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Analytical Skills for Collection Development and Journal Management

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Collection Development librarians strive to make informed evidence-based decisions about journal collections. We seek information about cost, usage, terms of acquisition and formats. Often we struggle to keep pace with the rate of change in the publishing industry. Our information systems may not produce appropriate reports for decision-making, coordination between library units may be disjointed, or the journal management life-cycle may not include important functions such as preservation and budget planning.

To effectively manage collections in a digital age, libraries could benefit from a set of analytical skills commonly found in the private sector. Trained analysts can transform decision-support requirements into systematic practices across the organization. Types of analytical skills that may be useful in the library environment include Business Systems Analysis, Requirements Analysis and Information Systems Analysis.

These skills allow an organization to change effectively and at a comparable pace with the publishing and IT industries. Librarians can use analytical skills to transform a collection strategy or any other strategic goal into a regular, sustainable flexible program.

At Z. Smith Reynolds Library, Wake Forest University the strategy for reviewing serials was transformed from a one-time, ad hoc project to a sustainable, on-going process of evidence-based reviews. The reviews were designed to involve all stakeholders in the serials collections, including faculty, with the support needed to make informed decisions about formats, cancellations and package renewals. The example demonstrates how a skilled analyst can guide a team of people to think about how their activities support journal collection strategies and to streamline activities for regular, evidence-based evaluation of the collections.

Analytical Skills Defined

There are three general types of analytical skills: Business Systems Analysis, Requirements Analysis and Information Systems Analysis. Business Systems Analysis refers to the process of translating strategic goals into practical, repeatable activities with measurable outcomes. One strategic goal for the library might be to develop a culture of regular assessment of serials in all formats with input from faculty and liaisons.

The business analyst’s job is to formally identify where the organization stands with respect to that strategic goal, where it needs to go and how it will know it has gone in the right direction. Business Systems Analysis is an iterative process that requires certain people skills, comfort with “the unknown,” and a strong ability to break down and reformatulate the components of the big picture (strategic directions, organizational structures, processes and data sets). It is important to note that while this type of analysis may result in adjusted workflows, it goes beyond workflow analysis into strategic planning and assessment.

The staff at Reynolds Library started by documenting all of the skills, processes, tasks, products and services currently involved in managing serials across the organization. They interviewed people in each step of the serials management process. The Library Director and the Collection Development Librarian were asked to define expectations for the serials collections. Technical service librarians explored how serials and orders, payments, usage and descriptive metadata are managed in the ILS, other systems and between the library and serials agents. These existing functions and inputs were mapped against the desired goals and outcomes. Inevitably, there will be gaps between the current state of things and the desired goals. The next task was to designs and oversee implementation of new functions across the various units.

Requirements Analysis identifies the processes, roles, skills and infrastructure needed to continue page 36

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to accomplish a new function. For example, for a serials review, some required processes may be to produce, test and distribute reports, conduct reviews, recommend changes, record, summarize and approve recommendations, adjust subscriptions and project budgetary impact. Roles for the review process might include subject specialists and budget analysts. Infrastructure requirements might include a report and a recommendation tool designed for non-technical reviewers. Skills might include knowledge of publication schedules, research emphasis, impact factors and advanced Excel techniques. The analyst documents these functional requirements formally and gets approval from each library unit. It is essential to document and seek approval of functional requirements before "technical" requirements and systems analysis occurs. This ensures that the business process drives information system design, not vice versa.

Information Systems Analysis is used to assess the capabilities of an electronic system, network architecture, and IT interoperability based on the functional analysis. An information systems analyst reviews a functional requirements document and recommends new software or modifications to existing software. Information systems analysts may also recommend methods of transferring data between people, systems and serials agents. Information Systems Analysis requires strong programming, database design, networking and testing skills as well as communication skills to translate functional language into "tech-speak".

Often a working team will have several trained analysts: a Business Systems Analyst, Requirements Analyst and Information Systems Analyst. Such teams are well equipped to create and implement change quickly and effectively. They are accustomed to "change" as a constant in the work environment and can transform strategic goals into practice.

Practical Application

Last year, a team of librarians at Reynolds Library embarked on a review of the journal collections, which included approximately 4,600 print titles and 14,000 electronic titles in the arts, humanities, social sciences and natural sciences. Initially, the team consisted of Collection Development, Acquisitions, Cataloging, and Information Systems Librarians and later included Library Administration, Electronic Resource Management, Library Liaisons and Faculty. It was headed by a librarian who was also a skilled business analyst.

We began with structured interviews of key stakeholders in the review process. The first interviews were dedicated to defining strategic goals and requirements. One immediate goal was to review the journal collections for cancellation or format changes, but we discovered that the longer term vision was to create a culture of on-going annual evaluation of serials collections. Such a culture would allow Collection Development to make agile decisions about electronic formats and journal packages on a regular basis. The library hoped to engage faculty, liaisons, administrators and collection development officers in the serials review process. We wanted faculty and liaisons to review the titles in a given discipline for content and fit within the University's current and anticipated curriculum and research needs. Finally, we wanted to take a subject-based approach to the review, as opposed to a review based on financial definitions of the collections. We did not want to give target dollar amounts for collection growth, cancellations or format changes.

We hoped to make effective use of our liaison and faculty's time and skills. We recognized that while our reviewers are knowledgeable about journals and publishers, they may not have the skills to troubleshoot technical and bibliographic glitches such as title changes, missing cost data, and access vs. ownership status. It was unreasonable to expect reviewers to dig through the integrated library and usage systems for each journal. Reviewers needed a single report containing all of the information our various systems could provide for each title. The complete list of titles had to be broken down by subject and put back together easily. The list had to capture recommendations and decision-making notes to inform the current and future reviews.

We documented the functional requirements: faculty and liaison involvement, subject-based analysis, analysis informed by cost, usage and bibliographic information, a single report and a tool to capture recommendations. The formal Requirements Document included not only a prose description of our needs, but also a sample report. The sample report was designed in Microsoft Excel with "fake" data for a small set of journals. It included column headings, and financial report headers and footers. The sample journal contained anomalies we expected to find in our serials collections such as titles with no usage or cost data, quirky holdings information, and suspended titles. In an iterative process, the analyst asked how the data should appear in those strange cases. She worked with technical service librarians to figure out how to make the data act the way we needed it to and to identify additional data that had to be captured in the system. The sample report was vetted several times by the Head of Collection Development and Technical Services Librarians and was formally approved before we went into the Information Systems Analysis phase.

The Information Systems Analysis phase generated a Technical Requirements Document and the infrastructure to produce, distribute and archive reports. The technical requirements documented where data resides, how specific fields in the MARC record and Purchase Order were to be used to supply information for serials reviews, and how usage data would be extracted. The technical requirements also included a description of how and where the information would be archived.

The Information Systems librarian set out to "program and test" a data extract. The programming touched records in all modules of the ILS system as well as the home-grown usage system. The programming effort took eight months (not full-time). As sample extracts were produced, the team got together to test them and identify problems in the data or logic used. A simple interface was designed to allow Collection Development librarians to "kick off" the report on demand.

We tested initial data extracts with a few simple quality assurance measures. We looked for a total dollar amount within 1% of what our ILS and home-grown spreadsheets indicated. We compared the total number of titles extracted versus a raw count of serial titles in the system (regardless of title changes). We also tested several known problem titles.

Throughout the process, the team's discussions not only served to hash out technical details, but also to cross-train members in all aspects of serials management in the library. Team members learned more about package negotia-
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nearly 700 titles for a total savings of approxi-
mately $145,000. Fortunately, Collection De-
velopment did not need to make as many can-
cellations as were offered, but it was very useful
to have that feedback for the future. Faculty
also recommended new titles that were suitable
for emerging curriculum and research needs.

In general, faculty and liaisons responded
positively to the process and were pleased to
see title lists. Only one academic department
did not respond to our request for recommenda-
tions and two departments grew defensive,
but eventually came around.

There were many other outcomes beyond
the immediate title recommendations. We
achieved transparency in reporting and decision-
making by producing complete lists of journals
that served specific subject areas. We showed
how much the titles cost over time and how
much they were used. We adjusted internal
workflows to produce the information needed
to support the decision-making process.
Librarians were cross-trained in serials man-
agement and most important, we designed a re-
view process that is repeatable and that can
be conducted for the entire collection or sub-
sets of it at any time.

Another welcome, though unintended, out-
come of the process was to prepare the library
organizationally (in cross-functional teams) and
technically for the serials portion of an Elec-
tronic Resource Management System. By ana-
lyzing our serials management functions, we
captured technical and decision-support data in
our systems in such a way that it could be eas-
ily migrated to an ERM system.

Conclusion

The serials review process could not have
been put in place without a team effort across
serials management functions, facilitated by
a skilled business analyst. In the latest OCLC
Environmental Scan, Chuck Henry aptly
summarized this need for collaboration in the
future,

"I see a great opportunity in the next
five years for a more rigorous and
pragmatic partnership between librarians,
IT professionals and scholars. While that may sound obvious, it re-
ally has not been done."

The collaboration he refers to may not be
gotten doing, in part, because librarians are not
equipped with the analytical skills to facilitate
such partnerships. A team of librarians skilled
in Business Systems, Requirements and Infor-
mation Systems Analysis, could successfully
gather faculty and IT staff to develop any num-
ber of strategic goals into workable, repeatable
library programs.

Further Reading

Consider reading the "Functional Require-
ments" for an Electronic Resource Management
System produced by the Digital Library Fed-
eration. Who do you need to interview in your
library to prioritize the ERM requirements for your
local business functions? Once prioritized,
what are the gaps between your current pro-
cesses and the DLF's processes? Then what?
An analyst can help.

Jewell, et al. Electronic resource man-
agement: report of the DLF ERM initia-
tive. Appendix A: Functional Require-
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The following Websites describe analytical
skills in more detail. This is not an endorse-
ment of the quality of training or services these organi-
izations offer.

Silicon Beach Training. "Systems
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Endnotes
1. De Roos, et. al. The 2003 OCLC Envi-
ronmental Scan: Pattern Recognition.

Adventures in Librarianship — A Difficult Birth

by Ned Kraft (Ralph J. Bunche Library, U.S. Department of State) <krafno@state.gov>

In its ongoing effort to educate younger li-
brarians about the history of their noble profes-
sion, ATG presents a short narrative of early
career developments.

The concept of "reference services" as a
separate specialty began in 1876 with the pub-
lication of Samuel Grope's Personal Rela-
tions Between Librarians and Readers. Other
monographs followed, most notably Horst's
Library Intercourse and Plank's The Satisfied
Patron, but Grope is remembered as the Father
of Reference Services. "Insular as the
mind is a bucket of milk, do not o'er flow that
bucket to the waiting cats with tasks
too disparate; rather let those
librarians of social standing
and a fondness for chatter
escort the visitors and ad-
vice, while those of surly
disposition, un Kemp ap-
pearance, and bad manners
index and calculate and labor unseen in the dark
recesses of the library." With that statement,
library specialization was born.

What followed was a sudden and irrational
enthusiasm for focused librarianship from Victor-
ian middle class patrons. In large city librar-
ies one found such oddities as Chief Phreno-
logical Librarian, Librarian of Memonism, and
the Anatomical Bibliographer. It is part of
the lore of our profession that Albany Public Li-
brary, in the 1890s, set up an Occultist Refer-
ence Desk which, during its short life, served
more patrons, both living and deceased, than
any other.

Remote reference services began at
Princeton University in 1888 when a group of
young men in Saint Bernabas hired two down-
ond-their-luck pensioners to constantly tread back
and forth from the dormitory to the library
with enquiries and answers. The Lib-
rary eventually hired the two old
men, gave them small desks, and
agreed to pay for shoe resoling
every month. Boston Public ex-
panded the concept by offering
"Carriage Reference" to Beacon
Hill residents, a savvy political
move which lead to a doubling of
the library's annual budget.
Equine delivery of information gave birth to the
saying "right from the horse's mouth," still heard
today in some circles.

The first instance of ILL actually began as a
book theft. In 1897, Orson Keen, a charming
but indolent Yale student, was planning to pla-
giarize his way through an overdue paper on
the economy of southern Austria. To avoid de-
tection he pulled his source material not from the
Yale Library, but from Columbia. On his
way toward the door, three toruses under his coat,
Keen was approached by the nearsighted but
lovely Lucrecia Copeswell, Librarian of Ant-
omy's & Waterfowl. Feeling cornered, Keen
claimed to be a librarian himself... an "Inter-
Library Loan" librarian. Over coffee he ex-
plained the concept. Over lunch, the two agreed
on procedures. Over dinner, they drafted the
official forms to be used. And at the conclu-
sion of the next morning's breakfast, Miss Keen
agreed to draft a document on the economy of
southern Austria. Yale officials were baffled
when they began receiving ILL forms from
Columbia, but eventually they got the gist of it.

By 1910, the specialties of reference services
were well established. But what is known to-
day as "Technical Services," was still a back-
water. Those laboring "unseen in the dark re-
cesses of the library," had not evolved in the same
way. Their tasks were a confusing swirl of
purchasing, repairing, indexing, labeling, card
writing, floor sweeping and whatnot. Until the
second World War, when Technical Services
finally began to define itself, many went mad,
some fell prey to exotic joint illnesses, a few
even began writing library satire.

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