

Unisa Library: Adapting the Organization to an Electronic Resource Management Environment

*Dorette Snyman*¹

The University of South Africa (Unisa) Library used the Digital Library Federation (DLF) Electronic Resources Management Initiative's generic workflow model during the implementation of its new Electronic Resource Management (ERM) system (Innovative Interfaces' Millennium). A Processing of Electronic Resources Workgroup was formed to manage the implementation phase. The workflow analysis was used to determine which processes from the new re-engineered library structure are involved in managing e-resources within the library. Discussions led to recommended changes to activities, inputs and outputs of existing processes. The workgroup created the implementation plan and made recommendations for customization of the ERM module. All the debating generally led to a deeper understanding of all interconnecting processes involved in the successful management of electronic resources.

Introduction

The explosion in the number of electronic resources has necessitated that libraries, specifically academic libraries, rethink the way they manage the life-cycle of their electronic resources within the structure and processes of their library. Libraries have generally found that their existing integrated library systems (ILS) lack the functionality required to support the management of e-resources. Problems associated with this lead to the commissioning and publication, by the Digital Library Federation (DLF), of three reports designed to improve the management of electronic resources. After the publication of this report, the Electronic Resources Management Initiative (ERMI) was established to develop specific needs, set data standards, define specifications and devise tools for managing electronic resources.

One of these tools was a generic Electronic Resource Management Workflow Flowchart of the detailed activities associated with the management of an e-resource life-cycle within a library.

A result of this extensive report was the development of electronic resource management systems or modules by ILS vendors (some involved in the ERMI) incorporating data standards and specifications into the ERM system. One such vendor was Innovative Interfaces, which was one of the first to release an ERM system in 2005.

¹ Electronic Resource Manager, University of South Africa (UNISA) Library, South Africa.

In tandem with this development (unintentionally), the Unisa Library embarked on a restructuring process that started in the late 1990s with various investigations and reports on a possible methodology to accomplish this, culminating in the introduction of a business process re-engineering (BPR) project to design a new library organizational structure.

The Unisa Library and Its Structure

Unisa is a leading distance education institution in the world. It is one of the oldest universities in South Africa, established in 1874 as the University of the Cape of Good Hope. As an examination body for higher education, it later become an independent university focused on education by correspondence in 1946.

During the 1990s, the University experienced a explosive growth in student population, reaching over 100,000 in Africa and the rest of the world. After the merger of the two distance education institutions in South Africa, i.e. the (old) Unisa and the Technikon South Africa (TSA) into the (new) University of South Africa, or Unisa, the student population grew to over 200,000 by 2005.

The Library functions as one of the supporting pillars of the University, as it renders a centralized service to all students wherever they are in the world. Meeting the needs of such a large and diversified body of students requires a robust structure, streamlined and automated processes, and a focus on continual service improvement.

The library implemented Innovative Interface's basic Innopac library system in 1997. It immediately began to look at various additional modules it could use to automate print or manual processes, and has since added numerous modules to its ILS. With the release of Innovative's ERM system in 2005, the library recognized the potential of the module to integrate the manual and unstructured management of its electronic resources into the new process-based structure of the library.

The BPR project used two independent consultants, one a business process specialist and the other a job profile and design specialist. The principle of the organizational design life cycle was used, and the Michael Porter Generic Value Chain served as a starting point for re-designing the library. For the re-design of the information technology section, the IBM Process Model was adopted.

The Unisa Library followed specific principles in the design of the organization which are enshrined in the new organizational structure. These are:

- Design only processes requiring human intervention (automated processes do not need human structures);
- Use best practice in the design of each process;
- Separate urgent from important, the urgent always taking precedent;
- Separate direct customer facing from indirect customer facing;
- Maintain the integrity of process boundaries to ensure continuity and eliminate holes between outputs and inputs;
- Create structures which entrench ownership of process inputs and outputs, and clusters of related processes. Each process should have a process owner;
- Ensure structures are self-governing and embody leadership qualities;
- Each process should have an owner to ensure that physical structures cannot be changed or high-jacked by individuals unless the process design is followed and the outcomes approved.

The new organizational structure was designed using a “clean sheet” approach designing from the bottom up, in which processes (tasks, activities, inputs and outputs) lead to identification of roles, roles to jobs, and jobs are grouped into business units. Business units are grouped together to form the organizational structure which together with a leadership framework form the physical organizational framework.

The organizational structure was designed to be robust enough to incorporate new technology and accommodate changes through ongoing process design.

The Unisa Library and Its Resources

The Unisa Library was one of the early adopters of electronic resources in South Africa, first with a CD-ROM network in the early 1990s, then changing to internet-based resources in the late 1990s. The library currently provides access to more than 200 databases (including bibliographic databases, full-text abstracting and indexing databases, full-text publisher’s databases, e-reference title and e-books) and almost 30,000 electronic journal titles.

Electronic resources are acquired individually by the library or as part of the library’s membership of GAELIC (the regional Gauteng and Environs Library Consortium) and the national consortium, SASLI (South African Site Licensing Initiative). The budget for e-resources has grown incrementally over the last few years and will comprise 35 percent of the total IR budget in 2008. In support of the University and the Library’s strategic 2015 plan to empower users by proving self-help services and direct access to resources, the library aims to have 40 percent of its collection available in a digital format by 2008, and to increase that percentage every year.

Management of the e-resources in the library has grown out of the subject librarian's collection development role in the past. Within the new library structure this role was allocated to the Information Resource (IR) Developer: Electronic Resources which is part of the IR Development Team.

Choosing Our ERM System

After a demonstration of the Millennium Electronic Resources Management module at a South African Innopac Users Group Meeting, we decided to purchase the Millennium module because it can be integrated with our Millennium ILS, needs no additional infrastructure, maintenance or software, the interface is already known to staff, upgrades and enhancements will be part of the Millennium new releases annually, and it adheres to the standards described in the DLF ERMI report. The module was installed early in 2006 and we started with our implementation shortly after.

Implementation of Our ERM System

During the initial implementation phase we received training from Innovative, staff were registered on the ERM listserv and we found a number of presentations from other Innovative libraries about their experiences in implementing an ERM system. What was clear from reading the material was that reality sets in after the initial flush of excitement has worn off. In this case, the ERM system had a far-reaching impact on the processes and procedures in their respective libraries, and almost all advised on the necessity to rethink these aspects.

In the light of this advice we decided that a more cautionary approach was wise. We based our approach on the principles we had followed in our BPR which included a newly established process on implementing new technology in our library.

Armed with the knowledge that a generic workflow already existed, we decided that the first step of our implementation plan was to do a workflow analysis and the measure the results of the workflow analysis against the newly re-engineered structure of the Library.

Establishing the Processing of Electronic Resources Workgroup

The process was started by convening an interdivisional workgroup representing all teams and business units involved in the processing of e-resources. Although this constituted a fairly large group of staff members, it was felt that it could serve the following purposes:

- To reach a common understanding about the aim of implementing the module in the library;
- To establish a communication avenue about e-resources on operational level—something that was lacking in the previous library structure;
- To create an environment in which staff reach an understanding of everybody's involvement in the flow of e-resources through the library's structure;
- To allow each staff member to see how their processes fit into the next process,
- To allow for inter-divisional discussions about boundaries between processes.

The Processing of Electronic Resources Workgroup, as we called ourselves, identified that the first order of business would be to reach a common understanding of the outcomes we expected the ERM system to deliver. We also felt that we should reach an agreement on who would be the overall owner of the ERM system. After some research we decided that our main outcomes would be:

- To facilitate a streamlined and seamless workflow across divisions using best practice principles;
- To create a complete paperless record of each e-resource;
- To minimize the need to maintain any kind of external lists by using the “create a list” functionality of Millennium in combination with specific fixed fields in the record structure;
- To enhance the availability of e-resources for all users of the Unisa Library.

It was important to decide on overall ownership of the ERM system as we felt that this person should be responsible for driving the implementation agenda of the ERM system, making final judgments in the case of multiple viewpoints on specific issues, co-ordinate input from various outside stakeholders and allocate ownership of any specific issues that needed resolution. Ownership of the ERM system could possibly be taken by Procurement (serials acquisition), Technical Services (catalogers) or Information Resources Development.

As in the debate about ownership of the library catalogue during re-engineering, we resolved that:

Ownership of the quality and maintenance of the data should rest with Technical Services (or Information Resources Description in the new structure); support in the technical maintenance of the module should

be with Library Systems Support; but ownership of the content of the ERM system should reside with Information Resources Development section. IR Development decides what goes into the ERM system, determines how resources should be displayed, and who may use the content, and when the content may be removed. We also determined that IR Development, specifically the IR Developer: E-Resources should be responsible for the initial activity in the first process at the start of the workflow (Notification of new product) and also for the very final process (Decision to renew or end product within collection). It was generally agreed that the IR Developer: E-Resources should be the overall owner of the ERM system within the library.

We decided that the ERM system would be a “one-stop paperless stop” for all e-resources in the library’s collection. One member joking said that the test of the ERM system would be if the IR Developer: Electronic Resources could go on extended leave without any colleagues struggling to find information regarding the electronic resources.

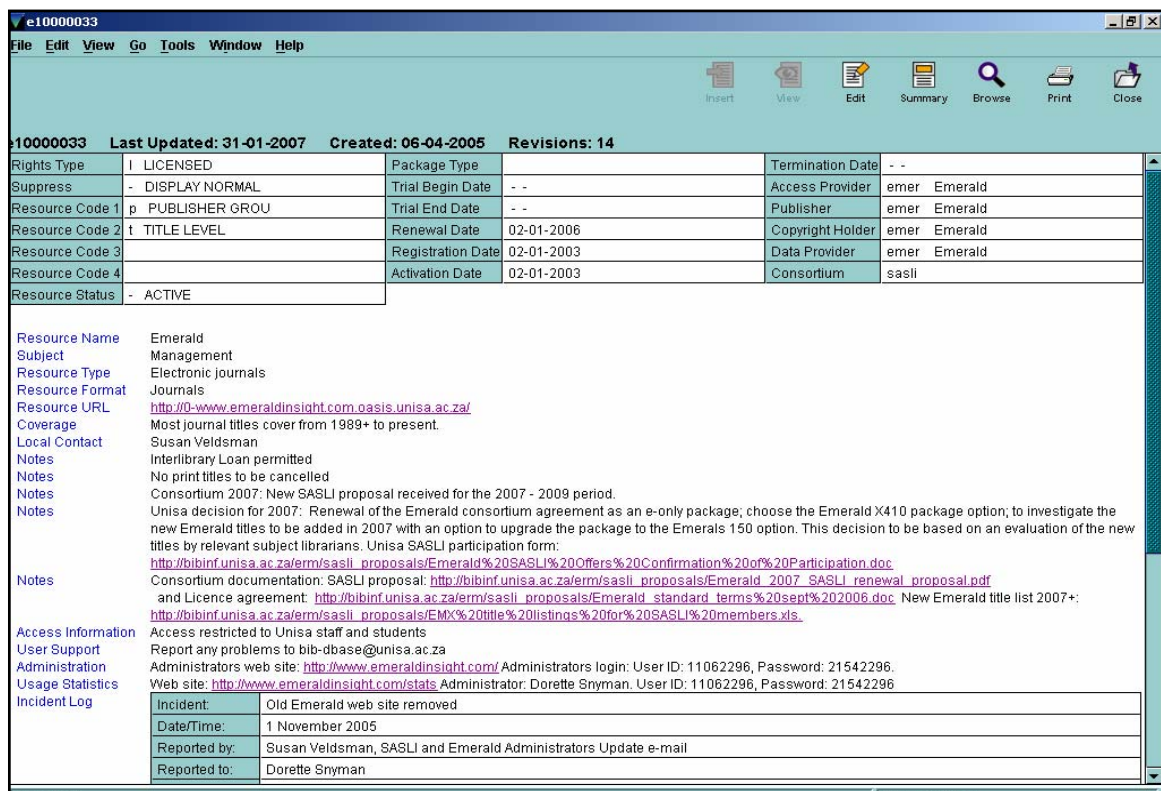


Figure 1: Examples of one record with links to supporting documentation.

The Workflow Analysis Process

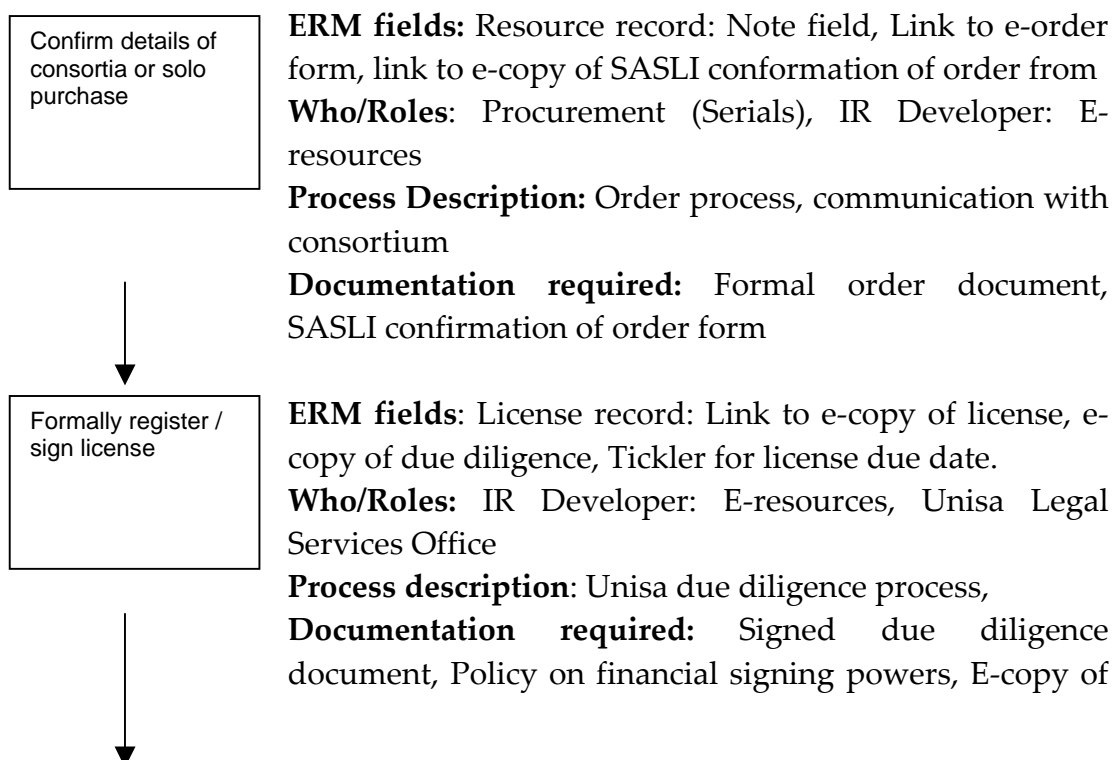
The workgroup decided to follow the DLF ERMI workflow in detail as this workflow incorporated best practice at the time of the design.

At each of the points of the diagram, detailed discussions were held to decide on the following:

- The fields to be populated in the ERM system regarding each process and decision point;
- To identify customization required in our ERM system to support these processes or decision points;
- To establish what roles and job titles are involved at every specific point of the workflow;
- The name, number and owner of each specific process as described in the new library structure;
- To identify the documentation required to complete or evaluate a successful process. Documentation can include procedures, administrative documents, criteria, checklists, etc.

Each of the steps was used to identify the completeness of the existing re-engineered processes as they were identified in the re-engineering over the proceeding two years and to check whether new process should be established. We also ensured that each process owner was aware of the content of the process he/she should manage, and to identify any activities that should be added to role profiles or existing process documentation. We also listed the documentation that should be created to facilitate each process.

All decisions were documented as we went along, and the workflow diagram was populated as the process unfolded (see Figure 2 below for a segment from the workflow document).



license, Procedures for due diligence, Form for SASLI signing on behalf of Unisa

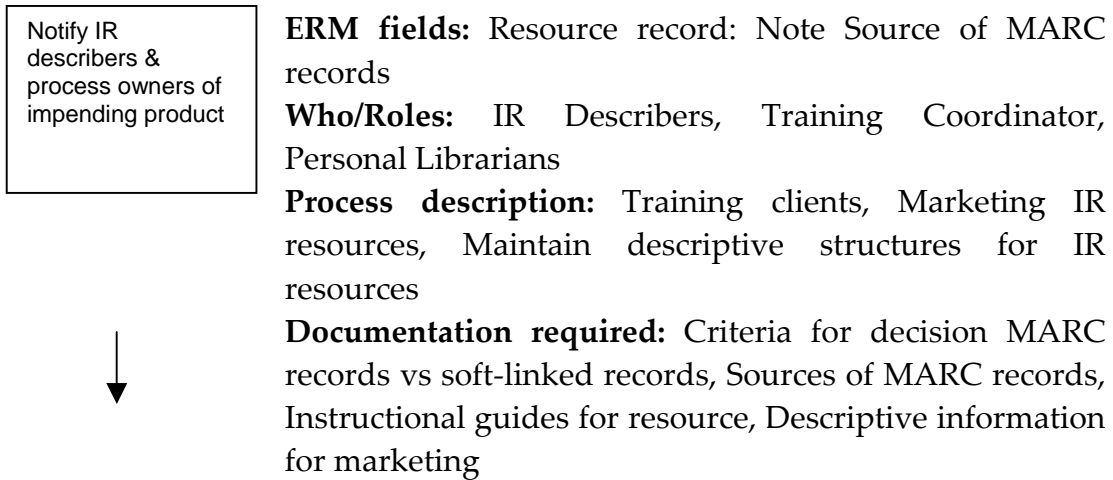


Figure 2: Section from the Unisa Library workflow document.

In the discussion, specific workflow processes were separated out for discussions with external stakeholders namely:

- The license process, which constitutes an extensive due diligence process as required by the Unisa Department of Finance and involves the Unisa Legal Services Division;
- National consortium process between SASLI and Unisa. Separate talks with the SASLI coordinator was necessary to finalize the workflow in terms of consortium announcements, participation documentation that should be completed, and signing license agreements on behalf of Unisa.

The discussion regarding the workflow was also used for fitting other e-resources work tool programs such the SerialsSolutions A-Z list and the Ulrich Serials Analysis to the e-resources workflow.

Other Decisions Made During the Workflow Analysis

The workflow analysis process both enforced discussions and sometimes led to decision making about related issues surrounding the processing of e-resources.

One of the first major decision points was the principle of the single vs. two record approach followed in the Unisa Library catalogue. The library has followed the single record approach since first computerizing its catalogue in the early 1980s. Providing users with one description point of a title was deemed to be the most user-friendly and least confusing practice. The ERM

system would create a new record type in the library catalogue called a “resource record” which was not MARC and used different fields from the original MARC records. During the workgroup discussions, the cataloguer responsible for standards drew up an overview of advantages and disadvantages of what the consequences would be for both continuing with the one record approach and moving to the two record approach. After much debate the workgroup recommended that the library should move to the two record approach. This would enable the display of resource records as the main entry for e-resources. Resource records allow for the display the unique fields in the library catalogue not possible with MARC records, e.g. resource descriptions, advisories about availability, restrictions on the use of the resource, etc. Resource records enable the loading of individual e-journals contained within aggregator and publishers databases through the coverage load function of the ERM system after which these e-journals would be searchable in the catalogue.

In the past, catalogue records for e-resources were originally created whenever an order was placed. This record was used to track payments and order information about the resource. No entries in the catalogue were made for any additional titles included in a database package since those titles were listed on the subject databases web page, which were created using Microsoft Access and MySQL.

The ERM system necessitated a rethink about which resources titles should be included in the ERM system and consequently the library catalogue. We determined that resource records should be created for all resources with licenses, all consortium resources, all publishers packages, all CD-ROM, user-name and password or stand-alone databases, all digital collections, all e-book collections, publishers or vendors (to enable the bulk loading of individual e-book title collections), resources with special pricing requirements and all resources used for e-reserves.

We also discussed the minimum level of the records required for resources as the Millennium ERM system allows for the creation of both MARC records and “soft-linked” records in the library catalogue. Soft-linked records are short holdings records that are linked to parent records such as aggregator databases. The workgroup proposed that MARC records should be created when:

- Acceptable standard or minimum level MARC records are supplied free of charge by the publishers (e.g. Oxford University Press);

- A permanent record in perpetuity is needed such as NetLibrary titles, digital archives, subject collections or titles which we purchased under the ownership model;
- Records that we would like to keep should we move to another library system;
- Records needed for scoping and limiting to sub-collections in our library catalogue;
- Records where indexed fields, subject headings and authority control are important.

Soft-linked records would be used for resources attached to aggregator databases with non-permanent content, titles where non-standard fields and non-indexing does not negatively impact on the retrieval of the resources, and titles where journal title and coverage date is the most important information to communicate to the user.

The workgroup also proposed that the IR Description Division recall a standing decision that only OCLC WorldCat MARC records are used in our catalogue (apart from own original cataloguing) and that the decision be amended to include Library of Congress MARC records with an acceptable standard from any other source.

The workgroup listed all the external lists of e-resources maintained separately in Excel and tried to list all possible information needed for individual e-resources such as accessibility for disabled users. These lists were used to identify customization of free fixed fields in both resource and license records so that these lists can be drawn from the ERM system in future.

Implementation Plan for Our ERM System

The work for populating the database was divided in two large sections: input of records for existing resources and creating records for new resources.

Staff from Procurement (Serials) volunteered to create basic resource records for all existing titles working from title lists created from the library catalogue of all current e-resources on order. They also created contact records from information about vendors and publishers stored within Procurement.

The IR Developer: Electronic Resources then expands these basic resource records using documentation stored in various paper files and cabinets such as expensive order motivations, final Excel title lists of publisher's packages, administrative and usage statistics information as well as links to consortium offer documentation. The supporting documents are stored on the library's

own web server on which an ERM directory with protected storage space was created.

License records will be created by the IR Developer E-Resources on an ongoing basis after the bulk of the resource records were created. Links to a scanned copy of the originally signed licenses kept in the files of the central Unisa Legal Services Office will be created. The original signed due diligence document accompanying each signed license will be scanned in PDF and stored on the Library's web server as well.

The workgroup recommended that new resource records be created for the following:

- E-resources on trial;
- E-resources recommended by individual subject developers;
- E-resources which are listed on the IR budget documents;
- E-resource subscriptions suggested by users.

Creating records and documenting decisions taken at the time of trial will enable the Library to build a long-term written history of a resource instead of relying on staff members' memories. Documenting decisions in writing strengthen the principle of "motivated decisions" which is entrenched in the new library structure as a means of eliminating biased decisions by individual staff members.

Recommendations from the Workflow Analysis

At the end of the workflow analysis, the workgroup documented some of the issues that should receive attention once the new library structure has been implemented:

- Some activities within role profiles need to be changed or updated by adding new technology tools. An example is the process designed for Information Resources Procurement. Inputs and outputs regarding the maintenance of correct SerialsSolutions and Ulrichs Serials Analysis data should be added to the process document;
- Workflow of e-resources between the SASLI national coordinator and the Unisa Library should be analyzed and incorporated into the Service Level Agreement between SASLI and the Unisa Library;
- Customization of the ERM field guide tables was identified:
 - New fields to provide descriptions and links to supporting documentation of each resources.

- New date fields to manage the due diligence process of the license agreements between the library and the Unisa Legal Services office.
- Building and indexing of the subject index field using the same subjects for resources as those used on the library's web page;
- New fixed fields to indicate disability compliance, OpenURL compliance, etc.
- A field to log motivated decisions regarding renewals or cancellations of resources.
- A field to summarize the history of the resource in the library – all paper records kept can be destroyed afterwards.
- The Workgroup was able to identify and list the numerous missing supporting documentation required such as checklists, criteria, minimum standards, procedures;
- All supporting documentation should either be scanned (original licenses or due diligence documents) or updated with all relevant information (journal title lists in Excel with Unisa holdings and payments in rand) so that anybody involved in processing e-resources could find the necessary correct documentation.

The workgroup will be continually working on customization of resource and license records structures to mould the ERM system to our needs.

All documentation relating to the implementation of the ERM system including the workflow, decisions, field guide tables, plans and progress reports are made available to the library staff on the Infoweb, the Unisa Library's intranet pages.

Conclusions

The participating workgroup members felt that the in-depth discussions during the workflow analysis enabled staff to reach an understanding of how an important connector each participant is in the life-cycle of an e-resource. It was one of the first opportunities to test the new re-engineered structure of the library against a generic model. The new library structure was designed to be flexible enough to accommodate new technology within the process structure and it held up very well. No missing processes or roles were discovered and the workgroup identified the individual inputs, outputs or activities that can easily be added to existing processes.

The workflow analysis has helped staff understand what a good workflow should be, how to determine best practice and how to plot the flow of processes and decisions. This experience gained can be utilized when

implementing other technologies that may have an impact on the structure of the library.

The implementation of the new ERM system has begun to permeate the structures of the new library and by utilizing the workflow we have created a tool to manage this process.

References

Geller, M. "ERM staffing, services, and systems." *Library technology reports* (March-April 2006): 1-27.

Graves, T., and M.A. Arthur. "Developing a Crystal Clear Future for the Serials Unit in an Electronic Environment: Results of a Workflow Analysis." *Serials Review* 32, no. 4 (2006): 238-246.

Jewell, T.D., et al. *Electronic Resource Management: Report of the DLF Electronic Resource Management Initiative*. Washington, D.C.: Digital Library Federation, 2004. <http://www.diglib.org/pubs/dlf102> (accessed November 30, 2007).

Prosser, G. *Organisational design at Unisa Library Services*. Unpublished confidential report submitted to the Unisa Library Management on completion of the Library Re-Engineering Project, 2002.

Related reading

Porter, M. *Competitive advantage: creating and sustaining superior performance*. New York: The Free Press, 1995.