Implementation of Batch Cataloging: A Case Study

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Batch cataloging, or editing and adding large batches of MARC records to a catalog at once, is gaining popularity over individually cataloging each title, especially regarding electronic resources. Academic libraries increasingly incorporate batch cataloging into workflows, due to the necessity of increasing access to resource collections. This automation frequently utilizes vendor-supplied MARC records, which can contain errors or incomplete records, and may be time-consuming to fix. Additionally, new technological skills are required in addition to cataloging knowledge in order to manipulate software used to edit large batches of records. Despite these challenges, batch cataloging of vendor-supplied records is increasingly prolific in academic libraries. Advantages include increasing user access to large collections at a faster rate and simplifying the process of adding large collections. Despite the increasing popularity of batch cataloging and the widespread use of open-source software such as MarcEdit to edit these records, there is very little literature currently available on the implementation process. This paper presents a case study of the implementation of batch cataloging and automation for ebooks in an academic library, focusing on the challenges and opportunities of the process, including the tools utilized. The study is relevant for any technical services department considering batch cataloging, or any librarians interested in tools for mass editing or cataloging of MARC records.

Introduction
This case study will focus on Kennesaw State University’s Horace W. Sturgis Library, in Kennesaw, Georgia. Kennesaw State University has a population of approximately 25,000 FTE students, and is facing a consolidation with another local university, Southern Polytechnic State University. Post-consolidation, the university will be the second-largest in the state of Georgia, and one of the top fifty in size nationally. The library currently employs 64 staff and faculty, consisting of 25 librarians (including administrators), 16 paraprofessionals, 21 student assistants, 2 graduate research assistants, and 1 administrative associate. The four librarians in technical services have subject liaison duties, work reference shifts, perform collection development and teach library instruction classes, so cataloging time is limited.

In this paper, I address Kennesaw State University’s implementation of batch cataloging for ebooks, focusing on the challenges and opportunities of the process, including the tools utilized. For the purposes of this paper, batch cataloging refers to editing and adding large batches of MARC records to a catalog at once. I will begin with a literature review, in order to provide background on batch cataloging. Following the literature review is an account of Kennesaw State University’s implementation of batch processes. Lastly, I will present recommendations, considerations, and potential solutions for libraries interested in implementing these processes.
Literature Review

As recently as 2006, there was no literature available on the establishment of batch processes, and in 2012 literature was still limited. Among existing literature, however, there are several common themes concerning batch processes in academic libraries. Ironically, one of the themes is that batch cataloging processes vary. According to Philip Young’s 2012 survey of batch cataloging practices, “Practices related to batch cataloging of MARC records are extremely variable and are influenced by differing record batches, editing tools, and local policies.” Roman S. Panchyshyn refers Young’s research in his documentation of the Kent State University Libraries’ establishment of batch cataloging practices, “Asking the Right Questions: An E-resource Checklist for Documenting Cataloging Decisions for Batch Cataloging Projects”, agreeing with his assessment that practices vary.

The establishment of batch cataloging processes takes time and effort, but is increasingly essential. In her 2013 article on vendor-provided records, Stacie Traill discussed the challenges of incorporating batch processes into an existing workflow. Rebecca L. Mugridge and Jeff Edmunds underscore the importance of establishing such processes, however, stating that “the need to batchload records is unavoidable.” Panchyshyn agrees, citing Karen Calhoun’s 2006 report to the Library of Congress on the lack of feasibility and cost-effectiveness in maintaining current practices for individual records. This only stresses the importance of developing workflows for batch processes. Complicating the problem, as Young describes, is a lack of evidence or research for batch workflows.

The varied nature of vendor records makes establishing a consistent workflow for batch processes more difficult. Record quality is a common concern for catalogers implementing batch processes. In Young’s 2012 survey of batch cataloging practices and problems, 40% of respondents voiced concerns over vendor record quality. When Mugridge and Edmunds conducted a survey in 2012, 82.4% of respondents “reported that the use of vendor-supplied metadata for digital resources has lowered their library’s quality standards for bibliographic data”. In a 2013 study of vendor record quality at the University of Minnesota, all record sets contained at least one error. Even worse, errors in record sets from the same vendor were inconsistent, complicating any attempt to establish a workflow for catching and correcting errors.

When Panchyshyn conducted a study of batch process implementation at Kent State University Libraries, he also noted the varying quality of MARC records provided by vendors. Martin agrees that vendor records tend to vary in quality, and describes a number of actions that typically need to be taken when handling vendor-supplied records, from correcting standard identifying numbers to adding proxy server information to links.

While these concerns over quality and consistency in records are valid, the trend of academic libraries moving towards batch processes necessitates adjusting to batch processes and troubleshooting problems regarding quality and consistency. It is also important to consider the benefits of increased speed and accuracy, even when importing less-than full level records provided by vendors. As Traill puts it, “what is gained in terms of efficiency and cataloger time? what is lost in terms of access and standardization? how important for user discovery needs is the additional access provided by full-level cataloging?” Additionally, it is worth considering that some access is better than no access at all. Indeed, when the University of Rochester loaded catalog records for NetLibrary ebooks, usage of the collection increased by 755 percent. Mudgridge and Edmunds state that “balancing record quality and improvement to access remains one of the biggest challenges in the batchloading process.” Accordingly, it is important for catalogers to take the larger picture into account when considering the minutia of vendor-supplied record errors. Wu and Mitchell emphasize such a disconnect between cataloger attention to detail and the nature of batch cataloging, stating “cataloging guidance has continued to focus on the content of individual fields and records rather than the logistics of large-scale record handling.” Even more, it is worth noting that vendor records will likely improve over time, especially with increased feed-
back from catalogers. As Elaine Sanchez et al. noted in 2006, vendors have historically demonstrated an increase in record quality over time.\(^{19}\) In order to work with these vendor records, catalogers must acquire a new and different skill set. In addition to knowledge of cataloging standards, batch cataloging processes require new technological skills. As Panchyshyn noted, “cataloging staff needed to upgrade their skills to have the ability to prepare and process these batch cataloging projects... this meant on-the-job training in the use of MarcEdit software and the use of scripting languages such as regular expressions.”\(^{20}\) Martin discusses ebooks specifically as requiring both new skills and additional technological resources, such as a need for dual screens.\(^{21}\) Young also cites programming capability as increasingly useful for catalogers, due to batch processes.\(^{22}\) Boydston and Leysen agree with the necessity of increased technological literacy, and also discuss the importance of other skills, such as a positive attitude towards change and an aptitude to learn new things.\(^{23}\) Finally, Wu and Mitchell suggest that beyond new technological skills, catalogers require other skills in order to manipulate batches of records, such as independent problem-solving and large-scale data manipulation abilities.\(^{24}\)

It is important to create awareness within the library of the necessity of these new skills and the work required of catalogers in batch cataloging, in order to improve cataloger morale. In a 2011 study of cataloger librarians, Boydston and Leysen discuss this, citing a general concern among survey respondents over the perception that catalogers can be completely replaced by vendor records and batch processes.\(^{25}\) Panchyshyn suggests a potential solution for this is improving cataloger visibility through cooperation both within the cataloging unit and with other library departments.\(^{26}\) Another perspective to consider is how batch cataloging may actually support and improve cataloger relevance. Including as many resources as possible in the library’s catalog maintains its centrality as the primary search tool for patrons.\(^{27}\) Additionally, it is important to consider the massive workload that maintenance requires. Maintenance for various collections requires a great deal of coordination and record work,\(^{28}\) and without cataloger efforts to manage these updates, the accuracy of the catalog would quickly deteriorate.

**Background**

Kennesaw State University’s Horace W. Sturgis Library employs four librarians in the Technical Services Department: three cataloging librarians and the Head of Technical Services. In 2012, KSU librarians were transitioned from staff to faculty status by the university. With this change in status came a shift in responsibilities for Technical Services librarians. New responsibilities included additional reference shifts, subject liaison responsibilities, service and scholarship requirements and some library instruction. Additionally, Technical Services librarians began RDA training in 2012 and underwent a change in leadership, with the retirement of the previous Head of Technical Services. Another significant change included the implementation of new collection development processes in early 2013, which involved a more definitive breakdown of budget responsibilities for librarians and the implementation of new software for purchases, YBP’s GOBI program. This significantly increased the amount of books purchased.

Prior to these changes, the Technical Services librarians manually cataloged 100% of donations and purchased materials for the library, including copy and original cataloging. The only e-resources present in the catalog were consortia purchases batch added at the consortium level. Cataloging software utilized included OCLC’s Connexion Client and Ex Libris’s Voyager ILS. Catalogers searched OCLC Connexion for existing records, edited and imported these records into Voyager’s Cataloging Module or created new records, depending on need. With the added responsibilities, this existing process made the workload of cataloging unmanageable.

**Workflow Analysis and Ebook Implementation**

The new Head of Technical Services instituted a workflow analysis project for the entire department in the
fall of 2013. Each member of the department was responsible for analyzing a different aspect of the workflow, and the unit met regularly to review and discuss the various processes for better efficiency and automation (see figures 1 and 2). The individual analysis of each process culminated in a single, broad workflow overview from point of order to shelf (see figure 3). Following the workflow analysis, several efficiencies were discovered and implemented, but the basic process and software used remained the same. At this point, another change which affected the Technical Services department was implemented—contracts with ebook companies were established, allowing librarians to select and order ebooks through GOBI.

Because of the previously existing constraints on cataloger time, the implementation of ebook ordering necessitated the use of vendor-supplied records. With no structure in place for alternative methods of cataloging, this led to a trial and error period, experimentation with Terry Reese’s MarcEdit for quality control and batch edits to the records, as well as creating and implementing bulk import profiles within the Voyager ILS to circumvent the existing Connexion Client to Voyager Cataloging Module individual record handling structure.

**Batch Cataloging Concerns**

There were several concerns with this change in processes. Cataloging librarians voiced concerns about job security, the loss of accuracy in catalog records, and the impact of such a decision on the perceived value of cataloging work—concerns typically expressed by catalogers when implementing batch processes, as discussed in the literature review. Additionally, the necessity of technological skills to navigate new software meant an additional strain on already short cataloger time to learn the new programs.

Several steps were taken to ameliorate these concerns. A visit to a peer institution already utilizing vendor records was arranged in order to improve understanding of how to increase efficiency without sacrificing quality. The three cataloging librarians were assigned new job titles, detailing their area of specialization: Automation and Batch Cataloging Librarian, Special Formats Cataloging Librarian and Serials and Authority Control Librarian. Additionally, two of the Technical Services faculty and staff presented on their individual job duties at monthly all staff library meetings, to better illuminate the breadth of their work and responsibilities. These changes were important from both an efficiency and morale standpoint within the Technical Services Department.

**Batch Cataloging Process**

The Automation and Batch Cataloging Librarian downloaded Terry Reese’s MarcEdit, an open source database maintenance program which allows for batch editing of MARC files. After studying tutorials on the program and experimenting with test records, the Automation and Batch Cataloger developed a checklist of changes to be made prior to importing ebook record sets. These changes include adding proxy information to links, updating AACR2 or hybrid records to the RDA standard, finding and adding OCLC numbers, creating an 852 field with holding location and call number information, and adding a 910 field in order to identify specific batches of records. MarcEdit allows for a majority of such checklists to be handled simultaneously, using the “Task List” tool. See figure 4 for a complete checklist.

In addition to these batch changes, some edits necessitate individual record editing. One such edit is the addition of OCLC numbers, which the cataloger individually searches for and manually adds to each record. There has been some discussion on the necessity of adding OCLC numbers to ebook records, due to the lack of interlibrary loan capability on such materials, but in this case it was deemed better to provide standard identifiers when possible, especially considering the need for deduplication during the library’s impending consolidation. Because of the time consuming nature of such a task, however, record sets exceeding 500 are typically not assigned OCLC numbers if OCLC numbers are not provided by the vendor.

Another task normally handled manually is the removal of excess ISBNs. Though the provider neutral
FIGURE 1
Cataloging Unit Workflow Part I
Source: Sandra Barclay, Special Formats Cataloging Librarian, Kennesaw State University (2013).

Copy Cataloging Workflow

- Look on Cataloging book shelf.
- Are there books with special notes?
  - Yes
  - Catalog these first to move out of Cataloging Unit quickly and place on Processing Cart ASAP.
  - Priority 1 — Notify (Requests)
  - Priority 2 — Special notes*
  - Priority 3 — Reference books

- Choose oldest purchased books to catalog first. If none, catalog donated books.
  - Open Connexion and Log On. Search Connection by ISBN.
  - Find a DLC or PCC record that matches?
    - Yes
    - Verify the contents of each field, beginning with the fixed field.
      - Check ISBN, title, statement of responsibility, publishing information, description, notes, subject headings, and series entries.
      - If special note is needed in cataloging record, check Constant Data File for established format.
    - no
  - Put on shelf for librarian.
    - Are there at least 2 subject headings: 600, 610, 621, 650, 651? Remove 655 fields.
  - no
  - Control headings in Connexion to check that the names, series, and subjects are authorized headings.
  - Are all headings controlled?
    - Yes
    - Verify call number.
    - Does call number "fit" into our catalog in right subject area and author?
      - Yes
      - Change code in 049 to match Location and print prefix on Spine Label or attach label.
      - GKJ for Reference, GK2 for Children’s Lit, GKY for Teen Lit, GKZ for TRAC, GKUM for PAL, etc.
      - no
    - no
  - no

*Source: Sandra Barclay, Special Formats Cataloging Librarian, Kennesaw State University (2013).
FIGURE 2
Cataloging Unit Workflow Part II
Source: Sandra Barclay, Special Formats Cataloging Librarian, Kennesaw State University (2013).

In Connexion, Edit/Reformat, Edit/Validate, Action/Holdings/Update/Holdings, Action/Export, View/Label/Print.
Write call number with pencil on T.p. verso if no CIP.

Open log in to Voyager Cataloging. Choose Cataloging Unit as Cataloging Location.

Click on Record, Retrieve by Record ID, and Bibliographic to open the Acquisition record that matches the book in hand. [Bibliographic record number is on the sticky note.]

Import record from Connexion, by clicking on Record, Import, (and the first time each day, From new flis, Bibrec). Double click the title to open. Check the box “OK to Export”, and then highlight and copy the 035.

Paste the 035 in the open Acquisition record and Save to DB. (The first save each session will verify the current Import/Replace profile. It should remain OCLCReplace to cause a match on the 035. Change if needed.) Then go back to the imported record and Save to DB. A Save message will appear that the record matched another duplicate record.

Is there a supplement, separate index or CD?

To add a holding for single book, click Get Holdings.
Verify Leader is (c or n), v, 1. Change headings in 008 to Receipt Status: Completed, Method of Acquisition: Purchase, Completeness: Completed, Lending Policy: a or b, Date of Report: Today’s date.

Use fields 867 or 868 as appropriate for supplements or indexes. Add holding record for accompanying CD.

Change Location in 852 $b to Stacks (or appropriate location), then use Ctrl-N to add call number. Save to DB.

Click New Item. Scan the barcode into the field. Change Item Type associated with Item Location, if needed. If part of volume set, add volume number. Save to DB.

Add 866 field with volume information.

Print labels using OCLC Label program. Open program, click icon to import labels. Search labels, select labels, press print, then identify row and column to begin, and press OK.

When labels are complete, match with books and place on processing cart. Get more books and start at the beginning!

Draft 3. 12-17-13
record standard recommended by the PCC dictates listing each e-version ISBN in a separate 020 field, the KSU library encountered difficulties with deduplication when including more than one 020 field with a subfield a. Ideally, the physical format ISBN would be moved to the 776 field, but the difficulties of distinguishing between the ISBNs of different formats in a single batch process limit the feasibility of such changes.

Finally, following the standard checklist of changes, the cataloger manually looks through the batch of records in MarcEdit, paying special attention to 245 and 100 fields and indicators, the content of 300 fields, 505 fields, and physical attributes mistakenly carried over into electronic version records (e.g. “paperback edition”). In batches over 500, a sample of records is examined as opposed to the entire set.

Each different vendor’s records present different difficulties and problems to fix. Because of this, the first batch from a specific vendor typically takes much longer to review and catalog than subsequent batches. It is also important to have checks in place, to offset issues missed in the initial review of record batches.
One such check involves the use of the E-Link Checker program, developed by Jason Zou. This program enables you to check the links in large batches of records at once, returning any errors such as broken links.

Unfortunately, not all errors can be identified in batch. On occasion, a link will direct the user to an overview of the material without providing access. Because this does not register as a broken link, it is difficult to detect unless it is manually tested. To catch issues like this in smaller batches of ebooks, the KSU library trained their student assistant to assist with checking links. Because the batch processes have lessened the amount of traditional student assistant work, such as physical book processing, the student has more time to work on data review projects. This has enabled catalogers to correct issues which would have otherwise gone unnoticed, such as access limitations and incorrect metadata.

An essential part of these processes from the beginning has been documentation. When learning the various programs used in batch processes, the Automation and Batch Cataloger took several screen-
captures and screencasts in order to document how specific tasks were performed. Following the learning process, a new training guide for ebook cataloging was created and updated as new batch processes were discovered. Additionally, the increase in ebook collections reflected in the catalog necessitated documentation on the inventory of the various collections. With the assistance and feedback of the Head of Technical Services, the Automation and Batch Cataloging Librarian documents each different collection, the identifying 910 field of the collection, and whether it is a subscription or a one-time purchase (see table 1).

**Research Methods**

The methodology used for data collection in this study included analysis of documentation from the implementation process and participant-observer data.

Documentation analyzed included a Cataloging Procedures document created in 2013, a Batch Loading Procedures document created in 2014, the workflow publication created for the cataloging unit in 2013 (figures 1 and 2) and the workflow created for the entire department in 2013 (figure 3).

The author and other individuals from the Technical Services Department constituted the participant-observers for this study, providing data in the form of procedural documents and self-reported cataloging statistics. Also, the author gathered usage statistics from the library’s electronic resource management system and ebook collection data using Microsoft Access reports. This data allowed for the assessment of the implementation of batch processes for ebooks.

**Analysis and Results/Findings**

Because the Kennesaw State University Library System’s Technical Services Department previously had not cataloged ebooks, there are no comparable statistics to demonstrate the increased efficiency of using vendor records and batch editing tools. There is, however, a demonstrable increase in the amount of regular cataloging completed following the workflow analysis and implementation of batch processes. In the 2012-2013 fiscal year, catalogers completed 3,181 volumes of cataloging. In 2013-2014, that number nearly doubled, with 6,278 volumes of cataloging completed. This increased efficiency not only reflects successful streamlining as part of the

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*Consortial Subscription through GALILEO
workflow analysis project in 2013, but also demonstrates the power of batch processes in influencing a wider perspective and less minutia-focused approach to cataloging.

Additionally, it is important to consider the aspect of access. Using the library’s electronic resource management software, some of the impact of the implementation of batch cataloging on resource access is apparent, as demonstrated in the graph below (see table 2). While this is only a sample of ebook collections contained in the catalog, there is a clear increase in the use of several collections following the implementation of batch cataloging. Because certain ebook collections were absent from the catalog prior to 2014, it was more difficult for users to locate and utilize ebooks. Also, it is important to note that librarians began purchasing individual ebooks in 2014, so a rise in number of ebooks certainly also correlates with increased usage.

Conclusions
One of the largest lessons learned from the process of implementing batch cataloging is the increasing importance of the ability to learn new programs. As integrated library systems, metatada schema and technology in general evolve, memorizing one set of programs, rules, or standards is not enough to enable cataloging librarians to maintain technological literacy. Instead, an essential skill is the flexibility and willingness to learn new software. This will help catalogers retain a sense of purpose, higher morale, and the ability to continue to maintain the catalog.

Communication and cooperation with library colleagues is key. With the influx of vendor records, it is increasingly important for catalogers to demonstrate value to the rest of the library community. This is essential in order to dispute any misconceptions that catalogers have no work if they are not creating original records. Therefore, it is increasingly important for catalogers to market their skills and educate their colleagues across department lines.

Transparency is also worth considering in regards to a library’s communications with its community. One potential for this transparency, as suggested by Mugridge and Edmunds, is to market new collections as they are batch added to the catalog, in order to increase the use of electronic resources and demonstrate the importance of the catalog. Informing library users that large batches of new resources are available is helpful both to the patron and to the cataloger, by increasing the visibility of the catalog.

Detailed recordkeeping is another necessary aspect of implementing batch processes. While it is easy to become focused on efficiency and allow documentation to slip through the cracks, it is essential. Keeping records of batch processes is not only important for establishing cataloger worth, it is essential so that future batch projects will not need to be re-devised, as Mugridge and Edmunds advised in their 2009 study of batch practices.

### TABLE 2
Use of Ebooks from July 2012-February 2015

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<td></td>
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<td><strong>Grand Total</strong></td>
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Challenges can be overcome by documentation, communication, and technological education. Areas for potential future research include alternate batch processes, the effects of evolving metadata schema, and more in-depth assessment of accessibility and use of batch-added resources.

Notes
9. Ibid., 23.
12. Ibid., 221.
32. Ibid., 59.

Bibliography
Mugridge, Rebecca L. and Edmunds, Jeff. "Batchloading MARC Bibliographic Records: Current Practices and Future Chall-


