

Keep calm and carry on: the new technical services

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“The problem lies not in the discovery of things to do but rather in the ability to keep pace with a rapidly changing, dynamic library system.” – The MARC pilot project (Avram, 1968, 1)

Librarians have long been information stewards, and in technical services we serve this role by acquiring, describing, and providing access to information resources. In the past this meant our skills were highly specialized and clearly defined – we were book vendor negotiators, catalogers, access specialists. In recent years, however, we have witnessed drastic changes in both the resources we manage and the users who access them which have forced us to reevaluate our roles in technical services. New formats have proliferated, challenging our methods of resource description and management. Resources are available through numerous channels that frequently bypass the library altogether. Our users expect instant access to information for minimal investments of time and energy. People now find information readily at home and on the go via mobile devices, and as a result libraries have fallen in prominence as gatekeepers of information resources.

Our diminished status in the information realm is alarming, and it has led to budget cuts, downsizing, and institutional reorganizations. Professionals in technical services have especially been singled out, with cataloging and acquisitions viewed as tasks which can be outsourced, downgraded to paraprofessionals, or automated. Because our professional relevance depends on our ability to adapt to these changes, we have responded by learning new skills and adopting practices that better meet the demands of our resources and users. We have improved

collaboration with other libraries, colleagues, vendors, and our users for cataloging and acquisitions. We have reconceptualized our acquisitions models. We have shifted the focus of our cataloging expertise to specialized resources and more complex tasks. We have embraced new metadata standards in order to maximize the impact of our data. Many of these adjustments have proven difficult and remain ongoing, and our need to adapt will only continue if not increase in the coming years. This, it seems, is the new normal.

In facing our challenges, it is important to maintain perspective and to see that the rapidly shifting environment in which we operate presents us with exciting opportunities to revolutionize the way we provide library services to our users. Libraries are evolving as information providers, and technical services will play a crucial role in shaping the library services of tomorrow. Libraries must better integrate their resources and practices with those of the larger knowledge universe if they hope to remain relevant, and our success depends on our own flexibility, creativity, and openness as information professionals. In the midst of constant change, our primary mission to promote the discovery and dissemination of information remains the same. We need to let go of outdated practices that are no longer suited to our resources and our users and embrace new technologies and partnerships that will help us to serve this mission. This may be easier said than done, but we are well on our way.

Access and Acquisitions

Many fundamental principles of how libraries pay for and access materials have changed. Historically, libraries tried to anticipate titles users would want and kept them on the shelves. These items were there when (and if) users asked for them. Approval plans were designed to

search out things that might be wanted, so that libraries would be sure to have them on hand. The combination of funding cuts, inflation, and the explosion in the amount of published material has changed the picture drastically in recent decades. Most libraries can no longer even try to buy everything that may be wanted due to lacking funds and shrinking space, and are instead moving from ownership to access, from just in case to just in time delivery. Various methods are used to provide resources not owned locally, including interlibrary loan and licensing electronic resources rather than purchasing them for permanent ownership. Libraries even let users select purchases through demand-driven acquisitions programs frequently based on interlibrary loan requests or triggers which are activated when a user accesses an electronic title through the library. Users, and those who fund libraries, may not see or understand this difference, but these methods frequently require much shuffling of metadata and materials behind the scenes and close monitoring of budgets.

Access and ownership have become gray areas as libraries cannot promise to have something forever. Old issues of electronic journals cannot just be kept on a shelf due to space constraints. Although electronic formats seem like an attractive solution to this problem, if a subscription is cancelled, the post-cancellation rights may not be guaranteed. Many libraries have deferred taking action on post-cancellation access to electronic materials or did not consider this issue when negotiating licenses in the first place. New demands on library space mean libraries need to think more creatively about storage and new acquisitions. This has led to a greater reliance on shared print repositories and local acquisitions that are influenced by holdings at the system or consortium level. These practices point toward a new trend called “collective intelligence,” in which libraries are beginning to think more systemically in order to inform practices at the local level (Dempsey et al., 2013, 4). Acquisitions librarians need to maintain

awareness of their collections on a broader level for cost effectiveness and a minimal impact on storage. Just because something is not “owned” locally does not mean a patron cannot access it fairly quickly.

Adding to our concerns is the difficulty of managing access to electronic resources. Over hundreds of years, libraries figured out workable methods to manage print materials, and microforms and other physical formats have been an issue for the last few decades. Management of electronic resources is now a free-for-all. Libraries are trying all kinds of strategies, most commonly leasing access to large chunks of materials grouped by publishers or vendors, which often means less flexibility in selecting individual titles and a greater potential for overlap from one package to the next. A few institutions have tried storing electronic resources themselves or banding together to digitize and store, but so far these solutions have not become practical for most. Copyright makes these issues even thornier, as shown by problems encountered in the Google Books project.

There has been a shift in focus from book and print material to a variety of other formats, including streaming video, downloadable audio, and electronic texts. These new formats, while convenient, have their own pitfalls. Only a few formats seem to have disappeared totally from our collections. Most libraries probably no longer have collections of 8-track tapes, but many still have videocassettes and microfilm, even though demand for these materials is low. Libraries may have to maintain these because items are still used but replacements are too expensive or because no other format is available. Justifying the purchase of electronic access to a resource already owned in another format is difficult, even though it would be easier and more convenient to use. For some items, there are formats that would be useful but which are not sold to libraries

or are sold only at an incredible markup. This creates complications for technical services because we are now managing access to more formats than ever.

Vendors are happy to develop and sell additional services to deal with the influx of materials in all formats. Libraries can easily outsource almost all processing of new materials and electronic resources, which has dramatically reduced the number of staff members needed in technical services areas for tasks like shelf prep and copy cataloging. Skilled staff are still needed to manage payments, perform quality checks, and oversee record loads. A few staff members have been put to work negotiating licenses, purchasing for electronic resources, and troubleshooting online items. The amount of time spent on electronic resources has grown, although these materials are less time-intensive per title than traditional print.

Although guaranteeing permanent access may be harder, acquiring materials has become easier. Library acquisitions used to be a specialized field requiring highly skilled librarians with contacts and patience. Now e-commerce companies like Amazon can supply the vast majority of things libraries want, including titles from distant countries or in obscure languages. There are still a few things that are hard to purchase, but not nearly as many as previously. Our users know this, of course, and are not patient with delays in access. Many users have come to expect instant online access to all library materials. However, while someday in the future everything may be available electronically, that day has not yet arrived. This is a transition time where many items, especially those more than a decade or so old, are not available electronically. Even recent materials may not have the same content available in print and electronic versions. The drive to digitize all of human knowledge is impeded by copyright concerns and logistical problems.

Metadata and Discovery

The creation and maintenance of descriptive metadata have long been the domain of Technical Services, but changes in acquisitions methods, formats purchased, and strained budgets have altered traditional workflows in ways that will likely persist into the foreseeable future. Facing limited staff time and the need to manage packages of electronic titles that potentially number in the hundreds of thousands, outsourcing cataloging to vendors is an increasingly attractive option for many libraries. This is especially true for leased content that may need to be removed from the catalog after a short period when a license expires. Combine this with an ever-present pressure to provide access to resources as quickly and easily as possible, and the result is that in lieu of creating records, we are instead managing their analysis, ingest and maintenance. The rate at which batchloading has expanding in technical services largely depends on the individual library, but in some instances batchloaded records can make up anywhere from 10-50% of the total number of records in a library's catalog (Mugridge and Edmunds, 2012, 159).

Given the large number of records coming in, it is nearly impossible for catalogers to evaluate all of the records we receive from vendors individually. Instead we must analyze records in quantity and identify changes that can appropriately be made in an automated fashion in bulk. This kind of work can be managed by fewer people, but it requires a higher level understanding of cataloging practice and library systems, as well as a familiarity with tools that aid in the manipulation of MARC records and large amounts of data. Deleting records in bulk is also a fairly new cataloging task that is sometimes necessitated by the cancellation of licensed content. Librarians need to query their databases to identify all the records that belong to a particular set, and then run batch processes to remove those records from their catalogs. This is

likely more exposure to back-end operations than many catalogers are used to, but it is a necessary component of new workflows in technical services.

Batchloading vendor records requires a willingness to let go of some control over cataloging in favor of cost savings and improved efficiency in granting access to our users. Modifying the catalog through dramatic additions and subtractions is a major departure from our former practice of giving records individual attention. The content of records is largely beyond our control and there is always the possibility that errors and omissions are overlooked. However, just because we may not be able to touch every single record in our catalog does not mean we cannot be part of the process. Vendor records have greatly improved in recent years, largely due to feedback from librarians and the cataloging community. We need to embrace the fact that we are no longer the sole creators of the metadata we ingest and recognize our vendors and other aggregators as important partners in the realm of bibliographic control.

As we get more vendor-purchased records and do less copy cataloging, original cataloging has moved away from widely-held materials to describing the unique resources at our library. Distinguishing and highlighting each library's individual holdings (such as special collections materials) can provide valuable research opportunities to scholars and students. Featuring those items can also add to the prestige of the library and provide a tangible demonstration of the library's relevance to the social and historical interests of the local community. Digitizing unique and rare items has become a priority for libraries, which necessitates high quality metadata so users can find them. Authority control is also an important part of the process of cataloging hidden collections, and catalogers should view this kind of work as another way to highlight the library's unique resources.

Technical services librarians should also consider letting go of the practice of loading records into the local catalog as we look for ways to enhance consortium arrangements and sharing across systems. Institutions in consortia traditionally maintain separate, local databases for their own records and holdings, which are often harvested or loaded into a master index maintained by the consortium. Maintenance of individual databases is time consuming, purchasing and storing records is costly, and there is much duplication of work across institutions when resources overlap. This has become increasingly apparent as web-scale indexing has become more commonplace for library catalogs, laying bare the full amount of duplication that takes place across cooperating institutions (Pennell, Sommerville, and Rodriguez, 2010, 228).

In order to overcome this problem, libraries are beginning to embrace the capabilities of the index in order to collaborate in more strategic ways. Where library collections overlap in a consortium environment, metadata does not need to exist across multiple institutional databases. The consortium can license MARC records from a vendor for a shared collection and assign the maintenance responsibilities to a single institution. Once the records are loaded into a central index, they can easily be linked to those institutions which have purchased access. This is an example of how “collective intelligence,” or changing local practices to better fit the larger system, affects metadata management. By spreading out the time and effort required to maintain shared metadata across multiple institutions, libraries can be more efficient without compromising patron access.

Librarians might have reservations about this approach to managing their resources. As Karen Calhoun puts it, “Libraries are unlikely to divest themselves of their catalogs...It is more practical to think about research libraries’ divesting themselves of the status quo,” (Calhoun,

2006, 12). We have to remember that the library provides access to resources across a variety of platforms, and the catalog is just one (perhaps decreasingly important) part of the information environment we create for our users. We host digital collections and electronic resources on separate specialized platforms that are better suited for the nature of these resources and their management. Rather than trying to bring the catalog back to prominence to manage these materials and duplicating our efforts in the process, we should be thinking about how we can create a unified experience for our patrons.

Web-scale discovery services are one option libraries have embraced to improve search experiences. These tools are intended to make searching seamless across local and remote content ranging from the library catalog to journal databases to digital collections, all through a single search interface. Major library vendors including EBSCO, ProQuest, OCLC, and Ex Libris have all developed their own products, and they continue to expand their indexes and improve search results. Because our discovery vendors are frequently our content vendors, they have easily integrated the content they provide with their discovery services, effectively removing technical services from the equation. We can index our digital collections and finding aids, which helps to eliminate intermediary steps such as the creation of MARC records to make collections searchable. With more data in the index, users can hone searches more effectively through facets and search suggestions. We can also integrate our reference materials directly into the search process to better steer researchers to the resources they seek.

Now that we have entered an era of unified searching, it is hard to imagine ever going back. Our users have become accustomed to single search boxes and expect results quickly and easily, and new discovery services are elevating library searching to meet these expectations. This technology should also help improve the management of shared print repositories. There are

drawbacks, however, which alter the scope of traditional cataloging and resource management. Because most of the library's metadata is gathered in one place, web-scale discovery results can be overwhelming. Our practice of creating catalog records for resources that are indexed elsewhere only adds to the clutter by producing duplicate results. This frustrates users and can bury some of the metadata we have worked so hard to create. Clearly we need to rethink the way we manage our metadata in this new search environment.

We have begun to adjust metadata management in the context of web-scale discovery through a combination of merging traditional cataloging with library systems tasks and a greater reliance on collaboration. We must work to minimize duplicate search results, which involves not only evaluating our own metadata but also working with content vendors and the developers of the discovery service to identify areas where duplication can occur. We also need to work to ensure that our metadata from disparate sources fits together in our new mammoth index so that patrons can easily find what they need. And we must leverage facets and other interface functionality to best expose our unique holdings. Our expertise in managing metadata and our familiarity with the behavior of library catalogs means that we are perfectly suited to the task, but we have to be more comfortable working with back-end configurations, looking at the "big picture" of our metadata output, and working closely with our vendors. The more we learn from working with these new tools, the better we can manage the creation and ingest of new metadata and eliminate outdated approaches to resource management.

Non-MARC metadata has become increasingly important as libraries undertake more digitization activities, and technical services librarians should be prepared for work in new environments. Digital resources can provide instant access to formerly inaccessible materials, and metadata portals such as Europeana and the Digital Public Library of America (DPLA) help

a library's metadata reach wider audiences and highlight the library's unique collections on an international level. Digital projects often necessitate the transformation of legacy metadata along with the creation of new records, and catalogers will need to develop proficiency in new schema such as MODS, EAD, and Dublin Core. We also need to start accounting for different types of metadata that are crucial to digital preservation, such as technical and administrative metadata. While we do not need necessarily need to become overnight experts in digital resource management, we should see our work as a crucial part of the process of creating and providing access to digital resources and work to improve our skills in this area. Digital projects require a broader awareness of metadata applications, which presents us with the opportunity to see how library metadata can be useful beyond the library website.

In addition to expanding the reach of our work, we are currently in the midst of reevaluating the conceptual structure of library metadata. The publication of Functional Requirements for Bibliographic Records (FRBR) by the International Federation of Library Associations and Institutions (IFLA) in 1997 paved the way for sweeping changes in library metadata. This report addresses issues we have already discussed, including the need to manage resources in a variety of formats, changing user expectations, and the limitations of the library catalog. FRBR outlines a conceptual model for bibliographic information based on entities and their relationships with one another, and attempts to comprehensively cover a range of formats and materials. It also defines its data requirements in terms of user tasks in order to address the important relationship between data elements and user needs (*Functional Requirements for Bibliographic Records*, 2009, 4).

FRBR is an important model because it enables new approaches to library metadata. Removing data elements from traditional bibliographic records and situating them instead as

entities with attributes and relationships allows for a more dynamic view of our data.

Translations, adaptations, and reprints can all be seen in relation to the original works from which they are derived, and multiple formats of a title can more easily be presented to users in one place. Cataloging can potentially be streamlined because of the way that FRBR allows for the inheritance of identifying information. FRBR is also well-positioned to take advantage of the web environment, making data more machine-readable, interoperable, and conducive to user-friendly interfaces.

Transitioning from conceptual model to practice in the library world has been a slow and complicated undertaking, and a major step in this direction was the release of Resource Description and Access (RDA). Built from the existing Anglo-American Cataloguing Rules (AACR), RDA is a cataloging standard based on the conceptual model of FRBR and was developed by the Joint Steering Committee for Development of RDA in collaboration with constituent institutions from 2005-2009. It was published in 2010 and implemented by the Library of Congress from 2012-2013. Its design principles echo FRBR in that it strives to cover all formats of resources, support FRBR user tasks, and describe resources using an entity-relationship approach. It is intended for a variety of encoding schema and has been translated into multiple languages, which means that it can be more widely adopted and shared outside of library environments and abroad. It can also support catalog displays that take fuller advantage of the FRBR model (Joint Steering Committee for Development of RDA, 2009, 3-4)

Implementing RDA presents many challenges. The amount of legacy catalog data in need of updating is daunting, as is the task of coordinating such changes across libraries throughout the world. Some libraries do not have the resources to pursue training for implementation. How can we keep up with these ongoing changes? Many integrated library systems have yet to take

advantage of RDA. Will our old catalogs become obsolete? A strong community has emerged surrounding the training and implementation of RDA, including the European RDA Interest Group to help coordinate efforts in Europe. Open access resources exist online from a network of participating organizations to help libraries seeking training and implementation plans.

Developers have created tools for the automation of certain processes associated with the maintenance of legacy data and the creation of new records to ease the transition to RDA.

Libraries are taking phased approaches to accommodate local practices and to better ease into the major changes. Change does not have to be overwhelming with strong community support, a commitment to training, and a well-designed plan.

Community acceptance is perhaps the largest obstacle to wide-scale implementation and adoption of RDA, and this needs to be addressed if librarians hope to continue modernizing library metadata. Some catalogers are comfortable with old practices and do not think change is necessary. Do we really need RDA? It is important to see RDA as another incremental step in the continuing evolution of library metadata, just like the introduction of AACR2. Libraries have long struggled to manage digital resources alongside print titles, and over the years we have been consigned to the margins of the information seeking process by superior search engines that better accommodate user demands. We cannot hope to remain relevant through improvements in workflows and search interfaces alone. We need to bring library services to our users, and this includes metadata. RDA helps us better reach our users by removing some of the esoteric language of former cataloging practices and focusing on how resources of all formats are to be used in order to aid in their discovery. RDA is useful for international cultural heritage organizations beyond the library realm and its interoperability with multiple metadata schemas allows for more collaboration in metadata creation and management. As Gordon Dunsire puts it,

“The catalog is acting locally, using RDA is thinking globally,” (Dunsire, 2014, 584). In short, if we want metadata that is more versatile, usable, and shareable on an international scale, RDA is a great start.

A long-term goal of RDA is to aid in transitioning library metadata away from the MARC format. While schemas like MARCXML and MODS have helped make library metadata more interoperable across various platforms, they still maintain the MARC structure. The Bibliographic Framework Initiative (BIBFRAME) is leading the way to the future of library metadata and is based on the principles of linked data and the semantic web. Just as we have seen with FRBR and RDA, entities and their relationships are of primary importance in linked data, which relies on the architecture of the web to link things to other things. Unlike MARC, which aggregates statements about a given resource into records, linked data takes a more granular approach by allowing each statement to stand on its own as a subject, predicate, object triple. These individual statements can be linked with other statements via the Resource Description Framework (RDF) model in a potentially infinite fashion, creating a graph of knowledge that is much more flexible, open, and information-rich than a MARC record could ever be.

Our ability to meet the challenges brought on by RDA serves as a gauge for measuring how well we can face the greater changes in store for library metadata as we transition away from MARC. If we master FRBR concepts now in our training for RDA, the BIBFRAME data model becomes far less disruptive. If we upgrade or select new integrated library systems that better utilize RDA, we should keep these experiences in mind as we work to develop new platforms for the creation and exchange of library metadata. The efforts to implement RDA on

an international level should guide us as we strive to make our data more open and interoperable through BIBFRAME and the semantic web.

Carry On

If this is the new normal, what can technical services librarians expect looking forward? Libraries will probably not see more funding or an end to budget woes, which are largely tied to problems with funding for government and higher education in general. This means less to spend for library materials (fewer titles and invoices) as well as less staff. Our work is not seen as vital or as “sexy” to administrators as that of some of our colleagues. A 2013 Ithaka survey of academic library directors pointed to likely reductions in staffing for technical services, metadata, cataloging, print preservation, and collections management in the future (Long and Schonfeld, 2014, 7). In-house expertise in any aspect of technical services is increasingly a luxury, and it will be difficult to retain positions for format or subject specialists. Professional development, while more important than ever, may be seen as less important than day-to-day tasks and thus fall by the wayside.

We have already learned to do more with less by leveraging technology and collaborating with vendors and other libraries, and this will have to continue. We also need to emphasize the value of our services from both the perspective of library operations and user experiences. As many in the archives community have embraced the “More Product, Less Process” philosophy, technical services librarians can also use this to guide their priorities to work smarter, not harder. If not doing so already, librarians in technical services may also be expected to perform duties in other areas, such as reference or instruction. These changes can be positive, because they present

opportunities to grow and learn and could lead to valuable partnerships outside of technical services. The skills of a technical services librarian can be useful in many library settings. Who has a better knowledge of how metadata really works, in order to help users find what they want or implement a great discovery system? As we gain more responsibilities, we move out from silos and can better understand the library from a holistic, patron-focused viewpoint.

We need to think creatively about new models for the cooperative work that sustains technical services. Library and technology communities have created many helpful guides, tutorials, and open source tools for learning and implementing new techniques, standards, and schemas, and we should seek them out to develop new skills and improve work practices. We must also face some tough questions: Can we let go of more control of our data and still serve our core mission? How can we use crowdsourcing and tagging? What if we allowed more people to contribute to cataloging and authority metadata; how might that look and what would we do with it? The success of Wikipedia shows that users can contribute to and monitor a collaborative resource, keeping it accurate and up to date. Our catalog data can have interesting new uses beyond telling people what is on our shelves and we should be taking steps to make it available for others to experiment with.

Some libraries have already embraced the possibilities of the semantic web by publishing catalog and authority records as linked open data, and we need to be prepared for the new responsibilities that arise as we look to join the linked data community. The Library Linked Data Incubator Group released a report in 2011 which includes tasks libraries should be prepared to undertake. Relationships and linking among data elements will be just as important as description, and catalogers will need to develop new skills in making these connections through URLs and identifiers. As we move away from creating records, we will likely maintain our data

in the form of RDF statements and persistent URLs. We need to make efforts to ensure that our data is in compliance with the principles of linked open data so that it can be effectively shared and reused by others (*W3C Library Linked Data Incubator Group Final Report*, 2011). Once our data is linked and exposed, we open up endless possibilities for connecting with the world of information around us in areas where we have previously been overlooked.

Ultimately our users' needs should be paramount in planning our future directions. How will technical services librarians "improve society through facilitating knowledge creation in their communities" (Lankes, 2011, 7)? Although predicting the future is difficult, it always helps to have knowledge of the past. It has been a bumpy road as we have lost staff and struggled to keep up with changing user demands in the face of restrictive budgets, new acquisitions environments, and new materials. This is our new normal, and we need to let go of outdated practices that no longer fit with our core mission. Technical services librarians can demonstrate value through improved workflows and services. We can work smarter by leveraging new technologies and seeking out strategic partnerships. And we can stay relevant by bringing library metadata practices into the 21st century. We have done this before, we will most likely need to do it again, and we are on the right track with a strong mission and years of experience as our guides.

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