Strategies for Wired Academia: The Most Wired Campus

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Dubious Honor

No demonstrable connection between the availability of networked computers & the quality of learning & research
Onus, Not Honor

- Probably a connection between the penetration of networked computers & increasing demand for desktop delivery

- Real connection between satisfying increasing demand for desktop delivery & increasing library expenditures
Assumptions

♦ Libraries preserve & provide access to our cultural & intellectual heritage in the service of learning & research

♦ Technology has the potential to help

♦ Digital divides must be bridged to unlock the potential of technology
Inequality of Access

White American | Native American | African American

Millions

ALA Cognotes
January 2001
Inequality of Available Content

ARL Report December 2000
E-Journals

Life Sciences | Social Sciences | Physical Sciences | Technology | Arts & Humanities

March 14, 2001
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Thesis

♦ The barrier pie is big enough for no one to go hungry

♦ One key to removing the barriers is a united effort
Big Picture

♦ Most / least wired is irrelevant
♦ Libraries are more alike than different
♦ None of us can do everything
♦ All of us can do something
Carnegie Mellon at a Glance

- 7 colleges or schools
- 3 + 2 libraries
- 12,848 campus population
  - 5,136 undergraduates
  - 3,174 graduate students
  - 1,254 faculty
  - 3,284 staff
Similar Upward Trends

- Cost of materials, equipment & staff
- Materials budget
- % spent on e-resources
- Library instruction
- Use of e-resources
- Use of ILL
Similar Downward Trends

♦ Gate counts
♦ In-house use
♦ Circulation
♦ Photocopying
♦ Revenue
Similar Collection Challenges

♦ Shelves are full, but we need more books

♦ Offsite storage has been approved, but not funded
Similar Staff Challenges

♦ Positions are being eliminated or combined & upgraded to keep pace with needed competencies & salaries

♦ Staff are struggling to cope with change

♦ Staff space is inadequate
Similar Development Challenges

Show me the money.

Give me the time.
Similar Measurement Challenges

- Traditional measures are inadequate

- Need
  - Composite measures
  - Standard usage reports
  - Data on environmental changes
  - Outcome & cost-benefit measures
  - System to manage the data
Similar User Challenges

♦ Users often don’t know what resources & services the libraries do provide

♦ Faculty want access to e-journals, but are reluctant to cancel print

♦ Compete for user attention
Similar U-graduate Challenges

♦ Many turn to Web search engines first
♦ Want 24/7 service
♦ Want more electronic full-text
♦ Don’t distinguish library resources
♦ Don’t ask for reference assistance
♦ Don’t care about copyright
♦ Want immediate gratification
Differences

♦ Carnegie Mellon is a research university without a research library

♦ Students are more satisfied with the University than with the Libraries

♦ At least 75% of e-resource use is remote
Computer Culture
Network Connectivity

Campus wireless enabled 2000
Freshmen Ownership

- Own
- Plan
- No plan
Computer Ownership & Access

- % of students who purchase computers after their freshman year is unknown
- GSIA students are required to own laptops
- Public clusters have 410 computers
- More computers in departments
Campus Expectations

- Everyone has computer access
- Admission, registration, syllabi, course materials, grades, etc. will be on the web
- Interaction among students, faculty, & administrators will be online
- The University will provide easy-to-use software & high bandwidth networking
Bandwidth Expectations

♦ Current rate is 100 megabit per second

♦ Campus will be re-wired in 2001 in preparation for gigabit per second

♦ Department pays for desktop delivery

♦ Users will expect gigabit rate in the library
“Email is My Life”
Different Library Mission

♦ Build a digital library
  – Lead development of tools & techniques
  – Provide multimedia collections
  – Conduct research to reduce costs
  – Transform scholarly publishing
  – Transfer knowledge & technology

♦ Solve our space problems with a triage of digitization & off-site storage
Digital Library Initiatives

- Distributed electronic library – 1989-1992
  - Mercury Electronic Library

  - The University Licensing Program (TULIP)

- Digital archives – 1993-1999
  - Heinz Electronic Library Information Online System (HELIOS)
Digital Library Initiatives

♦ Visual Content – 1998-1999
  – Art Museum Image Consortium (AMICO)

♦ Multi-media delivery system – 1999-present
  – Digital Information Versatile Archives (DIVA)

♦ Metadata capture system – 1999-present
  – MetaScan
Digitization Projects

- Visual materials
  - Swiss Posters – 1999-present
  - Slide Collection – 1999-present
  - Andrew Carnegie Collection – 2000-present

- E-reserves
  - Text – 2000-present
  - Audio – 2001
Digitization Projects

♦ Smart Web Exhibits (IMLS) – 1999-2001

♦ Copyright renewal records for books – 2000

♦ Books
  – 1000 Book – 2000-present
  – Million Book – 2000-present
Copyright Permissions Project

- Random sample of books in library catalog
- 94% copyright protected
- Codes: in/out of print, publication & publisher type & origin
- Letters
  - 83% of copyright protected
  - 60% of these received follow-up letters
Results

♦ 35% no response

♦ 13% provided address, returned unknown

♦ 29% permission denied
  – Average time 115 days

♦ 22% permission granted
  – Average time 91 days
22% Granted Permission

- 39% (7% sample) full permission
  - Digitize, OCR, provide full-text searching
  - Free to read web access for all Internet users

- 61% (11% sample) restricted permission
  - 39% access to Carnegie Mellon users only
  - 22% fee for use (average $100)
  - 6% permission for a limited time
Digital Library Services

♦ Instruction
  – Evaluating Information on the Web – 1999
  – Information Ethics – 2001

♦ Reference
  – Automated Reference Assistant – 1999-2001
  – Chat Reference – 2000-present
Automated Reference Assistant

User Interface

Inference Engine

Reference Interview Algorithm

Query Classification Algorithm

Resource Database

Electronic & Print Resources
Usage & Usability Research

♦ Part of library culture since 1990

♦ 1995-2000 – Sirsi Unicorn / WebCat

♦ 2000-2001 – DLF Distinguished Fellowship
  – Usage & usability data survey
  – Study the information-seeking & usage behaviors of students & faculty
Transforming Publishing

♦ Educating faculty & provosts
  – Cost, quality & rights
  – Accept e-journal articles for promotion

♦ Providing or supporting alternatives
  – Portal: Libraries & the Academy
  – Journal of Social Structure
  – Philosophy journal
  – Find trusted partners to archive
Lessons Learned

♦ Plan strategically
♦ Act opportunistically
♦ Change course as needed
Have an R&D Policy

♦ Develop software ONLY
  – When user needs & expectations cannot be met with existing software
  – Using supported components
  – Following standards

♦ Conduct usage & usability studies
Collaborate

♦ Seek partners with diverse expertise

♦ Cultivate investors
Develop Skills & Virtues

- Leadership
- Management
- Communication
- Conflict resolution
- Organizational
- Patience
- Flexibility
- Humility
Cultivate Culture of Assessment

♦ Make decisions based on data

♦ Collect data that serve strategic purposes

♦ Train staff to gather, analyze, present data

♦ Know when to settle for “good enough” data & “quick & dirty” research
Be Involved

♦ Participate in creating or revising standards, guidelines & best practices

♦ Lobby vendors to provide comparable usage statistics in manageable formats

♦ Negotiate licenses that suit your needs – when your strategies work, share them
Be Proactive

♦ If necessary, design new measures for your purposes – if they work, share them

♦ Help transform scholarly publishing
  – Educate faculty & administrators
  – Accept e-journals for promotion
  – Host publications “born digital”
  – Support cheaper alternatives
  – Encourage archiving & migration
Digital Library Facts of Life

♦ Development is risk
♦ Everything takes longer than expected
♦ The only constant in life is change
♦ The only thing you can change is yourself
Conclusion: Have Some Pie

Society
Technology
Politics
Economics
We Must Interlock to Unlock