of entry points into the MOREnet network for members. MOREnet defines a connection as the type and measurement of maximum bandwidth through each available tail circuit to a given site. The connection contains three components: the physical circuits, logical circuits (which are delivered through the physical circuits) and equipment needed to provide a unique logical path for delivery of data or video services. A “site” is a physical location where MOREnet delivers physical circuits, equipment or services. Tail circuits are the physical circuits between the telecommunications company and the participating organizations’ various sites that contribute to their connection to MOREnet.
 - * Currently MOREnet supports 96 connections delivered via DSL.
3. Individuals attending multiple training sessions within the fiscal year are counted in the “Total number of attendees” each time they attended a session.
4. Sessions attended reflects the number of course instances attended by a representative of a given member organization. The Sessions Attended Total reflects the number of distinct sessions attended by any member representative. For example, an individual from K-12 TNP and an individual from REAL may attend the same training session; the session is accounted for in each customer column, but the session is only counted once in the total.
5. Individual training topics are offered multiple times throughout the fiscal year. MOREnet-led course descriptions totaled 96 unique topics for the reported fiscal year. Contracted training providers maintain a separate course catalog and offer additional topics that can be scheduled through MOREnet. While member participation (attendees and contact hours) in these contracted events is included in this report, these courses are not typically published in MOREnet’s course descriptions.
6. List of Specific Conferences by Program (sanctioning sponsor):
 - MERC Conference: Higher Education Learning & Information eXchange (HELIX)
 - K-12 TNP Conferences: DESE/MOREnet Missouri Educational Technology Conference, MOREnet Spring Technical Conference
 - REAL Conferences: Summer Institute, Missouri Library Association (MLA)
 - eMINTS/MINTs Conferences: Summer Sampler
7. The total number of searches listed refers to all the EBSCO products, including MasterFile Elite, Academic Search Elite, Alt-Health Watch, Primary Search, HealthSource: Consumer Edition and HealthSource: Nursing/Academic Edition.