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Harnessing the Power of the Cooperative: Improving Access to the JapanKnowledge E-Resource Collection

**Yukari Sugiyama
Marlene van Ballegooie
Fabiano Takashi Rocha**

Introduction

In today's digital age, library users expect to access the majority of content in electronic format. Japanese language resources are no exception. Although the number of full-text online Japanese resources has been relatively small compared to Chinese and Korean counterparts, the availability of Japanese language e-resources is gradually increasing in the marketplace.

One of the most indispensable e-resource collections for Japanese studies is the JapanKnowledge collection provided by NetAdvance. Despite its broad utility, this collection was largely unfindable within the library's discovery interfaces due to the fact that a set of MARC records that conformed to North American quality standards was unavailable. Stoppag measures, such as the creation of brief MARC records from e-resource knowledge base holdings, also produced unsatisfactory results and left the JapanKnowledge collection underutilized by scholars. This paper documents a pilot project that aimed to improve the discoverability of the JapanKnowledge collection.

The project originated at the University of Toronto Libraries and was joined by Yale University Library, and subsequently expanded to include Stanford University Libraries and the University of Washington in St. Louis Libraries to become a collaborative effort. Using print bibliographic records created by the OCLC cooperative as a foundation, a team comprised of cataloging and metadata librarians worked to source catalog copy, perform record enhancements and create original catalog records where necessary.

The outcome of this process was the creation of a set of e-resource records for the JapanKnowledge collection that met North American quality standards. In addition to creating a set of bibliographic records to facilitate discovery, the project participants also established a global e-resource collection within OCLC's WorldCat knowledge base. By creating a customized sharable collection within the knowledge base, this provided a mechanism for project collaborators to minimize the duplication of effort and improve access to this important Japanese e-resource collection at a global level.

About the JapanKnowledge Collection

JapanKnowledge is an essential resource for Japanese studies covering ancient, modern and contemporary periods. It is comprised of encyclopedias (both in Japanese and English), dictionaries (Japanese, English, bilingual, European languages and specialty), and reference books on history, biography, geography, religion, culture, science, and law. In addition to

the numerous reference titles, JapanKnowledge has added over a thousand non-reference titles and reprinted magazines, both fiction and non-fiction.¹ Some of the most notable resources within the JapanKnowledge collection include large volume series such as the *Tōyō Bunko* 東洋文庫 (692 volumes), *Shinpen Nihon Koten Bungaku Zenshū* 新編日本古典文学全集 (263 volumes), and *Bunko Kuseju* 文庫クセジュ (354 volumes). The *Tōyō Bunko* 東洋文庫, or the Eastern Library Series is a collection of oriental classics that covers the history and culture of Asia: Japan, China, India, and Islamic countries from the ancient to the modern periods. The *Shinpen Nihon Koten Bungaku Zenshū* 新編日本古典文学全集 is a collection of Japanese masterpieces that includes ancient and medieval literature with notes and detailed explanations about the texts that are based on the best originals available. Finally, the *Bunko Kuseju* 文庫クセジュ is the Japanese version of a selection of titles from the Collection “Que sais-je,” a series of books published by the Presses Universitaires de France (PUF) that aim to provide an accessible introduction to a field of study by an expert in the field.²

Challenges in Providing Access to JapanKnowledge

Several of the challenges in providing access to the JapanKnowledge collection can be attributed to the fact that e-resource discovery is almost entirely dependent upon metadata that is supplied by parties outside of the library. Since e-resources are often purchased in large packages and metadata pertaining to these resources is dynamic and changeable, most libraries rely on content providers to supply MARC records to enable e-resource discovery within local systems. To further assist libraries in managing and facilitating access to their electronic resource collections, there is also an expectation that content providers will supply knowledge base vendors (such as Proquest, EBSCO and OCLC) with information pertaining to the availability and accessibility of resources. Thus, libraries now work in an environment where there are more interdependencies than ever; the successful provision of access to electronic resources is fully dependent on the transmission of high quality metadata throughout the e-resource supply chain.

One of the key factors hindering the discoverability of the JapanKnowledge collection was the unavailability of quality MARC records. Presently, NetAdvance supplies MARC data for the contents of its collection in NACSIS CAT-P format and also in MARC21, which is available upon request. Despite the availability of MARC21, these records did not conform to North American standards. Some of the typical issues demonstrated in the MARC records include lack of Library of Congress Subject Headings (LCSH) and name authority headings that correspond to the Library of Congress Name Authority File (LCNAF).

Additionally, several of the key fields within the bibliographic records were either inaccurate, missing or improperly coded. For example, the MARC leader and fixed fields contained minimal and sometimes erroneous data. All personal authors were coded by default as personal name added entries in the 700 field. For translated titles, particularly in the *Bunko*

¹ Detailed information about the contents of the JapanKnowledge collection can be found on the JapanKnowledge's website: <http://japanknowledge.com/en/contents/>.

² Presses Universitaires de France. “Que sais je?” Accessed April 27, 2016. https://www.puf.com/collections/Que_sais-je_-.

Kuseju series, the bibliographic records were missing the 240 field for uniform title, the 041 field for language and a note field indicating that the title was a translation. Since there were numerous errors contained within the records, few libraries loaded the record set into their library catalogs.

In addition to content errors, the MARC records were also problematic because they did not conform to the ALA-LC Romanization Rules. Within the MARC record set, it appeared that the transliteration was achieved through an automated process, resulting in titles containing erroneous transliterated terms and inaccurate word division. In the Table 1, some of the improper transliterations are illustrated.

Table 1. Comparison between NetAdvance transliteration and ALA-LC Romanization transliteration

Japanese	NetAdvance Transliteration	ALA-LC Romanization Transliteration
ファシズム	Fuashizumu	Fashizumu
シェイクスピア	Shieikusupia	Sheikusupia
フェミニズム	Fueminizumu	Feminizumu
ヴェトナム	Buetonamu	Vetonamu
ヴェネツィア史	Buenetsuiashi	Venetsia shi

The ALA-LC Romanization Rules dictate that proper names and titles of books must be written separately from modifiers or words modified by them.³ In the final example in the table above, it is noted that a space should be inserted between Venetsia (the proper name) and shi (the modifier). As a result of the inaccurate word division and improper transliteration, the visibility of these resources within library discovery systems is compromised.

Since the vendor supplied MARC records were not useable without significant modification, some libraries have explored alternative avenues to provide item-level discovery for the JapanKnowledge collection. For example, within the University of Toronto's e-resource management context, the Library employs a service that supplies MARC bibliographic records, coupled with electronic holdings information, to enhance discovery within the library catalog. Typically, the delivered records meet the Library of Congress quality standards, but in the absence of an appropriate catalog record, system generated brief records are created as a stopgap measure to provide title level access. In the case of the JapanKnowledge collection, the metadata contained in the electronic resource management system was minimal, in original script only and did not match any available catalog copy. As a result, the MARC records provided through the MARC record service were system generated brief records. Although the records were made available to users for discovery, they clearly did not meet the quality standards that the Library aims to provide to users.

³ Library of Congress. "ALA-LC Romanization Tables: Transliteration Schemes for Non-Roman Scripts: Japanese." Accessed April 27, 2016. <http://www.loc.gov/catdir/cpsp/romanization/japanese.pdf>.

Poor quality metadata can be attributed to several possible factors. There may be difficulties in communication between libraries, content providers and knowledge base vendors across language and cultural boundaries. It is possible that content providers do not fully understand the importance of quality metadata in providing user access and discovery. It is also conceivable that content providers do not have the expertise on staff to supply adequate metadata to libraries and knowledge base vendors. In the case of the JapanKnowledge collection, it is also important to note that North American institutions are a minority customer group for the product. Therefore, these libraries are in a weak negotiating position to demand MARC records that are compliant with North American standards.

Cooperative Cataloging and the OCLC's WorldShare Collection Manager

Given the challenges in providing suitable access to the JapanKnowledge collection, colleagues at the University of Toronto Libraries and Yale University Library decided to explore options for improving the discoverability of this important collection. One technology which held promise for collaboration and sharing is OCLC's WorldShare Collection Manager. Available to all libraries with a cataloging subscription to OCLC, the WorldShare Collection Manager is a service that enables cooperative management of contents contained in the WorldCat knowledge base. Through the WorldShare Collection Manager, participating libraries have the ability to approve or deny proposed changes to the knowledge base, make corrections to existing knowledge base records, create new e-resource collections and share them with other libraries.⁴ Furthermore, since it is backed by the world's largest database of bibliographic records, the WorldShare Collection Manager is capable of exporting bibliographic records for e-resource collections.

With a collaborative knowledge base that can export MARC records from the OCLC WorldCat database, and with Japanese cataloging librarians on staff at both institutions, the project collaborators believed that significant improvements could be made to the JapanKnowledge e-resource collection. Using print bibliographic records as a foundation for the creation of quality e-resource records and connecting these records to a customized JapanKnowledge package within the knowledge base, the team envisioned using the system as a vehicle to share enhanced bibliographic descriptions back to the larger community. Also, considering that the majority of libraries with CJK collections use the OCLC Connexion record editing tool to create their bibliographic records, the WorldShare Collection Manager seemed like an ideal platform for the community to get access to the collection without unnecessary and complicated processes.

The JapanKnowledge Cooperative Cataloging Project

1. Preliminary Metadata Preparation

As a first step to the cooperative cataloging project, it was necessary to create a comprehensive list of all the resources contained within the JapanKnowledge collection. Using the MARC21 metadata supplied by NetAdvance, data elements such as the title, ISBN

⁴ OCLC. "WorldCat knowledge base." Accessed April 27, 2016. <https://www.oclc.org/knowledge-base.en.html>.

and URL were extracted from the source file. These ISBNs were subsequently batch searched against the OCLC database. Once a set of records was obtained from OCLC, the basic metadata elements, such as title, ISBN and OCLC number, were extracted from the MARC file and imported into a MySQL database where matches were made between the OCLC print records and the electronic resource metadata provided by NetAdvance. After the print and electronic data was combined into a single database, the metadata was exported to a spreadsheet. This preliminary list of JapanKnowledge titles provided the foundation to begin the process of improving the metadata for the e-resource collection.

2. Record Assessment

Once the initial title list was complete, it was necessary to determine the appropriate method for cataloging the resources. The project team decided to use a separate record approach to catalog the JapanKnowledge contents based on the local cataloging practices at the University of Toronto and Yale University. Although there was a difference in preferred descriptive cataloging standards, such as AACR2 and RDA, both the University of Toronto and Yale University preferred to keep e-book and print versions of the records separate.

For both institutions, the separate record approach was deemed more efficient and practical for managing e-resources, ensuring that batch loading, editing and deleting e-resource data would not unduly impact the equivalent print records. Unlike the records supplied by content providers, where each volume of a multivolume set is cataloged separately with a different URL, all records in this project were cataloged at the title level and multivolume monograph titles were treated as a set with all URLs combined on a single record. Not only was title level cataloging efficient, reducing the number of records to be cataloged from 1182 to 872, it was also practical as the records for the print equivalents were most often cataloged at the title level. Once the matching work was complete, all titles were sorted into four main categories.

Table 2. Summary of record assessment

1. E-records / provider neutral records available in OCLC Connexion	426
2. Good quality records for print equivalents available in OCLC Connexion	98
3. Poor quality records for print equivalents available in OCLC Connexion	336
4. No records available in OCLC Connexion	12

As an initial step, the project team worked to create provider neutral records from print version records when they were available in OCLC Connexion. It was advantageous that nearly half of the contents of JapanKnowledge were already cataloged as e-records or provider neutral records. The majority of them were created as provider neutral records by University of California San Diego. However, since the records were created prior to the availability of volume level linking, the majority of records contained obsolete URLs that

linked to the landing page of the JapanKnowledge platform. To improve the quality of the linking, the project team used MarcEdit's OCLC Connexion Bib File Reader plug-in and Merge Records tool to update the existing records as a batch, replacing the old database level URL with individual volume URLs.⁵

In addition to the e-book/provider neutral records, 98 good quality print version records were identified by examining the cataloging agency codes in the 040 field of each MARC record. Most of the records created or modified by North American institutions contained adequate descriptions, Library of Congress call numbers, name and subject authority headings that correspond to the LCNAF and LCSH.

The remainder of the records were either unavailable in OCLC or were inadequately described for the purposes of the project. As noted previously, some of the problems identified included inadequate transliteration, word division, missing fields and lack of authority control. In addition, 12 items in the collection required full original cataloging, as they were born-digital titles that had not yet been cataloged and made available through the OCLC database. Not surprisingly, the records in category 3 and 4 were the most time consuming to enhance and required a much more manual approach.

3. Creating Provider-Neutral Records Using MarcEdit's Task Manager

Using the MarcEdit suite of tools and referring to the Program for Cooperative Cataloging (PCC) Provider-Neutral E-Resource MARC Record Guidelines, the project participants converted the matching print version records into new provider neutral records. MarcEdit's Task Manager was especially useful for creating a series of processing tasks to add, modify and delete fields. For example, the Task Manager was used for adding mandatory 007, 336, 337, 338 and 588 MARC fields, creating a 776 field based on data extracted from the 010 and 245 fields, and modifying the leader and 300 field.

The MarcEdit heading validation tool also created efficiencies for validating 1XX, 6XX and 7XX fields. Figures 1 and 2 illustrate the transformation from a print record to a provider neutral e-resource record using the MarcEdit Task Manager. Once new provider neutral records were created, they were imported into OCLC Connexion. Although local holdings were automatically added when new records were created in the WorldCat database, the project participants opted to delete the holdings afterwards to comply with local policies regarding holdings for licensed electronic content. After OCLC numbers were assigned to the new provider neutral e-resource records, these identifiers replaced the OCLC numbers for the matching print records in the original spreadsheet.

⁵ Reese, Terry. "MarcEdit." Accessed April 27, 2016. <http://marcedit.reeset.net/>.

Figure 1. Original print version record

```
=LDR 01706cam a2200469la 4500
=001 ocm38177397\
=003 OCoLC
=005 20151013011449.0
=008 980109s1997\\|ja|lab\\|b\\|000|0|jpn|d
=040 \\$aOSU$beng$cOSU$dUMC$dTRCLS$dCUY$dOCLCG$dOCLCQ$dOCLCO$dOCLCF$dOC
=020 \\$a4096580058
=020 \\$a9784096580059
=043 \\$aa-ja---
=050 \4$aDS822$b.K63 1997
=082 \4$aDB918
=084 \\$a918$2njb/9
=130 0\6880-01$aKofudoki.
=245 10$6880-02$aFudoki /$ckōchū, yaku Uegaki Setsuya.
=250 \\$6880-03$aDai 1-han.
=260 \\$6880-04$aTōkyō :$bShōgakkan,$c1997.
=300 \\$a629 pages :$billustrations, maps ;$c23 cm.
=336 \\$atext$btxt$2rdacontent
=337 \\$aunmediated$bn$2rdamedia
=338 \\$avolume$bnc$2rdacarrier
=490 1\6880-05$aShinpen Nihon koten bungaku zenshū ;$v5
=504 \\$aIncludes bibliographical references.
=651 \0$aJapan$xDescription and travel.
=651 \0$aJapan$xHistory, Local$vSources.
=650 \7$aTravel.$2fast$0(OCoLC)fst01155558
=651 \7$aJapan.$2fast$0(OCoLC)fst01204082
=655 \7$aLocal history.$2fast$0(OCoLC)fst01411631
=655 \7$aSources.$2fast$0(OCoLC)fst01423900
=700 1\6880-06$aUegaki, Setsuya,$d1927-
=830 \0$6880-07$aShinpen Nihon koten bungaku zenshū ;$v5.
=880 0\6130-01$a古風土記.
=880 10$6245-02$a風土記 /$c校注・ 訳 植垣節也.
=880 \\$6250-03$a第1版.
=880 \\$6260-04$a東京 :$b小学館,$c1997.
=880 1\6490-05$a新編日本古典文学全集 ;$v5
=880 \\$6500-00$a文献:p616-618.
=880 1\6700-06$a植垣節也,$d1927-
=880 \0$6830-07$a新編日本古典文学全集 ;$v5.
```


applied consistently by all participating institutions, it was deemed necessary to develop a set of quality control processes and a schedule to keep the project on track.

Cataloging guidelines were created and a timeline was established by the project members at the initial teleconference meeting (see Appendix). Prior to assigning records to each cataloger, the project lead used the MarcEdit suite of tools to enhance and convert print version records into provider neutral records. Upon receiving a file of 20-50 MARC records, each member then edited the records in OCLC Connexion. To facilitate the editing process, detailed instructions on how to edit records in OCLC Connexion and batch-export them in MARC format were also prepared by a lead member of the project. Since many of the titles requiring enhancement were Japanese translations of titles in the French language series "Que sais-je", the members were able to consult the records of the original French titles for guidance. This was particularly helpful in assigning subject headings and call numbers. Once all of the enhanced records were returned to the project lead, they were reviewed and batch-imported to OCLC Connexion and the new OCLC numbers for the e-resources were updated in the spreadsheet.

The number of JapanKnowledge titles that required original cataloging was surprisingly small. Within the collection, only twelve records were unavailable in OCLC Connexion and required more comprehensive treatment. As with the edited MARC records, once the newly created records were added to OCLC Connexion, their OCLC numbers were updated in the master spreadsheet.

5. Contributing the Collection to the knowledge base

With the cataloging and record enhancement complete, the next step was to create the JapanKnowledge collection in the WorldShare Collection Manager. To add a collection to the WorldCat knowledge base, the collection must be first created locally. On behalf of the project team, Yale University Library created the JapanKnowledge collection in the WorldShare Collection Manager. As described above, the team had been using a spreadsheet to track progress throughout the project. The spreadsheet contained data such as title, URL and OCLC number of each record. A KBART (Knowledge Bases and Related Tools) file was created based on the data from the spreadsheet and was uploaded to WorldShare Collection Manager to add titles to the local JapanKnowledge collection. With the local collection in place, actions were taken to make the collection global so that it could be shared with the wider community.

Managing the global JapanKnowledge collection within the WorldShare Collection Manager was more complicated than expected. After the collection was established, the project team cataloged an additional 100 titles. Since there is currently no mechanism to make changes to a global collection in a batch, the project participants were required to manually add individual titles to the global collection. Moreover, since the WorldCat knowledge base supports collaborative management of e-resource collections, each time a user made a change to a global collection, the change would not take effect immediately.

For each update to the knowledge base collection, libraries that subscribe to that collection had five days to review the changes and approve or deny them before the changes were reflected in the global knowledge base. If an update was denied by the libraries, the collection would not be updated and a support ticket would be opened with the OCLC data team to investigate the issue. If the update was approved by the libraries, the changes would take effect. Finally, if no libraries voted on the data update during the five day window, the changes would automatically be accepted.⁶ Working within this collaborative framework, it took about three weeks for the project team to properly add the new titles to the global collection. In hindsight, the process would have been simplified if the local collection was complete prior to its submission to the global knowledge base.

The JapanKnowledge collection is now available in the WorldCat knowledge base and any library with an OCLC cataloging subscription can use the WorldShare Collection Manager to download the set of MARC records. Alternatively, if libraries prefer to download MARC records directly from WorldCat, a list of the OCLC numbers can be obtained by contacting the Yale University Library.

Project Challenges

Throughout the collaborative cataloging process, project participants faced several challenges. In the initial record harvesting, searching by ISBN often retrieved multiple records from the OCLC database. Due to the fact that many of the resources within the JapanKnowledge collection are part of a multivolume set, the records that were retrieved from WorldCat were a mixture of series title level records and monographs described at the individual volume level. Multiple records led to some difficulty in automating the matching of records to the NetAdvance metadata and in determining the best match for each title. The necessity for quality control in the matching process led to a somewhat more manual approach than was desired.

Another challenge for the project was some unexpected limitations with OCLC's WorldShare Collection Manager. As noted above, a large number of resources in the JapanKnowledge collection were part of multivolume sets. Although the project participants determined that cataloging at the title level was more practical and helpful for users, it was later discovered that the MARC record sets output from WorldShare Collection Manager could not support the provision of multiple links for a single title as represented by multiple instances of the same OCLC number in one collection. What this meant for the project was that outputting MARC records using the WorldShare Collection Manager would not provide the optimal record output for discovery and access to the resources. To make up for this shortcoming, the project participants recommended an alternative to their colleagues. Exporting records directly from OCLC using a supplied list of OCLC numbers would provide more comprehensive coverage of the collection.

⁶ OCLC. "Worldcat Knowledge Base Cooperative Management: Approve or Deny Changes to the Global Knowledge Base." Accessed April 27, 2016. http://www.oclc.org/content/dam/support/knowledge-base/cooperative_phase_one.pdf.

The ever-changing nature of electronic resource collections also poses a challenge for the project participants. The contents of electronic resource collections can grow and platforms and URLs can change through time. To ensure that the records continue to point to the appropriate targets, the catalog records require monitoring and ongoing maintenance. For this collaborative cataloging project, team members had the benefit of the availability of print records for the resources within the JapanKnowledge collection. If the collection incorporates more born-digital resources, this could result in the need for more original cataloging which is more time consuming and requires manual effort. If an e-resource collection becomes too difficult to catalog and maintain, libraries will not be able to provide good access.

Although the introduction of collaborative knowledge base management in the WorldShare Collection Manager provides a mechanism for libraries to share the burden of maintaining e-resource collections, the success of this venture will only work if libraries participate in the process.

Conclusion

Prior to the cooperative cataloging project, the JapanKnowledge collection was largely absent within the library's discovery services and tools. The only way researchers could access the collection was by searching or browsing the database interface directly. Through the work done by the JapanKnowledge cooperative cataloging team, a set of MARC records that meet North American quality standards is now available to be discovered in online public access catalogs. The minimum guidelines established by the cooperative cataloging team included the provision of Japanese characters for records that were missing original script. Additionally, the transliteration of titles in accordance to the ALA-LC Romanization rules addressed issues such as erroneous transliteration and word division.

As a result of the project, titles included in JapanKnowledge are now accessible and users are able to search either in Japanese or transliterated forms. The URLs contained in the records give direct access to the titles and free users from having to take the extra step of initially connecting to the JapanKnowledge database prior to accessing a resource. This improved access to the JapanKnowledge collection not only benefits users, it also profits the library by providing a greater return on investment since the value of resources are often measured by the frequency with which they are used.

The JapanKnowledge cooperative cataloging project was a success and provides a model for future collaborations. As electronic resources continue to proliferate, the need for these types of collaborative efforts will only increase. Particularly for collections in non-Roman scripts, where quality metadata is much needed in knowledge base and discovery interfaces, the expertise of language experts is required to enhance the discovery and access to these resources. Through cooperative cataloging projects and the use of collaborative systems, such as the WorldCat knowledge base, librarians can reduce the duplication of effort and share the burden of the work in bringing to light hidden resources in our online discovery environments.

Appendix: Minimum guidelines for new provider neutral records

- Check for Japanese Romanization and typographical errors.
- Provide Japanese script when records lack 880 fields.
- Trace series titles (490 and 830 fields) if applicable.
- Catalog in either AACR2 or RDA (the records in mrc file were already massaged and formatted in RDA by the organizers).
- Call number (050 field) is optional.
- For a translation, supply 240 field if no original language title is given elsewhere in the record.
- Assign at least one LCSH per record (Except no LCSH needed for fiction).
- Remove non-LCSH subject headings and 653 fields (Non-LCSH/653 fields were left in the original mrc file records as they might be helpful to assign LCSHs).
- Verify 1XX/7XX fields. If the name is not authorized, leave it as is. No need to establish new names in LCNAF.

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