

INFORMATION TECHNOLOGIES COMMITTEE
MINUTES OF MEETING
MARCH 5, 2002

[In these minutes:

Welcome, Approval of February 5, 2002 Minutes, Internet2, Access to Information Technology Policy, Modulating the Flow of Information/Bandwidth Testing, Future Meeting Topic - Libraries]

[These minutes reflect discussion and debate at a meeting of a committee of the University of Minnesota Senate or Twin Cities Assembly; none of the comments, conclusions or actions reported in these minutes represent the views of, nor are they binding on, the Senate or Assembly, the Administration or the Board of Regents.]

PRESENT:

Phil Goodrich, Chair, Jeff Johnson, Mark Bellcourt, Josephine Crawford, William Peterson, Jacob Elo, April Schwartz, Ashutosh Jaiswal, Ryan Osero

REGRETS:

Stephen Crawley, Eric Celeste, Linda Jorn, Nancy Herther, Robert McMaster, Thomas McRoberts,

ABSENT: Yosef Cohen, Stephen Downing, Haesun Park

GUEST(S): Myron Lowe, Office of Information Technology Departmental Director

OTHER(S): Tim Fitzpatrick, John Fuller, Bernard Gulachek, Nancy McGlynn, John Miller, Shih-Pau Yen

I). Professor Goodrich called the meeting to order and welcomed all those present.

II). Committee members unanimously approved the February 5, 2002 minutes.

III).

Professor Goodrich introduced Myron Lowe, Office of Information Technology Departmental Director, who presented an overview of Internet2 to Committee members. The University of Minnesota has been involved with Internet2 since 1996.

In the last few years the University has broadened its focus related to Internet2 from just research use to making Internet2 a resource for the state/region.

The University has established the infrastructure for a regional access hub called Northern Lights.

Internet2 is:

- A consortium of over 180 universities developing and deploying advanced network applications for research and education.
- Members are connected by a private high speed, high quality network called Abilene.
- Network technology and applications together enabling leading edge research and education resources.

Internet2 leadership is managed byUCAID (University Corporation for Advanced Internet Development).UCAID is a 501C3 non-profit organization whose board includes member university presidents. In addition,UCAID has several advisory councils staffed by member universities, corporations and research labs. The advisory council advises in the areas of application strategies, network planning, and network liaisons.

Internet2, also known as the Abilene Network, has a high speed of 2.4 gigabits per second. The Abilene

Network is connected to other networks i.e. the government network called NGI (Next Generation Internet) and international networks.

To date, there are approximately 30 international partner networks that Internet2 interfaces with.

Internet2/Abilene Network continues to increase its membership as well as its speed. Abilene is scheduled to receive an upgrade to increase its speed and capacity.

The most common ways that Internet2 is used include:

- Send and receive large volumes of data.
- Access remote participants so resources and information can be shared.
- Enable discovery and innovation through interactive collaboration in ways not possible using the common Internet.

Application attributes almost always include interactive collaboration as well as real-time access to remote resources.

Internet2 application features:

- Tele-Immersion – Enables users at geographically distributed sites to collaborate in real time in a shared, simulated, hybrid environment as if they were in the same physical room.
- Virtual Reality
- Visualization
- Interactive
- Multi-Dimensional

Internet2 applications span science, engineering as well as cultural heritage, media communications, art and architecture, and distance education.

Internet2 uses technical innovations that help the user to make use of large data sets i.e. distributed computing and remote access to instrumentation. In addition, Internet2 includes emerging technologies such as high definition television and streaming media.

One of the most advanced application categories within Internet2 is called Virtual Laboratories. A Virtual Laboratory is “a heterogeneous distributed problem solving environment that enables a group of researchers located around the world to work together on a common set of projects”. An example of a Virtual Laboratory is ‘brain mapping’ whereby a MRI unit is housed in one location, a super computer in another location and a group of researchers in yet another location and in real time they watched the brain activity of a person watching a pattern change within the MRI unit.

Another application is called the Visible Human Project. The Visible Human Project is a digitized version of an entire human body.

An advanced application using the Visible Human Project would be a situation in which cameras are installed above an operating table and within the area of the body undergoing surgery allowing students hundreds of miles away to watch the operation in real-time from “inside” the body. Other medical examples include: Virtual Pelvic Floor, Tele-Mammography Project, Virtual Aneurysm, Web-based Segmentation of 3-D Radiological Data etc.

Another application for Internet2 is called the Grid. The Grid allows global resources be available to communities of researchers and its protocols, services and applications enable new forms of collaboration. Two main uses of the Grid are:

- A Computational Grid that is networked computers that are operating on a specific problem or problems.
- Access Grid – networked sites with video coverage.

Another feature of Internet2 is Digital Video. Digital Video is not restricted to a dedicated network. Internet2 is used to transfer stored video data as well as streaming. Digital Video is so good that the University of Oklahoma and others are conducting music instruction over the internet. An example of a future Internet2 application includes Virtual Rooms Videoconferencing (<http://www.vrvs.org/>).

Examples of other Internet2 initiatives include:

- Internet2 Commons - an effort to encourage and support large-scale distributed collaboration for the research and education community
- “End to End Performance”
- Internet2 K20 Initiative
- Digital Libraries

Some initiatives the University of Minnesota will be participating in include:

- NEESgrid the network for advanced earthquake studies
- Internet2 K20 Initiative

To conclude, Internet2 provides a variety of resources ranging from very advanced and experimental technology and at the other end of the spectrum it is a vast resource that is expanding and enriching education and research.

The next step for the University of Minnesota is to define what projects could best use Internet2 in order to gain the best value and benefit.

Another consideration is in some fields grantors are requiring Internet2 access. These grantors realize that an institution with Internet2 access enables them to get a better return on their funding dollars. Mr. Lowe encouraged members to visit the Internet2 website at www.internet2.edu

A brief question and answer exchange followed Mr. Lowe’s presentation. Highlights included:

- Because the University of Minnesota is a member of Internet2 technically there would be no charge to departments to use the service.
However, depending on which applications a department plans to use it may have to purchase equipment in order to run these applications.
- MnSCU has not applied to be a member of Internet2 but rather a participant through Internet2’s K20 initiative.
- OIT is seeking ways to demonstrate Internet2 applications for those interested. Mr. Lowe solicited ideas and input from members.
- Internet2 is very different and separate from the commodity internet although they share the same infrastructure.

IV).

Professor Goodrich commented that the Access to Information Technology Policy will be coming before the Senate soon.

He recommended that members review the policy so that if they have comments or concerns regarding the policy their input be can still be heard.

V).

Modulating the Flow of Information – John Miller of OIT updated members on a recent bandwidth demo that went awry.

During the week of February 18-22 the Office of Information Technology tested a new bandwidth-shaping tool.

The device being tested monitors, shapes and, if needed, allocates bandwidth for address ranges or applications. While testing this device several system bugs were detected. The testing affected not only students but all U of M traffic as the box ran into a software problem that ‘mangled’ some packets traveling through it. The overall result was poor speeds out to Internet1. OIT’s intent was not to make users suffer but rather to shape traffic in a way that makes the network better for all. It was decided that with any future testing better communication to faculty, students and staff will be disseminated so that if problems arise users will know what is happening.

VI). Other Business: Professor Goodrich indicated that the next meeting on April 2nd will be devoted to what the Libraries are doing and challenges currently facing the Libraries.

VII). With no further business, Professor Goodrich adjourned the meeting.

Renee Dempsey
University Senate