ADVANCED TECHNOLOGIES OF CREATION OF ELECTRONIC (VIRTUAL) LIBRARIES

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Abstract: *An electronic (virtual) library is an online platform created to provide users with information, e-books, magazines, articles and other texts via the Internet. Through this service, users will be able to access information anytime and anywhere. Virtual libraries allow users to access a wide range of information, read e-books, access electronic journals and use other electronic resources. These services include electronic search engines, databases, data analysis tools and other technologies.The advent of advanced technologies has evolved the way we access and use information, transforming the traditional concept of libraries into virtual repositories of knowledge.*

Keywords: *digital technology, virtual libraries, cloud system, backup systems, opportunities*

INTRODUCTION

One of the advanced technologies for creating electronic (virtual) libraries is "cloud services". Cloud services provide the ability to receive and use data and programs continuously over the Internet. Through this service, users will be able to access information anytime, anywhere, from any device. Another advanced technology is "artificial intelligence" (AI). With the help of AI, it is possible to give advice to users in virtual libraries, provide information according to their requirements and wishes. Another advanced technology is blockchain. Blockchain technology allows the database to be stored confidentially and provides transparency, as well as making it possible for data, including electronic books. These technologies will be important in creating electronic (virtual) libraries and will allow to provide high level of service to users. Information storage and retrieval (IPR) is the most important and continuous activity that libraries have carried out for centuries, and it is the most important need for societies to access cultural and intellectual heritage, as well as to acquire knowledge simultaneously to solve problems and progress. Effective IPR is highly dependent on the type of technology and how the library has the tools to acquire and use the knowledge. IPR is implemented with data storage. Now the library has a wide variety of information in digital form, besides it still has traditional information. Various advanced technologies provide reliable and secure means of storing data in a more cost-effective and smaller physical footprint. Data in digital form is subject to rapid change and it greatly benefits from strong and robust data management systems. In addition, there are simulation and virtual reality techniques to find better ways to use data. There are efficient ways to

access and sort through traditional and digital split data. In addition, there are intelligent agents, data discovery techniques, and knowledge discovery tools to discover new and concurrent knowledge from data.

To define what advanced technology is, we first define technology as a process or system that not only creates products or uses knowledge and resources to perform tasks that serve human needs, but also provides ways to solve problems or serve specific needs. This technology is an evolutionary or revolutionary change and a continuous process of solving problems and creating systems for various human needs that may be simple or complex [1,2]. The goal is not only to use advanced technology to solve complex problems in the library's information and communication technology (ICT) infrastructure and complex human resource management system, but also to use the systems and tools provided by technology to create easy systems and effective tools. libraries for community needs.

An "e-library" or "digital library" could be defined or described in several ways, as many people tend to think of e-libraries as web-based catalogs of online resources. The electronic library of the new era will be much wider in its scope, it will have a repository of knowledge and tools to access and use this knowledge according to needs. It has a more secure and reliable storage system, which will preserve the record (report) for future generations. A paradigm shift to ready access to warehouses at low cost instantly from home, office or any remote location can be a new and dynamic model.

Libraries play an important role in learning and preserving knowledge for people around the world. "Library" comes from the Latin word "liber" which means "book". The most traditional library was Ptolemy I, a collection of manuscript books, established in Alexandria around 300 BC. But since the end of the 20th century, libraries have greatly expanded their collections. This growth includes all types of media, such as audio recordings, video recordings, and still images, in addition to written materials.

Debate.

The electronic library (or digital library) is still in its infancy, but it holds a lot of potential information. This is one of the great oxymorons of the information age. Despite the enormous resources—money, brainpower, and time—being devoted to building digital libraries, and despite the fact that they are widely discussed, few people have anything resembling a detailed vision of the future. Electronic libraries are too new and unique to be entirely comfortable in any existing category, and symbolic or metaphorical activity is usually too difficult for people to imagine or conceptualize. As one famous person once said: "What does Shakespeare see when he meets hypertext?" The answer: "confusion." Static visions of electronic libraries of the future do not yet coalesce in the minds of many.

Since these early stages of library development, a number of observational studies and usability studies have been conducted in e-libraries to determine how people interact with them. Unfortunately, it is difficult to develop a coherent and general theory of information seeking behavior from these studies, and this is necessary to clearly propose advanced techniques for future digital libraries. This is because the observed behavior or even the usability of the interface depends on the specific task and the knowledge level and status of the individual. However, what is known about these variables is that we can build some

general theories that are important in suggesting new techniques based on the evolution of information resources and where people should go.

Advances in technology are fundamentally changing the way libraries work. The use of technology has made impossible tasks possible. For example, the digitization of books has made it possible to access a large amount of information from different parts of the world. It would be an almost impossible task if one relied on obtaining a physical copy of the book. With digital copy, the number of copies required is reduced. A digital copy can be accessed by many people at the same time. This concept is similar to storing data in the form of databases [3]. Data stored in this way can be accessed by many users at the same time. This is a huge improvement over the traditional way of storing information in the form of books, where only one person can access the information in one book at a time. Databases also allow for very efficient information retrieval. A good example is using an OPAC. Searching for information using an OPAC system is more efficient than searching for information by finding books on a topic of interest in a traditional library. Technologies have also enabled libraries to store information for longer periods of time. This is evident in the digitization of old books to preserve their content. With so many advantages of using advanced technologies for information storage, e-libraries are likely to be the future for libraries around the world.

Analysis and Results.

Virtual and augmented reality (VR/AR) technologies are also being explored in e-libraries. VR/AR can create immersive experiences that simulate real environments, allowing users to interact with digital content in new and innovative ways. For example, VR/AR can be used to recreate historical events, conduct virtual tours of museums or cultural institutions, or offer interactive simulations for educational purposes.

Another important technology supporting electronic libraries is cloud computing. Cloud-based infrastructure provides large-scale, on-demand access to computing resources that enable libraries to store and manage vast amounts of digital content without expensive hardware or maintenance. Cloud computing also facilitates collaboration and resource sharing among libraries, allowing them to pool their resources and provide more comprehensive services to users. One of the main technologies driving the development of electronic libraries is digitization. The process of converting physical materials into digital formats has made it possible to create vast repositories of data that can be accessed remotely. Digitization has not only preserved rare and fragile materials, but also made them more accessible to a wider audience. In addition, digitization has helped create metadata, which enables efficient search, indexing, and retrieval of digital content.

Artificial intelligence (AI) and machine learning (ML) will also play an important role in shaping the future of e-libraries. AI-powered algorithms can analyze user behavior, preferences, and search patterns to provide personalized recommendations and improve discovery services. ML-based systems can automate tasks such as cataloging, classification, and indexing, allowing librarians to focus on high-value tasks such as research support and public engagement [5,6].

The Internet of Things (IoT) is another technology that is transforming e-libraries. IoT-enabled devices such as smart shelves and RFID tags can track inventory levels, monitor

environmental conditions, and automate circulation processes, making library operations more efficient and cost-effective. IoT sensors can also be used to create immersive learning environments that allow students to interact with digital content in innovative ways.

In addition to these technologies, natural language processing (NLP) is also being used in electronic libraries. NLP-powered chatbots can provide personalized assistance to users, answer queries and support real-time research. NLP-based systems can also analyze large amounts of textual data, identifying patterns and trends that can inform research and decision-making.

The advantages of advanced technology in creating electronic libraries are many. First, they provide unprecedented access to information, allowing users to access digital content from anywhere in the world. Second, they offer enhanced discovery services that allow users to find relevant information quickly and efficiently. Third, they facilitate collaboration and resource sharing among libraries, promoting a culture of collaboration and innovation.

In addition, e-libraries can reduce costs associated with physical infrastructure, maintenance, and personnel. They can also promote the sustainability of paper-based publications. In addition, e-libraries can provide equal access to information for people with disabilities, remote or underserved communities, and those living in areas with limited access to physical libraries.

At the same time, the use of advanced technologies to create electronic libraries also causes a number of problems and concerns. One major concern is the issue of the digital divide, where some individuals or communities do not have access to the necessary technology or infrastructure to access digital content. Another concern is digital preservation, where the long-term viability of digital formats may be uncertain.

Summary

In summary, the advantages of virtual libraries include Internet connectivity, the possibility of constant updates, no fees for use, and the ability to provide customers with a wide range of information. High-speed Internet connections, various electronic devices and programs, cloud services and other technologies are used to create electronic (virtual) libraries. With the help of these technologies, it is possible to provide convenient and efficient service for users. advanced technologies have revolutionized the creation and interaction with electronic libraries. There are concerns about intellectual property rights, copyright infringement, and data privacy in electronic libraries. There is a need for standardization and interoperability between different systems and platforms to ensure seamless access to digital content. Digitization, cloud computing, AI/ML, IoT, VR/AR, and NLP are just a few examples of technologies that are changing the information management landscape. While there are issues and concerns surrounding the use of these technologies, their benefits are undeniable. As we move forward in this digital age, we must continue to invest in these technologies. Ultimately, the creation of electronic libraries represents a paradigm shift in the way we think about information management. This requires fundamental changes in the way library services are designed, delivered and interacted with. By addressing the challenges associated with the application and adoption of advanced

technologies, we can create a future that is accessible to all, regardless of geographic or socioeconomic barriers.

REFERENCES:

1. Rajashekar TB. Resonance of digital libraries. Journal of Science Education. 1997; 1(4).

2. Cleveland G. Digital Libraries: Definitions, Issues, and Challenges. UDT Occasional Paper, International Federation of Library Associations and Institutions; 1998. Ottawa, Canada.

3. Vyas KN. Information technologies for electronic libraries. Jaipur, Raj Publishing House; 2005 year.

4. Hello Amjad. Digital libraries and information networks. New Delhi, APH Publication; 2007 year.

5. Singh Gurdev. Digital libraries and digitization. New Delhi, ESS ESS Publication; 2011 year.

6. Mukhyadal BG, Khandare RB. Emerging Technologies in Library and Information Science, Dhule; Atharro Publications; 2013 year.

7. Hulser RP. The Digital Library: Preserving Content in a Digital World. DESIDOC Information Technology Bulletin. 1997; 17(6): 7-14p.

8. Chaudhary KK. Active use of digital library for e-learning in India. Journal of the Indian Library Association. 2012; 48(1):24-27.