Data Driven Decision Making: Getting there

We collect a lot of data at the library for various purposes (ARL, CARL, accreditation, service level assessment, usage statistics, etc.) and from various sources; but is this data being used to help make decisions or simply to fill in surveys? What data is being collected automatically through our various systems?

The wealth of data available to universities should be used to help make decisions based on the library’s strategic plan, show library value and impact, and demonstrate progress toward strategic goals.

In this workshop, we will introduce a method to be more strategic in the collection, analysis and use of data. Together, we will work through a five part strategy for how to tackle data collection for each decision required of your assessment plan (which is linked to your library’s strategic plan). The goal is to learn to leverage the benefit that the data represents.

For best results, come with an issue from your assessment plan that you need to make a decision about.

Liz Hayden
Assessment Librarian       Bibliothécaire responsable de l’évaluation
University of Ottawa       Université d’Ottawa

Pam Jacobs
Manager of Electronic Resources
University of Guelph

SESSION OUTLINE:

A.  Data driven decision making
B.  Framework for making data central to decision making
C.  Identify your question
D.  Develop a plan to collect necessary data to answer your question
E.  Collect the data
F.  Analyze the data
G.  Use that analysis to generate actionable recommendations
H.  Wrap-up
I.  References
Framework for making data central to decision making

Data driven decision making means “...systematically collecting and analyzing various types of data, including input, process, outcome and satisfaction data, to guide a range of decisions...”

Figure 1: Process for Data Driven Organizations

1. Identify your question
2. Develop a plan to collect data
3. Collect the data
4. Analyze the data
5. Generate actionable recommendations

Data driven decision making requires this final step

---

Identify your question

What do you and/or your stakeholders want to know? What is your objective in answering this question?

The context/reasons behind your question may be to:
- Demonstrate value, benchmark, advocate, compare
- To test a hypothesis – are fewer students borrowing laptops because they have their own devices?
- To follow up on a previous assessment activity
- To improve user services
- To improve internal processes
- To determine if a project was successful or not

The common thread is to **inform decision making**

In many cases your question will likely be too big to tackle it all at once. If so you will need to break it down into manageable pieces.

- What do you want to know?
- Be specific
- Make it manageable
- Ensure it is actionable

Exercise: Take a minute to write down your question.
Ask yourself: Who are the stakeholders? What will they want to know? What is the objective in answering this question?
Develop a plan to collect necessary data to answer your question

Exercise: Draft your plan to collect the necessary data

What data do I need to answer my question? (Refer to your question from Exercise 1)

<table>
<thead>
<tr>
<th>Deadline?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Do you need to give anyone a heads-up?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment scan</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Check the literature</td>
</tr>
<tr>
<td>- Identify existing frameworks, data sets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Based on some of what you identified above, begin listing your data needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Brainstorm (refer to your data sources list for inspiration)</td>
</tr>
<tr>
<td>- Begin to structure/refine the list</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experts I can talk to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- In my library (data librarian; social science librarians &amp; grad students)</td>
</tr>
<tr>
<td>- On my campus (Institutional research and planning office)</td>
</tr>
<tr>
<td>- External (Assessment colleagues, authors of results of environment scan)</td>
</tr>
</tbody>
</table>
References

Collect the data

Now that you’ve identified your data needs you need to actually collect the data. Consider the following:

- What data already exists? Where is it? How can you retrieve that data?

- What format does your data come in? If you have choices make sure to choose the format that is most compatible with the tools you will be using to analyze the data (e.g. if using Excel for analysis, don’t download a usage report in html or as a pdf).

- If you need to combine data from different sources your data may need to be cleaned up. What tools can you use? What skills and expertise do you need and how will you obtain these?

- It’s likely at this stage will you encounter issues or need to make decisions that you may not have thought of in the previous step. That’s okay – this an iterative process.

Exercise:
Where do you start? Provide thoughts and examples based on the questions and considerations listed above.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
References

  - See appendices for lists of potential metrics
- Project Counter: Counting Online Usage of NeTworked Electronic Resources [http://www.projectcounter.org/](http://www.projectcounter.org/)
Analyze the data

Turn data into information by analyzing and interpreting it. Even good quality data is meaningless without analysis.

Explore and Analyze:

- Gather the results
  *You may need software tools (Excel, SPSS, nVivo, etc.)

- What is the data telling you?
  List, Sort, Cluster, Track

- Test the validity of the data

“Data are the information you collect as part of your research study. In qualitative research, data usually take the form of words or pictures. (In quantitative research, they take the form of numbers.) Key concepts are derived from the data through a process of coding, sifting, sorting, and identifying themes. Storytelling or narrative is an alternate way of making sense of the data. As you can imagine, there are numerous steps along the way to move from the actual data you collected to either of these two ways of making sense of the data.”

Review the items listed in Explore & Analyze. Which do you think will be the most challenging for you?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________


References

Generate actionable recommendations

- You may not be able to make recommendations at this stage
  - You may need to do further analysis and/or require additional data sources
  - This is not a failure, it just means it’s a hard question to answer!
  - You want to be confident in your analysis, so it is critical to use an iterative process as necessary to fully understand what your data is telling you.

- Communicate your results
  - Aim for simplicity & clarity
  - Know your audience(s) and tailor your message(s)
  - Put your results in context

- Top 5 tips for communicating data (source: http://www.everydayanalytics.ca/2012/10/top-5-tips-for-communicating-data.html):
  - Plan: Know What You Want to Say
  - Prepare: Be Ready
  - Frame: Context is Key
  - Simplify: Less is More
  - Engage: It’s Useless If No One Knows It Exists

Exercise:
Assume that you have the results of your analysis and you can identify one or more actionable recommendations as a result. Who do you need to communicate this information to? How will you do so?
References


Blackburn, J., Reed, K., & McFarland, D. (2013). *Culling the herd in hard times: implementing an evidence-based “big deal” collection support tool at Vancouver Island University*. Poster presentation at EBLIP-7, Saskatoon, SK. [http://hdl.handle.net/10613/1059](http://hdl.handle.net/10613/1059)


Project Counter: Counting Online Usage of NeTworked Electronic Resources. [http://www.projectcounter.org/](http://www.projectcounter.org/)


**Data Sources and Support System List: From Session Brainstorming Exercise**

**DATA SOURCES**

- University Fact Books / Quick Facts – annual university statistics
- NSSE, National Student Survey on Engagement
- Maclean’s University Ranking
- Employee Opinion Survey (Library Results)
- Global Scientific Rankings (Performance Ranking of Scientific Papers for World Universities)
- NMC Horizon Report 2015
- ACRL Top Trends 2014
- CAUT Almanac of post-secondary education in Canada (annual pub.)
- Stats Can, RDC
- UBC Library Open Data
- Analysis of open-ended comments in surveys (Library & Institutional)
- Rochester Study on Library Space
- Headcount data for Library Space
- Libguide Statistics
- Curriculum at your library
- Google Analytics search terms data
- Published Literature
- Library Donor Data from Alumni/Donor/advancement unit
- Government (Federal/Prov./City) Statistics on Education or any specific area.
- SPEC kits from ARL
- ARL Investment Index and Ratios
- Library Assessment Conference (ARL), Poster presentation guide
- Library Assessment Conference (ARL) – Proceedings
- Link resolver data
- Library Acquisitions Metrics
- CUFTS (Simon Fraser University Resource)
- CRKN License Information Module (LIM)
- OA assessment look at # of articles archived in institutions repositories such as T-Space at U of T.
- Citations used in theses and dissertations at your university. Give an indication of what researchers/students are actually using.
- Services solutions
- Collections rubric from Vancouver Island University
- Consortia, Annual data but also data from projects, services, collections/resources
• Talk to vendors / companies & their methods for determining increase in usage because of their product (e.g. Summon; Gobi (YBP); OASIS (Coutts); etc.)
• Publishers websites (Admin Reports)
• ebrary, EBSCO etc. Backend Admin Deputing
• Vendor usage data for e-resources
• University’s Institutional Research + Planning Office
• Student Union
• Campus Security Office

GET SUPPORT FROM: Colleagues, Organizations, Associations, Units on Campus...

• People you met at CARL-CLAW
• Co-op students (look for MUS, Computer Science, etc. Students with specific skills
• OCUL – Assessment Community
• Own Team – Dept.
• Communication Team
• Supervisor vs Dept. Head
• ERIL-L (E-Resources) ListServ
• Institutional Analysis & Planning Office
• Project Counter – www.projectcounter.org
• Usus: a community website on usage www.usus.org.uk
• Campus Services e.g. Security for library 24 hours – discussion
• Social Sciences graduate student
• Data Librarian
• Everyday analytics blog
• PR dept.
• TAHSN LIBRARY DIRECTORS (Toronto Academic Health Sciences Network)
• HSICT Listservs (Health Sciences Information Consortium of Toronto)
• Consortial Colleagues and staff members
• ARL – Assess Listserv
• Information Resource Vendors
• Peer Network
• LIB-STATS Listserv
• ARL Assessment: Library Assessment Conference, Assessment Seminar
• Courses: MOOCs; Statistics Canada; Advanced Excel Course