KEEPING IT REAL

A COMPREHENSIVE AND TRANSPARENT EVALUATION OF ELECTRONIC RESOURCES
OVERVIEW

- Introduction
- Selecting & Defining Criteria
- Gathering & Analyzing Data
- Making Final Decisions
LOGISTICS

- Restrooms
- Schedule
- Power
- Lunch venues
WHO WE ARE

- Karen R. Harker, MLS, MPH
  - Collection Assessment Librarian
- Laurel Crawford, MLS
  - Manager, Collection Development
- Todd Enoch, MLS
  - Manager, Serials & Electronic Resources

- University of North Texas Libraries
WHO ARE YOU?

Get to know your table-mates

- What is the most interesting thing?
- Who came the farthest?

Name your table team

- 1980's Band
OUR STORY

The Good Stuff

- University of North Texas
- Solid teaching university
- Small but growing graduate programs
- Largest public university in the North Texas area
- Third largest university system in Texas
- Strong, vibrant community support
- Enrollment grew strongly
- Low rate of tuition increase
- “Best Deal” in education

The Not-So-Good Stuff

- State-funding declined
- Tuition increased
- Enrollment plateaued
- Funding of library based on student fees
- Library appropriations have been stable
- Continuation costs have grown 5-7% per year
- Effectively reducing collections expenditures
Doubts about “Big Deals”?

Stagnant budgets? Increased costs, particularly of journals?

WHAT’S YOUR STORY?
WHO HAS EXPERIENCED…

Changes to the way monographs are purchased?
In October 2013

Prepared for at least another $1M in collections budget for FY2014

Decisions would be based on data, not feelings or hunches or the squeakiest wheels

Inspired by the article by Gerri Foudy & Alesia McManus

University of Maryland, College Park
- Public university
- Enrollment: 35,000
- Budget year: 2004
- Expected cuts: 25%

University of North Texas, Denton
- Public university
- Enrollment: 33,000
- Budget year: 2014
- Expected cuts: 20%
**THEIR GOALS – OUR GOALS**

**UMCP**

- To evaluate *all* serial subscriptions to identify lesser priority serial titles in all subject areas.
- To develop a process to be managed by the libraries’ subject teams and coordinated by the collection management staff.
- To ensure that the serial review process be fair and open to the campus community, with all faculty having an opportunity to respond to suggested cancellations.
- To balance specific departmental needs and more interdisciplinary needs.
- To respect the libraries’ responsibilities to manage the collections budget in a responsible manner.
- To identify the lowest priority of serials expenditures in all formats and sort these commitments into three levels.

**UNT**

- To evaluate all of the most expensive serial subscriptions to identify lesser priority titles in all subject areas.
- To develop a process managed by the collection development staff with input from the subject specialists.
- To ensure that the serial review process be fair and open to the campus community, with all faculty have an opportunity to respond to suggested cancellations.
- To support a more interdisciplinary collection.
- To project the libraries’ responsibilities to manage the collections budget in a responsible manner.
- To identify the lowest priority of serials expenditures.
THEIR CRITERIA – OUR CRITERIA

UMCP
- Cost-effectiveness
- Access
- Breadth/Audience
- Uniqueness

UNT
- Cost-effectiveness
- *Ease of Use*
- Breadth/Audience
- Uniqueness to the curriculum
THEIR METHODS – OUR METHODS

UMCP

- Subject teams
  - Subject librarians
  - Broad disciplines
- Three levels:
  - 3 = does not meet the criteria well
  - 2 = somewhat meets the criteria
  - 1 = good at meeting the criteria

UNT

- Collection development team
  - Resources grouped by type
  - Ranked resources
- Subject librarians rated resources
  - Ease of Use
  - Breadth or Audience
  - Uniqueness to the curriculum
UMCP

- Summed the scores for each resource across all criteria
- Grouped the resources by score
  - **Priority 3** = could be canceled with the least damage to library services.
  - **Priority 2** = cancellation of these resources would more severely damage library services.
  - **Priority 1** = cancellation of these resources would cause the greatest damage to library services.

UNT

- Ranked each group of resources by the score for each criteria
  - Cost-per-Use
  - Change in price
  - Subject librarians’ ratings
    - **Weighted** average of 3 scores ((ease of use + breadth*2+uniqueness*3)/3)
- Converted to percentile distributions
  - Lowest 10th was **worst-performing** percentile
- Averaged the percentile distributions
UMCP

- Had 10% budget target
- Cancelled all resources in Priorities 2 & 3
- Campus community was kept informed and had ample opportunity for comment…
- Libraries received very little negative feedback
- “…and thanked us for doing the review”

UNT

- Had $1.25M target
- Cancelled the lowest-performing resources
- Selectively modified or cancelled mid-level resources
- Advised to refrain from properly communicating with the faculty in a timely manner
- Some negative comments, some grousing about the library funding in general
- Always able to back-up decisions with data
- Provided a full inventory of electronic resources with updated information
- Thanked by the Provost and Vice-Provost of Academic Affairs
TIME FOR YOUR STORIES
WHAT’S NEXT

- Selecting & Defining the Criteria – Karen Harker
- Gathering the Data – Todd Enoch
- Analyzing the Data – Todd Enoch
- Making Final Decisions – Laurel Crawford
- Conclusions & Discussion – You!

Each section
- Some storytelling
- Some guided discussion
- Some hands-on activities
SETTING THE FRAMEWORK

SELECTING AND DEFINING THE RIGHT MEASURES
Our decisions will be based on the data that most closely matches our values.
WHAT ARE OUR VALUES?

- **Education** over research
  - First two of Four Bold Goals
  - Library funded by student fees
  - Research often not well-connected with education

- **Cost-effectiveness**
  - Third of Four Bold Goals
  - Doing more with less
  - University coming under scrutiny
  - Need to take a stand

- Holistic, *interdisciplinary* collection development
  - No more subject-specific funds or formulas
  - Resources are inherently interdisciplinary
  - Education is becoming more interdisciplinary

- **Transparency**
  - Communicating with the faculty & subject librarians
  - Provide data that supports all decisions made
WHAT ARE YOUR VALUES?

- Value of Academic Libraries – Megan Oakleaf
- Align library’s values with the values of stakeholders.
- Activity 1: Institutional Focus Areas
  - Top 5 Institutional Focus Areas
    - Individually
    - For whole team
MATCHING DATA TO VALUES
THEIR CRITERIA – OUR CRITERIA

UMCP
- Cost-effectiveness
- Breadth/Audience
- Uniqueness
- Access

UNT
- Cost-effectiveness
- Breadth/Audience
- Uniqueness to the curriculum
- Ease of Use
Cost-effectiveness

UMCP
- Cost-per-search
- Rapid inflator

UNT
- Cost-per-use
  - Use depends on resource type
  - Renewal price divided by the three-year average of annual uses
- Inflationary trends
  - 5 year change in expenditures
COST-EFFECTIVENESS

UMCP

- Cost-per-search
- Rapid inflator

UNT

- 80/20 Rule for Big Deals
  - Packages only
  - Distribution of titles across a package by usage
  - Target set: 80% of uses served by 20% of titles

- Other ways of obtaining content?
  - PPV, ILL, Get it Now?
**UMCP**

- Impact on research and/or curriculum needs
- Number of users affected
- Primary user groups
- Number of searches per year

**UNT**

- **Interdisciplinary:**
  - The primary user group is very broad; it is used by students across several disciplines. The number of students who would be affected by cancellation would be high. It has a high impact on curriculum and teaching.

- **Disciplinary:**
  - The primary user group is limited to the discipline. It may impact curriculum and teaching.

- **Niche:**
  - The number of students who would be affected by cancellation would be limited. It has a minimal impact on curriculum and teaching; it may be used only for faculty research.
UNIQUENESS

UMCP
- Material Covered
- Overlap with other sources
- Unique resource for curriculum and/or teaching

UNT
- Subjective rating of liaisons
  - Totally unique
  - Somewhat unique
  - Not unique
- Overlap with other sources
  - Full-text: EJournals management system
  - A&I databases: Search Ulrich’s
THEIR CRITERIA - OUR CRITERIA

Access
- Technical reliability
- Open URL or Z39.50 Compliance
- Ease of Use
- Accessibility remotely

Ease of Use
- **Easy**
  - Most students can use both simple and advanced features without assistance; students routinely successfully find and access information.
- **Moderate**
  - Students can figure out simple tasks on their own, but need coaching for advanced tasks; students have some difficulty finding or accessing information without help.
- **Difficult**
  - Students require coaching for even the simplest tasks; only expert, experienced users are able to find and access information without assistance.
**Highest & Best** Measure of Usage

- That which is closest to the end-user experience
- Varies by what the resource provides
## HIGHEST & BEST USES

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<thead>
<tr>
<th>Category</th>
<th>Features</th>
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<tr>
<td>Individual journals</td>
<td>• Full-text downloads</td>
</tr>
<tr>
<td>Ejournal packages</td>
<td>• Full-text downloads&lt;br&gt;• Distribution of usage across titles</td>
</tr>
<tr>
<td>Audiovisual</td>
<td>• Items streamed/full-text downloads</td>
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<tr>
<td>Literature databases</td>
<td>• Abstracts/record views</td>
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<tr>
<td>Full-text databases</td>
<td>• Abstract/record views&lt;br&gt;• Full-text downloads</td>
</tr>
<tr>
<td>Online reference (miscellaneous)</td>
<td>• Abstract/record views</td>
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</table>
QUALITY

Impact Factor

Journal Lists
• From accrediting agencies
• From P&T committees

Subjective Opinions
• Librarians
• Faculty
<table>
<thead>
<tr>
<th>Education</th>
<th>Cost-effectiveness</th>
<th>Interdisciplinarity</th>
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<tr>
<td>• Ease of Use</td>
<td>• Cost-per-Use</td>
<td>• Breadth or Audience</td>
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<tr>
<td>• Breadth or Audience</td>
<td>• Inflationary Trends</td>
<td></td>
</tr>
<tr>
<td>• Uniqueness of content</td>
<td>• 80/20 distribution (packages)</td>
<td></td>
</tr>
</tbody>
</table>
WHAT DATA MATCHES YOUR VALUES?

SELECT 3 MEASURES THAT MOST CLOSELY MATCH YOUR VALUES.
DEFINING THE MEASURES

BEING PAINFULLY OBVIOUS
### ELEMENTS OF A CLEAR DEFINITION

| Characteristic | What exactly is being measured? |
| Source         | Vendor, Local                    |
| Time frame     | # of years, Fiscal or calendar   |
| Summary        | Sum, Average, Weighted           |
| Scale          | What is considered “good”?      |
| Direction      | Higher is better or worse?       |
**EXAMPLE: USE OF FULL-TEXT JOURNALS**

| Characteristic       | • Full-text views & downloads  
<table>
<thead>
<tr>
<th></th>
<th>• COUNTER JR1 (v4)</th>
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<tbody>
<tr>
<td>Source</td>
<td>• Vendor</td>
</tr>
<tr>
<td>Time frame</td>
<td>• 3 Calendar Years</td>
</tr>
<tr>
<td>Summary</td>
<td>• Annual Average</td>
</tr>
<tr>
<td>Scale</td>
<td>• Minimum of 24 uses per year</td>
</tr>
<tr>
<td>Direction</td>
<td>• Higher is better</td>
</tr>
</tbody>
</table>
**EXAMPLE: COST-PER-USE OF JOURNALS**

| Characteristic   | • Full-text views or downloads  
|                 | • Subscription price |
| Source          | • Vendor  
|                 | • ILS/ERM |
| Time frame      | • 3 Calendar Years |
| Summary         | • Average |
| Scale           | • Maximum of $25 |
| Direction       | • *Lower* is better |
PROBLEMS OF SCALE: DIRECTION

- Set in the same direction
  - Scores
    - Higher is better (1, 2, 3)
  - Ranks
    - Lower is better (1st, 2nd, 3rd)

- Scales of different measures
  - All the same scale? Different scales?
  - Set on same scale, if possible
  - Use percentiles
What is considered “good”? “bad”? “middlin’”?  
Absolute or pre-selected?  
Relative to each other?  
- Distribution of the values  
  - Minimum, maximum, median, average and percentiles  
  - Is it a smooth, gradual trend?  
  - Are there big jumps? steep climb?
Open the **BudgetData.xlsx** file

- Select a **tab** of interest (Ejournals, Packages, etc.)
- Select a **measure** of interest
- Copy the **column**

Open the **ScalesExercises.xlsx** file

- Paste the **copied data** into the first column **as values & number formatting**
- Distribution **statistics** will appear
<table>
<thead>
<tr>
<th>DEFINE YOUR CRITERIA</th>
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<tbody>
<tr>
<td>Characteristic</td>
</tr>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Time frame</td>
</tr>
<tr>
<td>Summary</td>
</tr>
<tr>
<td>Scale &amp; Reference Points</td>
</tr>
<tr>
<td>Direction</td>
</tr>
</tbody>
</table>
QUESTIONS?
BREAK!
FILLING IN THE DETAILS

GATHERING AND ORGANIZING DATA
First question – Where to store?

- ILS
- ERMS
- Usage Consolidation Service
- Wiki/Sharepoint
- Spreadsheets/Databases

Designate one tool/file as Master Repository of Data

- Should contain final forms of data from other sources
Identify all titles to be evaluated

Determine a unique identifier for each item
- OCLC #, Vendor title #, ISSN, ILS order #

Include identifying information to be used in later analysis
- Subject area
- Resource type (journal, package, database, reference work)
- Subscription type (annual sub, standing order, maintenance fee)
GATHERING COST PER USE

- Gathering Cost
  - ILS
  - Publisher
  - Subscription Agent
  - Ulrich’s

- Gathering Usage
  - Manual download from publisher
  - SUSHI
  - Usage consolidation service
THINGS TO CONSIDER WHEN GATHERING CPU

- Cost considerations
  - Pro/super-rated prices
  - One-time discounts/credits

- Usage considerations
  - Matching usage to appropriate title(s) in master list
  - Frequency
    - Platform changes
    - Rolling access
  - Lack of usage
CALCULATING CPU

<table>
<thead>
<tr>
<th>ORDER #</th>
<th>TITLE</th>
<th>Type</th>
<th>Renewal Price</th>
<th>Usage</th>
<th>CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>o1007099</td>
<td>E-Journal 9</td>
<td>E-Journal</td>
<td>$2,307.58</td>
<td>4.00</td>
<td>576.895</td>
</tr>
<tr>
<td>o1007804</td>
<td>E-Journal 2</td>
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<td>E-Journal 61</td>
<td>E-Journal</td>
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<tr>
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<td>0.019517</td>
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<td>o1015114</td>
<td>E-Journal 4</td>
<td>E-Journal</td>
<td>$5,028.37</td>
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<td>136.5061</td>
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</tbody>
</table>
GATHERING SUBJECTIVE DATA

- Ways of gathering
  - Surveys
  - One-on-one meetings
  - Focus Groups
DETERMINING SCOPE

- How much of target collection should be reviewed?
  - All?
  - Titles paid from particular fund?
  - Titles related to a specific subject area?
Lessons Learned

- If looking for specific values: Lock it down!
- Be clear
# OUR RUBRIC

<table>
<thead>
<tr>
<th>Rating</th>
<th>Ease of Use</th>
<th>Breadth of Audience</th>
<th>Uniqueness</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Easy</td>
<td>Interdisciplinary audience</td>
<td>Totally unique</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The primary user group is very broad; it is used by students across several disciplines. The number of students who would be affected by cancellation would be high. It has a high impact on curriculum and teaching.</td>
<td>This resource contains curriculum and teaching information not available anywhere else.</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
<td>Disciplinary audience</td>
<td>Somewhat unique</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The primary user group is limited to the discipline. It may impact curriculum and teaching.</td>
<td>This resource contains curriculum and teaching information which can be found elsewhere; or it contains the same information but has a uniquely useful search interface or metadata.</td>
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<tr>
<td>3</td>
<td>Difficult</td>
<td>Niche audience</td>
<td>Not unique</td>
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<tr>
<td></td>
<td></td>
<td>The number of students who would be affected by cancellation would be limited. It has a minimal impact on curriculum and teaching; it may be used only for faculty research.</td>
<td>This resource contains curriculum and teaching information widely or freely available elsewhere.</td>
</tr>
</tbody>
</table>
Lunch!
CRUNCHING THE NUMBERS
ANALYZING YOUR DATA
ANALYZING DATA

- Looking for patterns
- Looking for outliers
- Applying context – comparing like against like
DETERMINING DECISION POINTS

- E-journals – base off of ILL or PPV
- Streaming media
- A&I
- Reference Works
- Datasets
RELATIVE RANKING

- Compare resources against similar types
- Percentile Rankings
- Shows where value falls amongst a range
Calculate Percentile Ranking for CPU exercise
## PERCENTRANK OF CPU

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Use</th>
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<tbody>
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<td>2</td>
<td>o1007099 E-Journal 9</td>
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### Excel Functions

- **PERCENTRANK**: Returns the rank of a value in a data set as a percentage of the data set.
- **PERCENTRANK.INC**: Used to calculate the rank of a value in a data set, considering the entire range of data from 0 to 1.
- **PERCENTRANK.EXC**: Calculates the rank of a value in a data set, excluding the entire range of data from 0 to 1.
### PERCENTRANK() of CPU

<table>
<thead>
<tr>
<th>ORDER #</th>
<th>TITLE</th>
<th>Type</th>
<th>Renewal Price</th>
<th>Usage</th>
<th>CPU</th>
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</table>
SURVEY RESPONSES

- Collating responses for each item
  - Median vs. Mode
- Weighting responses
  - Are some factors more important than others?
  - Pay attention to scoring direction
PULLING IT ALL TOGETHER

- Composite score
  - Convert to same scale: Percentile rankings
  - Pay attention to direction of comparison
    - Reverse selected rankings by subtracting percentile from 1
REVERSING PERCENTILE RANKING

G2 : √ fx = PERCENTRANK.INC(F:F,F2,3)

BECOMES

G2 : √ fx = 1 - PERCENTRANK.INC(F:F,F2,3)
VISUALIZING DATA

- Conditional Formatting
  - Aid in spotting patterns
<table>
<thead>
<tr>
<th>ORDER #</th>
<th>Title</th>
<th>Renewal Price</th>
<th>3-yr Avg</th>
<th>% Rank Usage</th>
<th>CPU</th>
<th>% P</th>
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CONDITIONAL FORMATTING CPU
CHANGING RULE TO PERCENTILE

Change “Lowest” to “Percentile”
Change “Highest” to “Percentile”
OTHER TYPES OF ANALYSIS

- Packages
  - 80/20 rule
    - Help measure efficiency of package.
    - If 80% of use comes from more than 20% of titles: more efficient
    - If 80% of use comes from less than 20% of titles: less efficient

- Databases
  - Overlap analysis
<table>
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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
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<td>Database</td>
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<td>0.37 Percentile</td>
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<td>0.00 Percentile</td>
<td>0.00 Rank Reversed</td>
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</table>
SECTION 3
MAKING FINAL DECISIONS
OBJECTIVES

- Develop a plan for making final decisions
- Use SUMIF function to set up a scenario-planning tool
- Plan scenarios to aid in making final decisions
- Use a worksheet to document final decision-making
- Use Excel charts to communicate scenarios to stakeholders
ON SUBJECTIVITY

Objectivity

Subjectivity

Holistic Planning
How have you built trust among stakeholders as you made difficult, and maybe even unpopular, decisions?
How have you balanced the needs of squeaky wheels with the needs of the entire patron group?
DIFFERENT WAYS TO LOOK AT THE DATA

- Value of seeing real-time impact of decisions
- Open Baked Cake BRIP simplified.xlsx
WARM-UP

- Apply conditional formatting to Status column such that:
  - *Keep* turns the cell green
  - *Drop* turns the cell red
- Make all 300 items say *Keep* for now
- Change one to *Drop* to test your formatting
FUNCTION: SUM

= SUM ( Beginning Cell : Ending Cell )
**TASK 1: SEE PROGRESS TOWARD OVERALL GOAL**

**Formula**

<table>
<thead>
<tr>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Savings</td>
<td>Total Spending</td>
<td>Total Percent Cut</td>
</tr>
<tr>
<td>=SUM(L24:L324)</td>
<td>=SUM(K24:K324)</td>
<td>=SUM(L24:L324)/SUM(C24:C324)</td>
</tr>
</tbody>
</table>

**Result**

<table>
<thead>
<tr>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Savings</td>
<td>Total Spending</td>
<td>Total Percent Cut</td>
<td></td>
</tr>
<tr>
<td>$49,266</td>
<td>$3,947,301</td>
<td>1%</td>
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</tbody>
</table>
TASK 2: SEE PERCENT CUTS BY DEPARTMENT

FUNCTION:
SUMIF

= SUMIF (Criteria Location, Criteria to match, What to sum)
## TASK 2: SEE PERCENT CUTS BY DEPARTMENT

### Formula

<table>
<thead>
<tr>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Renewal Price for Department</td>
<td>Total Savings for Department</td>
<td>Total Percent Cut for Department</td>
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</tbody>
</table>

### Result

<table>
<thead>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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</thead>
<tbody>
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<td>Department</td>
<td>Total Renewal Price for Department</td>
<td>Total Savings for Department</td>
<td>Total Percent Cut for Department</td>
</tr>
<tr>
<td>Biology</td>
<td>$109,969.34</td>
<td>$49,265.52</td>
<td>45%</td>
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<tr>
<td>Business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dance &amp; Drama</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SCENARIO PLANNING

- Anticipatory
- Proactive
- Collaborative
- Considers all factors
Goal: to reach your budget cut while balancing* the cuts across departments

*Aim for 5%-40%

List out actual steps you took. Examples:

- Dropped all titles below 0.10 composite score
- Kept all titles essential for accreditation
- Use filters to sort and manipulate the rows
## BOTTOM 10% OF ITEMS

<table>
<thead>
<tr>
<th>Department</th>
<th>Total Renewal Price for Department</th>
<th>Total Savings for Department</th>
<th>Total Percent Cut for Department</th>
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</thead>
<tbody>
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<td>$1,913.79</td>
<td>2%</td>
</tr>
<tr>
<td>Business</td>
<td>$456,458.07</td>
<td>$10,890.65</td>
<td>2%</td>
</tr>
<tr>
<td>Chemistry</td>
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</tr>
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<td>Dance &amp; Drama</td>
<td>$21,747.65</td>
<td>-</td>
<td>0%</td>
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<tr>
<td>Economics</td>
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<td>18%</td>
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<tr>
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<tr>
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<tr>
<td>Government Documents</td>
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<tr>
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</tbody>
</table>

<table>
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<th>Total Spending</th>
<th>Total Percent Cut</th>
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<tbody>
<tr>
<td>$762,560</td>
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</tr>
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</table>
COMMUNICATION & NEGOTIATION

Stakeholders included:

- Students
- 30+ subject departments
- Subject librarians
- University administration
- Library administration
- Vendors
- The silent user
“The cuts to my department’s resources are ridiculous. We are clearly being targeted! I want to know how much the other departments’ resources are being cut, especially sciences vs humanities.”
TASK #4: PIE CHART
TASK #4: PIE CHART

Components of Cuts

- Interdisciplinary
- History
- Government Documents
- Geography
- English & Literature
- Economics
- Education
- Mathematics
- Physics
- Music
- Political Science
- Psychology
- Sociology
- Biology
- Visual Arts & Design
- Business
- Dance & Drama
- Chemistry
- Library & Information Sciences
- Journalism
TASK #5: 100% STACKED COLUMN

Impact on Departments

- Biology
- Business
- Chemistry
- Dance & Drama
- Economics
- Education
- English & Literature
- Geography
- Government Documents
- History
- Interdisciplinary
- Journalism
- Library & Information
- Mathematics
- Music
- Physics
- Political Science
- Psychology
- Sociology
- Visual Arts & Design

- Total Renewal Price for Department
- Total Savings for Department
Discussion Questions

- What is your reaction to the influence of subjectivity during your scenario planning and communication? Do you feel bias would play a role?

- How did you balance opinion vs hard data? For example, what would you tell people who wanted to keep items with poor cost-per-use?
WRAP-UP

- Summary
- Advice
- Reflection
- Evaluation
Karen Harker, Collection Assessment Librarian
University of North Texas Libraries
Karen.Harker@unt.edu

Todd Enoch, Serials Librarian
University of North Texas Libraries
Todd.Enoch@unt.edu

Laurel Sammonds Crawford, Coordinator of Collection Development
University of North Texas Libraries
Laurel.Crawford@unt.edu
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