Mapping Interlibrary Loan: Exploring Data Visualization in Resource Sharing

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#OCLCRSC19
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I like to organize packing materials
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Why we did this

• Geographic maps: where are we borrowing items from?

• Infographics: how do we communicate cancellations to patrons?

• Heat maps: when are borrowing requests submitted?
Purpose

• To demonstrate data visualization techniques, tools, and principles.

• To see if these approaches can help better understand the use patterns of interlibrary loan.
Outline

• Data visualization
• Three data visualizations
  – Geographic Maps (Google MyMaps and Tableau)
  – Infographics (Canva)
  – Heat maps (Tableau)
• Three takeaways
• Questions?
Data Visualization: General

• Data visualization and statistics
  – Easy to read
  – User friendly
  – Memorable

• Data visualization principles
  – Show the data
  – Be true to proportions
  – Color theory
Data Visualization: Interlibrary Loan

- Use of statistics in interlibrary loan
  - Cancellation reasons
  - Items going to satellite campuses
  - Submitted/filled
  - Most requested journals
- Problems with data in interlibrary loan
  - Outreach is anecdotal
  - Difficult to understand terms
- Dashboards
Geographic Maps

Google MyMaps
Google MyMaps

• Benefits
• Goal
• Methods
• Results
• Obstacles
• Conclusion
Google MyMaps: Benefits

- Free
- User friendly
- Interactive
Google MyMaps: Goal

• Using Google’s MyMap service, we can display geographic information about interlibrary loan transactions and explore the international network of resource sharing.
Google MyMaps: Methods

- ILLiad custom search
Google MyMaps: Methods

Libraries from which we borrowed physical materials by group (FY18)
Google MyMaps: Methods

Libraries from which we borrowed physical materials by group (FY18)

Libraries from which we borrowed physical materials by number of requests (FY18)
Google MyMaps: Methods

Libraries from which we borrowed physical materials by group (FY18)

Libraries from which we borrowed physical materials by number of requests (FY18)

Libraries from which we borrowed physical materials by fiscal year (FY14-FY18)
Google MyMaps: Results

Libraries from which we borrowed physical materials (FY16)

Libraries from which we borrowed physical materials (FY18)
Google MyMaps: Results

Number of libraries from which we borrowed physical materials (FY14-FY18)

Number of physical materials that we borrowed (FY14-FY18)
Google MyMaps: Results

Top 30 libraries from which we borrowed physical materials (FY16)

Top 30 libraries from which we borrowed physical materials (FY18)
Google MyMaps: Obstacles

- Data cleanup
- Google MyMaps layers
Google MyMaps: Obstacles

- Data cleanup
- Google MyMaps layers
- Background
- Graphics
Google MyMaps: Obstacles
Google MyMaps: Obstacles
Google MyMaps: Conclusion

• By using number of requests, fiscal year, and group as filters, we can examine the geographic distribution of our high volume lenders as well as groups and consortia in which we participate.
Geographic Maps

Tableau
Tableau

- Benefits
- Goals
- Methods
- Results
- Obstacles
- Conclusion
Tableau: Benefits

- Free
- Interactive
- User friendly
Tableau: Goals

• Using Tableau, we can display geographical information about interlibrary loan transactions in a novel way for outreach and internal reporting purposes.

• Explore Tableau, a program meant for data visualization.
Tableau: Methods

Number of days it takes for items to be shipped from certain states to Baltimore, Maryland according to UPS

This shows number of days for items to be shipped to Baltimore, and zip codes from which we have borrowed physical materials (FY16-FY18). Gradient shades display days it takes for items to be shipped, from darkest (7 days) to lightest (1 day).
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Tableau: Methods

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Tableau: Methods

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Tableau: Obstacles

This shows the states from which we borrowed physical materials by number of requests (FY16-FY18).

Although the number of requests is displayed on a gradient, Maryland serves as such an outlier the gradient is not applicable.
This shows the states from which we borrowed physical materials by number of requests (FY16-FY18).

The gradient has been altered so the darkest color is associated with 100 requests, while in the previous slide, the darkest color was associated with the maximum number of requests.
Tableau: Conclusion

This shows the states from which we borrowed physical materials by number of requests (FY16-FY18).
Infographics
Canva
Infographics

• Benefits
• Goal
• Methods
• Results
• Obstacles
• Conclusion
Infographics: Benefits

- Many free resources
- No artistic ability required
- Clean, clear, simple
- Easy and quick to use
Infographics: Goal

- Our goal for these infographics were to display statistics that we have reported before in a more user friendly way.
Infographics: Methods

- ILLiad canned reports
- Canva
Infographics: Results
Infographics: Results
This infographic will be used to display interlibrary loan data to a non-interlibrary loan audience.
Infographics: Results
Infographics: Results

This infographic will be used to communicate reasons for cancellation.

WHY WAS MY ILL REQUEST CANCELLED?

Below are the top 6 reasons we have cancelled ILL requests in 2019:

- Available at a USMAI library
  46% OF CANCELLED REQUESTS
  Your item is on its way! We have cancelled this in your ILL account and requested it through your regular library account.

- Duplicate requests
  17% OF CANCELLED REQUESTS
  Whoops! Could you have recently requested this item before?

- Could not fill the request by your deadline
  5% OF CANCELLED REQUESTS
  We noticed the date you needed this item by. We’re sorry we couldn’t get it in time!
Infographics: Results

This infographic will be used to communicate reasons for cancellation.

- **Exhausted all possible sources**
  5% of cancelled requests
  Either no library has this item or no library is willing to lend this item. Please let us know if you would like to speak to a reference library to help find similar sources.

- **Too new**
  4% of cancelled requests
  We are not able to get items that were recently published because not many libraries have them yet! Try again in a few months!

- **Requires additional citation information**
  3% of cancelled requests
  We tried getting in contact with you over the last week, it seems we need a bit more information before we move forward with this request.

Thank you for using LNDL ILL!
Infographics: Obstacles

• Templates
• Cost
• Skills required for more advanced work
Infographics: Conclusion
Heat Maps
Tableau
Heat Maps

• Benefits
• Goal
• Methods
• Results
• Obstacles
• Conclusion
Heat Maps: Benefits

- Provides a way to clearly identify trends
- Still able to show exact numbers if necessary
- User friendly
Heat Maps: Goal

• Display interlibrary loan data that are not included in the ILLiad canned reports to learn about user habits.
Heat Maps: Method

- ILLiad custom request search
Heat Maps: Results

Requests placed by day of week and hour of day (FY18)
Heat Maps: Results

Requests placed by day of week and hour of day: undergraduate students (FY18)
Heat Maps: Results

Number of requests placed by day of week and hour of day: graduate students (FY18)
Heat Maps: Results

Number of requests placed by day of week and hour of day: faculty (FY18)
Heat Maps: Results

Requests placed by month (FY18)
Heat Maps: Conclusion

- Instant pattern recognition
- Doesn’t obscure the numbers
- Simple to produce
Takeaways

1. Always be mindful of your users
Takeaways

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- Tailor the presentation to the audience
- Consider the format used in light of the data and the recipients
- Determine if work will result in improved patron experience
Takeaways

1. Always be mindful of your users
2. Collaborate
Takeaways

1. Always be mindful of your users
2. Collaborate

• Seek out stakeholders to determine needs of end users
• Consider IT resources to determine best practices and new data visualization packages
• Obtain fresh perspectives on the work
Takeaways

1. Always be mindful of your users
2. Collaborate
3. Tell a story
Takeaways

1. Always be mindful of your users
2. Collaborate
3. Tell a story

• Include data that could provide additional insight
• Determine appropriate goals for guidance
What’s the furthest library from which you’ve borrowed a book?

The Loyola Notre Dame Library

The Dalton McCaughey Library
References


Thank you!
Questions?
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