

Raising the Bar:

Google & Beyond

and

**New Info Pro Skills for Today's
World**

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Raising the Bar

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Google & Beyond: Mining Web Resources for Insight

Top Google Tips & Hidden Tools

The Old Google is Gone

Forget the days when Google maintained a 200-item ranking algorithm that evaluated everything from your browser to the time of day you are searching and how many prior searches you had done.

Forget trying to create complex searches with five layers of nested parentheses and 35 search terms. (Google truncates searches after 32 words anyway!)

Think of search as an experience, where you try multiple approaches and see what works best this time.

Google is focused on Artificial Intelligence. Instead of PageRank, we now have RankBrain, in which machine-learning technology is dynamically guessing (or learning) what the best results are.

It is the return of the search *black box*, where even the programmers cannot tell you exactly why you got the results you did.

Boolean search no longer works the same. Rather than strictly applying AND, OR, or phrase searches, Google uses your words and connectors as suggestions. Watch especially for notes at the end of individual items in search results in which Google indicates that not all your “required” words were actually included. Missing: ~~omitted term~~

Google is also focusing on mobile search. Google CEO Sundar Pichai told investors in August 2016 that “Mobile is the engine that drives our present”. This will have a tremendous impact on professional searchers, because mobile search is significantly different from “traditional” search:

-) Mobile searches are often spoken, and people tend to speak in sentences rather than keywords.
-) Mobile searches are activity-focused – people are looking for information on a movie, then want to find out when and where it is playing, then they want to buy tickets.

-) Mobile searches have no ads, so Google is emphasizing all the other places ads appear. And Google uses all it knows about user behaviour to better sell ads elsewhere.
-) Google ranks mobile-friendly and mobile-optimised sites higher, which means that established sites – including libraries and other information resources – may be lower-ranked.
-) Google is more focused on surfacing individual pages that look relevant rather than finding web *sites* that are relevant. Stand-alone pages often get more highly ranked because they answer a question.

For information professionals, this means that we have to keep questioning our assumptions.

Searches are not necessarily comprehensive, exhaustive or even repeatable. We have to think creatively and try more approaches than we used to do.

New Search Approaches

Try multiple approaches for all your searches:

-) Run all your searches several times, each time changing the order of the search terms or trying it when logged in and then logged out. (And use multiple search engines.)
-) When searching for concepts that are closely related, try connecting the words in several ways: word1 word2, word1-word2, "word1 word2"
-) Try wording your search differently. Note the different number of search results for:

Uber market strategy	18.700.000 results
What is Uber's market strategy	23.000.000 results
Uber "market strategy"	60.000 results
"market strategy" Uber	140.000 results

NOTE that Google ignores some parentheses

(A B) OR (C D) is interpreted as

A (B OR C) D

Google is de-emphasising Advanced Search. You can usually find it by running a search on anything, then finding a link in the search results page. Bookmark the Advanced Search pages for each Google index to eliminate that step.

Web: google.de/advanced_search

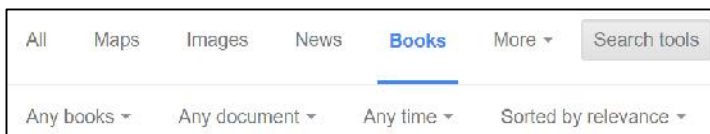
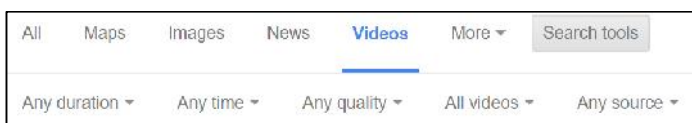
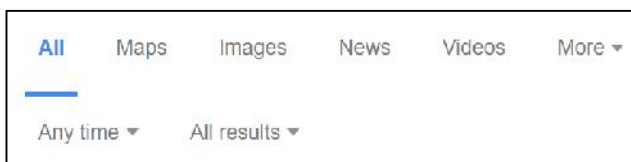
Images: google.de/advanced_image_search

News: Only available by pull-down from search results page

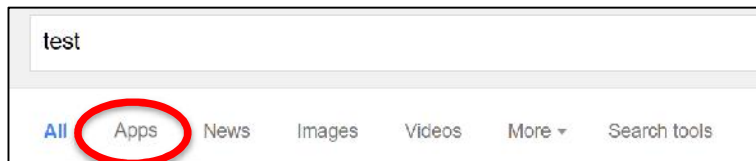
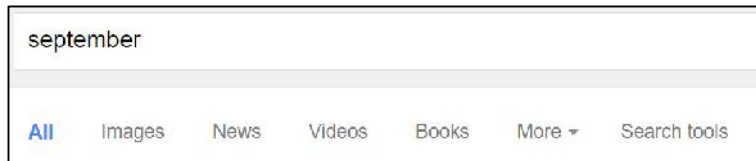
Books: books.google.de/advanced_book_search

Scholar: Only available by pull-down in search page

The Search Tools vary from index to index as well. Be sure to watch which ones appear as you move from one search area to another.



Google is always changing and evolving its search indexes. Note that sometimes the App Search option now appears in search results.



Google Search Prefixes

Use Google search prefixes for more fine-tuned searches. **NOTE: no space between the prefix: and the term** (filetype:pdf, NOT filetype: pdf)

Filetype:{extension} can be used for any filetype

Link:{URL} will retrieve *some* links from other pages to that URL. Not comprehensive but can be useful

Related:{URL} retrieves similar pages based on link and click patterns. Not perfect but sometimes useful.

Cache:{URL} retrieves the cached copy of page when Google last spidered it. This can be useful if a web page has been changed recently and you want to see an earlier version. (Use archive.org for prior versions of the page)

Inanchor:{word} retrieves URLs in which your search term appears in the anchor text linking that URL.

...Webster's study concluded that change contributed to an increase in the school's graduation rates. Despite that evidence [...]

Google's "exact" searching is no longer exact, but here are your best approaches for searching for an exact match.

-) From the search results page, click Search tools, then pull down the All Results menu and select Verbatim. Now, all your search terms will be searched for exact matches.
-) Use the *Intext:* prefix if you are retrieving too many results in which you cannot find your word in the body of the retrieved pages (i.e., the page was retrieved because your search term appeared in anchor text, metatag, URL, etc.)
-) Enclose your search term in "quotes".

Resist the urge to build complex searches.

Too many search terms will result in a lower number of results

Rather than ORing many synonyms, use Google's auto-synonyming

Use *inurl:* or *intitle:* only when needed

Watch out for those Missing: results

Google Tips and Tricks

Use * as a search placeholder for any number of word in the middle of a phrase. To find mentions of an individual, for example, use the * to get name variations. "john * smith" will retrieve mentions of John Smith, John M. Smith and John Mark Steven Smith.

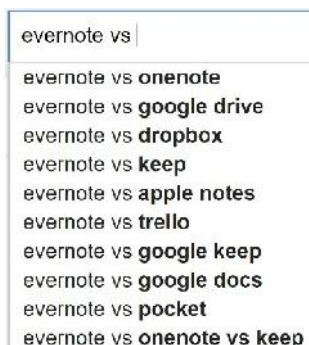
Use .. to search for a numeric range. This searches for *any number* within the range, based on syntax. A search for 2010..2014 will find pages that mention the years 2010, 2011, 2012, 2013 or 2014. A search for 5..8 will retrieve pages that mention 5 or 6, 2 or 7, 288.

Use Google's *site:* search to find subdomains within a web site that might be useful to explore in more depth, by looking for any pages from the site EXCEPT those on the main (www.) domain. For example, a search for `site:tu-berlin.de -site:www.tu-berlin.de` will retrieve any page from tu-berlin.de *except* pages on www.tu-berlin.de (so you will retrieve links to subdomains such as www.ensys.tu-berlin.de, www.innocampus.tu-berlin.de, and isis.tu-berlin.de).

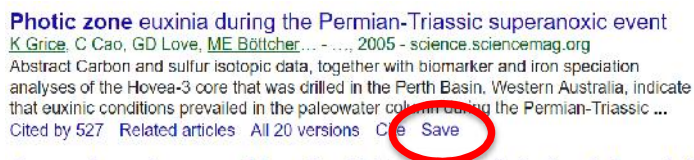
If you are searching blog content, take advantage of the fact that many blogs include the date of the blog post in each post's URL by including *inurl:* with a year. For example, to find any mentions of Wolfram Alpha in the blog ResearchBuzz during 2013, you could search for

```
site:researchbuzz.me wolfram inurl:2013
```

Use Google's Autocomplete feature to find popular alternatives to a product or service. Start typing your search with one item and the word **vs**



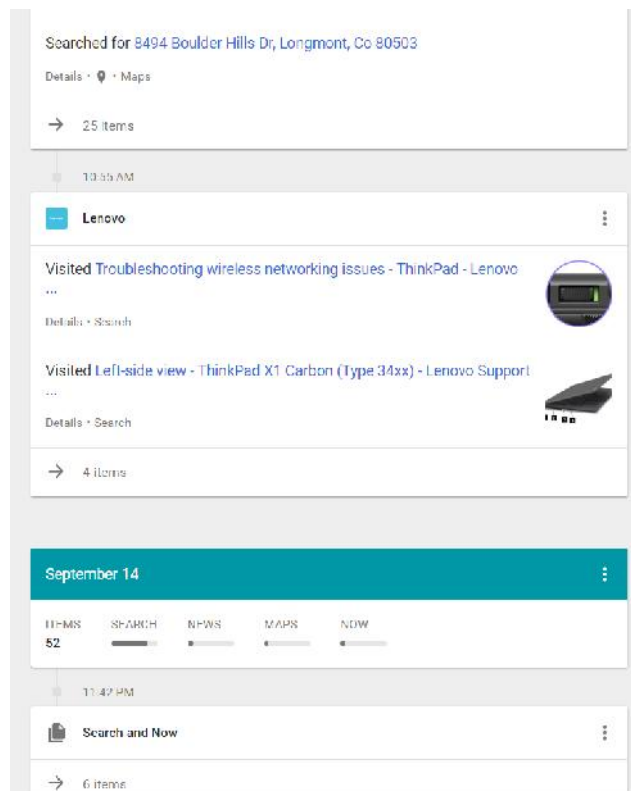
Google Scholar has a **library feature** that lets you save individual citations in a private area. Click the **SAVE** option next to the retrieved item



You can add labels to items to organize your library by research project. You can also export any subset of your library in BibTeX, EndNote, RefMan or CSV format.

Remember **Google's Custom Search Engine** – a great way to improve your clients' search results even when they are just searching Google. At **cse.google.de**, you can specify specific URLs that you want Google to rank more highly, limit the search to or exclude from search results. You can add search terms behind the scenes (your users do not see these added terms) to help filter or focus the search. Create these custom search engines and embed them in your organisation's internal web pages where you know people will be searching.

The latest Google panic is that, yes, Google maintains a record of every search ever done. No, you can't see all those searches, but you can see your own searches that were run while logged into Google. You can go to **myactivity.google.com** to view or delete portions or all of your search history. Your search history can be useful if you remember that you searched for something a few weeks ago but cannot remember what resource you found. Here is what part of my search history looks like:



Is it a good idea or bad idea to be logged in while searching Google? It depends. Relevance ranked is often improved by considering prior search activity, but you may not want Google basing results on prior searches. Compare your results when logged in to what you get in an anonymous/private browser window and see whether you get better results one way or the other.

Top Ten Alternatives to Google

Bing

Bing.de (which redirects to www.bing.com/?cc=de)

Bing is always my second choice for searching. Its people-searching is poor (IMO) and phrase searching is weak, but its video search tools are better than Google's.

Bing has a *linkfromdomain*: feature that lets you see pages linked *from* a web site.

`linkfromdomain:lifehacker.com` `todo` helps me find mentions of “to-do list” tools from the web site LifeHacker.com

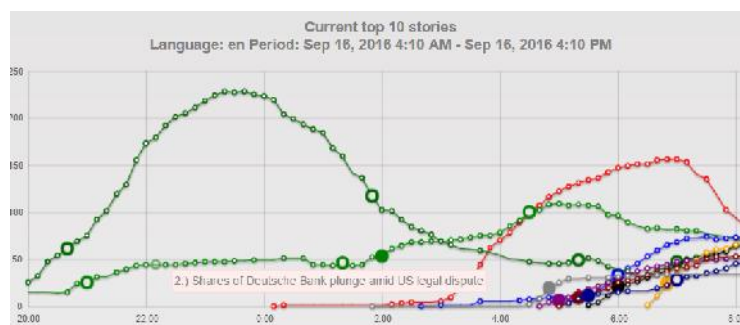
Omnity.io

This new semantic search tool is intended to find related documents, even if those documents do not link to or cite each other, by looking for “meaning-based relationships”. You can upload a document to find related material – a great approach if you are having trouble finding relevant material. You can also download a list of the results for later analysis.

European Media Monitor

emm.newsexplorer.eu and emm.newsbrief.eu

These search tools from the European Commission show news trends (not just news from the EC but general news as well) as well as clustered organisation of news, information on “related” people or events and “Events detection” for late news. See an example of how it shows news trends over the course of 24 hours:



Yandex.com

This search engine is based in Russia and seems to be better than most search engines at filtering out spammy web sites. While it works well for web, image and video searching, its news interface is only in Russian and it appears not to handle non-Russian queries well.

DuckDuckGo.com

This is one of the more established privacy search engines, emphasizing that it offers completely anonymous searching using Yahoo's search index and its own crawler. It allows you to limit your search by country through its Settings (duckduckgo.com/settings). Note that it emphasizes "instant answers"; this may be helpful if you want a quick answer or annoying if you want a deeper dive.

Startpage.com

This site offers anonymised Google searching and, unlike most non-tracking search engines, supports most of Google's advanced search features. You cannot use the *inurl:* prefix, but most other prefix searches work.

Oscobo.co.uk

This fairly new UK-based search engine also focuses on anonymous, non-tracking search. While it is somewhat UK-focused currently, they intend to expand to the rest of Europe. This search engine searches Bing/Yahoo.

Hulbee.com

This Swiss-based semantic search engine provides anonymous search via Yahoo. Two nice features are an easy ability to limit your search by country and its clustering of concepts in the search results page.

Gigablast.com

This long-time open source search engine is perhaps most useful when you are trying to figure out why you are retrieving what you are retrieving. The search results page lets you see for each retrieved page the metatags, links to the page, and links to more pages from this site. You can sort results by date, relevance or *by number of inbound links* to the page – a possible way to filter for more relevant content.

Yippy.com

This metasearch engine was formerly known as Clusty and was sold to a big-data firm in 2010. It has a reputation for offering “family focused” results, which may eliminate some controversial content, particularly on political or religious topics. One of its nice features is the clustering of search concepts, useful when disambiguating an overly broad search term.

And finally, remember to help move clients beyond Google. Create short videos that walk them through how to add other search engines to their browser search box.

Chrome: Settings -> Search

Firefox: Settings -> Options -> Search

Searching the Deep Web

We are looking at the Deep (not the Dark) Web. Not spooky stuff, not hackers, just what search engines cannot find.

What do search engines miss?

-) Dynamic content
-) Password or form-controlled access
-) Database content
-) Library catalogues
-) Government records
-) Your intranet

When looking for deep web content, you need to take a broad approach. Cast a wide net when searching, and watch for content that is close to what you want, even if not an exact match. In deep web research, you cannot expect to find everything, but you can always find *something*. Know what you are looking for – a dataset on ocean temperatures, for example, or an archive of original documents on a topic. While you want to keep a wide focus, it can be easy to get distracted by the nice-to-know information rather than the must-know material.

Rather than looking for THE authoritative answer or resource, look for leads and pointers from one source to the next source. Deep web content is usually two clicks away from a search engine search result.

Starting with the known

One effective approach for finding deep web content is to start with a known resource – a trade or professional association, a non-governmental organisation, a non-profit, a specialised library or museum, or even a university that specialises in the topic. Look for information portals from government agencies; note that governments are showing some consistency in the URLs for their data portals. (See for example, destatis.de, data.gov, data.gov.uk, etc.)

Once you have found one good resource, use Bing's *linkfromdomain*: search feature to find other sources that link TO an authoritative resource.

Reverse-image searching

Try a reverse-image search to find discussions of a person or resource. Take a useful chart or graph, or the photo of an expert; copy the URL to that image, and then search for other copies *of that image*.

Using Google Image Search, click the  in the search box or use TinEye.com.

You can also use Google Images to find graphics from useful reports, and then follow the trail to the original source. For example: I did a search in Google Images for “dog food” “market share”

The search results looked like:



I skimmed the results, clicked on the graphics that looked interesting, and saw that many of the most useful graphics were from petfoodindustry.com. Then I searched in Google Web (not Images) for “market share” (2015 OR 2016) site:petfoodindustry.com and found a number of useful reports I would not have known to look for otherwise.

Deep web finding tools

Maintain an internal list of the key deep web resources for your organisation's information needs.

For open-access journals, consider *doaj.org*

For open-access books, consider *doabooks.org*

For open-access repositories, consider *openDoar.org*

Use Public Library of Science: *plos.org*

Try OpenGrey (Grey Lit in Europe): *opengrey.eu*

For academic literature, try BASE – Bielefeld Academic Search Engine: *base-search.net*

And remember that some searchable databases may be hiding in plain sight. Google Scholar, Google Books, Amazon Books and SlideShare are all databases that are not well-indexed by search engines but potentially rich sources of information.

You can also use search engines to find *pointers* to deep web content by searching for the front page of a database or other resource. Combine your search terms with (database OR dataset OR archive) to find links to searchable resources, or combine your terms with (portal OR resources OR "online tool") to find further links.

And a trick that only works for Bing is to look for pages that have a link to a file with a particular file type, such as a spreadsheet or audio file, using the *contains:{extension}* search prefix. To retrieve web pages that have within them a link to an mp3 file, use *contains:mp3* in your search query. To find web pages with links to spreadsheets, use *contains:xls* in your search query.

Use Millionshort.com, whose tagline is 'What haven't you found?' This web site specifically filters for site popularity, and lets you filter for *less-popular* web sites that may be very useful. Millionshort is especially helpful if your search is turning up too many 'click-bait' sites that are designed to attract clicks but do not provide useful information. Millionshort is particularly valuable when you are looking for individuals or for narrow, obscure or niche topics.

Zanran.com calls itself "Google for data", and is a web crawler that specifically looks for images on web pages, analyses those images and determines which ones are actually data-rich tables or graphs (as opposed to photos or pictures). It extracts the text surrounding the image and provides a link to the page in which the image appears.

Think creatively

Compare Wikipedia articles in different languages on the same topic to get a different perspective on issues and concerns. (Use an auto-translate tool if necessary; even a machine translation is usually sufficient to discern key distinctions among articles on the topic.)

Are you researching a company? Think of ways to glean insight from unexpected sources. Even non-patent searchers can find patents awarded to a company; scan recent patents for unannounced developments or discoveries. Look up the company's employees in LinkedIn to find patterns such as the schools the company hires from, whether most employees have many years of experience or are fairly new, and so on. See what you can write up as added-value insight.

Look at employer review sites such as Glassdoor.com, keeping in mind that people motivated to review their employer may not be the typical employee. Glassdoor's value is in comparing the profile and reviews of one company with that of similar companies or competitors. You can see employee opinions of their company and its executives, average salaries for various positions, even reviews of job interview experiences.

Look for an organisation's promotional information to get a sense of how they talk about themselves. You can find product videos, sales presentations, and related information in YouTube, SlideShare, Pinterest, Instagram and other image-focused search tools.

Find an expert

When all else fails, tap into the expertise of other librarians and other experts. Look for a libguide on a topic, see who maintains the guide and reach out to that person. (You can search in Libguides.com or just search for the word libguide.) Use LinkedIn Advanced Search to find a librarian – search for the industry in the Keywords field, limit by location if necessary and specify Libraries in the Industry.

You can also use Google to find lists created by Twitter users. By limiting your search to lists that have the word *librarians* in the name of the list, you can find people who other info pros have identified as useful librarians.

`site:twitter.com/*/lists inurl:librarians`

Harvesting Information From Social Media

Some real-life uses of social media search include

-) Getting leads to new information or new topics
-) Identifying and validating an expert
-) Professional development
-) Monitoring a live event / news
-) Monitoring mentions of your organisation

Privacy concerns

Each social media network offers a number of settings to let you control how much of your information is disclosed. (And, of course, information you do not put on a social network always stays private!)

In **Facebook**, click the padlock icon in the upper right corner for privacy settings. From there, your options include:

- Who can see your posts
- Whether someone can tag you
- Who can contact you
- Whether you can be found by your email address or phone number
- Whether you want your account indexed by search engines

In **LinkedIn**, hover your mouse over your profile picture in the upper right corner, and select “Privacy & Settings”. There you can:

- Turn on/off your activity broadcasts
- Select who can see your activity feed
- Select what others see when you have viewed their profile
- Select who can see your connections
- Change your profile photo and visibility

In **Twitter**, click the gear in the upper right corner and select “Settings”. At the next screen, select “Security and Privacy”. There you can:

- Limit who tags you in photos
- Make your tweets public or private (viewable only to people you approve)
- Delete geographic information from your tweets
- Make your account findable by email address
- Turn on “Do Not Track” to limit personalisation

Social media search DOs and DON'Ts

DO understand privacy settings and make sure you are not disclosing anything you should not be.

DO manage clients’ expectations about what can and cannot be found in social media. (And remember that clients generally do not think to ask you to research social media.)

DO understand your organisation’s policies regarding social media research.

DO try several approaches; no social network provides truly robust searching.

DO use Advanced Search in LinkedIn and Twitter.

DO consider premium accounts if you use social media regularly, such as LinkedIn Premium and a Twitter tool such as HootSuite.

DON'T just lurk; you only learn how each social network really works by participating.

DON'T overpromise.

DON'T assume that you will find most of the good information in the first page of search results. In fact, expect to keep looking all the way to the fourth page of search results.

Searching for individuals

Watch for name variants, even for the same person, across social networks. Someone who is known as Katherine J. MacArthur on LinkedIn might go by Kathy MacArthur on Facebook and have a Twitter handle like CatMac.

Sometimes you get better results when using Google’s *site:*prefix to search social media. (A search for *site:twitter.com* “John * Smith” on Google may turn up better results than a search for “John Smith” in Twitter.) Add keywords such as the person’s city, employer, position or other relevant information to your search as needed to narrow the results.

Watch out for name changes! If someone changes their name in Facebook, their account name is **not** automatically changed. For example, my Facebook URL is facebook.com/maryellenbates. If I later change my name to Mary Ellen Brown but you did not know about the name change, you would not be able to find me through Facebook as Mary Ellen Bates. However, if you search for my Facebook account *on Google*, you would find me because Google would “see” my name in my Facebook URL.

Note that Facebook does allow users to include prior names, nicknames and other names you may be known by. Watch for clues as you look at Facebook profiles.

Searching Facebook

Facebook’s search syntax changes frequently. The following types of searches work fairly well (be sure to include quotes as indicated):

```

People named "name"
Posts about "topic" by name
Posts about "topic" in public group
Posts about "topic" from location
Friends of friends who like topic

```

Facebook introduced what it called “universal search”, although it is not a full-text or thorough search. If you simply type in words on a topic, you will find public posts (not those limited to friends or other categories). This can be useful to find discussions of unusual or new topics, as well as to find support groups and other special-interest groups. Unfortunately, you can only sort your results by relevance, not by date.

Searching LinkedIn

LinkedIn’s Advanced Search offers a number of powerful tools for digging into the database. Note that currently the Advanced Search only works for People searching – not for Company, Job, Groups and so on. You can use Advanced Search to identify current or former employees of an organization; see if they have included any presentations in their LinkedIn Profile (or on SlideShare, which is owned by LinkedIn), written any papers, or provided links to other resources.

Remember that you can also use Facebook and LinkedIn to find experts. In Facebook, think of what characteristics would indicate someone with a skill or expertise you need. For example, Librarians who like Evernote will identify other librarians I can ask about a specific use of

Evernote. Thai speakers who live in Denver will identify people I could contact for help in translating a difficult passage. In LinkedIn, you can search for Groups (even ones you do not belong to). If the group is private, you can ask to join.

Searching Twitter

Twitter's Advanced Search page is somewhat hidden; the easiest way to find it is to go directly to twitter.com/search-advanced. (And remember that you can search Twitter through Google by adding `site:twitter.com` to your query.) Twitter's advanced search lets you search by AND, OR, and NOT, by phrases, in a specific language, from or to a specific Twitter handle, near a location, from a certain date range or even by :) or :(

When searching for topics, try both with and without the hashtag (#). For example, a search for tweets about the iPhone 7 might be: `iphone7 OR #iphone7 OR "iphone 7"`

Be careful – Twitter defaults to showing you “Top” results, which are a subset of all results. If you want a fuller search result, be sure to click the “Live” link in the search results page. Interestingly, even the options for more complete results vary depending on your search. See for example the different search results for the single word zika and the phrase zika virus.



You can limit your search to tweets in specific language with the *lang:* prefix or by using the Advanced Search page. You can limit your search by date through the Advanced Search page. And you can retrieve posts from a particular account by use the prefix `from:{Twitter-handle}` (for examples, to find all posts I have sent, search `from:meps`)

Twitter is particularly valuable when following breaking news. You can limit your search to just tweets from or near a particular location using the *near:* and *within:* prefixes. To find tweets from

people within 15 kilometres of Berlin, for example, search for `near:berlin within:15km` (note no spaces between the prefix and the location). Be sure to use the neighbourhood name that people who live there would use to describe the location. Skim the tweets for a relevant trending #hashtag, which usually appears within an hour or two of a breaking news story. Also, consider use the Video tab to find news videos.

You can also use Twitter to find the *next* source by searching for tweets that contain links. Use the prefix `filter:links` along with keywords to find tweeted links. This is especially useful for new topics on which not much has been written yet.

One way to find the tweets with the most impact and influence is to limit your search to tweets that have been frequently retweeted or liked (formerly called favoured). Use the `min_tweets:n` or `min_faves:n` to specify that retrieved tweets must have been retweeted or liked at least *n* times. For example, you could find tweets about marketing to millennials with the query:

```
Millennials (brands OR marketing) min_retweets:5
```

Professional development

LinkedIn is a powerful tool for finding and being recognised as someone who knows the answer.

Develop your own voice on LinkedIn; share resources or presentations; participate in groups.

Recruiters and employers are looking in LinkedIn for prospective; make yourself attractive to and findable by people who want to find you.

Twitter is a useful tool for monitoring professional conferences – even those you are not attending – by identifying the hashtag of the conference and watching for tweets with that hashtag. Use a dashboard tool such as HootSuite or TweetDeck to simplify this process considerably. Twitter is also useful for keeping updated on current trends and thought leaders in your field. Be selective in who you follow and use a dashboard to make it easy to monitor and share tweets.

###

New Librarian Skills

Evaluating Information Quality

Before the days of the web, we would validate information by looking at

- The reputation of the source
- Whether or how often it was cited by others
- The background of author and the publisher
- Apparent bias
- Clarity in writing and articulation of position
- Whether the source is intended as news or opinion

Today, we validate information by asking a different set of questions:

- Is this probably fact? opinion? editorial? advertising?
- Is this information subject to confirmation bias or the echo-chamber effect?
- Does this source express a distrust of “experts” or the establishment point of view?
- Is this information considered true because it is popular, seems authoritative, is influential, is from a perceived expert, is new or late-breaking information? (All these may affect search engine ranking.)
- Many users trust search engine ranking and assume if information appeared at the top of search engine results, it must have been validated by *someone*.

What about the wisdom of crowds?

Ants do it, bees do it! Yes, there are times when a large group of strangers can be smarter than individual experts. Crowd-sourced information can be reliable *if* it is based on:

- Diverse opinions (not just a single point of view)
- Decentralised, local knowledge (individuals have specific knowledge)
- Independent, not influenced by others
- Aggregation and sense-making of these diverse opinions

(For more discussion, see *The Wisdom of Crowds: Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations*, by James Surowiecki.)

Are all instances of crowd-wisdom good? It depends...

Search engines' ranking algorithms are based on crowd behaviour, if not explicit knowledge.

Group discussions in social media can provide insight and identify outliers.

Are Wikipedia's editors quality peer reviewers or just control freaks?

Can you trust consumer review or rating sites?

Basics in evaluating information

-) Find reports, datasets and other resources this information is based on. Can the opinions/ideas be corroborated?
-) Is this information current and timely? Does it correlate to past information or is it inconsistent with past experience?
-) Who is the intended audience of this information? Is it intended to be introductory? in-depth?
-) What is the reputation and expertise of the information source? Does this person actually have authority in this area?
-) Why was this information written or produced? Is it intended to inform, persuade, influence?
-) Is this material self-published or has it been vetted by peers or a publisher?
-) How reliable is the peer review of open-access journal articles *in my field*?
-) Does the author cite other sources or authority?
-) What do others say about this expert and this topic?
-) Apply the JDLR test. Is this something that Just Doesn't Look Right?

This shift can be challenging for professional researchers and information professionals; the signals and signifiers we used to rely on are no longer as relevant. We have to stay open to recognising new and unexpected perspectives while still remaining sceptical of unreliable information. Experts may not have the same credentials that experts had in the past. There may be more of an expectation by our clients for more and varied perspectives, all of which may be partially correct.

Checklist for social media reliability

Evaluating information on social media is even more challenging; even the social networks themselves sometimes make it difficult to ascertain the credibility of users and content. Questions that will help to establish authenticity include:

-) How long has this account been in existence? Newly-opened accounts are more likely to be spam or fraudulent.
-) Does the person provide valid and in-depth contact information, and is that information consistent with what else you know about the person?
-) Does the person include a photo? (Run a reverse image search to make sure the photo is not of someone else.)
-) How many followers does the account have? (Keep in mind that fake followers can be purchased, so thousands of followers may not indicate credibility.)
-) How often are the person's posts forwarded or liked by peers?
-) How and how much does the person share and interact with others? Do they retweet or share others' posts? Do they respond to comments?
-) Watch out for links to fake news sites. Be on the lookout for misleading URLs like BBC-Breaking-News.gq, CNNInternationalNews.com, World-BBC-News.com
-) If the person is claiming local expertise, look for evidence the writer is in fact locally based.
-) Collect urban-myth busting sites such as snopes.com or TruthOrFiction.com and share them with clients

Information Alchemy

The Financial Times and the Special Libraries Association conducted a survey in 2013 of information professionals and of executives and knowledge workers in organisations that have libraries or information centres. According to the survey, the biggest information pain points of users were

1. Information overload
2. Having to filter through retrieved information
3. Problems with relevancy of information

Are information professionals part of the problem???

A common online acronym is TL;DR, which stands for *too long; didn't read*. The fact that this is such a common situation that it has a recognisable acronym suggests that we are dealing with a bad case of information overload. When we only provide information to our clients, we waste our client's time.

How can we avoid TL;DR? How can we reduce our users' information pain points? To ensure that we provide the most valuable results for every research project, we need to understand the Five Ws:

What

Why

Width/breadth/depth

What will it look like

What next

Getting to the real WHAT

The first description of what your client asks you for is probably not what is really needed. *Clients only ask us for what they think we can provide, rather than for what they really need*. We need to get at that underlying need. Questions that help elicit the underlying issue include:

“So, in other words, you need to know ...”

“If I can't find that, what would be second best?”

You can read more about the art of the client-needs interview at reluctant-entrepreneur.com/resources

Why ask WHY

Even research questions that initially sound very straightforward may contain a twist. For example, a request came in for a list of “the top 100 US plastic surgeons.” After asking the client what the information would be used for, I learned that he wanted to set up executive-level networking groups in large US cities, and he wanted to limit each group to one influential professional from different fields – investment firms, cosmetic plastic surgeons, litigation attorneys, and so on. So the request for “the top 100 US plastic surgeons” was actually for “five successful cosmetic plastic surgeons in each of 20 metropolitan areas”.

Width/breadth/depth

What level and scope of research is required for this project? Does the client need a quick overview? Is this to enable a decision? Is it to establish that there is, in fact, nothing already written on the topic? Providing too much or too detailed information is as much a problem as providing too little. Remember users' information pain point – information overload!

What will it look like?

In order to provide information in a format, design and structure that is most useful to the client, we have to understand what is happening to the information *after* we send it to the client. Will it be passed along to a group? Put on a web site? Incorporated into a proposal? What are the special concerns regarding distribution, background, etc.? Knowing the answers to these questions will help you decide what information sources to use.

What next?

Present your results with the next step in mind. What decision does your client have to make? What would make that decision easier to make? If you do not know, ASK! (If you have reluctant clients, try this approach: "The more I understand about what you will be doing after I am done, the better I can make what I send you." You may have to earn clients' trust on this.)

If appropriate and opportune, ask your clients what *other* decision-ready information that they receive looks like. In other words, what are you competing with? In your cover letter or summary, remember to recommend additional research if needed or desirable.

ALWAYS ask for feedback when you send your results to a client.

Did this address your needs?

Do you have any questions?

What could we do to make this more useful for you?

Better writing

Our work is not done until we have found, organised and *transformed* the necessary information for our clients. Writing a clear report – or even just executive summary or cover letter – requires time and attention. Organise the information in a way that makes the ideas clear and easy to understand. Remember the problem of TL;DR and make the information appealing and enticing.

Tell a story with concise sentences, using strong verbs and the active voice. Lead with a brief statement of the key findings, even something as simple as

“Enclosed is an analysis of the market for widget apps. Most experts expect this market to expand significantly in 2017.”

Then provide background information, additional insights, and original materials. Consider including an “information topography report”, in which you note what you found on your way to finding the results. Observations might include

“We expected to find this issue covered extensively in the UK, but it appears that interest peaked in late 2014.”

“Note that Smith does not name his current employer in any of his social media profiles.”

The point is to surface something (or the *lack* of something) that would not be obvious from simply looking at your results.




Then write a summary of any outstanding issues and recommended next steps.

Finally, re-read everything you wrote, taking the perspective of someone who has *not* spent time digging into this topic. Is everything clear and concise? As you read it, what questions come to your mind that you could address in your summary that would further help your client understand what you are sending. Assume that your client will be skimming anything that looks dense, so keep the high-level summary to one page. Assume that what you are sending to one client will be passed along to others, so be sure that any initial research parameters, time or budget constraints, or other important background information is referenced in your summary.

Create insightful deliverables

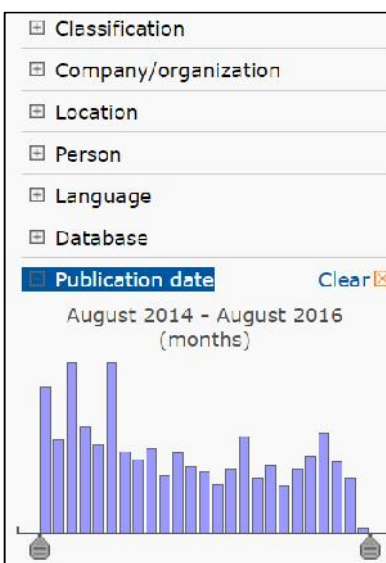
As you pull the information together for your deliverable, consider how your client will be using this information. How can you make it easier for your client to absorb the information, compare alternatives, identify important trends and identify significant or unexpected outliers? The following is an example of taking information from the web and social media on several companies and creating a table that helped my client compare the companies’ marketing strategies. The brief summaries I wrote in each cell were simple to prepare and added greatly to my client’s insight.

Analysis of Procter & Gamble's Pampers social media presence

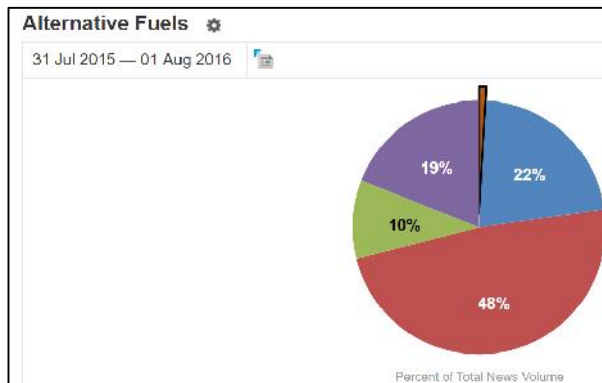
Site	Strategy	Screen shot
Company web site: pampers.com	Branded as Pampers Village. Focus on apps, coupons, creating community. Several links to multimedia. Very small links at bottom of page to Facebook and Twitter.	
Facebook: facebook.com/pampers	Currently, campaign to engage fathers on Father's Day. Encourages participation, comments. 670,000 "likes".	
Twitter: twitter.com/pampers	Maintained by "Cathy, Pampers Community Manager and soon to be first time mom", with chit chat and the inside scoop on Pampers. Personal, friendly tone. 3500 tweets 18,000 followers	

Use online services' services

The value-added online services have tools on the search results page that enable you to filter your results. These filters can also be used to display information topography as well as to identify trends and enable insight. For example, the following is from the search results page of ProQuest Dialog. Note that the Publication Date graph offers a nice display of how news coverage has changed over time.



Many of the online services also provide at least some rudimentary data analysis tools. Dow Jones Factiva has a handy Chart Builder feature that lets you create charts and graphs to illustrate trends in news coverage. The following is a pie chart showing the relative amount of news coverage devoted to various alternative fuel sources.



Many online services also have tools for building newsletters from retrieved content. Often, these are described in the context of a daily or weekly news alert, but they can also be used for packaging the results of any research project. These tools let you organise the materials, generate a hyperlinked table of contents, and even annotate individual records. Following is a sample newsletter format from Dow Jones Factiva.

Car Hacking report

Prepared for Robin Smith, Product Development

Publication Date : 30 August 2015

In this Newsletter:

- Industry analysis
- Associations
- Hacker blogs

Trends in Car Hacking

Following are the key articles on hackers being able to exploit vulnerabilities in automobile computer systems. We found particular concern over entertainment systems; we may want to extend our research to look for mentions of vulnerabilities that relate to our product.

[View all articles](#)

Industry analysis

Researcher: Other Carmakers Allegedly Vulnerable to Remote-Unlocking Hack
BMW Blog, 23 August 2015, 480 words, (English)
 Ever since two hackers, Charlie Miller and Chris Valasek, remotely hacked a Jeep Cherokee through its UConnect infotainment system, it seems as if we can't go a week without hearing of another instance where cars can be hacked remotely.

Charlie Miller And Chris Valasek, Famed Jeep Hackers, Start New Jobs At Uber's Autonomous Car Lab Next Week
Tech Times, (English)
Last Updated: 8:35 AM, 29 August 2015
 Security researchers Charlie Miller and Chris Valasek, who gained widespread fame earlier this month for demonstrating that a Jeep Cherokee could be hacked remotely, have caught Uber's eye and will start working for the ride-sharing company ...

Cars Become Target for Identity Theft as Shopping Hits
Car Hacker's Guide, 29 August 2015, 1,000 words, (English)

Doing visual information right

In fighting TL;DR, it often helps to make information visually appealing. Infographics can help summarise and highlight important items, and convey a message. Be sure your infographics help clarify the key aspects, and keep the page uncluttered, with plenty of white space.

You may want to extract data from your research and create a chart or table through a spreadsheet program. This can be an effective way of making data more understandable, but keep your graphics simple and clean. Remember that different formats work best for different types of information.

If you want to show change over time: use columns or lines

If you want to show ranking: use columns

If you want to show parts of a whole: use columns (not a pie chart)

In addition to the newsletter-builder tools of the online services, you can use basic word-processing software to create hyperlinked tables of contents. If you are using Word, here are the steps:

For each item you want to appear in the table of contents, highlight the title and apply one of the Heading formats. Then, go to where you want your table of contents, pull down the References tab and select Table of Contents and insert the Table of Contents. Now, your client can navigate directly from the ToC to the article.

Likewise, you can create a hyperlinked page of titles and summaries of articles to serve as a more detailed Table of Contents. To do this, highlight the title in the summary, right click, select Hyperlink, select Link to: Place in this Document, then click the corresponding title to the article you want to hyperlink.

Learning (and talking about) What You Don't Know You Don't Know

Yes, we are talking about *competitive intelligence* here.

Competitive: All the competing sources for your €s and clients

Intelligence: Gleaning insight from the un-said and un-noticed

Who are your library's competitors? Who competes with your library for budget €? Where else do your clients go? (And that is not just Google – do they feel that they need access to high-end information? Or are they happy with Google results?) Who or what could make your library obsolete?

Reality-check conversations

You can learn about your competitive situation through what I call reality-check conversations. No, they are not interviews in which you hit your client with a series of sharp questions about their information behaviour. Rather, these conversations help you find out what services your clients NEED, VALUE, and will BUDGET for.

Why have reality-check conversations?

To get past the obvious answer of what *you* think your clients value to finding out the real value you can offer them today.

To learn how clients describe their need. When you can talk about your information services and phrase what you do in the same words your clients already recognise, they are much more likely to hear you.

To become competition-proof! The only way you can effectively compete with all the other ways your clients meet their information and research needs is to first find out who your competition really is.

Find and create opportunities to have these almost-chance conversations – stop by clients' offices, have a conversation when you are both getting coffee, invite yourself to team project meetings to understand what their future information needs will be, and ask to meet with groups to give a customised presentation of the value of a particular service to them.

Make sure you talk with both existing clients and people who do not yet use your services.

Remember that these are conversations. You want to ask questions and listen, not sell the person on why they should use the information centre's services. Your goal is to see the world from their eyes, so that you can better ascertain how best to meet their underlying information needs.

Use open-ended questions such as:

-) What are your most challenging goals for this year?
-) What is keeping you from achieving those goals?
-) How can the information centre help you achieve those goals?
-) What do you do when you do not have the information you need?
-) Tell me about how you get up to speed at the start of a project
-) Who in your group keeps you updated?
-) For repeat clients, ask How would you describe us to a colleague? (This is a great way to find the most effective way of communicating your value.)

After you have had a half-dozen of these reality-check conversations, reflect on what you have learned and which of your assumptions you need to re-examine. Ask yourself:

-) How is the information centre serving this client group now?
-) Why are they using us at this level?
-) What can we add, what can we drop, to provide higher-value service?
-) What surprised me from these conversations?
-) What did they not know about?
-) What did they want that we cannot or do not do now? Why?

Talking about the library's value

Make sure that you are talking about what you now know offers the most value to your clients.

Are you tracking examples of your library's impact? Do you follow up after the completion of a job to find out the ultimate outcome?

What changed as a result of your library's services? What tangible difference do you make for your clients? What can they do now that they could not do before?

Make sure you know your organisation's strategic goals for 2016, whether that is expanding into new services, increasing the patent portfolio, or increase member donations by 15% or build the

client base. How are you *visibly* contributing to those goals, in ways that you can highlight to upper management when you are developing your next year's budget?

Finding the dog whistle

We have to find the words and phrases that describe our services in such a way that clients immediately hear and understand the value provided.

While something like "Libraries are great and they offer great ROI" is probably a true statement, it is not very compelling. A better way of describing your value would be "We supported 75% of the key intellectual property initiatives this year".

When you describe yourself and your services, are you talking about WHAT you do or HOW you do it? Or are you getting to the real heart of the issue by talking about WHY you provide the services you do? What is the outcome that you enable? So, for example, do you say:

"We search premium databases" or

"We bring insights from the outside"

"We provide research services" or

"We enable better decisions"

"Librarians are information experts" or

"We can show you what our competitors don't want you to see"

Remember that the fee-based online services are dealing with this same challenge. They, too, have to talk about the tangible value of a somewhat intangible service. Use the phrases and techniques that the online companies use! The following are links to specific tools that various online services offer to help libraries and information centres talk about their value.

ProQuest - proquest.com/libraries

Springer - springer.com/us/research-development

Taylor & Francis - tandf.co.uk/libsite

NO elevator pitches!

An elevator pitch is you talking for 15-30 seconds about what your information centre does. It is a one-way presentation, and it is not very effective. Consider other ways to engage whoever you are talking with in a more interactive conversation in which you can describe your services in a more engaging way.

Elevator ping-pong considers a conversation to be like a ping-pong game. You toss something to the other person, and they toss something back. Just as ping-pong requires sharing and constant back-and-forth, so elevator ping-pong focuses on ways to spark an interesting conversation in which the other person says “tell me more!”

A person selling automated external defibrillators, when asked what he does, might say: I sell human jumper leads.

Likewise, an information professional might say: I find what Google can't find, or I'm the one who squeezes the library into your smartphone.

Elevator Q&A looks at how you can remind the person of a time when they were not able to accomplish something, and then tell them how you could help them accomplish their goal. The format, in two sentences that each take only one breath to speak out, is:

You know how {describe problem, in one breath}?

Well, I {describe what your clients get, in one breath}

Examples:

You know what it is like to walk into a key donor's office and get blindsided?

Well, I can brief you the morning of the appointment with the latest on your donor.

Do you wonder whether you are missing key research?

Well, we have _____

The third anti-elevator pitch approach is **elevator story-telling**. In this case, you are telling a three-sentence story (yes, it is a very short story). The first sentence describes the situation in only enough detail to pique your listener's curiosity. The second sentence describes what you sent to the client. The third sentence describes what your client could do afterward. So, for example:

Sentence 1: One of our organisation's goals is to prepare youth for today's job market.

Sentence 2: Through a library workshop, 45 students learned how to build and program a communications robot for autistic kids.

Sentence 3: We partnered with a local company to hire the kids and build more robots.

See how short those stories were? You do not need to go into much detail in order for these stories to be effective and powerful. In fact, the shorter they are, the easier it is for your listener to share that story with colleagues later.

Troubleshooting when they just don't get it

When you want to throw up your hands in frustration because it seems that no one actually sees the value that the information centre is providing, you need to change...

WHO

WHAT

HOW

WHEN

WHY

WHO you are talking with

Are you sure that you are talking with people who can actually use your services? Are your resources in fact relevant and useful for them? Are you missing what it is they really care about?

WHAT you say

Are you talking about their concerns (that is, the value you are providing them) or are you talking about the library's services and features? Talk about tangible benefits, not features.

HOW you say it

Are you talking to your market where they hear you? Are you just sending out a promotional email once a year or are you engaging your prospective clients constantly, conducting ad hoc reality-check conversations at every opportunity?

WHEN you say it

Are you consistently talking about the benefits the information centre provides, when they are paying attention? Do they hear about you when they are thinking about getting their goals accomplished?

WHY you say it

Are you 100% focused on your clients' outcome or are you feeling scared and just trying to get someone to save your job?

If you do not feel that you are getting through to your key markets, try new approaches.

Create short how-to videos showing users how to take advantage of specialised research services. In a world where people go to YouTube to find out how to change a tyre or install a new router, videos are effective ways of teaching so your clients can hear you.

Build a tip sheet on when and how to use the open web more effectively, focusing on how to accomplish something rather than just listing benefits of various resources. Example:

	Advantages	Disadvantages	Best uses
<u>Google, Bing, other search engines</u>	Free, fast results, easy to use	Irrelevant information, too much information, limited search tools	Quick answers to straightforward questions
<u>Wikipedia, Internet Public Library, other reference resources</u>	Free, broad range of topics (semi-)curated information	No professional or trade publications, limited coverage of complex topics	Initial research, background material
<u>US Census, Science.gov, other gov't data sources</u>	Free, authoritative, in-depth statistical data	Must search each data set separately, limited to simple searches, often not current	Statistics, reliable sources
<u>Google Scholar, HighWire, other scholarly search tools</u>	Free searching, scholarly publications, some full-text articles available	Not all material is free, limited to simple searches, limited number of journals	A few articles on a topic, background material
<u>ProQuest Dialog, other premium search services</u>	Wide range of professional sources, reliable content, consistent format, power search and analysis tools	Fee-based, can take time to learn full capabilities	In-depth research, industry analysis, authoritative articles, patent research

Embed widgets and custom search engines to enable better searching. Identify pages and portals within your organisation's intranet where knowledge workers are most likely to look, and make sure you are providing tools for better research.

Write 100-word vignettes of information centre successes, and then blog about the, post them on your internal web page, and put them in your annual report. (see Reluctant-Entrepreneur.com/resources for an article about writing marketing vignettes)

Our messages to both clients and not-yet-clients:

Information professionals enable you to accomplish your goals

Information professionals are strategic assets

Information professionals can rock your world

Embracing Return On Investment

It's not just us... Many who provide a professional service or a less-tangible product struggle with demonstrating their ROI.

A marketing professional needing to show ROI for trade show booth may want to measure:

The number of attendees, or perhaps just the number or prospects interacted with, or the number of sales leads produced, or the number of sales meetings generated, or the number of new clients acquired, or even the eventual revenue value of any new clients.

Likewise, a social media marketer may want to show ROI of their services by comparing their cost to the number of leads generated, the comparative expense of generating a similar number of leads through paying for Google Adwords, or even the conversion rate on new traffic to their web site.

The most important question to ask when measuring ROI is:

What would it cost to achieve {this goal} without {this resource/service}?

There are two kinds of data that a library or information centre can collect:

HOW data: transactional or operational numbers useful for managing the library

WHY data: outcome data that helps demonstrate the library's value, which you can enhance by adding marketing vignettes or elevator stories to highlight key examples of ROI.

While calculating the ROI of the information centre is not easy, there is an ROI for calculating ROI.

The benefits include:

- Better tools for justifying an increased budget
- Gaining support from stakeholders for new initiatives or restored funding
- Recognising and adjusting to changing needs and priorities of your organisation
- Identifying service gaps where you are not providing an equivalent level of service
- Identifying opportunities for providing higher value to a particular client group

There have been numerous studies in the past five years, examining the ROI of libraries in a number of settings and around the world. For example, studies have shown that an increased ejournal budget results in significantly larger increase in the number of article downloads, indicating that more selection creates much larger usage. Likewise, for every €1 in increased library budget, the library can show €4 in increased benefits to users and the organization. See

libraryconnect.elsevier.com for links to many studies and surveys on library ROI.

Look for the easy ROI calculations first.

You can compare the cost of to acquire an item vs the total value of that item achieved through library circulation.

Take 20% of cost of the material (which is roughly the cost of a used copy of whatever you acquired or the un-inflated cost of an ebook to an individual rather than a library) and multiply that by the number of times that item was circulated. So, for example, a book that cost €30 originally and was used by 10 clients generated a net value of €30. ($€30 * 20\% * 10 = €60$, less the original purchase price of €30)

Compare the cost for the information centre to provide document delivery service and compare that to the risk in not having access to the information, or to a document purchase price of €40 or €50 that a user would pay the publisher directly.

Then dig a bit deeper and look at the impact the library has on your organisation's goals.

- % of awarded patents supported by library research

- # of regulatory approvals supported by library research

- # of articles or presentations supported by library research

- # of strategic initiatives supported by library research

- Key sales goals met

- By improving your searchers' user interface by changing default search settings, you can significantly improve strategic searching

- Enable better Google searches with custom search engines

Look for ways to move searchers beyond Google and to the value-added online services and other professional-level resources. If you invest time once to customise (or teach users to customise) their account settings, you can show ongoing savings and increased value.

Identify time saved by users searching more effectively and efficiently after attending a library training session, online video or other learning tool.

Show how you are supporting employee development through identifying the best learning opportunities, thereby improve staff retention.

Look at information flows within your organisation and identify friction points and instances where users are likely not finding what they want, duplicating research and news monitoring services within a group, and underutilising resources your organisation has already paid for.

Dare to Compare

Be willing to offer to non-users a "dare to compare" test. Invite them to contact you the next time they have an information need and let them see what they can find through Google and other open sources. Then show them what the information centre could find through value-added online services, better search skills and more advanced search techniques.

Talk about the value of truly global coverage and the ability to search for content in multiple languages and how that enables your organisation to follow and participate in global discussions about issues that matter, identify new opportunities and challenges, and to monitor competitors

(both established and unknown) around the world. What is this access worth to your organisation?
What can professionals do with better information?

Address the value of using value-added online services to ensure both current information and a deep and reliable archive of information.

Raise the risk of copyright and privacy violations, particularly in a “sharing economy” in which there is a lowered awareness of copyright and concern for intellectual property protection. By providing information that is licensed and may be shared, you reduce your organisation’s risk exposure. Likewise, discuss the need in the Right To Be Forgotten world to find those news items that may have been removed from Google’s search indexes.

What is a minute worth?

What is a knowledge worker’s time worth? I assume that most knowledge workers are in the office and working ~1.800 hours a year (52 weeks, less 7 weeks of official holidays, personal leave, professional development and sick leave, multiplied by 40 hours/week, which equals 1800 hours/year.

Assume a “burden load rate” of 45% of a knowledge worker’s salary, which covers benefits and other overhead associated with each employee.

Now, just do the math. A knowledge worker’s hourly rate is

$$\text{annual salary} * 1,45 \div 1800$$

To put that in real numbers:

$$€80.000 \text{ annual salary} * 1,45 =$$

$$€116.000 \text{ fully-loaded salary}$$

$$\div 1800 \text{ hours in a year} =$$

$$€64/\text{hour}$$

$$€1/\text{minute}$$

Now, start counting minutes

Time NOT spent Googling

15 minutes twice a day = €7.200/year/user

Time saved with customised search settings or time saved by not having to scanning literature/news on a search engine

15 minutes once a day = €3.600/year/user

Time saved with a team's shared home page with current news

1 hour/week/person = €17K savings a year for 6-member team

Information professionals' time counts too!

Time saved generating data analytics automatically with a fee-based online service, or time NOT spent on user support because an online service offers live chat and other real-time customer support, translates into significant cost savings for the library staff.

You can read a white paper on The True ROI of Digital Content, sponsored by Dow Jones Factiva, at **tinyurl.com/gkw527p**

Finding ROI opportunities

Think about *all* your organisation's stakeholders – those people who are somehow affiliated with or affected by your organisation's activities and services.

For a university, stakeholders might include faculty, students, parents, alumni, administrators, prospective students, employers of graduated students, staff, and even the local community. For a for-profit organisation, stakeholders might include clients, vendors, shareholders, employees, regulators and the local community.

Look at how you can increase value to all your organisation's stakeholders. That might be a program to help students find internships, and learn job-hunting skills and interview skills, or a grant funding workshops for staff.

Remind users of library resources they cannot access themselves (and that they really do need to accomplish their goals).

Raise users' DISSatisfaction with their own search results. Help them expect more and better results.

Look for ways to build higher and higher-value usage; once you recognise the ROI impact of library services, you can focus on promoting those services that have the greatest impact on your organisation.

Look for underutilised resources that you know from your reality-check conversations would be of value to a specific user group. Promote that service in your newsletter, the intranet, on fliers, and with special training opportunities.

While virtual training may be the only option, face-to-face interactions have a lot more impact, particularly when you are working on increasing awareness of library resources and services. Consider scheduling onsite awareness-raising events where your user groups are, providing regular drop-by sessions when people can come by to talk about a challenging research project, or having a staff "ambassador" program in which you cultivate the go-to person within a group or department who is a particularly effective advocate for library services and products.

To be seen as valuable, it helps to be ubiquitous; the more clients who depend on your services and products, the more they will advocate for you during budget negotiations. Look for opportunities to be where your clients are:

- Install widgets at informational pain points and portals

- Embed content, if not librarians

- Promote the mobile apps from your online vendors (most users consume most of their info on mobile devices)

- Provide a curated daily news that is visibly more valuable than Google News

Use others' ideas – ask colleagues within your organisation how *they* talk about ROI and the value of their operation.

And finally, focus on talking about improved outcomes, not just the products or services the information centre provides.

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