MOREnet
Missouri Research & Education Network

Year-end Report FY04

July 1, 2003 - June 30, 2004

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Executive Summary

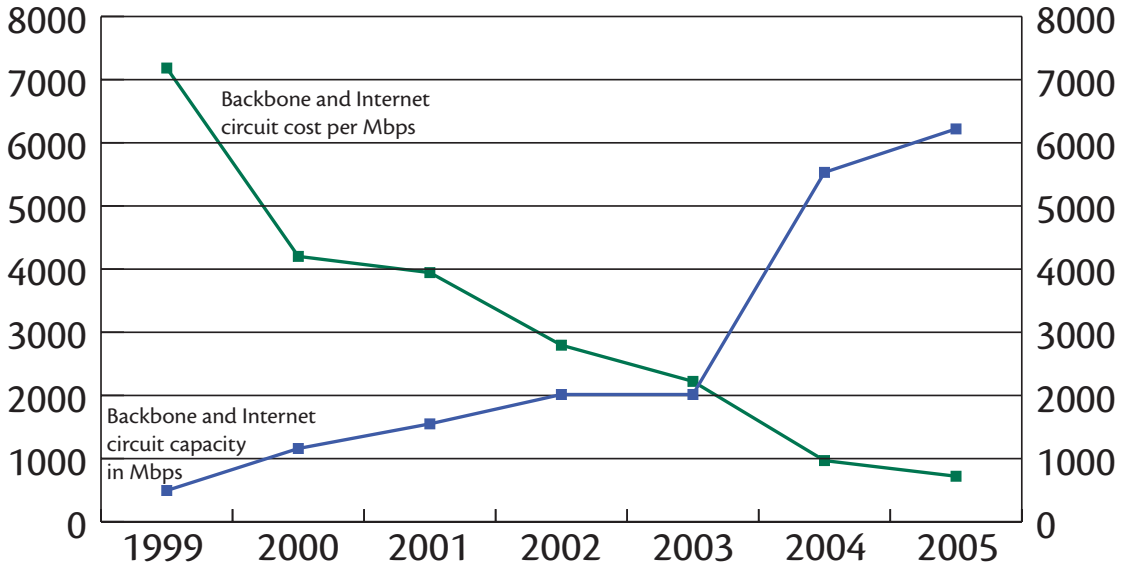
Delivering the Network

Over the past year, MOREnet has delivered a reliable, robust and secure network while contending with external pressures that include increasing demand and budgetary constraints. MOREnet maintained its services without affecting customers.

In FY04, the budget remained flat. At the same time, network demand increased by as much as 70 percent. To continue to meet demand, MOREnet rebid its contracts for backbone and Internet circuits and is completing new contracts for customer tail circuits.

Because of our position in the Missouri telecommunications market as a dominant buyer, we can purchase in large volumes and help change market prices. In FY04, a backbone upgrade resulted in a fourfold increase in bandwidth (155 Mbps to 622 Mbps) without increasing costs. Current capacity should accommodate customer bandwidth increases for the next several years without congestion. We also increased the amount of bandwidth available at our Internet access points in Kansas City and St. Louis. With the increased bandwidth, customers can take advantage of new services and conduct business in new ways. We expect the same trend of increasing bandwidth without significantly changing costs to continue for the customer tail circuit rebid, which will be completed in FY05.

The graph below shows MOREnet's cost per megabit of Internet and backbone circuits, compared to capacity.



REAL and K-12 TNP customers moved from one-size-fits-all to size-appropriate connections. A cornerstone of the REAL and K-12 TNP programs is to provide equitable access to the network for libraries and schools. State funding and purchasing power allows us to reduce and spread costs across the network, allowing customers in rural areas to afford otherwise prohibitively expensive high-speed Internet access, as compared to their urban counterparts. Thus, MOREnet provides affordable bandwidth to every customer, even in the most expensive-to-serve places.

Delivering Value Through Services

MOREnet continued to expand its role as a service provider during FY04.

e-Conferencing debuted in March, and within three months, 400 licenses had been purchased by 13 organizations. We anticipate substantial increases in FY05 and the following year as part of a 3-year rollout plan.

During the third quarter of FY04, we issued a request for proposal (RFP) seeking a content filtering solution to enable libraries to meet the filtering requirements for receiving E-rate discounts and other government funding, eventually selecting N2H2 Bess distributed by Software Plus. This service was available to customers beginning July 1, 2004. The Missouri State Library provided LSTA funds for the one-time hardware and software start-up costs, to help make the program more affordable for school libraries and public libraries.

Since its debut in March 2004, 16 school districts have taken advantage of our NetSmartz Workshop® training. This training will continue in FY05. NetSmartz Workshop® is an interactive, educational resource that uses age-appropriate, 3-D activities to teach young people how to stay safer on the Internet.

The *kinetic* service continued to provide e-mail accounts, webmail access and Web hosting services. During 2004, *kinetic* nearly doubled the number of organizations served.

Flat funding has forced hard decisions for some services. While online access to the *St. Louis Post-Dispatch* and *Kansas City Star* will continue as part of Online Resources funded by the Secretary of State, overall newspaper coverage has been reduced. Interest in the Remote Vulnerability Assessment service has not yet reached the level indicated in focus groups, and we will continue to examine the most effective means of delivering this service.

Security remains a top priority. To respond to the proliferation of increasingly sophisticated attacks, MOREnet has elevated the status of its Security group, including hiring a new manager and adding personnel through internal reallocation.

Evaluation of existing services will continue.

Being an Effective Organization

Internal organizational improvements will continue. A consulting firm, Vangel & Associates, was retained to review customer satisfaction and suggest ways to improve. The first phase of this project has been completed and recommendations are being reviewed. MOREnet is also working with StateNets, a national organization of state education networks, to establish external performance measures. These measures will assess the impact of our services and also allow comparison of performance data across different state networks. Higher education measures are scheduled for completion in fall FY05, with K-12 and library measures to follow.

Activities for the past fiscal year can be summarized by referring to the strategic objectives outlined in the FY04 Goals and Objectives document. Refer to FY05 Goals and Objectives for information on upcoming tasks.

FY04 Goals and Objectives Status

1. Operate a secure, reliable and robust shared network to maximize the value of Missouri's investment in public sector telecommunications.

1.1 Enhance core network.
Completed. Upgrades to core network implemented, enhancing both capability and reliability.

1.2 Tail circuit acquisition
Process continues as planned. Objective will continue into FY05. Award of bids began in June 2004 and will continue as existing contracts expire. New contracts will enable MOREnet to sustain tail circuit infrastructure while maintaining stable cost structure.

2. Influence and deliver high value services that support the effective use of technology in accomplishing Missouri's research and education goals.

2.1 Develop and implement external performance measures.
Development of measures ongoing; other state networks are now collaborating in initiative. Development of model ongoing; anticipate initial data gathering in fall 2004.

2.2 Develop and implement an ongoing customer focus/satisfaction assessment system.
Assessment phase complete. See FY05 Goals and Objectives for next steps.

2.3 Determine the future viability of selected services.
Completed. Providing e-mail services and modem pool management to customers remains viable. Current server management services are financially and operationally viable, but migration to managing other kinds of servers/operating systems will require additional analysis.

2.4 Training refocus project.
Project continues with renewed emphasis to focus MOREnet's training offerings on customer needs and to explore more efficient training delivery methods to customers via new technology and/or alternate delivery models.

3. Be an effective and efficient organization, focused on speed, productivity and customer service.

3.1 Assist in the formation and implementation of the MOREnet Council.
Completed. MOREnet will continue to assist, support and respond to the Council.

3.2 Revise current budget and cost allocation practices to incorporate cost per service activity philosophy and model.
Completed. Service costing has been implemented for all new service offerings and cost allocation among programs has been standardized.

3.3 Implement an organizational development program for all levels of management and staff.
Consultant engaged. Assessment scheduled for August 2004 and recommendations for improvement of organizational effectiveness are expected in September.

3.4 Implement a comprehensive reporting system.
Progress on-track. Currently drafting a year-end report to effectively address customer and sponsor information needs based on feedback from stakeholders and exploration of various reporting models.

FY05 Goals and Objectives

1. Operate a secure, reliable and robust shared network to maximize the value of Missouri's investment in public sector telecommunications.

1.1 Tail circuit acquisition
Continue to meet customers' increasing bandwidth requirements at the same or lower cost.

1.2 Next generation network
Leverage technology advancements to maintain the balance between improved capability and cost avoidance for our customers.

2. Influence and deliver high-value services that support the effective use of technology in accomplishing Missouri's research and education goals.

2.1 External performance measures
Clearly describe the benefit perceived by our customers from MOREnet's services.

2.2 Evaluate and realign services
Customers will leverage their internal resources, using MOREnet services to enable them to accomplish more than they could on their own, as measured by ongoing customer committment (view MOREnet as the first choice for these services).

2.3 Training refocus project
Customers will become fully aware of MOREnet training offerings and perceive that MOREnet offers what is required in selected technical areas.

3. Be an effective and efficient organization, focused on speed, productivity and customer service.

3.1 Organizational development
Improve management and staff performance in all areas, including aligning responsibility, authority and accountability.

3.2 Comprehensive reporting system
Constituents receive timely information appropriate to their needs.

FY04 Year-end Report

Program-related Funding versus Planned Expenditures

Preliminary FY04 Actuals - including eMINTS ($ millions)

	Shared Network/ Shared Services	K-12 Related		Public Library Related	Higher Education Related		Fee-based and Contracted Services	Total
		K-12 TNP	eMINTS		Public Higher Education Circuits	Higher Education Customer Fees		
HB3	$8.801	$4.788	$-	$-	$1.416	$-	$-	$15.004
HB12	$1.255	$-	$-	$1.705	$-	$-	$-	$2.959
Other State	$-	$0.050	$0.275	$-	$-	$-	$0.060	$0.385
Withholding	$(0.264)	$(0.144)	$-	$-	$(0.042)	$-	$-	$(0.450)
E-rate*	$2.959	$1.639	$1.292	$0.904	$-	$-	$0.050	$6.845
Customer Fees and Other	$0.030	$1.493	$1.277	$0.253	$-	$0.650	$2.808	$6.511
Total Revenue	$12.780	$7.827	$2.844	$2.862	$1.374	$0.650	$2.918	$31.255
Telecommunications	$8.572	$4.484	$0.053	$1.410	$1.374	$-	$1.232	$17.125
Salaries and Benefits	$1.784	$1.918	$1.723	$0.610	$-	$0.369	$1.094	$7.499
Operating Expenses	$0.347	$0.347	$0.356	$0.106	$-	$0.062	$0.190	$1.408
Online Resources**	$1.265	$0.011	$-	$-	$-	$-	$-	$1.276
Other Expenses	$-	$0.013	$0.531	$0.051	$-	$0.006	$1.065	$1.666
Total Expenditures	$11.968	$6.772	$2.663	$2.177	$1.374	$0.437	$3.582	$28.973
Revenue over Expenses	$0.812	$1.054	$0.181	$0.685	$-	$0.212	$(0.663)	$2.282
Fund Balance Start FY	$3.001	$0.971	$0.912	$1.977	$-	$0.433	$0.619	$7.912
Fund Balance End FY	$3.813	$2.025	$1.093	$2.661	$-	$0.645	$(0.044)	$10.193
Allocated FTE	28.3	33.8	30.9	11.4	***	5.8	20.5	130.6

Color codes: Pink = State Funds, Green = E-rate, Yellow = Customer Fees for Services

Note: Revenues and expenses related to Gates Grant are included in the Fee-based and Contracted Services column, and eMINTS includes out-of-state.

* 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.

** One-time use of non-REAL Program funds to cover price increases for online resources; $10,500 from each of Shared Service and TNP E-rate.

*** Staffing to support public higher education circuits included under Shared Network.

FY04 Year-end Report

MOREnet Year-end Statistics by Customer Group (July 1, 2003 - June 30, 2004)

Type of Statistic	Measurement	Higher Ed	K-12 TNP	REAL	MINTS/ eMINTS	Affili-ates	State Agency	Other	TOTAL
Customers[1]	Participants as of 06/30/04	64	514	130	203	27	0	5	746[1]
Customer Connections[2]	Total connections as of 06/30/04	99	531	226	5[3]	194	0	0	1050[2]
Remedy Help Desk (Number of tickets created during this period excluding security tickets)	Core Network Group	129	184	39	0	163	1	62	578
	Network Consulting Group	197	795	247	7	262	0	17	1525
	Network Systems Group	10	16	7	0	16	0	4	53
	Technical Support Group	221	1395	539	41	282	5	134	2617
	Video Consulting Group	806	174	54	7	344	7	108	1500
	Other MOREnet Groups	93	328	59	147	244	5	1437	2313
	E-rate support	0	244	32	0	3	0	0	279
	Total Tickets	1456	3136	977	202	1314	18	1760	8865
Training	Total number of attendees[4]	181	879	596	5585	191	58	83	7563
	Sessions held[5]	71	126	117	608	86	17	49	808[5]
	Topics offered[5]	67	75	69	51	71	66	19	140[5]
	Contact hours	548	5190	3413	27475	1213	331	511	38,691
	Graduate Credit Hours[6]	N/A	N/A	N/A	682	N/A	N/A	N/A	682
Security[7]	Security Problem	458	1325	259	N/A	228	35	88	2393
	Security Question	14	146	37	N/A	9	1	6	213
	Security Request	8	41	7	N/A	11	0	11	78
	Total Tickets	480	1512	323	N/A	248	36	105	2684
	Details: Virus	250	928	154	N/A	137	14	37	1525
	Compormises	22	80	37	N/A	3	1	9	152
	Denial of Service	20	25	4	N/A	2	3	6	60
Conferences[8]	Conferences with MOREnet participation	3	6	4	2	1	0	0	16
	MO Educational Technology Conference Attendees (Oct. 2003)								733
	MOREnet Spring Technical Conference (March 2004)								305
	HELIX (Higher Education Leaning & eXchange) Attendees (March 2004)								160
EBSCOhost[9]	Number of EBSCOhost searches								6,167,910

1. Customers: 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. An organization may participate in multiple programs, dependent on their specific needs and requirements; i.e. 198 K-12 TNP districts participate in the eMINTS/MINTs programs. Customer totals reflect the total number of distinct organizations that receive MOREnet services.

2. Customer Connections: The number of entry points into the MOREnet network for customers. 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.

3. There are 5 connections that exclusively support the eMINTS/MINTS programs for a given customer organization. All other eMINTS/MINTS customers use a connection provided through their school district's participation in the K-12 TNP program.

4. Individuals attending multiple training sessions within the fiscal year are counted in the "Total number of attendees" each time they attended a session.

5. Individual training topics are offered multiple instances throughout the fiscal year. A core list of 40 courses were offered to all customer organizations, with additional topics offered to specific target audiences. The Topics Offered Total reflects the number of distinct topics offered by MOREnet, regardless of target audience. "Sessions held" reflect the number of course instances attended by a representative of a given customer organization. The Sessions Held Total reflects the number of distinct sessions attended by any customer 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.

6. The University of Missouri-Columbia, College of Education (CoE) receives tuition money from eMINTS/MINTS teachers electing to pay for graduate credit, without cost to the CoE. MU and other campus agreements to grant graduate credit show support for K-20 initiatives and is an example of multiple campuses working with MOREnet.

7. Security:

- MOREnet Security treats callers from MINTS/eMINTS districts as K-12 TNP, unless there is a specific connection to eMINTS activity.
- The actual impact and cost of viruses, compromises and denial of service attacks are far greater than the single counted customer contact documented above. A single virus-infected computer can generate several complaints to the security office. Those multiple complaints are contained in a single customer contact.
- Network-aware viruses frequently contain a proxy server or other backdoor access to a machine. These attacks are recorded as viruses, even if the original complaint was about spam being sent from a MOREnet customer site.

8. 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

9. 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.

Shared Network/Shared Services

Reducing Costs and Increasing Flexibility

In FY04, MOREnet continued to receive benefits from its ongoing purchasing power and an industry-wide cycle of declining connectivity costs, allowing it to accommodate simultaneous cuts in funding and increases in bandwidth demands. Internet2 (I2) membership helped secure even lower prices for Internet connectivity. When the industry bottoms out from this cycle, MOREnet may need to increase funding substantially to meet increasing demand or pursue alternative strategies such as procuring its own long-term fiber assets to limit telecommunication price increases. There are also increasing concerns about latent demand as customers shift their applications from mainframe and server-based systems to more Internet-based applications.

Three major changes to the statewide network were completed during FY04. They included upgrading the backbone from OC-3 (155 Mbps) to OC-12 (622 Mbps); upgrading diverse Internet access from six OC-3s to four, tiered OC-12 connections; and taking the largest step in preparing for the expiration of tail circuit contracts in FY05.

The OC-12 contract for the backbone resulted in a four-fold increase in capacity at an annual operating savings of $700,000. Core equipment upgrades were completed on schedule in early Q1 while the circuit upgrades were completed ahead of schedule in Q3.

The Internet upgrade has been completed. The unit cost has dropped 56 percent from $225 per megabit to $99 per megabit. Preliminary I2/QUILT pricing is expected to reduce the unit cost even further. This tiered OC-12 upgrade also allows MOREnet to purchase only the Internet bandwidth it needs — gradually increasing capacity by 168 percent without the need for any further procurement actions.

Finally, tail circuits account for over half of MOREnet's telecommunications costs and are the basis for a substantial part of its E-rate reimbursements. A multi-step approach involves first establishing a statewide E-rate safety net — creating basic pricing for every telecommunication exchange in the state. The next step is to pursue larger, more flexible connections at specific locations based on customer needs. Much like the approach to tiered Internet connections, these single circuits benefit from economies of scale — unit costs are much cheaper for the larger connections than for multiple, smaller basic connections — and can be increased in steps to contain costs.

Current tail circuit contracts will begin expiring in December 2004. The bulk of the individual circuits begin expiring in June and July 2005.

Other Upgrades

Security vulnerabilities required software upgrades on nearly all the routers in the network in Q1. Some router upgrades were necessary because the router's memory was inadequate to support the software upgrades or were at end-of-life (EOL) and no longer supported by the vendor. Most of the EOL routers were six or more years old. The Operations group recommends implementing a policy of regular router replacement on a three- or four-year cycle with longer cycles for locations that require more powerful routers. Closing this vulnerability prevented interruptions to customer access.

Video services completed a technology refresh to its video multipoint control unit (MCU) equipment in Q1 to support new video standards that improve bandwidth utilization and video quality — especially important for low bandwidth sites. The cost of the upgrade will be recovered through reduced vendor maintenance costs over three years. In addition to supporting distance learning and administrative uses, this infrastructure was used to host the Southern Governor's Conference on Bioterroism Response.

FY04 has been a refocusing year, emphasizing the end customer and expanding the role of MOREnet as a central services provider and buying agent. Cost containment and reduction have been, and continue to be, major priorities in order to deal with increasing demand and funding cuts.

K-12 Technology Network Program — K-12 Schools

Additional Bandwidth

MOREnet's K-12 Technology Network Program (K-12 TNP) provides school districts with additional bandwidth that allows access to network resources without having to block or restrict access. This size-appropriate bandwidth approach accommodates continuing growth in number of computers connected to the district network and increasing interest in videoconferencing for distance learning courses and virtual field trips. It also provides access to resources such as streaming media that require large amounts of bandwidth to be effective.

Providing size-appropriate bandwidth will continue to be one of the significant components of the K-12 TNP as technology needs continue to grow in school districts throughout Missouri.

As of June 2004, 58 school districts have received, or are in the process of receiving, connection upgrades as part of additional bandwidth funded by the K-12 TNP. Typical upgrades range from 1.5 Megabits per second (Mbps) to a total of 20 Mbps. The Kansas City 33 school district was upgraded from 4.5 Mbps to 20 Mbps to provide Internet access to over 3,000 staff and 35,000 students. Large and small, urban and rural districts all can benefit from additional bandwidth from the K-12 TNP. Doniphan R-I and Branson R-IV also fully utilized their T1 connections and received upgrades to 3 Mbps, doubling their Internet bandwidth.

Router Upgrades

Throughout FY04 MOREnet upgraded routers at over 150 sites, replacing aging equipment in use for 5-10 years. The new equipment enables school districts to run the current router operating systems necessary to maintain a robust service to the school district and to use the Quality of Service (QoS) protocol, a means of prioritizing data packets to ensure they reach their destination in the most efficient manner.

NetSmartz

The NetSmartz Internet Safety Workshop® expanded customer resources and joined MOREnet's training catalog in late spring 2004. NetSmartz provides K-12 educators, students and parents access to a free Internet safety program developed by the Center for Missing & Exploited Children© and the Internet Crimes Against Children Taskforce.

While hardware devices can provide a level of safety to students by blocking access to potentially offensive sites, NetSmartz teaches students through real-life experiences and interactive activities about dangers on the Internet and how to avoid them and protect themselves at home as well as at school.

To date 16 school districts have taken advantage of MOREnet's NetSmartz Workshop training. Classes will be offered throughout FY05.

eMINTS

eMINTS Continues to Grow

The eMINTS program experienced continued growth and productivity in FY04. It is currently active in more than 800 classrooms in Missouri. Sixteen eMINTS staff members are providing professional development support to the current groups of 215 eMINTS teachers. Approximately 100 teachers in the Year 2 group have completed their two-year professional development commitment and were awarded certificates of completion. Staff continue to support teachers with classroom visits and through e-mail and telephone calls.

Twenty-three new eMINTS districts were added in May, bringing the total to 218. New Missouri eMINTS teachers and administrators were welcomed at an orientation event in Columbia on May 18, 2004.

eMINTS staff provided professional development support to three groups of professional development specialists in the Professional Development for Educational Technology Specialists (PD4ETS) program. Approximately 100 teachers are receiving eMINTS professional development from the specialists participating in this train-the-trainer program. A certification process was developed and the first nine PD4ETS Instructional Specialists were certified in May.

Beyond Missouri's Borders

Out-of-state implementation of the eMINTS program in Utah continues to expand and is currently active in 45 classrooms. eMINTS staff visited Utah in November 2003 and participated in the development of an evaluation process with Missouri's Office of Social and Economic Data Analysis (OSEDA) to parallel Missouri's eMINTS program evaluation. Additional classrooms are planned for Year 2 of the Utah implementation. Utah specialists returned to Missouri for one week of continued professional development support in April 2004.

eMINTS staff were invited to make an informational presentation to the Arkansas Technology in Education Legislative Task Force in late January 2004. In coming months staff expect to hear from the Task Force chair about proposed collaboration.

eMINTS staff serve on the advisory board for the Maine Evaluating State Educational Technology Programs federal project. The first board meeting was held April 29-30, 2004, in Portland, Maine.

The Private and Independent Technology Education Consortium (PI*TEC) was launched in June 2004. PI*TEC is a project of Allied Learning Technologies in Education Consortium (ALTEC) based at the University of Kansas. PI*TEC is the contract awardee for a Title IID bypass contract. Funds for private, non-public Missouri schools will be administered through ALTEC. eMINTS services are among those that private, non-public schools may select. Six private schools have selected Summer Sampler Institutes and PD4ETS participation for their initial eMINTS services.

Online Resources and Tools for Educators

The eThemes database update has been completed and now includes both Missouri and Utah educational standards. Utah eMINTS teachers are making requests for resource themes and current topics are being correlated to Utah standards. The updated application is capable of incorporating educational standards from additional states as needed. In the second quarter of FY04 eThemes recorded more than 1 million visits in a single month for the first time.

A new online lesson planning application, eMINTS Planning Lessons Around Networked Resources (ePLANR), is being developed jointly between eMINTS and the MU College of Education. The tool will be available to eMINTS teachers and staff; a similar version will be shared with eight universities participating in a federal grant with the MU College of Education. A test version of the tool was made available in June 2004.

eMINTS National Center

The eMINTS National Center concept became reality Feb. 24, 2004, when it was approved by the University of Missouri System general officers, more than a month before DESE's March 31 target date. Dr. Monica Beglau has been named as Director of the Center and reports to the University of Missouri System's Vice President for Academic Affairs, Dr. Stephen Lehmkuhle. Formerly administered by MOREnet, the eMINTS program is now a fully autonomous entity within the University of Missouri. The transition is substantially complete, including a new domain and website at http://www.emints.org.

The eMINTS National Center is a collaborative education program sponsored by the Missouri Department of Elementary and Secondary Education (DESE) and the University of Missouri System Office of Academic Affairs. It serves as a resource base for Missouri schools and districts as well as for other states that wish to collaborate with eMINTS staff and with one another to replicate the eMINTS instructional model within their educational systems.

Remote Electronic Access for Libraries (REAL) Program — Public Libraries

Internet Content Filtering

In June 2003, the Supreme Court upheld the filtering requirement for public libraries that receive certain types of E-rate discounts and Library Services and Technology Act (LSTA) funds.

On Oct. 28, 2003, the Missouri State Library released a memorandum about the Children's Internet Protection Act and HB1402. Upon the recommendation of the Secretary's Council on Library Development, Secretary of State Blunt decreed that if a library does not certify compliance with CIPA and E-rate discounts are lost, the library will be charged with the amount of the lost E-rate discount in addition to the fees it pays MOREnet for its membership in the Remote Electronic Access for Libraries (REAL) program.

The Missouri State Library, on behalf of public libraries in Missouri, asked MOREnet to research Internet content filtering to libraries. The FY04 research process determined that MOREnet could now provide cost-effective content filtering for REAL participants and resulted in a Request for Proposal (RFP) to vendors.

N2H2 Bess distributed by Software Plus was selected and made available to customers July 1, 2004. Currently, this service has over 100 customers with almost 14,000 workstations signed up.

The Missouri State Library provided LSTA funds for the one-time hardware and software start-up costs, to help make the program more affordable for school libraries and public libraries.

Connection Upgrades

REAL program participants' 56 Kbps connections, including branch library connections, were upgraded to size-appropriate connections (384 Kbps, 768 Kbps or T1). This initiative has increased the Internet connection speeds and capacities for 48 REAL program connections across 29 public libraries and their branches.

As of June 30, 2004, 35 connection upgrades have been completed and 13 are in process.

Gates Training Grant

The Missouri State Library received a grant from the Bill and Melinda Gates Foundation to support training. The Missouri State Library has contracted with MOREnet to provide registration and website creation and maintenance to support all Gates Foundation training sessions. The State Library also contracted with MOREnet to provide training on technology topics.

Online Resources

A Request for Bid (RFB) for Missouri newspapers, including the *St. Louis Post-Dispatch* and the *Kansas City Star* was released. Due to exclusivity arrangements with the *Kansas City Star*, NewsBank was the only respondent. The Missouri State Library has approved providing online resources from the *St. Louis Post-Dispatch* and the *Kansas City Star*.

Missouri Education and Research Consortium (MERC) — Higher Education

Higher Education Connections

Ninety percent of Missouri's public and independent higher education institutions receive Internet access through MOREnet as participants in the Missouri Education and Research Consortium (MERC). MERC strives to advance the collaborative use of networked technology and applications in higher education, research and public service. Students, faculty, administrators and staff depend on MOREnet's network to do their jobs, conduct research, conduct or take online classes, access information and use e-mail.

Formed in 1991 as the MOREnet Consortium, the group's original goals were to acquire Internet access for their respective campuses as well as support services and resources for the higher education community. MERC recognizes three primary segments of higher education: public 4-year colleges and universities, public 2-year colleges and technical colleges and the independent and proprietary higher education institutions. Currently MERC has 65 members: 13 2-year public institutions, 13 4-year public institutions and 39 independent institutions and is governed by the MERC Board of Directors who oversee and guide the affairs of the Consortium.

MERC Task Forces

Security and Bandwidth Management task forces were appointed by the MERC Board during FY04 to investigate higher education security and bandwidth management issues and recommend policies and/or courses of action where appropriate. Each task force was comprised of specialists and subject matter experts from the MERC organizations.

Both task force groups gave reports at the HELIX 2004 conference. They requested increased access to high-level security training and solutions for better management of residence hall traffic.

Technicians at all levels who deal with Internet security issues are expected to possess the knowledge and expertise to deal with security problems in a timely and effective manner. It is essential that staff know how to protect their campus from Internet attacks, how to keep ahead of threats and what tools to use.

Allowing students in residence halls to have unfettered access to bandwidth can have negative impact on academic and administrative network resources. Most campuses are either fencing off the dorms or implementing bandwidth shaping to thwart problems with over-utilization and to help prevent activities that could place the institution under risk from lawsuit.

Both task forces will continue in FY05.

Fund Balance Options

The MERC Board of Directors made the decision to offer members a discount on membership fees for FY05 to spend down a portion of their fund balance. This discount will offer MERC institutions cost savings and flexibility in tight budget times.

HELIX 2004: Securing Our Future

HELIX 2004 was held March 24-25, 2004, concurrently with MOREnet's Spring Technical Conference to conserve resources. The conference focused on security and featured more than 15 security-related topics. The keynote presentation was provided by Dr. Ann Miller, the Cynthia Tang Missouri Distinguished Professor of Computer Engineering at the University of Missouri-Rolla, who spoke on "The Role of Information Technology in Combating Terrorism." Overall conference evaluations were positive and the MERC Board has made a commitment to increase their level of support for future HELIX conferences.

Fee-based Services

Internet Content Filtering

During the third quarter of FY04, MOREnet issued a Request for Proposal (RFP) seeking a content filtering solution. N2H2 Bess distributed by Software Plus was selected and made available to customers July 1, 2004. Currently, this service has over 100 customers with almost 14,000 workstations signed up.

MOREnet e-Conferencing Powered by Centra

This e-conferencing service rolled out on schedule for education-related customers, March 1, 2004. By the end of FY04, 400 licenses had been purchased by 13 organizations, including nine higher education institutions, three education-related affiliates and one library.

MOREnet's training group has been delivering various technical training topics via Centra as well as providing training to customers on how to use the e-conferencing service effectively. Customers benefit from available topics and training while saving time and travel expenses by learning from their desktops.

Future milestones:

- During summer 2004, information and pricing for non-education-related e-conferencing service customers will be available.
- Perform market study and testing of integration with Blackboard 6, also during summer 2004. The ability to assign and access Centra events within a Blackboard interface is targeted as a future premium service offering.
- The roll-out of Centra Knowledge Center (CKC) for education-related customers is targeted for fall 2004. CKC will provide enhanced content management, personalized blended learning and tracking and reporting capabilities for MOREnet e-Conferencing customers. CKC is included with current 10-pack licensing and pricing.

Remote Vulnerability Assessment

At the beginning of the third quarter of FY04, a new Remote Vulnerability Assessment service became available. Initially requested by the MERC community, this service looks for signs of security vulnerabilities that could pose a risk to the institution's and MOREnet's networks if not addressed.

kinetic

The *kinetic* service provides e-mail accounts, webmail access and Web hosting services for 77 organizations. During FY04 *kinetic* nearly doubled the number of organizations it serves and currently hosts 6,896 accounts.

State Government

MOREnet provides server management, consulting and training services for Missouri state government, including ongoing consulting services for the Missouri Lottery. Similar consulting services for the Department of Higher Education were initiated in FY04. The Missouri Lottery is interested in expanding its relationship with MOREnet to include server maintenance in FY05.

Contracted Services

University of Missouri Health Care

Potential exists for adding 15 clinics from the Missouri Primary Care Association in FY05 under the current telemedicine model. Currently MOREnet supports 23 telemedicine sites.

There is also potential to add 23 sites in FY05 – including 21 sites for the Department of Health and two administrative offices (DHSS and Missouri Hospital Association) – under a more restrictive operating model that includes a homeland defense component, with up to 135-140 total sites over the next three years. Several hospitals that might participate in this project are already telemedicine sites. This service would be provided via a contract with UM Health Care.

MOREnet Affiliates

Affiliate organizations continue to seek lower-cost solutions for limited network services. Some Affiliates have determined that their needs do not require the costs of technical support, training and consulting services provided to MOREnet's customers. Future planning will investigate the possibility and feasibility of unbundling current service packages.

Several community information networks (CINs) are exploring alternate business models to address their current financial constraints. The City of Columbia discontinued customer participation Dec. 31, 2003. Showme.net and Tigernet discontinued participation effective June 30, 2004.

University of Missouri Extension

MOREnet and Extension have been working through an extensive network revision plan during FY04. This plan would put T1s in strategic locations on a regional basis to minimize travel time to high-quality video sites. Broadband is also being emphasized as an intermediate-bandwidth, low-cost alternative where it is available.

The network revision was delayed as a new Extension leadership team works through its priorities. Extension and MOREnet will be working through several alternative broadband solutions in FY05.

MOBIUS

MOREnet continues to provide internal support and financial services for MOBIUS and also began system administration support in the first half of FY04.

Great Plains Network (GPN)

MOREnet assumed full technical operational responsibility for the Great Plains Network (GPN) beginning July 1, 2003, under a full cost-recovery contract. During the first half of the year all necessary background work to move the GPN consortium from the University of Kansas Center for Research (KUCR) to the University of Missouri System was completed.

At the end of June 2004, the new Executive Director of the Great Plains Network, Carol Farnham, met with staff and affirmed the existing Memorandum of Understanding. Over the next few weeks MOREnet and GPN staff will be working together to make decisions about the dynamic technical implementation for Internet1 and Internet2 services to the connected GPN members (Kansas, Missouri and Nebraska) and look at new services for GPN.

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