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A Bridge Between Users and Library Professionals Amid and Post COVID-19 Pandemic: Use of Virtual Reference Services in the Top Five University Libraries of World

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Abstract

The paper discusses the importance of ICT in rendering Virtual Reference Services (VRS) in libraries during and post Covid-19. The application of ICT is not a new phenomenon in libraries. Still, the disclosure of physical buildings is a nudge for adapting technology to make the libraries relevant during and after the pandemic. The study highlights the various ways to render virtual reference services delivery that libraries can provide to their users by harnessing Information and Communication technology. The paper discusses the use of virtual reference services such as email, webform, VoIP, instant messaging, videoconferencing and online chat in libraries to serve their users swiftly in the tough time of Covid-19. The paper investigated the various modes of providing virtual reference services in the top five universities as per the QS World University Rankings 2021, which are Massachusetts Institute of Technology (MIT), Stanford University, Harvard University, California Institute of Technology (Caltech) and the University of Oxford. The content analysis of websites was used to collect data. These libraries were selected deliberately as there are rendering different modes of Virtual reference services. VRS act as a bridge to facilitate users during a pandemic and reshape and enhance the library services after the pandemic. The article is an effort to create awareness among libraries to utilise the virtual reference service and support their users virtually.

Keywords: Virtual Reference Service, Reference Service, Digital Reference Service, Libraries services in Covid-19

1. Introduction

The world has experienced an unprecedented Covid-19 pandemic which led to complete lockdown and shutdown of physical premises. The pandemic has emerged as an opportunity to break the stigma that libraries can only work in physical space. ICT has given the opportunity to provide reference service outside the wall of the library using virtual means. By leveraging technology effectively, libraries can create resilience from the pandemic and continue library services. The digital reference service, which prevents physical communication, acts as a great tool to facilitate patrons during the pandemic.

The digital reference service is one of the fastest and innovative library services (Oluwabiyi, 2017). In simple terms, a virtual reference service employs a computer or technology to communicate users with the reference staff, often in real-time without the physical presence of the patrons (Khobragade & Lihitkar, 2015). Reference and User Services Association (2017) defines Virtual reference is a reference service initiated electronically for which patrons

employ technology to communicate with public services staff without being physically present. VRS is the real-time assistance service to users by libraries using web-based software (Khobragade & Lihitkar, 2015). Virtual reference can be possible through digital reference, real-time reference, live reference and e-reference, which can be communicated by the channels of chat, email, Video-conferencing and instant messaging (Kolthuri, 2014). It acts as a liaison that connects the users with the information professionals to get direct assistance at any location through virtual means. It is an effective means to cater the needs of the users without the physical interaction in a swift manner.

The application of Virtual reference services is proliferating. They facilitate real-time interaction between users and staff using e-mail, voice over internet protocol, instant messaging, and social media tools and emerge as an essential information service delivery tool during the pandemic (Abubakar, 2021). Academic libraries should understand the importance of these VRS and leverage them during and after pandemic for the effective delivery of service and cater to their users' needs in the age of the digital world. The study will help libraries to understand the various means of providing library reference services during and after Covid in the new age of digital and tech-savvy users by analysing the VRS offered in the top five university Libraries of the World.

1.1 Objectives

i. To discuss the various modes of providing virtual references in the academic libraries.
ii. To explore the use of various virtual reference tools in the top five universities of the world under study.

2. Literature Review

The libraries which are continuously evolving by going online should also provide effective virtual reference services by making more user-oriented technology to expedite the process of access of library resources and information where the future of library services lies in the use of both physical and virtual services (Garvey, 2021). Communication channels used frequently in virtual reference include chat, videoconferencing, Voice-over-IP, co-browsing, e-mail, instant messaging, and text which has no restrictions of location and space and can be said as "Contact between the right user and right information at the right time and in a right personal way through electronic media". (Jan, 2018).

Several studies were conducted before and after the pandemic on the use and implementation of various virtual reference services. Khobragade & Lihitkar (2015) investigated the use of various types of virtual reference services in the IIM's and IISc/ IISER libraries of India. The email was the most used reference service in these libraries, and few were employed face-to-face and web-from service. Singh (2012) analysed the existing use of digital reference in four university libraries of Northern India and the pros and cons of these services in the libraries under study. The findings revealed that out of four universities, Delhi university System was delivering maximum digital services, which were Ask a librarian, Question Point, Online chat, FAQ, Web-based user education and search engine services to the users and suggested libraries to follow IFLA and ALA to provide better digital reference services. This study conducted the

content analysis of the website of all the U.S. academic libraries in the Association of Research Libraries (ARL) to find the technology, terminology, visibility, accessibility, and design elements of virtual reference programs currently provided by academic libraries to their users. The VRS were popular in ARL libraries, and their elements varied from institution to institution. (Carlson, 2012).

The studies were also conducted related to digital or virtual references services in the wake of the Covid-19 pandemic. V. & M. (2021) discussed the role of library professionals in the Covid -19 pandemic where libraries can serve to its users using virtual reference services. The study demonstrated the use of Media Wiki software to develop VRS, which is an effective tool to serve its users virtually. Abubakar (2021) by conducting an extensive literature review on the VRS, the researchers discussed the four VRS communication technologies that can be used in pandemic by libraries were e-mail, voice over internet protocol (VoIP), instant messaging and social media technologies, and discussed the significant inherent challenges for implementing these services in the academic libraries of developing countries.

3. Scope of the Study

The scope of this study is the use of Virtual reference services in the top five university libraries of world that were decided based on QS World University Ranking. These libraries were chosen purposely also as they are rendering different modes of virtual reference services. The selected five top university libraries are mentioned below-
- Massachusetts Institute of Technology (MIT)
- Stanford University
- Harvard University
- California Institute of Technology (Caltech)
- University of Oxford

4. Methodology

The methodology is the procedure and techniques to collect data for the research. The websites of five university libraries under study were analysed to identify the different kinds of virtual reference services rendered by these libraries. The findings of the study depend only upon the information available on their websites. The data was collected from the website on 23 October and 24 October 2021.

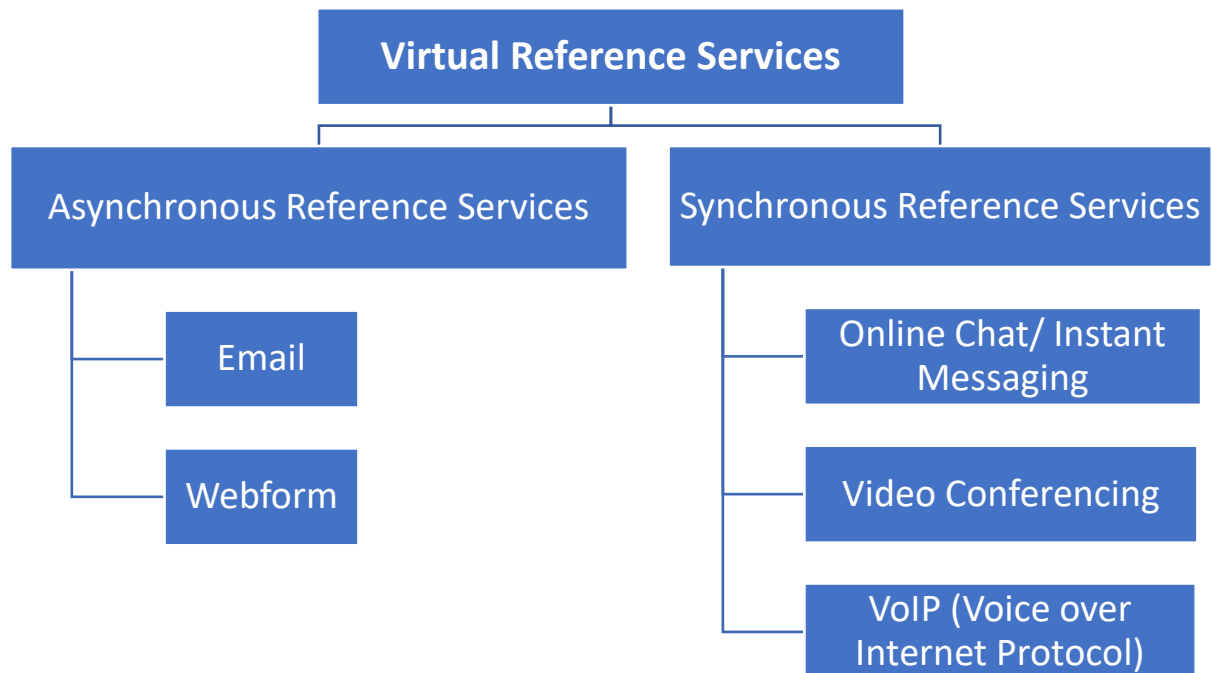5. Modes of Virtual Reference Services

Figure 1: Modes of Virtual Reference Services

5.1 Asynchronous Reference Service- In this service, users submit the questions/queries and get the response later from the library. There is no real-time interaction. Some of the asynchronous reference services are-

- Email- It is a communication medium to transfer a message from one device to another via the internet. It is the most widely used way as it does not require additional software requirements and is available freely. (Jan, 2018). It is the most cost-effective way that can be used by developing countries that are struggling with budget constraints to provide VRS. (Abubakar, 2021) whereas email does not provide an instantaneous response, it sometimes takes several days to get clarification and put an extra burden on library staff to check the email regularly. (Oluwabiyi, 2017)

- Webform: It is similar to email-based service; instead of mailing, web forms are designed with specific fields that are more structured and provide better clarity to users' questions. This helps the library staff to locate exactly what the patron is asking for. The Web Form can be accessed through library homepage or reference page. Generally required information in the webform are name, email, type of question, affiliation.

5.2. Synchronous Reference Service- Users get the response of their query in a real-time manner. Some of the synchronous reference services are-

- Online Chat/ Instant Messaging - It is a real-time reference service that uses text to contact the librarian. The chat service can be available on the website embedded online chat service or through instant messaging where both users and librarians need to install IM software on their laptops. The most popular online chatting is instant messaging. The speed of the chat service is fast, and users get responses swiftly. It is beneficial also if users need an immediate response to their questions. The advantages are direct one-to-one chat with patrons, getting better clarity of users' questions and problems. In contrast, the drawbacks are time-consuming over voice communication, which would not bring immediate response if library staffs are busy. (Oluwabiyi, 2017).

- Video Conferencing – It enables librarians and users to interact with each other by using both text and speech for reference service. (Singh, 2012). Along with text, users can communicate with reference librarian face-to face. It gives better experience to users and able to explain their queries and questions more effectively. The popular Video-conferencing tools are Google meet, zoom and cisco WebEx.

- VoIP (Voice over Internet Protocol)- It allows users to make a call using an internet connection. It is cost-effective and can be used from anywhere using the network. The infrastructure requirements are hardware, speakers and microphones from both sides in their PCs (Singh, 2012). The benefits are real-time interaction and getting an immediate response. VoIP is beneficial to users who prefer calling over text.

6. Data Analysis and Interpretation

Table 1: List of Universities and the Terminology used for their Reference Service

University	Terminology
Massachusetts Institute of Technology (MIT)	Ask Us
Stanford University	Ask Us
Harvard University	Ask
California Institute of Technology (Caltech)	Reference Service
University of Oxford	Ask a Librarian

Table 1 mentions the list of universities selected for the study and the terminology used by their libraries for the Reference services on their websites. The Massachusetts Institute of Technology (MIT) and Stanford University use the term 'Ask Us'. Harvard University uses the term 'Ask'. The California Institute of Technology (Caltech) mentions it 'Reference Service', and the University of Oxford uses 'Ask a Librarian' and all of them linked to their library's website homepage to easily access them. It shows the variation in the use of terminology for reference services by the libraries.

6.1 Analysis of Virtual Reference Services of Top Five University Libraries of World

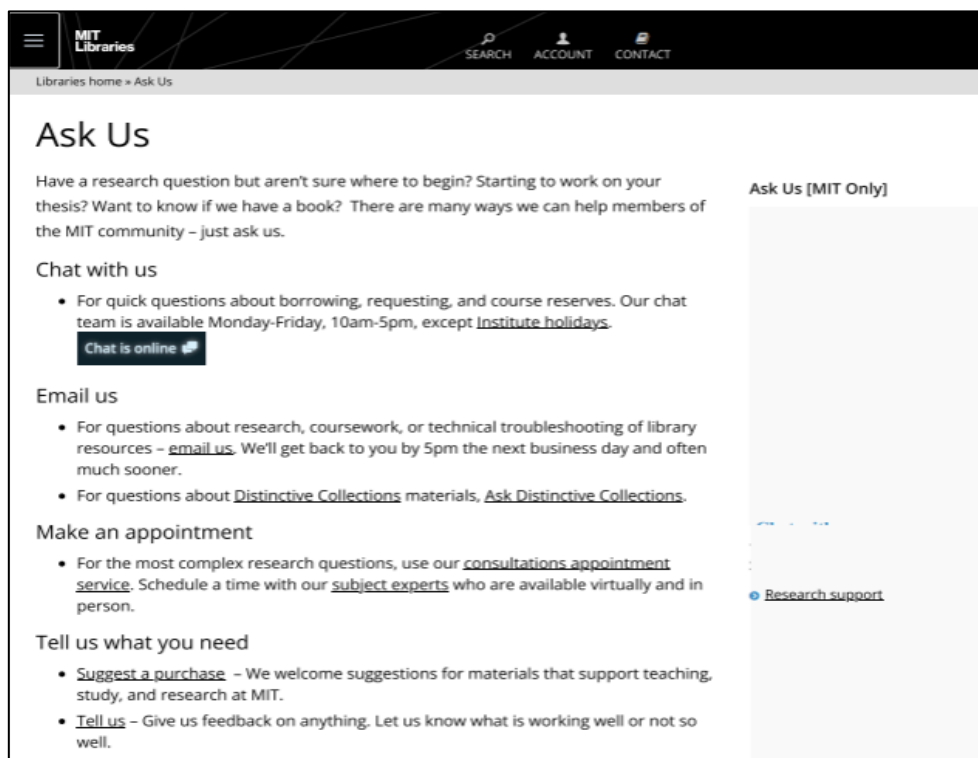### 6.1.1 Massachusetts Institute of Technology (MIT)

Figure 2: Reference Service page of Massachusetts Institute of Technology (MIT) Library

Figure 2 shows that the MIT library uses the title 'Ask us' for Reference service. The library uses three ways to render VRS. The Online Chat is available for the quick response of information related to borrowing, requesting, and course reserves. It is available in the working hours of 10 am.- 5 pm from Monday to Friday. The username is required to initiate a chat. Users can email for questions about research, coursework, or technical troubleshooting of library resources and require login to access it also. To get more assistance and complex research questions, the users can book an appointment service with the subject experts available virtually through the library website. Users can choose under the subject category with a definite date and time to book a subject expert. It shows that the library has already mentioned which VRS tool is suitable for users according to their questions and requirements. It saves the time of both users and library professionals and serves their patrons more effectively. The additional services under 'ask us' service are 'suggest a purchase' for the library collection and 'tell us' to provide feedback, both require login to access them.
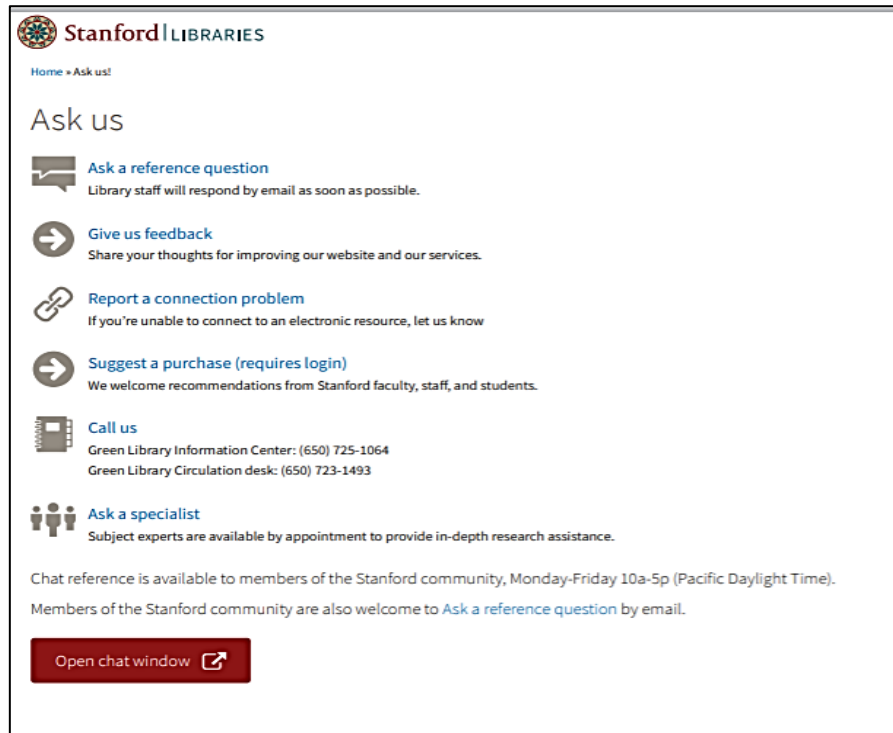
6.1.2 Stanford University

Figure 3: Reference Service page of Stanford University Library

Figure 3 reveals that the Stanford University library provides VRS under the term 'Ask us.' The library gives access to an online chat service through users' login. The timing of the chat service is available to the members' community from Monday to Friday, 10 am- 5 pm. Webform available on the library's website contains four fields- name, email, question and affiliation to ask a question. The other types of online web forms are also designed with the different fields for the specific purposes: 'feedback form' which holds subject, message, name and email, 'report a connection problem' which contains the name of e-resource, problem URL, description of the problem, name and email and 'suggestion of a purchase' form for the library collection.

6.1.3 Harvard University
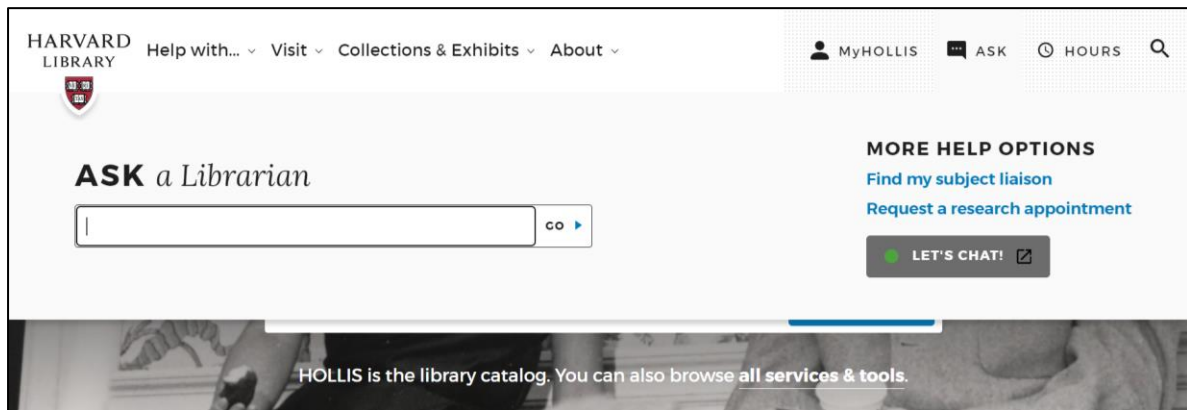
Figure 4: Reference Service page of Harvard University Library

Figure 4 shows that Harvard library uses the term 'Ask' for reference services and renders three types of VRS. Harvard library provides an online chat service for brief inquiries from the Harvard community. The online form is available, which contains fields – question, explanation, attachment, name, email and affiliation and users get a response within 24 hours. To discuss with the research librarian for your project or research and find specific subject sources, users can book an appointment with the online form. The name, email address, a preference of particular staff member or department, information regarding your research or project, the timing of the appointment, the location preference and other academic details of users should be mentioned *to* book an appointment. The FAQs are also provided under the 'Ask' service, mentioning all the users' most used questions. It is an effective way to save the time of both users and library staff.

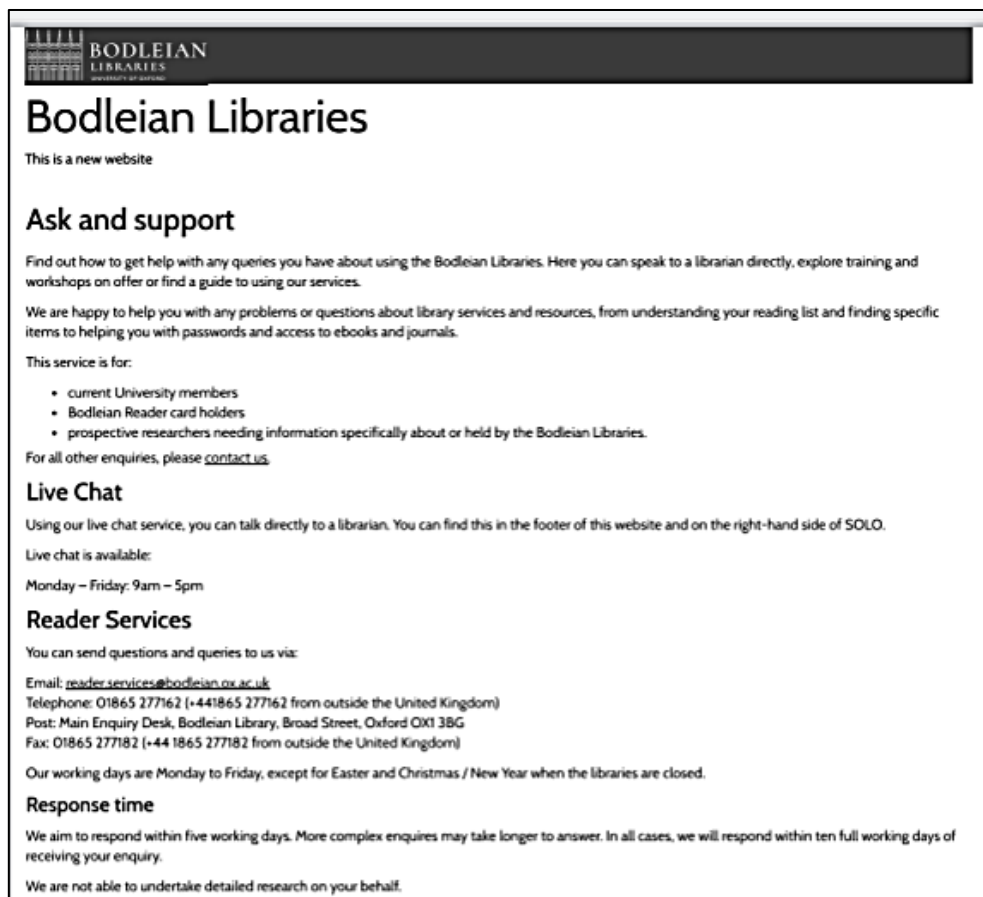### 6.1.4 California Institute of Technology (Caltech)
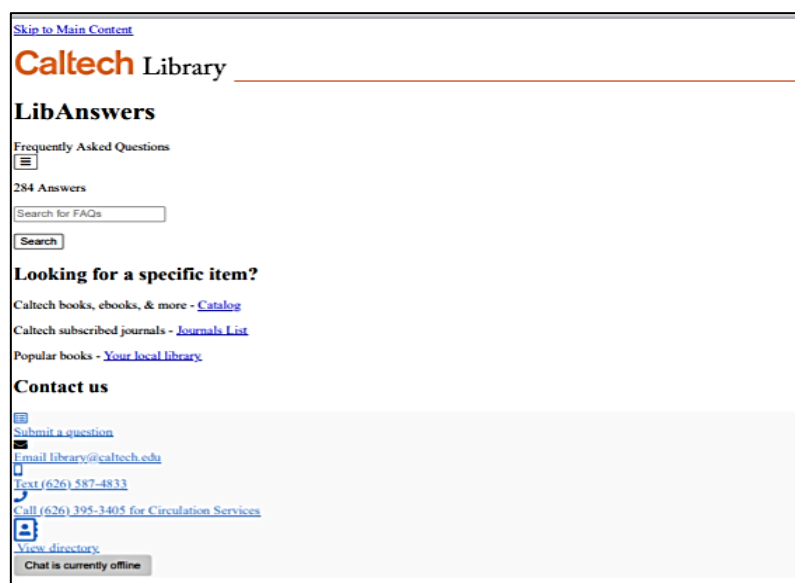
Figure 5: Reference Service page of California Institute of Technology (Caltech) Library

Figure 5 illustrates the reference service page of the California Institute of Technology (Caltech) Library. The library provides webform service under submit a question title and gives the provision of email and calling for circulation service. The form contains six fields- name, email, question and affiliation, question topic and the provision of attachments. Online Chat service is currently offline. The library also mentions all the frequently asked questions under the reference service.

6.1.5 University of Oxford (Bodleian libraries)

Figure 6: Reference Service page of University of Oxford Library (Bodleian libraries)

Figure 6 shows the reference page of Bodleian libraries, the primary research library of Oxford University. It uses 'Ask a Librarian' term under the main menu of ask and support. The library provides chat, telephone and email services to help users with any problems or questions about library services and resources. The Online Chat is available in the working hours from 9 am.- 7 pm from Monday to Friday and from 10 am- 4 pm Saturday- Sunday.

7. Findings & Discussion

The Virtual reference services, which include email, webform, VoIP, instant messaging, videoconferencing and online chat offered by the top five universities libraries of the world are discussed. The study reveals by analysing the website, that libraries use variations in terminology for their reference service. The term used are Ask, Ask us, Ask a Librarian, Reference Service or contact us. The library should have consistency in the terms, use user-friendly terms and avoid library jargon for adequate service access. The uses of different terminology make the users difficult to understand the service, which makes it unuse. All the studied libraries are added their virtual reference widgets from the library homepage, which is also crucial for the visibility of the services.

The Online chat method is available in all the five libraries under study but currently offline in the California Institute of Technology (Caltech) university. The online chat is helpful to facilitate one to one interaction with the library staff in real-time and is the fastest method to get a response from the library. The online chat service is available only during working hours mentioned in the library website of MIT University, Harvard University and University of Oxford (Bodleian libraries). The timing of the service should be available to better cater their users. The library can also provide the provision of 24/7 service through library consortia or other means for the quick response of users' queries. The username or login is required to initiate a chat in these libraries which prevents unauthorised users from accessing the services.

The California Institute of Technology (Caltech) and Oxford Library (Bodleian libraries) render email service. The email is cost-effective but often unpreferred because it is not real-time and sometimes delayed in response and less structured. On the other hand, web forms have predefined questions and specific fields embedded with the email where users send their queries through form and get a response back on their email. The patrons are required to give some identifying information before asking a virtual question. The general information is asked such as name, question, email, affiliation, and attachment. The Stanford, Harvard and California Institute of Technology (Caltech) Library use webform for VRS available on their library's website reference page. The webform over email is more structured and gets the relevant information necessary to answer users' queries. The other additional services provided by universities libraries through web forms are suggest a purchase, feedback form, report a connection problem. The users can use those forms for a specific purpose; if the users want to suggest any library collection or resource, they can use suggest a purchase form which is helpful for users as they can put up their information or resource need to the library. Users can use feedback form for share their complaints, problems, suggestions or praises, which is an excellent method for improving libraries and reporting a connection problem form for the complaint of internet connection.

VoIP and Video-conferencing enable the library to initiate a talk with users anywhere using an internet connection. It is helpful to discuss in-depth and complex problems without the hindrance of physical boundaries. The difference between VoIP and video-conferencing is that VoIP only provides voice communication over video-conferencing, which gives the provision of face- to face communication or chat. The Massachusetts Institute of Technology (MIT) and Harvard University offered this service, where users can book an appointment with the specific subject experts on a definite date and time through website embedded appointment widget where users can communicate through video or audio mode or both as the medium of

communication. Apps such as google meet, zoom, Cisco WebEx are great tools for video call, audio call, or chat as per the convenience of users and library staff using the internet and can be open either in the browser or installing an app. Libraries can leverage these tools to implement VRS and reach out to their users effectively.

The Frequently Asked Questions (FAQs) are available in the Harvard University and California Institute of Technology (Caltech) under the reference service section. It is helpful where the library already mentioned the most asked questions, which saves the time of both the users and library staff.

8. Limitations

The study was limited to the top five university libraries of the world. A second limitation is in the nature of the study. Because this was a content analysis study conducted entirely by analysing the library websites, more information could be gathered if survey method was used to collect the data.

9. Conclusion

Virtual Reference Services are growing in popularity as a service in academic libraries. The study aims to create awareness by discussing the different types of VRS and their implementation in the top five universities libraries. The research can provide valuable implications and insights for most academic libraries to implement virtual reference services better. VRS acts as an essential bridge between users and library professionals during the lockdown, where users can reach out to the libraries to solve their queries and requirements. The difficult situation of the covid-19 pandemic should be converted into an opportunity by libraries to provide more effective services and reach out to their users by harnessing the technology. It is a reminder for libraries to work in a hybrid mode where both physical and virtual services are required to make libraries relevant in the covid and post-covid era.

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