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## ***Using Technology to Meet Rising Expectations: The CISTI Experience***

**30th Annual Colorado Interlibrary Loan Conference May 13, 1999**

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### **Abstract**

CISTI as an organization can simply be described as forward thinking in terms of embracing technology. With a history of "early adoption" of technology to improve service to our clients, CISTI continues to build on this foundation today and in the future. This paper will outline our understanding of users' expectations and the technologies used in CISTI's Document Delivery Services to meet their needs.

### **User Expectations**

In the fast-paced information world, timing is everything, therefore it is no surprise to us, as members of the Interlibrary Loan or Document Delivery business, that clients require information as fast as possible. Clients have the uncanny ability to continually raise the bar in terms of their tight deadlines, to which we try to respond.

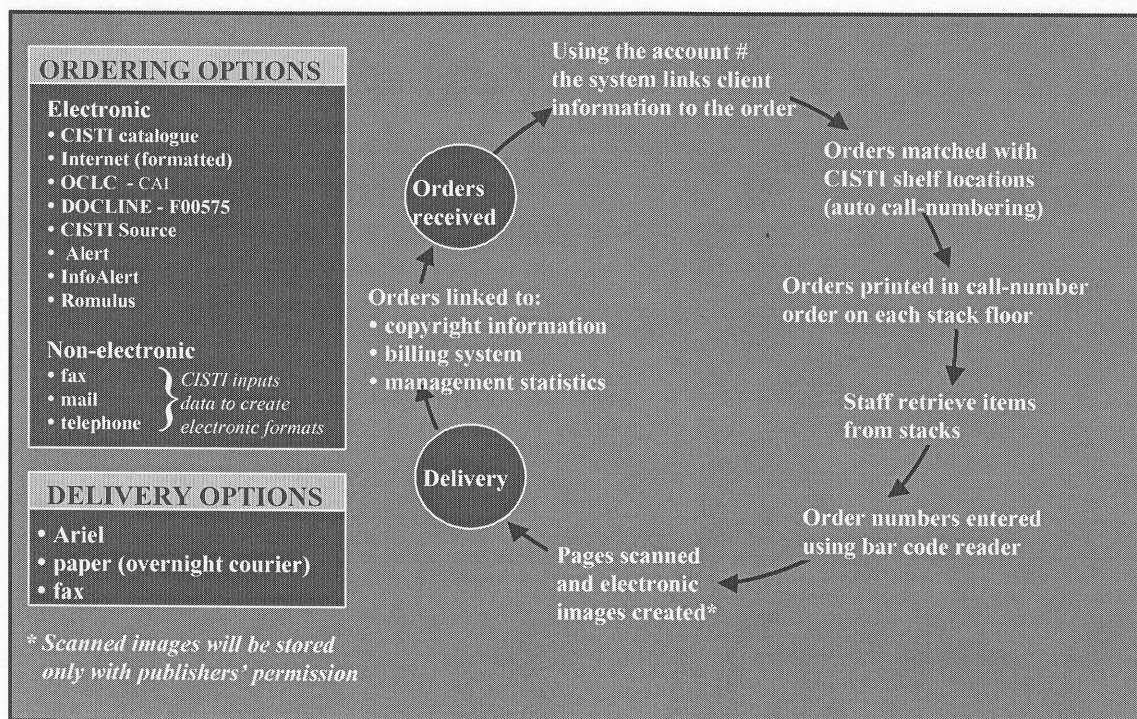
Given that speed is the main driver, then the timesaving of one-stop shopping by accessing a single comprehensive supplier, would be a priority. But this supplier will not be successful unless they offer consistent reliable service, where client support and the quality of the document is also excellent. Any scrimping in these areas will cost time, which is at a premium for the user.

Another reality in this "more for less" world is price, where the cheapest, most competitive price is expected. Also clients expect rewards for loyalty to a particular supplier in terms of volume discounts. And finally, you as intermediaries want to unburden the workflow in the ILL Office, by pushing end-user participation to order their own documents and expect them to be delivered directly to the end-user client.

### **CISTI's Response**

CISTI, Canada Institute for Scientific and Technical Information began building its collection in 1924. Celebrating our 75th anniversary in 1999, CISTI is North America's largest science and technical library. Partnership arrangements with the Canadian Agricultural Library and other organizations have enhanced the CISTI collection, which now includes agricultural and nursing material. To compliment the STM (scientific, technical and medical focus), CISTI's Link Supply service also provides one-stop shopping/ordering to the British Library Document Supply Centre (BLDSC) collection. Less than ten percent (10%) of CISTI's clients come on-site to use the collection, therefore CISTI was in the fortunate position to close the Stacks to public access in 1994. On-site Retrieval Clerks are able to retrieve material within fifteen (15) minutes for on-site clients. The closed secure stacks, with sufficient in-house storage for the foreseeable future, responds to the client's need for comprehensive, secure, reliable and efficient access to their desired documents.

## IntelliDoc: CISTI's Electronic Document Delivery System



In 1993, CISTI began discussions with a local Ottawa Software Company, Network Support Inc, or NSI to develop and build an electronic document delivery system to improve the workflow efficiency and capacity, order tracking, and provision of scanned instead of photocopied images. By 1995, IntelliDoc was implemented but changes and improvements to it have been on going ever since.

Before outlining the technologies that form the basis for IntelliDoc, CISTI's first automation of the Document Delivery Service began in 1986 with an Auto-call-numbering program (ACN). This program matched electronic formatted orders with bibliographic records in the CISTI Catalogue, which was then on the Dobis system to print the call-number or shelf location on the order. These retrieval slips are printed in call-number order. Although not 100% successful, significant staff time was saved from the previous practice of searching the CISTI catalogue and writing the call number on the order form. Before retrieval, the Stacks staff had to sort these paper sheets into LC Call-Number order.

### Technologies Used & Benefits

The IntelliDoc system is a compilation of the many systems, programs and functionality. The heart of IntelliDoc is the Client Registration System. All users of CISTI services register with the standard tombstone information, stating address for paper delivery of documents, preferred method to receive cancellation messages, invoicing address, delivery method for documents (Ariel, fax, or paper copy by courier). Once registered, the client only needs to enter their CISTI account number, because the system is then aware of their preferences. Lately, to accommodate consortium or unmediated end-user configurations, additional customized preferences can be added, which include the maximum cost (MaxCost) per order to ensure financial control over fluctuating copyright charges or restrict users from Urgent service, which is more expensive than the regular Direct Supply Service.

All orders must be in an electronic format for IntelliDoc. CISTI has written interfaces between ordering templates on bibliographic utilities, to provide maximum flexibility for clients to access CISTI's Document Delivery Services. Some of the current twelve- (12) current electronic methods include CISTI Catalogue (free searching on the Web, with copyright information); OCLC, DOCLINE, OVID,

SilverPlatter, CISTI Source. There is a time and cost savings for electronically submitted orders, over those submitted by fax, telephone, Internet free-text or mail, which are keyed into an "order transcription system" at CISTI.

The next step for orders received in IntelliDoc is the Auto-call-numbering (ACN) program, which was previously mentioned. After the location matching process, the orders are printed out on the appropriate stack floor in LC call-number order. For orders submitted electronically (90% of orders) and successfully matched (75%), the first human interaction for these orders is by the Collection Services Unit (CSU) staff, who retrieves the publication from their stack shelf. Another non-technical process is the use of customized flags for each CSU member who places their flag in the spot where the publication resided. By maintaining the same order during the scanning process, the reshelfing can be done at a speed twice as fast as the retrieval.

One fundamental requirement of the IntelliDoc system was to provide better quality scanned images instead of the traditional photocopy quality. The scanners utilize a dither switch, which differentiates between text and graphics to ensure the best scan quality. Also with scanned images, they can be directed to the Ariel and Fax delivery queues, which are integrated into IntelliDoc. The paper copy delivery queue enables batching and sorting by client for within each print run, to reduce the number of individual envelopes the client receives.

Cancellation Messages are initiated by the CSU staff touching or "mouse" pointing to "exception codes" on the scanning workstation monitor screen. IntelliDoc also generates these messaging reports for easy bar-code entry into OCLC and Docline.

The beauty of the IntelliDoc system, where all orders are in electronic format is ability to track orders. This functionality is available to CISTI's Product Help Desk staff who queries the system. The Client Assistants, in response to client queries, can determine an order's date and time at critical points through the workflow. Clients can track their own orders by accessing the "List All Orders" function from the CISTI Web Site and entering their account number.

Finally, this automated system allows reports to be generated in response to many different needs. Primarily, the integrated Copyright Tracking System, generates reports for royalty payments to the respective copyright collectives, CanCopy, Copyright Clearance Center (CCC), or to publishers, where direct publisher agreements have been established. Tapes from the CCC, listing the royalty payments, or charges for particular publishers are loaded into IntelliDoc and perform a similar matching process, based on ISSN's as with the Auto-call-numbering program. Each night, the order transactions are loaded into our finance system; a SAP installation named "Sigma" at the NRC, which generates the monthly invoices. In addition a variety of MIS statistical reports can be generated, which include turnaround time for order processing from the time the client submitted the order to the time of delivery.

#### Pitfalls of Technology

The major pitfall for implementing new technology is time. Although the computer age has trained us to expect "instant" everything, where response times of more than a second become annoyances, the same is not true for designing, enhancing or building new systems. To ensure that one builds a system to meet a specific need, clear user specifications and requirements must be written in consultation with the staff who uses the system. Staff, who use the system, are usually the ones who are in the best position to provide input. This consultation will also reduce any staff resistance to the changes one is trying to institute. Time for testing is also necessary, whether for system functionality or staff use of new equipment such as new scanners.

Support from the Systems staff is necessary during the planning, building, implementation and maintenance of the system. Depending on your organizational structure, one may need to secure their time to support your needs, either through informal understandings or formal work plan agreements.

#### User Response of Technology

By use of technology in the interlibrary loan or document delivery process, the user is now able to benefit from the enhanced functionality. This includes: quality scanned images, order tracking capabilities, reduced TAT, detailed invoicing, effective client assistance in responding to client queries and the ability for the client to track their orders by use of the ListAll Orders function.

#### Internet: User Expectations

The Internet has changed our world and our users' expectations for information. The key benefit to clients is access to content. The following are the types of information, with CISTI examples, which our clients use and then convert or transfer, this content into ILL orders: library catalogues (CISTI Catalogue <http://cat.cisti.nrc.ca>), Table of Contents and Current Awareness services (CISTI Source), bibliographic utilities (OCLC), databases (Dialog, PubMed etc.), and full-text: e-journals.

#### Technology: Fulfil User Goals?

In evaluating the advances of technology, one must measure the extent to which it meets the user's expectations. In terms of access to full-text e-journals, users do not yet have access to all journals in this format. Publishers currently control the access to the e-journals, which may prevent or limit user access. The responsibility for archiving e-journals has yet to be assumed or designated, therefore our clients cannot be guaranteed future access to this format.

Technology in the ILL/Document Delivery department has resulted in faster turnaround time, order tracking, and flexible customized order requirements. Although the cost of this technology is not cheap, one can achieve economies of scale, by handling more orders with the same or reduced amount of staff.

#### Future Technology Enhancements

Until the functionality to automatically integrate access to E-journals in IntelliDoc has been achieved, CISTI has developed EVA, where a staff member matches the order and the requested e-journal article on a split screen. The need for publisher permission to permit end-user electronic delivery of their publications remains a barrier to fulfilling client expectations. CISTI has developed the CISTI Viewer, which will be beta tested this summer using publications from a few publishers. The CISTI Viewer enables the delivery of an electronic file, that can only be viewed on the user's screen and then printed. No downloading storage or re-distribution functionality is available.

To increase the access to full-text content, more work needs to be done to seek publisher permission. The tracking and statistical capabilities of IntelliDoc will ensure proper reporting and royalty payment to publishers. Continued efforts are needed to aggregate all e-journals in one location with the same format standards in order for clients to have comprehensive access in a consistent manner. CISTI is beginning to create the Science Knowledge Network (SKN) which will negotiate and secure national site licenses from publishers in order to provide this one-stop shop for all e-journals to the Canadian academic and research community. The use of partnerships to build these collections is necessary to achieve this mammoth task.

Technology enhancements are never static. To succeed, one must embrace an environment of continuous change, which is focussed on meeting client expectations.