
Need for Materializing Future Technologies and Techniques in Library Services for Effective Information Management

K Veeranjanyulu

LSRCV Ramesh

Abstract

Against the backdrop of the electronic age, new organizational structures are emerging. In order to be more efficient, effective and responsive organizations give prominence to the use of networks and computer based information systems. Likewise a data warehouse, a database system that is separate from the organizations online transaction processing system. Data mining helps in discovering meaningful new corrections, patterns and trends by shifting through, large repositories, using pattern recognition technologies as well as statistical and mathematical techniques. Finally it is concluded that there is due need to materialize the future technologies to guide the future generations in a most effective way of Library Management.

Keywords : Information Management, Library Services, Future Technologies

0. Introduction

The virtual libraries evolved around the Internet and the websites have transformed into a base for university education "back up services". Web empowers its users; its most immediate impact has been to corrode institutional power. The web power is such that even before the newspaper arrives in the morning, the reports are read and judgments are passed on over the web.

1. Versatile web dynamics

The web's exponential spread has become possible in a short span of time, because web can host cheap, convenient and better connected information through various visions of universities, shops, laboratories, conferences etc. For example the rapid movement of a stock market is dematerialized across the globe simultaneously and without any time lag. The community is being redefined in electronic terms. Even big business, despite its size, does not surpass the web and inevitably chooses to channelize the information.

2. Future Vision

Against the backdrop of the electronic age, new organizational structures are emerging. The advents of strong external coalitions are transforming traditional, monolithic centralized and hierarchical organizations into loosely coupled organic networks. These organizational forms are characterized by cooperation instead of autonomy and control. Consequently, the structures facilitate intense sharing of information and a high level of interpersonal and inter organizational connectivity.

Increasingly, individuals and institutions are setting up such 'transnational networks' that pay absolutely no need to national boundaries and barriers. In order to be more efficient, effective and responsive organizations give prominence to the use of networks and computer based information systems. It appears that less security is applied to data held in computer systems than is the case for data held in manual systems.

3. Data warehousing for decision-making

Data warehousing offers a better approach by implementing the process to access heterogeneous data sources; clean, filter and transform the data, and store the data in a structure that is easy to access, understand and use. A data warehouse provides the base for the powerful data analysis techniques such as data mining, online analytical processing (OLAP) as well as more traditional Querying and Reporting. Making use of these techniques along with data warehousing can result in easier access to organization's critical information for more informed decision-making.

4. A data warehouse is typically a dedicated database system that is separate from the organization's online transaction processing systems in that;

- a. It covers a much longer time horizon than does transaction systems.
- b. It includes multiple databases that have been processed so that the warehouse's data are defined uniformly and
- c. It is optimized for analysis answering, complex queries from direct users and applications.

The basic applications are summarized as follows :

1. Data explosion.
2. Increasing power and decreasing cost of computer hardware.
3. Amazing power of Desktops.
4. Ever increasing power of Server Software.
5. Push Technology.
6. Competitive Business environment.
7. Proliferation of Intranets and Web based applications.

Building a data warehouse of library transactions, especially in big libraries, greatly helps the library professionals and librarians in many ways. For example, circulation control system in libraries generates large volumes of data such as the borrower details and documents borrowed by them. Library data warehouses if implemented on organization's Internet coupled with the push technology not only would help to provide critical information to library professionals but also to the library users.

5. Data mining techniques for new patterns and trends

Data mining derives its name from the similarities between searching for valuable information in a large database and mining rocks for a vein of valuable ore. While Data mining is the process of discovering meaningful new correlations, patterns and trends by shifting through large repositories, using pattern recognition technologies as well as statistical and mathematical techniques.

There are many data mining techniques available today. Data mining methods and techniques may be categorized on the basis of data source and data model to be mined i.e. relational databases, transaction databases, object-oriented databases, deductive databases, spatial databases temporal databases, multimedia databases, active databases legacy databases, heterogeneous databases and Internet's gigantic library (world wide web); the kinds of techniques to be used and the kinds of knowledge to be discovered.

6. Conclusion

The virtual libraries with web-based operations have already evolved; the new technologies and techniques would certainly help in effective library management. The specific techniques like data warehousing and data mining relevant to Library and Information Science are need to be materialized in near future. The data warehousing and data mining techniques demand the preparation and presentation of data in an amenable form. This involves considerable work on the existing databases that are being used in libraries.

7. References

1. Inman, W.H (1992). Building the data warehouse. John Wiley, New York.
2. Gupta, V.R (1997). An Introduction to data warehousing. Chicago systems Services Corporation.
3. Zakne, O.R (1999). Principles of knowledge discovery in databases CMPUT 690. University of Alberia.
4. Nylund, A (1999). The Art and Science of Mining data Enterprise. Business 1.
5. Piatetsky-Shapiro, G and Fraulley, W.J (1991). Knowledge Discovery in Databases. AAAI/MIT.
6. International Technical Support Organization (1998). Data modeling techniques for data warehousing SG 24-2338-00. California IBM.
7. Mexon, B (1996) Defining data mining DBMS ONLINE. DBMS Data warehouse supplement.
8. Banerjee, K (1998). Is Data mining right for your library? Computer in Libraries 18 (10).
9. Venkataramana, V and Varatha Rajan, N (2001). Evolution of web university information centers : The perspectives of innovative technology. Paper presented at 46th ILA Seminar at Ahmedabad 3-6 January 2001. 348-353pp.
10. Nageswara Rao, K and Rangaswamy (2001). Date warehousing and Data mining : Future technologies and techniques for Information Management and Decisio making in libraries. Cit opt. 367-377pp.

About Authors



Dr. K. Veeranjanyulu is Senior Assistant Librarian, College of Fishery Science, ANGR Agricultural University, Muthukur – 524 344, Nellore, India. He holds MLISc, and Ph.D. and published several articles in various conferences and journals. He organised and attended several conferences and training programmes.
E-mail : ru_123@rediffmail.com



Mr. LSRCV Ramesh is at Extension Education Institute, ANGR Agricultural University, Hyderabad – 500030, India