Smart fulfillment: a Vision from the corn fields

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University of Chicago
University of Illinois-Champaign/Urbana
University of Iowa

University of Maryland College Park
University of Michigan
University of Minnesota
University of Nebraska-Lincoln
University of Wisconsin-Madison
How we got here:

• We wrote a report for our deans and directors. (They told us to)
• We shared it with other consortia, vendors and ILL folks.
• They liked it.
• We know we all face similar issues so lets all work together!
Every Resource Delivery transaction starts with a unique patron need and those needs ought dictate how the systems work, not the other way around.
Smart Fulfillment (noun): a unified patron interface including expanded request management functionality that leverages library, identity management and tracking systems interoperability to automate and simplify request processing and item provisioning.
Meet the Patrons:
Usher Undergraduate needs a copy of John Locke’s *Two Treatises of Government* since it is a required reading for his Poli Sci 201 class. All the copies of this title are checked out from his college’s library. How can he get a copy? He needs this and he needs it fast.
Urge Overkill Undergraduate is writing a 300 level history paper exploring the changes to social morals that 1920’s Berlin saw. History is her major. She needs a variety of scholarly resources and primary sources that she will synthesize. She is adept at using Zotero.
Geddy Lee Grad Student

is preparing for his comprehensive exams in Rushology. His department has provided him with an extensive list of books to read. Everyone who studies Rushology uses APA as their citation style. He uploads the bibliography into the delivery system.
Duran Duran Doctoral Student

is doing dissertation work in his lab where they study a specific surface protein on baker’s yeast. His research is progressing well but he needs to keep up to date with new research. He gets My NCBI email alerts regularly and he requests these new items but doesn’t have the time to search each one independently in the local discovery tool.
Freddie Mercury 1st Year Faculty

is preparing his Opera classes and needs articles, book chapters and recordings for course reserve that his new employer may or may not own.
Tina Turner Tenured Faculty

is on sabbatical spending 2 months at the Mad Max archives in Australia polishing a biography of Mel Gibson on whom she is world renowned expert. Being in the Outback, the archives lack a monograph or journal collection thus she needs extensive support from her home university’s document delivery service. This has been a multiyear project and she has an office of full of books back home that she is also using. She loves the library’s office delivery program.
Managing everything in one place is critical for her.
How can we most effectively meet their individual, unique needs?
Their end purpose defines how our systems work:

✓ What is their process?
✓ What are their outcomes?
✓ How do our tools fit into their process?
In our current systems **Silos** and a **lack of system integration** on the Library/Vendor side make it hard for the patron and force library staff to do busy work. No longer shall it be acceptable to slap a patron interface on a library system and call it a day.

If this is your UI (and it is), you’re doing it wrong =>
Gentlemen, we can rebuild him. We have the technology. We have the capability to build the world's first bionic man. Steve Austin will be that man. Better than he was before. Better, stronger, faster."
What can we do to better meet the patrons’ needs and how will we do that?
Patron Dashboard: everything together

Mock up based on Primo “Library Card” edited by Guy Peterson.
Meeting Usher’s needs:

Acquire a copy of a book not available locally, let him track the requests status including shipping and manage his loan in the local LSP.

Automate and simplify his process and our work:

✓ Relais D2D web services running in ILLiad place an ILL request for identified on-shelf lendable copy automatically
✓ UPS APIs provide real time shipping information (Amazon: where’s my stuff?)
✓ NCIP integration creates a record in Alma and Alma handles circulation, notifications, etc.
Meeting Geddy Lee’s needs:

Get copies of a bunch of books from a list he was given. Let him track them.

Automate and simplify his process and our work:

✓ Ingest a list of citations, parse them and search each one
✓ Place holds for locally available on-shelf copies automatically via Alma HOLD APIs
✓ Relais D2D web services running in ILLiad place an ILL request for on-shelf copy at a Lender automatically
✓ UPS APIs provide real time shipping information (Amazon’s where’s my stuff?)
✓ NCIP integration creates a record in Alma and Alma handles circulation, notifications, etc.
These are simple workflows that just repeat the same steps over and over again using the best possible tool to do the actual work and in communication with the other tools.
Meeting Freddie Mercury’s needs I:

Get copies of a bunch of books, CDs, DVDs, Book Chapter Scans and articles from a list he created in a syllabus. Let him track progress, access scanned PDFs and build his course site for teaching.

Automate and simplify his process and our work:

✓ Ingest a list of citations, parse them and search each one
✓ Place holds for locally available on-shelf copies automatically via Alma HOLD APIs for Course Reserves
Meeting Freddie Mercury’s needs II:

- Perform a Purchase Search of Gobi or like product via APIs for items that need to be placed on course reserve

- Create item record in the local LSP for the item and place a hold for Freddy via APIs so the item can go on course reserves

- Auto-locate available copies of books to scan chapters from, pull, scan and delivery PDFs to Freddie in his dashboard. Articles are OCR’d and thus searchable

- Resource Delivery system has a flexible copyright workflow which takes CONTU guidelines into account, is able to auto-route requests for ILL ordering and on-demand purchasing when necessary
This workflow has a different end point—Instructional Support and it includes both a Purchase on Demand workflow as well as a scan workflow.
Meeting Duran Duran’s needs:

Get copies of new article as his NCBI feed notifies him. Let him track these along with all his dissertation materials and the articles he already has.

Automate and simplify his process and our work:

✓ Ingest a list of citations, parse them, search and route each one automatically without staff intervention when possible

✓ Identify and source articles from local, open access, commercial providers or partner libraries as defined by local practices

✓ Deliver locally available copy, perform Copyright analysis and externally source items not owned locally

✓ Scans are all available for download in the patron’s dashboard
Meeting Urge Overkill’s needs:

Identify, get and manage both scans and loans to write a paper.

Automate and simplify her process and our work:
✓ Iterative process of discovering and consuming more and more sources
✓ One Get It button in discovery makes this process quick and easy
✓ Same loan workflows as Usher and Geddy Lee used for book chapter scans too. It’s just a different request format
✓ Same scan workflow as Duran Duran’s
✓ Scans display for download in the Urge’s dashboard with all her other stuff
Meeting Tina Turner’s needs:
Get, manage, scan, delivery

Automate and simplify her process and our work:
✓ Iterative process of discovering and consuming more and more sources
✓ We envision a Zotero-like tool which will capture resource metadata anywhere, the Get It/ILL option all in one click of a browser app
✓ This reuses the workflows described above, only the volume and period of time are different
✓ All of the PDFs delivered in Tina’s Dashboard are searchable because the library OCRs all documents (example: Abbyy software)
These are Project-Based citation management and item consumption workflows but the library part is the same as the other workflows.
Most of the parts exist already, we (Libraries, Vendors, Publishers) just don’t put them together the right way or use them as effectively as we could. Building the new parts can and must be done. Likewise, old ways must be discarded.
We are just moving things around, loaning them to people and providing PDFs.

This is NOT a completely new version of the laws of Physics. Let’s keep perspective.

ILL Borrowing Loans are just overly complicated circulation transactions, lets fully leverage our circulation systems for them. That’s what they do. Its their job, after all.
How to make the Loans:

APIs, NCIP, automated requesting and searching, a simple single patron dashboard

- APIs – tools that allow systems to talk to each other and do things automatically like place holds, provide shipping tracking, search Amazon
- Protocols – Automate processes like creating a hold
- Appropriate Leveraging of existing systems, like campus authentication and address information to do what they do well
- A patron dashboard that shows them everything they have or had with all the options of things they can do with each thing.
Resource Delivery Management System- Loan Request Workflow #1

**Inputs**
- Local Catalog
- Databases (WorldCat, PubMed, Amazon)
- Formatted Citation Lists, bibliographies
- Get It Button

**Patron Dashboard**
- Displays all requests (Local loans, ILL, Doc Del)
- Displays real time request statuses
- Request options (download, renew, cancel, etc.)
- Completed Requests

**Resource Delivery Management System**
Tracks and manages requests by calling external systems via APIs and protocols to update statuses and route requests.

**1) Local Availability Search** *
- Search Return
- Place Hold
- Return Success
- Create Hold & brief Record
- Mark complete

**2) Purchase Search †**
- Search Return
- Update Received
- Update Returned

**3) Consortia Availability Search**
- Search Return
- Place Hold Return Success

**Next Tool**

**Local LSP**
- Provide Patron Information
- Manage Loans
- Send notifications

* Local availability includes shared consortial catalogs where applicable. † If used.
How to make the Scans Part I:

Automated requesting, searching and link resolution, delivery mechanism, notification mechanism, a simple single patron dashboard

- The discovery process for articles is overly fragmented, poorly managed, difficult to navigate and confusing for both patrons and library staff members in current systems. Resolving to the item take too much work.
- Understand that patrons use Sci-Hub because it’s easy to resolve to items then quickly acquire items
- We should leverage DOIs the same way we leverage ISBNs
How to make the Scans Part II:

Automated requesting, searching and link resolution, delivery mechanism, notification mechanism, a simple single patron dashboard

- Link Resolvers should leverage DOIs, PMIDs, Web of Science A# and other control numbers the same way we leverage ISBNs and OCLC#s.
- Support ISO 18626 as a replacement for OpenURL
- Expose only those holdings we can lend to potential borrowers
- A patron dashboard that shows them everything they have or had with all the options of things they can do with each thing.
We can do this: if we rethink how we do things, put parts together differently, look at how other like procurement systems work, share ideas and allow the function to determine the shape the form takes.
Questions?
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