Taking an API-first approach to product development

Karen Coombs
Senior Product Analyst, OCLC

Hank Sway
Product Manager, OCLC
Anna Jones
Community Manager, OCLC
Karen Coombs
Senior Product Analyst, OCLC
Agenda

- Having an “API-first” mindset
- OCLC’s API ecosystem
- Our API philosophy and principles
- Benefits to libraries
HAVING AN API-FIRST MINDSET
A bit of context
Old way of building technology products

Consider only the product end user, restricting data and capabilities to a user interface
New way: Consider APIs first!

Assume data and capabilities will be consumed by different workflows, devices, and developers.
OCLC’S API ECOSYSTEM
OCLC’s API ecosystem

Library community, OCLC, and partner developers
This API ecosystem spans library areas:

- Acquisitions
- Analytics
- Resource sharing
- Metadata
- Discovery
- Circulation
Libraries use WMS Acquisitions API to integrate with campus financial systems to pay vendors.

Concordia University Library used WMS Circulation and Vendor Information Management APIs to migrate open orders (future DevConnect session!)
Library community developers

Dartmouth syncs data from their repository to WorldCat using the WorldCat Metadata API.

The MarcEdit application uses WorldCat Metadata API to create and manipulate MARC records.
Library community developers

Libraries use WorldCat Search API to integrate WMS with learning management systems so faculty create reading lists with materials.

Libraries want to use our new discovery APIs to incorporate WorldCat data into their library website bento box search results.
The University of New Mexico Label Application uses the WMS Circulation API to create customized spine labels. Libraries use the WMS Circulation API to synchronize circulation and offsite storage item data.
Some OCLC implementation teams use the WMS Acquisitions API to load open orders as part of WMS implementation process.
OCLC developers

Some OCLC teams use the WorldCat Metadata API to clean up and enhance records
OCLC developers

Digby application uses the WMS Circulation API so libraries can get real-time pull lists.

Some OCLC implementation teams use the WMS Circulation API to get everything in old system checked out in WMS.
Partner developers

Reading list management system partners use the WorldCat Search API to integrate with WMS.

Discovery system partners use the WorldCat Search API to load WorldCat data.

Chegg powers its citation tool with WorldCat Search API.
Partner developers

Student portal system partners use WMS Circulation API to enable “My Library Account”

Offsite storage partners work with libraries to synchronize circulation and offsite storage item data
ILLiad uses our APIs to get requests into the ILL network, scan documents, and aid fee payments.

Minitex’s Resource Sharing unit uses the Article Exchange API to electronically deliver digital materials directly from their system (future DevConnect session!)
API PHILOSOPHY AND PRINCIPLES
Our API philosophy and principles
Our API philosophy and principles

APIs should be treated as products and as fundamental to product strategy.
Our API philosophy and principles

- APIs should be treated as products and as fundamental to product strategy.
- API naming, authorization, and other components should be consistent.
Our API philosophy and principles

- APIs should be treated as products and as fundamental to product strategy.
- API naming, authorization, and other components should be consistent.
- API use cases should be considered across library areas and workflows.
How we implement this API philosophy
How we implement this API philosophy

Today
Projects assume APIs will be consumed by different workflows and devices

API product team collaborates across lines of business
How we implement this API philosophy

**Today**
Projects assume APIs will be consumed by different workflows and devices
API product team collaborates across lines of business

**Future**
Establish API governance processes
Expand investments in API developer tools
<table>
<thead>
<tr>
<th>Authorization</th>
<th>RESTful</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevancy</td>
<td>Search syntax</td>
<td>Serialization</td>
</tr>
<tr>
<td>Facet infrastructure</td>
<td>Pagination</td>
<td>Data model</td>
</tr>
</tbody>
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OAuth 2.0 is an industry standard; makes APIs easier to test and implement.

It’s device independent; allows a variety of applications to interact with our APIs.

Extensible – OIDC for user authentication.
API naming and design align with market problems across library areas and ecosystem.
How our API URLs are designed

Product family

metadata.api.oclc.org/worldcat/search/brief-bibs
metadata.api.oclc.org/worldcat/manage/bibs
discovery.api.oclc.org/worldcat/search/bibs
How our API URLs are designed

Standard domain

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Consistent search experience across both user interfaces and APIs

Default relevancy and options for relevancy are the same

Uniform facet structure in API response
Data field naming is uniform across APIs

How data fields are populated is uniform across APIs

If there is a difference, there is a semantic difference and reason!
BENEFITS TO LIBRARIES
How our API philosophy benefits you
How our API philosophy benefits you

Provides the flexibility to optimize workflows
How our API philosophy benefits you

Provides the flexibility to optimize workflows

Creates opportunities to extend the library reach
How our API philosophy benefits you

Provides the flexibility to optimize workflows

Creates opportunities to extend the library reach

Drives and sustains library community innovation
Register at oc.lc/devconnect-2021

“Migrating open orders with WMS APIs”, 13 May

“Visually exploring current events patterns in WorldCat records and holdings data”, 25 May

“Lightning talks: Managing and highlighting collections using APIs”, 3 June