# ONE STOP eRESERVE SHOP : MANAGING THE ENTIRE CYCLE

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## ABSTRACT

This paper describes the project to provide a One Stop Shop at USQ which manages course readings and resources.  Although all other universities have eReserve systems which contain course readings and systems to manage copyright, the USQ system is unique in it's scope – to manage all readings and additional resources prescribed for all courses (regardless of source or format), to manage and report on the associated copyright, and to act as the source for all course material production (online, CD & print) of readings.  Part two of this paper discusses some of the unanticipated benefits of the new system (DiReCt – the Digital Resource Collection) which has provided new opportunities for the Library in terms of involvement in new directions outside typical Library responsibilities and increased cross divisional projects and business processes. These are helping to position the Library for future growth and survival in a changing world where traditional library services are diminishing.

## 1.  CREATING A ONE STOP SHOP

### 1.1. Background

As part of course package production, the University of Southern Queensland has been providing course readings in hard copy, on CD or on online for many years. Course production for approximately 65% of courses is handled by a central facility – the Distance and eLearning Centre (DeC). The remaining 35% of course production is carried out within the Faculties, with academic staff loading material directly onto course web pages. Readings were stored in a variety of formats on different platforms. Quality and consistency of bibliographic data varied considerably. Information regarding the readings was stored in hard copy in individual offices within DeC. Only courses with all content available on course web pages had online readings. DeC was not concerned with additional readings not contained in course packs or readings for courses for which they did not produce course packs.

In 2005, knowing that electronic access to in demand course readings was increasingly required by USQ students and staff, the Library created a small-scale pilot eReserve system of scanned articles. This pilot was deliberately simple and non-scaleable, to test need and basic processes. Scanned readings were saved to a network drive (in PDF format) and a link to them created and placed on the course intranet page, USQStudyDesk. For copyright recording, all details were added manually to an Excel Spreadsheet. Usage by students (5,948 accesses in 2005, 26,394 accesses in 2006) and feedback from academic staff indicated strong support for an eReserve system.

Copyright within the Library and DeC was managed in isolation.  Within DeC, copyright was managed on a course by course basis. There was no checking on reproduction of readings across the university. The university's sampling agreement with Copyright Agency Limited (CAL), required that the university report on all reproduction of copyrighted materials for an 8 week period every year. Copyright Management involved extensive paper records and a large amount of duplication of effort. The annual CAL reporting required duplicate data entry into a small copyright database, a process which took considerable staff resources across both departments.

It was always intended that following the Library's pilot eReserve program, an eReserve management system would be purchased and implemented. Cooperation between the Library and Dec to report on copyright in the CAL sampling periods soon identified synergies between the two departments in regards to the management of course readings. It was decided to expand the scope of the Library eReserve project to create an integrated system which would manage copyright and access to all course readings across the university. The main advantages of the new Course readings Management System would be:

- *One system to manage all readings produced in course packs or hosted on university websites.* This would replace several disparate systems where readings were previously stored.
- *Efficient Copyright Management.* Copyright could now be applied across the university, hard copy records would be replaced, and CAL reporting would be easily managed via reports from the new system and integration with other key USQ systems.
- *Central source of readings.* There would now be one source of readings for replication to CD, print and online.  For students all readings, whether they be included in course packs or not, could be accessed from one source.

## 1.2 Project details

A project team consisting of staff from the Library and the Distance and eLearning Centre was created in late 2006. The project lasted a total of 3 years and was implemented in stages, which included a requirements and evaluation phase, a request for offer and tender phase and the implementation of the product. The implementation phase was broken up into 3 main stages. The first stage trialled 20 courses only, in an online context. The next phase was a full online trial for semester 2, 2008 but had the backup of the old systems just in case. This stage include the conversion of pre-existing readings from several other university systems into the DiReCt system. The third and last phase completed all course reading conversions and rolled out full CD, online and print rendering of books of readings.

### 1.2.1 Request for Information

The output of the requirement phase led to the generation of the Request for Information document that was sent to the various vendors, who had been identified via a survey of CAUL libraries, networking and internet searching.  The Request for Information process is not a formal process at USQ but was used to ascertain whether there were suitable solutions out in the market place that matched USQ's needs. The main assessment criteria were based around storage, administration, access, copyright, digitisation and integration.

The responses were then evaluated according to a checklist. This indicated the following:
1.  That there were systems that could perform the requirements that USQ had previously identified
2.  There was more than one vendor/solution to be evaluated in the tender process.

### 1.2.2 Request for Offer

The Request for Offer process was then initiated using much of the information obtained through the Request for Information process. Feedback from vendors and a series of vendor demonstrations outlined basic system capabilities and common eReserve system features. The members of the project team gained a greater comprehension of typical system functionalities and processes and consequently reviewed and amended the initial requirements. The Request for Offer therefore contained more targeted and deliverable criteria and functionalities than the Request for Information. A Request for Offer document was sent to successful vendors from the RFI process. Vendors were asked to address various selection criteria including: storage, metadata, user functionality, systems and security, system administration, copyright control and reporting, training and documentation, installation assistance, support, value added functionalities, operating environments, server specification, system workload capability.

As part of the Request for Offer process, vendors were also asked to provide onsite demonstrations to two groups – a technical demonstration to IT and Library systems staff and a functional demonstration to Library, DeC and Academic staff and students.  For these demonstrations various scenarios were prepared for which the vendors were asked to demonstrate their products capabilities. These scenarios covered data conversion of student records and course readings, system configuration, upload of course readings, metadata creation and edit, copyright, searching and reporting.

Attendees at the demonstrations were provided with checklists and asked to indicate whether each product could perform specific criteria. They were also asked to indicate which of the two systems they preferred against different criteria. Using these responses and their own observations, a small panel of four key project staff then provided a numerical rating for each software (in accordance with university procurement policy) which formed the basis of the software selection.

### 1.2.3 Chosen Solution

The chosen solution was **Equella** by The Learning Edge. The eReserve evaluation panel rated EQUELLA higher than the other systems for the following reasons (in order of importance):

1. Value for money – The committee recognised Equella provided better value for money in the areas of initial purchase, and ongoing licence costs.
2. Copyright Capabilities - Equella showed more capability in the area of notification of copyright breaches.
3. Administration, Security and Workflow – Equella was more flexible and configurable in the areas of workflow setup/maintenance and system security. Also the Z39.50 searching was better integrated into the product.
4. Reporting capabilities – In most areas Equella demonstrated superior functionality. In particular web development and deployment of reports, downloading of data into various formats, and, the provision of CAL reports were all areas where Equella had an advantage.
5. Metadata and Storage - The committee recognised Equella provided more flexibility in metadata creation and maintenance which will meet changing University needs and future CAL requirements.
6. Searching and User Functionality – Equella supported more varieties of web browsers and had a better advanced searching capability.
7. Implementation, Training, Documentation and Support – Equella scored more highly in the areas of data conversion, LMS integration and branding/customisations.

### 1.2.4 System Implementation

System implementation started in September 2007 with a successfully installed and configured system for the start of semester 1 2008. The project needed a variety of technical and functional resources which were drawn from many different work areas of the university. The creation and the approval of a project mandate enabled procurement and coordination of the necessary resources.

Development and implementation of the Equella software has included:
- A **metadata schema** with c250 fields, housed on 5 tabs.
  - Use of repeaters to add course details for different courses/different semesters
  - Various drop down lists/check boxes
  - Controls which show/hide specific metadata fields
- A five step automated **workflow** (see Figure 3). With some steps initiated by metadata controls.
  - Submitter
  - Check Metadata
  - Scanning
  - Review Metadata
  - Copyright Final Check
- Various **bolt-ons** to deliver needed functionality which Equella was unable to:
  - Citation rendering (currently available in Harvard AGPS, APA and AGLC)
  - Fast Edit – Produces lists of items for specific courses, displays status and workflow step. Used to submit items which have been bulk imported into Equella. Quicker than editing in Equella
  - Overview screens (Faculty and Workflow) to quickly show list of courses for a semester, and number of items at various statuses (Draft, moderating, live). These were heavily used in initial upload of readings.
  - Table of contents display – Displays readings for a particular course in Table of Contents format - includes reading numbers and sorted in reading number order. Items which have had copyright permission to host granted are highlighted.

- o SRMS Conversion – Used to indicate which parts of a study package an item is contained in and delivery method. Used as a flag for readings to be included in print, CD and online production of course packs.
  - o CAL CD & Print stats – Print and CD production numbers are entered here for reporting during CAL sampling periods.
  - o Rescheduling of readings from one semester to another.
- **DRM and security** - DRM is used for digital rights management and as part of the security process. The DRM and the security work together to firstly validate that the student has access to the content and secondly for the DRM (copyright) agreement/notice generation.
  - o DRM notices display when a student first accesses a reading. Students must agree to have reading access. These are scripted based on the copyright category and notice type assigned within the copyright metadata.
  - o At the item level - Each item has a number of security groups assigned when the course becomes active - 2 weeks before semester starts.
  - o At student level – Staff, student, courses and enrolment data is loaded into Equella security tables from PeopleSoft students and HR. When a student logs on, Equella looks up the USQ Identity management to see if they are a valid USQ user. Then the user ID is used to determine which classes/groups (memberships) they are able to access. This determines what readings students can view.
- **Report development** - USQ are not using the vanilla reporting tools of Equella, BIRT, due to limitations in reporting architecture which currently exist. Reporting is managed by using the SOAP APIs which exist in Equella to harvest each item two minutes after it is saved. USQ have then created a series of USQ reporting tables which allow any database reporting tool (products such as Impromptu, Crystal) to create reports.
- **Bulk updates -** This is necessary when readings are rescheduled for each new semester or when a change is made to the metadata fields which impacts on existing records. This is done by a PHP script (written by USQ) which accesses the SOAP APIs.
- **Course Materials Creation -** Readings stored in Equella can be rendered into 3 formats for inclusion in course materials – print, CD and online. The system is a bolt-on to Equella (utilising the APIs) and data from the course production tracking system. ICE submits a web request to Equella and the ICE renderer returns citation, copyright details and the file/online link depending on the course delivery method.

### 1.2.5    Project Outcome

What worked well:
- The project brought together a number of departments and divisions i.e. DAIS (both DeC and Library), the It department, the Legal Office, and all faculties with a view to improving the hosting and management of USQ's third party copyrighted content. It was a well managed project and is a good example of a whole of University approach.
- Support from the Project Sponsor worked extremely well throughout the project, particularly when extra staff resourcing was required for the data conversion elements.
- Most of the system customizations and importing scripts were carried out by one competent and well motivated ICT staff member. Having a single developer contact throughout the project expedited the development process by facilitating rapid feedback.
- The Project Manager's and Project team's ability to maintain the cooperation and enthusiasm of staff across campus during the development and implementation ensured well supported pilot testing with ongoing improvements to the system resulting from user feedback.
- This was the first significant project undertaken since the creation of DAIS as a Division. The whole-of-Division approach was pivotal to the success of the project and is an exemplar for the future operation of the integrated Division.

What could be improved:
- The size of the Project Manager's role was underestimated – the development of DiReCt was a large project and would have benefited from a dedicated full time Project Manager.
- Depth of staff support, especially IT support within the project team was inadequate at some points in the project. Because of other task priorities within the Library Systems team, it was sometimes difficult to assign the necessary priority to this project.

- The Virtual machine architecture and backup are not well established yet. Work to improve this will be undertaken immediately in conjunction with planning for the new hardware.

Lessons learned:
- *Don't always believe vendors* – vendors will tell you that their systems can deliver functionalities that they can't (not without major modification/customizations)
- *Purchase a flexible system* – no system will be able to deliver all functionalities you need. A flexible system will allow you to customize or develop bolt-ons to suit.
- *Ensure adequate technical resources* – to keep your project on track and to be able to respond to problems and identified gaps in the solution
- *Allow time to talk to stakeholders* – this will ensure that all requirements are identified, that you have people available for evaluation and testing and that you have user buy-in for the new system.
- *Create an extensive requirements list and revisit it regularly*– this will ensure you are considering all needed functionalities during evaluation and will aid in the screen design phases.
- *Assume stakeholders won't articulate everything they need* – ask stakeholders what they need more than once, check screen/process design and ensure they are involved in testing.
- *Be prepared to make many changes* – you won't get it right first go. Factor in the need to make changes to screen design.
- *Find a champion* – get support from a senior manager. They will be useful to secure needed resources and funding and to help promote and position your system within your organisation.
- *Start slow – trial limited number of courses.* Don't try to implement the system fully. Trialling a limited number of courses will allow you to identify and rectify any bugs or problems.

## 1.2.6      Current system inclusions and functions

The DiReCt system has created a One Stop Shop for the management of course resources and readings. In the three years since it's inception a total of 11,618 resources have been added to the system. Currently 11,275 are at a "live" status. Access of the readings contained within the system has increased steadily. First time accesses has grown from 35 146 in 2008 to 68 158 for the first six months of 2010.

DiReCt has created a one step process for both academic staff and students. Previously academics staff had to create a reading list, source a reading and obtain a hard copy (often these were obtained by printing articles from databases, and use of them in course packages was contravening license agreements), complete copyright forms and physically walk items across to the DeC.  Academics now have a choice of either emailing reading details, or adding reading details directly into the system. All sourcing of materials and copyright management is carried out by DiReCt and DeC staff. Students previously accessed readings and resources from a variety of sources, including CD and print course packs, links on course web pages, searching library databases or obtaining in hard copy via the Library.  Now all readings can be accessed from one list on their course web pages.

eReserve systems are common to all universities. Typically these systems incorporate digitised course and additional readings as prescribed by lecturers. Students are expected to access other course resources (such as websites, online journal articles, e-books etc) from other system such as course web pages and Library catalogues. Realizing that students are confused by the sheer volume of resources and the numerous systems used to access them, DiReCt aims to incorporate all course required and additional resources in a central repository with a controlled, single point of access. Therefore included in DiReCt are:
- All core course readings and additional readings regardless of source or format – this includes digitised versions of hard copy journal articles and book chapters, links to journal and e-book databases and links to websites.
- Prescribed texts or recommended references available as e-books - links to them will be added into DiReCt to aid in discovery and access.
- In demand items identified by Library staff through interactions with students
- Audio and video files – items are streamed through university streaming servers with links within the DiReCt system.

DiReCt provides a standardised approach to accessing course resources, whilst providing flexibility to academic staff. All courses have a link to DiReCt on course web pages, but academics can choose to imbed links to readings within course modules. There are no restrictions on the types of items added. The system can cope with a variety of file formats or links to external sources.

As typical with many eReserve systems, DiReCt also functions as the copyright management system for the university. A university mandate directs that all third party copyrighted material uploaded onto university websites must be processed via DiReCt. DiReCt also manages copyright associated with all course packs, including online, CD and print production. This includes application of Digital Rights Management notices, identification of resources in breach of copyright limits, storage of copyright application details for items in excess of allowable limits, and controlled access to students based on current enrolment. DiReCt also serves as the basis for reporting to CAL in the university's annual copyright sampling periods.

As DiReCt stores all readings which are included in course packs, it also serves as the source of readings for course pack production. Reading files are extracted from DiReCt to be included on CDs and in printed books of readings. Links are extracted and imbedded in online course materials. Bibliographic data is extracted and added as citations to online and CD readings and formatted into Table of Contents for inclusion in printed books of readings. The citation render included in DiReCt allows a referencing style to be chosen (currently from Harvard, APA or AGLC) and applied to each reading.

## 2. USING THE ONE STOP SHOP TO POSITION THE LIBRARY FOR FUTURE GROWTH

Libraries are currently existing (and attempting to survive) in an ever changing world. The explosion of electronic and online resources has had a tremendous impact on traditional Library services, particularly in Lending and Technical Services areas. Whilst technical services areas have been able in some ways to shift focus from print to electronic resource acquisition, and redeploy and re-skill staff, the electronic world has not delivered a similar experience to traditional Lending Services activities. Increasing acquisition and use of electronic resources has lead to decreasing Loans Desk transactions and decreasing shelving activities. USQ Library, like most other academic Libraries, has seen a decrease in the number of staff rostered onto the Loans Desk, and an accompanying reduction in staff numbers within the section. The Library's involvement in the DiReCt system has provided new opportunities and new directions, for both the Library as a whole and more particularly, for the Lending Services Section.

### 2.1 A new direction for Lending Services

Two staff from Lending Services have been redeployed to become permanent members of the DiReCt team, which also includes Materials Development Officers, Electronic Publishing staff, and a copyright officer from DeC. Even though traditional Library skills and functions, such as bibliographic records management, interpretation and application of citations and referencing styles, and creation of metadata skills are employed as part of the DiReCt workflow, they are not skills associated with Lending Services staff. However, Lending Services staff are experienced in managing course reserves (which involves liaising with academic staff), creating short entry patron records within the Library database, assisting students locate resources, and carrying out very procedural, repetitive work, which are all skills which are also utilised in the course readings process. Thus Lending Services staff have had to acquire new skills. This up-skilling has included acquiring improved:
- Bibliographic skills/knowledge
- Metadata skills
- Organisational skills
- Communication skills
- Problem solving skills.

The process for adding course readings to DiReCt and producing the course reading component of course packs has enabled the development of a cross departmental team, which takes advantage of the skills and experience of staff in the Library and Distance and eLearning Centre. The staff have formed a collaborative working environment. At busy times, tasks, such as submission of readings, will be shared between Materials Development Officers and Library DiReCt staff. Other Lending Services staff not permanently in the DiReCt team will also assist with reading submission and processing. This has meant a significant acquisition of new skills (and associated confidence) for many staff within Lending Services.

## 2.2 A new direction for the Library

At USQ, functional and technological management of the DiReCt system rests with the Library, even though a large proportion of the content in the eReserve system (ie the course pack readings) is the province of the Distance and eLearning Centre, and not a traditional Library responsibility. Through its involvement with DiReCt the Library has positioned itself to be a key member of the course pack production process, which is a core university activity, supporting core university business. DiReCt involvement has also enabled the Library to be a key stakeholder in copyright management across the university. The ability of the Library to undertake the DiReCt management role was due to several factors. The project was initiated through the Library's eReserve trial and identified need for an eReserve system. From the earliest stages the Library took a lead role. The Library was also able, and eager, to work collaboratively with the DeC throughout the project, thus engendering trust from DeC that their needs would not be ignored. Throughout all phases of the project, Library staff demonstrated a strong commitment to the new system and committed resources (through staff time and money) to the project. Most importantly, the Library simply "put up their hand". Utilising existing staffing, they were able to re-assign staff to dedicated positions as part of the immediate DiReCt team, and made a commitment within the systems team and management to supply technical support and functional management.

DiReCt has played an important role in helping to position the Library as a key player in supporting university initiatives and innovations. By building a robust, user-friendly system, which provides a needed service and actively supports learning and teaching at the university, DiReCt functions as its own PR mechanism. The system has become very popular with academic staff and students, and is well regarded across the university. In 2009, the implementation team won a university Excellence award for Innovation or Process Improvement. DiReCt, and thus the Library's, reputation has been enhanced by its role in offering solutions to problems across the university, both big and small. These have included storing and providing controlled access to the Faculty of Engineering's Spatial Sciences data collection and providing online access to EndNote software for download to students. A recent project in which the Library is involved is the development of a Media and Learning Objects repository, incorporating DiReCt. This project is another cross departmental project which also involves the Australian Digital Futures Institute.

Libraries can create opportunities, such as USQ Library has with DiReCt, which will position the Library to play a vital role in the future directions of its parent organisation and will make changes in technology and traditional functions, work *for* the Library, instead of *against* it. Through the DiReCt experience, the Library has learned the following tips –

- *Don't be afraid to step outside traditional library boundaries* – opportunities may exist which, whilst not being a traditional library role, can use traditional library skills and expertise. Many of these may involve creating a partnership with other departments in your organisation.
- *Become involved in projects* – Even though most library resources are already stretched, identify what resources you can offer from within the Library for involvement in external and internal projects. Alternately ask for additional funding.
- *Put your hand up to take on a management/lead role* – Don't be afraid to take on a leadership role. Find the necessary resources to commit to leading a project. Taking on a leadership role will enable you to control the direction of the project/programme. NB – Don't put up your hand if you don't have the statistics, information and resources to back it up.
- *Use information from within wisely* – collect and analyse appropriate statistics and use them to support your decisions and arguments.

- *Build on current success* – If you have implemented a system, process or program which is working well, explore how it may be used for other initiatives or to solve problems.
- *Create opportunities, don't wait for them to be created for you* – pay attention to what is happening in your organisation and in the Library profession. Make suggestions for new projects or programmes.
- *Create relationships between departments and individuals* – many opportunities arise based on previous and existing relationships. If relationships already exist between departments, then it will be easier to become involved in joint projects and functions.
- *Offer solutions to problems* – if you can provide a solution to an existing problem within your organisation, you will be in a better position to ask for and receive funding to implement a new system/process/program.
- *Actively promote the Library, Library systems and capabilities* – use whatever channels you can to promote the Library, especially its successes and capabilities. One of the best channels which will assist participation in future projects is to ensure good representation on existing organisational committees and working parties.

Through employing some of the above techniques, the Library has identified several future initiatives which can use DiReCt as the platform.

## 2.3 The Future

It is anticipated that DiReCt will be used as the platform for several other repository systems throughout the university. Work has already commenced on the creation of a Media and Learning Objects Repository. This project is a joint project between the Library and the Australian Digital Futures Institute (ADFI) to develop a repository for media files used in teaching, such as lecture recordings, images, video clips etc. The Media Objects Repository will utilise the Equella software to house bibliographic data and manage copyright and security/access, and an ADFI developed product to manage the user interface and streaming of audio and video files.

A need for various other systems to address current issues has been flagged across the university. The Library systems team has been working to position DiReCt as the best solution for these, and will be creating projects proposals for submission to relevant committees. These include:

- Library Tutorials Collection
- Course Materials Repository
- Research Data Repository
- Student Express Print and Course Optional Print support and copyright management

Whilst most of the above repositories are managing resources which are not strictly library resources, such as course materials and teaching objects, the Library is proposing that that they take on functional support and management of the new repositories. This will align with the technical support for the DiReCt system provided by the Library Systems Team and utilise the repository expertise and metadata skills obtained from the functional management of DiReCt. The Library is currently investigating the formation of a repository team within the Library which will include staff currently involved in providing support for DiReCt and for the USQ ePrints system. This team would be well positioned, with some additional positions, to provide support and management for other university repositories.

Overall the DiReCt project has been very successful. In a relatively short amount of time the Library has been able to implement a new system, transfer all existing readings into the system and create processes which provide secure online access, rendering to online, CD and print course packs, and efficient copyright management and reporting. The Library has also been able to cement good working relationships across different departments. The confidence and experience gained from the success of the project has opened new doors to other projects and system implementations. It has also enabled the Library to position itself within the organisation as an innovative and flexible department with the capabilities, expertise and enthusiasm needed to become involved in processes which are outside traditional library boundaries.