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Review Article

Reinvention and re-engineering of library services during the post-Covid-19 pandemic

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ABSTRACT

The COVID-19 pandemic has had a significant impact on library services, leading to the need for reinvention and re-engineering. Libraries had to quickly adapt to provide services remotely and ensure the safety of staff and patrons. This has included increasing the use of technology for virtual programming, curbside pickup, and digital collections. Many libraries have also had to change their physical spaces and operations to adhere to social distancing guidelines. Additionally, some libraries have had to pivot their focus to address new community needs, such as providing technology and internet access for remote learning and telework. Overall, the pandemic has accelerated the trend towards digital and virtual services, but it also highlighted the importance of libraries as knowledge hubs. The purpose of this paper is to examine the problem of libraries reopening after a pandemic and what precautions they should take to stop the spread of viruses like Covid-19.

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1. Introduction

The COVID-19 pandemic had a significant impact on libraries, leading to the closure of physical spaces and the shift to virtual services. As a result, libraries have had to quickly adapt and re-invent their services to meet the changing needs of their patrons.

One of the key changes has been an increased focus on digital services and resources. Libraries have expanded their e-book and e-audiobook collections, and have made more of their databases and online reference materials available remotely. They have also invested in virtual reality and 3D printing resources. The role of ICT in the development of necessary competencies among library professionals, involved in the GSDL and other digital library software for the present scenario is very necessary (Manhas R. 2022)¹ Library has also had to re-engineer their services

to meet the needs of patrons now working and learning remotely. This has included the development of online tutorials and courses, as well as the expansion of virtual programming and events.

In addition, libraries have had to find new ways to support patrons who may be facing economic and social challenges due to the pandemic. This has included providing access to digital resources for job search, resume building, and career development.²

Other Post-Covid libraries re-engineering services include

1. Contactless pickup and delivery services
2. Virtual reference and assistance service
3. Offering online library card registration
4. Expanding the hours of online assistance and chat services
5. Encouraging online book clubs and online reading groups

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Overall, the COVID-19 pandemic has forced libraries to re-think and re-invent their services to better meet the needs of their patrons in a rapidly changing environment. And as the situation continues to evolve, libraries will likely continue to adapt and re-engineer their services to meet the evolving needs of their patrons.

2. Review of Literature

The Changing Scenario for Libraries is the Current Result of the COVID-19 Pandemic situation. To the library, the way of service content has been changed due to non-contact. Ease of use for users. In this context, Babbar and Shukla (2020)³ highlighted different perspectives and supported the Academic library system. A remote-based method it has been thought that service can be fruitful for JNU library examples and other important stuff Current challenges and solutions. Haines and Grodzinski (1999)⁴ emphasize web accessibility by users through library sites and by remote users, thereby improving accessibility. Fernandez (2020)⁵ focuses on the situation of COVID-19 in the library as a service organization providing online services in the context of remote access in the form of e-books and other digital resources that are accessible to users, and "libraries have an opportunity to reinvent work and help their users adapt to these changes". Ram B, Singh KK (2020)⁶ Appropriate application of information and communication technology in resource hubs bring a big change to how resource centres work. The library moved from the traditional stadium to the modern stadium; at that time the library was automated, went digital and cell phones worked. Today's mobile phones have become the basic elements of human life for correspondence and it also serves for students to learn online. In this article, we talked about mobile innovation and focus on its application and the difficulties encountered in library management.

The present scenario of libraries as a result of the COVID-19 pandemic situation. The set of library services has been changed due to contactless communication. Ram B, et al. (2018)⁷ It is aware that the library serves as more than just a repository of information; it aims to provide all users with quality services. As a result, in the modern era, libraries must constantly improve themselves by acquiring several new IT technologies. Additionally, we tried to use cloud computing to improve the present client benefit display in libraries. Mestri (2020)⁸ mentioned challenges and proposed recommendations for the library in the post-lockdown period. The author also recommends revising library rules based on recommendations and the severity of the pandemic. The author suggested different strategies and divided the modes of operation into four different levels based on the number of COVID-19 cases.

3. About COVID-19 Virus

COVID-19, also known as coronavirus disease 2019, is a highly contagious respiratory illness caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in Wuhan, China in December 2019 and has since spread globally, leading to a worldwide pandemic.

Symptoms of COVID-19 can range from mild to severe and include fever, cough, shortness of breath, and fatigue. Some individuals may also experience body aches, sore throat, and loss of taste or smell. In severe cases, COVID-19 can lead to pneumonia, acute respiratory distress syndrome, and death. The virus is primarily spread through respiratory droplets produced when an infected person coughs, sneezes, or talks. It can also be spread by touching a surface or object that has the virus on it and then touching one's face. To prevent the spread of COVID-19, it is important to practice good hygiene, such as washing hands frequently, wearing a mask in public, and maintaining social distancing. Vaccines have been developed and authorized for emergency use around the world, and it is recommended to get vaccinated as soon as possible.

It is also essential to stay informed about the latest guidelines and recommendations from local health authorities and the World Health Organization (WHO) regarding COVID-19.

4. Present Trends of Library Services

Recent trends in library services include an emphasis on digital resources, online access, and user-centered design. Many libraries now offer digital collections of e-books, audiobooks, and other digital media, as well as online databases and research tools. Additionally, some libraries offer more programming and services for children, teens, and adults, such as literacy programs and job search assistance. In addition to the advent of technology, libraries are now providing more online services such as live reference services online tutorials and webinars, and virtual tours. Some are mentioned:-

1. Digital Resources: With the growing popularity of e-books and other digital media, libraries are now offering more digital resources to patrons. This includes e-books, audiobooks, digital magazines, and online databases.
2. Online Access: Many libraries now offer online access to their resources and services. Patrons can access digital resources, place holds, renew items, and even pay fines online.
3. User-Centered Design: Libraries are now focusing on user-centred design to provide a better experience for patrons. This includes creating open and flexible spaces, collaborative workspaces, and maker spaces.
4. Programming and Services: Libraries now offer more programming and services for children, teens, and

adults. This includes literacy programs, job search assistance, and technology training.

5. **Technology Integration:** Libraries are now using technology to improve services and make them more accessible to patrons. This includes self-checkout kiosks, RFID technology, and mobile apps.
6. **Community Outreach:** Libraries are now more focused on community outreach and building relationships with local organizations. This includes partnering with schools, community centres and other organizations to provide programs and services.
7. **Virtual Services:** With the current pandemic situation, virtual services are becoming popular in libraries. They provide online reference services, webinars, virtual tours, and another online programming.
8. **Data analytics:** Libraries are using data analytics to track the usage and engagement of their services and resources. This helps them to understand their patrons' needs and preferences, and make decisions to improve the services.
9. Overall, the trend in library services is to provide patrons with more digital resources, online access, and user-centered design while also providing a wide range of programs and services that meet the needs of the community.

5. Libraries Under Lockdown

In response to the COVID-19 pandemic, many libraries have been closed or have limited access to the public. This is to help prevent the spread of the virus and keep staff and visitors safe. Some libraries have transitioned to offering online services, such as e-books and digital resources, while others have implemented curbside pickup or limited in-person services. The specific policies and services offered by libraries will vary depending on the location and the guidance from local health officials.

6. Library Services After the Covid-19

As the COVID-19 pandemic continues to evolve, libraries are adapting their services to ensure the safety of staff and patrons while still providing access to information and resources. Some of the ways libraries are modifying their services include:

1. **Virtual services:** Many libraries offer online resources and services, such as e-books, audiobooks, and online databases, which can be accessed remotely.
2. **Curbside pickup:** Some libraries allow patrons to place holds on materials and then pick them up outside the library, reducing the need for in-person browsing.
3. **Limited in-person services:** Some libraries have reopened with reduced capacity, social distancing measures, and enhanced cleaning protocols in place.

4. **Contactless services:** Some libraries offer contactless options such as self-checkout, contactless holds pickup and returns, and mobile payments.
5. **Virtual programming:** Many libraries have shifted to offering virtual programs and events, such as book clubs, author talks, and workshops that can be accessed remotely.

The specific services and policies of each library will depend on the guidance of local health officials and the library's own policies and resources.

7. Preventive Measures in Libraries Against Covid-19

1. To prevent the spread of COVID-19 in libraries, some measures that can be implemented include:
2. Encouraging patrons to wear masks and practice social distancing
3. Increasing the frequency of cleaning and disinfecting high-touch surfaces
4. Implementing a reservation or booking system to limit the number of people in the library at once.
5. Providing hand sanitizer or hand washing stations for patrons
6. Encouraging contactless or digital means of borrowing materials, such as online holds and contactless pickup.
7. Closing or limiting access to certain areas, such as study rooms or seating areas, to maintain social distancing.
8. Closing or limiting access to certain services, such as printing or scanning, to reduce contact between patrons.
9. Offering virtual services and resources, such as online programming and e-books
10. Providing clear signage and information to educate patrons on COVID-19 prevention measures
11. Following guidelines and recommendations from local health authorities and the World Health Organization

8. Important Online Resources

1. **NDL:** A National digital library that provides access to thousands of books, and primary sources.
2. **DOAJ:** Directory of open-access academic journals, etc
3. **Project MUSE:** A collection of digital humanities and social science journals from leading universities
4. **Oxford Reference:** A collection of online reference works, including dictionaries, encyclopaedias, and handbooks
5. **ProQuest:** A provider of research databases, e-journals, and digital archives for academic, corporate, government, public, and school libraries.
6. **National Emergency Library:** A collection of books that supports emergency remote teaching, research activities, independent scholarship, and intellectual

stimulation while universities, schools, training centres, and libraries are closed.

7. HathiTrust: A digital repository of over 17 million books and texts from research libraries around the world.
8. Google Books: A search engine that allows users to search the full text of books and magazines.
9. Library of Congress Digital Collections: A collection of primary source materials, including photographs, manuscripts, maps, and sound recordings.
10. Internet Archive: A digital library that offers free access to millions of books, movies, music, and other media.
11. European Digital Library: A collection of digital resources from European libraries, archives, and museums, including books, photographs, and other primary source materials.

Here are some additional e-resources that libraries may offer to patrons:

1. E-books: Many libraries now offer a digital collection of e-books that can be borrowed and read on electronic devices such as e-readers, tablets, and smartphones.
2. E-audiobooks: Libraries may offer a collection of digital audiobooks, which can be downloaded and listened to on a computer or mobile device.
3. Online databases: Libraries may provide access to a wide range of online databases, such as those for research, news, and industry information.
4. Streaming media: Libraries may offer streaming services for movies, music, and television shows, as well as access to language learning resources.
5. Online tutorials and courses: Libraries may provide access to online tutorials and courses, such as those for programming, design, and professional development.
6. Online reference works: Libraries may offer access to online reference works, such as dictionaries, encyclopedias, and handbooks.
7. Digital archives: Many libraries now provide access to digital archives, such as historical newspapers, photographs, and manuscripts.
8. Virtual reality and 3D printing resources: Libraries may offer access to virtual reality and 3D printing resources to patrons.
9. Online research tools: Libraries may provide access to online research tools such as citation management software and survey tools.
10. Mobile apps: Libraries may develop and offer mobile apps that allow patrons to access library resources and services on the go.

9. Post Covid-19 Impact on Libraries

The COVID-19 pandemic has had a significant impact on libraries, causing them to adapt and make changes to their

services in order to keep patrons and staff safe. The impact of the pandemic on libraries can be summarized as follows:

1. Virtual services: The pandemic has accelerated the shift towards virtual services, such as online reference, webinars, and virtual programming, which will likely continue even after the pandemic subsides.
2. Digital resources: The pandemic has increased the demand for digital resources and online access, such as e-books and online databases, as patrons have been unable to access physical materials.
3. Curbside pickup: Libraries have implemented curbside pickup services, which may continue to be offered as an option for patrons even after the pandemic subsides.
4. Limited capacity: Libraries may continue implementing limited capacity and social distancing measures to keep patrons and staff safe, even after the pandemic subsides.
5. Increased cleaning and sanitation: Libraries may continue to increase the frequency of cleaning and sanitation of high-touch surfaces to reduce the spread of germs.
6. Reduced budget: The pandemic has led to a reduction in library budgets, as libraries have had to reduce services and incur additional costs for cleaning and sanitation.
7. Remote work: Library staff have had to work remotely during the pandemic, which may continue to be a trend even after the pandemic subsides.
8. Collaboration: The pandemic has led to increased collaboration among libraries, as they have had to share resources and expertise to continue serving patrons during the pandemic.

The ideal way to forestall and dial back transmission is to be informed about the sickness and how the infection spreads. Shield yourself as well as other people from disease by remaining something like 1 meter from others, wearing an appropriately fitted cover, and cleaning up or utilizing a liquor-based rub much of the time. Receive an immunization shot when it's your move and heed neighbourhood directions².

Overall, the pandemic has accelerated the shift towards virtual services and digital resources and has also led to changes in how libraries operate, such as increased cleaning and sanitation and limited capacity. Despite the challenges, libraries have adapted and continue to provide valuable resources and services to their communities.

10. Post Covid -19 Challenges for the Libraries

The COVID-19 pandemic has presented a number of challenges for libraries, which include:

1. Reduced funding: Many libraries have seen their budgets reduced as a result of the economic downturn

caused by the pandemic, making it difficult to maintain and expand services.

2. Limited access to physical spaces: With many libraries closed or operating at reduced capacity, patrons have had limited access to physical resources and services.
3. Digital divide: Not all patrons have equal access to digital resources and technology, which can limit their ability to take advantage of virtual services offered by libraries.
4. Staffing challenges: With many libraries operating at reduced capacity, staffing has been challenging for me libraries have had to reduce hours or furlough staff.
5. Health and safety concerns: Libraries have had to implement various health and safety measures to protect staff and patrons, which can be costly and time-consuming.
6. Adapting to the new normal: Libraries have had to quickly adapt to the new normal and find ways to continue to provide services in a virtual environment.
7. Meeting the needs of the community: With many patrons facing economic and social challenges as a result of the pandemic, libraries have had to find new ways to support them.
8. Keeping up with the current technology: With the shift to virtual services, libraries have had to invest in technology and infrastructure to support the delivery of digital resources and services.
9. Managing the uncertainty: The pandemic is ongoing and, the situation is constantly changing, which makes it difficult for libraries to plan and manage services over the long long term.
10. Mental Health: The pandemic has brought a lot of stress and uncertainty to people, and libraries may have to work on ways to support the mental well-being of the community.

11. Re-engineering of Library Services

Re-engineering of library services refers to the process of re-designing and re-inventing library services to better meet the changing needs of patrons in a rapidly changing environment. The COVID-19 pandemic has accelerated the need for libraries to re-engineer their services, as libraries have had to quickly adapt to the shift to virtual services and support patrons who are learning remotely.

Here are some examples of how libraries can re-engineer their services:

1. Digital services and resources: Libraries can expand their e-book, e-audiobook, and online databases to make them more accessible to patrons remotely.
2. Virtual programming and events: Libraries can offer virtual programming and events, such as online book clubs, author talks, and workshops, to engage with patrons remotely.

3. Virtual reference and assistance: Libraries can offer virtual reference and assistance services, such as online chat or video conferencing, to help patrons find the information they need.
4. Online tutorials and courses: Libraries can offer online tutorials and courses, such as those for programming, design, and professional development, to support patrons who are working and learning remotely.
5. Mobile apps: Libraries can develop and offer mobile that allows patrons to access library resources and services on the go.
6. Contactless pickup and delivery services: Libraries can offer contactless pickup and delivery services to patrons, allowing them to safely access physical resources while maintaining social distancing.
7. Offering online library card registration: Libraries can make the process of getting a library card more convenient by allowing patrons to register for a library card online.
8. Virtual tours and augmented reality: Libraries can offer virtual tours and augmented reality experiences to patrons to make the library experience more interactive.
9. Online research tools: Libraries can provide access to online research tools such as citation management software and survey tools to support patrons' research needs.
10. Collaboration with other organizations: Libraries can collaborate with other organizations, such as schools, businesses, and community groups, to expand their reach and services.

12. Conclusion

The COVID-19 pandemic had a hazardous effect all over the world. With the aid of contemporary information and communication technology, most educational institutions and their libraries provide virtual and online services in response to this disease. The corona virus posed a direct threat to libraries in terms of both their physical location as well as resources and services they offer to users. According to legislative regulations, all libraries were required to function virtually through their own library websites and adhere to the COVID-19 safety procedure. The best method to help library clients during a pandemic is to periodically update library web pages with information about highlighted online access points and any digital or online library services that are offered.

13. Source of Funding

None.


14. Conflict of Interest

None.

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