Implementing Cyberinfrastructure for 21st Century Research
2008-2009 President’s Emerging Leaders Program

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“...it’s not clear who to contact for what.”

“The basic tech person assigned to the department is fine for routine computer and computer related software things, but beyond the basics it’s not clear who to contact for what.” - Faculty Member in the College of Liberal Arts

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“...I have storage requirements on the order of terabytes.” - Faculty Member in the College of Food, Agriculture & Natural Resource Sciences

Develop enterprise-wise integrated cyberinfrastructure to align with national efforts

Accountability at the senior leader level is needed to ensure the University’s competitiveness in the future (i.e., obtain grants, become a top three public research university; recruit, retain research and program). At the same time, the University has the opportunity to leverage existing ‘cottage industries’ and to align internal services.

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“I use a USB drive purchased with personal funds to backup data. Note that this is data about mice and is not related to any personal data that may need to be encrypted. We have an imaging system for viewing gels that is connected to a computer that can only store data on the hard drive and floppy disk. A floppy disk can hold only four images. Other storage or a network connection would be nice.” - Scientist in the Medical School

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Better position services around the end-user

Provide IT contacts with the tools to share/leverage existing resources across University service providers. Researchers do not care who offers the service; they just want the opportunity to take advantage of the offering.

“I find it hard to translate the terms...”

“This instrument seems to have been constructed using the sciences as its template. I find it hard to translate the terms into my research in the Humanities.” - Faculty member in the College of Liberal Arts

Improve and expand the University’s ability to handle data

In order to meet the growing needs of researchers, IT service providers should provide short-term data storage as needed (i.e., a bank model), while external cloud storage for long-term archiving, provide high-speed data connectivity, and automatic back-up, with the appropriate compliance and privacy mechanisms.

“International collaboration will increase...”

“International collaboration will increase. How do we encourage/ensure compliance with security standards from our collaborators?” - Faculty Member in the College of Education and Human Development

Create incentives for virtual collaborative relationships

Give researchers the necessary tools to help develop collaborative relationships and facilitate local and external data sharing, in order to establish the University as a top research institute.

What is Research Cyberinfrastructure?

Research Cyberinfrastructure (CI) is a key ingredient in fostering interdisciplinary research, garnering national funding, and transforming the University of Minnesota into a top three public research university. Increasingly, research technology and emerging global partnerships are generating data that have computational and storage needs that outpace the infrastructure currently available. Our project addressed the growing needs for CI at the University and determined strategic ways to leverage the University’s Research Cyberinfrastructure Alliance (RCA) and other University partners.

Methodology

During March 24th-April 8th, 2009, the PEL project on Research Cyberinfrastructure at the University of Minnesota emailed our online user-needs survey to 8,424 faculty, research staff, and students asking them to report the current state of cyberinfrastructure support at the University as well as to assess their future needs. The survey comprised of 510 questions on the following cyberinfrastructure trends: data storage, data management, and networking infrastructure; collaboration with other researchers, tools and applications; high-performance computing and networking development, as well as trends outside of these areas.

After two weeks, our survey generated 780 successful responses (a 9.2% response rate) from a broad cross-section of affiliates representing all research disciplines, environments, and campuses.

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