BA 301 Winter 2011
Data Analysis Lecture

Research & Analysis of Business Problems

PSU Problem Solving Process

1. Position
2. Sense
3. Uncover
4. Solve
5. Build
6. Achieve

Data

- How and where do you get it?
  - Sources and methods
- What do you do with it once you get it?
  - Analysis and manipulation
- How do you use it once you've analyzed it?
  - Presenting data so others can understand what you know so well!

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Research & Data Gathering

- Primary Research – gathering new data to answer a specific question
  - The BA 301 demographic survey
- Secondary Research – collecting data that already exists from a variety of sources
  - An existing survey on airline travel from Mintel
- Pros & cons?

Primary Research

- Observe
  - Experiments
  - Focus groups
- Ask questions
  - Questionnaires
    - Online, by mail, in person, on the phone
  - Focus Groups
  - Consumer Panels
  - Online Networks

Secondary Research

- Internal sources
  - Existing documents
    - Policies, quality reports, emails and memos
    - Production records, HR records, sales records, etc.
  - Corporate databases
- External sources
  - Commercial surveys
  - Online and internet-based

Research Strategy

- What is a research strategy?
  - A systematic plan for tracking down sources for your research topic.
- There are many options:
  - Databases with access to articles in magazines, newspapers and journals (specialized and general).
  - Web search engines (Google) to locate relevant web sites, online articles and government publications.
  - Books, using the library’s online catalog.
Pyramid of Sources

General Encyclopedias
- General Interest Magazines & Newspapers
- Specialized Magazines
- Trade Books
- Gov't Documents
- Scholarly Books
- Academic Journals

Source: Ballenger, 74

Research Strategy

- But, honestly, where’s the first place you go?
- What percentage of the information on the “Web” is visible to search engines like Google?
- Some industry people say as little as 1%
- Where is the rest of it?
- The DEEP web – tens of thousands of terabytes (estimate)

The DEEP (Invisible) Web

- What is the DEEP web?
  - Databases that are hidden – firewalls, password protected areas, technical restrictions, etc.
  - What can you find there?
    - Government databases, medical and academic journals, personal records, professional publications, proprietary research and “peer-reviewed sources”.
  - Can you get to some of this great data?
    - Yes – through the PSU library web site.

What is “Peer Review”?

- Peer reviewing or “refereeing” is the process of submitting an article, a piece of scholarly work, research or ideas to the scrutiny of others who are recognized experts on the subject.
- Publications that have not undergone peer review may be regarded with suspicion by scholars and professionals.
The Visible Web

- Search Engines
- Directories
- Archives
- Government
- News sites
- Online Reference Sources

Search Engines

- These take your search terms and seek matches among millions of web pages. Some are better than others, but none search the entire web.
  - Google, Yahoo, Bing.com, Ask.com, Wolfram Alpha, Altavista, HotBot, AlltheWeb
  - Metasearch
    - Clusty, Dogpile, Mamma, Search.com, Vivisimo, SurfWa.
  - Check <www.searchenginewatch.com> for reviews of search engines.

Directories

- Unlike bot-based search engines, directories have a human touch – information specialists arrange sites by topic.
  - Infomine <http://infomine.ucr.edu>
  - Librarian's Index <http://www.lii.org>
  - Scout Report Archives <http://scout.wisc.edu/archives>
  - WWW Virtual Library <http://www.vlib.org>
  - Yahoo <http://www.yahoo.com>
  - Even Google <http://directory.google.com/>

Archives

- Archives contain the texts of poems, books, speeches, political cartoons and historically significant documents.
  - American Memory <http://memory.loc.gov>
  - Scholar's Lab <http://etext.lib.virginia.edu>
  - Internet History Sourcebooks <http://www.fordham.edu/halsall>
Government & News Sites

- For current topics, government and news sites can provide useful information.
  - Census Bureau [http://www.census.gov]
  - Fedstats [http://www.fedstats.gov]
  - CNN [http://www.cnn.com]
  - BBC [http://www.bbc.co.uk]
  - Fox News [http://www.foxnews.com]

Online Reference Sources

- Almanacs, directories, and encyclopedias:
  - CIA World Fact Book [https://www.cia.gov/library/publications/the-world-factbook/]
  - The Old Farmer’s Almanac [http://www.almanac.com]
  - Baseball Almanac [http://www.baseball-almanac.com]

Refining A Keyword Search

- Use quotation marks around words that are part of a phrase: “Exxon profit levels”.
- Use AND (sometimes a + sign) to connect words that must appear in a document: McDonalds AND nutrition.
- Use NOT in front of words that must not appear in a document: PSU NOT Penn State.
- Use OR if only one of the words must appear in a document: DeBeers OR "conflict diamond".
- Use an asterisk as a substitute for letters that might vary: "marine biology" (to find marine biologist or marine biology).
- Use parentheses to group a search expression and combine it with another: (hamburgers OR cheeseburger OR fat*) AND McDonalds.

Research Hint

- Use the references and citations from one source to further your search.
Evaluating Online Sources

- Always keep your purpose in mind.
- Favor governmental and educational over commercial – how do you know?
- Favor authored over those without.
- Favor those available also in print.
- Favor those with recent updates. How recent?
- Favor those that document their claims.

Citing Your Sources

- Why is this important?
  - We must give credit to others for their ideas – avoid plagiarism.
  - Society requires a well-informed citizenry.
  - Society must maintain high standards in circulated and published materials.
  - These materials affect opinion and action.
  - Responsible writers take great care to specify when they refer to the work of others – readers can check the source.
  - Plagiarism breaks the “trust” and breeds skepticism.

Citing Your Sources

- When must you cite?
  - Whenever you quote from an original source.
  - Whenever you borrow ideas from an original source, even when you express them in your own words by paraphrasing or summarizing.
  - Whenever you borrow factual information from a source that is not common knowledge.

Using The MLA Format

- MLA gives author’s full name on first mention, and omits the date.
- MLA allows for two ways to introduce cited material:
  - Brandon Conran argues that the story is written from “a bifocal point of view” (111).
  - The story is written from a bifocal point of view (Conran, 111).
Some Basic Rules

- The Bibliography starts on a new page.
- Double-space each line and between citations.
- Indent the second and subsequent lines of citations by five spaces (hanging indent).
- If citing an article you found on the web, but was originally in print form, provide enough info so that the reader can access it in either form.
- Arrange the list alphabetically by author.
- There are tons of sources for help:

Citing Periodical Print Pubs

- This list shows most of the possible components in an entry for an article from a print magazine:
  - Author’s name
  - Title of the article (in quotation marks)
  - Name of the periodical (italicized)
  - Series number or name (if relevant)
  - Volume number (for a scholarly journal)
  - Issue number (if available, for scholarly journal)
  - Date of publication (for a scholarly journal, the year; for other periodicals, the day, month, and year, as available)
  - Inclusive page numbers
  - Medium of publication (Print)
  - Supplementary information (see MLA Guide)

Print Pub Example

- An article from Business Week:


Citing Web Publications

- This list shows most of the possible components in an entry for an article from a print magazine:
  - Name of author, compiler, director, narrator, performer, or translator of the work (for multiple authors, corporate authors, or anonymous, see MLA Handbook)
  - Title of the work (italicized)
  - Title of the overall Web site (italicized), if distinct from #2
  - Version or edition used
  - Publisher or sponsor of the site
  - Date of publication; if nothing is available, use n.d.
  - Medium of publication (Web)
  - Date of access
  - URL, only if reader can’t find it without!
### Online Only Periodical Example

- **An online article from Newsweek:**
  

### Web Site Example

- **General:**
  
  Lastname, Firstname. “Article Title” Site Name. Organization Name, Article Date. Web. Date of Access.

- **No Author/No Date:**
  

### When Using A Library Database

- **General Rule:**
  
  - Must include both article/publication and library/database information.


### Some Other Tools

- **Outlining sites:**
  
  - [http://www.loosestitch.com](http://www.loosestitch.com)
  - [http://www.ioutliner.com](http://www.ioutliner.com)

- **Tracking research links:**
  
  - [http://del.icio.us](http://del.icio.us)

- **Citations:**
  
  - [http://www.bibme.org](http://www.bibme.org)
  - [http://www.ottobib.com](http://www.ottobib.com)
  - [http://www.citationmachine.net](http://www.citationmachine.net)
You are a management consultant hired to help Max with his video store business in Missoula.

- Develop a research strategy in support of your consulting activities. What information would help with your efforts? How would you go about getting it?
- Find a research report on Mintel that might be useful in your work for Max. Show me the title of the report along with one interesting piece of information that you think would be relevant for your work.
- Find one online "refereed" source about the video rental business. Provide the Ulrich’s page proving the peer-reviewed status.
- Blockbuster is a key competitor for Max. Find an online SWOT analysis for Blockbuster.
- What are some key demographics for Missoula that might impact Max’s business?