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E-RESOURCES MANAGEMENT: HOW WE POSITIONED OUR ORGANIZATION TO IMPLEMENT AN ELECTRONIC RESOURCES MANAGEMENT SYSTEM

Marilyn White
Susan Sanders

The Information Services Division (ISD) of the National Institute of Standards and Technology (NIST) positioned itself to successfully implement an electronic resources management system. This article highlights the ISD’s unique ability to “team” across the organization to realize a common goal, develop leadership qualities in support of organizational strategic plans, and by extension support the NIST’s mission.

Keywords: Electronic resource management system, serials, electronic resources, workflow, technical services, implementation, knowledge management, customer service

INTRODUCTION

Implementing a new product or service is always a welcome challenge in the Information Services Division (ISD). It can be said it is part of our “psyche,” what we are encouraged to do, and therefore what we do best. Some background information on the National Institute of Standards and Technology (NIST), and the ISD in particular, will illustrate the reason for this claim.

THE NIST ENVIRONMENT

The NIST was founded in 1901 as the National Bureau of Standards, and today it is the Commerce Department’s premier federal agency supporting...
the measurements and standards requirements of the nation. Scientists in
the NIST laboratories conduct research in a wide variety of physical and
engineering sciences. The labs respond to industry needs for measurement
methods, tools, data, and technology.

The NIST culture is one of commitment to continuous process im-
provement. That being said, it is home to the Baldrige National Quality
Program—which promotes and recognizes organizational performance ex-
cellence.

What is the Information Services Division?

The ISD is a tri-part information services organization that includes
the NIST Research Library, the Electronic Information and Publications
Group, and the Museum and History Program. The integrated efforts of
these three programs drive the ISD’s knowledge management functions.

The ISD operates within the framework of a knowledge continuum
assisting NIST research efforts via the research library, producing, pub-
lishing, and dispersing NIST research via the Electronic Information and
Publications Group and preserving NIST knowledge by way of the Mu-
seum and History Program.

How We Achieve Our Goals: Vision, Strategic Plan, Teams,
and Implementation

The underpinning of all we do is based on our vision—to be globally
recognized as the premier science and technology information resource.
We support this vision with a dynamic and constantly evolving strategic
plan that is prominently woven into each staff member’s performance plan.
We then meld the unique skill sets available in our organization into team
projects. This solid foundation enables us to execute a new program or
service in accordance with a definitive plan or design.

A strong commitment to our core values (innovation, flexibility, perfor-
manence excellence, customer focus, teaming for success) and the steadfast
support of NIST goals drive the creative and collaborative efforts in the
ISD.

Laying the Groundwork for an Electronic Resources
Management System

The ISD serves customers who require the very latest in e-resource content
to support their research needs. As the complexity of managing our digital
resources increased, we were already poised to draw on our organizational
assets to create an action plan and execute a solution. The next part of this discussion will illustrate how we garnered teamwork to investigate, recommend, and implement an ERMS product to manage the life cycle of our key digital assets.

**Overview of Team Approach**

Because of the variety of skill sets we needed to launch an ERM and the large investment in staff hours we would enlist from our colleagues, we determined the ERM implementation process should be handled by two teams. The ISD’s strategic plan, in particular, “the transformation of operational processes to keep pace with industry best practices,” was the backdrop for each team’s commitment to the project.

Team 1 (product selection) consisted of four staff members. The Library’s systems administrator was the team lead; additional members included an interlibrary loan librarian, a serials librarian, and a technical information specialist (who started the project as an acquisitions and interlibrary loan specialist and later became the ILS administrator).

Team 2 (implementation) consisted of the serials librarian as team lead, additional members included the interlibrary loan librarian, ILS administrator, and the serials technician. As you can see, all team members brought specialized and complementary skill sets to the table.

Team one was formed in February 2007. This team consulted product review articles, investigated existing and developing ERMS standards, and attended product demonstrations at local libraries. The team also interviewed the serials staff and conducted workflow and needs analyses.

This preparation time was a critical point in the implementation process. The team agreed that once a vendor was selected, the success of the initial training sessions was dependent upon the careful outline of the serial team workflow process and the details of how they maintained their serials data. This careful preparation also enabled the team to create a list of system evaluation criteria for the ISD. Team 1 submitted their product recommendation to management in March 2008. Team 2 began the implementation process in August 2008.

**Defining the Problem**

We considered the most urgent problem areas in our e-resource management process and set out to address them early in the implementation process. We also looked at what data could be migrated from other systems, what data would require manual entry, and what services the vendor could provide to help us populate the ERMS. We also kept vendor development
plans in mind as we determined which stages of the implementation could be postponed if need be. In fact, we did delay our ERMS purchase for about 4 months to allow for the development of reporting features from one vendor.

Some of the main challenges we faced in our current workflows included multiple data entry points. We were updating our online public access catalog, our E-journals page, and myriad spreadsheets. Our process resembled a snowball effect. We updated data in one area and continued the process across multiple data entry points. Another challenge was inconsistent metadata and “silod” work processes. As our record-keeping tasks multiplied, individual methods of record keeping evolved and did not allow for shared information across the serials team environment. A third challenge was lack of central storage for usage statistics and license agreements. Although we utilized a vendor for collecting most of our e-usage data, there were still quite a few titles that were tracked individually. This information was collected on a multitude of spreadsheets. License agreements are in housed in hard copy and in PDF and thus are not easily accessible to staff. We were faced also with increasing complexity of maintaining e-journals. As our journal package collections grew—sometimes doubling or tripling the titles we received—it became a big challenge to keep track of the title changes each year. This situation was compounded as we additionally struggled to keep up with the titles we received through our consortial membership. A fifth challenge was that customers and staff require timely information delivery. This declaration reflects our organization’s mission statement: “To support and enhance NIST’s scientific and technological community through a comprehensive program of knowledge management and superior customer service.” That said, our team supported the acquisition of an ERMS that would enhance our capability to not only maintain key business data but continue (and hopefully surpass) our customer service. The team agreed the purchase of an appropriate e-resource management system would provide our organization the opportunity to support the growth of our e-collections and promote synergy within the quickly evolving information ecosystem. A final hurdle was that our first-generation record keeping was unable to keep pace with the growth of our electronic collection. Our initial method of tracking data in Excel morphed into a large, cumbersome, and complex set of spreadsheets. Although we were able to manage key journal information this way, the data could not be manipulated easily to deliver timely collection development data.

**Information Gathering**

Team One read product reviews and articles, investigated existing and developing ERMS standards, examined the library’s current workflow for
managing electronic resources, and interviewed serials staff to determine
t heir needs. The team made note of what was working and where there
were opportunities for improvement. The team also consulted the collection
development librarians, reference services librarians, and the business spe-
cialist as they are involved in the management of the library’s e-resources
as well. The team conducted an extensive review of system requirements
developed by the Digital Library Federation’s Electronic Resource Man-
agement Initiative. The team determined what data elements were currently
captured via multiple spreadsheets and paper files and likewise identified
data gaps. Insight gained from this exercise was used to narrow the ex-
tensive ERM requirements developed by the DLF ERMI to fit the ISD’s
needs. Subsequently, the team used its newly identified criteria to asses
ERSM products.

System Evaluation Criteria

The team used the following criteria to evaluate ERM products: connec-
tivity and intuitiveness of search and retrieval functionality for both staff
and public interfaces; capacity to store a variety of metadata; how well the
system supported collection development activities; and ease of workflow.
The team also asked for input from staff. Staff required the following cri-
teria: data storage capabilities, reporting features, storage and handling of
usage statistics, and how well the system supported data manipulation for
collection development activities. None of the ERM systems on the market
met all of the criteria the team identified as “highest priority” requirements.
Therefore, the team was willing to consider ERM systems that had “must
have” features still in the developmental stage.

Key to selection of an ERMS was the vendor knowledge base. As the
team compared various systems, they realized the knowledge base was the
key to reliable searching, linking, and e-resource management. The team
was well aware that maintaining an accurate knowledge base requires
the ability to update e-resource information on a continual basis. Content
aggregators and providers regularly acquire and drop titles to make their
packages as attractive and competitively priced as possible. The location of
e-resource titles change often, and several URLs can be used to represent
the same resource in multiple databases.

The team chose the ERMS with the most extensive and current knowl-
edge base for e-resources, including journals, books, and databases. This
“must have” feature helps reduce workflow processes and ensures our pa-
trons have up-to-date information on their valued resources. This product
allows the library to maintain a database within the ERMS that will popu-
late a link resolver and generate an A-to-Z list. The reports feature was not
fully developed when the team made its selection decision. However, there were a few basic reporting features that were available and alternate ways of pulling information from the system. With reporting features scheduled for release in a few months time, the team felt the temporary work-around was acceptable.

**Implementation**

Team 1 presented its ERM recommendation to management in March 2008. The recommendation was accepted, and the procurement process was set in motion. Simultaneously, the ERM system had to pass a review by the Office of the Chief Information Office (OCIO) for acceptable level of risk. This type of system review is required of all federal agencies who manage operational data via applications outside their firewall.

Team 2 then stepped in to guide the implementation process. Vendor training was scheduled for summer 2008. The reconfigured team prepared for this event by completing vendor questionnaires on our current workflow processes for managing e-resource life cycles and supplying examples of how we tracked and recorded data. The team also began to define a clear vision of how to manage data input activities. They determined data should be entered via a controlled vocabulary, as this would allow for the later extraction of meaningful information. They asked such questions as “What would the new workflow look like? Who would be enlisted to help with data input? How would they be managed? What type of quality control processes needed to be in place? What kind of customizations might be needed? What data could be migrated from other systems? How much manual entry would be needed? What data could the vendor migrate for us?” The team also studied the weaknesses in the current workflow and looked for solutions that might be available in the ERMS.

The vendor’s trainer arrived in August to conduct a 2-day workshop. A substantial portion of the session was spent determining how our key business data would “fit into” the structure of the new e-resource manager. We took a sample of one of our journal acquisition spreadsheets and found a place in the ERMS for each piece of data we wished to capture. We learned to match our journal holdings to the databases within the system and to create local holdings information. We learned the rudiments of data entry for recording notes, contacts, collections, and how to “attach” information to records in the ERMS. As we completed these tasks, the hierarchical structure of the ERM became clear, and we began to see how a “layered” approach to data entry would be beneficial. When the training session was over, we felt confident the vendor had a customer service team in place that
would be able to answer all of our future implementation and maintenance questions.

To sustain its momentum and keep the management team abreast of its progress, the team created an ERMS ‘Implementation Timeline’ complete with milestone deliverables. The team decided on a “phased-in” approach and began to input journal package titles first, followed by “big deal” packages and special collection titles. After our journal holdings were entered, we began to enter sub-layers of data. Sub-layer information consisted of contacts, notes, current subscription costs, and other types of supporting information. Data entry processes and procedures were documented, with special attention given to use of uniform data elements and consistent methods of input. The link resolver implementation looms on the horizon. The team will contact publishers to notify them of the library’s new base URL and complete the customization of the e-journal portal.

Our e-book collection and databases will be added during Phase 2. Also slated for Phase 2 are testing the usage statistics tools and reports module and adding license agreement information.

Where We Currently Are

Our new system is a favorable back-end solution for the management of our e-resources life cycle. Not only is it helping us to consolidate all of our journal package subscription data, it is reducing redundant data entry from multiple access points to (one): This “one” sounds odd to me. Eventually, it will provide more-efficient access to license agreement terms and conditions, and provide cost-per-click usage data. It will improve communication between library staff via the message alerts and resource notes features (e.g., staff will be easily notified of trial and renewal dates), and our e-book collections and databases will become more integrated into our acquisition and collection development activities. As the implementation continues to unfold, the team has begun to see the merit in accepting the new workflow as an ongoing exercise in process improvement rather than an overwhelming task that seems to have no end in sight. After all, to quote from our organization’s strategic plan “... the transformation of operational processes to keep pace with industry best practices” is what this project is all about.

Positioning for the Future

The ERMS processes are incrementally becoming a part of the serials team work environment. Eventually, as the ERM system is “built,” new processes and workflows will be incorporated into other library service areas as well
(i.e., reference services, the business specialist, circulation services, and interlibrary loan). Staff roles will be redefined. There will probably be a planned phase-out of selected tasks. The team will take the lead to educate and train staff on the ERMS. The newly educated library staff will in turn instruct our customers (i.e., on the new e-journal portal.) Library staff will collaborate with publishers and vendors with an ERMS-based perspective on new products and services.

The team started their ERMS journey with the search for a dynamic way to manage the library’s e-resources. They accomplished their goal but also concluded there was a bigger evolution happening in the information environment. Libraries are envisioning ERM systems that will synchronize with other library systems (i.e., a Google-like search and discovery tool on their library’s Web site) to “push” backend data to user-facing systems. The team has begun to imagine a cohesive digital environment and the possible creation of a central knowledge hub. The ERMS is not an ending point in information delivery but the next step.
Appendix

Knowledge Continuum

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<th>Apr</th>
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<td>Purchase process</td>
<td>Trainer visit</td>
<td>Define metadata strategy</td>
<td>Load journal packages</td>
<td>Prepare documentation</td>
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