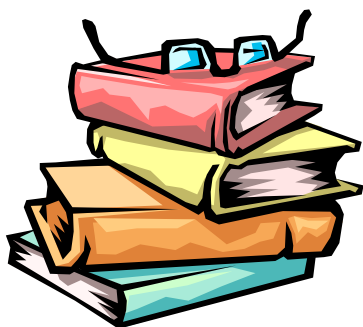


Digital Trekking

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To Search, to Find, is Happiness enough



Birds of a feather flock together [traditional English proverb]

We used to think that an hundred million monkeys at an hundred million keyboards eventually could produce the complete works of Shakespeare; now, thanks to the Internet, we know this is not true. [unknown source]

The whole world is getting smaller. The concept of 'we' and 'they' is gone, out of date. [Dalai Lama]

Searching the Digital World

We all know about libraries and how to use them. But when it comes to searching for information in the digital world, is our knowledge up to scratch?

Probably not. I frequently observe teachers and students alike making a complete hash of looking for information across the Internet. If I judge by the numbers of complaints I hear in the lunchroom, or the questions people direct to me by email, there are many people in universities, colleges and schools who are disenchanted by their experiences at finding data in the digital world.

In the lead article of this issue, I want to address a number of strategies, some of which you may find useful to adopt. Not all strategies will be suitable to everyone; after all not everyone uses a paper-based library the same way.

The Search Engine Fixation

Before I get down to details, I must address one issue briefly. It is the *Search Engine Fixation* that so many people have. The answer to finding information on the Internet is not simply finding the right search engine and taking a course in how to phrase an enquiry. That is like imagining that the only way to find data in a paper library is to learn how to use the catalog.

So while search engines have their place in searching in the digital world, I have banished them to near the end of this article. They are often the sledgehammers that you use as a last resort to try to crack a tough nut.

Hub sites

One of the key concepts in the digital world is that of a *hub site*. A hub site is a place on the Web that links you to most everything interesting in a particular

field. A hub site serves as a port of departure for your voyages in the digital world.

Let me give an example. Suppose you are interested in things maritime: ships, boats, buoys, safety, rescue, regulations, sailing, history and knots. Then you might think that <http://www.boat-links.com/boatlink.html> is a relevant hub site if you had found it. Have a look and see if you agree with me. If you are not keen on the sea try this for clip art <http://webclipart.about.com/internet/webclipart/index.htm>.

So one effective search strategy on the Web is to give priority to collecting hub sites relevant to your work. Actually, even if you find just one hub site in a field, the chances are quite high that it contains links to many others also in the field. What could be more natural for a hub site to do?

Once you have a collection of hub sites, safely bookmarked as your favorites, then you can resort to the traditional library technique of browsing, only through lists rather than shelves. People who bemoan the loss of library browsing with the rise in electronic access are simply wrong: it hasn't gone away, but just adapted to the technology. The [human] browser can still make serendipitous finds.

How do you find the first hub site? Personal recommendation is one path; another is use of a search engine such as [Google.com](http://www.google.com) that ranks pages highly if they are frequently cited by hyperlinks on the Web. Try this strategy and see if you can find a

hub site relevant to the bone disease *osteoporosis*.

Remember that hub sites are often run by organizations and are updated frequently. With luck you will find the [US] *National Institute of Health Resource Center on Osteoporosis and Bone-Related Diseases*



<http://www.osteoporosis.org/> and the [US] *National Osteoporosis Foundation* <http://store.yahoo.com/nof/>. Explore the links in the first and you will rapidly find the *International Osteoporosis Foundation*, with links to other societies and hub sites worldwide.

If this does not work, but you have found a page or pages with important information, look at the sites that have a hyperlink to it/them. For example, in Google go to **Advanced Search** and type the URL of your important page into the box opposite 'Find pages that link to the page' and **Go**. A good hub site may be somewhere there in the resultant listing.

WebRings

If hub sites are difficult to find, *WebRings* are an easy alternative. A WebRing is a collective of Web sites whose owners have voluntarily associated with each other for common interest. One Web site owner decides to set up a ring on a topic, and invites others to join him or her. The sites belonging to the ring can be visited one after another in a closed linear sequence (hence the name *WebRing*), or you can search for a particular topic within the ring. The home page of each WebRing member carries a standardized WebRing navigation entry, usually at or near the bottom of the page. Some sites belong to more than one WebRing.

Here is an example. Suppose you are interested in reconstructing the events leading up to road accidents for legal or police purposes. Suppose further that you have found a site offering such services: <http://granitestategraphics.com/>. Visit it and scroll down to the bottom of the page. Here you will find the following navigation data, and you should find the same data on the home pages of every member of the ring.



[[To Next Site](#) | [To Previous Site](#) | [Random Site](#) | [Skip Next Site](#) | [List Next 5 Sites](#)]

Explore a few of the sites in the ring and see how a ring works. Look at the 'Next 5 Sites'.

A big collection of WebRings is to be found at <http://dir.WebRing.yahoo.com/rw>. Select a topic of interest to you, and go to this site and see if there is a WebRing devoted to the topic. You will have to register first (free). If your mind is blank try one of these topics: politics in the European Union, or the Baha'i faith. Bookmark the **Yahoo! WebRing** entry page for future use.

WebRings are of most use in areas which are of interest to a substantial number of people; they tend not to help scientists as much because their research questions are often too specific and not of general interest.

Specialized Search Engines

The Internet is a gigantic collection of junk with good stuff mixed up in it. Finding the good stuff is just like finding a needle in a haystack. This is where the specialized search engines come in: they have already separated much of the straw from the needles, and you can search within a restricted area confident that the things you find will be relevant.

The first example I give is borrowed from paper libraries. Suppose you want to find some reference data: the sort of thing you would look for in the reference collection of a paper library rather than the general shelves. You might want an encyclopedia entry, or a dictionary entry. Unfortunately, if you try to search for the origin of the word 'boat' or the person 'George Washington' using a general search engine, you are likely to be swamped with all sorts of finds, many quite useless. The concise reference data you want will be lost in the sea of finds. You want a sharper tool.

Here is one specialized reference search engine that tackles this problem by providing access to reference works: try it on my previous examples, or on a problem of your own.



There are other types of specialized search engines. They are all characterized by restricting their domain, as opposed to general search engines that attempt to take on the entire Net. A good place to look for specialized search engines is:

<http://www.zdnet.com/searchiq/subjects/reference/>.

For example here you will find:

<http://www.yourdictionary.com/>

(dictionaries, thesauruses, rhyming dictionaries)

<http://www.world-arts-resources.com/>

(global art resources)

<http://all-midi.net/midifind/>

(music clips in MIDI format)

Indeed the whole site is a mine of information on search engines and searching.

Digital Libraries

Some people use the term *digital library* to refer to the section of a university, college or school library that contains the electronic catalogues (CD-ROM and on-line); others use it to refer to e-journals to which the library subscribes.

I mean neither: in my terminology a *digital library* is a resource in cyberspace which has the look and feel of a traditional library, and which has many of its features. This has many implications, for example:

- A digital library will have special collections: electronic resources organized around specialized topics.

- A digital library will permit searching by keywords, subject, author, and topics familiar to paper library users.
- A digital library will be open for business to all visitors, at all times, and in all places.
- A digital library will maintain archives and preserve e-material.
- Use of the material will not be subject to apparently arbitrary access restrictions.

There are several digital libraries that answer this description, and in a later issue I may explore their use and role in education. A user will perceive a special e-collection in a digital library to be conceptually similar to a specialized search engine. The implications for the supplier are quite different; the digital librarian has control of the e-collection.

For the purpose of this issue, however, let me show you one digital library as an example: Waikato University's Digital Library (hosted in New Zealand) at <http://www.nzdl.org/fast-cgi-bin/library>.

To demonstrate the power of the concept, suppose that we are interested in the nutritional value of sweet potato (*Ipomoea batatas*). Waikato has UN contracts to develop materials for third world countries, and distribute their collections by CD as well as the Internet.



Open your browser, go to the site, and choose the **Food and Nutrition Library**. Start a search for *sweet potato* and you should find something relevant, for example 'Ways to use sweet potato' by Ethiopia Berhe and Addis Belay.

If this concept interests you, what about exploring other e-collections, such as the **Women's History** primary source documents; search on *suffrage* or look at the alphabetical listing to find information on *Aethelflaed*, Warrior Princess. Find the text of *Don Quixote* in the **Project Gutenberg** collection.

While we are looking here, can I interest you in looking at the Waikato Digital Library's offer of free software to create special e-collections, codenamed *Greenstone*. The research activities include an



automated extraction of keywords and phrases from legacy documents, and word determination in non-alphabetic scripts such as

Chinese and Japanese. However, if you want to use the software, you will need help from a technical expert such as an IT professional or a librarian.

Search Engines as tools

So I turn to search engines at last. The general-purpose search engine is a very blunt instrument.

When you phrase a query for it, it selects all the documents in its database which have text that match your query, and serves them up to you in some order peculiar to its design. This is a simplified description.

A meta-search engine is simply a program that serves up your query to a number of search engines, collects their answers, and dishes the result up to you. Now as I wrote in Vol 1 No 1 of *Digital Trekking*, the key problem in many searches is not that of not retrieving the data that you want, but of having it lost in a sea of data that you didn't want. So meta-search engines are of limited use, but what to do?

Well, the best tip I can give you is to *first* and *always* look at the information that your search engine gives you on how many items it found. If it says it found something like 20 to 200 items, there is a possibility that you will find what you are asking for, simply by browsing through the returns. Go look.

If it tells you that it found fewer than 10 items, consider whether the item is really difficult to find (information on a pharmaceutical drug for example, such as *ziduvine*—2 results), or whether your search query is too tightly specified. Did you get the spelling right? Does it have another name or alternative spellings? For example *ziduvine* is also known as *AZT* and *Retrovir*. Maybe a meta-search engine and an inclusive search will really help in this case.

Of course if your search turns up 1000+ items, you need to start again. Your query is too general. For example a simple search for *osteoporosis* yielded me 377,000 results.

Unfortunately in some cases it is difficult to refine your question. How many ways can you ask for data on *crowd psychology* (48,000 results)? In these cases, try to add some special knowledge you may have, such as a particular incident you are studying like *crowd psychology Gothenburg 1998* (23 results). The more specialized the knowledge, the more you will narrow the list of documents. While some search engines are better than others at producing good information from simple enquiries, sooner or later you are going to have to learn how to phrase good enquiries. Ask your local help desk, library, or computer guru if they run a short course in advanced use of search engines, or spend an hour or so working through the on-line tutorials at <http://www.zdnet.com/searchiq/guide/> and <http://www.completeplanet.com/Tutorials/Search/index.asp>.

Building a personal collection

Let me try to pull all this together in a really important recommendation. As a teacher or as a student you may have been collecting books for your personal library. This collection is ready at hand to be consulted whenever you want, before you make the trip to the library to do that larger search.

You ought to do the same in the digital world so that you can work in it comfortably. Work on building up a personal library of Internet resources, and

organize this as carefully as you would the books that you buy for yourself. Do it as you would with books. In your *Favorites* (Explorer) or *Bookmarks* (Netscape) create a carefully chosen set of named folders. Think of them as your personal library *linkshelves*, analogous to 'bookshelves'. Then organize your links into the shelves. If one gets too much in it to be easily browsed, consider splitting it into two or creating sub-shelves within it.

Fortunately, building up your personal digital collection is not likely to cost you much money, except perhaps in connection fees. It will cost you some time, and you will need to update it and manage it every so often, but that should be just part of your effort to stay up with your field.

Your personal digital collection of hub sites, WebRings, search engines and the rest are not as photogenic as books, nor do they have the old book smell. You can't have everything. However they don't take up space, they don't require the destruction of trees, and they are easier to take with you when you move.

If you still aren't convinced, consider this analogy. Putting all your faith in finding things in the digital world with one search engine is like the person who buys an encyclopedia as their sole personal library.

Sinistral mice

If you've ever been involved in designing a multiple user workstation, or a laboratory or library full of multiple user workstations, did you give any thought to those who are left-handed? At least 10% are or might have been. Left-handed genes must have some evolutionary value to the species, or they would have died out. Did you know that language processing is in the right brain of 40% of left-handed people as opposed to 3% for right-handers?

While Macs and Wintel PCs can accommodate left- or right-handed use of a mouse, there are a couple of things to look out for. On any machine, the mouse cable must be long enough to reach across to the left as well as the right, and there must be room alongside the keyboard for a mousepad on either side.

Avoid any mouse which is asymmetrical; they should be reserved for a computer used by a single person. Check also that a cordless mouse can have its sensor situated so that it can pick up signals from a mouse on either side of the keyboard.



The PC has an additional problem: it has two buttons, and the natural way to operate a PC mouse is to use the index finger (of either hand) to operate the main click function (normal select and drag), and the middle finger to operate the secondary functions

(context menu, special drag). Accordingly, the PC needs to know which way around the mouse button functions are. This setting is changed by a **Control Panel** found in the **Settings** folder, and it is one of the first things I head for when I start to use a borrowed laptop for a presentation, or sit down to a library computer. Once I've set the machine to left-handed use, I can heave the mouse over to *my* side and stop concentrating on my right fingers. I usually switch it back when I leave from politeness, but if I forget, hey! now *you* get a taste of the other world!

There are many other features of left-handedness that intrude into computer software, but let me finish with just one more. I dislike people who use the phrase 'right-click' in manuals and documents. I cope with it by treating 'right-click' as one word meaning 'press and release the secondary button' — the one operated by my left middle finger. It would be really nice if people avoided this silly phrase, and instead talked about a *click* (with the index finger) and a *context-click* (with the middle finger), or something similar.

The heading? One of the meanings of *sinistral* is left-handed, from *sinister* (Latin: left) + *al*. Curiously the Romans regarded left as lucky, whereas the Greeks regarded it as unlucky. In the computer industry the plural *mice* usually refers to the furry animals, and *mouses* is more common for the hard variety.

Editorial

With this issue, I'd like to record several milestones passed by *Digital Trekking*: the first issue was written a year ago; it has its own domain digitaltrekking.com and website; and feedback from readers has been uniformly positive.

My target is to achieve a high level of customer satisfaction for every reader in higher and secondary education. If you do no other professional development in IT, what about setting aside an hour to try out the ideas in each issue? That's only six hours a year. I aim to make sure you find something useful for your work or study.

The theme of the next issue is developing and exploiting your document preparation and usage skills, and getting up beyond the learning plateau.

Suggestions for topics or comments are welcome, addressed to me at ahjs@ozemail.com.au or editor@digitaltrekking.com.