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Research Paper

Z39.50 AND LIBRARIES

Library Science

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Bhupender Singh | Professional Assistant, Shivaji College, Ring Road, Raja Garden, New Delhi – 110027

ABSTRACT

The information technology has reduced the world into a village and the Libraries are changing with the times. The major challenge before the libraries is to provide the right information to the right users in the least possible time and with precision. This paper discusses the Z39.50 technology, its uses and highlights its advantages and dis-advantages. It also provides the information about free Z39.50 software and Z39.50 record syntaxes.

0. Introduction:

It is commonly said that information technology has reduced the world into a village. With the increasing use of information technology (Computers) in the libraries we are able to search, retrieve and store for future the information, thus it has made the preservation and posterity of information possible. With the help of information technology, we are able to create the documents in a variety of forms, structure such as text, graphic, audio, video, audio-visual, CD-ROMs etc. For the creation of these documents and to make them available to end users, we use different computer languages, software and hardware.

The question then arises is do all the users have the same choice with regard to the selection of forms and structures of information? Do all the users know the same language, software and hardware.

The answer is most certainly No. So, we can say that the information is same but the users' access it or want to see or use it as per their choices, necessity and requirements. Hence, we require to have knowledge of different computer languages, software and hardware, data forms and structures to satisfy our end users information needs.

Now, if this is true, then how can we say that the information technology has reduced the world into a small village, whereas it is still divided like the real world which is divided on continents, sub-continent, race, caste, creed and sex, etc.

To make the information exchange possible and to reduce this world into a small village a revolutionary step was taken and Z39.50/23950 came into existence as a NISO standard (National Information Standards Organisation).

1. Definition:

"National Information Standards organization Z39.50 Information Retrieval Protocol (Z39.50/ISO 23950) defined Z39.50 standard as a computer protocol that can be implemented on any platform, defines a standard way for two computers to communicate for the purpose of information retrieval. A Z39.50 implementation enables one interface to access multiple systems, providing the end-user with nearly transparent access to other systems" (Z39.50 Resources Page, n.d.).

2. How it works:

Z39.50 is a client server protocol. When we say this, we mean that a client (user) who is looking for the information make a query (the information he is looking for) the query is formatted to Z39.50 standard by the user's system without the knowledge of the user. The query is then sent to multiple databases that too instantly and simultaneously. The databases or computers/sources which respond to these queries are called targets. The responses received from these targets are interpreted and presented to the users as per his choice with regard to the number of results, language, syntax (MARC, Dublin core metadata, Xml, etc.).

3. Advantages:

1. Uses common language, thus user's does not require to master in all the languages used by different software/sources
2. Uses TCP/IP protocol common internet protocol, thus cost efficient and no extra hardware/software requirement.
3. Z 39.50 supports open system (i.e. it is nonproprietary or vendor independent.
4. Display results as per choice of user.
5. A single query for search intently and simultaneously different databases/networks/ servers.
6. It saves the valuable time of the user.
7. Provides quick and seamless access and easy to use.
8. No need to learn new software/language, even a layman can use it.
9. Knowledge of searching techniques not essential.

4. Disadvantages:

1. Not widely used as it is a new concept.
2. Most of the Library software providers are not using or implementing it in their software.
3. User's awareness is quiet low.
4. Non updation of library records/catalogues could hinder its implementation and use.
5. Non-cooperation by the libraries is the biggest drawback.
6. The associated cost of delivery of documents after their retrieval from the Z39.50 search hinders its implementations.
7. It is costly, so small libraries cannot afford it.
8. Software, hardware & Library Management Software matching the world standard are costly, thus increases the cost of Z39.50 client server protocol implementation.
9. The training of manpower to handle it increase its cost.

5. Uses and facilities:

1. Web OPAC: The Z39.50 uses the TCP / IP protocol. Thus a Z39.50 enabled system searches all the system which follows this protocol. A user query for a document search is met instantly and simultaneously.
2. Inter Library Loan: Since the search results let us know about the availability of documents at the respective libraries, thus it makes possible for the library to make a request for Inter Library Loan.
3. Union Catalogue: Library users can search several systems without worrying about the structure and standards a library user for cataloguing of its documents. Thus the preparation of union catalogue becomes a reality.
4. Resource Sharing: The libraries could come together to share their resources to supplement their collections and meet the users ever growing demands through the limited resources they have.
5. Ease of Searching & time saving: The users can search different network and databases through with a single search query. This saves the valuable time of the users.
6. Bibliographic Records: The Z39.50 make the preparation of bibliographic records possible as the user's query is changed into Z39.50 standard by the computers and the

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matching results are presented to users in the desired format. This makes the preparation of bibliographies possible.

6. Z39.50 is not a Search Engine

The Z39.50 is a client server networked communication protocol and not a search engine. The Z39.50 provides access to information in structured format, whereas the results displayed by the World Wide Web search engines are both structured and unstructured. While the Z39.50 performs specific search using keywords etc. without any search command or any operators or specific search strategies, the World wide web uses spider and crawler for locating the search information from their centralized server. Z39.50 uses distributed/federated search and locates the search term in different system that are Z39.50 compliant but the search engines uses different operators (Boolean operators etc.) and search strategies to make their search specific.

6. "Free Z39.50 Software:

i. BibData.Com

BibDataZU V1.0 is a free Z39.50 client software available to download from www.bibdata.com

ii. Mercury Z39.50 Client

Developed by Basedow Information Systems, Mercury Z39.50 client for windows 2000/XP can be downloaded from http://www.basedowinfosys.com/projects/mzc

iii. ZMARCO

ZMARCO allows MARC records available through a Z39.50 server to be made available via OAI.

iv. Alejandria WorldLibrary

A universal Z39.50 client that uses, a web interface. The software may be downloaded from http://alejandria.hacer.ula.ve/Z3950

v. ZContent

ZContent is a Perl script and a module that provides a Z39.50 target for the CONTENTdm server. Website http://www.lib.utah.edu/digital/ZContent.html

vi. VB ZOOM

VB ZOOM is an ActiveX DLL, written in Visual Basic which is an implementation of the ZOOM (Z39.50 Object-Orientation Model) Abstract API. Website http://dli.grainger.uiuc.edu University of Illinois at Urbana-Champaign, (217) 244-4425.

vii. JZkit Knowledge Integration Ltd

JZKit is a pure Java, Open source (LGPL), a toolkit designed to assist developers implementing the Z39.50 standard in pure Java environments. Website http://www.k-int.com/jzkit" (Z39.50 Software, n.d.)"

7. Z39.50 Record Syntaxes

"Appendix 5 REC: Record Syntaxes (Normative)

This standard registers the following object identifiers for record syntaxes:

Object identifiers assigned for bibliographic syntaxes, not described via ASN.1:

Unimarc {Z39-50-recordSyntax 1}
Intermarc {Z39-50-recordSyntax 2}
CCF {Z39-50-recordSyntax 3}
USmarc {Z39-50-recordSyntax 10}
UKmarc {Z39-50-recordSyntax 11}
Normarc {Z39-50-recordSyntax 12}
Librismarc {Z39-50-recordSyntax 13}
Danmarc {Z39-50-recordSyntax 14}
Finmarc {Z39-50-recordSyntax 15}
MAB {Z39-50-recordSyntax 16}
Canmarc {Z39-50-recordSyntax 17}
SBN {Z39-50-recordSyntax 18}
Picamarc {Z39-50-recordSyntax 19}
Ausmarc {Z39-50-recordSyntax 20}
Ibermarc {Z39-50-recordSyntax 21}

[Note: this appendix lists only those record syntaxes registered as part of the publication of Z39.50-1995. For a complete list registered record syntaxes, see http://www. loc.gov/z3950/agency/defns/oids.html#5]" (Appendix 5 REC: Record Syntaxes, n.d.)

8. Conclusion

The world wide web has emerged as a hub of information, where all types of information for all types of users as per their demand/requirement are available just at a click of the mouse. In this vast resource/hub of information it has become a challenge for the users to access the right information at the right time with the least efforts and precision. The Z39.50 protocol has emerged as a navigator/search tool which takes the users to the sources of information without requiring the mastery over the search techniques and technologies. The implementation of this wonderful client server protocol is largely restricted to the libraries and museums and a large audience is deprived of it. It is the high time that the search engines and other sectors / industry use this technology for the benefit of their clients/users to facilitate and make information exchange possible paving ways for new research.

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