Remote Access to Engineering Libraries using Online Platforms in Karnataka: A Comprehensive Study

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ABSTRACT

The objective of this study is to identify suitable library remote access platforms for the engineering libraries in India to continue uninterrupted library services during lockdown periods. The Covid-19 pandemic has altered how educators and students approach the teaching and learning process. Online meeting technologies such as Zoom, Microsoft Teams, Google Meet, Cisco WebEx, and others are used to connect teachers and students. However, during the COVID lockdown, where is the librarian's opportunity to engage with students?. Next is the use of online library platforms, such as Knimbus, which provide remote access, as well as the ACM Digital Library, Emerald Insight, ScienceDirect, IEEE, Springer, and Taylor & Francis. Subscribed materials can now be accessed remotely via personal computers, laptops, smartphones, and other devices, thanks to digital technology. By creating user credentials and using these platforms to educate users online, the librarian can establish a connection with their users.

KEYWORDS: Remote Access, Engineering Libraries, User Study, Online Platform, Covid-19.

1. INTRODUCTION

Introduction to Remote Access and Methods: The ability to remotely access a computer or server over a network connection is known as remote access. Users have the ability to work remotely from a distance while still having access to a network or computer. The same principle is applicable to Library data which is stored in a server or cloud can be accessed through remote login. It was a typical task of accessing the library resource 20 years back. That time remote access was done using Direct (Physical) Line, Virtual Private Networks, Microsoft Remote Desktop Services and Additional techniques include cable modems, DSL (digital subscriber line), wireless networks, and integrated service digital networks, among others and showing remote access online platforms figure. The other tools like proxy server, EZ proxy, URL rewriting proxy etc. EZ proxy is still existing and continuing services. Another well-known remote access technology that has been serving Affiliated Technical College libraries' needs globally since 1995. VTU Consortium is another access tool that uses a platform with several protocols that upholds a uniform set of rules.

Figure: Remote Access Online Platforms

Source: https://www.lisedunetwork.com

2. LIBRARY USAGE DURING COVID-19 PANDEMIC

Covid has changed the reading habits of the readers and thrown challenges to libraries survive and become normal status. Most of the libraries are either closed or world partially during the pandemic period due to different circumstances. The public libraries are closed for long time and still lagging in providing services to readers. The book publication also suffered due to pandemic and acceptance of e-books gained. Engineering librarians that too from Government institutions got salaries and other librarians from private institutions either not paid or partially paid. Some have lost their jobs even after putting more years of service with the same institutions. The teachers were able to teach their students through online platforms like zoom, Microsoft teams etc. They were followed the normal time table and taught the syllabus as per their lesson plans. But the problem arises for the librarians in supporting the students with required material in time. Majority of the librarians faced the challenge of Drury (1930) principle of library science "To provide the right book to the right reader at the right time".

Those librarians who have assured future tried their best to support their users remotely with the help of subscribed online collections, and many have increased their virtual offerings. But most of the librarians are not lucky enough to do so. Apart from this situation librarians also felt the uncertainty of their monthly pay, and future survival of librarians if nobody turns to libraries for reading. In this pandemic situation, most of the readers were depended on Internet search engines and several social media platforms to share and access the information. But social media also have its merits and demerits.

The authenticity of information published on social media is unchecked by any authority. Such information without authenticity is forwarded to others. In such situation the readers felt the need of libraries for the correct and authenticated information as the libraries provide primary, secondary, tertiary information. Those who have not used or visited the libraries also felt the need of library more than ever. So it is important to continue to promote library services through online platforms even the buildings are closed. The Library services during Post COVID-19 era

have seen drastic change in the delivery of services to their readers. The users mostly used social media platforms and online material for the news and health related content.

As a result there is a short-fall of user visits to libraries and huge demand aroused for remote and online services. In technical institutions most of the class work was conducted using remote meeting applications and necessity of reaching library through remote networks as also increase. So libraries were forced to adopt to provide library content through online access platforms. The subscribed resources were provided to their members through VPN (virtual private networks) systems. The libraries migrated to proxy technologies to reach their clientele. The VPN systems are not much cost and can afford by any institution. But, it requires high quality ICT equipment on institution part. The availability of quality ICT Infrastructure engineering libraries is a big task. The subscribed resources will help the institutions to offer online reading material in a smoother manner. The small publishers may not be in a position to offer online platforms to their content. But they managed in providing the online content through agreements with common platforms like through the VTU Consortium.

3. PUBLISHERS HELP DURING THE COVID-19 OUTBURST

Most of the academic publishers have shown generosity to library users by providing free access to their resources. As a result lot of paid category reading material was made available to the general public to bridge the digital divide. This facility was extended to users ranges from 3-6 months time by publishers. As a result large number of quality journals, conference proceedings, e-books etc made accessible directly from the publisher's websites by creating free credentials to login in to databases. Various non-profit organizations have compiled all these freely offered resources from their websites to reach library users. In India famous publishers like McGraw Hill, Wiley, Springer, Taylor & Francis provided free access to their content during the lock-down period at a free of cost. There is no use of the library resources if they are not made available to its users.

The best practice is to create remote login credentials to library e-resources. This facility allows the usage of the e-resources from remote locations and offers easy and quick access to various subscribed resources of the library through its interface. Generally, the libraries provide user ID and password or IP addresses to access subscribed e-resources. But COVID-19 followed close-down of libraries has forced to change the way of using library resources and services. The pandemic period changed the way of accessing information as users need not come to the library, as they can access the library from their home and read the content at their own pace. There are various library remote access platforms like, Knimbus, ACM Digital Library, emerald Insight, Science Direct, IEEE, Springer, Tayor & Francis and Delnet etc to fulfill the library usage from remote places.

These remote platforms enable the library readers to access the subscribed online content from any place with their own gadgets. The access is provided in two different manners. First one is linking the subscribed resources through the institution websites and provide user ID and passwords to their multiple databases. In this method each database will contain their own platform and readers need to use their user ID and password separately to each database. For example McGraw Hill publication have their own platform, IEEE Journals have their own platform. This will lead to multiple search attempts for the user to get the correct information from subscribed resources. But the modern digital remote access platforms are provided with federated search engines which will help in searching all the

resources with one keyword or set of sentences / keywords. The availability of licensed online material off campus comprising research articles, databases, E-journals, e-books, conference proceedings, standards, and many more reading materials with a single log-in. The libraries procure license of these resources from concerned publishers. These license agreements restrict the access to purchased resources to only authorized readers of an institute.

4. COMPARATIVE STATEMENT OF REMOTE PLATFORMS

These remote access platforms are there from past 10 years and due to Covid-19 these got recognition and usage effectively. Out of these, Knimbus, ACM Digital Library, Emerald Insight, Science Direct, IEEE, Springer and Tayor & Francis are famous. These platforms have their own unique features and offering different kinds of services. The authors made attempt to analyse these platforms to take a decision on their requirement. Some of these platforms are well-known and adopted in many libraries across India, which was covered below.

4.1 Knimbus: Knimbus is a cloud-based online remote access platform that facilitates library users to use their subscribed content and save for further usage through log in credentials. Knimbus uses federated search engine for knowledge discovery and collaborative space for research scholars, staff, students and executives. It is currently used in over 1100 academic institutions and R&D labs. It is a collaborative platform for researchers to discover and access millions of journal articles, patents and eBooks subscribed by relevant institutions and share the knowledge with their peers (Sankar & Sarangapani, 2020). This platform has a unique feature of federated search engine which can help searching the subscribers' databases with one search. The results are shown according to popularity and can be filtered by author-wise, year-wise, and publication-wise. There is also another feature where the content of the results can be filtered by journal type and e-book-wise. It is suitable to academic institutions and R&D Labs where the content can be arranged according to sections. An user can create number of sections and start uploading the content to that particular section. For example, if a teacher want to share his notes and PDF Files to students he can create a section on his name with the help of the librarian and upload the content to the section folder. This section can be accessible to students and others. So they can down load or read online as per their convenience. Any academic, corporate, or government institutional library can undergo a full digital makeover with the help of the cloud-based Knimbus mLibrary app. Knimbus offers remote access via web and mobile applications (iOS and Android). The users ones registered with the Knimbus can use web portal as well as mobile app.

4.2 ACM Digital Library: Association of Computing Machinery This is the ACM Digital Library that librarians already know and trust, and now with continuous updates and improvements to better support research and discovery needs. This approach enables institutions to continue benefiting from advanced functionalities that support deeper engagement with research, while ensuring financial sustainability for ACM's publishing efforts.

Emerald Insight-refers to an online platform provided by Emerald Publishing, where users can access a vast collection of peer-reviewed research articles, books, and case studies primarily focused on business, management, and related fields, with the option to download most content in PDF format for convenient reading and storage; essentially, it's a digital library where you can find research papers in PDF format across various business disciplines, accessible through the Emerald Insight website.

4.3 Science Direct: Science Direct is a primary online platform used by researchers, students, and professionals to access a vast collection of peer-reviewed scientific, technical, and medical journal articles and book chapters, allowing them to stay updated on the latest research within their field, conduct in-depth research, and explore various topics across diverse scientific disciplines through a single search portal; essentially serving as a comprehensive source for scholarly information in the sciences and healthcare domains, with Science Direct, you may browse through a wide range of excellent journal articles, book chapters, and supplemental information to help you learn and explore, keeping you informed about changes that affect your area.

4.4 Springer: Springer Leading worldwide scientific, technical, and medical portfolio provider Springer offers top-notch content through cutting-edge information, goods, and services to researchers in academic institutions and business research and development departments. In addition to having one of the best STMs, Springer offers a wide variety of hybrid and open access journals and books under its label, as well as ebook collections and archives.

4.5 Taylor & Francis: Taylor & Francis is primarily used as a platform to access a vast collection of peer reviewed scholarly articles and books across various academic disciplines like science technology medical humanities and social sciences allowing researchers and students to find credible research information for their studies and publications essentially. It serves as a major source of academic knowledge and research findings. Open access publishing options are available for both books and journals published by Taylor & Francis. Its digital content offerings include the Routledge Encyclopedia of Modernism, the Routledge Performance Archive, and Routledge Handbooks Online.

4.6 IEEE: Which stands for the institute of electrical and electronics engineers is primarily used to develop and establish international standers for a wide range of technologies including telecommunications, information technology power generation and electronics ensuring compatibility and functionality across different devices and systems essentially acting as a central authority for setting technical guidelines in these fields.

Some of the major features of Library Remote access platforms in India:

a) A unique portal with a branded and tailored interface created in accordance with the institution's needs.

b) A mobile app, an intuitive online portal, and a modern interface ensure easy access to e-resources.

c) Digital collections include databases, open access journals, e-books, Videos, and subscribed resources.

d) It offers a single search field for all resources, making it universal search: Such as repositories, databases, e-books, and e-journals.

e) Full capability, customized off-campus access, and an integrated Web OPAC (Online Public Access Catalog) with an A-Z catalog of all digital resources.

f) Mobile apps and off-campus access, It gives users access to all e-resources on any device, at any time (24x7) and from any location.

g) Strong security controls to stop unwanted access and an open architecture for integrations with online learning resources are features of this unified cloud platform.

h) The librarian dashboard monitors all users and resources, centrally regulates and manages users and usage from a single location, and creates customized reports to satisfy the library department's demands.

i) Users can share and preserve content from their library's e-resources, websites, blogs, and RSS feeds (Really Simple Syndication) that interests them both personally and professionally.

j) Access the most recent articles from journals that the library has subscribed to, databases, and e-books directly.

k) Users have the option to tag content for convenient offline reading and searching, as well as to arrange it in reference folders.

The authors have made some efforts to bring comparative statement of these online platforms in order to help the library community to select their choice of software based on their collection, infrastructure and budget. Authors have the experience of using Knimbus, All these platforms are categorized in to free and paid services. Those who do not have more budgets can go for Indeed and Shibboleth to cater their user needs remotely. Those who can afford can go for other software's like Knimbus,. There are plenty of features available with the above mentioned remote platforms and library community are advised to take a demo from the vendors before they choose their platform according to their collection as well as budget.

List of remote access A-Z feature list

Features Indicates SL No.	Feature List (A-Z)
1	Bookmarks for quick access to frequently visited sites
2	Browser integration in mobile app allowing user to follow their current workflow
3	Content discovery using library search engines
4	Content sharing
5	Favorite e-resources for quick reference
6	In-App Help and support
7	Listen and Highlight articles
8	Notification and SDI
9	Offline Reading
10	organise Articles Using Collections and tags
11	Save and Sync articles
12	Seamless access to subscribed and free content across mobile and web platforms
13	Single sign on and one time login
14	Voice enabled search
15	Institute subscribed content access indicator via visible icon on search results to allow user to access e-content in single click
16	Admin level features
17	Admin Dashboard
18	Usage analytics
19	Database level access control

20	User level access control	
21	Pop-Up Notification	
22	Sub Admin Rights	
23	Admin Can Push Bookmarks	
24	Concurrent Login Control	
25	Usage Reports	
26	Monitoring	
27	OPAC Linking	

Table: Comparison

Feature List (A-Z) * Indicates	Science Direct	Emerald Insight	IEEE	Knimbus	Taylor& Francis	ACM Digital Library
1	Yes	Partial	Not Available	Not Available	-	Not Available
2	No	Not Available	Not Available	Not Available	Yes	Yes
3	Yes	Yes	Yes	Yes	Yes	Yes
4	Yes	Yes	Not	Available	Yes	yes
5	Yes	Yes	Not	Available	Can save the	content
6	Yes	Yes	Not	Available	Not	Available
7	Yes	No	Not Available	Not Available	Not Available	Yes
8	Yes	No	Not Available	Alerts Available	Alerts & feeds	Not available
9	Not Available	Not Available	Not Available	Available	Available	Not Available
10	Yes	Not Available	Not Available	Not Available		Yes
11	Yes	Not Available	Not Available	Not Available		Not Available
12	Yes	Yes	Not Available	Not Available	Not Available	Not Available
13	Yes	No	Limited SSO integration support	Using own SSO	Yes	Yes

14	Yes	Not Available	Not Available	Not Available	No	Not Available
15	Yes	Not Available	Not Available	Not Available	Yes	Yes
16	Yes	Yes	Yes	Yes	Yes	Yes
17	No	Yes	Yes	Yes	Yes	Yes
18	No	Yes	Yes	Yes	Yes	Yes
19	Yes	Yes	Yes	Yes	Yes	Yes
20	Yes	No	No	Yes	Yes	Yes
21	Yes	Yes	Yes	Yes	Yes	Yes
22	Yes	No	No	Yes	Yes	Yes
23	Yes	Yes	No	Yes	Yes	No
24	Yes	Yes	Yes	Yes with graphs and numbers	Yes	Not Available
25	Yes	No	Yes	Can view the activities of any user	Yes	Yes
26	Yes			Yes	Yes	Yes

CONCLUSION

The ability to remotely access a computer or server over a network connection is known as remote access. Users have the ability to operate remotely from a location other than the office or institution while still having access to a network or computer. The same principle is applicable to Library data which is stored in a server or cloud can be accessed through remote login. An user can access their library content through desktop, smart phone or i pad. The library users no longer visit the libraries to find articles in physically managed journals, magazines, newspapers and books. Users can search their library's OPAC – Online Public Access Catalogue to find the availability of print and e-books without visiting their library. The technology enables authenticated users to read the content through a user ID and password. Once the users are authenticated they can access their library collections with browsing capabilities.

Libraries now face both opportunities and challenges as a result of the COVID situation. The challenges came from content access to library operations. It was necessary for academic libraries to restructure and reorganize their services to adapt to the new situation. This pandemic has generated a seismic change in the way people live and work and of course, it also had an impact on how libraries operate. In order to face the tough times in Covid environment the central and state Governments are requested to increase their budgets for the education sector in India. As previously said, the education industry requires significant financial investments to provide the infrastructure and services needed in the current environment. The investment should be towards providing hardware and software, Internet facilities to access the centralized free and subscribed resources without any interruptions.

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