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## Virtual Reference Service: An Imperative for the Jamaica Social and Economic Information Network

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### Abstract:

*The Social and Economic Information Network (SECIN) is one of the official library collaborations amongst Jamaica Government Ministries/Departments/Agencies for the creation of communities of practice. SECIN comprises of over seventy Information Units which makes it the network with the largest number of Government libraries in Jamaica. Jamaica has the technological infrastructure needed to support. According to Digicel Jamaica, in 2014 the number of its subscribers who use smartphones surpassed one million while in 2013 LIME report over 780,000 subscribers with smartphones. This increase and dependence for access to information at their fingertips have placed pressure on the information units within the Jamaica Library and Information Network (JAMLIN) as well as the Special library section of the Library and Information Association of Jamaica (LIAJA) to introduce the Virtual Reference Service consortium.*

*The article presents a case study of the adoption of Jamaica's virtual reference services (VRS) consortium using Rogers's diffusion of innovation theory. In 2011, Nicholas and Sterling concluded that Jamaica was ready for a national VRS consortium. This research will appraise the readiness of Jamaica for a national VRS consortium between the Special Libraries Section of the Library and Information Association of Jamaica (LIAJA) and the Social and Economic Information Network (SECIN). The findings of this research will help the organizations to successfully introduce a new technology that can approach 100% adoption. In the future the results will be used as a consultation resource of best practices whenever the library fraternity in Jamaica proposes to introduce any new technological services.*

**Keywords:** SECIN, virtual reference service, special libraries, LIAJA

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### Introduction

The Social and Economic Information Network (SECIN) is one of the official library collaborations amongst Jamaica Government Ministries/Departments/Agencies for the creation of communities of practice. SECIN comprises of over seventy Information Units which makes it the network with the largest number of Government libraries in Jamaica.

Other Government libraries form part of the Sector Networks which are of the Jamaica Library and Information Network (JAMLIN) formerly the National Information System. JAMLIN comprises of libraries, archives, information and documentation units, which collect documents and publications in all formats (print, audiovisual and electronic) and make these available to satisfy the information needs of the nation (National Library of Jamaica [NLJ], 1). According to the National Library of Jamaica, the sub-systems that form JAMLIN collaborate with each other to ensure speedy access to information; provide for sharing; and to ensure that these institutions are fully integrated into the country's National Information Infrastructure.

Chow and Croxton states that today's 21<sup>st</sup> century users expect to get help to identify the most convenient source to meet their information needs. Numminen and Vakkari added that although users may be capable of using a search engine to answer simple fact-based queries, users may still have difficulty sorting through the results of a research-based query, and this is where virtual reference steps in. Virtual reference is initiated electronically, often in real-time, where patrons employ computers or other Internet technology to communicate with reference staff, without being physically present (RUSA, 1). This type of services requires the basic infrastructure such as an up to date computer with speakers, laptops and smartphones, internet connection as well as an electronic reference services librarian. The advent of information and communication technologies and the internet have triggered many new developments that have impacted the delivery of reference services. Library users no longer want to walk into a physical structure of a library for reference assistance; however, they are demanding timely access to information to be made available via their mobile devices. The increase demands prompted the introduction of this Jamaican virtual reference services consortium.

Jamaica has the technological infrastructure needed to support. According to Digicel Jamaica, in 2014 the number of its subscribers who use smartphones surpassed one million while in 2013 LIME report over 780,000 subscribers with smartphones. This increase and dependence for access to information at their fingertips have placed pressure on the information units within the Jamaica Library and Information Network (JAMLIN) as well as the Special library section of the Library and Information Association of Jamaica (LIAJA) to introduce the Virtual Reference Service consortium. In addition to the pressure being experienced, librarians are also aware of the 21<sup>st</sup> century users of mobile devices and tablets. This millennial generation are digital natives and expect information delivery in real time (Matthews, 1).

### **Rationale and significance of the problem**

This study explores the adoption of Jamaica's virtual reference services (VRS) consortium using Rogers's diffusion of innovation theory. The diffusion of innovation theory seeks to explain how, why and at what rate new ideas and technology spread through cultures. Diffusion is the process by which an innovation is communicated using certain channels over time among members of a social system (Licker, 59). A study done in 2011 by Nicholas and Sterling concluded that Jamaica was ready for a national VRS consortium. According to Nicholas and Sterling this study appraised the readiness of Jamaica for a national VRS consortium between the Library and Information Association of Jamaica (LIAJA) and the Social and Economic Information Network (SECIN). The findings of this research may help the organizations to successfully introduce a new technology that can approach 100% adoption. It is intended that the results of this study will be used as a consultation resource of best practices whenever the library fraternity in Developing countries proposes to introduce any new nationwide library technological services.

In addition, the research explored the adoption of Jamaica's virtual reference services (VRS) consortium and identified the factors that influenced the adopters or late adopters of the VRS; their reasons for and any associated challenges they have with using or not using the VRS.

The purpose of this research is to evaluate the adoption of Jamaica's virtual reference services consortium. This study explores if the librarians using the service have been encountering challenges which will explain the slow adoption to the service.

The absence of local literature on this topic is a compelling reason for research on the Jamaica Virtual Reference Service Consortium. The findings and recommendations from this study are expected to inform the feasibility of the implementation and continuation of a national consortium between the Library and Information Association of Jamaica (LIAJA) and the Social and Economic Information Network (SECIN).

The research results should also be of interest to the Jamaica Library and Information Network (JAMLIN). Specifically, since it was through the libraries that the service was offered the challenges highlighted should help JAMLIN to identify the risk factors and put policies in place to mitigate against any future reoccurrences. Since this consortium was newly implemented in 2012, this study is the first to evaluate the initiative. It is hoped that, aside from providing feedback and recommendations, insights will be gained on issues concerning the adoption of innovations in libraries. This research should therefore facilitate decision making from an informed basis for librarians. The study can also be used as a base for further research on the topic, especially in areas not covered in this research.

In light of my purpose, the research objectives and questions are as follows:

#### **Research Objectives**

1. to identify the factors that influence librarians to adopt Jamaica's Virtual Reference Services Consortium
2. to determine the levels of adoption by librarians of the Jamaica Virtual Reference Service
3. to identify and explore the challenges to adopting virtual reference services consortium

#### **Research Questions**

In light of these objectives, the questions that guided the research include:

1. How have identified factors influenced librarians to adopt Jamaica's Virtual Reference Services Consortium?
2. Why do librarians adopt Jamaica's Virtual Reference Services Consortium?
3. What are the levels of adoptions by librarians of the Jamaica Virtual Reference Services Consortium?
4. What are the challenges to adopting virtual reference services consortium?
5. How have challenges associated with virtual reference services consortium influenced adoption?

#### **Methodology**

The research was conducted over a two weeks period by a recruited researcher from the Planning Institute of Jamaica. The primary approach to the study was the use of **qualitative exploratory case study research** approach. This approach permits, an in-depth exploration or understanding the case and process of LIAJA and SECIN adopting the VRS consortium innovation. An exploratory design is used as Babbie defines *exploration* as the research design used to familiarise a researcher with a topic (87). Accordingly, the exploratory research design was selected as this study explores the adoption of the virtual reference service consortium as a new innovation that is only four to five years of age.

In addition, this study uses the case study design to conduct a detailed examination of all or most facets/factors of the setting, the group, the programme, the individuals and institutions to yield a full or thorough knowledge of why the technology and innovation is being used or not. Leedy defines a *case study* as the study of a particular individual, program, or event for a period (135). Information regarding the Virtual Reference Service Consortium (VRSC) innovation and adoption was garnered using focus group interviews of the librarians that are registered users of the LIAJA and SECIN virtual reference services consortium.

The focus group is a group interview designed to explore in depth the feelings and beliefs people hold and to learn how these attitudes shape overt behavior (Conway and Powell, 173). This method will be used because it will be able to capture an explanation as to why they use or do not use the virtual reference service. As recommended by Babbie, a total of 10 to 12 persons should be scheduled to be interviewed (302). Participants of two focus groups will be purposely selected to have a group of early adopters and a separate group of late adopters. Prior to the focus group interview, a letter requesting participation in the research will be sent to the participants.

At the start of each focus group, instructions were given and participants completed the information consent form and a brief demographic questionnaire. Then a maximum of 12 questions were asked of the group. The questions were focused on the research objectives and the purpose of the research.

### **Sampling**

While the total population comprises of eighty-nine (89) of the registered librarians of the virtual reference service, QuestionPoint software, this study selected a purposive sample of twenty librarians. The selected sample size of twenty corresponds to that of a previous OCLC research of VRS librarians, which comprised of 21 librarians for two focus group sessions (Raddford, 3). The sample was further purposively selected as according to Babbie, a purposive sample or judgmental selection was based on knowledge of the population (183). In the case of this study, members of the group of 20 were selected from the observation checklist of the librarians registered to use the virtual reference service for over a two (2) year period. This sample group of twenty purposively include two sub-groupings, namely the early *adopters* and the late adopters. The *adopters* are defined as the people who want to be the first to try the innovation (Boston University, 4). On the other hand, according to Cambridge dictionary late adopters are someone who starts using a new product, especially a new piece of technology, later than many other people. As such, this study will include in the sample the first adopter, as well as early and late adopters (otherwise known as laggards) in order to investigate both the adoption and resistance to the use of the system. The *adopters* to the *laggards* will be identified as follows a) innovator(s) – the first person to use the system; b) early user(s) of the system (that may not have used the system for over a year); c) user(s) that took a long time to use/adopt the system; d) user(s) that use the system less than a year; e) user(s) that only logged on the system once; f) non- user(s) that vary in age ( a young person and an older person); g) non-user(s) of varied managerial level (manager, supervisor, line worker).

### **Limitation**

The study was conducted on a small sample of the librarian population of the Social and Economic Information Network (SECIN) and the Library and Information Association of Jamaica (LIAJA). This sample consists of only the early and late adopters and those who

resist the VRS-service. Therefore, all librarians in Jamaica as this group is special category of librarians that differ from public and academic librarians.

### **Literature Review**

Blackburn emphasised that libraries have increasingly seen technology become a quick candidate as a solution to nearly every problem existing in the field. It is difficult to change libraries as quickly as other technology-based information providers because library systems and the services constructed around them have been in place for centuries. However, Blackburn revealed that consequences for adopting technology can also be negative because of the risks involved with the product, such as performance or financial risk. Performance risk is the possibility the product will malfunction or not deliver the desired benefit.

An innovation, no matter how well designed, would be perceived as useless if it is not adopted. One of the important duties of those responsible for an innovation is to maximize its adoption rate (Chigona and Licker, 57). To this end, Rogers points out that change agents should consider the consequences of the innovation on the community. These consequences can be described along the following three dimensions: 1) desirable versus undesirable, 2) direct versus indirect, and 3) anticipated versus unanticipated.

### **Library Consortium**

Webster's dictionary defines a consortium as an agreement, combination, or group formed to undertake an enterprise beyond the resources of any one member. In addition, a group of libraries will have a larger total collection than any single library. According to Ted Koppel, Product Manager of Verso libraries for many years now have organized themselves into consortia as a means of broadening the services they provide to their public which would otherwise be unaffordable to any individual library. Libraries join consortia to gain three primary advantages: a) Better Service – to their customers and the general public. b) Increase Buying Power – By combining orders for library services, materials, equipment, the consortium can usually achieve better pricing – due to volume than what any individual library could have achieved alone. c) Lower overhead costs – Particularly for processing and technical services functions (Koppel, 1).

### **Diffusion of Innovations Five Categories of Adopters**

The diffusion of innovation theory is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures. Diffusion is the process by which an innovation is communicated using certain channels over time among members of a social system. Licker defines diffusion of innovation as the process and factors that influence the adoption of innovations (59). The fuzziness of the boundaries of the innovation can impact its adoption. However, adoption is an individual process detailing the series of stages one undergoes from first hearing about a product to finally adopting it.

There are five main categories of adopters. These are: *innovators*, *early adopters*, *early majority*, *late majority* and *laggards*.

*Innovators* are the first of the innovation. They are risks takers and work closely with technology (Rogers, 282). The second fastest category innovation are the *early adopters*. These are the opinionated leaders; younger in age, with higher social status, more financial lucidity, advanced education, and are more socially forward than late adopters. The third category are called the *early majority*. They take a significantly longer time than the innovators and early adopters to adopt to the innovation. (Rogers, 283). The fourth category

are the *late majority* are individuals who are skeptical and usually take a longer time to adopt with very little opinion of the innovation. The final category of innovation are the *laggards*. They are individuals who are the last to adopt an innovation. Laggards focused on “traditions”, likely to have lowest social status, lowest financial fluidity, be oldest of all other adopters, in contact with only family and close friends, with very little to no opinion leadership (Rogers, 284).

### **Factors that Influence the Use of Virtual Reference Service**

Already, librarians are drawn to using information and communication technology because this makes it possible for libraries to provide a variety of library and information services to clients. With ICT use, information and research services are enabled to be delivered on a timely basis. Virtual reference service is a service that allows librarians and patrons to communicate with each other in real time through the internet by email, chat or instant messaging (Bakker, 124).

### **Three main factors that influence use**

#### a) The Perceived benefits of Chat Service

This is a synchronous real time two way communication between reference librarian and a client seeking information. According to Bakker, since the year 2000 there's been an explosion of interest in the library world of adapting chat technology, which allows the user and librarian to send short written messages back and forth instantly. On the other hand Georgetown University results from a study concluded that chat reference was meeting the information needs of students, faculty and alumni. It was also complemented the reference services provided at the reference desk via email or telephone (Luini, 7).

Advantages of chat reference are: it feels somewhat like a live reference interaction you can talk to the patron directly; you can conduct a reference interview on the spot by exchanging a series of short messages to get a better idea of what's asked for; it eliminates problems of mishearing what is said; it is helpful for those with hearing or speaking impairments and the user can save text of chat session to refer to later (Bakker, 127).

#### b) The perceived benefits of Email Service

According to Bakker, users send the library an email with a reference query, supplying whatever information he or she feels is necessary (126). Each library with internet access have an assigned simple email address provided on the library or organization's web site. Information users are encouraged to submit a question, then click on the link which in turn launches the user's email software (such as outlook). Email reference transaction involves back and forth exchange of information; users would not get immediate answer (Negi, 6). Some advantages of email reference services are: who feel uneasy about asking questions in person and those who have poor oral communication skills as well as those who are not able to visit a library due to difficulty may use this service.

### **Challenges**

Failed diffusion does not mean that the technology was not adopted by one. Rather, failed diffusion often refers to diffusion that does not reach or approach 100% adoption due to its own weakness, competition from other innovations, or simply a lack of awareness.

## **Background**

### **Brief History of Library and Information Association of Jamaica (LIAJA)**

The initiative to establish a library association was led by Mr. A. S. Bryant, the first Director of the Jamaica Library Service, as such a body was regarded as an essential part of library organization in the island. The mission of the Association is “to provide leadership in the development, promotion and mobilization of personnel, institutions and resources in the information field in order to encourage learning and facilitate access to information.”

The aims and objectives of the Jamaica Library Association was founded to: unite all persons engaged in or interested in library work in Jamaica and provide opportunities for their meeting together to discuss matters relating to libraries; encourage co-operation between libraries and promote the active development and maintenance of libraries throughout Jamaica; promote a high standard of education and training of library staff and work towards improving the status of librarians and promote a wider knowledge of library work and to form an educated public opinion on libraries (LIAJA, 1).

The Association organizes (a) regular meetings, (b) professional meetings, (c) seminars and workshops and conferences. The Association hosts an Annual General Meeting in January of each year. Regular meetings are held at least three times a year.

### **Library and Information Association of Jamaica Consortium**

The genesis of the SECIN LIAJA VRS consortia began as the LIAJALINK project that sought to connect library users to knowledge by establishing a national virtual reference consortium. Collaboration was sought with the Planning Institute of Jamaica and the Library and Information Association of Jamaica for the implementation of the virtual reference consortium. The Planning Institute of Jamaica was asked to act as the focal point of the project due its strategic focus on national development and literacy. The pilot project of LIAJALINK began with the Special Libraries Section of the Library and Information Association of Jamaica and the members of the Social and Economic Information Network of the National Information System. Other libraries outside of these groups were free to join the project.

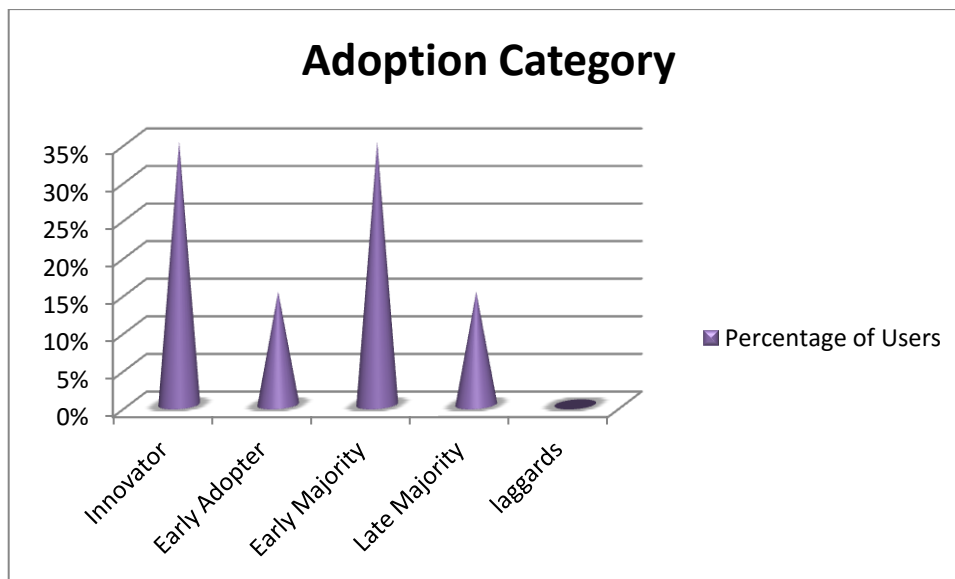
The virtual reference software chosen for the project was OCLC’s QuestionPoint. It allows librarians to answer questions anywhere, anytime through cooperative virtual reference. In addition, high-quality reference services online and around the clock. According to OCLC your users’ information needs don’t end at the library door or in the evening. QuestionPoint provides a complete virtual reference management system, integrating chat, a reference knowledge base, email and reports.

All librarians were trained by the SECIN and LIAJA group shortly after the purchase of Question Point; training covered quality and accuracy of responses to the clients. In addition to the local training received a representative from OCLC also conducted one of the training sessions to the librarians. Training covered how to effectively use Question Point and so immediately after training, each librarian was given the link called “Ask a Librarian: to be placed on their organization’s webpage. In addition to the link librarians were encouraged to continue using the QuestionPoint user name and password to log in to offer virtual reference service from their Information Units.

During the implementation stage of this consortium, it was hoped that virtual reference service would be easy to use by the librarians and therefore become a popular service in Jamaica. Moreover, it was hoped that it would have created a more integrated approach of service delivery through the libraries in Jamaica. The interface between the readers and the libraries would have a more user-friendly interface for answering questions and timely responses.

## Findings

Twenty participants were interviewed and asked to complete a mini questionnaire. Results from the questionnaire are as follows:



According to the adoption category table, there are no laggards identified in this research. 35% of the participants are innovators and early adopters while 15% are both the early adopters and late majority.

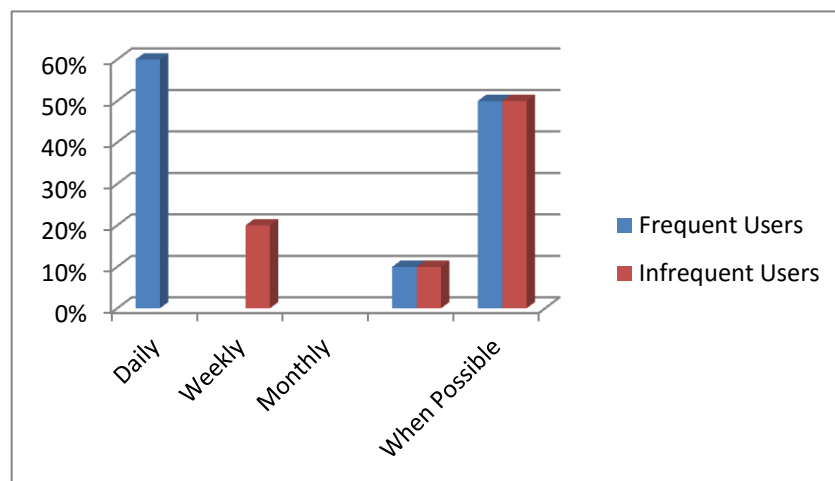


Figure 1 Frequency of Use

A significant 60% of the frequent users are dominant while 30% of the infrequent users use the virtual reference service weekly. Both frequent and infrequent users shows a 10% usage once since the implementation of the consortium. Fifty percent of frequent users and infrequent users use the service when possible.



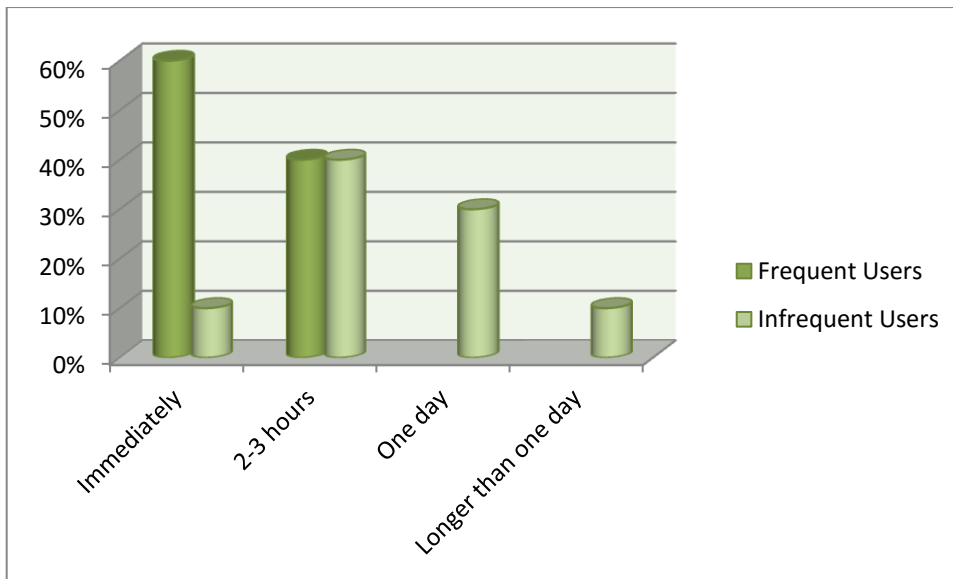


Figure 2 Response Time

Sixty percent of the frequent users responds immediately to a query while the infrequent users respond immediately 10% of the time. Both frequent and infrequent users take 2-3 hours to respond to a question. Only the infrequent users take one day or longer to respond to the question.

### Focus Group Discussion/Data Analysis

The results of my research suggest that librarians underestimated the volume of work and the levels of commitment required to sustain the virtual reference service. Further findings showed that this result had an impact on the timely delivery of service by all. There were five main themes articulated by all twenty respondents. The first theme is that of public education and marketing which will increase the visibility of the service. The second theme is the use of the technology in the context of how librarians reach distance users by giving access to information using smart/technological devices. The third theme is the limitation of the system. The fourth theme outlines the challenges identified by all the respondents.

### Public Education and Marketing

Virtual reference service functions as an excellent platform for marketing the services offered by libraries. It also serves as interface between librarians nationally and internationally. Majority of the participants emphasized that there was need for public education and customer sensitization of the system especially during outdoors events such as exhibitions. One participant's response:

*"Users do not know that the system exist or they do not understand how to use the system. The system needs to be adequately marketed among users as some users do not know the benefits of the virtual system."*

A few participants acknowledge the fact that there was need for comprehensive sensitization of the different features, how the VRS operates and what happens in the consortium. This will greatly enhance the efficiency of the responses via this medium and help to mitigate against the challenges identified below. There was a general consensus that the service can enhance the visibility of an organization, thus further enhancing the work of the librarian depending on how speedily responses are given to queries/requests.

## The Use of the Technology

Participants identified the use of the technology and its features is a major factor that influenced their participation in the consortium. Some of the features are:

*“The VRS provides a more efficient process that facilitating instant interaction between organizations, clients and satisfying users’ requests through its ‘chat’ feature. It provides instant conversations between librarians whereby workers can provide clients with immediate assistance in terms of problem solving, getting information, books as well as referring users to other libraries without having to break the conversation. Virtual reference provides two links – one for chat and one for email - clients’ requests/queries can be sent to both links. This feature enables the worker greater control in managing his/her workload as ‘chat’ can be very competing with the worker’s time. The organization receives an email.”*

Because the virtual reference service is offered through QuestionPoint it serves as a reference management tool for the library’s reference services. The librarians expressed that it is an excellent mechanism to reach users who do not have the time or who do not want to visit the library particularly among the younger users who prefer not to physically be at the libraries.

*One participant also used the VRS to communicate directly with local and international stakeholders, thus providing an improved system of communication.*

There were mixed responses among the participants regarding the preferred face-to-face interactions with the clients as it was felt that this provided opportunity for clarification and further probing to adequately satisfy the users. Others participants were comfortable with both communication methods, but noted that some clients prefer to interface with the staff than opt for live chatting over a device or sending a request via an email. There were some clients; especially the older clients who prefer the traditional way of gathering information and have no desire of accessing the VRS.

Most of the participants said the VRS is a very useful system. One hundred percent have indicated that the system is one that they would desire continued use of. The system can play a vital role in the way how clients and librarian communicate as well as the speed in delivery of information.

A few agencies were experiencing hardware problem which cannot facilitate the VRS software in that the equipment is not compatible. Many queries/requests still come via email as persons were not comfortable with the system or they do not know about the system. It provides an alternative medium through which queries/requests are received, apart from personal emails etc.

There was a general consensus of more than 50% of the participants that emails are preferred. While instant messaging plays a good role, emails allows one to give better and more informed responses. Chat is preferred for routine inquiries that do not necessarily involve researching information.

*“Email service makes it possible for the librarians to pace themselves”*

A standard procedure should be institutionalized to govern the chat mechanism of the VRS as not all information can be shared via this medium.

## **Limitations of the System**

The VRS has capacity issues as transmission of large documents/books via *QuestionPoint – virtual reference platform* is a major challenge. As a result, many requests are dealt with via personal emails which impact the accurate capturing of the usage of the system. Workers have to be careful not to use personal emails with the system as queries/requests will be routed directly to them instead of the main library which affect reporting mechanism as well as duplication of efforts if such a request is not handled in a timely manner and the client complaints or resend the request. In addition, most of the participants was not pleased that the VRS does not support access by Android devices which limit the system. One of the reasons cited was that some users prefer to interface with the library staff instead of via a device, particularly if they are unable to express their requests clearly.

*“ The system does not allow each organization to be identifiable by the user when logged into the system resulting in many challenges including clients being confused as to which organization has addressed their requests.”*

## **Challenges**

Turnaround time between is not adequate between receiving a request whether via email or chat and providing a response, particularly when there was the need to seek further clarification. One participant expressed that:

*“Users among the younger population expressed major challenges accessing the system due to lack of internet services, particularly in the rural areas, making it impossible to use the service.”*

Major challenges were expressed among persons who work and attend evening schools in receiving help via the VRS outside of regular office hours. This is particularly frustrating in cases of meeting assignments deadlines. Majority of participants, except academia, lack the capacity to offer this service outside of regular office hours. Explanation given:

*“if a worker from an organization signs in on the system, the entire platform is opened which prevents users from realizing that other organizations are on/not on the system.”*

All participants identified the expensive of the annual subscription as a major challenge.

## **Recommendations**

The following recommendations from this study may be applied to the Jamaican landscape.

1. If the system is to be fully and efficiently operationalized within organizations, serious consideration must be given to staffing requirement within these entities to ensure efficient manning and monitor of the system, particularly as more persons are accessing information online.
2. *QuestionPoint* should support access by Android devices which would make the system more efficient and accessible to users, particularly among the younger population.

3. There is need to add a drop down box feature that directs users to select preferred librarian/organizations.
4. SECIN should develop a policy document for 'the chat service'.
5. The librarians need training in the accurate usage of the system.
6. Identification of consistent funding should be identified to have "Ask Your Librarian" feature on the respective Ministries, Department and Agencies (MDAs) websites.
7. Libraries should conduct internal sensitization sessions on the use of the VRS so that internal clients are aware of the system.

## **Conclusion**

The genesis of the Social and Economic Information Network and the Special Library Section of the Library and Information Association of Jamaica virtual reference services consortium is the official collaboration amongst Government libraries in Jamaica. The VRS provides an efficient process that facilitates instant interaction between organizations, clients and satisfying users' requests through its 'chat' feature. It continues to provide instant conversations between librarians whereby workers can provide clients with immediate assistance in terms of problem solving, getting information, books as well as referring users to other libraries without having to break the conversation. So, is this collaboration working? This is what the members of the focus group said:

*"Yes, it is working! I would continue using the service. It makes work more manageable for me. I am still learning, but it is good."*

From the study librarians realized that the virtual reference service is a staff intensive service, requiring time, attention and money (Garlish, 31). Like the literature review covered earlier, librarians that use the software do so because they like the chat feature of the technology that allow for real time interaction as well as email. The challenges that affect the adoption of the technology are the limitations of the technological infrastructure and the extensive time require offering the service along with your daily job assignments.

Overall, Government libraries are delivering timely service to the decision makers, policy makers and researchers using virtual reference service.

## **Acknowledgments**

Thanks to Mr Mark Shane-Scale of the Department of Library and Information Studies at the University of the West Indies, Mona, Jamaica for his encouragement and invaluable suggestions. Special thanks to Mareeca Brown and Toni Shae Freckleton for constant feedback and guidance. To my husband Romone Phoenix for his understanding and support.

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