Clothes May Disguise a Fool But His Voice Will Give Him Away: The Challenge of Smart Service Delivery for Off-Campus Clients

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Abstract

Serving remote clients is now one of the most challenging issues for almost all libraries, since our web, database access and other tools mean that physical access is far less necessary than ever before. This situation is even more critical at the University of Southern Queensland (USQ) where 80% of students are classified as "off-campus" or external. In all likelihood, we will never see or meet these clients face-to-face. USQ's implementation of the DocEx system in 2004 provided a streamlined, integrated web requesting and document delivery service to our off-campus students. This paper explores the technologies and skills involved in the project, client and staff reaction, and project management issues encountered along the way. Advantages to date are documented, and future plans outlined.

Introduction

This paper examines the University of Southern Queensland (USQ) Library's response to the challenge of providing smart service to off-campus clients. It outlines a number of Library initiatives, with a full description of the implementation of the DocEx system. DocEx allows our off-campus students to search for and request items in one step, have items web-delivered, and monitor the status of their requests.

The paper positions the USQ experience within the broader context of library services to off-campus students. "Off-campus" students are defined as those students enrolled in courses for which physical attendance at lectures and tutorials is not required. For most off-campus students, contact with their universities comprises receipt of prepared study packages (print, CD-ROM or online formats), email or telephone contact with staff, and sometimes residential school visits.

Characteristics of Off-campus Students

The peculiar characteristics of off-campus students have been the focus of much consideration by educators and librarians for many years, both within Australia and overseas. The common feature of off-campus students is their physical absence from their universities. More variable features include personal characteristics such as age, ethnicity, work and family commitments, distance from their university, time available for study, and reason for studying; skill levels in activities such as information-seeking, computer use, writing and studying; environmental characteristics such as the availability of computing facilities, internet access, and internet speed and reliability; course characteristics such as undergraduate or postgraduate level, and discipline area.

The stereotypical off-campus student is over 25 years of age, employed, studying part-time, with family responsibilities. Many off-campus students may be returning to study after a long break; many will be unfamiliar with, or lack confidence in using, computer technology; many live in remote locations; many may be unaware of the library services available from their home institutions. (Cooper, 1998; Fletcher, 2000; Gandhi, 2003; McPherson, 2000). Time is a critical factor, both time available for study and library response times to student requests. A survey carried out by the University of Minnesota Libraries found that

> … when they needed library resources, [distance learners] needed them quickly. Nearly 80% needed them within one week, with nearly 20% within 24 hours, and 54% within 3 days. (Butler, 1997)

General Library Approaches to Off-Campus Service Delivery

Universities have traditionally made distinctions between on-campus and off-campus, or internal and external, students for purposes of course delivery and support services. The traditional model of library service to off-campus students has been to replicate as far as possible services available to on-campus students, ie on-campus service delivery has been considered the norm. Off-campus service delivery has presented challenges in terms of access to resources and services, delivery of needed items, and instruction in information skills. In an attempt at equity, libraries have provided reference, lending/document delivery and information literacy services, modified for off-campus delivery.

Libraries dealing with significant numbers of off-campus students have taken fairly similar approaches to service provision, eg:

- Development of websites with clear information for off-campus students
- Provision of electronic resources – books, journal articles, e-reserve material, recommended internet resources
- Item requesting and delivery services

- Reference advisory services – including subject searches
- Information literacy instruction - online library tutorials, classes at residential schools, orientations at major centres
- Technical support/troubleshooting help – for problems with logins and passwords, database access, browser configuration, printing
- Multiple, easy contact channels - email, phone (1800 or 1300 numbers), web forms, live chat
- Reciprocal borrowing arrangements.

It is widely acknowledged that, regardless of the quality of such services, they are used by only a minority of an institution's off-campus students (Appleton, 1994; Cavanagh, 1994; McPherson 2000; Parnell, 2002). Although many students use other libraries, the low usage of their home institution's library services poses a challenge to make those services easier to access, more relevant or more convenient.

Changes

For some years now, the distinction between service provision for on-campus and off-campus students has been blurring because of broader environmental changes: the growth of email and the web, allowing fast, convenient communication and interaction; the availability of an ever-increasing range of electronic resources, many full-text; increasing sophistication of user interfaces (eg AARLIN); changes in student enrolment patterns and study expectations; and the availability of increasingly mixed modes of learning. These changes have created a situation in which off-campus service delivery might now more usefully be considered the norm than on-campus delivery. Off-campus users might just as easily be internal students accessing resources or services remotely as "real" external students.

Janet Fletcher (2000) reports on the outcomes of focus groups run by Southern Cross University in 1999 at which off-campus students were asked what library services they might expect by the year 2010:

In 2010, participants believed that library research would be a simple process of telling the computer (no keyboard) what they required and receiving a list of relevant full-text resources back. The procedure would be so intuitive and reliable that success in finding resources in a timely manner would be very high. However, as no system is infallible, if users needed help, all they would need to do would be to call for assistance and they would instantly be connected to an information professional. All services would be available 24 hours a day, seven days a week.

If such a scenario were a reality, libraries could expect that their services would be fully utilised, not to mention greatly appreciated, by their off-campus students.

USQ's Approach

Institutional Profile

USQ is a dual-mode university with a solid reputation in distance education. In 1999 USQ won the inaugural Award for Institutional Excellence from the International Council for Distance Education (ICDE), a UNESCO-affiliated organisation representing 130 distance education universities around the world. In 2001, USQ was joint winner of Australia's University of the Year award for its work in developing the e-university.

USQ has a centrally-coordinated operation for the production of distance learning materials, and a centrally-coordinated support service for students. The University's Outreach Services coordinates the roles of Regional Liaison Officers along the eastern coast of Australia. USQ International provides support for off-shore students individually and through the University's international partners. Learning support is managed through WebCT, the University's learning management system, and supplemented with teletutorials, videoconferencing, email discussion groups and residential schools. Purely online programs are offered through the University's commercial partner, NextEd, using the Blackboard LMS platform. USQ also provides a system called USQ*Assist* which allows students to check a knowledge base of common questions and answers, or ask a question. The University recently developed recommended computing hardware and software standards to help students ensure that they had sufficient home computing resources to undertake their study programs successfully.

Client Profile

USQ, with campuses at Toowoomba and Wide Bay, has one of the highest proportions of off-campus students of any Australian university. Of our 26,000 students, 20,000 (80%) are enrolled in external programs, 6,000 of whom are off-shore. Of these off-campus students, 75% are over 25 years of age. More than 50% are considered rural or geographically isolated.

Despite our enrolment of 26,000 students, our actual student load is 12,000 EFTSU. This ratio creates additional burdens on the University because of the need to support a large number of students enrolled in only one or two courses per semester.

USQ has conducted a number of student surveys in recent years that provide a comprehensive picture of our off-campus students, who they are, what they want and what they find difficult. We know from these surveys that most of our off-campus students have work and family commitments which make their study time limited. We also know that despite the apparent ubiquity of the internet, many students still face technological barriers such as internet availability and cost, line capacity, and computing hardware and software constraints.

Determining Client Needs

The Library has used the results of these surveys to align our services more closely with student priorities. Specific surveys with key findings relating to off-campus students are listed below:

University e-Systems Survey 2003
Telephone interviews indicated that students wanted simple, easy access to information. They wanted the information that they needed to access to be in one place, rather than distributed across a number of different systems. They wanted clearer information about what to do initially, and they wanted some consistency in the different electronic systems that they had to use.

Library Website Survey 2002
Focus groups about the Library's website revealed that students wanted to find things on the site as quickly as possible. They wanted homepage headings to be unambiguous so that they didn't have to click on headings to check what the content was. They wanted pages that loaded quickly and that presented key information only, ie no extraneous graphics or "waffly" text. They wanted the functions that they had to perform most frequently, eg searching the catalogue and databases, checking or renewing their loans, to be available on the home page.

Library Rodski survey 2002

The Library's first Rodski survey indicated that the most important issue for students was the ease of using library databases. Other important issues were the usefulness of the catalogue and ease of finding information on the website, as well as the friendliness of Library staff.

USQ Student Opinion Survey 2001

Seventy percent of off-campus students indicated that they were satisfied or very satisfied with the usefulness of the Library catalogue, Library databases, and the internet. The satisfaction rating for the Library catalogue had increased since the original survey conducted in 1995. No comparison could be made about satisfaction with databases and the internet because there had been no question about those in the original survey. Helpfulness of Library staff rated highest, with 82% of off-campus respondents indicating they were satisfied or very satisfied. This rating was also higher than the rating in the original survey.

Apart from our own surveys, we have also drawn on useful data in the broader professional literature to inform our off-campus service development and delivery.

Hiller (2002), for example, in describing the outcomes of recent surveys at the University of Washington Libraries, has highlighted the importance of "full-text to desktop" delivery for faculty, graduate students and undergraduate students, with online access to resources also critical.

Top Three Library Priorities for Faculty and Students

Library Priority	Faculty	Graduate Students	Undergrads
Full-text to desktop	73.5%	72.8%	54.9%
Online access to older journals	59.6%	61.8%	40.0%
Maintain quality of print collection	57.4%	53.3%	24.5%
Electronic reserves	23.8%	37.5%	49.5%

Figure 1: Top Library Priorities from Hiller (2002)

USQ Library has for some years adopted a deliberate strategy of subscribing to full-text electronic journals and books rather than print formats, so that our collection is more readily available to our off-campus students.

Wells (2004) has noted a significant decline in usage of print material at the University of New South Wales Library and a significant increase in interest and attendance at information literacy classes. The impact has been so significant that he has driven a restructure of staffing to move resources away from managing the print collections (especially in areas such as shelving) to focussing on the demands of managing and delivering the ever-increasing range of electronic resources and systems in the Library.

USQ Library developed online information literacy tutorials some years ago, primarily for our off-campus students. Although we have not yet moved any additional staff into the systems area, we are currently working on a program to develop the IT skills of our staff, so that we have the resources to deal with increasingly sophisticated systems such as DocEx.

USQ Library Initiatives

USQ Library has a discrete Off-Campus Services unit which offers resource delivery and reference advisory services to off-campus students. The unit offers the standard library services outlined above. In recent years, we have attempted to improve access for off-campus students to library resources and expertise, and to make that access simpler. Recent initiatives include:

- Redesign of the Library's website with a specific area on the home page for off-campus students. The redesign was informed by focus groups held with off-campus students in Australia and overseas, mentioned above. As a result, the Library's website was redesigned to allow catalogue searching directly from the home page, check and renew loan functions available from the home page, and a "getting started" page for new users.

- Population of the USQ*Assist* knowledge base with Library-specific questions and answers. We have developed more than 30 frequently-asked questions and answers on issues such as database searching, passwords, loans, resources and services. Use of this facility by students has increased markedly, with Library questions and answers accessed 2,000 times in May 2004, compared with 200 times in May 2003.

- Faculty Librarian involvement in email discussions with students for specific courses, via WebCT. Faculty Librarians are able to advise on search strategies or useful resources as the need arises.

- Involvement in the University's hybrid delivery model trial, along with academic and instructional design staff. The hybrid model provides students with a "package" that includes course information, study schedules, assessment information and resource materials, usually in CD-ROM format with associated online links, sometimes also including print materials. USQ is developing this model for 19 courses during 2004 in the Faculties of Business and Arts. For the first time, both on-campus and off-campus students will be receiving the same course package. The hybrid model changes the traditional distinction between off-campus and on-campus students. It raises questions about the nature of teaching that occurs to support the hybrid package. It also raises questions about the Library's role in information literacy provision and resource support.

- Establishment of a framework for ongoing dialogue between the Library and its clients, eg focus groups and telephone interviews scheduled each semester; Quick Poll on Library website for feedback on topical issues.

- Implementation of DocEx.

DocEx

The DocEx system, launched at the start of Semester I 2004, has been a dramatic step forward in streamlining resource delivery to our off campus students. DocEx is the local name given to a project formerly known in Australia as the LIDDAS Project. LIDDAS was a consortial project to implement Fretwell-Downing's VDX product across a number of university libraries in Australia. USQ is the first library to have implemented the VDX software for document delivery to off-campus students, while most other participants in the LIDDAS project have focused on the inter-library loan aspects of implementation.

Functionality

In a nutshell, the DocEx system enables students to search for material in the USQ Library collection and then place requests for the online (or postal) delivery of that material. Students can request a copy of an extract, such as a chapter or journal article,

or the loan of an entire monograph (note, off-campus loans are only available to students within Australia). They may also place a request for any citation or reference by completing a blank "Create a Request" form.
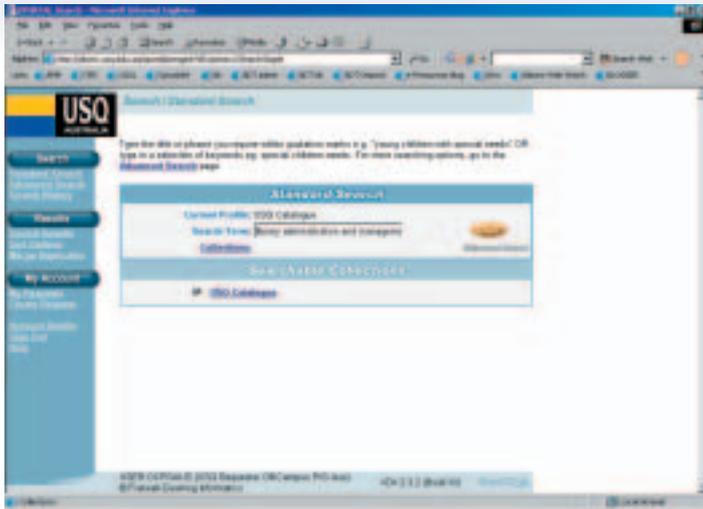

Figure 2: Standard search screen of DocEx

As displayed by the above screen, the DocEx system is only configured to search the USQ Library catalogue at this stage. ZPortal, the web interface for VDX, can also be configured to search across a range of electronic resources to locate citations in electronic journals and other library catalogues. We are currently exploring this additional functionality and hope to roll this out to our off-campus students by Semester I, 2005.

Active links are provided by the interface to all electronic resources where metadata for those resources exists in the Library catalogue, Virtua. This means that students can search the collection to determine whether we hold a required journal or monograph, check the availability status and then place a request for a copy or loan of that item. The request form is automatically populated with the details displayed on the catalogue record.
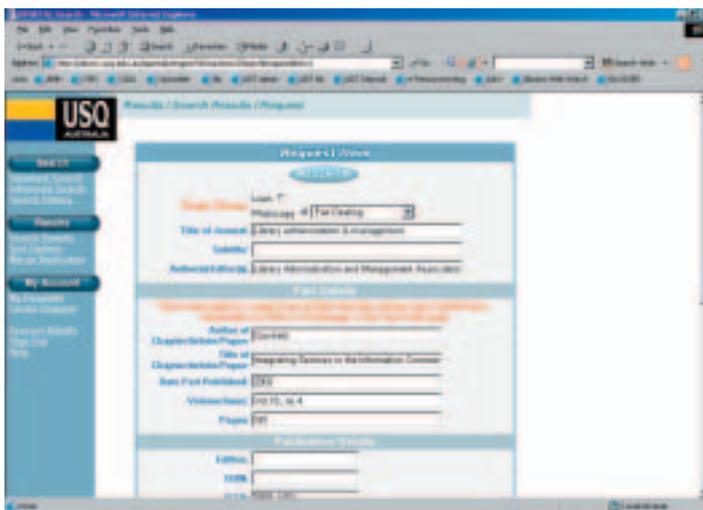

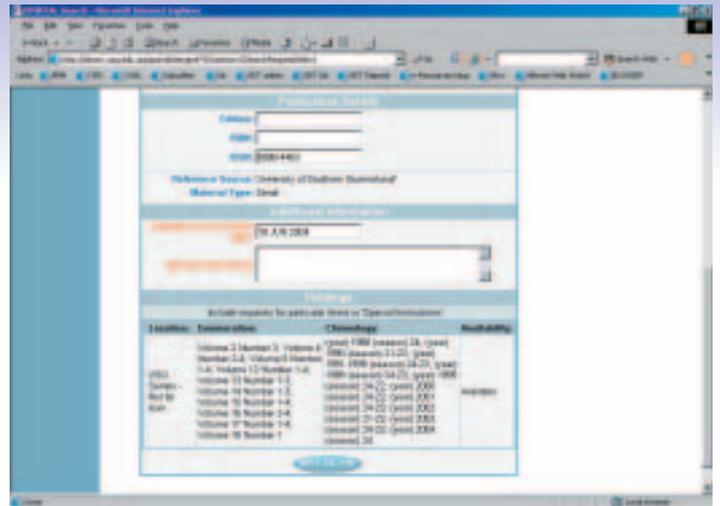*Figure 3: DocEx request form with pre-populated bibliographic data*

Figure 4: DocEx lower half of request form showing holdings and availability

The system auto-mediates all requests and retrieves the call number for staff, checks against copyright rules configured in the system and modifies the status from "Idle" to "Pending". Off-Campus Services staff retrieve pending requests twice a day, check that the appropriate copyright choice has been made (loan vs copy) and then follow a workflow to fulfill the request.

Requested items are delivered via the web or post, depending on student preference. Web delivery provides access to the PDF version of a scanned document via the DocEx interface. Once a student has logged in, they can view "My Requests" and locate the article.
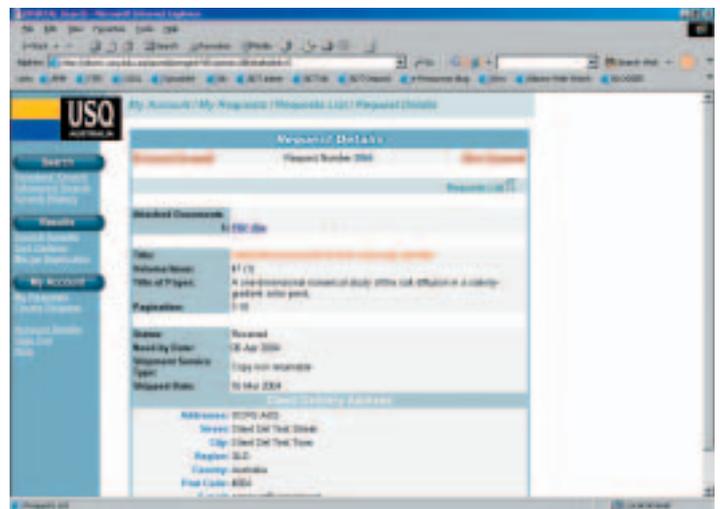

Figure 5: Fulfilled request with a link to PDF file for viewing

Implementation phase: technologies and skills involved

We decided on a phased approach, rolling the system out for off-campus document delivery initially, with ILL implementation to follow later. This decision was made on the grounds of both the scale of project management required with a small staff resource and the need to replace the aged and struggling REDD[1] server with a more robust solution.

We applied customization in two areas. Firstly, we amended the interface to better suit the purpose of off-campus document delivery. We may have to rethink this customization when we roll out the ILL functionality. Alternatively we could run a second web

instance for the ILL interface. Customization of the web interface required XSL skills, which we were able to develop in-house sufficiently to make the changes we required.

Secondly, we customized our reports. Oracle, SQL and Access skills were required to configure the custom reports. We already had basic skills in this area but still had a steep learning curve to get the reports functional in time for our go-live deadline. We had a lot of help from our DBA on campus with the more technical aspects of the SQL query.

The VDX system interfaces with our Virtua catalogue using Z39.50 technology. This means that students can check holdings and availability prior to placing a request. To use DocEx effectively, students must be familiar with a web environment, understand the concept of USQConnect (USQ's student portal, for authentication) and be able to login and navigate through the system.

Preliminary outcomes

Library staff believe that the introduction of the DocEx service has dramatically improved the accessibility of library material for off-campus students. This is because of the convenience of the one-step search and request feature, and the speed of web delivery of requested items.

Turnaround time for delivery of copied material to students in Australia and overseas has been dramatically shortened. Prior to DocEx, it took two working days plus postal delivery time (up to three weeks for more remote international students). Now, students who request web delivery receive the documents online after the two working day processing period.

There has been much discussion recently in the library world about making our resources "more like Google". We took up the Google challenge with a thorough redesign of our Library website in 2002-2003. A more detailed account of this project is available in Hunter (2003). The primary objective of the website redesign was to simplify the presentation of library information to our students and to remove most of the "just in case" information. The most radical element of this project was placing the Library catalogue search box in the prime real estate position of the home page for immediate search access by students.

The DocEx interface also displays a simple search box as soon as the student has logged in. By making the search option as obvious as possible across tools such as these, we hope to break down the barriers between our students and the Library systems we provide.

Feedback gathered from student surveys and focus groups influenced our customization of the interface for the system. We removed any screen elements that did not enhance the student's experience of locating and requesting resources. We also attempted to make the look and feel of DocEx as similar as possible to other Library systems, particularly the web catalogue interface and the content management system which stores other data for the website.

We also ran the system in a pilot phase to get student feedback before going live. We feel these approaches helped to ensure that the system was as user-friendly as possible, and contributed to its acceptance by students.

Student Response

Of the students eligible to use DocEx, we had just over 500 students log into the system in the first two months of operation. Of those, nearly 400 placed at least one request, with Off-

Campus Services staff fulfilling 1,978 requests. It would be an interesting project to contact the 100 students who logged in but did not place a request and find out why. This could also give us insights into the design of screens and workflows at the user end.

While 500 students does not seem a large number of new users, it should be noted that we took a very "soft launch" approach. A number of technical issues in the early stages of being live also made us cautious about advertising the system more widely.

During the trial phase before going live, feedback was actively sought from participating students. Some of their comments are listed below:

Student 1: I did a few searches and believe this new system will be wonderful. For example, rather than requesting the table of contents, having it sent to me, deciding what chapter I want, making another request, and then having that chapter sent, I can see the names of the chapters for many (although not all I noticed) books and eliminate many steps. The order form is also much quicker because the data is already entered when I click on request. This saves me time, as well as you, particularly since many of my requests have been unavailable, wasting your time to respond. I did not find any "bugs" while using it. As I use it more in the next months, I will be happy to e-mail you with any major problems, if you like. Thank you for including me in your trial.

Student 2: It all seems to be working beautifully right now. I've got to say that I had to go back to the ordinary Catalogue to find out how to reference periodicals, but that was something I'd never done before anyway. Is there a way I can choose Author or Title or Journal within DocEx? I think that linking the Catalogue and the Request facility is beaut!

Student 3: Dear Library, This service is absolutely brilliant! No more wasted paper, and we can cut and paste whatever references we need right into our assignments. Wonderful. I still need to use my temporary DocEx password to access DocEx, but that is no problem, as long as it works. Thank you.

Student 4: I am sorry for the late reply. I did receive the DocEx chapter immediately. I am certain in the past two weeks you have revised and improved the system, but I would like to go ahead and share the things I noticed.
1. I received 6 notices saying that my document was ready for pick-up. I am certain this point is now mute, but I will mention it all the same.
2. My files downloaded quickly, so sending the entire chapter or at least larger sections would seem acceptable from my point of view.
3. If you continue to send out sections, sending them in groups with an even number of pages will assist those of us who print two pages to one sheet of paper in order to save paper and the environment. Similarly (although a minor point), because the copies are like photos, they cannot be adjusted before printing. If you could decrease the amount of black around the edges, there would be less black being printed on my end.

Thank you for all of your assistance. Best wishes as you continue to innovate and improve your services.

Student 5: Also meant to mention to you while speaking with you that I think the DocEx set-up is great. So user friendly and saves much typing, compared with the previous system and able to track requests. It's great.

In May 2004, our website Quick Poll question asked which Library services students felt they needed greater assistance with. We

had only a small response to this poll, but of the 27 responses received, only 4 (15%) needed more help with DocEx, compared to 14 (52%) needing more help with journal databases, 8 (30%) e-books, and 1 (3%) check/renew loans.

Initially the system was configured to send all requests to students via postal delivery unless they requested web delivery. If students want to try web delivery, Off-Campus Services staff change the preference on the student record on request. Students may elect to change back if they experience any difficulties with online delivery. In all, about seven students have changed back to postal delivery, mainly for technical reasons. Most commonly, their computer setup was unable to cope with the size of the PDF files and they had trouble opening the documents. One student was unfortunate enough to have received TIFF files a couple of times (when the conversion process had failed) and decided it was less trouble to get postal delivery (being in Southeast Queensland, postal delivery was quite an acceptable option for her). Some students also prefer the Library to do the printing/photocopying for them so they have not bothered to request web delivery in the first place. When the problems with electronic delivery have been resolved, we intend to make web delivery the default. It will be interesting then to see who switches back to postal delivery and why they choose to do so.

Staff reaction

The five staff required to use the system were trained thoroughly prior to the go-live date. Their learning styles and initial reactions to the system varied widely. Two staff members refused to refer to documentation and preferred to ask and learn by doing. One other did not make a move on the system (for the first few days at least) without checking against documentation. The other two were somewhere in between these two extremes.

Initial challenges included the differences between the staff and student screens, system terminology, workflow changes and system problems. Two HEW2 staff with limited computer skills were quite worried when they were initially introduced to the windows interface. Although they had been shown the student interface to get an understanding of how a request is generated and then the staff interface that they would be using to process requests, they found the two interfaces confusing and asked that they only see the staff interface.

System terminology made the HEW2s, in particular, anxious that they would not be able to learn the system. One staff member studied the documentation at night, practised when possible during the training time, and asked questions until she felt competent. She was utterly determined to overcome her "fear" of this new technology. The other staff member initially tried to avoid the new system if she could but finally settled down to using it. For her, it worked best when someone sat with her the first few times she had to use the system. Repetition of the actual steps involved helped to gradually increase her level of comfort.

A couple of training sessions had to be rescheduled because of system problems. Workflow documentation had to be changed a few times as a result of the training and during the initial weeks of going live. For example, we had to develop workarounds to cope with the PDF file conversion issues. Some procedures had to be discarded and others introduced - this increased stress for a while. The training time was definitely a mixture of good days and bad days.

When DocEx was first introduced, staff ability to cope was aided greatly by the fact that the numbers of requests were slightly

down from the previous year and requests were staggered fairly consistently across a number of weeks. Two staff worked extra hours to cope with the initial workload, but this was not unusual for March/April, the peak months for Off-Campus Services.

All staff appear to be quite relaxed about the system after three months. Stage 2 of the training will be held mid-year as staff need to develop greater troubleshooting skills, as well as be able to respond to students' queries regarding their requests more effectively.

Some highlights of the new system for staff have been the automatic email notifications and the scanning aspect which is perceived to be more "fun" than photocopying.

Project Management Issues

It is not possible to implement a system of the complexity and significance of DocEx without encountering technical, workflow and deployment issues along the way.

The main problems encountered can be summarized as follows:

1. The complexity that results from increased interoperability between systems. In the week prior to going live we had performance issues between Virtua and DocEx and were not sure which system was the cause (we found ourselves in a difficult place between the two vendors involved). A re-index on the Virtua system improved the situation considerably and the problem has not been encountered since.

2. Initially we had patron login incompatibility problems with the LDAP server which were fixed by the vendor about a month into operation. Again the main issue we had in troubleshooting this problem was caused by the complexity of interlinked systems, particularly those such as LDAP which were outside the Library's control. We had to provide approximately half of our students in the first month with an alternative login until the problem was resolved. Thankfully this was a fairly easy workaround for all involved. We ran a daily check on the Oracle tables to locate students who had failed to login, checked whether they were valid users of the system and then sent them an email asking them to contact us for the workaround if they wanted to use the service. We only had one comment about the "Big Brother" nature of this workaround. Thankfully the problem is now completely resolved.

3. There are other limitations caused by the LDAP authentication process, mainly because the data stored in LDAP is very limited. It means that valid users can only be determined from the patron load pulled out of PeopleSoft, the University's student administration system. This forces us to maintain multiple versions of patron files in different systems (we now manage patron loads into VDX as well as Virtua).

4. We have had an intermittent problem with occasional requests sitting at a status of "idle". There does not appear to be a pattern to this problem. When it happens, staff are unable to process the request because it is locked by the system. Staff either re-enter the request or contact the student and ask them to re-enter it. We are working with the vendor to find a resolution to this problem.

5. The initial patron load went very smoothly, however we have not had sufficient time to develop a method for importing regular updates to the database. This is an outstanding issue as we continue to fine-tune the process.

6. The VDX system is designed to manage only a TIFF file format. One of the big issues for the customer base was

the ability to use a TIFF to PDF converter which would work across all platforms. The main issue is that a TIFF viewer that would work on a Macintosh platform with the VDX files has not yet been located. Only days before we went live, a TIFF to PDF converter program was installed. Unfortunately this has been very resource-intensive on the server side while conversions are being done. The vendor is continuing to look into an improved solution for this and some customers have turned off the functionality. We are persevering because we feel that PDF is a much easier format for our off-campus students to use, rather than TIFF which requires a plug-in to be loaded.

7. For workflow purposes, we needed to design our own custom reports to provide staff with pick-lists that contained all of the information they needed to process the requests. This was primarily because our application of the product was slightly different to others in the LIDDAS project, focusing as we were on off-campus document delivery rather than ILL. New reports were written in SQL which creates new views of the data at the Oracle level. The new views are then imported to MS Access and formatted through Access query and report templates. One advantage of designing our own reports is that we can customize them readily. One disadvantage that we may strike down the track is the impact of any database design changes that might be implemented by the vendor in future releases.

Future Improvements

We barely feel we are out of the implementation stages with the product. Although both staff and student levels of comfort with the system have improved, there are a number of improvements we hope to make to streamline our processes even further.

These include:

1. Eventually being able to implement a "Single-Sign On" (SSO) solution across all of our Library systems rather than relying purely on interaction with LDAP.
2. Some of the system management aspects, such as completing the fine-tuning of the patron load process for updates, and changes and expiry of patrons once they're no longer eligible to use the system.
3. Expanding functionality to include ILL (work begun in April 2004).
4. Expanding functionality to include federated searching of prioritized electronic resources from the Library's collection.

Conclusion

Going live with DocEx in some ways was a leap of faith for everyone involved. Fortunately, we have been extremely pleased with the results. Uptake of the system by students has been steady, staff skills and comfort levels have developed at a satisfactory pace and, despite a few "teething" problems, the system continues to work well.

Students have provided positive feedback about the interface and ease of requesting from the collection. Web delivery of scanned documents has been a boon, particularly for our overseas students.

Library staff and management feel that DocEx has been a great step forward in the provision of sophisticated delivery of Library services and are looking forward to expanding both the use of existing functionality and the addition of new functionality in the next few years. DocEx is one way that we are meeting the "Smart Service Challenge".

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Endnotes
[1] Regional Document Delivery Project (REDD) was developed by the University of Queensland, Griffith University and the Queensland University of Technology from 1994 and implemented at USQ in the mid 1990's. While cutting edge in its time, it was still in use in 2003 and had passed its use by date. The technology and platform were dated, there were no longer any support services for the product and the server "fell over" at least once a day, requiring a reboot. We not only needed to retire the software, we needed to retire the ancient server it ran on as well which was Windows95 (it was not possible to migrate the software to a new platform).