



Important of Web Resources for Library and Information Science Professionals

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Abstract:

The impact of Information and Communication technology revolution over the last decade is tremendous and developments in internet technology have surpassed the individual's imagination. The internet introduces both challenges and opportunities for libraries as well as information providers like Database vendors and others involved in information handling. The developments in electronic publishing have also made a great impact on users' information seeking behaviors. The development of web has provided us with a distribution channel that makes it cheaper and easy to share information with others. Many individual researchers, research organizations, universities, government agencies, professional associations and commercial organizations have discovered that internet and web resources are simply a cheaper and more effective way of disseminating their information than print on paper.

Keywords: *Information & Communication, Library science, Technology, Web resources*

1. Introduction

There are also many Open Archive Initiatives (OAI) all over the world on many subjects' fields to keep the users abreast of the development in their respective fields. Many commercial publishers also provide the information content at least partially free of charge which was not available in past. While there are many useful resources added to web, many more trash and junk items also find their way on the web. Finding the good stuff among all these takes time effort and a good deal of retrieval skill. So even though there is a virtual abundance of free and high quality information available on web.

2. Literature Review

Shukla& Mishra (2011) reported extent to which research scholars of institute of Technology, Banaras Hindu University are aware of making use of e-resources to highlight the problems faced by them in accessing e-resources. Their views on usefulness of e-resources compared to that of print resources and the place form where they prefer to access information. The Research scholars prefer e-resources against print resources because of its various good features for their research progress and are looking in future to have more e-resource access within university campus with better internet connectivity.

Madhusudhan & Aggarwal (2011) opined under the title "Web-based online public access catalogues of IIT libraries in India: an evaluative study". The purpose of the paper is to examine the various features and components of web-based online public access catalogues (OPACs) of IIT libraries in India with the help of specially designed evaluation checklist. The design/methodology/approach of various features of the web-based OPACs in six IIT libraries (IIT Delhi, Bombay, Madras, Kanpur, Guwahati, and Roorkee) are evaluated. The evaluation approach

taken was similar to that of Luong and Liew with minor modifications, comprising 122 dichotomous questions with 174 features, categorized as 11 broad categories.

Ali & Nisha (2011) study highlights on e-journals awareness and use among research scholars of Central Science Library; University of Delhi found that more than 60 percent of users in the Central Science Library are using e-journals weekly for the purpose of research. Print journals are also consulted by the users compared with e-journals. Keyword is the most popular search method for searching e-journals among research scholars, whereas the date of publication carries the least percentage among all the options. However, it is found that slow downloading of PDF files is the major problem that would discourage users while using e-journals.

Satpathy & Rout (2010) conducted a study under the title of “Use of E-resources by the faculty members with special reference to C.V. Raman College of Engineering (CVRCE), Bhubaneswar”. The aim of the study was to assess and evaluate the use of e-resources by the faculty members of CVRCE, Bhubaneswar, with a view to examine the exposure of faculty members to e-resources. The authors investigate the use of e-resources by the faculty members of CVRCE through a survey based on structured questionnaire. Various statistical methods have been used for data analysis. The study confirmed the faculty members are aware of the e-resources and various types of e-resource, e-database and e-journals. It suggests for the improvement in the access facilities with high internet speed and subscription to more e-resources by the central library of CVRCE, Bhubaneswar.

Rao & Choudhury (2009) conducted a study under the title of “Availability of Electronic resources at NIT Libraries in India: A Study”. The objectives of the study were to investigate electronic resources available at National Institutes of Technology (NITs) libraries across the country. The electronic resources consist of online journals databases, COROM material and audio/video course materials. The survey finds majority of libraries use 11 to 15 number of online journals databases, whereas 25 percent libraries have the facility of more than 16 number of online journals databases. Very few libraries (20%) indicate that they have less than 10 online journals databases at their end. A total of 85 percent of libraries have the facilities of e-resources in CO-ROMs/OVOs from. About 90 percent of libraries obtain audio/video course materials. This study also reveals the zone-wise performance among NIT libraries in India with respect to electronic resources availability. The south zone (75%) libraries have better-off in comparison with the other zones libraries.

Veenapani S. & Others (2008) stated that the e-resources are highly useful for the research and academic community in the present digital environment in which the UGC-INFONET has to play a significant role to assist the academic community in the provision of this unique service to academic and research community. They also suggested that for the improvement of the system required to be translated in to reality by the authority of Manipur University so that effectiveness and accountability of the same can be maintained to serve the users community in a better way.

3. Web Resources

The concept of a **web resource** is primitive in the web architecture, and is used in the definition of its fundamental elements. The term was first introduced to refer to targets of uniform resource locators (URLs), but its definition has been further extended to include the referent of any uniform resource identifier (RFC 3986), or internationalized resource identifier (RFC 3987). In the Semantic Web, abstract resources and their semantic properties are described using the family of languages based on Resource Description Framework (RDF).(wiki)

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electronic publishing have also made a great impact on users' information seeking behaviors. The development of web has provided us with a distribution channel that makes it cheaper and easy to share information with others. Many individual researchers, research organizations, universities, government agencies, professional associations and commercial organizations have discovered that internet and web resources are simply a cheaper and more effective way of disseminating their information than print on paper. There are also many Open Archive Initiatives (OAI) all over the world on many subjects' fields to keep the users abreast of the development in their respective fields. Many commercial publishers also provide the information content at least partially free of charge which was not available in past.

The web resources are not new words. It is as old as the history of learned journal in which research result are published. Any scholar interact with the author via editor of journal or direct to author through the personal correspondence, telephone help updated communication system and in 1990 e-mail has brought revolution. In this system there were several obstacles which are now removed.

Duff Alister define web resources as "Process whereby a valuable raw material namely ideas turns into digestible consume product, information and higher form of information, we call knowledge" Wikipedia define as "web resources is an umbrella term used to describe the process of academic academics, scholars and researchers sharing and publishing their research findings so that they are available to wider academic community and beyond" The internet and web technology has brought revolution in modern era particularly in the field of communication. It facilitates the people to communicate, interact, acquire access, share knowledge and ideas, search, investigate and participate in creation and reuse of content. This became possible due to development of web technology i.e. dynamic web also known as web 2.0 which provides a platform for international collaborative efforts. Web 2.0 is a second generation communication Technology that facilitates online collaboration and sharing knowledge among users. These capabilities include social networking, wikis, instant messaging, blog etc. These are the new web resources which can also be used in library web i.e. lib 2.0, LIS professionals can use these tools to provide effective and efficient value added library and information services.

The LIS professionals can use these tools for their personal as well as professional development. A LIS professional can develop personal blog and publish his problem or idea. Other LIS professional on blogging co-operate, support and share their ideas and experience or other known examples etc. RSS (Rich Site Summary) is also such tool by using it one may able to add new reference to support the theme expressed by someone. A group of friends can generate common site platform to exchange the professional news, ask questions, innovative activity introduced in his library, etc. There are such many tools like Instant Massaging, Wiki, Social Networking; Personal Journal etc by these tools the LIS professionals are able to enhance their knowledge.

The World Wide Web offers a challenge unlike traditional media to those who seek to manage it and to categorize it (Johnston, 1998). The Web is different. Internet, information was managed in essentially two ways. The first is ephemeral, centrally owned and controlled, and unrecorded. Oral traditions, the spoken word, and even live unrecorded broadcasts are examples. The second is the written or recorded tradition. These materials are more permanent not only because they are stored in some format, but also because their ownership tends to be diffuse. Web content lies somewhere between these two traditional information storage and dissemination strategies. Web content may be centrally owned but universally accessible. At the same time, edited Web material replaces its antecedent, usually leaving no trace of the previous document/edition. Once a Web document is permanently removed from the WWW it ceases to exist (Koehler, 1997). Our understanding of Web dynamics is further complicated by the proliferation of digital libraries of varying quality, complexity, and scope (Lesk, 1996) and a definitional confusion between digital libraries and the Web.

We begin with the assumption that Web pages and Web sites can be collected and categorized. The paper explores the proposition that the Web constitutes a library. We conclude that the Web is not a digital library. However, its component parts can be aggregated and included as parts of digital library collections. These, in turn, can be incorporated into "hybrid libraries." These are libraries with both traditional and digital collections (Pinfield, *et al.*, 1998). Material on the Web can be organized and managed. Native documents can be collected *in situ*, disseminated, distributed, catalogued, indexed, controlled, in traditional library fashion. The Web therefore is not a library but library material can be selected from the Web.

3.1 Definition & Meaning

A means of connecting a computer to any other computer anywhere in the world via dedicated routers and servers. When two computers are connected over the Internet, they can send and receive all kinds of information such as text, graphics, voice, video, and computer programs.

- **Web sites:** Most of the information on the Internet is distributed via Web sites. Web sites vary widely in quality of information and validity of sources.
- **Weblogs / Blogs:** A rather recent development in Web technology, weblogs or blogs are a type of interactive journal where writers post and readers respond. They vary widely in quality of information and validity of sources. For example, many prestigious journalists and public figures may have blogs, which may be more credible of a blog than most.
- **Message boards, Discussion lists, and Chat rooms:** Discussion lists, chat rooms, and message boards exist for all kinds of disciplines both in and outside of the university. However, plenty of boards exist that are rather unhelpful and poorly researched.
- **Multimedia:** The Internet has a multitude of multimedia resources including online broadcasts and news, images, audio files, and interactive Web sites.

4. Criteria Used in Evaluating Web Resources

Five traditional criteria, used to determine the quality of print information in libraries, can also be applied to the evaluation of web resources:

4.1 Accuracy

To determine how reliable and free from error the information contained on a website is, remember to look at who is hosting the site. Is it a University, a government, a professional association, a commercial host, an advocacy group, a publisher? What are their biases? A good website should state its purpose and intended audience. It is always a good idea to check with other web resources, journals or magazines that publish website reviews to see if the site has received a stamp of approval, and if so, by whom. Always remember to verify the information on the website with information found in other print and/or web-based sources.

4.2 Authority

To determine the authorship of a website, examine the page closely for information about the author and to see if anyone else has contributed to the site. Check information on the WebPages to see if it includes references. A good website should provide a way to contact the producers of the site. Identify the type of Webpage i.e. educational, professional, personal, advocacy, advertising, etc. Determine where they are getting their information. Check to see if the author or contributor to a Webpage has published in print. If so, do these print sources provide you with additional information on who he/she is and their qualifications? Check to see if the author(s) have created other websites. See if the other websites provide more information about the author(s).

4.3 Objectivity

To determine the objectivity of a website, check if advertising and informational content are being supplied by the same person or organization. If so, examine whether there is a bias to the

informational content. Keep in mind that many websites with excellent information are sponsored by commercial entities or take advertisements to finance the website.

4.4 Currency

To determine the currency of a website, find out when the page was last updated. Also look to see if there are broken links on the site, it could be an indication of an abandoned page. You should also check to see how often new links appear on the site.

4.5 Coverage

To determine if the information is adequately covered on a website, compare the information with information found on other websites. Does one site provide more information, more references, more contacts? Also compare the information on the website with information available in print sources such as books, journals, reports, etc. (if available).

5. Evaluating Web Sources

Although you should generally begin your electronic research by using e-resources available through the Harvard Library, there may be times when you will want to use popular Web search engines like Google. The fact that a document appears on the Web doesn't make it accurate or objective, and therefore these search engines should be held to the same rigorous standards used by Harvard's librarians when they vet sources. Because Web sources can be created by anyone and therefore are riskier in terms of their credibility and authority, they should always be evaluated according to the following criteria:

- **Who is the author of this site?**

As with any source, it's important to identify the author of a Web site and to become familiar with the author's qualifications. Be skeptical of any Web page that does not identify an author or invites you to contact an unnamed "Web master." If you are going to depend on this Web site as a source of information, you need to determine the author's credentials as well as the purpose and rationale for posting the site in the first place. For example, a Web site created to serve a particular viewpoint, or to make a monetary profit, might skew information for the author's own ends. In addition to considering the author, you should also consider the publishing body of the Web page—the place or server on which the document resides (or from which it originates). If this information isn't readily apparent, try backing up several levels (deleting from the right side of the URL). Is the Web document linked to a federal agency (.gov), a non-profit site (.org), an educational institution (.edu), or a business (.com)? Always ask yourself whether the organization sponsoring a particular site is a known, reliable, and suitable site for the document—a research center, for example, a college or university, or a government office.

- **How accurate and objective is the site?**

Sites that have academic or educational content are often non-profit sites and generally follow certain rules. Scholarship relies upon context and usually builds on precedent, so ask yourself these questions:

- Do you have the sense that the author is positioning himself or herself within an ongoing and serious discussion?
- Does the site demonstrate knowledge of related research—and does the author cite current and reliable sources?
- If footnotes, bibliographies, and hypertext links are used, do they add authority, credibility, or depth to the argument or only seem to do so?

- **What is the site's currency and coverage?**

Since information on the Web is so easily posted, it's especially important to make sure that the sources you consult are timely. Ask yourself these questions:

- Is the creation date of the document (or of its most recent revision) listed?

- Is the information up-to-date or are the resources outdated? Age is relative on the Web: certain documents are timeless—their value is determined completely by their place in the historical record, and a document that is three or four years old can still be "timely" in certain disciplines. In fields where knowledge develops rapidly (the sciences, for example) or data is expected to change (statistics, for example), currency is more critical. As always, if you have questions about whether a source is current enough for your purposes, ask your instructor or a librarian.

6. Why Use Sources?

College writing assignments generally ask you to respond in some way to sources. Some assignments will require you to consult only sources assigned in class, while others will require you to locate your own sources relevant to a specific research topic. In many of your courses, your research will focus primarily on written texts such as books and scholarly articles, but you may also be asked to consult a variety of other sources, including letters, diaries, films, works of art, data from experiments, numerical data, surveys, and transcripts of interviews.

What constitutes a useful and reliable source will vary according to both your assignment and the methods used in a particular field of study. As you approach a paper in an unfamiliar field, it will be important to remember that within each field of study, scholars distinguish between primary sources, or the raw material that they analyze as they attempt to answer a question, and secondary sources, or the analyses of that raw material done by other scholars in the field. For example, for literary scholars, primary sources include fiction and poetry, while secondary sources include criticism written by other scholars about those literary texts. Historians, on the other hand, grapple with primary sources such as letters, diaries, and eyewitness accounts produced at the time of an event, as well as with secondary sources such as arguments presented by other historians. Sociologists tend to rely for raw material on quantitative data, such as surveys, censuses, and other statistics, or qualitative data, such as observation and interviews.

Social scientists in some fields, such as psychology and economics, also consider empirical journal articles (articles that describe the results of original research) published in peer-reviewed journals to be primary sources. These articles provide raw material for other scholars, who may then raise questions about the published results or develop new research based on these results. Social scientists in other fields, such as anthropology and history, however, do not consider research articles primary sources because articles in these fields do not typically present raw data. For these social scientists, journal articles would be secondary sources. For all social scientists, literature reviews and published books are considered secondary sources.

Natural scientists count as primary sources empirical articles published in peer-reviewed journals. These published results of experiments and analyses of data provide the raw material for other scientists to consider as they pursue their own research. Secondary sources in the natural sciences include literature reviews and books.

As a college student taking courses in many different fields, you will need to ask questions about what is considered a reliable source in each new field, and about how sources can be used appropriately in that field. At the same time, there are many common principles for using sources effectively that you will be able to carry with you from course to course.

7. What is the use of web resources by Library Professionals?

No matter what sources you consult, it's important to understand what you're actually *doing* with sources when you use them to write a paper, and, for that matter, why writing papers is such a significant component of your college education. While there may be occasions when you are asked to provide a summary of other people's ideas, most of your writing assignments at Harvard will ask

you to answer a question or series of questions—either posed by you or posed for you by your instructor. The answer to a question will generally come in the form of an argument in which you make a claim, marshal evidence to support it, analyze that evidence, and cogently explain to your readers why you have taken this position. The strongest arguments in any field are those that don't simply repeat what has already been said, but rather survey the relevant data, arguments, or documents—i.e., the *sources*—and, taking those sources into account, offer an original response to the question.

When you examine and consider sources as you seek to answer a research question, you are engaging with the work of scholars in your field and the work that they have written about. By doing so, you are joining the ongoing conversation about ideas that your professors and TFs have introduced you to in lecture and seminar, and that they themselves engage in as they conduct their own research and do their own writing. If you think of your work as playing a part in this larger conversation, it becomes easier to understand what you are doing with sources in your own writing: you are responding to and building on the work that has come before your own. As you consult sources, you should always be asking yourself questions about what a source adds to your understanding of a topic and how it might be helpful to you as you write your own paper. For example, a source might help you answer the question you've raised, or it might raise another question for you that suggests a path for further research. A source might influence your thinking about a particular topic or question, but it might also contradict your own thinking, which would require you to do more research to figure out how to understand this conflicting point of view.

The question you are trying to answer will determine the types of sources you consider within a specific field, as will the scope of the paper you're writing. For example, if you are writing a close reading paper about Shakespeare's *The Taming of the Shrew*, you will likely be expected to focus only on the play itself. In this case, the play is your source. On the other hand, if you wanted to investigate how the social climate of Victorian England influenced the way Shakespeare's comedies were produced in that era, your sources might also include theater reviews from London newspapers of the time, as well as letters or diary entries written by people who saw productions of the plays. If you were writing a literature review paper for a sociology course about racial bias in education, your sources would likely include journal articles that report studies on this topic. On the other hand, if you were writing a senior thesis about racial bias in education, you would consider those same articles, but you would also likely produce your own raw data through interviews or other studies.

- For Information Searching
- Communication
- Data transfer

8. Advantages and disadvantages of web resources

We all love being on our laptop, smart phones and ipads, the internet is the big reason behind us spending so much time on these gadgets. The internet is probably one of the greatest inventions of the century. Before this invention we had to go to the library to do our research but now, all we have to do is go to Google and do our research. We can do many things with the internet; we can shop, chat with your friends in Face book or Skype, watch videos in YouTube, earn money from blogging, and many more! The internet is really useful and has a lot of advantages, but there are also some disadvantages of using it. Ones need to be very alert when using the internet. Check out this list of advantages and disadvantages of the internet.

8.1 Advantages

- Information Resources
- Faster Communication
- Entertainment

- Social Networking
- Online Services

8.2 Disadvantages

- Theft of Personal Information
- Virus Threat
- Pornography
- Social Disconnect

9. Growth of Web Recourse Users in India

India has taken decades to grow from 10 million to 100 million internet users and 3 year from 100 million to 200 million internet users but it will take a year to move from 200 million to 300 million internet users. Currently, China currently leads with more than 600 million internet users, US is the second largest internet Users' base in the world and India is the third largest internet users' base in the world.

According to the report, 'Internet in India 2014', which is jointly published by the Internet and Mobile Association of India (IAMAI) and IMRB International, "The growth of internet users in urban India has grown by 29% from October 2013 to access 177 million with October 2014 and it is expected to go 190 million in the end of December 2014 and 216 million by June 2015." If we compare in rural India to last year, the growth of internet users have increased by 39% to reach 101 million in October 2014. By December 2014, it is expected to reach 112 million and by June 2015 to be 138 million. The reasons for faster growth of internet user in India are, in urban India, the primary use of internet is for search, and education related stuff followed by online communication and social networking. And, in rural India, the people use internet for their entertainment and other usage followed by communication and social media. By seeing the rapid growth of the internet users in India it is estimated that by December 2014, India will overtake the US as the second largest internet users' base in the world".

Large scale digitization projects are underway at Google, the Million Book Project, and Internet Archive. With continued improvements in book handling and presentation technologies such as optical character recognition and books, and development of alternative depositories and business models, digital libraries are rapidly growing in popularity. Just as libraries have ventured into audio and video collections, so have digital libraries such as the Internet Archive. Google Books project recently received a court victory on proceeding with their book-scanning project that was halted by the Authors' guild. This helped open the road for libraries to work with Google to better reach patrons who are accustomed to computerized information.

10. The future of web accessibility for Information

10.1 Where are we now?

It's been seven years since the W3C released the first version of the web content accessibility guidelines (WCAG 1.0). Since then, accessibility has slowly but surely turned up on the radar of web managers in most large organizations. The benefits of accessibility are pretty well known too - a quick Google search for web accessibility benefits returns over 37 million results! Because of this, more and more large profile websites have offered better and better accessibility as the years have gone by. There's still a long way to go but the progress over the past few years is highly visible and indeed positive.

10.2 Web 2.0

Web 2.0 refers to the 'next generation' of websites and online applications. Websites using Web 2.0 technologies have started to spring up all over the Internet, and are likely to exponentially increase in

number over the next few years. Although the term itself, Web 2.0, has become a bit of a buzzword, there's no doubt that Web 2.0 is here and is becoming more and more commonplace. Two characteristics of Web 2.0 include AJAX and user generated content. Many websites are beginning to embrace these two concepts, causing **never-before seen accessibility issues...**

10.3 AJAX

AJAX, or Asynchronous JavaScript and XML isn't actually a technology in itself. Rather, it's a technique for using a number of existing technologies to create highly interactive web applications. AJAX-based web pages require support for JavaScript, but most assistive technologies can now support (some types of) JavaScript. The main accessibility concern isn't therefore the use of JavaScript, but rather **the way in which JavaScript is used** to cause on-the-page changes.

The Amazon diamond search, for example, showcases a great example of using AJAX to create an interactive and highly useful interface. It basically uses click-and-drag sliders to allow users to broaden and narrow a wide range of filtering criteria. The page then automatically updates to show how many results conform to the users' selected criteria. The Amazon application offers fantastic usability for many web users. But it's totally **impossible for screen reader and keyboard-only users** to use, and very difficult for any screen magnifier user to use. The solution? A separate simplified accessible version, which Amazon have actually provided (ironically, this separate version hasn't been built to high levels of accessibility, although it could easily have been).

10.4 User generated content

Another concept of Web 2.0 is content generated by users. Blogs and wikis are becoming more and more commonplace, as stand-alone websites or within an organisation's website. Currently, many large organisations **struggle to control the accessibility of their content** due to the large number of content editors - how are they going to cope with users contributing content as well as employees of the organisation? Websites such as Blogger, Flickr and YouTube are totally reliant on user generated content, in the form of blogs, photos and videos respectively. How can these websites control the accessibility of their content? **Content is created at such a rapid speed** that it wouldn't be reasonable (or even possible) for any of these websites to police that content for accessibility. Image- and photo-driven websites, such as Flickr, could request users insert alternative descriptions, either of their own or other people's photos. Ensuring this actually happens across the site though will be difficult to impossible to achieve. Other websites, including those of large organisations, are attempting to build up communities by allowing users to upload images, post comments and generally interact with each other and the site. Will the website owners provide a mechanism to ensure this content is produced accessibly? Can they?

10.5 WCAG 2.0

The second version of the web content accessibility guidelines (WCAG) from the W3C is currently in final working draft and is soon to be released officially. One of the main differences between version 2.0 and 1.0 of the guidelines is that **WCAG 2.0 is technology-neutral**. This means that the guidelines themselves are far vaguer and open to interpretation than previously.

10.6 Predictions

There are three major factors that will shape web accessibility in the future: AJAX, user generated content and WCAG 2.0. The increased prominence of these factors could lead to some of the following:

- **Accessibility will become less and less guideline-driven**

With the advent of new technology (such as AJAX), and the technology-neutral and vague nature of the new W3C guidelines (WCAG 2.0), accessibility is becoming less and less guideline driven. This means that employing accessibility experts is going to become more and more important for organisations as interpreting these guidelines correctly will become more and more difficult.

- **Alternative accessible versions will become the norm**
Historically speaking, separate accessible versions were frowned on for both ethical and business reasons (see for more on this). However, for the first time usability and accessibility are coming head-to-head with each other and rich interactive interfaces often can't be made fully accessible. In this instance, a separate version will have to be provided (but only after all other routes have been exhausted).
- **User generated content is likely to offer poor accessibility**
Content created by users is becoming more and more commonplace on the web. This kind of content is being created at such a rapid rate that it's going to be impossible to police it for accessibility.
- **JavaScript, PDF & Flash will no longer be thought of as 'evil'**
In WCAG 1.0, web managers and developers were basically told that their websites shouldn't rely on any of these three technologies. WCAG 2.0 on the other hand doesn't stipulate this, and rightly so as most assistive technologies can now support these technologies.

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