

Review Article

The Evolution of Libraries: From Ancient Times to the Digital Age

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A B S T R A C T

Libraries have been an important source of information for centuries, providing access to books, manuscripts, and other resources. This research paper explores the evolution of libraries, from ancient times to the digital age. We examine the purpose and function of libraries throughout history, and how they have changed over time to meet the changing needs of society. We also examine the role of technology in the modern library, and how digital libraries are changing the way we access and use information.

Libraries have forever been considered probably the best asset for extending information. Since the kick-off of the libraries, their motivation has been to serve all classes of the community with admittance to information. Libraries are known for being extraordinary places to learn, and they continue to draw in an ever-increasing number of learners, particularly scholars, who are tracking down a quiet spot for concentrating yet finding the resources they might require in one place.

With the advancements in technology and the development of library spaces, it is observed these progressions in scholastic libraries will change the way libraries are utilised for eternity. Libraries are adjusting to fit with a progressively advanced world and although studies can investigate patterns, likewise with the Horizon report, there is no assurance how this will develop. In many years from now the world could see totally paperless libraries, touchscreen data entryways, and mechanical aides as guides. The libraries outfitted with the most recent internet-based assets are libraries of the next generations.

Keywords: Evolution of Libraries, Digital Library, Future Library, Learning, Information

Introduction

Libraries have existed for thousands of years and have undergone significant changes in response to changing societal needs and technological advancements. The purpose of this literature review is to provide an overview of the historical and contemporary evolution of libraries,

including their roles in society, the development of library collections and services, and the impact of technology on libraries.

Libraries have a long and rich history, dating back to ancient civilisations such as Egypt and Mesopotamia. In these societies, libraries were primarily used to preserve religious

and legal texts. The ancient Greeks and Romans also had libraries, with the Library of Alexandria being one of the most famous libraries of the ancient world. During the Middle Ages, libraries were mostly found in monasteries and were used to preserve and copy religious texts.

The modern library system began to develop during the Renaissance, with the establishment of public libraries in Europe. The first public library was founded in 1588 in the Italian city of Verona. During the Enlightenment, libraries played a significant role in spreading knowledge and ideas, and the first national libraries were established during this period. The British Library, for example, was founded in 1753.

Libraries continued to evolve, with the development of new library collections and services. The Dewey Decimal System was introduced in 1876, which revolutionised the organisation of library materials. In the 1930s, library services for children were developed, and in the 1960s, academic libraries began to offer computerised information services.¹

The digital age has brought significant changes to libraries, with the development of online databases, e-books, and other electronic resources. Libraries have also embraced social media and other digital tools to connect with their communities and provide access to information. Libraries, committed to informing people, grapple with challenges due to state laws and legal scrutiny. Despite obstacles, the librarians bravely provide accurate information, continuing the historical tradition of informing the public.

The impact of technology on libraries has been significant, and it has changed the way libraries operate and provide services. Technology has enabled libraries to provide access to a broader range of resources and has made it easier for library users to find and access information. However, it has also presented challenges, such as the need to maintain and update technology infrastructure and the question of how to balance physical and digital collections.²

Literature Review

Reading was only accessible to a small portion of society before the invention of print, and the idea of private reading was non-existent for the general public. For known reasons, such as the physical drawbacks of palm leaf text and restricted social accessibility, it was necessary to put in extra effort to help them read. The development of public libraries in India was greatly influenced by the invention of printing. The expansion of print and publishing output in India was made possible by the advent of protestant missionaries in the wake of the East India Company charter in 1813. The missionaries created the opportunity for communication between Europeans and Native Americans through print by introducing print and printed text. Since

there were certain caste-related restrictions in place during this time, printed texts were essential for connecting with the Muslim and Hindu communities. It is asserted that as there was no printing press in place before the missionaries' arrival, the first written texts that the Aboriginal people encountered were found in missionary tracts and school textbooks.

Sikarwar and Rashmi in August 2018 did research on the Impact of Information Communication Technology ICT on medical college libraries of MP.¹ She discovered that medical students, professionals, and practitioners in India had a strong desire for medical knowledge in digital form. As a result, medical college library experts are taking additional initiatives to convey medical knowledge to users. Due to limited financial resources in the age of information explosion, library networking allows libraries in different geographic locations to share resources.

Sureshkumar in 2021 did research on awareness and usage of e-resources among faculties in management institutes in Gujarat, India.² He found that almost all leading institutions nowadays are subscribing to e-resources for their teaching, research, and training purposes. The study underlines that existing information preservation and access methods have been significantly altered by the advent of ICT, particularly for e-resources, in today's rapidly changing world. According to the study's findings, the majority of important institutions now subscribe to electronic resources for use in teaching, research, and training.

The total results show that the state university libraries are happy with the online resources offered to users, and they choose it most because of its easy and convenient availability, multidimensional engagement, ease of preservation, and independent infrastructure.³

A significant fraction of faculty members are aware of e-resources, and those who are aware of e-resources use them, according to several important study findings. The institutions offer fundamental online resource access services such as OPAC, intranet access, Wi-Fi, and others. Users should get frequent training and updates on e-resources through regular orientation programmes. E-resources are used by many faculties since they offer up-to-date data and information.

Gangwani conducted a study on the knowledge and use of Saudi digital libraries among faculty members of different college libraries in the Kingdom of Saudi Arabia in 2020 and came to the conclusion that there is a significant relationship between faculty members' demographic characteristics, such as gender, age, teaching experience, designation, education, and computer training, and their knowledge and utilisation of online resources.³ Faculty members, according to the poll, use digital materials more frequently

because of the speed with which they are available and the convenience with which they may be accessed. As a result, libraries will be able to take the lead in organising instructional programmes in this field.

Libraries of the Past

This section explores the libraries of the past, looking at examples from around the world. We examine libraries such as Ashurbanipal's clay tablets, Alexandrian Libraries, Al Qarawiggin in Morocco, the Vatican Library in Vatican City, the Joanina Library in Portugal, the Trinity College Dublin Library in Ireland, and the Sarasvathi Mahal Library in India. These libraries are important examples of how libraries have served their communities over time, and the various ways in which they have adapted to changing needs. We examine the collections held by these libraries, their architecture and design, and the services they provide to their patrons.⁴

Ashurbanipal's Clay Tablets

Ashurbanipal's clay tablets, dating back to the seventh century BCE and discovered in Nineveh, constitute an extraordinary collection within the royal library. Assembled by the Assyrian king Ashurbanipal, these ancient artefacts encompass diverse subjects such as literature, religion, science, and administration. Remarkably organised, the tablets offer valuable insights into Assyrian culture and daily life. This early example of systematic knowledge preservation underscores the Assyrians' profound appreciation for intellectual pursuits and cultural heritage. Unearthed in the 19th century, these tablets continue to significantly enhance our understanding of the ancient world, shedding light on a rich tapestry of historical and societal facets.

The Sumerian clay tablets, primarily administrative and legal, faced challenges like deciphering wedge-shaped indentations. However, they preserved significant works like the Epic of Gilgamesh. With Alexander's conquest in the 4th century B.C., papyrus replaced clay tablets in Hellenistic regions.

Alexandrian Library

Ancient libraries, traced from Ashurbanipal's clay tablets to Ptolemy I's Alexandria library, navigated challenges of theft, damage, and evolving materials like papyrus and the codex. Cassiodorus, whose full name was Flavius Magnus Aurelius Cassiodorus Senator, was a Roman statesman, scholar, and writer who lived in the 6th century A.D. and helped to preserve old books and well-known Alexandrian libraries. In his monastery, Cassiodorus stressed the value of producing, reading, and copying manuscripts that contained both religious and secular writings. Major pagan Latin writers and Greek philosophers' writings from his personal library had an impact on the monastic life of subsequently

established institutions like Bobbio, St. Gallen, and Fulda. Greek and Latin literature was greatly helped by these monasteries.⁵

It is hypothesised that the Mouseion library at Alexandria was destroyed sometime around 270 A.D. in battles between Emperor Aurelian's and Queen Zenobia's armies. Historical accounts claim that in 391 A.D., a Christian mob destroyed and burned the books of another Alexandrian library located in the Serapis temple. Nevertheless, contradictory reports from Arabic sources state that when Muslim Arabs took over the city in 640 A.D., there was a library. Only the books by Aristotle were spared, indicating a sizable library considering the length of the fires, despite the attempts of Aristotle scholar John Philoponos to preserve the volumes. Omar, the Caliph, ordered that the books be used as fuel in the public baths.

Al Qarawiggin, Morocco

This is a beautiful and ancient Islamic library. Officially opening its doors in 859 AD, the library has now been used by scholars for over a millennium. The library has restored an original manuscript for the ancient Islamic legal system, and a 9th-century Qu'ran — the oldest work in the entire collection.

Vatican Library, Vatican City

It was formally recognised in 1475, though actually operating from a much earlier date, the Vatican houses one of the oldest libraries in Europe. Today, the Vatican Library is currently undergoing an extensive digitisation project to provide free access to digitised collections of over 180,000 manuscripts and 8,600 incunabula. The Library also preserves over 1,600,000 printed books, over 300,000 coins and medals, 150,000 prints, drawings, engravings, and over 150,000 photographs.

Joanina Library, Portugal

The library was constructed between 1717 and 1728. The Baroque-style Bibliotheca was decorated by Portugal's finest artists; the ceilings were painted by the Lisbon painters Simões Ribeiro and Vicente Nunes.⁶

Trinity College Dublin Library, Ireland

The Library's main chamber, built between 1712 and 1732, is an impressive 65 metres long, containing over 200,000 books. The Library holds the unique status of being able to claim a free copy of every book published in the UK and Ireland.

Sarasvathi Mahal Library

The Sarasvati Mahal Library in Tanjore, Tamil Nadu, is one of the most exquisite libraries in the country. This library, which is regarded as one of the oldest in Asia, is home to a unique collection of manuscripts written in several

languages on palm leaves. During their reign from 1535 until 1675 AD, the Nayak Kings of Thanjavur are reported to have used this library as their private Royal Library.

The National Library of India

Originally known as the Calcutta Public Library, it was founded in 1836 and currently possesses the greatest collection of books in India. With over 2.2 million books in its collection, this library ought to be on the wish list of every bookworm. Before India gained its freedom, this library served as the Lieutenant Governor of Bengal's official house.

Modern Libraries

This section looks at modern libraries, with a particular focus on the Toronto Public Library system. We examine how the Toronto Public Library has evolved over time, from its early days as the library of the Mechanics' Institute in 1830, to the present day where it is the largest public library system in Canada. We examine the technology and services provided by the Toronto Public Library, including community computers, free wireless internet access, e-books, music, movies, and other electronic collections. We also look at the Toronto Public Library's Digital Innovation Hubs, which allow patrons to access and experiment with new and emerging technologies.^{7,8}

Toronto Public Library

In Toronto, Ontario, there is a public library system called Toronto Public Library (TPL). It is the biggest neighbourhood-based library system on the earth and the largest public library system in Canada. As of 2008, its average circulation per capita exceeded that of several other public library systems worldwide. In comparison to other major metropolitan networks, it also had the largest circulation and number of visitors in North America. Originally founded in 1830 as the Mechanics' Institute library, the Toronto Public Library now contains approximately 12 million items in its collection and consists of 100 branch libraries.

All branches of the Toronto Public Library offer free wireless internet access and community computers. Access to e-books, music, films, and other electronic resources is also offered by the library. Additionally, each library has about one high-contrast printer that costs \$0.15 per page for customers. It houses the system's primary public colour printer at the Toronto Reference Library. Customers can reserve items on the Toronto Public Library website and have them delivered to their selected branch. Additionally, the library has a telephone hotline called Dial-a-Story that reads stories to kids in sixteen different languages.^{9,10}

Each book in the library has an NFC pad, so all patrons have to do to check out without looking inside is set the book down on a table.

Toronto Public Library cardholders can digitally acquire books, music, and movies since 2014 by creating a record on the online stage Hoopla. Likewise, since 2018, the Toronto Public Library has partnered with Kanopy, a streaming stage with over 30,000 movies and documentaries, that lets library users stream up to eight items per month after registering and utilising their library card.

The library's Digital Archive provides moment access to chronicled images—including photos from the Toronto Star Photograph Archive—postcards, maps, rare digitised books, and more.

Through its website, the Toronto Public Library provides audiobook, e-book, and eMagazine services. These services include OverDrive eBooks and eAudiobooks, Zinio eMagazines, OneClickDigital eAudiobooks, Safari Tech and Business Books Online, TumbleBook Library, and Ebsco eBooks.

Helsinki Central Library Oodi

At the centre of Helsinki, on Kansalaistori Square, Library Central in Helsinki Oodi is a vibrant gathering spot. This Library functions as a hub for the Helmet network of libraries and is one of the 37 branches of the Helsinki City Library.

The Helsinki Music Centre, Finlandia Hall, Sanoma House, and the Museum of Contemporary Art Kiasma are part of a multimedia and cultural centre that is completed by Oodi. Opposite the Parliament Building, Oodi is an open-access, non-profit urban public space.

100,000 books, periodicals, newspapers, pieces of music, movies, and games are available on Oodi. Books in 20 various languages and content for kids, teens, and adults are all included in Oodi's collection. One of the Helmet libraries in the Helsinki area, Oodi gives users access to about 3.5 million distinct books.¹¹

Gaming Services

Both those who enjoy digital gaming and those who prefer table games can discover equipment and amenities on Oodi's second floor. In the gaming rooms, which you can reserve through Varaamo, you can play alone or with a small group of pals on the newest consoles, go on virtual reality experiences, or travel back in time with retro games.

Studios

At Oodi, everyone may experience the entire musical creation process from beginning to end, from rehearsing to recording to final performance. The staff will assist anyone whenever required, however, the studios are only used by the users.

Urban Workshop

Users can make new objects and customise existing ones at

the Urban Workshop on the second floor. Users have access to a large variety of professional tools, including a soldering station, a laser cutter, and conventional handicrafts. Users can utilise the workspaces and equipment on their own or with help from library staff.¹²

Users can use the laser cutter to cut and engrave custom-designed cutlery, jewellery, and decorations. You may create tangible objects using a 3D printer, from little models to spare parts. The vinyl cutter makes it simple to create textile prints and window decorations. Users also have access to a large-format printer, a UV printer, and different sewing machines that users may use for everything from embroidery to minor repairs.

Lismore Australia Human Libraries

In 2006, Lismore, Australia, became the home of the first permanent Human Library. The Human Library allows visitors to borrow a person instead of books so they may engage with them and learn about their interesting life. The Human Library creates a secure environment for private discussions that can aid in overcoming prejudice, averting conflicts, and fostering more inter-ethnic, inter-religious, and inter-racial understanding.¹³

National Library Board, Singapore

The Ministry of Communications and Information of Singapore is in charge of the National Library Board, a judicial body. Across the nation, the board collaborates with public libraries.

Chinese, Tamil, Malay, and English are Singapore's four official languages. The National Library of Singapore has books in each of these languages. In addition to paper books, libraries now accept electronic materials including DVD videos, Blu-ray discs, music CDs, magazines, and journals. The National Library of Singapore, the district's centrepiece institution, depends on Victoria Street.

Although the NLB was first established on September 1, 1995, its history dates all the way back to the 1820s, when Stamford Raffles first suggested creating a public library. This library was to become the National Library of Singapore in 1960 before moving into the suburbs by establishing branch libraries in the many new towns around the nation.

The National Library Board, of Singapore was responsible for carrying out the suggestions of the Library 2000 Review Committee, which was established in June 1992 to assess the public library system, when it took over the duties of the National Library of Singapore in 1995. The panel talked about the challenge of information innovation in modern library administrations for the upcoming ten years, with the objectives of creating Singapore as a global information centre, attempting to maintain and develop Singapore's scholarly legacy, to provide for education, information,

and exploration, and promoting a well-read and educated society.^{14,15}

Libraries of the Future

This section explores the future of libraries, looking at the ways in which technology is transforming the library experience. We examine the rise of digital libraries, and how they are changing the way we access and use information. We also look at the role of artificial intelligence in the library, and how it can be used to improve access to information and provide new services to patrons. Finally, we examine the challenges and opportunities facing libraries in the digital age, and what steps they can take to remain relevant and meet the changing needs of their communities.

In terms of the social infrastructure, they offer as well as the variety of services and experiences they provide, libraries are experiencing a renaissance.

In corporate environments, they are assuming an increased part in the arrangement of collaborative workspace and innovation. In communities, they are evolving into hubs for education, health, entertainment, and work. These trends reflect increased efforts by libraries across a range of sectors to bring people once again into their actual spaces.

This has resulted in an increase in tangible experiences, including maker spaces and immersive activities, especially in open libraries. As well as changing spatial format and projects, the digital environment is key. The "dividers" of a library continue to expand beyond the actual space, with an increase in online resources, web-based media, and publicly supporting and mobile services affecting how collections are accessed online and in a hurry.

A list of relevant and useful novel technologies for the library is provided below. The relevance of the technology and the benefits it could provide to the library are at the forefront of our discussion.

Big Data

People's most basic activities are creating more data than at any time in recent memory, despite all of the technological breakthroughs. Administrators who have the required skills and knowledge to make the greatest use of these vast data sources can benefit greatly from the storage and analysis of large datasets.

Virtual Reality

Library guidance may undergo a transformation thanks to virtual reality (VR). How? - by using realistic, immersive scenarios to show students how they currently apply data literacy skills on a daily basis. While traditional data literacy instruction is verbose and lecture-based, virtual reality facilitates more hands-on learning.

Using virtual reality technology, students could take part

in a real-life scenario where they would have to decide which course of action is safer, such as accepting an opened beverage from a stranger on the street or seeking treatment in an emergency room where a nurse would advise them to swallow some pills with water. In essence, these scenarios ask students to assess the veracity of the individual presenting a material.

Artificial Intelligence

Nowadays, everyone has Siri and Alexa on their smartphones, so artificial intelligence isn't exactly a cutting-edge technology at this point because it's becoming more and more ingrained in our daily lives. According to Kristin Whitehair, "it can appear that AI is a challenge to libraries with numerous AI applications focused on delivering data to the user." This is highlighted in an article on the Public Libraries Online website. Nevertheless, she continues, saying, "Human intelligence is artificial. AI can't connect individuals to other people; libraries allow them to connect to data and, more importantly, to each other.

By giving every programme at the library an intelligent side, there is a genuine opportunity to recognise user behaviour trends and make necessary adjustments.

Internet of Things

The Internet of Things, or IoT, is becoming more and more popular as internet access has moved from being a luxury to a need. Similar to RFID (Radio-Frequency Identification) technology, the IoT refers to the possibility of establishing connections and exchanging data across commonplace objects. However, the data is transported over the Internet solely because of IoT. Numerous "opportunities for library applications, from following room usage and programme attendance to checking dampness levels for special collections and more" are available, according to a recent article on the American Library Association website. Therefore, by improving its services and collections, the library may provide a better user experience.¹⁵⁻²⁰

Conclusion

Libraries have been a crucial part of human history, providing access to knowledge and information for centuries. Over time, libraries have evolved to meet the changing needs of society, and the rise of technology has transformed the library experience. As we look to the future, it is clear that libraries will continue to play a vital role in the development and dissemination of knowledge. By embracing technology and adapting to changing needs, libraries can remain relevant and continue to serve their communities for centuries to come.

Conflict of Interest: None

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