Abstract
User interface design is challenging - especially for music. Some challenges come from the user experience side: identifying priorities, determining what really is best for users, or balancing conflicting use cases. Other challenges come from the metadata itself, which may be inconsistent, absent, or not structured in a way that easily meets identified user needs. The specific systems in use present additional challenges. This session will explore the inner workings of OCLC’s WorldCat database and its public interfaces, the approaches the OCLC team uses, and how attendees can contribute via MOUG’s Reference, Discovery, and Collections work.
What We’ll Cover

• MOUG’s Reference, Discovery, and Collection (RDC) Committee
• User experience at OCLC
• MARC 245 $c in WorldCat and in WorldCat Discovery
• Changes to WorldCat Discovery: how they happen
MOUG’S REFERENCE, DISCOVERY, AND COLLECTIONS COMMITTEE
MOUG Reference, Discovery, and Collections

• Existed in numerous iterations throughout the years.
• Currently, RDC Coordinator on Board
• RDC Committee (RDC Coordinator chairs)
• OCLC liaison (Jay Holloway) – and others at OCLC

• MOUG’s RDC work has existed in numerous iterations over the years, but currently, an RDC coordinator sits on the MOUG Board (currently Nara Newcomer, soon Monica Figueroa).
• The RDC Coordinator chairs the RDC Committee. At OCLC, we also have an RDC liaison – currently Jay Holloway. We also work with numerous other OCLC employees. I’ll personally say it’s been great to work with them!
• We post updates on our work, our recommendations, and more on the MOUG Reference, Discovery, and Collections page. Many recommendations are also relevant to configuring other discovery systems.
Recent RDC Work

- Work with OCLC to implement changes to WCD and FS
  - Recommend changes
  - Survey membership to determine preferred options
  - Preview & comment on coming changes
- Conversations with OCLC about priorities & possibilities
- Participate/recruit for in-person and online sessions
  - Working sessions
  - Updates/info dissemination
- Share info about OCLC RDC products with MOUG membership
- Joint MOUG/MLA WMS Interest Group
  - Meets: Thursday, 2/21, 5:00pm - 5:55pm (New York Central/Illinois Central)
- FirstSearch Advisory Board – maintain contact

Much recent work has focused on discovery interfaces. OCLC has been very responsive to our needs and interested in learning more. I have worked not just with Jay Holloway, but with numerous other OCLC colleagues.

You can see that we’ve contributed in numerous ways and venues, including discussions at MOUG, surveys, recommendations, in-person and online sessions, advisory boards, and more.

We also share info on RDC products with the MOUG membership and, jointly with MLA, oversee the MLA/MOUG WMS (WorldShare Management Services) Interest Group (will meet during MLA.)
USER CENTERED DESIGN AT OCLC
The user is at the center of all that we do.

From students to library staff, user input drives our development.
From Idea to Release

Planning  Refinement  Coding / QA / Demo  Release
From https://medium.com/kevin-on-code/dual-track-agile-focusing-on-customer-value-a2e39312585b
## User Testing and Research

**Librarian Validation**
- Is this feature valuable?
  - Surveys
  - Focus Groups
  - Site visits
  - Webinars

**User Validation**
- Is this feature usable?
  - KPIs – e.g. fulfillment funnel
  - Unmediated testing
  - Mediated testing – e.g. usability test (high fidelity)
But the research that the OCLC team provides is only one piece in the shaping of our product strategy. We rely on you, our library members to help us further refine our product vision. We leverage surveys and feedback in the community center. We hold member forums and user group meetings and advisory boards in which we hear directly from you. But we also believe in understanding the everyday realities that you face as you do your work. We apply contextual inquiry interviews, where we come into the library and observe how you do your work. By understanding what is truly happening in your library we can develop ‘best-in-class’ solutions for the features that you need.

And finally, we prototype capabilities before we release them to customers. This ensures that we have gotten the feature right before we release it to everyone.
Search and Fulfillment Focus Groups

- 53 members registered and participated
- Generated 97 ideas
- 159 votes to surface top priorities
Search Feedback

– Help users **explore content** with ideas such as search expansion, search filtering and authorized subject headings and names.

– Help you *manage locally held materials* with ideas such as call number browsing, shelf location limiters, and temporary material searching.

– Above all a **consistent search** is the foundation of a delightful search experience.
Fulfillment Feedback

– Provide users the **highest-quality links possible** with many ideas around OCLC knowledge base and vendor links.

– Provide **simplified fulfillment actions** with ideas such as a single fulfillment button, print availability on ebooks, and alternative editions.
Two-way dialogue with our members

40+ Discovery Notes

9 Discovery Shorts
Our approach to meeting diverse library needs

**Configuration**  vs.  **Customization**

- ✔ Driven by research
- ✔ Fit-for-purpose
- ✔ Best-practices “baked in”
- ✔ No coding skills required
- ✔ Adjusts when enhancements are added
Driven by user research
Fit-for-purpose
Best-practices “baked in”
Fewer clicks
No coding skills required
Adjusts when enhancements are added
Configuration doesn’t imply simplistic

- For items owned by [LibraryName]

**Existing content for “Specify when to display each fulfillment button” // Level 1 fulfillment button**

**WMS Place Hold Form Display**
Enable place hold form types and fields your library users can submit from WorldCat Discovery. These configurations apply to Level 1 WMS place hold forms only. Read detailed documentation about default request type depending on configuration and material format.

- Display hold request date fields on place hold form
WorldCat Discovery only. Display of these fields are collapsed by default.
- Enabled
- Display shelving locations on Any Copy and Special Request request types
WorldCat Discovery only. Specific Copy/Volume request type displays shelving locations by default.
- Enabled

**WMS Place Hold Form Request Types**

- Display Any Copy request type
WorldCat Discovery only
- Enabled
- Display hold notes field on Any Copy request
WorldCat Discovery only
- Enabled
- Display Specific Copy/Volume request type
WorldCat Discovery only. Allows library users to select one or many specific copies and volumes from each shelving location, up to 10.
- Display hold notes field on Specific Copy/Volume request
WorldCat Discovery only
- Enabled
- Display Special Request request type
WorldCat Discovery only. The hold note is the only required field for special requests.
- Enabled
MARC 245 $C IN WORLDCAT AND WORLDCAT DISCOVERY
Parsing Title Statements

How many of you remember going to a library and searching through a physical card catalog?
Parsing Title Statements

When the MARC formats were created in the 1960s, the intention was to re-create a catalog card in a machine-readable form so that a record could be created once for all, allowing cataloging work to be shared.

On these little three-by-five inch cards, space was at a premium. That’s why the Anglo-American Cataloging Rules, both One and Two were always trying to shorten things, save keystrokes, use abbreviations, omit certain information, and so on.

The sharing of bibliographic data was certainly a consideration from the beginning. But even the foresightful creators of MARC – a more than fifty-year-old technology that has stood us in excellent stead all these decades – could hardly have imagined the intricacies of the Web and Linked Data, never mind the lengths to which we in the twenty-first century have been willing to go in order to mine the golden nuggets buried in every bibliographic record.
Parsing Title Statements

Probably no one in this room needs to be reminded of the current structure of the MARC 21 Bibliographic field 245, Title Statement. You also hardly need to be reminded of the sentence that appears in the definition of subfield $c$: "Once a subfield $c$ has been recorded, no further subfield coding of field 245 is possible."
Parsing Title Statements

The problem isn’t limited to subfield $c$, of course. Alternative titles can be hidden in the nonrepeatable subfield $a$. Subsequent titles, parallel titles, and other title information can also be lost in the nonrepeatable subfield $b$. Perhaps more than catalogers of some other sorts of resources, music catalogers know the consequences of each of these subfield limitations, because for resources such as but not limited to audio recordings, there will often be lots of vital data obscured in subfields $a$ and $b$ or buried far into a subfield $c$. In a MARC 21 record, where field 245 is the core of a bibliographic description, that is a large problem for all sorts of processing such as matching and discovery.
Parsing Title Statements

MARC formats other than MARC 21 have tried to alleviate some of these problems by defining additional subfields. The now-defunct British UKMARC had defined repeatable subfields specifically for “Parallel title,” “Statement of responsibility differing from, or adding to, information in the main entry heading,” “Second or subsequent title by the same author in an item lacking a collective title,” and several other equally convoluted circumstances.

The still-very-much-alive UNIMARC Bibliographic format from IFLA defined many similar subfields in its Title and Statement of Responsibility field 200 and made many of them repeatable.

At ALA Annual in June 2018, OCLC presented MARC Discussion Paper No. 2018-DP09 (http://www.loc.gov/marc/mac/2018/2018-dp09.html), which was drawn up chiefly by the OCLC Leiden, Netherlands, office, offering two options for “Improving Subfield Structure of Field 245 in the MARC 21 Bibliographic Format.” One option used the existing subfields, but made them repeatable. The other option added several newly-defined repeatable subfields.
 Parsing Title Statements

"Despite the historical appeal of what is explored in the paper, the general consensus from MAC was that it introduces more complexity and confusion as well as moving in a direction away from RDA's "manifestation statement" of a single, undifferentiated string of characters derived from the preferred source. Additional comments observed that attempting to make a single field serve double duty (description and access) has proven problematic. A straw poll on whether it would be fruitful or not to move forward was 12 to 8 against. The authors, OCLC's Leiden office, were not present and the OCLC liaison did not feel comfortable burdening them or speaking for them with respect to pursuing the idea further. Though the discussion paper in its present form will not return as a proposal, it was credited for initiating a conversation about the merits/drawbacks of more granularity in field 245."

The MAC discussion paper was in line with earlier papers, proposals, and reports related to the issue of ISBD punctuation, but would have needed considerable reworking to achieve its goals: "... subfields ought to be as specific as possible and that the different elements of the title statement ought to be put in subfields that are very precise." On the screen is the diplomatically-worded official account of the results of the MARC Advisory Committee (MAC) discussion, essentially "nice try but no thanks."

"Despite the historical appeal of what is explored in the paper, the general consensus from MAC was that it introduces more complexity and confusion as well as moving in a direction away from RDA's "manifestation statement" of a single, undifferentiated string of characters derived from the preferred source. Additional comments observed that attempting to make a single field serve double duty (description and access) has proven problematic. A straw poll on whether it would be fruitful or not to move forward was 12 to 8 against. The authors, OCLC's Leiden office, were not present and the OCLC liaison did not feel comfortable burdening them or speaking for them with respect to pursuing the idea further. Though the discussion paper in its present form will not return as a proposal, it was credited for initiating a conversation about the merits/drawbacks of more granularity in field 245."
Parsing Title Statements

Behind the scenes, however, OCLC has been doing its best to deconstruct, parse, and interpret title and statement of responsibility information in field 245 since we began work on the current version of Duplicate Detection and Resolution (DDR) in 2005. As some of you have heard me say repeatedly when speaking about DDR over the years, the software looks for over sixty different conditions in field 245 alone, each of which triggers its own particular reaction in trying to match. That count of sixty dates from around 2011, and the current count is undoubtedly more.

Those listed here offer just a few hints and greatly simplified. The manipulations are not limited to English language data, in spite of the impression here.

- Symbol equivalents (&, +, and)
- Interpretation of omission by ellipses, bracketed data
- Cardinal number presence and omission
- Ordinal number forms (1st, first, 1.)
- Omitted articles
- Variances in or omissions of short words (in, on, of)
- Possessives beginning a title (Bach’s …)
Parsing Title Statements

Additionally, along the lines of what we’ve been talking about regarding the subfielding inadequacies of the MARC 21 field 245, we have used the structure of ISBD punctuation, as well as educated guesses we can make about non-ISBD and pre-ISBD transcriptions to try to parse title and statement of responsibility data to assist in matching. MARC 21 offers some guidance in interpreting ISBD punctuation:

$\textit{a} "\text{In records formulated according to ISBD principles, subfield}$ $\textit{a}$ includes all the information up to and including the first mark of ISBD punctuation (e.g., an equal sign (=), a colon (:), a semicolon (;), or a slash (/)) or the medium designator (e.g., [microform])."

$\textit{b} "\text{In records formulated according to ISBD principles, subfield}$ $\textit{b}$ contains all the data following the first mark of ISBD punctuation and up to and including the mark of ISBD punctuation that introduces the first author statement (i.e., the first slash (/)) or precedes either the number (subfield}$ $\textit{n}$ or the name (subfield}$ $\textit{p}$ of a part/section of a work."

$\textit{c} "\text{In records formulated according to ISBD principles, subfield}$ $\textit{c}$ contains all data following the first slash (/)."

$\textit{n} "\text{In records formulated according to ISBD principles, subfield}$ $\textit{n}$ data follows a period (.) unless the last word in the [preceding] field is an abbreviation, initial/letter, or data that ends with final punctuation. Multiple alternative numberings for a part/section are contained in a single subfield}$ $\textit{n}$."

$\textit{p} "\text{In records formulated according to ISBD principles, subfield}$ $\textit{p}$ data follows a period (.) when it is preceded by subfield}$ $\textit{a}$, $\textit{b}$ or another subfield}$ $\textit{p}$. Subfield}$ $\textit{p}$ follows a comma (,) when it follows subfield}$ $\textit{n}$."
$c$  “In records formulated according to ISBD principles, subfield $c$ contains all data following the first slash (/).”

$n$  “In records formulated according to ISBD principles, subfield $n$ data follows a period (.) unless the last word in the [preceding] field is an abbreviation, initial/letter, or data that ends with final punctuation. Multiple alternative numberings for a part/section are contained in a single subfield $n$.”

$p$  “In records formulated according to ISBD principles, subfield $p$ data follows a period (.) when it is preceded by subfield $a$, $b$ or another subfield $p$. Subfield $p$ follows a comma (,) when it follows subfield $n$.”
Parsing Title Statements

That information from MARC 21 derives from the “Prescribed Punctuation” section in the ISBD Consolidated Edition for the Title and Statement of Responsibility Area. That also includes 24 schematic “Punctuation Patterns” that cover a variety of possibilities. From these patterns and the instructions, we are able to extrapolate other instances. Those listed here are just a few of the included patterns.

Title proper : other title information = Parallel title : parallel other title information
Title proper : other title information = parallel other title information
Title proper = Parallel title = Parallel title / statement of responsibility
Title proper : other title information : other title information / statement of responsibility
Title proper / statement of responsibility = parallel statement of responsibility
Title proper / statement of responsibility = Parallel title / parallel statement of responsibility
Title = Parallel title ; Title = Parallel title / statement of responsibility
Common title. Dependent title = Parallel common title. Parallel dependent title
Parsing Title Statements

Thank you for your kind attention.

Now it’s time for your questions.
As Jay W. has discussed, MARC 245 $c$ contains important but disparate data that is not always reflected elsewhere in the record. In the first example, it contains details on exactly what each of the other creators or contributors did. In this bib, most of the people have entries, but Nathan Broder does not, and even if he did, it would probably be difficult to convey exactly what he did.

The second example is particularly egregious because the title of the Weill piece is not displayed at all in WorldCat Discovery. The authorized form, Kleine Dreigroschenmusik, is contained in an undisplayed 700.
I’ll be referencing two resources throughout this presentation. Here are the details.

Resources referenced

  - http://musicoclusers.org/resources/discovery-reference-collections/
- OCLC Community Center Enhancement Requests
  - https://www.oclc.org/community/home.en.html
  - Connect with community peers
  - Collaborate, ask questions and gain insights
  - Contribute and share ideas to improve products
  - Stay on top of and discuss OCLC announcements
  - Create your account using your existing OCLC credentials
245 $c display in WCD

- Display 245 subfields together; alternatively, identify 245 subfield $c as responsibility instead of names from 1xx/7xx (feature present in FirstSearch). (OCLC S&D TF Report)
- Displaying tag 245 subfield c (OCLC Community Center Enhancement Request: https://www.oclc.org/community/enhancements/user_forms/displaying-tag-245-subfield-c.en.html)

The OCLC S&D TF recommended in their report to display 245 $c with the rest of the 245 subfields, or as an alternative, to display it elsewhere in the record.
MOUG added our comments to an existing enhancement request in the OCLC Community Center.
As OCLC was working towards displaying this subfield, they asked for MOUG’s input. We surveyed the music library community and the nonprint cataloging community via the MLA, MOUG, and OLAC email lists. We recommended “More author/title information” as the display label...
And OCLC implemented it in October 2018!
Here is the enhancement request in the OCLC Community Center. You can see that the OCLC product team provides updates on where they are with considering or implementing the request. This one shows it was implemented, with a link to details in the October 2018 release notes.
Planning with development by our side

The music of multicultural America: performance, identity, and community in the United States
by Kip Lomell, Anne K. Rasmussen

Print Book 2016 | View all editions & formats
*The music of multicultural America explores the intersection of performance, identity, and community in a wide range of musical expressions. Fifteen essays explore traditions that rang... Read More

Held by: UNM Main Campus Libraries

View eBook

We had a little introduction to how a change happened with 245 $c. We’ll look at 3 examples, trading off between Jay H. and Nara. We will focus not just on the changes, but the process.
MARC 382 for MoP was a newly created field, specific to music. The challenge for OCLC – and all interface creators – is to create a useful, intuitive display for this new field. The field was carefully designed to produce useful displays, but it’s very important that all needed subfields display, in the right order, and with useful labels and punctuation or the field will become gibberish.

<table>
<thead>
<tr>
<th>Medium of Performance: the problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>• New field: create an intuitive, useful display (many subfields!)</td>
</tr>
<tr>
<td>• $a$ - Medium of performance (R)</td>
</tr>
<tr>
<td>• $b$ - Soloist (R)</td>
</tr>
<tr>
<td>• $d$ - Doubling instrument (R)</td>
</tr>
<tr>
<td>• $e$ - Number of ensembles of the same type (R)</td>
</tr>
<tr>
<td>• $n$ - Number of performers of the same medium (R)</td>
</tr>
<tr>
<td>• $p$ - Alternative medium of performance (R)</td>
</tr>
<tr>
<td>• $r$ - Total number of individuals performing alongside ensembles (NR)</td>
</tr>
<tr>
<td>• $s$ - Total number of performers (NR)</td>
</tr>
<tr>
<td>• $t$ - Total number of ensembles (NR)</td>
</tr>
<tr>
<td>• $v$ - Note (R)</td>
</tr>
<tr>
<td>• + $0, $1, $2, $3, $6, $8</td>
</tr>
</tbody>
</table>
Medium of Performance: MOUG’s work

- Surveyed music library community to determine best options
- Recommendation to OCLC & posted on OCLC website
- Worked with OCLC staff to provide extra examples and testing
- Recommendation: Display 382 fields as recommended in “WorldCat Discovery Display Preferences for Medium of Performance.” (OCLC S&D TF Report)

2 surveys in 2015, 1 survey in 2017 with implementation pending, regarding newly defined subfields
Published recommendations on MOUG website – sharing, as they can also be implemented in other systems.
These next slides give examples of what is actually implemented in WorldCat Discovery.
Medium of Performance – alternative instruments ($p$)

382 01 flute $n$ 1 $p$ violin $n$ 1 $p$ oboe $n$ 1 $a$ viola $n$ 1  
$p$ violin $n$ 1 $p$ flute $n$ 1 $p$ oboe $n$ 1 $p$ clarinet $n$ 1  
$p$ English horn $n$ 1 $a$ guitar $s$ 3 $f$ 2 lcmpt

flute OR violin OR oboe; viola OR violin OR flute OR oboe  
OR clarinet OR English horn; guitar; Total performers: 3.

#859795512  https://umkc.on.worldcat.org/oclc/859795512
Medium of Performance –
Notes ($v$)

382 01 men's chorus $v$ TTB $e$ 1 $t$ 1 $l_c$ 2 lcmpt
382 01 men's chorus $v$ TTBB $e$ 1 $a$ piano $n$ 1 $r$ 1
$t$ 1 $l_c$ 2 lcmpt

men's chorus [TTB]
men's chorus [TTBB]; piano

#998847009 https://umkc.on.worldcat.org/oclc/998847009
Medium of Performance –
Total number of ensembles >1 ($t$)

382 01 mixed chorus †e 2 †t 2 †2 lcmpt
mixed chorus (2); **Total ensembles: 2.**

#961281988 [https://umkc.on.worldcat.org/oclc/961281988](https://umkc.on.worldcat.org/oclc/961281988)
WCD approach to implementing ‘instrumentation’

- Do we understand the problem trying to be solved?
- How valuable is solving this problem to the community?
- Does the proposed solution align with our understanding of user behavior? If yes, great. If not, why not?
- Is the proposed solution feasible?
Let’s look at another problem – with the “music” facet label. “Music” is ambiguous and could mean score or recording. At my academic library, patrons who come in asking for “the music for x piece” usually want notated music. Though not always, and the tendencies may be different in other contexts, such as public libraries.
MOUG and MLA convened a joint task force that resulted in the 2016 S&D TF report. This report identified and prioritized problems with WorldCat Discovery, and recommended solutions.

Much of recent MOUG RDCC work has focused on priorities identified in the 2016 MLA-MOUG joint Search & Discovery Task Force Report. For the “music” facet label, we discussed this need with OCLC staff on multiple occasions. The summer MOUG Board meeting is held near OCLC HQ and includes an opportunity to visit OCLC’s offices. In recent years, we’ve set aside time to meet with various discovery staff members and it has been very useful both for us to explain our concerns and why they are important, and to learn about how OCLC processes work. For some issues, we’ve also held remote discussions over email or online meetings. The OCLC Community Center is a valuable place for us to post music issues and gather input from across the OCLC community – not just music. As we all know, music often highlights problems that actually occur with many kinds of materials, and so we’ve gathered interdisciplinary support.
Here is the enhancement request in the Community Center
WCD approach to implementing ‘music recording’ facet label

- Do we understand the problem trying to be solved?
- How valuable is solving this problem to the community?
- Does the proposed solution align with our understanding of user behavior? If yes, great. If not, why not?
- Is the proposed solution feasible?
The final example – editions and formats - is a problem where work has been very iterative.
The idea of clustering different versions of the same work together makes sense on an intellectual level. This is the same premise of collocation that led to standardized forms of names, titles, etc.

On a practical level, it’s not so straightforward. WorldCat Discovery clusters bibliographic records, and since music exists in so many versions, there are often many bibs clustered together. In this example, 83. There were minimal tools for filtering, sorting, or identifying if a specific edition/format was the one desired.

Note there are 83 editions and formats.
This shows sorting through the editions on the W.C. Handy example. There are many of them, and they take up a lot of space. They are grouped by relevance, but not in any way apparent to the user and often not in a way useful to the user.
MOUG and others noted that while grouping together is useful in many situations, there are also many situations where users need related editions Ungrouped. OCLC added a check box – putting it prominently in the upper left – to group and ungroup related editions.

Still, when you had the box checked, it was hard to sort through all the related editions to find the desired one. Especially when there were many related editions, which happens often with music. (next slide)
Revised display allows filtering and sorting, and the important details are easier to parse. Popout bigger screenshot on next page.
Filter and sort by library, format, format, year, language
Editions and formats was a problem that manifested strongly in music, but was in no way music specific. We gave input to OCLC in multiple venues, including online focus groups, RDC discussions at MOUG annual meetings, meetings with OCLC staff, and numerous, iterative tweaks occurred. As changes were made, MOUG communicated them via listservs, presentations at annual meetings, and the MOUG newsletter.
Editions and formats < Clustering

- Editions and formats is one application of a broader problem – we know that clustering must be successful.
- "When college students are not looking for a specific edition, they expect their library to offer the best edition first, sometimes without much understanding or curiosity about which edition that is. To college students, ‘best’ generally means most recent locally held edition in the language of the search." 98% agreement in community
- Solve for both specific, best, and comprehensive edition use, and solve for both unclustered and clustered use.
Thank you!

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