

Access/Ownership and the Evolution of Document Delivery/Interlibrary Loan: The University of Connecticut

Joseph A. Natale

ABSTRACT. In 1999, the University of Connecticut (UConn) Libraries began re-engineering its Document Delivery/Interlibrary Loan (DD/ILL) operation to address the demands of an increasing volume of requests and the new information delivery needs of its users. Already a successful operation with a strong commitment to public service and very popular with the University's research community, DD/ILL's fragile infrastructure had begun to buckle under the increased pressure. The unit found itself facing (1) a rising volume of requests each year and (2) a user population with a wide variety of access and delivery needs and preferences. The Library realized that a solution had to be found soon in order for DD/ILL to support current levels of service and expand that service. The solution to the problem could not depend only on an infusion of resources, although a new position was created to direct the re-engineering process. The solution was to be found in the use of new technologies, retooling of existing staff, and aggressive re-education and marketing to the user population. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com> © 2003 by The Haworth Press, Inc. All rights reserved.]*

Joseph A. Natale is Document Delivery/Shared Resources Librarian, University of Connecticut Libraries (U-1005F), 369 Fairfield Road, Storrs, CT 06269-1005 (E-mail: joseph.natale@uconn.edu).

The author would like to thank Nancy Orth, Head of Access Services in the Homer Babbidge Library at the University of Connecticut, for her support, input and advice during the writing of this paper.

Journal of Interlibrary Loan, Document Delivery & Information Supply
Vol. 13(3) 2003

<http://www.haworthpress.com/store/product.asp?sku=J110>

© 2003 by The Haworth Press, Inc. All rights reserved.

10.1300/J110v13n03_03

KEYWORDS. Document delivery, interlibrary loan, University of Connecticut

The effort to restructure DD/ILL has been a libraries-wide strategic priority for the past two years. It has been conducted in the broader framework of new approaches to the Libraries' traditional collection development process and with the support of the outreach strategies of a robust Library Liaison Program.

DD/ILL first had to streamline unit operations by automating all everyday tasks, to maintain and improve turnaround time without sacrificing its reputation for stringent quality control and high quality reproduction techniques. In addition, DD/ILL had to be able to quickly produce accurate and timely statistics that did not previously exist in order to illustrate borrowing patterns and changes to support collection building.

This paper tracks all aspects of the re-engineering effort to accommodate and anticipate evolving user needs and to complement the libraries' access/ownership model. Today, DD/ILL is, arguably, a model for an efficient, cost effective, user oriented, and technologically advanced interlibrary loan and document delivery service that plays a major role in the libraries' strategies to support research and instruction at the University of Connecticut, employing technology, data, and outreach.

Founded in 1881, the University of Connecticut is comprised of a main campus in Storrs, and five regional campuses across the state. Student enrollment (graduate and undergraduate) totaled 24,051 in Fall 2001, and the number of full-time and part-time faculty and staff totaled 8,488.

The Homer Babbidge Library is the University's main library, located on the Storrs campus. Each regional campus has its own library. With 2,500,000 volumes, the University of Connecticut Libraries system holds the largest public collection of research materials in the state. More than two million volumes are shelved in the Homer Babbidge Library, which also houses nearly three million units of microtext, 180,000 maps, 35,000 reference volumes, and subscriptions to about 4,500 current print and 1,200 electronic journals.

The University of Connecticut Libraries DD/ILL office serves the main campus, as well as the five regional campuses. It also provides robust support for the UConn Health and Law Libraries that are not part of the University of Connecticut Libraries system.

In March of 1999, in the report *Ownership and Access in a Global Information Market: A Framework for the University of Connecticut Libraries*, the University of Connecticut's Chancellor's Library Advisory Committee issued an invitation to academic departments and the University community to join

the Libraries in developing new strategies to meet the changing information needs of the University community.¹

Two recommendations in this report directly impact interlibrary loan/document delivery operations and services:

Focus local collection development efforts according to department and university priorities, and use networked electronic services and document delivery to expand access and control costs.

Base the development of collections and information services on the evidence of the value of the information for local users and on performance measures for library services . . .

Common and implicit in both recommendations is the need for accurate and substantial statistics on interlibrary loan/document delivery operations for informed decision-making about collection building and information access needs. As serial prices continued to escalate and demand for online full-text journals increased, available monies would have to be spent more effectively. DD/ILL would have to play a much larger role by contributing, on an ongoing basis, data reflecting user information needs and the Libraries' ability to meet those needs "just in time."

COLLECTION BUILDING ACTIVITY

Supporting successful current and future users is the primary objective of the University of Connecticut Libraries' (UCL) collection development program. Given the current state of available monies, a traditional approach to building a truly comprehensive collection is no longer feasible. As a result, the Libraries are looking to interlibrary lending and document delivery as integral strategies to reach information delivery goals and objectives.

Preference is given to the procurement of monograph titles and serial subscriptions that are expected to preserve academic and intellectual appeal over time. One collection development policy attempts to avoid monograph purchases that significantly overlap journal and web content, and potential purchases of "current interest" material must be justified by high usage among the research community at the university. Discontinuing print subscriptions where archival preservation is ensured is being encouraged.

Over the course of the last decade, many changes have affected the process by which UCL purchase serial subscriptions and monographs. Overall, the libraries cut serial subscriptions severely in 1991, 1995 and 1997. In 1996 and

2001, the libraries decided to increase funding for some science fields and decrease for some humanities and social science areas. These reallocation decisions were based primarily on factors such as:

- Measurable decrease in UCL book circulation numbers
- Decreasing number of scholarly book publishing in some areas
- The University's decision not to refill department and program vacancies

2002 budget year decisions were not based on these previously used allocation guidelines. Instead, the social sciences and humanities funds were reduced to retain current print science journals and, in addition, introduce several electronic information services, including Elsevier's *Science Direct*, which includes more than 1200 titles and more than 1.5 million articles dating back to 1995. Electronic information services are very popular with the University's faculty and students. As a result of the addition of electronic information services and the lessons learned in previous years, the Libraries adopted new collection objectives:

- Increase electronic access to basic library materials
- Manage allocation budgets to maximize value for library users
- Continue to offer new and innovative products to library users

In addition, the Libraries have abandoned the use of separate funding for special formats and replacements to further encourage the Liaison Program librarians to make the necessary trade-offs involved in the new collection building process.

The libraries' Collections Budget Team approves all new funding requests. The respective subject area Liaison must justify all new requests. Monograph expenses must be justified on the basis of circulation data. Serial titles must be core to the related field of interest or ill suited to electronic or DD/ILL access, and all electronic products must be justified by collected usage data. Generally, the argument for additional funding due to inflation is no longer a sufficient justification for increases in funding.

IMPACT ON DOCUMENT DELIVERY AND INTERLIBRARY LOAN

Document Delivery/Interlibrary Loan (DD/ILL) plays a large role in the new library strategies outlined in *Ownership and Access in a Global Information Market: A Framework for the University of Connecticut Libraries* and in the adoption of a new collection building policy. Not only does DD/ILL pro-

vide services for its users, it also provides Liaison Librarians and the Collections Budget Team with timely, relevant statistical data that reflects borrowing activity among its users. From this data and other data collected, the library will build and maintains the collection. It was not until 1999 that DD/ILL began looking to the regular reporting of statistical data to the Collections Budget Team, the Liaison Librarians, and other library departments.

Before the summer of 1999, the DD/ILL office structure did not lend itself to routine record keeping and data gathering and reporting. DD/ILL reported information for the library's annual report simply by counting copies of OCLC ILL requests that were printed and archived on 5 × 7 index cards retained in filing cabinets. Extracting data was laborious and very time consuming. Very little information could be accessed and reported with any regularity. DD/ILL relied heavily on OCLC-generated reports that track borrowing and lending activity, but these reports did not provide the detailed information needed by the Collections Budget Team and the Liaison Librarians.

Since 1999, the driving force behind the University of Connecticut Libraries goals and visions for the next several years has been the design and implementation of new services for traditional and non-traditional university populations. Serving the needs of a wider variety of clientele, including distance learners and regional campus populations has also influenced the development of these services.

During the last decade, DD/ILL witnessed a steady increase in the number of photocopy and loan requests placed by students and faculty (see Figure 1). Pressures on the structure of existing workflow and workload responsibility rose steadily as requests for documents and loans continued to increase. The DD/ILL staff found themselves inundated with a rising volume and weakened by a lack of skill redundancy in the office. As the department continued to provide excellent service to its users, the department found itself in the grips of a chaotic administrative situation that would first require a re-engineering of internal procedures and responsibilities. Automation of office record keeping would be a key factor in this process. Before DD/ILL could begin to support its role outlined in the Ownership and Access model, it would first have to re-examine department processes and procedures.

DOCUMENT DELIVERY/INTERLIBRARY LOAN ORGANIZATION AND WORKFLOW PRIOR TO 1999

Early in 1997, the UCL reorganized its administrative structure by adopting a team-based organizational model. As a result of this reorganization, the teams comprising the Access Services area include:

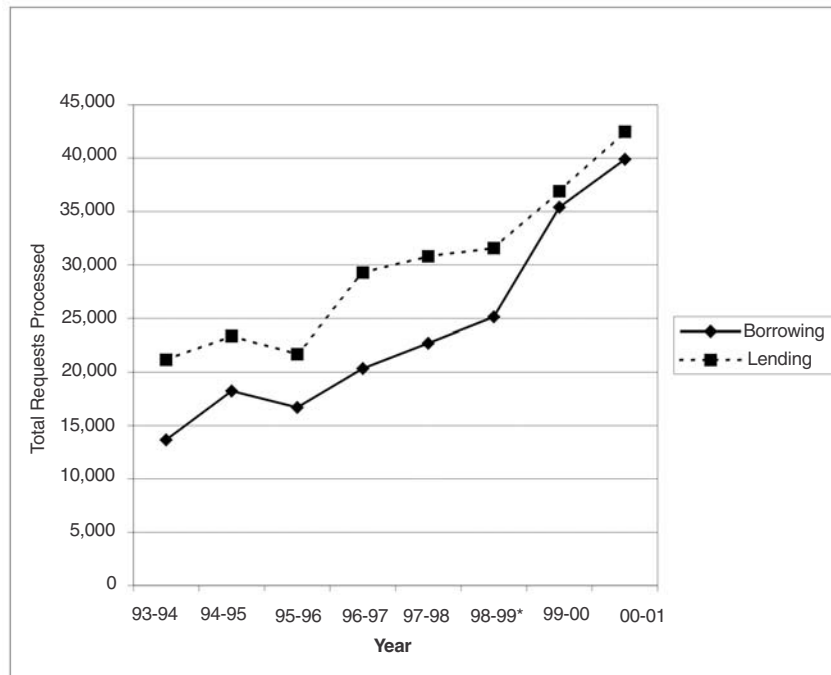
- Circulation/Reserve Services Team (includes Media Services)
- DD/ILL Team

The team leader for each team in Access Services reports directly to the head of Access Services, who in turn reports to the library director. Before the reorganization, Interlibrary Loan (now DD/ILL) was a separate department with a department head reporting to the Associate University Librarian for Public Services.

From 1997 until April of 1999, the DD/ILL staff consisted of the following:

- Team Leader [“Interlibrary Loan Department Head” prior to 1997] (1 FTE)
- Lending Coordinator (1 FTE)
- Borrowing Coordinator (1 FTE)
- Bibliographic Verifier (.5 FTE)

FIGURE 1. Borrowing and Lending Activity



* Indicates calculated estimate because of incomplete data.

In addition, the unit employed about six students who collectively worked a total of about 120 hours per week. The students reported directly to the team leader.

Prior to 1999, the team leader performed the majority of everyday borrowing and lending duties. Each of the other staff functioned in support of the team leader.

Some of the tasks performed daily by the team leader included:

- Sorting electronic and paper requests
- OCLC ordering
- Processing incoming and outgoing mail
- OCLC updating
- Compiling statistical information
- Contacting and interacting with patrons
- Pulling locally held material for both main and regional campus patrons
- Verifying citations
- Supervising student staff

Some of the more common tasks performed by the other DD/ILL staff included:

- Providing clerical support in a paper environment
- Verifying all citations for both borrowing and lending requests
- Preparing and processing incoming and outgoing mail
- Processing invoices and tracking billing of document and loan fees for both borrowing and lending

The team leader placed all requests via OCLC or directly to document vendors via fax. No other staff members in the department assisted the team leader with this duty. Patrons could make requests by accessing an online program, by filling out a paper form, by telephone or by email. The team leader processed each request once the citation was verified. The part time citation verifier assisted the team leader in verifying.

All requests placed were done without the use of any existing OCLC custom holdings or macros. By 1999, DD/ILL had established a handful of independent reciprocal agreements. Document vendors were used regularly.

The borrowing and lending coordinators assisted the team leader with the processing of all incoming and outgoing mail.

For both borrowing and lending, the team leader updated all OCLC requests when material was received, shipped or returned.

All OCLC borrowing and lending requests were archived on 5 × 7 index cards. This file was kept as the permanent record of each request processed. The archive procedure involved printing each request on the cards and housing them

in separate filing cabinets for borrowing and lending. When a photocopy or book would arrive, the card was pulled from the file and annotated with information that reflected the date the item arrived and, for loans, when they were returned.

The team leader gathered information for monthly and annual statistics by performing physical counts of paper records. Statistics gathered were limited to total basic statistical information, such as total photocopy requests filled, total photocopy requests unfilled, total loan requests filled, and total loan requests unfilled. Paper request forms were retained and made available to collection development staff.

To extract information that would illustrate borrowing activity by academic department was out of the question because of the large amount of time that would be required to gather such numbers.

When materials arrived (Ariel software was initially purchased in 1995 to speed the sending and receiving of documents), the borrowing coordinator would contact patrons via the telephone. In many cases, patrons did not have telephone answering machines or voicemail available. As a result, the borrowing coordinator would have to attempt to contact patrons many times over the period of several days. This would in turn reduce the period of time patrons would have the material in their possession before having to renew or return it. When patrons had to be contacted because of citation problems, long delays were common. For example, if a patron dropped off an illegible citation, the borrowing coordinator or the citation verifier would have to contact the patron.

When patrons did not check the online library catalog and placed requests for materials that were owned by the library, each item was pulled and shelved in the DD/ILL office. The borrowing coordinator would then notify the patron.

Despite the lack of technology, DD/ILL maintained an excellent level of service to its users. Survey results conducted by the library illustrated that DD/ILL users were very pleased and satisfied with their interactions with the staff and the service.

The New England Library Network's (NELINET) ILL Advisory Committee presents the Interlibrary Loan Department of the Year award each year to a member library's lending unit for outstanding service. On three separate occasions, the University of Connecticut's DD/ILL office received the award for 1984-1985, 1991-1992, and 1996-1997.

Over time, as DD/ILL was able to serve the needs of its users very well, other teams in the library had statistical expectations of DD/ILL that needed to be met. In order to make informed decisions about collection development, data was needed that reflected borrowing activity of the faculty and students in each academic department. Given the tedious workflow situation in DD/ILL, the staff found it impossible to do what was necessary to automate record keeping and produce needed reports.

DOCUMENT DELIVERY/SHARED RESOURCES LIBRARIAN

In 1998, UCL created the Document Delivery/Shared Resources Librarian (DD/SR) position in DD/ILL and filled it in 1999. Some of the new librarian's responsibilities include the following:

- Manage short-and long-term document delivery services (e.g., explore and implement electronic document delivery)
- Centralize all DD/ILL internal procedures and workflows in a single system environment at the main and all regional campuses.
- Develop and maintain comprehensive, flexible and manageable electronic statistical data for all DD/ILL operations that can be used for library decisions concerning collection development, resource allocation and user support.
- Works closely with all Library Liaisons to assess user needs and market services to users.
- Works closely with UCL Webmaster to refine continually the presentation and functionality of DD/ILL services in the UCL electronic gateway environment.
- Works with Collection Development staff on issues related to the implementation of the access/ownership library model and to intellectual property use in the networked environment.
- Assumes responsibility for compliance with U.S. Copyright Law for DD/ILL operations within UCL and university guidelines.
- Introduces, customizes, troubleshoots and manages new document requests and delivery technologies in support of the goals and objectives of Access Services and UCL.

UCL designed the Document Delivery/Shared Resources Librarian position to address automation, stimulate communication between DD/ILL and other UCL departments (Liaison Program, Collection Services, etc.). This position is also responsible for identifying, evaluating and implementing new services and essential hardware/software that are needed to improve upon existing services and new services that are introduced later. The Document Delivery/Shared Resources Librarian is responsible for all staff training needed as a result of acquiring new hardware and software applications.

RE-ENGINEERING

In May of 1999, DD/ILL purchased Clío 2.0. The Document Delivery/Shared Resources Librarian configured the borrowing module of Clío first. Three weeks later, the lending side of Clío was configured. By July 1999,

Clio was functional. During Clio implementation, the Document Delivery/Shared Resources Librarian provided in-depth training to the DD/ILL staff. Staff evaluated workflow issues that were generated because of migrating to Clio.

Workflow issues for both borrowing and lending included the following: Instead of updating OCLC request records directly, staff had to become acquainted with updating records in Clio.

Each morning, Clio converted OCLC messages downloaded via the microenhancer. This became a daily responsibility for the team leader.

On the borrowing side, as requests were placed on OCLC, the team leader took a 'snapshot' of each record and then converted these records into Clio. The team leader did this at the end of each day.

Clio replaced the paper file of 5×7 index cards used as the permanent record for each borrowing or lending OCLC request. Clio also removed the need for the department to retain a permanent file of paper requests submitted by UCL patrons.

The Document Delivery/Shared Resources Librarian trained all staff in using Clio, especially the team leader. The biggest challenge Clio presented was getting the DD/ILL staff weaned from relying on the paper file as the permanent record. Staff learned how to perform simply and complex tasks with Clio:

- Update borrowing records
- Update lending records
- Check the status of a borrowing or lending request
- Locate all requests placed by a patron or borrowing library
- Find all requests made by one patron or library
- Search Clio by title of item requested for borrowing or lending
- Find requests that have been updated to Received Copy, Received Loan, Yes Copy, Yes Loan, Complete and Returned

After one month, DD/ILL began to collect data from both the borrowing and lending modules in Clio. Despite the short time period, DD/ILL immediately shared a list of the previous month's ten most popular journal titles requested. The Liaison Program librarians and the Collection Services staff received, via email, this list of titles requested by UCL patrons. DD/ILL also published a list of the top ten most requested journals by other libraries (lending).

Previously, custom holdings were not set up for use in OCLC. The Document Delivery/Shared Resources Librarian set up a series of custom holdings that would help make the requesting process more streamlined, and the department initiated a campaign to stimulate independent reciprocal agreements. Custom holdings that were first established included:

- New England Libraries that do not charge (non-LVIS)
- Ariel users
- IFM participants in New England
- IFM participants outside New England
- Audio/Video lenders

DD/ILL joined the LVIS consortium in July 1999. Appropriate custom holdings were added and tiered:

- LVIS-Ariel Users: New England
- LVIS-Ariel Users: New England 2X in lending string
- LVIS-Ariel Users (non-New England)
- LVIS-Ariel Users (non-New England) 2X in lending string
- LVIS New England
- LVIS New England 2X in lending string
- LVIS (non-New England)
- LVIS 2X in string (non-New England)

Until this time, patrons were notified about the arrival of their materials via telephone. This was found to be very time consuming and tedious. The photocopy and loan request forms and electronic requests system allowed patrons to enter their email addresses, as well as their telephone number, dorm or home address. DD/ILL began taking the email address from each request and entering it in the patron notes field on the OCLC work form. When a record was updated in Clio 2.0, the patron notes field appeared on screen for each record called up. The staff member updating records would simply cut-and-paste the email address from the patron notes field into the blind carbon copy address field in a Netscape email message. Template email messages were created and stored for journal article notification and loan notification. At the beginning of each updating session for photocopy material, the staff member would first initiate an email message in Netscape and would subsequently add email addresses in the blind carbon copy field. Each patron notified was told that requested photocopy material was ready for pickup. A separate template was used for loan material notification.

The Document Delivery/Shared Resources Librarian designed macros for passport using OCLC Macro Language (OML). Before this time, the team leader did not use macros to assist with entering citation or patron information into the ILL OCLC work form. The Document Delivery/Shared Resources Librarian designed OML macros that made ordering journal articles and loans easier and faster. Before ordering several articles from different journals for the same patron, the team leader edited the patron information (name, department, status, email, delivery option, etc.) one time. Once editing of the macro

was complete, the team leader could initiate requests without having to fill in the same patron information more than once (see Figure 2).

The combination of using custom holdings and OML macros allowed the team leader to process requests faster than ever before, shaving several seconds off the average time taken to place them.

In July of 1999, the team leader announced his resignation. As a result of this resignation, DD/ILL staff found themselves in the difficult position of having to maintain a level of service to its users, and at the same time, fill in a tremendous administrative gap in the office.

The re-engineering of DD/ILL with which the Document Delivery/Shared Resources Librarian was charged, was now an immediate priority for the department. The Document Delivery/Shared Resources Librarian faced not only phasing in new services and work flow, but the immediate needs of the users as well, and this included processing users' borrowing requests and requests placed for materials by other libraries. In July and August of 1999, the DD/ILL staff processed a total of 8,917 borrowing and lending requests.

The Document Delivery/Shared Resources Librarian met with each DD/ILL staff member to outline and implement changes in processing and workflow responsibilities:

FIGURE 2

Storrs Campus Request Box					
Request #: 12345					
Article/Chapter Jones / This is what I call a movie					
Vol	No	Date	Pages	Copyright	Max Cost
45	12	Dec 1995	65-75	CCL	\$40 IFM
Patron Name		Patron Email Address (notify via email)		Non-Email Contact Info (U-Box/phone)	
Smith, John		johnsmith@email.com		send to campus box 2356	
Dept	Status	Campus			
ACCT	GRAD	STORRS			
Borrowing Notes					
Please retain image quality when scanning documents requested. Thank you.					
Locations					
Series Note					
Billing Notes					
FEIN 06-6000798 / CISTI: CAIDD697883 / BRI: 51-9055					
Ship Via		Fax		Email	
Email (PDF attachment)		ARIEL address = 137.99.181.191		udoc@lib.uconn.edu	
Ship To					
DD-ILL/Babbidge Library (U-1005F)/Univ of Connecticut/369 Fairfield Rd/Storrs, CT 06269-1005					
Affiliation					
LVIS - NELINET - CCC					

Lending Coordinator—Document Delivery/Shared Resources Librarian assisted in Clio training for lending. All citation verification for the lending operation ceased due to time constraints. The entire lending operation was turned over to the lending coordinator, including supervision of the student workers assigned to this area of the operation. The lending side of the operation experienced minimal impact on volume due to LVIS borrowers. Within one week, the coordinator was overseeing all processing, updating, and all billing/invoicing (through Clio) in lending with the assistance of the Document Delivery/Shared Resources Librarian.

Citation Verifier—Document Delivery/Shared Resources Librarian trained this staff member in making borrowing requests in OCLC. Citation verification activity for this staff member was reduced to ‘as needed’ status. This cut down verification by about 95%. Training for this staff member included use of custom holdings, OML macros, and the nuances of the borrowing process. This staff member also coordinated the effort of obtaining materials that could not be acquired via OCLC. This included international requests, web-based vendor requests, etc.

Borrowing Coordinator—The Document Delivery/Shared Resources Librarian trained this staff member extensively in searching Clio and using the program to update borrowing records. Subsequently, the coordinator trained the student employees in checking in and returning borrowed materials and coordinated all processes in shipping and receiving.

All staff members in the department were in need of developing their basic computer skills. The Document Delivery/Shared Resources Librarian provided training as needed in the office during the summer and fall of 1999.

As the re-engineering process progressed and new services were added over time, the staff had to be able to multi-task, locate files on both their local PCs and the LAN, and become very familiar and adept in sending and receiving email and attachments.

The importance of skill redundancy and automation were paramount to the effective operation of the department. Before the team leader’s resignation, no redundancy of skill or task knowledge existed. The Document Delivery/Shared Resources Librarian produced and developed documentation for all processes in the borrowing operation. This documentation became invaluable as training tools for staff and student employees.

In August, DD/ILL hired a part-time temporary staff member to assist with correspondence and processing borrowing requests. This position helped improve workflow efficiency. The Document Delivery/Shared Resources Librarian and the Citation Verifier trained this individual and directed all daily routine activity.

By the end of October 1999, the DD/ILL staff had successfully parceled out among themselves, in a cooperative and team-oriented fashion, those routine tasks and duties that had previously been performed solely by the team leader. In addition, the team began targeting tasks that could be more easily executed with the help of automation.

Two very important events occurred during the fall 1999 semester that would help push DD/ILL to a new level of service and efficiency:

1. The centralization of all Regional Campus Library DD/ILL activity at the Storrs campus
2. The centralization of staff tools each member of DD/ILL used in carrying out everyday tasks.

The University of Connecticut is made up of the main campus in Storrs and five smaller regional campuses across the state. For the most part, each regional campus library was responsible for its own DD/ILL processing. Patrons at each campus had available to them two methods for placing DD/ILL requests: paper request forms and the online request forms. Paper forms could be turned in at any campus library, but only the DD/ILL staff in Storrs received online requests.

All online requests placed for non-returnable materials were processed by DD/ILL on the main (Storrs) campus. Online requests for returnable materials placed by regional campus patrons were bounced to the respective regional campus library to be processed. When patrons submitted paper request forms for both returnables and non-returnables, each respective regional campus library would process these.

In the fall of 1999, UCL decided to centralize the DD/ILL operation from the Storrs campus. The online request form was marketed as a primary means of placing requests at all campuses. The paper request forms would be used as a back up mechanism when online access was down.

Each regional campus library made an effort to reduce the use of paper request forms and encourage patrons to place their requests via the online form.

The DD/ILL staff had to find a way to handle and process incoming requests from patrons at six campus locations around the state. The Document Delivery/Shared Resources Librarian created separate OML macros, one for each of the regional campus locations so that material requested for each patron could be shipped directly to the respective campus. For returnables, this was as simple as changing the ship to address, fax number, and the Ariel IP in each campus's macro. The Document Delivery/Shared Resources Librarian created and updated very detailed instructions about processing such requests. Non-returnable requests were received via Ariel. Once the documents were checked for accuracy and quality and were updated in Clio, they were then passed via Ariel to the

respective campus. Documents were mailed directly to patrons who requested home delivery.

As daily routines and tasks changed, it became important that all documentation be up-to-date and that all DD/ILL staff be made aware of such changes. It became obvious to the Document Delivery/Shared Resources Librarian that there was definitely a need for a central availability of the tools and resources that DD/ILL staff used everyday. As a result, the Document Delivery/Shared Resources Librarian created the DD/ILL intranet page. All DD/ILL staff provided input for what to include on the intranet page. Relevant office Information not already available in HTML format was converted and linked on the page.

The content of the intranet page consisted of documentation outlining the requesting and processing of requests, some complete with explanatory illustrations and graphics. Some of the initial resources on the page included:

- List of Document Delivery Accounts and Passwords
- This list included document vendors accounts and passwords for ordering on OCLC or via the web.
- DD/ILL Patrons with overdue materials
- A list of patrons with long overdue interlibrary loan materials first existed on paper and could be located on the Borrowing Coordinator's desk. Each time the list changed, which occurred up to four or five times a week, it has to be updated and reprinted.
- OCLC ILL Reference Card
- PubMed
- British Library Catalogue
- CISTI Catalogue
- UMI-Dissertation Express
- Library Staff Directory
- Names, email addresses, telephone extensions, mail box numbers of all UCL staff.
- DD/ILL F.A.Q.
- Online document created for users to get acquainted with DD/ILL services
- Clio Users Manual (PDF)
- Links to search engines:
 - AltaVista
 - Google
 - Hotbot
- List of Independent Reciprocal Agreements

This list provided up-to-date information about those libraries with which DD/ILL had a reciprocal borrowing/lending agreement.

As these new tools and policies were absorbed into office workflow over the 1999-2000 academic year, request volume on both the lending and borrowing sides of the operation maintained a steady climb.

In the 1998-1999 academic year, DD/ILL processed a total of 56,693 requests (lending and borrowing). In 1999-2000, that number grew to 72,318.

The next step in preparing the DD/ILL staff was to overlap staff skills. Each DD/ILL staff member had to become familiar with the processes and basic workflow and routines of each other. This was necessary to establish in case someone was absent or on leave. Written documentation produced by the Document Delivery/Shared Resources Librarian was a starting point. Over the course of the 1999-2000 academic year, each staff member, guided by the Document Delivery/Shared Resources Librarian, learned the basic responsibilities and duties of each of the other staff members in the office. This allowed the Lending Coordinator to take vacation without compromising service offered to borrowing libraries. The skill redundancy effort also afforded the Borrowing Coordinator, the Citation Verifier, the Document Delivery/Shared Resources Librarian, and the part-time temporary staff member to be away from the office without the absence shutting down any part of the DD/ILL operation.

In the late spring of 2000, DD/ILL was granted permission to finally fill the vacancy that the previous team leader left in July 1999. The part-time temporary position that was filled the previous August terminated in May 2000, and this left DD/ILL short staffed again. The DD/ILL staff decided to restructure this position by reducing librarian to university library assistant. With two librarians already in the department, the staff decided another one was not necessary. The new position was titled Document Delivery/Interlibrary Loan Ordering Assistant and was filled in June of 2000. Some responsibilities in this position's job description included:

Organizes, prioritizes, and processes to completion, following established procedure and policy guidelines, daily incoming borrowing requests; includes sorting, verification, and considerable decision making in the areas of prioritization and selection of sources for ordering of requests.

Acquires and maintains a specific knowledge of the collections, paper and electronic of the University of Connecticut Libraries System.

Corresponds via email, telephone, and in person with DD/ILL users to provide instruction in DD/ILL services, give status information on requests, resolve problems with incomplete requests, and provide assistance with the use of the DD/ILL web site.

Participates in the maintenance of the Clio document delivery/interlibrary loan statistical management system.

Serves as a backup for materials processing and preparation (scanning, copying, faxing, stack retrieval, packaging).

Once the ordering assistant position was filled, DD/ILL could move ahead with further automation of administrative tasks. The most important task that was automated was the storage of paperwork. Even though its IFM was used mostly for loan and delivery fees through OCLC, the department had its share of incoming invoices to process. Once the invoices were processed and sent to the library accounting office and account payable, copies were housed in filing cabinets in the DD/ILL office. In some cases, DD/ILL and another department in the building retained two copies of the same invoice. DD/ILL housed six (6) two-and four-drawer lateral filing cabinets full of old records, invoices, and paper requests (both borrowing and lending). Clio took care of ‘housing’ the archived borrowing and lending requests.

DD/ILL purchased a software program that is basically a virtual filing cabinet. Papermaster provided the department with a solution to the mounting administrative paper records that were housed in the office.

With Papermaster, an unlimited number of ‘filing cabinets’ can be created and housed on a network. These cabinets can have as many ‘drawers’ and folders necessary to accommodate the paperwork of any large department. Figure 3 illustrates a filing cabinet titled “Borrowing 2.”

The Borrowing 2 cabinet has twelve drawers of files. Clicking on any drawer will open it.

Figure 4 displays the “file folders” in the “Copies of Forms” drawer. The user would then determine what folder is needed. Clicking on the folder will display its contents.

Any document in these drawers can be sent to an email address, a printer or can be copied to another drawer in the same or a different filing cabinet.

FIGURE 3

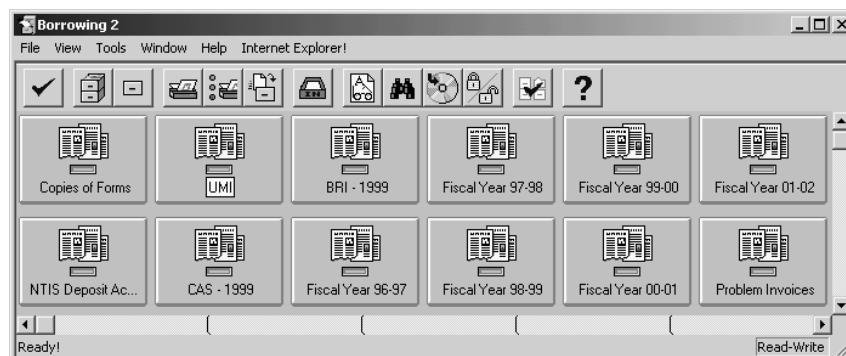
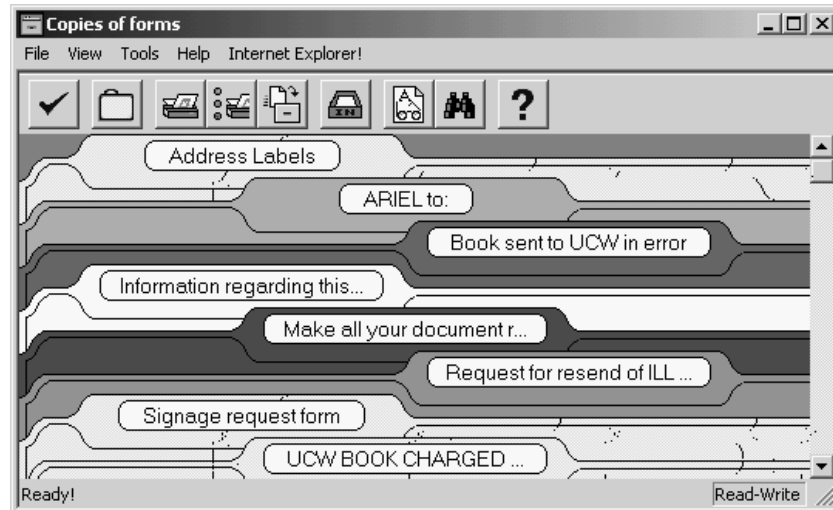


FIGURE 4



Papermaster also has an indexing feature that allows the user to search for keywords in the document names.

Documents are placed in cabinets in two ways:

- Importing an existing file
- Direct scanning

DD/ILL purchased several desktop sheet scanners for each staff member. These scanners allowed staff to scan invoices and other relevant documents directly into Papermaster. By the fall of 2000, the DD/ILL office reduced its collection of physical filing cabinets to one four-drawer lateral cabinet (used primarily for storing personal items during the workday).

GENERATING REPORTS

In July of 2000, Clio had collected one year's worth of data for borrowing and lending. As a result, Clio generated several statistical reports each academic year. These reports were designed to assist the UCL in collection building assessment and the members of the Liaison Program understand the needs of the faculty and graduate populations. At the time of this writing, these reports could be found at this URL:

<http://www.lib.uconn.edu/docdel/Reports/Reports.html>

Patron Requests for Title Purchases Report—Patrons are given the opportunity to communicate that they would like certain book titles, borrowed for them via interlibrary loan, added to the UCL collection. This report is a record of requests for purchase made by Storrs campus faculty, staff, and students.

Most Requested Journal Titles Report—Those journal titles from which patrons requested ten or more articles were included in this report. This report consists of two separate reports: one lists the journals alphabetically and the other lists the journals by the number of requests made for each title. All campuses and populations are reflected in these reports.

Photocopy Request Activity Report—Broken down by campus, these reports list alphabetically the name and publication date of the journal requested, the patron's department and status, and the OCLC record number. There are two sets of photocopy activity reports for the Storrs (main) campus: one is arranged by journal title and the other report is arranged by department. This series of reports supplies the Liaison librarians with detailed information concerning which serial titles are requested that UCL does not own or have access electronically.

Loan Request Activity Reports—The Loan Activity Reports are set up similar to those for Photocopies. These tables reflect data for every filled request for loan (returnable) material, including print and non-print materials.

Overview of Borrowing and Lending Activity—These bar charts reflect TOTAL DD/ILL activity for both the lending and the borrowing components of the operation by month.

Regional Campus Filled Loan and Photocopy Requests Activity—These bar charts reflect a subset of the Borrowing and Lending Activity charts that reflect the total number of filled loan and photocopy requests for regional campus patrons.

Request Placed for Materials Owned by Libraries on the Storrs Campus—DD/ILL received many requests from Storrs campus patrons (undergraduates, graduates and staff members) for material owned by one of the Storrs Campus Libraries. These charts illustrate the number of requests made each month by Storrs campus patrons for material held electronically or in paper format by a Storrs campus library.

Electronic Document Delivery Participation Chart—This chart provides a monthly update of how many documents were made available to patrons electing to receive journal articles, papers, etc., via electronic document delivery.

Copyright Information—General copyright expenditure is tracked annually. Copyright invoice details are provided to the library staff annually.

In addition to the portion of reports and charts described below, the Document Delivery/Shared Resources Librarian was able to routinely provide Liaison librarians very detailed data concerning lending, document and copyright costs for specific titles and the same information for specific academic departments. This information also played a crucial role in collection building decisions.

EXPANDING SERVICES AND ACQUIRING HARDWARE

The 2000-2001 academic year was one of great strides for DD/ILL. As the new Document Delivery/Interlibrary Loan Ordering Assistant became familiar with office workflow, and as the existing DD/ILL staff became more comfortable with the automation projects and their revised responsibilities, the Document Delivery/Shared Resources Librarian was able to begin expanding services.

Electronic Document Delivery (EDD) service began in August of 2000 with a handful of users. DD/ILL was able to successfully install Prospero, a web-based document delivery program that, when used in conjunction with Ariel, provided patrons with PDF documents of their photocopy materials. Prospero is made up of two components. The first is a staff module that runs in any version of Windows (95 and later). This module captures and converts Ariel documents (TIFF images) to PDF, which are then made available on the web.

The other module is a user interface that allows patrons to retrieve their documents on the web using any browser.

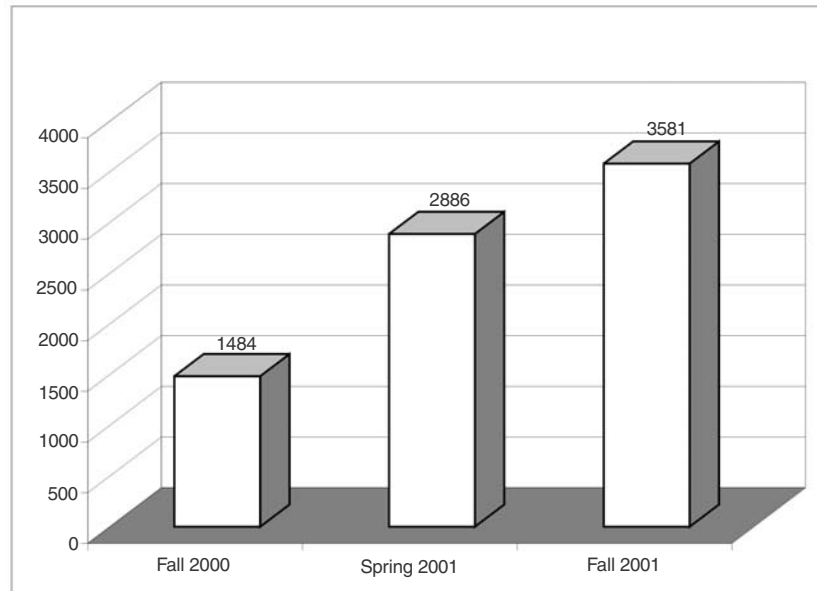
By the spring of 2002, DD/ILL signed up its 1,000th patron to participate in EDD. Figure 5 illustrates how popular EDD had become by January 2002.

For patrons at the regional campuses who needed photocopy materials from the libraries on the Storrs campus, Ariel and Prospero were used to scan, convert and post documents to the web.

DD/ILL wanted to be able to share as much as possible with the regional campus population and retain the original quality of the original material. In order to do this, it was necessary to obtain a color scanner. In addition, a color printer was also considered.

In the fall of 2000, DD/ILL acquired a Hewlett-Packard Color LaserJet 8550DN which provides excellent color reproduction and speed. This printer allows for the copying of color material to be shipped to patrons' home addresses. Also purchased were two Hewlett-Packard 9100C Digital Senders (one for borrowing and one for lending). The digital sender is a high-end scanner that has excellent color reproduction capability. The technology of the digital sender allows for scanning direct to email or direct to a user's desktop in either PDF or TIFF file format.

FIGURE 5. Electronic Documents Delivered



DD/ILL decided to upgrade its aging fax machine to a Canon Laser Class 3175MS. This fax machine also doubled as a network printer.

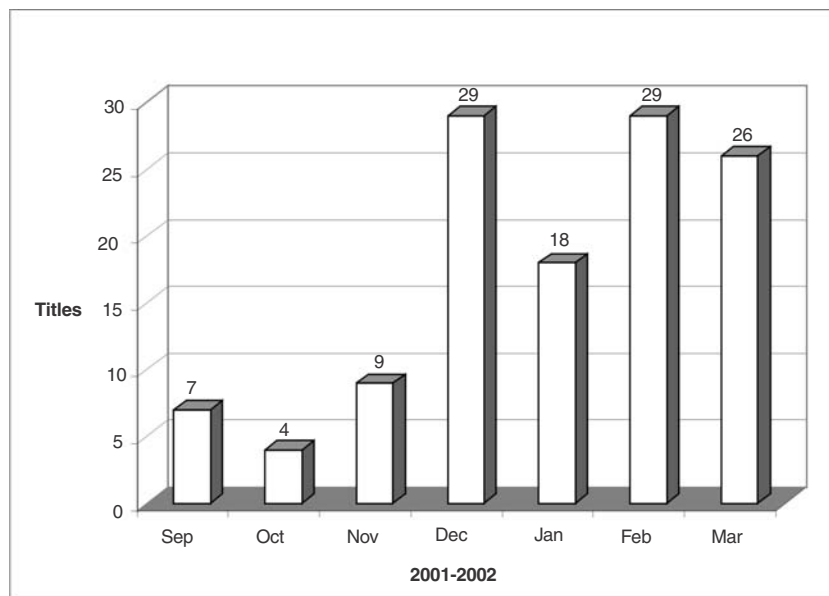
ONWARD!

The lending operation of DD/ILL became a completely paperless operation during the 2001-2002 academic year. In the summer of 2001, the UCL Copy Services Desk obtained a high-speed, black and white scanner and invited the lending operation to participate in a trial of producing photocopies of articles for borrowing libraries. Articles are scanned in TIFF file format and stored in a specified location on the LAN. The lending staff would simply retrieve the files, import each into Ariel, check for quality and then process the document to the borrowing library's Ariel IP. Those documents that would not be transmitted via Ariel were printed and either mailed or faxed to their destinations. The trial period was a success and lending did away with receiving photocopies from the Copy Services Desk.

In the fall of 2002, the Canon Laser Class fax machine was networked using multi-spot network software. This feature allowed lending staff to print those documents imported into Ariel and transmit documents to those borrowing libraries without Ariel software that were able to receive fax transmissions. Each member of the DD/ILL office could 'print' directly to the Canon fax without having to leave his or her workstation.

During the 2001-2002 academic year, DD/ILL enhanced many of the services it had put in place since 1999. Additional delivery methods for photocopies were offered. Home delivery of returnable loan materials was initiated. Many graduate students who had completed coursework still needed research support for their dissertations. In many cases, these students lived too far to commute to retrieve materials. Undergraduate students enrolled in out-of-state independent study courses were found to have a need for research support. Home delivery of returnable loan materials was established in the fall of 2001. Home delivery got off to a slow start, but popularity began to grow as 2002 approached (see Figure 6—numbers reflects titles delivered to home addresses). This delivery option was made available to all users on all campuses.

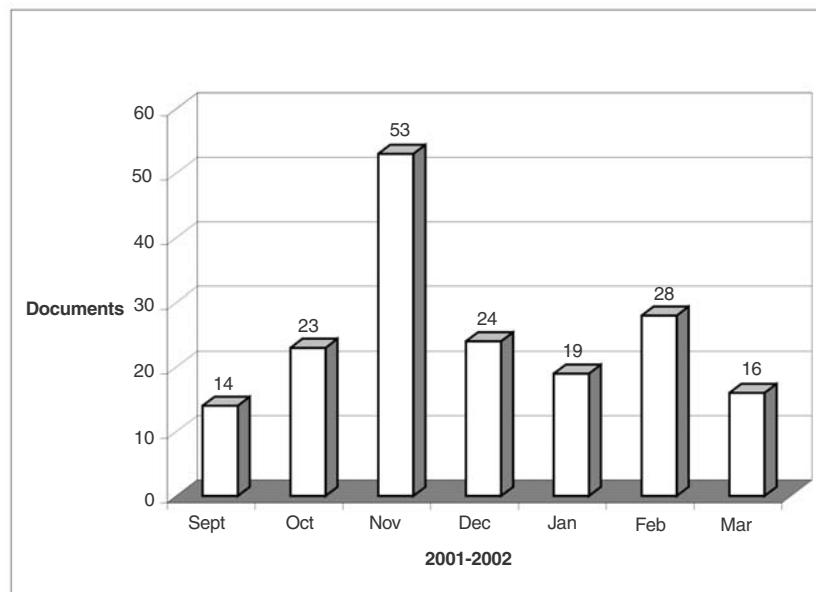
FIGURE 6. Home Delivery of Returnables



Faculty on the Storrs (main) campus of the University of Connecticut often requested circulating titles found on the Homer Babbidge Library. In the fall of 2001, DD/ILL established on-campus delivery of circulating materials housed in the Babbidge Library for Storrs campus faculty (Rapid Retrieval Program). For a fee, faculty on the Storrs campus of the University of Connecticut could have journal articles, book chapters, etc., scanned and made available in PDF. The popularity of this service is illustrated in Figure 7.

In the fall of 2001, the DD/ILL office abandoned the use of Ariel as a means of document transmission to the Regional Campus Libraries. DD/ILL switched to using Prospero to send PDF documents to the Regional Campus Libraries for patrons who chose to pick up documents at their home Regional Campus Library. This improved the quality of documents scanned directly from materials housed in the Homer Babbidge Library. Materials were scanned to PDF (including color documents) and then processed through Prospero to the respective Regional Campus Library. The Regional Campus Library would then print the document and make it available to the patron. DD/ILL successfully implemented this change by purchasing its own scanner, a Ricoh Aficio 1035P. This

FIGURE 7. Rapid Retrieval



grayscale scanner was capable of scanning several pages per minute directly to a folder on a dedicated PC in PDF or several TIFF formats.

The last service to be added to the DD/ILL menu was the Homer's Rapid Retrieval Service. Homer's Rapid Retrieval Service provided Storrs campus faculty members with materials from the Homer Babbidge Library collections and made them available electronically in Portable Document Format (PDF)—no photocopies. Materials that qualify for this service included: journal articles, conference papers, and chapters from books from either the paper or microform collections housed in the Babbidge Library. The fee per document was \$2.00. The service was available when classes were in session during the fall, spring and summer semesters.

For patrons at the regional campuses who needed photocopy materials from the libraries on the Storrs campus, Ariel and Prospero were used to scan, convert and post document to the web.

Since the publication of *Ownership and Access in a Global Information Market: A Framework for the University of Connecticut Libraries*, DD/ILL identified, pursued and embraced avenues that allowed the department to improve delivery mechanisms for users. In addition, the department automated most of its operation and through automation, was able to provide statistical data for the Collections Budget Team and the Liaison Program.

Since the summer of 1999, DD/ILL at the University of Connecticut evolved to become an efficient and effective service to the research community. A lot was accomplished in the re-engineering of the department and in a relatively short time. Technological upgrades and extensive automation allowed the same number of staff to handle an increase in request volume of more than thirty-five percent from 1998-1999 to 2000-2001. Efficiency through automation is what drives the success of a program such as this. The serious situation in which DD/ILL found itself back in 1999 threatened the success of collection building at the University of Connecticut. It was a 'no choice' situation that required a great deal of re-engineering of the entire workflow of the department to get in line with what its users needed and with what was required for collection building and information access needs.

During peak periods in 2000-2001 and 2001-2002, DD/ILL processed upwards of 7,000 requests (borrowing and lending combined) each month.

In the spring of 2002, about 780 electronic documents were delivered to patrons each month.

The following is a summary of the key changes in DD/ILL since 1999:

- New position created: Document Delivery/Shared Resources Librarian-filled Spring 1999
- Conversion from paper request records to Clio 2.0

- Creation of OCLC custom holdings and macros using OCLC Macro Language
- Development of skill overlap among DD/ILL staff members
- The gathering of borrowing activity statistical data for Collection Services and the Liaison Program
- Centralized DD/ILL operations from all six campuses working independently to the main campus at Storrs, CT.
- Creation of DD/ILL Intranet Tools page
- Fostering the paperless office by implementing an electronic filing cabinet (PaperMaster) software application
- Acquisition of new state-of-the-art hardware, including 2 Hewlett-Packard Color Digital Senders, a Hewlett-Packard 8550 printer, and a Ricoh 1035P scanner
- Delivery of documents in electronic format (PDF), including color
- Expansion of services and delivery options for users (including electronic document delivery, home delivery and the Rapid Retrieval Program for Storrs campus faculty)

In the summer of 2002, a new half-time, permanent position was approved for the lending module. The creation of this new position is credited to the evidence of need illustrated by statistics gathered since 1999.

At the time of this writing DD/ILL had more than 1200 users participating in electronic document delivery and 45 faculty members participating in the Rapid Retrieval program.

The University of Connecticut Libraries' DD/ILL department continues to look for ways to enhance its current services. As it does so, it monitors trends in the profession and constantly evaluates the potential of implementing these into its program.

NOTE

1. Chancellor's Library Advisory Committee. *Ownership and Access in a Global Information Market: A Framework for the University of Connecticut Libraries*. The University of Connecticut. March 1999 <<http://www.lib.uconn.edu/cs/clac/>>.