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Vol. 2 No. 5

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**UM Bookstore**  
• 612/625-6564  
• [www.bookstore.umn.edu](http://www.bookstore.umn.edu)

**The Computer Store is host-  
ing the Computer Fest: Sept  
30–Oct 1, 9–4:30, outdoors  
on Williamson Hall Plaza.  
Computer Fest highlights the  
latest hardware, software  
and peripheral technology for  
back-to-school. Manufactur-  
ers like Apple, Dell, Micron,  
Microsoft, Adobe and others  
will be available to demon-  
strate their products and an-  
swer questions. The event is  
a good time to evaluate the  
products available at educa-  
tional savings through the  
Computer Discount Program.**

**Academic and Distributed  
Computing Services and En-  
gineering Services staff will  
be available to answer sup-  
port, networking, and war-  
ranty service questions.**

# Information Technology

## Newsletter

### Testing and Redesigning for Usability

#### The New Digital Media Center Website

Recently I had a kind of virtual nightmare, the kind that must plague Uni-  
versity web developers the world over: Professor X wants to create her  
first course website and include on it video clips of experiments. She  
wants to know what kind of equipment and skills she needs, and  
has heard that the campus office where I work, the Digital  
Media Center (DMC), helps faculty create multimedia. She  
decides to visit our site to find out if we can help her.

She selects the first icon on our home page, “Multimedia  
Repository,” and looks for instructions on how to make a  
website.

She finds nothing on this page, so she goes back and  
selects another icon labeled “Development Suite” and  
learns that the DMC has a development facility that contains  
“state-of-the-art hardware and software” faculty can use to  
create multimedia. She knows that hardware and multimedia  
are computer terms, but she is not sure exactly what they mean,  
so she selects one of the first links on this page, Workstations. She  
learns that the DMC’s development facility has several “multimedia  
workstations” that are equipped with “peripherals” and a “selection of  
Internet, World-Wide Web and utility software.” Two are video stations with  
“powerful digitizer/frame grabber packages” that allow users to “capture and

*We’ve redesigned  
the site to help  
inexperienced  
and experienced  
computer users find  
the information  
they need.*

digitize video images from a VCR” and “edit these files and distribute them to multiple storage devices.”

It seems the Digital Media Center has the right equipment (for, of course, she knows what a VCR is) and software for creating World-Wide Web materials. But what kind of hardware are they talking about? What does it mean to capture and digitize video images? And what the heck is a peripheral or utility software?

She must not have sufficient computer skills to create a website, she concludes, and certainly not enough time to learn them right now. Professor X decides she won't make a website for her course this year after all.

If you visited our website before May 1997, my nightmare could have been your reality. The site was well received when it was created in August 1995, and it contained a lot of useful information. However, by a year later, the site was beginning to look outdated. Some of the information was hard to find and sometimes too technical for beginning campus multimedia developers. As one faculty member explained during a usability test of a new prototype: “Hardware is something you get at a hardware store, like a hammer.” So we began to redesign the site to help both inexperienced and experienced computer users find the information they need.

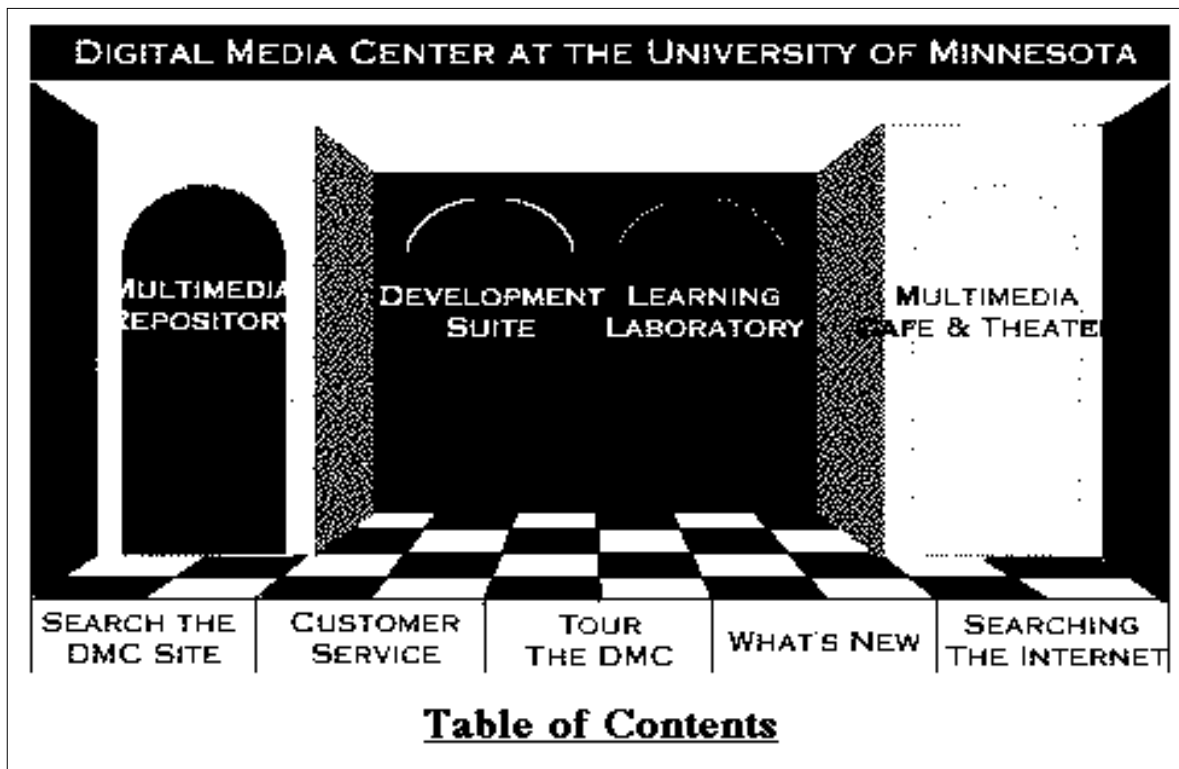
## The First DMC Site

The Digital Media Center, a partner in the New Media Center program that promotes the use of new media technologies at universities around the world, is a unit of the Office of Information Technology. The DMC opened in July 1995 and is staffed and supported by the University Libraries and Academic and Distributed Computing Services. On the home page of our first website, DMC staff used the latest techniques to create an image map of four colored doors with the labels shown in Figure 1: Multimedia Repository, Development Suite, Learning Laboratory, and Multimedia Cafe & Theater.


The doors linked to pages containing information about multimedia library materials and copyright information; information about our multimedia development facilities; information about our classroom facilities, short course offerings, and online multimedia tutorials; and information about multimedia mailing lists, other campus resources, funding opportunities, courseware projects, and information for student multimedia developers.

The site was well-received. In March 1996, the site was included on the *St. Paul Pioneer Press's* “hot list” of

Figure 1:  
Old DMC  
Home Page



# Other Usability Testing Techniques



## Create Multimedia

Plan  
Analyze  
Design  
Produce  
Implement  
Evaluate ◀

## Evaluate

Revised Thursday, 19-Jun-97 16:11:24.

### Summary

Campus instructors can learn how to evaluate a multimedia courseware project by taking advantage of the Digital Media Center's services and by viewing the information outlined below.

Please note: we will be revising and expanding this section during the summer of 1997. Please check back frequently to see our progress, then view the complete section by September 15, 1997.

[DMC Website Usability Tests](#)

Other campus departments that maintain a large website may wish to conduct similar usability tests of their own sites.

Faculty course website developers may also find some of the techniques we used helpful; but if they do not have the time or resources to conduct group tests, they may wish to conduct a simpler and less costly heuristic evaluation of the type developed by M. Levi and F. Conrad to evaluate the Bureau of Labor Statistics website.

The instructor or his or her colleagues or students can evaluate the site based on how well it fulfills these principles:

- Speak the user's language.
- Be consistent.
- Minimize the user's memory load.
- Build flexible and efficient systems.
- Design aesthetic and minimalist systems.
- Use chunking.
- Provide progressive levels of detail.
- Give navigational feedback.
- Don't lie to the user.

These principles are explained in greater detail on the DMC's new website at <http://www.umn.edu/dmc/create/cws/cwseval.shtml>.

We will also discuss other techniques in our new *Create Multimedia: Evaluate* section <http://www.umn.edu/dmc/create/evaluate.shtml>. This section is scheduled to be completed this summer. Be sure to visit and send us your own evaluations of our site. ■

Welcome  
short mission statement: Helping faculty enhance instruction using multimedia

**Figure 2:  
Prototype 1**

Search this Site

What's New at the Digital Media Center?

New Events, Projects, and Products; Digital Spotlight: the Digital Media Center's Mailing List Newsletter; FAQs: Frequently Asked Multimedia Questions

Learn About Multimedia

An introduction; the creation process; legal issues; examples in teaching; classes and online tutorials

Other Campus Resources

Other Facilities and Services; Students As Resources; Student Access Computing Facilities with Multimedia Hardware and Software; Campus Multimedia Job Postings; Post Your Resume; Other Resources for Students

About the Digital Media Center

Faculty Intake Form; Digital Media Center Listserv; Development Suite; Eddy Hall Annex; Tours; Staff

Development Software and Hardware

Resources at the Digital Media Center; Software Resources; Hardware Resources

Multimedia Library

Journals and Books; CD-ROMs; Borrowing Policies; Find Other Multimedia Resources at University Libraries (via LUMINA); Public Domain Resources; Style Guides for Citing Electronic Resources ;Suggestions for Library Purchases

area websites. In June 1997 it was featured on MN Online's "Learning: Technology in Education" hot list.

Clients complimented the site. One e-mailed that it was "first rate." Another client found our multimedia development process section <<http://www-dmc.tc.umn.edu/lab/mmdev.html>> "the most thorough, well-written document on the subject I have seen" and our Building Virtual Learning Communities: Course Web Sites section <<http://www-dmc.tc.umn.edu/lab/cwsintro.html>> "the most comprehensive, detailed site for faculty web page training I have EVER seen."

However, as the DMC expanded its facilities, services, and website, staff members found it difficult to fit new information into the four-door structure and suspected that the site was what web designer David Seigel termed a "second-generation site"—harder to read and navigate because it used image maps and long pages of links and text with horizontal lines separating sections.

## Redesign Process

The DMC's Web Team decided to redesign the website to take advantage of new web page layout techniques and multimedia capabilities and to provide better access to its information. The team created a design document describing the site's purpose and our target audience and their needs, objectives, and the environment where they would use the site.

Team members together brainstormed content, wrote ideas on index cards, and as a group sorted them into similar categories. Some team members wanted to present seven categories on the home page; others wanted to present only four. We decided to ask members of our primary audience—campus faculty—which they preferred.

## Content Organization Tested

In April and May 1996, our staff asked 17 faculty members to find specific information, such as how to digitize video, on two prototype websites (Figures 2 and 3) that contained text-only links to main categories of information while observers recorded the links selected and the faculty members' comments.



Welcome  
short mission statement: Helping faculty enhance instruction using multimedia

[Search this Site](#)

[Digital Media Center Facilities and Services](#)

[Other University of Minnesota Multimedia Facilities and Services](#)

[Multimedia Reference](#)

[University of Minnesota](#) | [Academic and Distributed Computing Services](#) | [University Libraries](#) | [New Media Centers](#) | [Learn Online](#) |

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Author: XXXX

Send comments to the Digital Media Center at [dmc@boombox.micro.wmn.edu](mailto:dmc@boombox.micro.wmn.edu)

**Figure 3:  
Prototype 2**

***We found that the two prototypes were equally ineffective and actually not significantly different.***

We found that the two prototypes were equally ineffective and actually not significantly different:

- testers either used too many clicks to get to the information or did not find the information
- more users eventually found the information using Prototype Two, the one that presented fewer choices on the home page
- faculty needed extensive cross-links throughout the site to find the information
- faculty did not want to have to follow more than five links to find specific information
- faculty did not understand several of the category titles we used such as “Multimedia Reference” and could not find many of the mid-level documents such as those describing our development facilities
- experienced users of our site needed quick reference guides up front and immediate access to our online forms

**Content Reorganized**

Based on the test results, our team members then reorganized the content to include

- content organized by task rather than physical location or type of information

- more basic, introductory material (at a minimum a glossary with pictures explaining such terms as “platform” and “hardware”)
- a means to attract more clients

**Interface Developed**

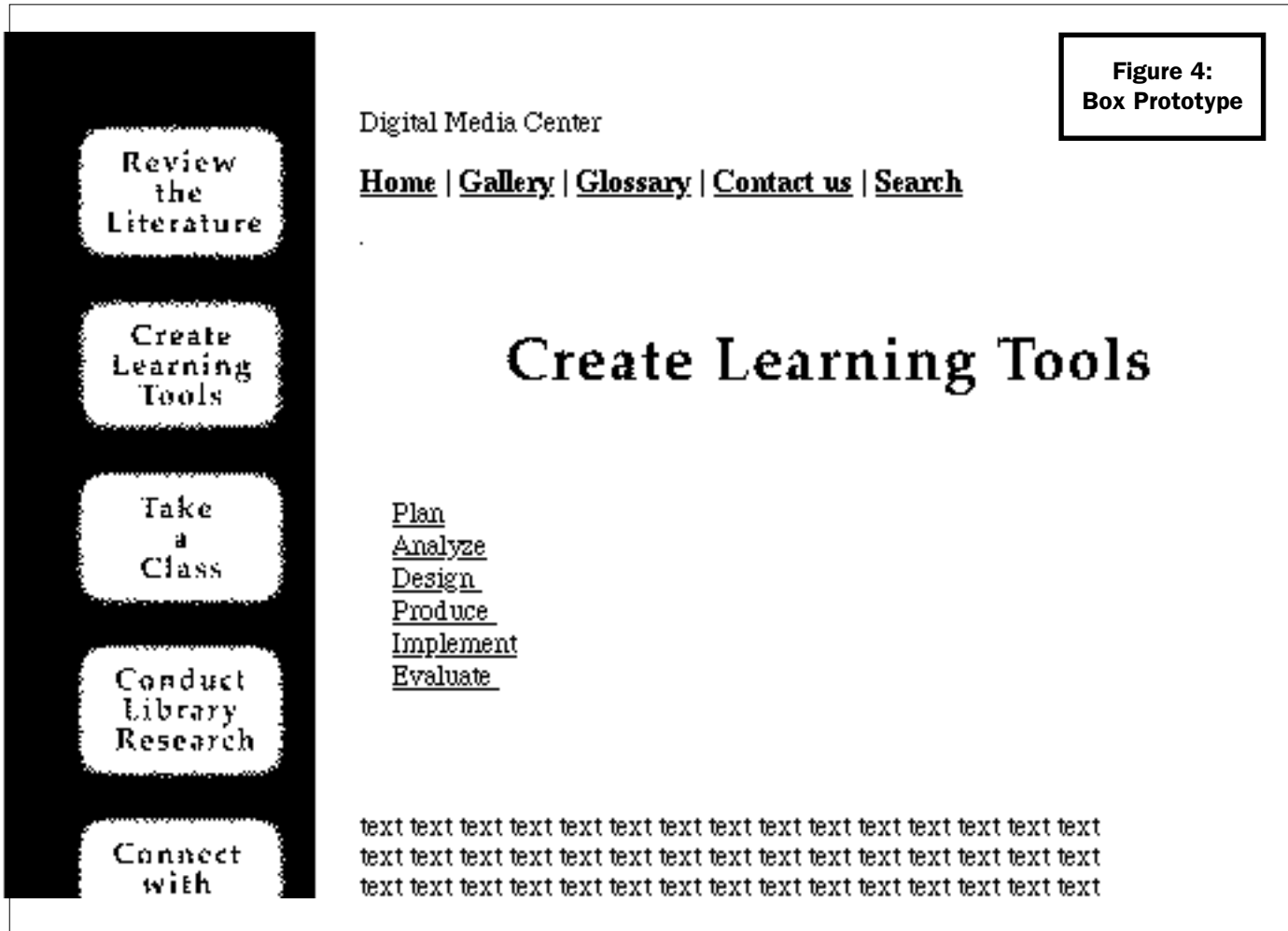
At the same time, staff members created two prototype interfaces of the home and second-level pages. One interface used a simple magazine-style layout (Figure 4) and the other a tree graphic (Figure 5) with branches pointing to subpages that would change seasonally.

**Interface Tested**

In November 1996, Digital Media Center staff asked 12 faculty members to evaluate the appearance and navigability of the two prototype websites. Faculty were asked to match section titles such as “Connect with Colleagues” with the types of information they would expect to find in that section, such as how to find an electronic mailing list used by educational multimedia developers.

Faculty were then asked to circle places on printouts of each prototype that should be clickable, tell us if the text was readable, describe the types of information

**Figure 4:  
Box Prototype**



they would expect to find on different parts of the screens, choose from a list of phrases such as “professional,” “intimidating,” and “cutting edge” those that described the DMC and its staff based on each prototype, and finally tell us which prototype they preferred.

## Test Results

We found that the majority of the faculty tested

- preferred the boxes prototype
- were more interested in the content of the website than the interface, and that either interface appeared to lead you to the content
- thought the boxes prototype was more intuitive and the linear format more understandable
- thought that some of the creative elements expressed in the “Tree” website should be applied to the boxes prototype to express the creativity of the DMC staff

- thought the site was well organized and that the basic framework was in place
- suggested a few changes in the category names, such as — “Connect With Other Educational Developers” rather than “Connect With Colleagues” — “Contact the DMC” rather than “Contact Us” and — “DMC Portfolio” rather than “Gallery”

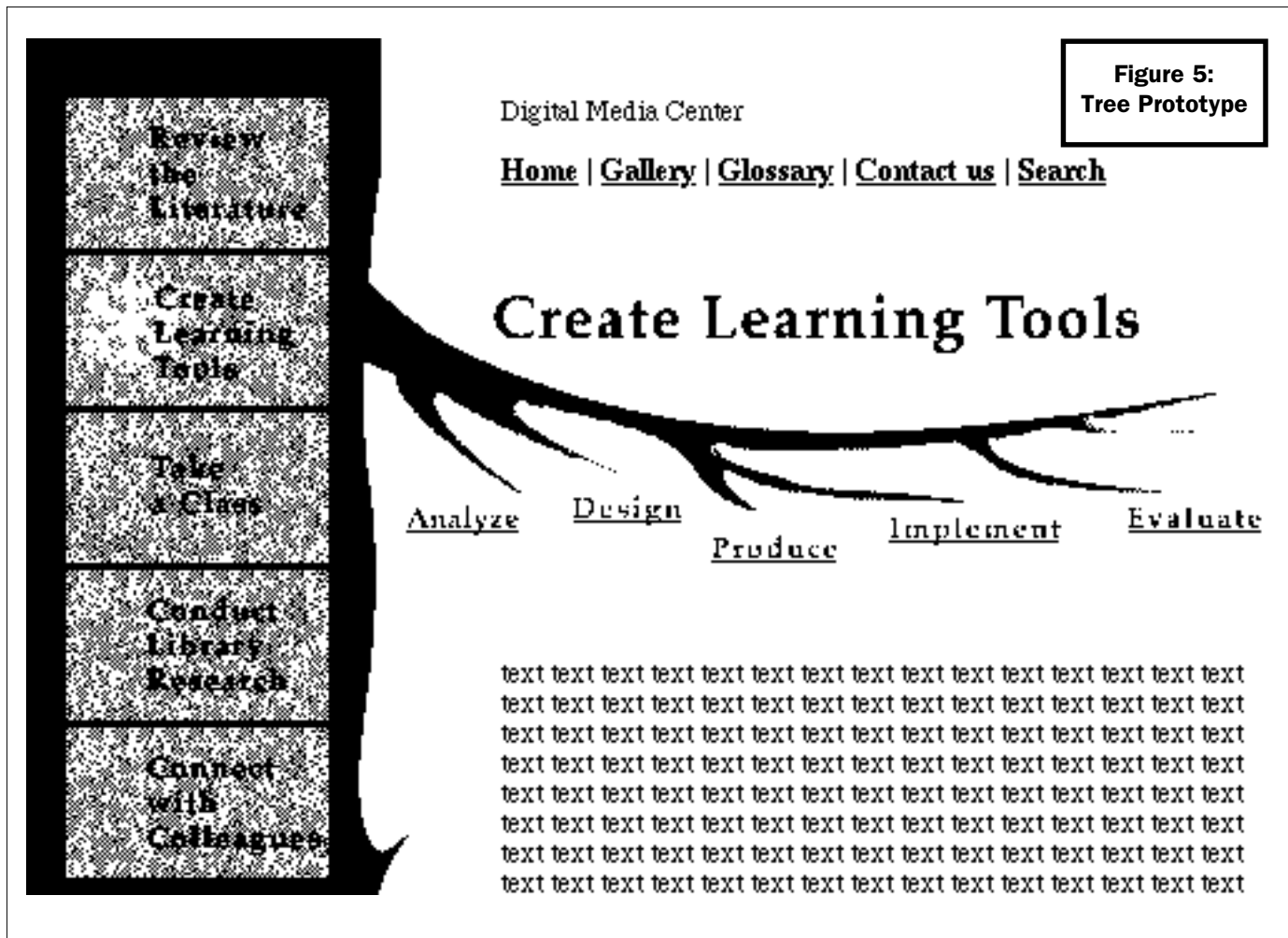
## Interface Redesigned

As a result of this second test, the DMC Web Team changed some of the category names and colors, altered the menu structure of the second-level pages in the boxes prototype, and created a template for our new site.

We also surveyed over a dozen web and print style guides to create an extensive style guide of our own where we summarized controversial recommendations and explained our choices <<http://www.umn.edu/dmc/styleguide/styleguide.shtml>>.



**Figure 5:  
Tree Prototype**



**Content Developed**

Once we had defined the style and organization of our new site, DMC staff members reformatted the information on our old site to fit our new design and released the site to the public in June at a new URL: <<http://www.umn.edu/dmc/>>.

This summer we are adding a significant amount of new content:

- summaries of multimedia pedagogical and development literature in a new “Review the Literature” section
- examples of tools and techniques faculty and our staff have used to develop and create instructional multimedia applications in a “Create Multimedia” section


- forms that allow our clients to submit multimedia announcements and requests and other features that will allow them to interact with us, the information on the site, and other users

We will also add frequent updates about new multimedia courseware tools, theories, techniques, and faculty projects. Please visit our new home page often to find out what’s new and send us comments; you’ll find us at <<http://www.umn.edu/dmc/home.shtml>>. We will use your feedback to continually reshape the site to better meet our clients’ needs.

■ Christina L. Goodland, Digital Media Center

<<http://www.umn.edu/dmc/home.shtml>>

# OIT's Strategic Initiatives, an Update

 Our May 1997 newsletter highlighted the Office of Information Technology's strategic initiatives – the new direction and goals we're developing to meet the University's needs in a time of rapid technological change. In June, the University's budget allocation process concluded, providing us with information about funds that will be available to help us achieve those initiatives.

## 1. Upgrade the Network Infrastructure

a.) OIT will receive \$4.1 million in non-recurring funds for the modem pool and University network upgrades – routers, ATM switching, fiber plant.

## 2. Modern Learning Environments

a.) Through internal re-allocations, the Digital Media Center (DMC) will continue to collaborate, partner and support collegiate and departmental Academic Programmatic and Distance Learning Initiatives.

b.) DMC and Academic and Distributed Computing Services (ADCS) will partner with collegiate units to train and support Web Teaching Assistants.

## 3. Administrative Process Redesign

a.) Providing application and technical support, OIT will continue to partner with the University Enterprise Systems Projects, colleges, departments, and central units. Ten million dollars has been approved over the next six months for this initiative which includes Student, Human Resources, Financial and Grants Management systems.

b.) Partnering with colleges, departments, and central units OIT will develop and implement Public Key Infrastructure (PKI). Traditional security practices and mechanisms have not evolved to meet security issues

created by modern, open, distributed computing environments. PKI is the preferred solution to the University's information security needs; it is aligned with technology trends, will provide for current security needs, and provides the flexibility and scalability to adapt to future needs <<http://www.umn.edu/oit/arch/sec-strat/essrprt.htm>>.

## 4. External Partnerships

a.) The Governor's Virtual University initiatives are partnerships with the state of Minnesota, Minnesota State Colleges and Universities (MnSCU), and the Minnesota Career Education Planning Service (MnCEPS) of which the University, via OIT, is a participating member. The University has been allocated \$1M for the biennium in non-recurring funds for these initiatives.

“MnCEPS will be an Internet-based system of linked home pages that will provide students, job-seekers, education planners and others with up-to-date and user-friendly career and education planning information. Education, training, workforce preparation and career development data currently maintained by a wide range of state agencies and post-secondary institutions will be accessible through a single entry point, available to any Minnesotans with access to the Internet.” <<http://www.ot.state.mn.us/itbudget/itbudg.html>>.

b) Partnering with the State of Minnesota, OIT has received \$1.5M non-recurring, matching funds for the next biennium for vBNS (very high speed backbone networking service) and Internet 2 (next generation Internet). This funding is through HES/METC (Higher Education Systems/Metropolitan Education Technology). ■ Jodie Berg-Combs, OIT Planning, Architecture, and Communications

### OIT and NTS help ABC and get award

Press Release: U telecommunications experts are helping the Associated Block Clubs (ABC) of the Twin Cities run a community watch network on the Internet. Last year, ABC set up a web site and started distributing donated computers to block club leaders in neighborhoods such as Phillips in Minneapolis so each could access the site. "This is a good way for them to share information and network


with other nearby block club leaders," says Paris Getty, ABC founder and co-director. "People talk to each other, so they're not isolated. No crack dealer is going to be able to move into a neighborhood where they're talking." ABC had trouble getting some of the equipment working; that's where the U came in. Don Riley, the U's chief information officer, authorized techies from his staff to help get the computers up and running.

Now the U runs ABC's modem pool, and soon—thanks to a partnership with Sun Microsystems—will run a state-of-the-art SPARCstation as ABC's Web server. All seven metro-area counties are on line on the ABC site, <http://www.blockclubs.org>. For their help, Riley, the Office of Information Technology, and Networking and Telecommunications Services will receive Citizens' Choice Awards for public service.





# Planning Lifecycle for OIT

 OIT's planning lifecycle is a three-step process for change that includes strategic planning, performance measurement, and operational planning. Working with colleges, departments, and central units strategic planning points out our path for the future. Performance measurements check our progress, and operational plans set our pace. OIT repeats this cycle annually, incorporating the needs of the University community. We develop new products and services to replace old ones, continuously improving existing processes to be better, faster, and cheaper.

The Planning Lifecycle diagram identifies the three primary components of the planning process.

## Strategic Planning

Strategic planning involves assessing OIT's mission in response to changing needs and expectations, and redirecting our resources in order to meet collegiate and departmental needs. The new directions are determined by:

- Assessing external opportunities and threats and internal strengths and weaknesses
- Realigning the OIT mission to better serve University-wide strategic directions, goals and measures and
- Partnering with colleges and departments to develop complementary roles and responsibilities

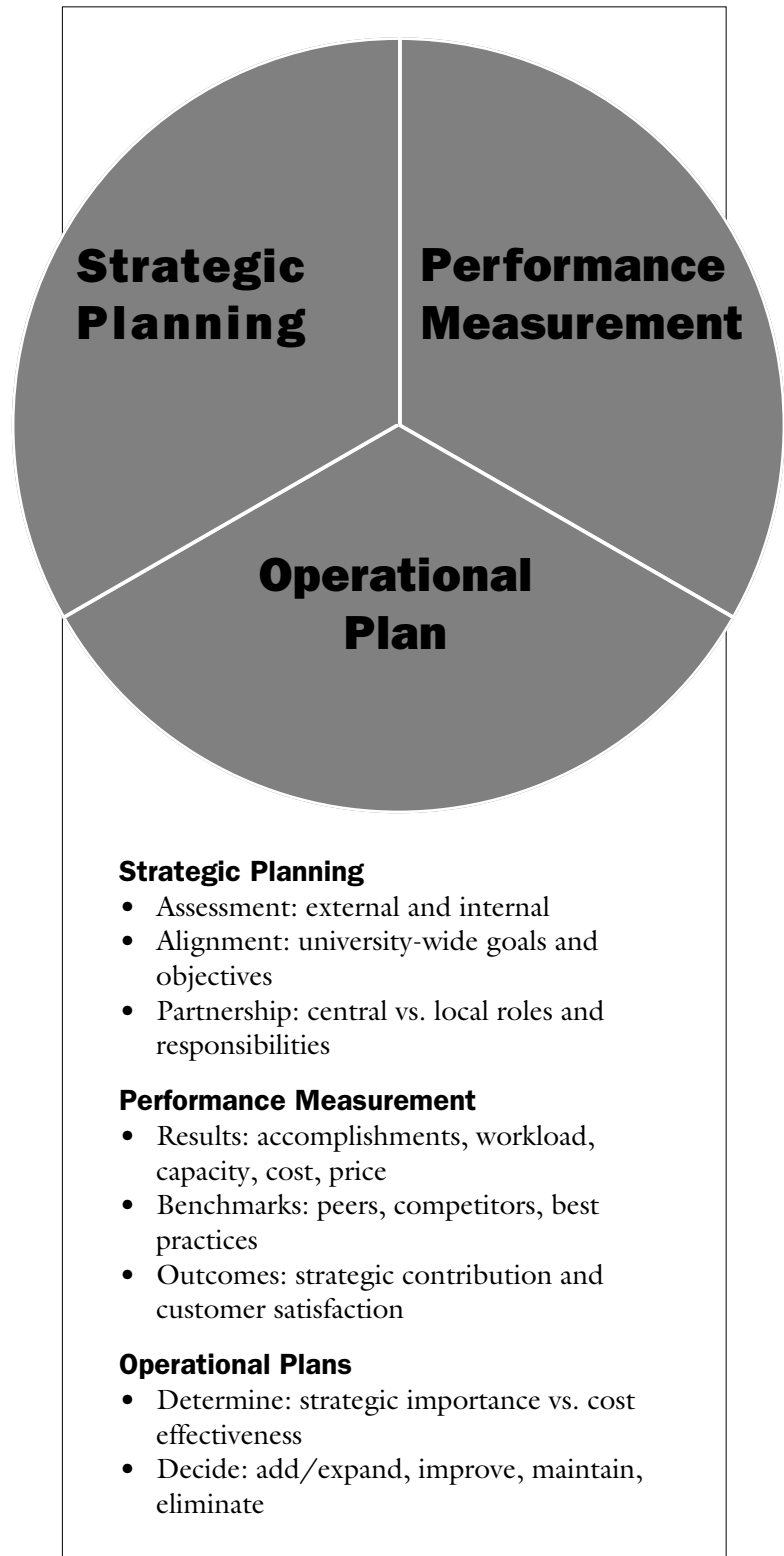
In charting our course for the future, we review the University's goals and objectives, along with the needs of students, faculty and staff. We also analyze industry trends, emerging markets and enabling technologies in order to determine the most appropriate ways of meeting University goals and needs. Once new concepts are researched, developed, and tested, we can offer them to the University community as new products and services—moving from theory into practice.

## Performance Measurement

The Performance Measurement component involves regularly evaluating our performance in relation to quantitative indicators and qualitative expectations, summarizing the results in an annual report which includes:

- a. Our accomplishments compared to our plans
- b. The growth in our workload and capacity

## Planning Lifecycle



### Strategic Importance

		Strategic Importance	
		Low	High
Cost Effectiveness	High	Maintain	Add and Expand
	Low	Eliminate	Improve

### Strategic Importance

Given the critically important role of information technology in attaining the University's goals, it's essential to be flexible, adaptable, and creative in our technological investments. Should we be growing a particular service or "business" or have it go out of business? The answers will be based on supply and demand, capability and capacity, performance and price, mission critical ("must have")

- c. Comparative costs and competitive prices
- d. Best practice benchmarks and peer comparisons
- e. Customer feedback and satisfaction surveys and
- f. Our contributions to strategic directions and critical measures

As an evaluation of current practices, the annual report asks and answers questions such as:

- Did we do what we said we were going to do?
- Did we do it better this year than last year?
- Was it worth the effort?
- Is it still important?
- Can anyone else do it better or cheaper?

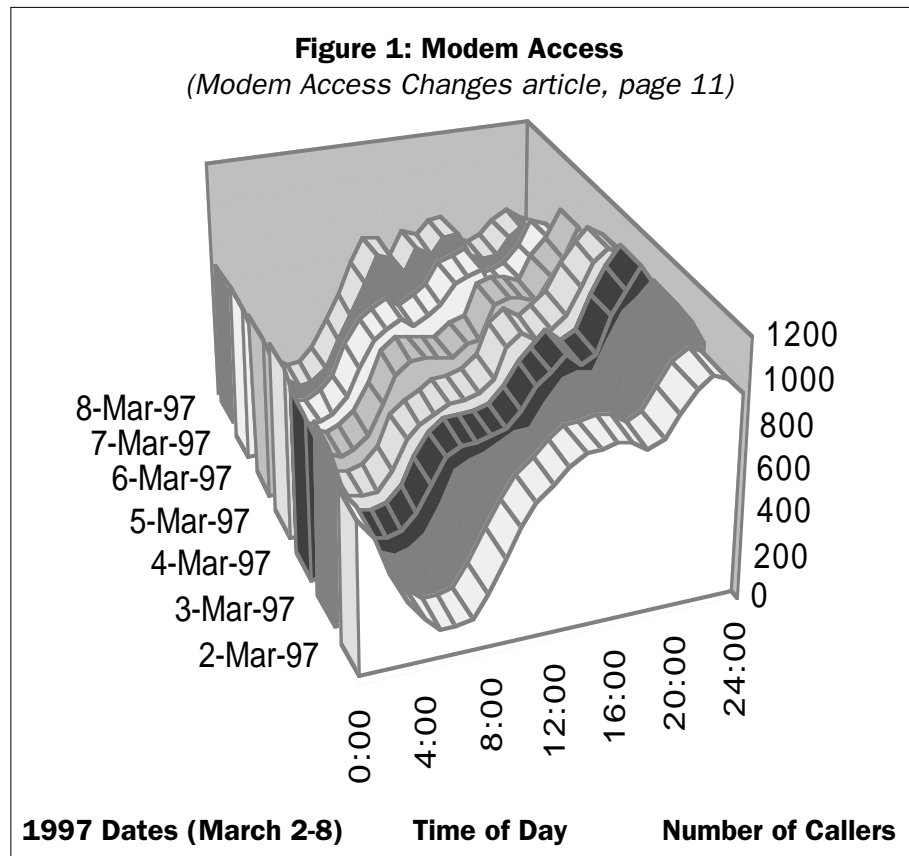
The answers to these questions help determine the areas in which we should focus our efforts.

### Operational Plans

Our operational plans evolve from revisiting University goals in relation to our performance of current practices. By comparing the strategic importance of our traditional products and services with the cost-effectiveness of providing the service, we can determine which specific OIT services and support to add, expand, improve, maintain, or eliminate.

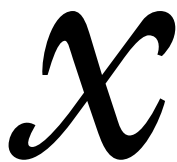
services versus less strategic/non cost effective (eliminate or outsource) services. Periodically evaluating our current operations provides us with valuable information in making reallocation decisions during times of retrenchment; shifting scarce resources to find cost effective solutions for faculty and departments.

■ Jodie Berg-Combs, OIT Planning, Architecture, and Communications — Look for a discussion of OIT Operational Plans in an upcoming issue.



# Modem Access Changes

## Dial-In Modem Access to University Only via X.500 and 627-4250



Since July 15 dial-in modem access is only allowed via requests that are authenticated by the University's X.500 database. Since most staff and students already use their X.500 usernames and passwords to gain access to the internet when they dial into the University, most people will not notice the change.

### Why Enforce X.500 Authentication?

There are four principle reasons for enforcement of X.500 authentication.

First: the University Audit department requires that responsibility for use of University resources be tied to individuals and to University departments.

Second: since the University has many departments and business sections, there must be a controlled, central repository of the names and authentications for faculty, students, staff and other persons associated with the University. The University's X.500 database was selected as that repository for names and authentication information in electronic form. (For more information about the X.500 database visit this internet site <<http://www.nts.umn.edu/services/modembilling.html#x500>>.)

Third: the University 'Year 2000' plans expect the University network to become the main enterprise conduit for its business, academic and human resources activities. Many of those activities will be restricted to proven, specific members of the University.

Finally: every internet account at the University was to be given up to 30 hours per month of no-charge modem access. It would not be fair to all users if a few people could exploit being on X.500 as well as departmental fanout systems to get additional free hours. (Although an additional 30 hours per month is only \$4 per user, that number multiplied by the thousands of people at the University becomes real money.)

For answers to frequently asked questions about fanouts, turn your web browser to <<http://www.nts.umn.edu/services/fanout.html>>.

### The Past

Previously, access to the University's modem pools could be obtained in three ways:

1. Dial into the separate V.34 (28.8K) and V.32.bis (14.4K) modem pools using an X.500 login name and authentication (password).
2. Dial into the separate V.34 (28.8K) and V.32.bis (14.4K) modem pools via a valid departmental system (fanout) that contained departmental login names and authentications (passwords).
3. Dial into older 300, 1200, 2400 and V.32 (9600) baud modem pools that did not require using a known central or departmental authentication list.

### Change: No Unauthenticated Access

The older unauthenticated modem pools (phone numbers 626-9600, -2400, -1200, and -0300) were shut down on July 14th.

### Change: One Phone Number

Now by dialing 627-4250 you gain access to both SLIP/PPP modem pools. This happened when the V.34 (28.8K) and V.32.bis (14.4K) modem pools were combined. Under this arrangement the 1,200 faster V.34 modems are used first; and if more than 1,200 simultaneous users need access, incoming calls are rolled over into the 400 V.32.bis modem pool. Through July there have not been more than 1,200 users simultaneously.

### Change: Departmental Fanouts

For several months before July 14, 1997, Networking and Telecommunications Services (NTS) worked with Private LAN Administrators (PLAs) and departments who operated fanout authentication servers to bring their users into X.500 to form a single University electronic authentication database. (In doing so, access issues were resolved about visiting professors and departments needing accounts for high school or casual users by allowing departments to sponsor these special accounts for an annual fee.)

## Conclusion

To restate the reasons for these changes, we cite from a draft policy on “Authentication on Dial-up Access to the University Internet” by Susan Walz, NTS.

- Safeguard the integrity of networks and data at the University.
- Ensure identification of users of University resources.
- Conserve and protect University resources.
- Allow only authorized persons access to the University network.
- Ensure consistent authentication for University network access.
- Require that departments be responsible for non-University individuals to whom they give access.

For comments or questions about modems, drop a line to [modem@nts.umn.edu](mailto:modem@nts.umn.edu).

## Modem Access Usage

Figure 1 (page 10) shows a typical week of modem pool access. During that week 48,822 users logged in on Wednesday, 5 March 97 and only 38,944 on Saturday, 8 March 97. In a typical month 29,000 different users (7,500 faculty and staff, 16,500 students and 5,000 other [alumni, etc.]) use the modem pool.

■ Lawrence A Liddiard, Networking and Telecommunications Services [liddiard@nts.umn.edu](mailto:liddiard@nts.umn.edu)

### Figures for Eureka Article, page 13

Figure 5: Sample ESTC Record

Figure 6: Sample HAPI Record

AUTHOR: J. P.  
TITLE: The fruitful wonder: or, A strange relation from Kingston upon Thames. Of a woman, who on Thursday and Friday, being the 5th. and 6th. days of this instant March, 1673/4. VWas delivered of four children at one birth, viz. three sons and one daughter, all born alive, lusty children, and perfect in every part; which lived 24 hours, and then dyed all much about the same time. VWith several other examples of numerous births from credible historians. VWith the physical and astrological reasons for the same. Published by J. P. student in physick.

PUBLISHED: [London]: Printed for Rich. Rosse, 1674.  
PHYSICAL DETAILS: 8 p. ; 40.  
RECORD ID: ESTCR220453  
LOCATION: British Library  
SHELFMARK: 1168.d.13

NOTES: Place of publication from Wing.  
Dummy reproduction of the original in the British Library.

REFERENCES: Wing (2nd ed.), P52A.  
NOTES: Microfilm. Ann Arbor, Mich.: University Microfilms International, 1992. 1 microfilm reel 35 mm. (Early English books, 1641-1700; 2129:5).

AUTHOR: Lindholm, Kathryn J.  
TITLE: Theoretical Assumptions and Empirical Evidence for Academic Achievement in Two Languages.  
PHYSICAL DETAILS: pp. 3-17: tables.  
IN: Hispanic Journal of Behavioral Sciences v.13, no.1, Feb 91.  
SYSTEM CONTROL NO.: (CLU-HAPI)hapi180870  
NOTES: Includes bibliography.  
SUBJECTS:  
Bilingualism.  
Learning, Psychology of.  
Education, Bilingual—United States.



# Eureka! More RLG Databases for Your Research (part II)

Nancy K. Herther, University Libraries

**!** In the July issue, we covered some of the important databases available through our contracts with the Research Libraries Group (RLG). RLG offers some important, unique databases of interest to researchers; and in this column we will provide some general information on more of these databases. Eureka and other on-line databases are available using the INDEXES option in LUMINA or through our web page <<http://www.lib.umn.edu>>.

If you have any questions about these or other Libraries resources, feel free to contact me or any of the staff of the Libraries. We will be happy to help you in any way that we can!

## 18th Century Short-Title Catalogue (ESTC)

ESTC contains about 374,000 full bibliographic descriptions of 18th century English printing — including books, lists, advertisements, rules, songs, election propaganda, and other ephemeral items — that were printed in the English language anywhere in the world or printed in any language in the British Isles or the territories governed by Britain at any time during the 18th century. Each record includes detailed notes and bibliographic information about the specific edition. ESTC includes some non-English-language materials.

Data are derived from holdings of the various departments of the British Library's Reference Division, including Printed Books, Manuscripts, and Oriental Manuscripts and Printed Books, as well as relevant items held in the Lending Division, and from records of holdings contributed from more than 1000 public, academic, and special libraries in the United Kingdom, Europe, North America, and Australia. Typical data items include author name, title, publisher, place of publication, language, year of publication, notes, library of origin, and holdings information.

Subjects covered include: English printing in the 18th century covering the subjects of literature, science,

technology, art, architecture, medicine, law, social science, politics, economics, transport, religion, philosophy, and psychology.

Looking at how some topic or issue was seen in the past? As you can see from the sample record (Figure 5, page 12), this is an excellent database to get quick access to the literature of this time period.

- Producer: British Library
- Language: English
- Scope: See above
- Coverage: 1701 - 1800
- Updates: Daily, over 400,000 records included in the database

## Hispanic American Periodicals Index (HAPI) On-line

HAPI contains over 190,000 citations to periodical articles, documents, book reviews, original literary works, and other materials appearing in scholarly journals of interest to Latin Americanists. HAPI also covers journals treating United States-Mexico border issues and Hispanic groups in the United States. Sources used include more than 400 journals published in North and South America and in Europe. Corresponds to coverage in the printed *Hispanic American Periodicals Index* (HAPI).

Subjects covered include: topics relating to Latin America in the areas of the humanities and social sciences, including business and industry; the United States and Mexico border region; Hispanic groups in the United States. Figure 6 (page 12) shows a sample record.

- Producer: University of California, Los Angeles, Latin American Center
- Language: English
- Scope: Latin America and the United States
- Dates of Coverage: 1970 to date
- Updates: Annual, database contains over 200,000 records

## History of Science & Technology (HST)

HST contains records describing journal articles, conference proceedings, books, book reviews and dissertations in the history of science and technology and allied historical fields. Citations reflect the contents of over 600 journals and partial contents of several hundred more. Coverage includes all languages in which these materials are published. Records appear in print annually in the journal *Technology and Culture* as the “Bibliography in the History of Technology” or in the “ISIS Current Bibliography.”

Subjects include: all aspects of physical, biological, social and applied sciences, education, communication, geography, linguistics, mathematics, music pharmacy and medicine, philosophy, psychology, and town planning. Some abstracts included.

The name for this database is somewhat limiting, because you will find important information on virtually any subject in the physical/biological as well as the social sciences. Figure 7 shows a sample record.

- Producer: Society for the History of Technology, History of Science Society
- Language: English
- Scope: International
- Dates of Coverage: 1976 to the present.
- Updates: Annual updates of about 4000 records are made, with a database totally about 95,000 records

## Russian Academy of Sciences Bibliographies (RAS)

RAS covers materials in the humanities and social sciences published in the Commonwealth of Independent States, in Eastern European countries and elsewhere, including books, manuscripts, dissertations and articles from over 10,000 periodicals.

The database covers such subjects as: anthropology, archaeology, area studies, demography, economics, history, international relations, law, linguistics, literary criticism, philosophy, political science, religion, sociology, and scientific policy. Note that an understanding of the Russian language is very useful in working with this database.

Figure 7: Sample HST Record

```
AUTHOR: Bell, J. H.
TITLE: The Exclusion of Women from Australian Post
Secondary Agricultural Education and Training, 1880-1969.
IN: Australian Journal of Politics and History v. 36,
no. 2, 1990, p. 205-16.
OTHER AUTHORS: Pandey, U. S.
SUBJECTS:
    Education.
    Women in Agriculture.
    Australia.
    Technical societies, technical education-20th century.
```

- Producer: Russian Academy of Sciences
- Language: English citations, abstracts in Russian
- Scope: Publications of the former Soviet Union and its allied countries
- Dates of coverage: 1992-present with over 480,000 records
- Updates: Bimonthly updates of about 15,000 entries per update

## U.S. Government Periodicals Index (GPI)

GPI contains records describing articles having research or general interest value that have appeared in periodicals published by agencies of the U.S. government. This includes periodicals intended to serve as forums for professional development and exchange of technical information to transfer technical knowledge to the public and to improve public understanding of government agency objectives.

Subjects covered include: all aspects of technical and scientific activity, government programs, American history and public policy. No abstracts are given. Figure 8 shows a sample record.

- Producer: Congressional Information Service Inc.
- Language: English
- Scope: United States
- Dates of coverage: Fall 1993 - present
- Updates: Quarterly updates of about 2500 records per update; the database now includes over 40,000 records



**Figure 8: Sample GPI Record**

AUTHOR: Sorkin, Virginia.  
TITLE: Science at the Library is a hoot!  
"Science Online" held in Digital Library  
Vistors' Center [Internet program for  
science teachers.].

PHYSICAL DETAILS: ill.  
IN: Library of Congress Information  
Bulletin May 27, 1996, v.55,  
no.10, p.202-203, ISSN 0041-7904.  
SYSTEM CONTROL NO.: (MdBECI)9657514002  
NOTES: Availability: 3 96-57514.2.

SUBJECTS:  
Library of Congress.  
Association of Science-Technology  
Centers.  
Internet.  
Science education.  
Teachers.  
Education technology.

GPO ITEM NUMBER: 785-C  
SUPT. OF DOCS. NO.: LC 1.18:

## RLIN & More

The only database from RLG that we have not covered is the important RLIN, the bibliographic database to over 22 million titles held in major North American and European libraries and archival collections. This will be covered in depth in an upcoming issue of the newsletter.

We hope that these brief descriptions are useful in helping you select databases for your research or teaching work. Some may just be fun to look at for recreational or informational purposes. Libraries staff are constantly evaluating and re-evaluating our selection of databases for the University. If you have comments on these or any databases — or ideas on databases that you feel would be useful, feel free to talk with any of the subject specialists or reference librarians on our staff.

Communications to the authors should be addressed to: Nancy K. Herther, Education/Psychology Reference Service, 108 Walter Library, East Bank, 624-2020, <n-hert@tc.umn.edu>.

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