IFLA

Contents

Aims and Scope

IFLA Journal is an international journal publishing peer reviewed articles on library and information services and the social, political and economic issues that impact access to information through libraries. The Journal publishes research, case studies and essays that reflect the broad spectrum of the profession internationally. To submit an article to IFLA Journal please visit: journals.sagepub.com/home/ifl

Three Days to the Future: An invitation to reflect upon IFLA's Global Vision project

Lynne M. Rudasill
Chair, IFLA Social Sciences Section, University of Illinois at Urbana-Champaign, Urbana, IL, USA

In March of 2018, IFLA President, Glòria Pérez-Salmerón hosted the President's Meeting in Barcelona - home to Palau Güell, Sagrada Família and the 1992 Summer Olympics. The meeting served as the kickoff workshop for the long awaited IFLA Global Vision Report Summary, which presents data from an ambitious global survey of IFLA's membership (IFLA President's Meeting, 2018)[1]. The report provides details regarding perspectives on the challenges the profession believes it will face in the future. This work aligns with other sensemaking activities among library associations around the world (Dorner et al., 2017). Speakers who ranged from government officials to non-governmental organizations and from storytellers to publishers explored a variety of themes important to library and information workers. During the final event of the opening day, IFLA Secretary General Gerald Leitner launched the Global Vision Report Summary. The Report provides ten "Highlights" and ten "Opportunities" for our consideration, and through the Key Findings the report encourages library and information professionals to act locally and think globally when addressing future challenges (IFLA, 2018a). This was a fitting prologue for the work that would occur over the two following days of the IFLA Global Vision Workshop.

An optimist would view the organization of the two-day workshop that occurred after the President's Meeting as a reflection of an ongoing renewal and rededication to the importance of the input from the many library and information workers who volunteer time as members of the professional committees. This is an effort to ensure local perspectives and help IFLA explore its future development. Under the leadership of Secretary General Gerald Leitner, 2018 is the second year the chairs, secretaries, and others from the sections and special interest groups came together outside of the annual congress to discuss the future of IFLA and the profession. If we consider active and engaged professionals within the sections representative of new voices and groups, clearly IFLA is responding and empowering us to become more closely engaged in the organization as it works toward a new strategic framework.

In the years leading up to the Global Vision Report, IFLA engaged the profession widely in the creation of the IFLA Trend Report. IFLA launched the Trend Report's Insights Document at the Singapore Congress in 2013. Both the Trend Report and Global Vision Report employ a bottom-up approach that solicits local perspectives with attempts to synthesize them at a global level. For the Vision Report six regional workshops will take place through July of 2018. The workshops will be followed by a Global Call for Ideas as part of the Global Vision Outcomes Report scheduled during the WLIC in Kuala Lumpur in August of 2018. From September 2018 through March of 2019, IFLA will analyze the data and design a way forward with the launch of the IFLA Strategy for 2019 – 2024, occurring in August 2019 at the Congress in Greece (IFLA, 2018b).

The Global Vision Report Summary raises important issues for the profession, and readers should feel compelled to review the report to see all of the data points and information it encompasses. In Barcelona, the second day of the program provided an opportunity to analyze the essence of each of the highlights and opportunities articulated in the report summary. A rapid look at the degree of participation in the survey from which the report emerged reflects the passion of practitioners from throughout the world. Seven

Corresponding author:
Lynne M. Rudasill, Chair, IFLA Social Sciences Section University of Illinois at Urbana-Champaign, Urbana, IL 61820, USA.
Email: rudasill@illinois.edu

continents, 190 states and over 21,000 online votes at least partially answered the question of whether there is a united library field. During the workshop, conversation tables reflected the ten major issues explored in the Report. Participants engaged in a variety of discussions and exercises over the course of two days. The ongoing workshops in the spring of 2018 will replicate this methodology by gathering the perspectives and bold ideas of leaders from associations within each of IFLA's regions.

From my perspective in the Barcelona meeting, the suggested responses to the challenges articulated in the Report were interesting and varied. As an example, the first Highlight relates specifically to the concepts of intellectual freedom and free access to information. Recognition of cultural and political differences were basic to the discussions and resulted in the suggestion to create a toolkit to advocate for intellectual freedom. Items for this toolkit included:

- creation of a map showing where access and intellectual freedom are challenged or difficult,
- development of best practice "champions" stories,
- articulation of the benefits of intellectual freedom,
- translation of promotional materials in languages beyond the IFLA official languages, and
- development of a list of experts for each geographic region to contact for assistance.

This type of toolkit would provide an opportunity for the engagement of several sections as well as pulling the expertise of the FAIFE Committee into the mix.

The Barcelona table assigned to work on the Opportunity related to further developing a spirit of collaboration within the field had a great deal of impact on those at the workshop. The conversations indicated that the biggest barrier to collaboration is often language. This is an issue IFLA discusses often and it continues to be one of the organization's biggest challenges – especially when we acknowledge that native speakers of English often dominate discussions and may unintentionally inhibit the type of collaboration through which partners have an equal voice.

The President's Meeting and the Visioning Workshop provided us with the opportunity to discuss issues that were identified by our peers at a deep and meaningful level through the global survey. The workshop also provided participants the chance to explore the possible, to move beyond the present, and

better understand our working realities. The final question that many of us want to ask, however, is going forward how involved can we be? Will the same type of assets that have been put forward to help us discuss problems and opportunities be available to future members and their elected section leaders? Can IFLA Headquarters continue to grow and become more responsive to the needs of the membership represented by individuals in numerous sections and special interest groups? What stakeholders should be involved in these conversations with IFLA? Finally, how can the membership adjust and reshape the organization to ensure success as the future becomes the present?

As mentioned in previous issues of *IFLA Journal*, (Witt, 2017) IFLA's extensive and global sensemaking activities provide an opportunity for researchers to build upon our knowledge base. The workshops and subsequent activities provide an excellent venue for qualitative research and case studies that reveal the challenges, opportunities, and effective practices hidden within the continuous social experiment of global collaboration. The output of IFLA's surveys and the workshops will be made available as a digital repository for researchers. This will provide a large data-set from which quantitative researches can analyze the responses, perspectives, and permutations of the library and information community on the level of professional opinion, linguistic background, nationality, gender, and professional affiliation. Building a better understanding of the professional practices that we most value, the ideals we share, and the unique characteristics that animate us at a local and regional level will provide a rich opportunity to situate library and information practices into wider cultural and theoretical perspectives.

Declaration of Conflicting Interests

Funding

Note

1. The recordings of the live streaming events from the IFLA President's Meeting are available through the dedicated website for the event, as are several of the speakers' presentations.

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Transformation strategies in community engagement: Selected initiatives by Malaysian libraries

Zawiyah Baba
Librarians Association of Malaysia (PPM), Kuala Lumpur, Malaysia

A. Abrizah
Department of Library & Information Science, Faculty of Computer Science & Information Technology, University of Malaya, Kuala Lumpur, Malaysia

Abstract

This paper examines initiatives developed in Malaysian libraries to enhance library roles in promoting knowledge and technology exchange as well as community wellbeing. It explores how libraries in Malaysia are transforming society through community engagement and highlights initiatives undertaken by libraries that promote community access to collections, services, and events. The success of the initiatives is demonstrated in seven transformation strategy themes, namely; (i) embedded services; (ii) bridges and web technology; (iii) strategic and institutional partnering; (iv) rural libraries; (v) community libraries; (vi) asset-based community development; and (vii) international librarianship. While it is often cited that public libraries are those that serve the community at large, this paper provides the perspective from other types of library viewpoints, emphasizing that such community outreach services should not be limited to public libraries. The library science community at large, and especially academic libraries, must play a role in community engagement.

Introduction

Libraries are universalized local community institutions; that is, every citizen is an eligible library patron regardless of all individual traits. Recognizing the critical and evolving role of libraries in the digital age, libraries are bringing in new roles and skill sets to address the evolving needs of digital scholarship. Libraries are transforming, and how librarians continue to impact their local communities and institutions requires the former to look up and out at their local and global communities, finding connections through local programs, philanthropy, and just meeting in person. In the world of community building and engagement, libraries – especially public ones – have a unique and powerful role. The literature has evidenced the significant role of libraries in contributing to community engagement. It has identified the objectives of community engagement for libraries of all types in terms of tackling social exclusion (Birdi, Wilson & Cocker, 2008; Dutch & Muddiman, 2001; Stillwell, 2016), and contributing to social capital (Ferguson, 2012; Hillenbrand 2005; Vårheim, Steinmo & Ide, 2008), improving well-being (Museums, Libraries and Archives Council, 2010), and enhancing community resilience (Vårheim 2017). While many places and organizations "bond" people of like mind, libraries also have the capacity to "bridge" by bringing together different types of people who may not otherwise share experiences with

Corresponding author:
Zawiyah Baba, Librarians Association of Malaysia, Kuala Lumpur, Malaysia.
Email: zawiyah.baba@gmail.com

each other. Professionals working in libraries with strong community engagement see evidence of how social interaction and engagement enriches patrons' lives. Putnam and Feldstein (2003) describe how 'planting' a library in a community can turn a place around physically, encouraging new social networks and attracting further reinvestment and development. An evaluation of a community library programme highlighted the value of undertaking library community engagement, such as having a positive impact on library perceptions held by non-users; benefiting library workforce development; strengthening existing partnerships; and enhancing libraries' roles as centres of wider community based learning and skills (Museums, Libraries and Archives Council, 2010).

There has been no widely-accepted definition of community engagement (Sarkissian et al., 2009: 47), and similar to Sung and Hepworth (2013) for the purpose of this paper, the following definition of community engagement from Rogers and Robinson, (2004) was adopted: "*Community engagement encompasses a variety of approaches whereby public service bodies empower citizens to consider and express their views on how their particular needs are best met. These may range from encouraging people to have a say on setting the priorities for community safety […] to sharing decision-making with them in relation to defined services*" (2004:1).

Community engagement is high on the Malaysian government's agenda and has also attracted the interest of both academics and practitioners. Efforts to reach out to the wider community by national, public, academic and other major libraries are largely part of the National Transformation Programme (NTP). Efforts by individual libraries have mostly been conducted on an ad hoc basis and lack a more coordinated policy and direction on community engagement (Zakariya, 2014). There is little scholarly literature discussing community engagement of libraries for and about Malaysians. Empirical data on actual community engagement in Malaysian libraries is still rare. However, Baba (2017) provides an overview of development of different types of libraries in Malaysia and highlights their initiatives in transforming library services through digital technology and community engagement. The National Library of Malaysia takes the lead through their Strategic Plan (Pelan Strategik Perpustakaan Negara 2014-2018, 2014) and transformation plan (Pelan Transformasi Perpustakaan Negara 2015-2017, 2015) with digital technology as the enabler, to drive transformational changes in delivery of library services, among the nation's libraries including those serving rural communities. A number of strategies including Katalog Induk Kebangsaan (KIK), the National Union Catalogue, u-Pustaka (Ubiquitous Library), and rebranding of rural libraries to MyLike or Community Knowledge Commons have been endorsed by the government for nationwide implementation. These and other strategies by individual academic libraries, public, municipal and community library services have developed or supported local programmes and initiatives to facilitate community outreach.

Therefore, it is the intention of this paper to explore how libraries in Malaysia are transforming the library and society through community engagement. The paper contributes to the under-researched field investigating the actual community engagement in libraries. Having acknowledged the significant benefits offered by community engagement of libraries, the authors are keen to examine the strategies and initiatives developed in Malaysian libraries of all types with the goal of enhancing library roles in promoting knowledge and technology exchange as well as community wellbeing through community engagement.

Situation Analysis

The objective of this paper is to explore how libraries in Malaysia are transforming the society through community engagement. The paper addresses the specific question "What are the library's transformation strategies for community engagement through its services, systems and policies in improving and maintaining the society?"

Adopting a pragmatic philosophical perspective (Saunders, Lewis & Thornhill 2009), the authors focused on the objective and used literature reviews available to understand the problem. The paper analyses selected works focusing particularly on community engagement activities in Malaysian libraries. Key issues are illustrated using examples from the literature. Two data collection techniques were used in this study – namely: (a) direct observation and involvement of the authors, and (b) document analysis. Relevant documented events and meetings were observed to capture the strategies and practices when libraries participated in community engagement events and to understand the meanings of librarians' behaviours in that setting. Finally, documents (e.g. scholarly articles, government policies, meeting minutes, reports and press releases) were collected to help understand the wider context as well as previous work on community engagement and to help substantiate the findings. In this regard, this was an exploratory qualitative analysis. Based on the literature, the authors use seven metrics to illustrate the library's activities on community engagement in Malaysia namely (i) embedded services; (ii) bridges and web technology; (iii) strategic and

institutional partnering; (iv) rural libraries; (v) community libraries; (vi) asset-based community development; and (vii) international librarianship.

a) Community engagement through embedded services

As indicated in much of the current literature that addresses embedded librarianship, there is no one rule that defines how embedded services are implemented. For example, librarians – especially those in schools, colleges and universities – can embed themselves in academic programs, where the librarian collaborates with a subject specialist faculty member in a team-teaching endeavor. The focus on embedded services within the academic library community has been heavily concentrated on embedding librarians within courses to assist with information literacy instruction, which is an essential form of integrated librarianship that helps libraries demonstrate value. Increasingly, librarians especially at Malaysian research-intensive universities are applying the embedded librarianship model when working directly with the faculty they serve as collaborators on research projects or as an integral part of the research team (Abrizah 2015). A fine example of embedding services are done by academic librarians at the University of Malaya and Universiti Kebangsaan Malaysia, who wish to embed themselves with the academic community. Their most prominent service goal is to infuse information literacy into the curriculum by partnering with subject faculty. They approach this by developing an ongoing relationship with a student or group of students to deliver individualized instruction or by participating in committee work to influence the faculty's management to support library embedding initiatives.

Through embedded services, 16 librarians at the Universiti Sains Malaysia move from a supporting role into research partnership with their users, enabling librarians to develop stronger connections and relationships with the research community that they serve. The librarians are organizationally attached to the central library, but they may spend their days away from the library and other librarians. They are working with information resources as the latter are generated over the course of the research, such as data, to prepare them for dissemination beyond the project personnel for re-use by others or for long-term preservation. Universiti Sains Malaysia's librarians are designing workflows and systems to organize, manage, and deliver research project documentation or other needed materials. They perform literature searches, but are better able to identify search needs by joining researchers to do research, particularly in training them to use research tools and writing for publication. They also do research that involves them to improve the library services or accountability, or a specific research topic in the areas of competency that require special attention with groups they are embedded with. They spend most of their time in collaboration with the teams whose work they are participating in. This embedded role offers the librarians a means to increase their value in their organizations, their communities, and society as a whole, through integrating librarians into a university's teaching and research missions by implementing the method of embedded librarianship.

b) Community engagement through bridges and web technology

To demonstrate their value to communities at large, Malaysian libraries increasingly and proactively model their services effectively via the online information world, where libraries deliver knowledge services for learning and research virtually 24/7 to homes, classrooms, and offices while also providing inviting technology-rich "learning common" library spaces. The traditional face-to-face approaches to learning are quickly being replaced by faster mass online interactions at lower cost. This is inline with the Blue-Ocean strategy advocated for public services. There are good examples of this approach implemented for libraries in Malaysia such as the KIK (National Union Catalogue) and u-Pustaka (Ubiquitous Library).

KIK or the National Union Catalogue is a resource sharing project initiated and coordinated by the National Library of Malaysia (NLM). As coordinator, NLM hosts bibliographic records of participating libraries in their database. The database now contains 6,179,355 bibliographic records of the libraries' holdings, their location and details of holding libraries. Implemented in three phases, in 2005, 2006 and 2007, the KIK has proved to be a boon to libraries in supporting and promoting research by providing access to all forms of library collections to communities of researchers and the public at large. The project has inspired enthusiastic responses and keen participation from all types of libraries in Malaysia. With more than 125 libraries participating in 2013, the searching of library collections has become much easier, faster, and more productive. KIK greatly enhanced the efficiency of Document Delivery Services to the satisfaction and benefit of both users and libraries. It was the answer to librarians' and researchers' prayers and had great potential in providing the infrastructure for future networking projects. Inevitably, however, with increasing number of participants, the KIK project has faced issues of duplication,

complicated by non-uniformity in cataloguing practices, which made integration of duplicate records difficult and time-consuming. Lack of manpower to edit and upload records lead to bottlenecks. Manaf and Ajis (2011) identified three dimensions of accessibility, functionality and authoritativeness as core issues to assess the usability of the KIK. These issues have been highlighted in an earlier study (Mansor & Manaf, 2008). Using a purposeful sampling of libraries who have participated in KIK for at least three years, the study, which was based on their perception as well as records analysis, found that the KIK's usability "exceeded minimal acceptable level". The authors opined that "Each dimension possess positive relationships which whenever each dimension improves, usability will also be improved and a higher level of satisfaction would be achieved" (Manaf & Ajis, 2011:15). The study could perhaps also be extended to researchers and public users for a more complete assessment of usability which "corresponds to entirely acceptable level." A later study (Ajis & Manaf, 2013) appraising the "authoritativeness" of the KIK for its document analysis of 500 selected bibliographic records based on compliance with international cataloguing standards MARC21 and AACR2 R indicated that 90 percent of qualified records in the study are developed according to the aforementioned standards and are considered "acceptable records." Abdul Wahid (2013), who heads the National Library's KIK team, recognized several challenges facing her team including duplicate records due to non-uniformity in cataloguing practices; problems of data collection due to non-existence of data extraction tools in some libraries resulting in records not conforming to ISO 2709 required format; lack of consistency in submitting records and lack of quality in records which requires a lot of time-consuming editing and resulting in a lack of manpower to address and overcome the issues highlighted above. While workshops on MARC21 have been conducted for libraries not conversant with the standard, the project, which comes under the National Digital Library (PERDANA) under the leadership and coordination of the National Library, needs to address these issues urgently to ensure the integrity of the KIK database as a vital support for libraries, the research community, and the public. With increased budgets in the 11th Malaysia five year development plan (2016 -2020) for technology development, the prospects of overcoming these issues are promising.

Another major initiative, u-Pustaka (The Ubiquitous Library) was rooted under the National Broadband Initiative to increase the penetration rate in Malaysia with funding from the Economic Planning Unit and technical and financial support from the Malaysia Commission for Multimedia Communication (MCMC) as well as collaboration of other key government Ministries. The initiative featured participation of the National Library, seven public libraries, and a special library (National Institute of Public Administration) at the initial stage. u-Pustaka is an information service based on the *ubiquitous* concept to provide access anytime, anywhere through a combination of physical and digital library services, including online access to digital resources, online borrowing, and delivery of books through the postal services (Poslaju). Sidek (2010:46) saw the collaboration of libraries as "leveraging of the development traditional information resources to create attractiveness for broadband take-up." She rationalized that "Community Broadband Centres in underserved areas have flourished and it became obvious that if the content in libraries could be made available nationally, it would spur the adoption of a lifelong learning culture as well as aid the economic and social progress of the nation" (Sidek 2010: 46). The u-Pustaka portal and service was launched on 30th March 2011 at the National Library of Malaysia and is accessible to the public through its URL (www.u-library.gov.my). In line with the goals of the National Broadband Initiative Plan, u-Pustaka enables the bridging of the digital gap between rural and urban communities through improvement in the rate of information and IT literacy, increased broadband penetration in rural areas, and access to life-long learning within rural communities. Salleh (2013) indicated the rapid increase in access to the portal from 82,455 in 2011 to 133,375 in 2013. By 2016, Ahmad (2015) reported that the number accessing the portal has increased substantially to 543,313. Kadir (2014) summarized u-Pustaka's achievement as "If knowledge is power, u-Pustaka has applied sparkplugs to Malaysia's knowledge economy through its use of technology to widen access to books, strengthen the library's ecosystem, and reduce the digital divide".

A study on u-Pustaka Services (Malaysia Communication and Multimedia Commission & National Library of Malaysia, 2016) commissioned by the National Library found that overall, the use and acceptance of u-Pustaka services by members is at medium level (68.2%). Members acknowledge that u-Pustaka is the main source of information (70.8%), provides exposure to greater sources of information and knowledge (70.7%), and that their information literacy had improved (70.2%). Other indicators of acceptance of social change include: fulfilment of hobbies and interest (70.1%), improved quality of life (68.9%), access to educational support facilities (68.5%), facilitated learning (65.98%),

improved computer skills (65.9%), assistance in obtaining information about other places (66.7%) and the encouragement of responsible social behavior (67.8%). However, the study identified several weaknesses in various aspects of its implementation, particularly technical issues. These include slow response time, a sluggish system, the portal interface not being user-friendly enough, contents not meeting user needs, and the payment system not being supported by online banking in some rural areas. Added to these are problems with the National Union Catalogue system and database – the backbone of the physical book loan service – which include the slow processing and updating of bibliographic records as well as late arrival of borrowed books through the postal service.

Additional funding, which was recently approved under the 11th Malaysia Development Plan, has enabled the National Library to strategize on addressing the technical issues related to KIK and u-Pustaka as well as boosting its digital content programme. These strategies mainly include review and upgrading of the entire KIK and u-Pustaka systems and technology. Strategies will also accommodate recommendations made by the 2016 study which include:

Enhance public acceptance of u-Pustaka by providing applications that support life-long learning such as exam bank questions, business guidelines and coaching;

  i. Provide relevant information skills classes to increase user competency in information seeking;
 ii. Cooperate with schools, tertiary education institutions and Ministries to proliferate the use of u-Pustaka;
iii. Establish more internet centres or facilities and enhance broadband infrastructure and coverage in rural areas to improve access;
 iv. Review service policy implementation to be more user-friendly;
  v. Study user information needs in order to provide more relevant information especially for local digital content;
 vi. Provide alternative facility for cashless transactions.

The National Library of Malaysia (NLM) Strategic Plan (2014-2018) highlighted "the strengthening of the Malaysian Ubiquitous Library (u-Pustaka) as the National Information Hub" as NLM's strategic thrust towards achieving inclusiveness and ownership (Pelan Strategik Perpustakaan Negara Malaysia, 2014). Usage of u-Pustaka services is expected to increase exponentially with enhancement of the KIK

and u-Pustaka ICT infostructure and systems, and the inclusion of four more public libraries as well as other libraries to the consortium in the near future. The increase will actualize the National Broadband Initiative Plan's goal by transforming rural communities throughout the country through (i) improvement in the rate of information literacy (ii) improvement in the rate of IT literacy; (iii) improvement in the penetration rate of broadband; and (iv) lifelong learning.

c) Community engagement through strategic and institutional partnering

Libraries around the world have made community engagement for libraries a strategic priority by partnering with other organizations and promoting local, state, and national programs that offer libraries the tools they need to engage more effectively in their own communities. The following examples illustrate how Malaysian libraries engage with the community with the help of their strategic and institutional partners.

  i. *Collaboration with foreign embassies*: public and private organisations for book and cultural exhibitions and book collections have long existed and continue to this day. An important aspect of the work of foreign missions is the promotion and forging of cultural ties. Books and libraries have proven to provide a natural attraction for High Commissions and foreign embassies in Malaysia in establishing cultural relations. The National Library of Malaysia for example has collaborated with High Commissions of Australia, India and the United Kingdom, as well as the Embassies of the United States of America, Germany, France, Japan, India, Chile, Singapore, Thailand and the Czech Republic among others in organizing exhibitions of books, receiving book donations, writers and publishing. This is particularly so since the National Library moved into its imposing and attractive new building in Kuala Lumpur in 1993. The Embassy of Chile, in collaboration with the National Library, held an exhibition on the artefacts of indigenous Chile civilisation in June 2000. The National Library of Malaysia was fortunate to be included in the itinerary for the travelling exhibition 'Chile Indigena' mounted by the Santiago Archeological Museum and sponsored by the Ministry of Foreign Affairs Chile. The travelling

exhibition provided the rare opportunity for communities in Malaysia to appreciate the many important aspects of Chile's unique aboriginal culture, both present-day as well as their pre-columbian ancestors. The ensemble of materials displayed encompassed tapestries, ornaments, jars, vases, headgear, figurine, mummified infant and other forms of artistic works (Chile Indigena, 2000). The National Library was also the first library and in fact Malaysia was the first country to hold a special photo exhibition entitled 'After September 11: Images from Ground Zero' from 21 April 2002 to 20 May 2002 in collaboration with the Embassy of the United States of America (Perpustakaan Negara Malaysia, 2002). It was barely six months after the plane attack on the World Trade Center in New York on 11 September 2001 and the horrific incident was still fresh in the minds of the public. The currentness of the exhibition drew sizeable crowds curious to see the images of the aftermath of the attack. The US Embassy has in fact gone a step further to create an 'American Shelf 'at the National Library, University and Public Libraries in Malaysia. The 'American Shelf' or 'American Corner' project involves designating shelf space or a corner in the library specifically for books gifted from the United States. Such collaboration has been sustained for more than two decades The most recent being the gift of books from the Embassy of the Republic of Kazakhstan and an exhibition of books from and about Russia in the second quarter of 2018 in collaboration with the Embassies of Russia (Edward, 2018).

ii. Strategic partnership with private corporations and companies has proved to be a winning strategy for community engagement by libraries in Malaysia especially in urban communities. A recent example is with Samsung Electronics since 2014 whose corporate social responsibility (CSR) contribution is in the form of fully equipped Samsung Smart Libraries (SSL) within a strategic area of the library building. SSLs provide digital services to readers through Reading Zone for access to electronic reading materials including books, serials and newspapers in the National Library's collection. An Interactive Zone is equipped with Microsoft Office, E-studio and Cloud Readers for users. Children may use electronic books and interactive games at the Childrens' Zone. The SSLs have received very

encouraging responses from library users and to date SSLs have been established at the National Library, university libraries and a number of public libraries including the Perlis Public Library Corporation and the Johor Public Library. The University Kebangsaan Malaysia was one of the first university libraries to provide a Smart Library corner equipped by Samsung Electronics. In addition to providing the digital equipment, Samsung Electronics also regularly co-organize activities with the National Library including talks and hands-on session on "Gadgets as tools for lifelong learning" to promote the use of the SSLs (National Library of Malaysia, 2015).

The National Library of Malaysia has had an enduring partnership with several other companies in Malaysia in the provision of state of the art facilities for the public ever since it moved into its new building and opened for services in 1993 (Perpustakaan Negara Malaysia, 1996). Starting with Esso (M) Berhad and later Exxon-Mobil donated RM1million in conjunction with its 100th anniversary in Malaysia for the setting up of the Childrens Hypermedia Library Services. Subsequently it provided annual grants for development of the Hypermedia centre as well annual IT Workshops for Aborigine Children. A first in Malaysia, it made a great impact with the Kuala Lumpur community and was a major attraction to the library for many years. The Japan Foundation similarly provided through a Cultural Grant state-of the-art equipment for the entire Audio Visual Section of the National Library in 1994. This was later followed by creating the Hypermedia Library for Youth by Felda Foundation in 2003. Maybank or Malayan Banking Bhd donated to the National Library a digital collection of 500 titles on Banking and Economics in 2008. These partnerships have been a boon to the National Library by enabling it to interact more closely and widely with different segments of its users as well as provide the necessary exposure to users in the use of technology for information and knowledge.

d) Community engagement through rural libraries

The establishment of rural libraries via five-year Malaysian development plans and budgets began during the Sixth five-year development plan (1991-1995) by initiating the development and building of rural libraries with both static and mobile library services. From the Seventh (1996-2000) and Eighth Malaysia development plan (2001-2005) the National Library,

in partnership with public library corporations and relevant Ministries and telecommunication companies (Telcos), started to provide internet services to rural areas. This included providing mobile library services with internet services aimed at increasing penetration of internet into rural areas (Baba, 2017).

In addition to the five-year development budgets, rural library development was given a major boost through government special allocations in annual operating budgets in 2005, 2006 and 2007. The target was to establish rural libraries in every district and *mukim* in line with National Policy for Development of Libraries, 1989. Cooperation of State Library Corporations and State Development Units are essential as land is a state matter and the state needs to identify areas underserved by public libraries. Existing rural libraries are run by State Library Corporations in Peninsular Malaysia, State Library Department in Sabah and State Library Board in Sarawak and the National Library itself. By the end of 2005, 1,121 rural libraries had been built throughout the country. These rural libraries are equipped with computers and many are provided with internet services through participation in Ministry initiated projects involving telcos. Most of the libraries established under the special operating budgets are managed by the National Library with a minimum of two staff in each library.

In a comparative study of rural library services in Malaysia and Australia, Abu (2014) observed that in the rural public libraries included in the study "activities and programmes are standardized and limited only to children, taking little account of local community information needs." Participants of the study further indicated that "library materials and resources are often outdated and they perceive the library services as being mainly for children." On the other hand, Abu found that rural libraries in Australia included in the study "facilitated greater community participation and involvement and are more responsive to the needs of local communities, providing support and assistance for lifelong learning and access to information literacy." The study suggested strategies that will have greater impact on rural communities including "locally focused collection development, consultation regarding local information needs, and the development of local partnerships as well as the development of a rural public library network." A more recent study (Omar et al., 2016) pointed out that while extensive research on rural libraries has been carried out by various groups across the globe, such research has not focused on Malaysia. As such not much is known about the quality of rural libraries in Malaysia except for research done by Chew et al. (2013), Marzuki et al. (2014) and

Shaifuddin et al. (2011) which has provided some insight into the quality of rural libraries in Malaysia. In the 2016 qualitative study through focus group discussions, Omar and colleagues considered four elements in examining the quality of library services, namely a) resources; b) services; c) access; and d) interaction between library services and their users. The study concluded with participants expressing that their rural library provided good quality service and expressed satisfaction with the quality of services with regard to resources, services, access and interaction between rural library services and users (Omar et al., 2016:184). However, the study recommended further improvements such as computers and adequate internet connection, rather than WIFI as provided in telecentres which tend to benefit those with laptops. Consultation with local communities too is recommended for collection development especially to teachers for educational materials. Participants also suggest adequate signage for the rural libraries in order to assist users to find their ways around the library and resources. The findings of this study come from Chew et al. (2013) in another study on critical factors affecting the development of ICT projects in Malaysia. One of the factors identified is the "insufficient ICT resources, inadequate maintenance and repair of telecentres and IT equipment." Further, Wan Rozaimi et al. (2007) and Roman and Colle (2002) among others argue that "many ICT projects have been initiated without a firm plan for sustainability". Without the use of technology to provide impactful delivery of rural library services, rural libraries tend to be isolated and little used. It needed to be transformed into knowledge centres with access to the global resources available. The National Library of Malaysia came up with the idea of rebranding rural libraries through a transformation programme aimed to create *Laman Ilmu Komuniti* (MyLIKE) or Community Knowledge Commons. This is done by strengthening the ICT infrastructure and enhancing rural library services through provision of high-speed internet to provide 24-hour online services and use of an integrated library system, upgrading the landscape of rural libraries to a more conducive learning environment. At present, four rural libraries have been selected as pilot projects for implementation under the National Library's transformation programme. If proven successful, it will be extended to other rural libraries in stages to achieve the Blue-Ocean effect of the transformation of rural communities. In addition, strategies for human resource development and monitoring of staff managing rural libraries as well as greater participation of community leaders and members in the library's

policies and activities – especially as volunteers – are being seriously considered.

e) Community engagement through community libraries

Apart from public libraries run by the State public library authorities, there are also libraries established by Municipal Councils to serve the public within urban communities. These are usually known as community libraries. Under the Local Government Act, 1976, local government authorities such municipal councils are empowered to provide public library services for communities in their municipal areas. Kuala Lumpur City Hall and the Petaling Jaya City Councils are among the pioneers in setting up community libraries and are among the most active and well-patronised libraries. Initially, mobile libraries were used to reach out to communities in the outlying areas within the city. But these have given way to static libraries which are increasingly known as community libraries as they provide more people oriented services. A more recent phenomena are community libraries set up as CSR projects by corporate organisations in partnership with a library authority. There are good examples of these in Kuala Lumpur where the library building or space, internal fittings, furniture and books are funded by the company while the National Library provides staff to manage the Library and provide services and run activities for their users. There are now four of such libraries located in an Urban Transformation Centre, supermarkets and a community centre in Bukit Damansara, one of the urban residential areas in Kuala Lumpur. A more recent initiative on a smaller scale is by Starbucks who are reportedly (Bernama, 2017) eyeing to set up six community libraries in six states in Malaysia under a community service project themed 'Make a difference, donate a book'. They invite customers to contribute by dropping off spare reading materials for the libraries in baskets provided in 93 Starbucks outlets in Malaysia.

The management corporation of the new administrative capital of Malaysia in Putrajaya also runs a chain of community libraries known as Neighbourhood Community Learning Centres in four precincts within their federal territory. The more modern concept of these community libraries is geared towards supporting a vibrant community centre and include facilities such as a multi-purpose hall and exhibition area in addition to reading bays, children's library, computer centre and reading and research area with extended opening hours to 9.00 pm. at the request of their patrons. These and other community libraries

regularly hold a variety of activities for adults, youth and children and are well patronized. In the Subang Jaya district, the Municipal Council started the first hypermedia library which was a major attraction for local users. This led to the establishment of similar high-tech libraries in Bandar Sunway, Seri Kembangan and Puchong. In Petaling Jaya in Selangor, the impressive community library goes beyond traditional book collection to include toys for children and a very active programme of talks, craft making, drawing and games competitions and reading activities to engage with their patrons.

The earliest community libraries were started by the Community Development Division (KEMAS) in 1961 as adult education centres to eradicate illiteracy among the adult rural population. In 1971, Adult Education classes were restructured as Community Development to cater to the wider needs of rural communities, including nursery and pre-school facilities, workshops for skills development for youth and adults, apart from functional literacy. Under the aegis of the Ministry of Rural Development, KEMAS developed more than 200 resource centres in rural areas throughout the country including the Borneo states of Sabah and Sarawak. These centres serve to ensure that rural communities have access to reading materials and library services for information and knowledge in conducting their day-to-day lives. KEMAS resource centres are an essential part of the KEMAS Community Centres. In addition the centres engage the communities they serve through coaching classes, motivational workshops, and educational toys for children. The KEMAS resource centres are located in rural areas and quite often complement the role of rural libraries. As such, public library authorities take into consideration the location of KEMAS resource centres when planning the location of new rural libraries, not only to avoid duplication but also to ensure a wider and better coverage of hard to reach communities in the rural areas.

f) Community engagement asset-based community development

Asset-based community development or asset-based community-driven development (Peters 2013), is a bottom-up way of working with communities that focuses on community strengths and assets rather than on deficits and problems. Recognizing the skills and abilities of individuals within the academic community and finding people who are passionate about a particular community and who are good at making connections, it has led to an attempt of an academic library and a library school to work with area school

libraries. The University of Malaya Library and the Department of Library & Information Science at the University of Malaya (where the second author is affiliated to), with funding from the University of Malaya's UMCares Community Engagement project providing resources and instruction for five school partners and taking part directly in library-community collaborations. For instruction the librarians, becoming involved in service-learning courses, provide some practical ideas for applying information literacy instruction at the selected secondary schools. They additionally support community engagement projects through public lectures events and exhibits, which can help library faculty and staff leverage their position on campus and demonstrate the library's value to the school community both on campus and beyond. Library schools' community connections like this continue to grow in Malaysia.

Recognizing that the visually-impaired people in the local community were unable to use library resources for information, life-long learning, and leisure, the Department of Library & Information Science at the University of Malaya also is reaching out to the Malaysian Association for the Blind (MAB) library. The collaboration involves (i) training the library staff to improve the experiences of the visually-impaired people; (ii) having access technology in place for the library, for example providing accessible computerized library catalogue and reading equipment to magnify texts; and (iii) developing local collections of large prints and audio books so that a satisfactory choice of books in accessible formats is available to meet users' needs. The library science educators and students from the University of Malaya gather at the MAB Library on a bi-weekly basis (every Friday) for about 3-4 hours through this community engagement project. They also helped to disseminate pledges to raise funds for the library.

The Audio Book Collection development programme by the National Library is an on-going programme in collaboration with MAB and local publishers for visually impaired users. This is an on-going programme, and the project involves audio recording of books selected by MAB by the National Library. The readers in this project may be prominent personalities invited to cooperate with the National Library to donate their time and talent as well as staff of the National Library selected following voice auditions. In a recent development, the National Library has set up a special corner for disabled persons, including the visually impaired on the ground floor of the National Library building. Apart from the braille, audio recordings and talking books collection,

the special corner is provided with internet access electronic and digital collections. A special software JAWS (Job Access with Speech) is available to facilitate use of the internet digital collections by the visually impaired. Public libraries in Penang, Sabah, Sarawak, Selangor and Terengganu have been providing library services for the visually impaired and increasingly more public libraries are making special provision for services to the visually impaired. It is high time that all public libraries form strategic partnerships with relevant agencies to make special provisions to cater for disabled persons to enable them to become active library users.

h) Community engagement through international librarianship

This library community engagement strategy through international librarianship is best illustrated by the CLMV (Cambodia-Laos-Myanmar-Vietnam) international outreach programme and the Librarians Association of Malaysia's (PPM) mission to Aceh after the Tsunami. Under the CLMV programme, Malaysia's aspiration is to help the less able ASEAN member countries for the growth of research and higher education and foster collaboration between academia and public administration to ensure that Southeast Asia operates as a "single market for knowledge" (Ramli 2017). A large sum of RM630,000 was mobilized through the Ministry of Higher Education Malaysia to the University of Malaya under the "internationalization initiative" and RM90,000 was channeled by the University to the ICT research cluster to initiate ICT related collaborative activities. University of Malaya Library and the library school initiated projects to reach out to libraries in Cambodia and Laos, and purposively selected The National Library of Cambodia (NLC) and the National University of Laos (NUOL) Library as partners. A philosophy of service (i.e. transfer of technology and knowledge) and education is foremost in this project. Zainab, Abrizah and Ling (2012) presented a personal narrative describing visits to universities and libraries in Cambodia and how inclusion and outreach can be shaped through technology and knowledge transfer programme for Cambodians, who in general do not have access to well-resourced libraries. They highlighted one important outcome of a programme to ensure the inclusion of Cambodia in an initiative to provide Cambodian information resources electronically and transferring whatever knowledge or ICT related skills and facilities that can be transferred to Cambodians voluntarily. Under this "reaching out" programme, it was agreed that: (i) University of

Malaya (UM) and the University of Malaya Library (UML) will provide the necessary infrastructure and training to digitize selected collections of Cambodian resources. NLC will identify the resources (print, microfiche, microfilms) to be digitized and plan for the resources to be delivered to UML; (ii) This technical correspondent from NLC should be able to visit the University of Malaya for training purposes (digitization of resources) for a maximum of two months. The correspondent will be given a monthly stipend cover the cost of flight, accommodation at the University of Malaya, living allowance and local transportation. Under this initiative, 300 Cambodian works of fiction preserved on microfilm in the NLC have been digitized to PDF format. Today, IT professionals and librarians in Cambodia are able to manage digitized collections and a digital library as well as provide information services and training that addresses essential community needs by making Cambodian library collections and scholarly works more accessible (Ramli, 2017).

Another library outreach programme under the CLMV project conducted in Laos involved the following activities to support Laos ICT and information needs:

i.   Training through a workshop in Cataloguing of Library Resources using Resource Discovery and Access (RDA) from 23rd–27th September 2013 at the Central Library, The National University of Laos, Dong Dok, Vientiane, LAO PDR. This RDA training involved 25 practising librarians from the NUOL, the National Library, college libraries and special libraries. The Workshop in Cataloguing of Library Resources was given a coverage in Vientianne Times on Sept 25 2013 (Times Reporter, 2013).

ii. Continuous Professional Education through a Professional Library attachment programme at the University of Malaya Library from 13–21 May 2014. As a follow-up of this global outreach programme, an invitation was extended to selected participants who have completed all assignments satisfactorily in the cataloguing workshop for a one week library attachment at the University of Malaya Library. Six librarians participated in the library attachment programme.

iii. Comparative librarianship through professional visits and knowledge-sharing sessions on trends in library services on 19 & 20 August, 2014 at the National Library of Laos and the National University of Laos, Dong

Dok, Vientiane, LAO PDR involving 30 participants from the NUOL Library and the National Library attended the knowledge-sharing session. Three senior academic librarians and a library science Professor took the participants through the following topics: *Library Outreach Programme using Social Media*; *Conducting an Online Information Literacy Course;* Management *of Bibliography Using Endnote* / Mendeley; and *Continuing Education and Comparative Librarianship.*

The Malaysian Embassy in Laos has provided full support to the programme. The results of this programme are reflected in the ability of librarians to utilize various computing resources and transfer the knowledge and skills to other library staff and users as well as a committee to revise ICT and library science curriculum in Laos. Foremost, the project is building a new generation of library professionals to help sustain the prospective information agenda that has been established (Ramli, 2017).

The Librarians Association of Malaysia (PPM) went well beyond its borders to engage with their neighbours Aceh in West Sumatera, Indonesia, during the Indian Ocean tsunami of December 2004. In response to a request from the Library Association of Indonesia (IPI) in early 2005, the PPM approved a volunteer mission to Aceh to explore what assistance was needed and how PPM can help with the redevelopment of libraries destroyed or damaged during the tsunami. The PPM External Aid Committee was set up and a three-person Iqra' Mission led by Dato' Zawiyah Baba with Puan Rohani Rustam and Encik Hasbullah Atan as members, went on a five-day mission to Aceh in August 2005. The team reported about the situation in Aceh to PPM and at IFLA WLIC Conference in Oslo, Norway 2005 at a special session on the aftermath of tsunami in Sri Lanka. This impromptu oral report generated a lot of interest and requests for official reports about Aceh. A full report (Baba et al., 2005) was submitted to PPM and IPI, the Indonesian Library Association, as well as the relevant government authorities in Malaysia. The report identified the types of assistance needed based on interviews with Aceh librarians and stake-holders, the highest priority of which was books in the Indonesian language, replacement copies of rare books pertaining to Aceh, book shelves and library furniture, and replacement for mobiles libraries destroyed or damaged during the tsunami (Baba et al., 2005: 29). The PPM Aceh Library Fund was launched at PPM's annual meeting in 2006 to receive donations for Aceh libraries. Over a five-year period from 2005 – 2010,

the Iqra' Mission team engaged with Indonesian librarians, academicians, researchers, policy makers and volunteers from other aid organisations regarding the redevelopment of public libraries and other local facilities and amenities in Aceh (Baba, 2010). The Iqra' Mission team were able to accomplish the following with the assistance of the PPM, National Library of Malaysia, Universiti Kebangsaan Malaysia Library, and the Dewan Bahasa dan Pustaka and of course librarians and staff of the Badan Perpustakaan Daerah, Aceh and the Phi Beta Learning Centre, Banda Aceh:

i.   Conducted site visits, met with librarians, volunteers and government officials to identify damage to libraries and types of assistance needed;

ii. Prepared the report on the impact of the tsunami on libraries in Aceh;

iii. Launched the PPM Aceh Libraries Fund to receive funds for aid for Aceh libraries;

iv. Presented papers at conferences on Aceh in Bangi, Malaysia, Bandar Aceh and Lhokseumawe highlighting the plight of libraries in Aceh after the tsunami and the restoration and redevelopment urgently needed;

v.   Conducted workshops on cataloguing (Baba, 2009) and reading promotion;

vi. Conducted workshop in Library Redevelopment in Aceh at 2nd PAPA Conference in Lhokseumawe on 26–30 Dec 2007;

vii. Organised exhibition on the tsunami in Aceh in conjunction with PPM AGM at the National Library of Malaysia in March 2008;

viii. Collected book donations from Malaysian libraries and purchased selected titles of Indonesian books at the Jakarta Book Fair (6–9 July 2006) to rebuild library collections in the Badan Perpustakaan Daerah (Central Provincial Library) and the Yayasan Masyarakat Iqra' mini library and mobile library maintenance and book collection of the Phi Beta Learning Centre (PBLC) educational Centre;

ix. Presented book gifts to other libraries including Pusat Dokumentasi Informasi Aceh which was totally destroyed during the tsunami and the Perpustakaan Masjid Raya Baiturrahman, the Grand Mosque in Banda Aceh in 2005 and 2006;

x.   Helped to trace books on Aceh in Malaysian libraries' collections;

xi. Provided copies of Aceh manuscripts with the assistance of the National Library of Malaysia as the Centre for Malay manuscripts;

xii. The team with the cooperation of the National Library of Malaysia succeeded in enabling five Aceh Librarians to attend three courses organized by the National Library of Malaysia, fully sponsored under the Malaysian Technical Cooperation Programme (MTCP) in 2006 namely i) Basic Course for Library Assistants, ii) Library Visits and Attachment for Professional Librarians and iii) Workshop on Leadership Development for Senior Management of National Libraries in Developing Countries;

xiii. Baba (2007), drew on her experience as UNESCO consultant for Redevelopment of Public Libraries in Sri Lanka After the Tsunami in 2005 to provide a comparative study of the situation after the tsunami in Aceh and Sri Lanka and the lessons learnt in the recovery process for redevelopment of libraries in a paper which was presented at the First International Conference of Aceh and Indian Ocean Studies (ICAIOS) in Banda Aceh, Indonesia, 24–26 April, 2007;

xiv. The Iqra' Team culminated their mission in Aceh with the publication of a book entitled '*Aceh Reads On: The PPM Iqra' Mission in Post-Tsunami Aceh*' published by the PPM (Baba, Rustam & Atan, 2011);

xv. Sponsorship through the Librarians Association of Malaysia for Aceh Librarian to attend IFLA World Library Conference in Kuala Lumpur, 24–30 August 2018.

By 2010, almost all aid agencies had left Aceh. Clearly much development had taken place in the five years since the tsunami. Roads have been rebuilt and resurfaced and attractive new housing and residential areas, new parks and other facilities for the public have been developed. Electricity supply, however, continues to be an issue, and blackouts occur from time to time, disrupting medical services, schools, offices and libraries, and computerised services. The population of Aceh has increased almost to its pre-tsunami days, with influx from outside now that it is wide open, unlike its former status as a closed province. There are many attractive new buildings, not least the new state-of-the-art hospital funded by the Germans and the one of its kind Tsunami Museum. The newly built Pusat Dokumentasi dan Informasi Aceh (Aceh Documentation and Information Centre)

has replaced the totally demolished building and valuable collection and the Badan Perpustakaan Daerah (BPD) or Aceh Provincial Library has undergone extensive renovations and extension, its collection restored and its fleet of mobile libraries replaced with better vehicles. The Library of the Grand Mosque of Aceh, Masjid Raya Baiturrahman, which also acts as a public library, too has been restored and its collection rebuilt through donations from foreign governments including Brunei Darussalam. However, human resource development of librarians have sadly not kept pace with physical rebuilding in respect of recruitment, education and training. Career development of library staff have not been given much attention, with emphases generally given to physical redevelopment. Several remaining professional library staff have sought employment elsewhere, some in non-library departments. Senior librarians who perished in the tsunami including the Director of BPD have been replaced by senior officers from other sectors.

However, just as in the case of libraries, while public buildings like the hospital and museum are impressive, its contents are very much lacking, both physically and in human resources. Specialist skills especially are far from adequate. Aware of this predicament, in the years following the tsunami, the Aceh government declared that human resources development would be given top priority. This is an area where the central government in Jakarta and other countries can continue to provide vital support in the rebuilding of Aceh – the development of its human capital in terms of training, tertiary education opportunities, specialist skills education and training including job or practical attachment.

Implications of Community Engagement to Libraries

Demonstrating the value of libraries to the community that they serve has long been a topic of research and comment among librarians. The social role public libraries might fulfill through community engagement is conceived as either facilitating the creation of social capital or actively working for social change (Muddiman et al., 2001). The creation of social capital results in increased public participation and influence in existing library services and structures. Actively working for social change creates locally defined institutions, such as needs-based community-led libraries, in the case of rural and community libraries, and requires ways of working which depart significantly from current methods, ranging from internal decision-making and outreach to partnership. The

paper also highlights the role of ICT and digital technology as an enabler in community engagement to transform society, especially in addressing digital and information divide. Associated with this, librarians are increasingly responsible for bridging the gap between the community and digital technology in ways that enable the community (end-users) to effectively and efficiently use the digital resources.

The community engagement strategies illustrated in this paper brings the following benefits to libraries, the library science community, and the communities that they serve:

National Library

The National Library of Malaysia has provided a leadership role in the transformation of libraries in Malaysia through major projects involving close collaboration with relevant agencies as well as academic, public and special libraries in Malaysia. These projects include the National Union Catalogue (KIK) and u-Pustaka (Ubiquitous Library) under the umbrella of the National Digital Library System (PERDANA) as well as the rebranding or rural libraries into Community Knowledge Commons (MyLike), which are strategic thrusts in its Strategic Plan for 2014-2018. All of these projects leverage heavily on the ICT and digital technology and broadband coverage and have had positive and enthusiastic response from the communities they serve. However, there is an urgent need to ensure the stability and reliability of infostructure through continuous monitoring and upgrading or replacement of ICT, digital, and broadband facilities to ensure their sustainability and impact. In addition, participating libraries also need to ensure they have reliable and up to date ICT facilities to become viable and effective partners. Only then will community engagement projects enable bridging and web technologies realise the objective to transform communities into a knowledgeable and informed Malaysian society.

Public libraries and rural libraries

Public libraries and particularly rural libraries play a key role in reaching out to hard to reach communities. Formerly reached through a network of mobile libraries, these are slowly but surely replaced by a network of static libraries which are established to serve every parliamentary and eventually state constituency in Malaysia. Public libraries have slowly developed ICT facilities and LMS which enables them to participate in mutually projects initiated by NLM. Public libraries and especially rural libraries face similar issues in respect of ICT and digital

technology. Most of these facilities such as computers, internet connectivity and broadband coverage, are to a large extent provided as part of a project with a specific time-frame, usually up to two or three years. If infostructure is not developed by the end of the project period, it is inevitable that rural libraries will face internet and broadband coverage disruptions. Generous government support for rural libraries have boosted rural library development, and the strategy of rebranding of rural libraries will hopefully ensure sustainability of computers and internet provision and access to digital resources. Rural libraries especially need to foster closer rapport and participation of community leaders and members especially the youth as volunteers in running the library services and activities. A sense of ownership and feedback from the community is essential in provision of relevant information services and collections, particularly digital content. Equally important is the monitoring, training and development of rural library personnel in order to empower them to play their role effectively.

Community libraries

Community libraries in Malaysia serve to reach urban communities who may otherwise not have easy access to library services. The recognition of this need by municipal authorities helped to develop libraries to serve the need of urban communities (Khoir, 2011). Increasingly companies fulfilling their CSR have opted to set up libraries in busy urban districts, shopping malls and residential districts. This helped to meet the needs of urban communities who are otherwise too busy to make their way to conventional public libraries located away from where they live or work. Community libraries tend to be more modern and give more emphasis to the latest technology and digital resources thus appealing to younger readers. By promoting these libraries more corporate organisations will be attracted to the idea of reaching out to and engaging with otherwise marginalized urban societies through libraries. Cooperation and strategic partnership with Municipal and library authorities as well as the involvement of the communities themselves are essential in planning relevant and sustainable community library services. Promoting effective and well-used community libraries will raise their profiles and create the desired impact and encourage more corporate organisations to do the same. Strategically located community libraries with an active membership can become the nuclei in the transformation of outlying and underserved urban communities into knowledgeable and informed societies.

Academic libraries

Academic libraries are in a sustained state of proving their contributions to the academic missions of universities which do not necessarily recognize the broader value of libraries. This trend will most likely continue because of budget decreases and changing perspectives of university administrators who do not prioritize budget requests that do not make a connection between the library and the academic community it serves. Academic libraries need to establish their impact on enrollment, student learning outcomes, student performance, and research performance. In addition to placing priority on achieving their academic objectives, academic libraries can address national and societal needs through community engagement programmes. Embedded service is a recommended approach to showcasing the value of academic librarians outside the library walls.

The Association

The Librarians Association of Malaysia (PPM) as the only professional body for librarians in Malaysia has been instrumental in the development of librarians and librarianship in Malaysia. In collaboration with the National Library and other libraries and library schools in Malaysia, the PPM proves provides education and training for librarians, sets standards of service, organizes national, regional and international library conferences, promotes literacy and reading, and recognizes excellence among its members. By providing assistance to libraries in Aceh after the tsunami PPM has shown that it is capable of reaching out beyond its borders to help in the recovery and transformation of Aceh society. Currently it has a highly visible international leadership role as co-hosts with the National Library of Malaysia of the International Federation of Library Associations and Institutions (IFLA) World Library and Information Conference (WLIC) in Kuala Lumpur on 24–30 August 2018. Themed "Transform Libraries: Transform Societies", PPM can leverage on the Conference and its increasing membership to synergise libraries to reach out and engage with all communities including disabled people, to transform Malaysia into a knowledge-rich and informed society.

Library schools

Now, surely other library communities, such as the library schools in Malaysia can also help in various ways through inclusion and outreach efforts to meet the present needs of other libraries and their communities. At the more basic level, library schools can

collaboratively set up mini rural libraries, donate books, or even engage voluntarily in encouraging children to read through basic readers and storytelling. As a group, the academics can continue to volunteer to provide short courses to librarians or help catalogue collections and organize collections in schools and universities. They can help with creating and even hosting digital libraries for our ASEAN counterparts. The sky is the limit and no task is insurmountable when our hearts are committed.

It was identified that scarce systematic research has examined the community process in the context of Malaysian library services. To this end, the significance of this paper was the identification, based on the literature and authors' experience, of arguably the essential elements of community engagement in libraries. The themes that were developed in this paper highlighted elements for community engagement that were grounded in the reality and perceptions of the community rather than only from an institutional perspective. It also appreciated the community's capacity to initiate, run, and sustain community engagement practices, which reflects the ethos of genuine community engagement. Findings of this analysis evidenced how community engagement was implemented differently in different projects, bringing about various outcomes. In this respect, it is suggested that further empirical research, for instance from service-led to community-driven, is required to help further develop genuine engagement with the community. In addition, this paper recognises, instead of focusing on formalising the engagement process, the natural and organic development of the community process, which significantly depends on the input of the community. In other words, this article suggests a community-driven and organic form of community engagement.

Conclusion

In looking towards the future of Malaysian libraries, it will be increasingly important for libraries to demonstrate their value to the community beyond historically core library services: one-shot instruction sessions, collection development, and reference services that still adhere to the traditional departmental-based liaison programs. The initiatives illustrate how librarians can become more visible, more engaged, and integrated into the community as "social capital partners." Further, this paper demonstrates a more comprehensive view and emphasis on embedded services, web technology, strategic and institutional partnering; rural libraries; community libraries; asset-based community development; and international librarianship. The initiatives presented in this paper can now be used as an example when contacting library stakeholders and pursuing potential partnerships focusing on community outreach and engagement. There is now documented evidence on the important contributions librarians make beyond traditional support. Libraries can truly become integrated into the community and demonstrate their inherent value.

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Author biographies

Zawiyah Baba is currently Advisor, Libarians' Association of Malaysia. She graduated with B.A. (Hons) degree from the University of Malaya in 1972 and obtained a P.G.Diploma in librarianship (1973) and M.Lib. (1983) from Aberystwyth University, Wales, U.K. She began her career as Research Librarian with the Ministry of Information Malaysia (1973 – 1980) and then with the National Library of Malaysia from 1980 - 2005, where she retired as Director-General. Post-retirement, she was appointed Principal Research Fellow, Institute of the Malay World & Civilization (ATMA), Universiti Kebangsaan Malaysia (2006 – 2014). Her publications include translations of books and journal articles, in Malay and English. Dato' Zawiyah was President, Librarians Association of Malaysia (PPM) for four terms. Following the tsunami of December 2004, she led the PPM volunteer team (Iqra' Mission) to Aceh (2005-2010) and was Unesco consultant to Sri Lanka for redevelopment of public libraries (Nov.-Dec.2005). She served with IFLA Standing Committee for National Libraries (2000 - 2005) and the Congress of South-East Asian Librarians (CONSAL) (1984-86; 2000-05). Dato' Zawiyah was awarded the IFLA Medal (Durban, 2007), Outstanding Librarian PPM (Kuala Lumpur, 2008) and CONSAL Outstanding Librarian, South-East Asia (Vietnam, 2009).

Abrizah Abdullah is a Professor at the Department of Library & Information Science and Dean, Faculty of Computer Science and Information Technology, University of Malaya, Kuala Lumpur. She was a teacher librarian, and started her teaching career in 1990; and was then appointed as a librarian at the Educational Planning and Research Division (EPRD) of the Ministry of Education Malaysia before joining the University in 2000. She graduated with a bachelor degree in Environmental Engineering from Temple University, Philadelphia in 1988, and obtained her Masters degree in 1998 and PhD in 2007, both in Library & Information Science, from the University of Malaya (UM). Her research interests focus on digital libraries, Open Access & Open Science, information behaviour, bibliometrics and scholarly communication. She is the chief editor of the *Malaysian Journal of Library & Information Science* (SSCI, Scopus) and a research fellow at the Malaysian Citation Centre Ministry of Higher Education Malaysia. She is also a Senior Academic Associate at CIBER Research Ltd. UK.

An investigation of the experiences of Nicaraguan Costeño librarians

Ana Ndumu and Lorraine Mon
Florida State University, USA

Abstract
This research examines the experiences of librarians in Bluefields, Nicaragua. Semi-structured interviews and photovoice activities were used to investigate librarians' professional development, daily operations, and ways of meeting the information needs of Costeños—or, Miskitu, Rama, and Sumu indigenous groups as well as African-descending Creoles. The findings suggest that librarians' accounts coincide with established knowledge on Nicaragua's library landscape: libraries are predominantly formal and education-related; Nicaraguan society values oral knowledge or word-of-mouth information; and when compared with academic libraries, Nicaraguan public libraries are fewer and lack resources. Libraries on the Atlantic coast can strengthen their services through collaborations as well as culturally-based services. Additionally, the photovoice technique was found to be an effective tool for conducting research involving multicultural communities.

In the past two decades, there has been substantial library development in Latin America. Advancements include the improvement of services (Fernandez de Zamora, 1991; Pasch and Miranda-Murillo, 2004); strengthening of professional development (Johnson, 2006, 2008); the rise of independent libraries, particularly grassroots libraries with ties to nonprofit organizations (Mirandette, 2011; Mirandette and Miller, 2011); strident efforts to meet citizens' needs for technology and information literacy through automation (Block, 2008); and the investment in library facilities as seen in the breathtaking architecture of the National Library of Brazil, National Library of Chile, Library of the San Francisco Monastery in Peru, the National Library in Costa Rica, and Columbia's Virgilio, EPM and Villanueva Public Libraries.

The Central American country of Nicaragua has also seen gains in library development, mainly as a result of sustained political and economic stability. International library data suggests that in 1987 there were only 39 credentialed librarians across the country (Quinn, 1987) and in 1990, just 13 public libraries (Nations Encyclopedia, 2017). Today, there are 184 librarians and 456 libraries throughout Nicaragua (OCLC, 2017) of which 412 (90.3%) are school libraries; six (.01%) are academic; seven (0.13%) are special libraries; and 30 (0.6%) are public libraries. Most public libraries are overseen by the National Library and two (in Esteli and Matagalpa) are operated by the National Bank. There is at least one library in each province as well as a number of grassroots, community libraries such as the San Juan del Sur Biblioteca; Chacaraseca Biblioteca; the ProNica Bibliotecas de Esteli and Achuapa; and the Puedo Leer Library in Granada. Despite these advancements, when viewed from the scope of library to population ratio, freely-accessible libraries—that is, ones that do not require school or university affiliation—are scarce in that there is one for every 245,833 citizens. Stated differently, the entire country of Nicaragua (population 5.9 million) has about a third fewer libraries than

Corresponding author:
Ana Ndumu, School of Information, College of Communication and Information, Florida State University, 142 Collegiate Loop, Tallahassee, FL 32304, USA.
Email: avg05d@my.fsu.edu

the US city of Atlanta, Georgia (population 5.7 million). Understandings of Nicaragua's library landscape is necessary for continued progress.

Prior scholarship has focused on mainstream Nicaragua. There is little attention to the sociocultural needs and realities of African-descending Creoles along with indigenous groups such as the Miskitu, Sumus, and Ramas in the eastern part of the country. Centuries of geographic, political, and sociolinguistic isolation have resulted in two disparate Nicaraguan regions and cultures, with Atlantic-based minorities (13.5% of the population), or *Costeños*, being largely on the periphery of mainstream society. The goal of this field study was to comprehend the realities of *Costeña* librarians and to situate Atlantic coast libraries within the Nicaraguan library landscape.

Methods

Using Taylor's (1986, 1991) theory of information use environments (IUE) as the theoretical framework, this study examines the normative information values and practices of Nicaraguan librarians in Bluefields, Nicaragua. Emphasis is placed on understanding subjects in their environments. In short, a study that is guided by the IUE paradigm seeks to understand information, resources and modes of access. Such an inquiry investigates the flow and use of information along with the needs and dimensions of information environments. Therefore, this research addresses the questions:

> What characterizes the information environments of librarians in Bluefields?
>
> How do librarians meet the information needs of Costeños?
>
> What are the challenges and opportunities as far as providing books and information to Costeños?

The research entailed a multimethod qualitative study that utilized semi-structured interviews followed by photovoice activities. Originated by Wang and Burris (1994), the photovoice approach has been widely used in examinations on the perspectives of vulnerable groups (Castleden and Garvin 2008; Lorenz and Kolb 2009). Photovoice is ideal for interdisciplinary inquiries such as information behavior and combines participants' photography with their written accounts of a specific aspect of their lives. Participants are typically supplied with cameras and then trained on capturing photos that represent their realities. Afterward, they describe the photos either individually or within a group discussion setting. Several library and information science (LIS) scholars have undertaken photovoice research (Given et al., 2011; Hartel and Thomson, 2011; Yu, 2016).

The ethnographic field study project took place across six Nicaraguan towns or cities in June of 2015. A total of seven librarians in Matagalpa, Chacraseca, Managua, Pearl Lagoon, and Bluefields participated in the project. Each interview and photovoice activity lasted approximately an hour and a half. Participants were asked about their personal library career trajectories, daily job-related activities as well as the needs of their communities. For the present article, the researcher utilized the data from interviews and photovoice activities with two librarians in Bluefields, a multicultural port town that is the regional seat of the Región Autónoma de la Costa Caribe Sur (or South Caribbean Coast Autonomous Region, or RAAS) and has a population of 200,000. One interview was translated from Spanish to English then both interviews were transcribed. Using Berelson's (1952) qualitative content analysis technique, the data was organized according to emergent themes. Participants names have been masked to protect their identities.

A glimpse into Costeño culture

To understand the information use environments (Taylor, 1986, 1991) of Bluefields' librarians, it is important to understand their heritages.

Indigenous groups

Before the arrival of Europeans and African descendants, modern-day Nicaragua was home to various AmeriIndian communities—Garifunas, Mangue, Mayanga, Subtiaba, Ulwa, Sumu, Rama, and Miskitu (Baldi et al., 2014; Gould 1998). The introduction of European powers led to sharp declines or extinctions of these groups as a result of disease, war, and displacement. It is also believed that integration and assimilation further led to Nicaragua's AmerIndian population's decline (Gritzner, 2010). In other words, most indigenous groups simply acclimated to modern day mestizo society. In Nicaragua, the Miskitu and Rama, and Sumu people groups remain. Since the 1980s, shortly after the Sandinista Revolution, there have been efforts to preserve indigenous heritage through language and cultural revitalization.

Miskito. For centuries, the Miskitio Kingdom was large and prominent to the extent that the Atlantic Coast was referred to as the Miskito coast—though there is no linkage to the word mosquito or mosca in

Spanish (Pineda, 2006). The kingdom was well organized and adroit in trade, thus allowing chiefs and kings to strategically resist ruling powers. In order to subvert the Spanish, for instance, the Miskito formed an alliance with British privateers and explorers, which helped them subdue competing groups and maintain their independence from the Spanish (Baldi et al., 2014; Gould, 1998). The Miskito Kingdom was finally absorbed as a Nicaraguan territory in 1894. They have significantly declined in numbers (4% of the population, or 200,000) and have been surpassed in population size by Creoles. There are various Miskito enclaves along the RAAS region of the Atlantic coast.

Rama. The Rama people group (1% or 50,000 people) have lived in the Atlantic coast's Rio Escondido region for hundreds of years. Throughout the 19th century when the Miskito Kingdom wielded control, many Rama relocated to the islands known as Rama Cay and Monkey Point. As such, their language and traditions endured (Baldi et al., 2014; Stonich, 2001). Today, many live in the port town of El Rama, a major thoroughfare between the eastern and western sections of the country. Because of their aquatic lifestyle, the Rama are skilled at boat-making and fishing (Baldi et al., 2014; Stonich 2001).

Sumu. The Sumu people group primarily live in villages along the Rios Coco, Waspuk, Pispis, and Bocay. The Sumu inhabited much of the Miskito Coast in the 16th century. As the Miskito kingdom rose in power, the Sumu community significantly reduced in size. Today, Sumus live in remote northern Atlantic regions and speak various Sumu dialects—Panamahka, Twahka, and Ulwa. Though they comprise less than 1%, or 10,000, of Nicaragua's population, the Sumu have retained their way of life (Baldi et al., 2014; Stonich 2001).

Afro-Nicaraguan Creoles

The largest ethnic minority group, Creoles have had an eclectic sociopolitical experience, and their place within their national consciousness is complex. Some 580,000 Creoles (nearly 10% of the total population) live predominantly in the RAAS region. Creoles meander between Afro-Caribbean and Latin culture, and speak a hybrid dialect of English patois and Spanish. Creole culinary, art and religious practices are similar to those of neighboring island nations (Baldi et al., 2014; Goett, 2016; Gould, 2016).

There are various, though not entirely competing, narratives on the ancestral ties and movement of people groups between Africa and Nicaragua. One account posits that Blacks arrived as early as the 17th century as enslaved servants and field hands of British explorers such as the Buccaneer Blewfelt, after which the city of Bluefields is said to have been named. Another holds that modern-day Afro-Nicaraguans are descendants of runaway slaves from neighboring Caribbean islands. Still another explanation suggests that Blacks arrived on the southern Atlantic coast long after the slave trade was abolished in 1807; Afro-Caribbeans were imported to the region as indentured servants from British colonies during the British Nicaraguan occupation in the 19th century. For explorations on Afro-Nicaraguan heritage, see Gordon, 1998; Gould, 1998; and Pineda, 2006.

Contemporary Costeño society

Aside from its diversity, an important aspect of the collective Costeño culture lies in its relative independence from mainstream Nicaraguan society. Throughout the Spanish colonial era and especially during the nation's first 120 years of independence, the Atlantic coast of Nicaragua was geographically and demographically distinct from Pacific coast. This separation has fostered unique social typing, customs, boundaries and, certainly, everyday information habits (Goett, 2016; Gordon, 1998).

Beginning in 1905, the Atlantic coast territory entered a quasi-colonial period of American rule where US business entities controlled markets and natural resources, particularly mining and banana farming. Recognizing its economic promise, the Zelaya administration attempted, through military force and commercial penetration, to incorporate the Atlantic coast and its various ethnic groups into mainstream Nicaraguan society (Gordon, 1998). The Somoza regime led to further exploitation and conflict. Despite the Sandinista government's promises to integrate the Atlantic and Pacific coasts, tensions persisted. An Indigenous Rights and Recognition movement even resulted in uprisings against the FSLN. In 1987, the Atlantic coast was divided into two autonomous territorial systems, the *Región Autónoma del Atlántico Norte* (RAAN) and, as mentioned before, the *Región Autónoma de la Costa Caribe Sur* (RAAS) (Gordon, 1998; Stonich, 2001; Wade and Walker, 2011). Today, Creole and indigenous groups live corporately. Economically, the Atlantic coast has few labor markets, poor infrastructure, and insufficient social or civic opportunities. The Sandinista and Contra wars along with the deteriorating economic conditions prompted many Costeños to migrate. Creoles, in particular, have migrated the United States and

established enclaves in cities such as New York and Miami. More recently, Creoles have sought work on US cruise lines along with outsourced US-owned customer service call centers in the capital city of Managua. This migration "push" will likely continue, as Nicaragua remains the poorest country in Central America and follows Haiti as the poorest nation in the western hemisphere (United Nations, 2017). Further complicating matters, Costeños are facing possible displacement as a result of a pending interoceanic canal similar to that of Panama. In June 2013, the Nicaraguan National Assembly approved the Nicaraguan Canal and Development Project, a 50-year concession to finance and manage the project by private Chinese investors (Daley, 2016).

Narratives

Roberta Taylor, Bluefields Public Library

Fifty-eight-year-old Roberta Taylor has worked as the librarian at the Bluefields Public Library since it was established in June of 1997. The library is situated in the downtown borough (Barrio Beholden), just across from the Central Park. It occupies a room in the local *Alcaldea*, or municipal building, as it is a government-run public library. Roberta graduated from the *Colegio Moravo* or Moravian School, Bluefields' largest private school. She also obtained a Bachelor's degree in nursing at the Bluefields Indian and Caribbean University (BICU) and received her library science training through the *Institute de Cultural Nicaraguense* (Institute of Nicaraguan Culture), or INC. Roberta reports directly to the mayor of Bluefields. She is the sole staff member. The library is open Monday through Friday from 6a.m. to 4p.m. The holdings include 4000 non-circulating volumes in Spanish. There are several group and individual study areas but no computers, wireless Internet access, or copiers. The library is independently operated, as it is not affiliated with any local, national, or international library consortium or association. The library is modestly decorated with maps, scientific diagrams or tables, and similar educational paraphernalia.

Visitors, who are mostly primary and secondary students, must abide by the dress and silence codes. Since materials do not circulate, visitors typically read in-house, take photographs, or write information. According to Roberta, in the past there has been a problem of students ripping pages from books. The library has no card catalog automated online public access catalog (OPAC), as there is no technology. Books are shelved alphabetically by title and then stacked or sectioned by discipline (history, literature,

science). Roberta expressed that the geography books are the most popular resources.

After the local government mandated a literacy requirement for all government employees Roberta began providing adult literacy classes. She teaches phonics and grammar at 6a.m. each morning. Currently, there are six students, all local waste and sanitation workers who attend classes before their shifts. Each year, Roberta also holds a *Semana do los Libros,* or "Library Week" celebration. Roberta estimates that she serves 300 visitors annually.

Roberta indicated that the most pressing need of the Bluefields' Costeño community is the need to read in both English and Spanish. Roberta, herself a Creole Nicaraguan, stated that most visitors are Creoles; however, she would also like to better serve the Miskito community. Though she has no computing or Internet skills. Roberta acknowledged that "a modern library" with computers and Internet access is vital. "People need to know technology," she stated. She expressed that support is the biggest challenge, as funding is low. Roberta's views on her work as a librarian were captured in the photographs and captions of Figures 1–3.

Evelyn Ramirez, Bluefields Indian and Caribbean University library system

Sixty-two-year-old Evelyn Ramierz directs the main library at the Bluefields Indian and Caribbean University, or BICU. Founded in 1991, the BICU works to provide professional, technical, and leadership training specifically for Creole and indigenous Atlantic coast citizens. It and the Universidad de las Regiones Autónomas de la Costa Caribe Nicaragüense (University of the Autonomous Regions of the Nicaraguan Coast), abbreviated URACCAN and founded in 1992, are the only universities on the Atlantic coast of Nicaragua.

Evelyn has been working as a librarian since 2001. She earned a certificate in monography, or matriculated through a seminario de monografia at the UNAN-Managua. She supervises a staff of five full-time employees and six student assistants. The library is open 8a.m. to 9p.m. Monday through Friday, 10a.m. to 5p.m. on Saturdays and Sunday and serves 3000 faculty, staff, and students. The BICU Main Library is the central branch of BICU Library System (SIB-BICU). Two other branches are located at the BICU Bilwi campus as well as the BICU Pearl Lagoon campus.

The library collection consists of 12,000 volumes in Spanish, many of which are donations. There are three collections—the general collection, a health
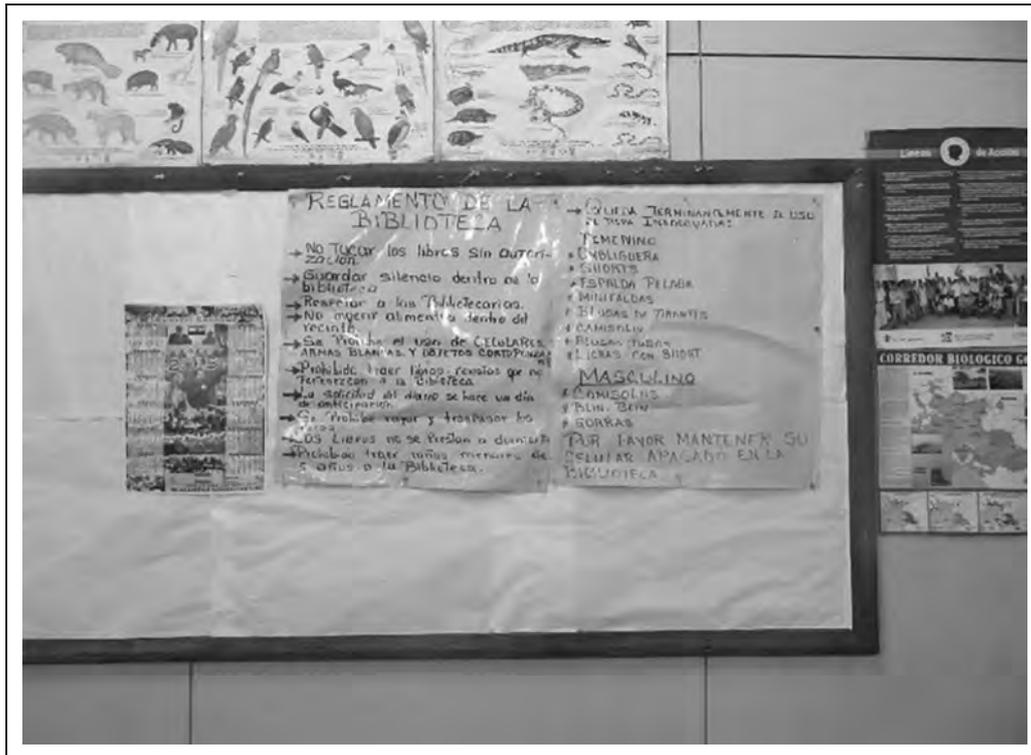
Figure 1. "These are the rules, so that the people know how to behave in the library."

Figure 2. "I feel that I contribute to something."

Figure 3. "One day we will have a nice library, with a place for the children."

collection serving the Perla Maria Norori School of Nursing, and a historical library within the Atlantic Coast Research and Documentation Collection. Books are classified according to the Dewey Decimal System and are processed using the *Regla de Catalogia* or Rules of Cataloging software version 21. Staff utilize the SIABUC 8 integrated library system (ILS) to manage material acquisitions, cataloging, analysis, and access. Electronic resources include *e-libros* (e-books) along with academic journals through *bases de datos* (scholarly databases) such as HINARI, JSTOR, LatIndex, Springer, EBSCOHost, Gale and more. One of the featured databases is Turkulka, an online dictionary of the Rama indigenous language. The online catalog and electronic resources are available through the library website. Remote access is available to distance students at the BICU's extension sites. There are 22 computers, two copiers, two printers and wireless Internet access. The library offers orientations for new students and ongoing computer and research workshops.

The BICU library system participates in several library consortiums: *Sistema de Informacion de Bievestar Estudiantil* or SIBUENA (System for Information Development) a Central American library resource cost-sharing system; the Program for the Enhancement of Research in Information (PERII), an cooperative established by researchers and librarians in Africa, Asia and Latin America that provides access to journals, databases and articles across a wide range of disciplines; along with an library support network through SIABUC8 ILS software vendor that provides affiliated libraries with training and resource-sharing opportunities.

When asked about areas of strengths and opportunities, Evelyn responded that the library has made great strides in the 21st century. The priority is to improve technology and online collections. The library is one of the more popular facilities on campus. Student organizations often raise awareness or promote their events by "tabling" in front of the library. Students are comfortable with technology; most own smartphones, tablets, or laptops. They perceive the library as an information center, study space, and a student union, according to Evelyn.

In terms of challenges, Evelyn relayed that there is a need for more sophisticated library science techniques such as book conservation and digitization, particularly of government and historical documents. "Our next project," she stated, "is an institutional repository." Moreover, original cataloging is often necessary. Thus, the cataloging backlog is sizable. She argues that professional training is often expensive since, as she put it, "the career is in the Pacific, not here [in Bluefields]." Evelyn also expressed the need for information literacy instruction. "Students

Figure 4. "The collection has grown so much in the last few years."

need to learn to evaluate, find and organize the information we have for them here."

Photographs and captions representing Evelyn's views on her work as a librarian as well as the information needs of Costeños can be seen in Figures 4–7.

Discussion

The narratives presented by Bluefields librarians Roberta Taylor and Evelyn Ramirez coincide with what has been documented on Nicaraguan libraries. Their accounts also afford insight specific to Costeño culture.

Library expansion

Both the Bluefields Public library and the BICU main library are less than 30 years old. Evelyn and Roberta spoke to the limitations they face in meeting the growing need for material and, specifically, helping users access the necessary resources for ICT use and digital participation. Similarly, much of the literature on Nicaraguan libraries describes successes and challenges involving library expansion. Although literacy, poetry, and education are deeply entrenched in Nicaraguan society, library history in Nicaragua "is largely a history of the 20th century" (Wiegand and Davis, 1994: 475). Apart from the Ruben Dario Biblioteca Nacional de Nicaragua (or Ruben Dario National

Library) that was established in 1882 and renamed after the famed poet and librarian, little is written in terms of 18th- and early 19th-century Nicaraguan libraries (Biblioteca Nacional de Nicaragua, 2014). Historically, libraries and private reading rooms reflected Spanish colonial ideals that predicated reading as a privilege of the governing class (Kent, 1990).

As the country continues to advance, so do its libraries. The national library, for instance, has evolved in that it has been rebuilt or relocated after several natural disasters as well as a civil war. Currently housed in the National Institute of Culture—once the palace of the Somoza family dictatorship—the Biblioteca Nacional de Nicaragua (Nicaraguan National Library) holds 100,000 volumes, has a staff of 12 and is a popular attraction in the capitol city of Managua's vibrant Salvador Allende district. The Nicaraguan Library System consists of the National Library as the central branch and dozens of public libraries. Modernization is ongoing.

Evelyn Ramirez' description of the BICU library's operations suggests that there is growing interlibrary support and training among Nicaraguan librarians through the SIBUENA, PERII, and SIABUC8 networks, which suggests that they rely on collaborations for development. Such networks can perhaps be seen as a new era in the nation's library history. According to prior research, there were three periods of LIS
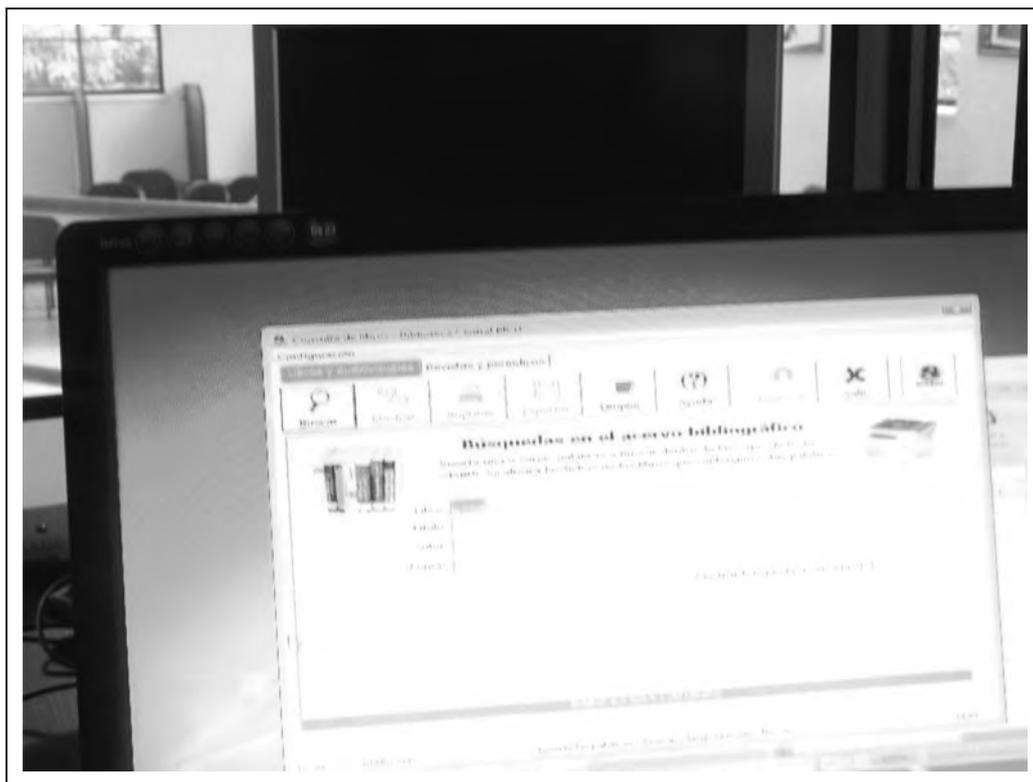
Figure 5. "We give orientations and workshops on finding information."

growth throughout the 20th century, the first of which involved school libraries when, in 1965, the Ministry of Public Education mandated school libraries and organized efforts to establish school libraries within the educational system (Weigand and Davis, 1994). The second phase was a response to the 1972 earthquake that devastated many libraries. Thompson et al. (1978) in their chronicle of libraries in the aftermath of the earthquake described mass destruction. Only 7,653 of the original national library's 80,000 volumes were recovered after the earthquake. The prestigious regional repository, the Central American Library, meanwhile, lost 25% of its collection while the Nicaraguan-American Library subsequently closed. Approximately 55 school libraries were demolished and 94 more suffering substantial damage. Among the universities, the National Autonomous University in Managua (UNAN) lost its building, most equipment and 25% of its collection; the Central American University lost 1500 volumes along with a significant portion of equipment, shelving, and furnishings. Foreign aid in the form of assistance from the Peace Corp, UNESCO, and a special task force from the Kent State University Library School helped libraries recover (Thompson et al, 1978). Prior research predominantly describes the history of libraries on the Pacific coast. There has been no research on those of the Atlantic coast.

Reading and information literacy in Nicaragua

It is difficult to apprehend the attitudes of Costeños toward reading, as perceived by the librarians who serve them. Both the BICU library (an academic library) and the Bluefields public library house educational collections, with virtually no leisure material such as magazines, novels, or children's books. Aside from the literacy classes at the public library, there was no mention of book clubs or readers' advisories; it is not clear whether this omission points to a cultural view of reading and readership being associated with schooling versus whether librarians espoused a formal view of the library as space. Glimpses of a conventional or conservative library approach are seen in Roberta's adherence to strict library rules such as non-circulation and silence.

In similar fashion, the literature on the relationship between reading and library history in Nicaragua is ambiguous. It appears that after the developments brought on by school library initiative and natural disaster recovery, another significant era of library growth began after the Sandinista Revolution in 1979, when the newly-established FLSN (Sandinista National Liberation Front) government launched its Nicaraguan Literacy Campaign. This movement received international attention on account of its impact in light of its brevity. At the time, Nicaragua's population was estimated to be 2.4 million, of which

Figure 6. "A lot of our electronic resources come from PERI."

841,500 people were at least 15 years old and illiterate (Arnove, 1981; Daniel, 2000; Miller, 1985; Sandiford et al., 1994). Spurred by post-war zeal and a renewed national consciousness, the program dispatched some 65,000 young adult *brigadista* reading coaches into disenfranchised communities. Reading circles took place in barns, farms, and churches. Brigadistas developed material in dialogue with the community in lieu of using prepared texts. Paulo Freire's (1970) *Pedagogia del oprimido (Pedagogy of the Oppressed)* functioned as the curriculum primer. By all accounts, the campaign, which earned the UNESCO Nadeshda Krupskaya Literacy Prize, succeeded in reducing the Nicaragua adult illiteracy rate from 50% to just under 13% in five months.

Nearly 30 years later, the Nicaraguan Demographic and Health Survey data (DHS) reports a current literacy rate of roughly 88% (Instituto Nacional de Estadisticas y Census, 2012), which is on par with the global literacy rate of 86.3% (United Nations, 2017). It appears that Nicaragua maintained its literacy rate despite initial concerns regarding the operationalization of reading as well. However, as the lack of print material to foster reading fluency there is no mention of the role of libraries and librarians in the national literacy campaign. (Miller, 1985; Sandiford et al., 1994).

Nicaragua can also be characterized as a listening society in that radio broadcast is the most popular form of information communication technology (ICT). About 18% of the population lacks electricity (Nicaraguan National Institute of Information

Figure 7. "You always find students studying in groups throughout the day."

Development, 2016; World Bank, 2016), so battery-powered radios are common, particularly in rural areas. Radio broadcast is available in public spaces such as markets and public transportation. Despite multiple television stations supplemented by cable television access in urban areas, television pales in comparison to radio broadcast, as evidence by the fact that there are more than 300 radio stations but only 18 national television channels. In regards to print media, there are several newspapers, with *La Prensa* being the flagship periodical. There are few bookstores, and since only 24.6% of Nicaraguans have access to the Internet at home, many Nicaraguans utilize smartphones and cyber cafés to meet immediate computing or information needs (Nicaragua National Institute of Information Development, 2016; United States Central Intelligence Agency, 2016).

Nicaragua's information panorama along with the work of Bluefields librarians appears to be complex. When asked about the biggest limitation in terms of their work, Roberta and Evelyn described the need to strengthen visitors' information skills. They emphasized the importance of electronic resources, Internet access, computers, and an online library portal. To this end, Dudziak (2007) in her study on information literacy and lifelong learning in Latin America, argued that now more than ever Latin American libraries must integrate information literacy training into their services. The great challenge in Nicaragua and other developing nations is to create mechanisms for empowering citizens through access to advanced computing technologies and information.

Librarian education and professional development

Though their dedication to the Bluefields community, is clear, neither Roberta or Evelyn attended formal library school. While Evelyn had access to training via library networks, Roberta did not. Both expressed a need for ongoing training. Roberta, in particular, desired computing skills. Prior research substantiates that library education in Nicaragua has improved but is still limited. The country's first and only degree program in Library Science was established at the Central American University beginning in 1980 (Quinn, 1987). At its peak in 1986, the program had 238 students. The nation's struggles, however, impacted on all aspects of higher education and the Library Science program was eventually discontinued (Quinn, 1987).

Today, library certificate courses are available in Managua at the UNAN—thus requiring greater effort and costs on the part of Costeño librarians. Distance LIS education affords the opportunity to enroll in Bachelor's or Master's level courses through the Universidad de Costa Rica, and the Universidad de la Habana (Cuba), the Universidad de Cuba, the Universidad de Puerto Rico, and several in Mexico such as the Universidad Autonoma de Guadalajara. The majority of Latin American LIS programs provide the licentiate (licenciatura) degree in Library Science. Also, training or professional certification are provided by IFLA (the International Federation of Library Association), INFO LAC (Latin American and Caribbean Society of Information), ABINIA (Association of InterAmerican National Libraries) and other consortiums. There are also opportunities for professional support and advocacy through two national library associations: the Nicaraguan Association of Librarians and the Association of University and Related Professional Librarians of Nicaragua (Meinhold, 2010).

It appears that Costeño librarians do not partner. The academic library owes its advancement to participation in national and international cooperatives. There is room for cross-training among school, public, and university librarians in Bluefields and throughout the entire Atlantic coast. In doing so, librarians will be better equipped to advocate for stronger bilingual reading and information skills.

Culturally-responsive libraries

The accounts provided by Evelyn and Roberta also shed light on how they perceive their roles as librarians. Themes derived from statements suggest that the scope of their work is confined to meeting the day-to-day needs of their branch, and not the broader community. Improvements in intergroup dialogue and ethnic coexistence along with the rise of a common Costeño consciousness have resulted in the development of vibrant cultural entities. There are several cultural heritage festivals and observances as well as a growing number of think tanks that support the research and preservation of Creole and indigenous ways of life, including the Center for Studies and Information on Multiethnic Women (CEIMM), Environmental Information Center, Institute for the Study and Promotion of Autonomy (IEPA), the Institute of Traditional Medicine and Community Development (IMTRADEC), the Institute for Natural Resources, Environment and Sustainable Development (IRE-MADES), the Intercultural Communication Institute (ICI), and the Institute for the Promotion and Research of Cultural Revitalization (IPILC). There

are several other independent, civic organizations with similar missions.

However, librarians did not address participation in this cultural movement. There is an opportunity for Bluefields' libraries to tap into this Costeño heritage appreciation to not only celebrate the community, but promote reading, information literacy, and lifelong learning. Buschman (2009) called this "triangulated literacies." Library services, collections, and programming can be intertwined with Costeño empowerment. For example, small stakes but high impact endeavors might entail exhibits or displays featuring the writings of famed Costeño poet Carlos Rigby, or the artwork of the late Creole poet, June Beer, or the music of Creole folk singer and activist, Philip Montalban. Librarians might even establish book clubs with selections like the biography of Central American indigenous activist and Nobel Peace Prize winner, Rigoberta Menchu. The Costeño cultural ideology might function as a vehicle for encouraging library use, in other words.

On a larger note, this void in Costeño librarianship seems to be typical of not just Nicaragua, but Latin America. Fernandez de Zamora (1991) wrote in her analysis of Latin American libraries that several challenges limited library services: the need for greater unification, integration and cooperation; the underestimation of the value of libraries and librarianship; the subsequent scarcity of resources allocated to libraries; and the lack of a Latin American library paradigm or identity. Fernandez de Zamora also contended that Latin American libraries have uncritically accepted foreign classification systems (i.e. Dewey Decimal, MARC, Library of Congress) while also lacking emic research and theory. Lastly, she posited that libraries are largely detached from cultural memory or identity (Fernandez de Zamora, 1991). Over 25 years later, Fernandez de Zamora's assessment is relevant; it might be said that a self-defined epistemological transition might dismantle the boundaries and limitations affecting libraries and librarianship in Nicaragua and beyond.

Conclusion

The purpose of this study is to investigate the experiences of Costeño librarians and to locate areas of congruence and divergence with what has been chronicled on Nicaraguan libraries. Findings reflect that Nicaraguan libraries have made significant strides but face limitations as they continue to evolve. Librarians cite the challenges of providing access to resources and obtaining professional development.

There is also a need for collection building and advanced computing technologies. More nuanced themes include that library operations remain in keeping with traditional views of the role of libraries in society in that they are formal and academic in scope. Findings also suggest that Costeño librarians might strengthen their efforts by networking or collaborating among themselves and with other librarians in the region. Additionally, Costeño librarians have not taken part in the recent cultural revitalization on the Atlantic coast; doing so might enhance library outreach and awareness.

This study is bound by the limitations of qualitative research. Although the interviews and photovoice material provide a glimpse into the norms and practices of librarians on the Atlantic coast, the data is not generalizable. In the future, the study may be expanded to include librarians in other Atlantic Coast towns. Additionally, a follow-up survey study could provide a comprehensive picture of the practices of Costeño librarians along with Nicaraguan librarians as a whole. Another long-term approach may be to explore the impact of independent, grassroots community libraries.

As a final word, when it comes to qualitative research, the photovoice technique can be an effective complementary and confirmatory tool that sheds light on the lived experiences of marginalized groups (Maclean and Woodward, 2013; Wang and Burris, 1994, 1997; Yu, 2016). Julien et al. (2013:257) note that:

> a truly user-centered perspective of information behavior requires investment in methods that explore that behavior in emic terms. Using such methods, research results can be more meaningful from the point of view of users, and data can have relevant practical application. Photovoice is one such emic method.

Photovoice is conducive for research involving community development and social action. It would be interesting to combine survey research with the photovoice method to arrive at conclusions that expose broad patterns while still making room for participant reflections.

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Author biographies

Ana Ndumu is a PhD candidate studying Library and Information Science at Florida State University's School of Information. Originally from Nicaragua, she worked in academic libraries for many years. Her interests include information equality and inclusion as well as diversity in LIS.

Dr Lorraine Mon is Director and Associate Professor at Florida State University's School of Information. Her research and teaching interests entail social media management, digital reference, government information, e-government, and reference and information services.

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

Magnus Osahon Igbinovia (ORCID)
University of Ibadan, Nigeria

Ngozi P. Osuchukwu
Madonna University, Nigeria

Abstract
The study was carried out to investigate the predictors of library personnel's knowledge sharing behaviours and its implication for achieving sustainable development goals, using the theory of planned behaviour. Survey research design was adopted for the study whereby a structured questionnaire was used to elicit data from 100 registered library personnel in Anambra State, Nigeria. Total enumeration was adopted as the sampling technique to obtain the population sample. The study revealed that attitude, perceived behavioural control and subjective norm had a significant influence on knowledge sharing intention at $P < 0.05$. Also, knowledge sharing intention had a positive and significant influence on SDGs actualization. The study concluded that for library personnel to contribute greatly to the realization of Sustainable Development Goals, they must ensure effective knowledge sharing behaviour on Sustainable Development Goals-related information. Therefore, management of libraries should set up structures that foster knowledge sharing. Also, library personnel should develop themselves with the required skills and knowledge on Sustainable Development Goals, which will stimulate a high rate of knowledge sharing.

Introduction

The United Nations adopted a set of goals at the general assembly on 25 September 2015. These goals known as Sustainable Development Goals (SDGs) consist of 17 goals and 169 targets (available at: https://sustainabledevelopment.un.org/sdgs). SDGs are transformation from the Millennium Development Goals (MDGs). The objective of the global agenda is to make the world a better place by stimulating development actions over the next 15 years in areas of critical importance. Igbinovia (2016) reported that the 103rd session of the International Federation of Library Associations and Institutions (IFLA) conference held in 2015 was on the contribution and mission of libraries and information services to sustainable development. According to Bradley (2014), libraries contribute to sustainable development by providing access to data and knowledge that support informed research which is instrumental in achieving these goals. Moreover, over the years, libraries have continued to champion the course for information literacy, which according to Chingono et al. (2015)

Corresponding author:
Magnus Osahon Igbinovia, Department of Library, Archival and Information Studies, Faculty of Education, University of Ibadan, Oyo State, Nigeria.
Email: infor.migbinovia@gmail.com

fosters socio-economic development and by extension, SDGs. Thus, libraries and librarians have been doing much to achieve sustainable development.

The SDGs have resulted in a shift in scholarship to pertinent issues necessary to spur development in line with the agenda. The result of this shift is an upsurge in the level of knowledge generated and/or created in areas of sustainable development. As the amount of available knowledge increases, there is need for knowledge Management (KM) practices, with knowledge sharing as a key concept which allows the leveraging of knowledge for possible gains (Alegbeleye, 2010). One objective of KM according to Rowley and Farrow (2000) is to improve and provide access to knowledge in order to enhance its transfer among individuals. This is pertinent to increase the level of SDGs awareness among stakeholders. Igbinovia (2016) opines that libraries and librarians have been doing much in creating awareness of SDGs, which corroborates previous findings that librarians share knowledge on new trends (Awodoyin et al., 2016; Okonedo and Popoola, 2012). While UN Women (2015) advocates sharing of SDGs knowledge with a wider audience, they added that the purpose of KM strategy for SDGs is to ensure that knowledge generated and innovations are properly documented, analysed and widely disseminated for uptake and replication.

Knowledge sharing is a key aspect of KM which refers to the exchange of acquired information, knowledge, ideas, skills and experience, among people, organizations and institutions (Ikenwe and Igbinovia, 2015). In the context of libraries, it can be noted that a great deal of knowledge sharing is entirely uncoordinated (Maponya, 2004). Van Den Hooff and De Ridder (2004) assert that the intention of individuals to mutually exchange their knowledge and create new knowledge (regardless of the platform or level of coordination) is considered knowledge sharing behaviour (KSB).

On the relevance of knowledge sharing to ensure sustainable development, the African Internet Governance Forum (AfIGF) (2015) emphasized the need to address access to information as a key development issue and as such encouraged information and knowledge sharing. This seems to align with Urama et al. (2014) who opine that knowledge sharing that will enable government advance development planning and implementation, cannot be over-emphasized. Also, its outcome will be establishing communities of practice (CoPs) comprised of people put together by institutions or organizations, to accomplish certain functions or who have a common goal or problem for which they can share knowledge for collaborative research and development. The implication is that

through knowledge sharing, common goals and targets are ensured by proffering solutions to problems that underlie the SDGs.

Several factors could impede or facilitate an individual's intention to share knowledge (Boateng et al., 2015). However, the Theory of Planned Behaviour (TPB) is a widely accepted theory that reflects the factors likely to influence KSB using three conceptually independent determinants of intention, i.e. attitude, subjective norm and perceived behavioural control. According to Ajzen (1991), the prediction of intention by these three variables vary across behaviours and situations. Thus, for the purpose of this study, TPB which is a model that explains the behavioural intentions of individuals will be considered in order to determine factors likely to affect library personnel's intention to share knowledge in the context of sustainable development goals.

Statement of the problem

Librarians, by virtue of their profession, are rightly positioned to share information and knowledge on SDGs. At a time like this, when the focus of nations, organizations and institutions is tilted towards ensuring a sustained development as outlined in the United Nations' global agenda; librarians as information professionals are key players in creating awareness of these 17 goals and 169 targets identified in the development framework. However, how effective their knowledge sharing on SDGs will be, is predicted or influenced by several factors which require scholarly attention. Meanwhile, Biranvand et al. (2015) note that the most important reason behind a KM system's lack of success in sharing knowledge, is lack of information on the factors affecting knowledge sharing.

Moreover, there is a dearth of literature on the varied factors affecting the KSB of librarians. Identifying these factors is significant in ensuring that awareness of these goals is effectively carried out by all stakeholders, invariably increasing the chances of actualizing them by the end of 2030, if not completely, to a large extent. Hence this study aims to investigate the predictors of library personnel's KSBs and their implications for achieving SDGs.

Theoretical framework

The study is anchored on the TPB, propounded by Ajzen (1985), which provides a useful conceptual framework for dealing with the complexities of human social behaviour. It is an extension of the theory of reasoned action (Fishbein and Ajzen, 1975), which was unable to cater for behaviour over which people lack control or with incomplete volitional control (Ajzen,
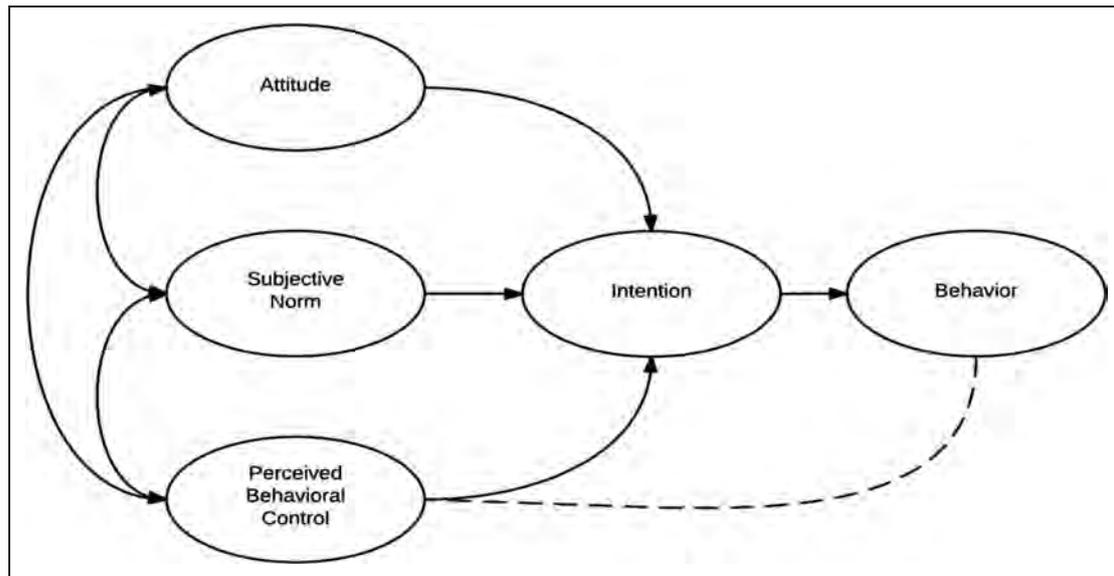
Figure 1. Model of theory of planned behaviour (Ajzen, 1991).

1991). Thus, the theory of reasoned action (TRA) was the basis of TPB, as it incorporates the perceived behavioural control (PBC) variable to cater for situations where people lack complete control over the behaviour (Al Qeisi and Al Zagheer, 2015).

Ajzen (1988) states that the behaviour of an individual is dependent on behavioural intention, which consists of three components, i.e. attitude, subjective norms and perceived behaviour control. According to Ajzen (1991), the TPB postulates three conceptually independent determinants of intention as defined below:

The first is the **attitude** toward the behaviour and refers to the degree at which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question. The second predictor is a social factor termed **subjective norm**; it refers to the perceived social pressure to perform or not to perform the behaviour. The third antecedent of intention is the degree of **perceived behavioural control**, which, as we saw earlier, refers to the perceived ease, or difficulty of performing the behaviour and it is assumed to reflect past experience as well as anticipated impediments and obstacles (Ajzen, 1991: 188).

Attitudes towards the behaviour, subjective norms with respect to the behaviour and perceived control over the behaviour, are usually found to predict behavioural intentions with a high degree of accuracy. In turn, these intentions, in combination with PBC could influence behaviour (Ajzen, 1991). The implication of this is that attitude, subjective norm and perceived behavioural intentions, are all variables whose manipulation will likely influence behavioural intention and subsequently, KSB as reflected in the model (see Figure 1).

The TPB was adopted for the present study due to its general acceptability and applicability in unveiling the factors likely to influence an individual's behaviour in a given context. According to Ajzen (2006) when using the TPB, the behavioural actions must be defined precisely to allow useful generalization. While this study is carried out in the context of library personnel's KSB towards SDGs, it is pertinent to delineate each of these predictors or influencing variables to reflect sub-constructs upon which they will be measured in view of this present study. Therefore, a conceptual framework was developed in line with the TPB to guide the study as seen in Figure 2.

The conceptual framework in Figure 2 was designed to show the independent variables of attitude (A), subjective Norm (SN) and perceived behavioural control (PBC) with their sub-constructs as used in the study. By implication, any modification in the independent variables of A, SN, or PBC will have a significant influence on the knowledge sharing intention (KSI) of library personnel and subsequently, perceived SDGs realization.

Conceptualization and hypotheses generation

In a bid to achieve the objective of the study, there is need to make explicit, key variables in the context from which hypotheses will be generated in line with the TPB, guided by the conceptual framework for the study. However, it is pertinent to state here that while each of the independent variables (A, SN and PBC) is reviewed against KSI, in the conceptualization; they will be linked to SDGs actualization, in the formulation of the hypotheses. This is because of the dearth of
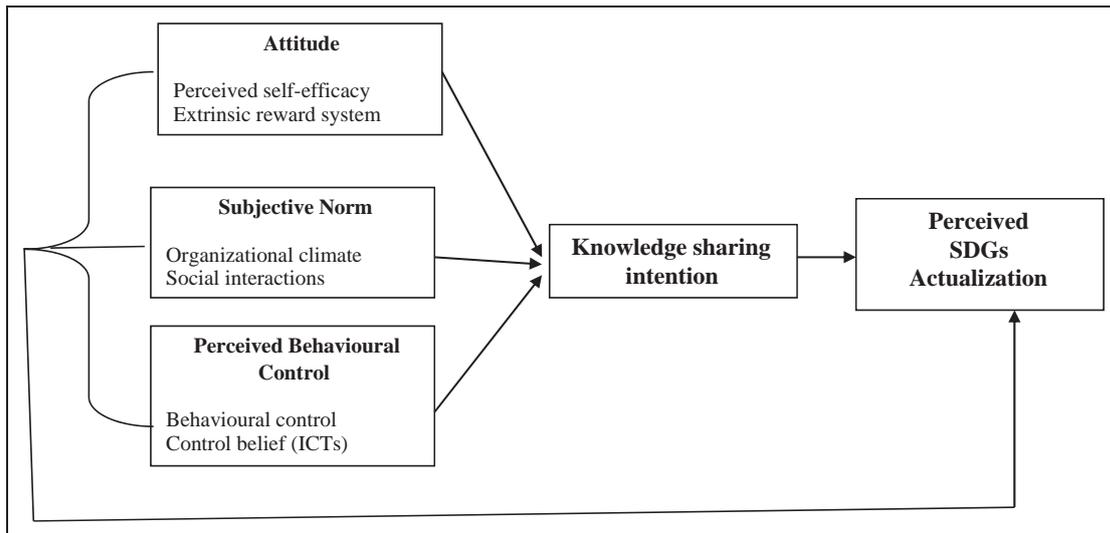
Figure 2. Self-developed conceptual framework for the study.

literature on SDGs actualization especially with respect to the independent variables. Moreover, it has been established that intention will eventually lead to actual behaviour. Thus, for the purpose of this study, KSI will equate actual behaviour.

Attitude and knowledge sharing intention

Skaik and Othman (2015) in giving an empirical and theoretical background to their study on KSB, note that attitude determines the individual's intention to actually perform KSB. Shook and Bratianu (2010) state that attitude is formed based on one's beliefs in the possible outcomes. It is asserted that the more favourable the possibility to actualize a behaviour is, the stronger the intention to perform the behaviour will be, and vice versa. It is a function of the perceived consequences people associate with the behaviour (Chiou, 1998). Thus, attitudinal beliefs are key determinants of behavioural intention to share knowledge (Al Qeisi and Al AlZagheer, 2015).

Several studies have shown a positive relationship between attitude and KSI (Chen et al, 2009; Kuang et al., 2012; Ramayah, 2009; Skaik and Othman, 2015). Attitude towards behaviour for this study will be measured using self-efficacy and extrinsic reward system.

According to Ajzen (2002), self-efficacy is an individual's confidence in the ease or difficulty of performing the behaviour in question, which influences an individual's intention to perform the behaviour. Constant et al. (1994) opine that an individual with high self-efficacy is more confident (positive attitude) in sharing knowledge with others. Self-efficacy has been shown to be one of the main determinants in forming an optimistic attitude towards knowledge

sharing (Ye et al., 2006). Also, Skaik and Othman (2015) note that self-efficacy has a significant effect on the KSB of academics.

While an effective reward system is also likely to affect people's attitudinal behaviour towards knowledge sharing (Homans, 1974), the absence of it may frustrate such intention to share knowledge (Riege, 2005). Such reward systems are motivational factors considered to influence KSI (Ardichvili, 2008). On a similar note, Syed-Ikhsan and Rowland (2004) assert that employees need a strong motivator in order to share knowledge. Rehman et al. (2011) further note that rewards (extrinsic) could increase the KSB of people, but only as a short-term solution, and thereafter, people return to their original behaviour. Hence, Hypothesis 1 is presented below:

> **Ho1:** There is no significant relationship between attitude and perceived SDGs actualization

Subjective norm and knowledge sharing intention

Subjective Norm (SN) is defined as the individual's perceived social pressure or influence to perform or not to perform a given behaviour in a given situation (Ajzen, 1991). According to Huda et al. (2012) it refers to an individual's belief or assumption about people's expectations of their behaviour. SN has been shown to be an important determinant of acceptable behaviours in numerous studies (Srite and Karahanna, 2006). Bock et al. (2005) in their study revealed that SN has significant influence on KSI. Several studies have shown a positive relationship between SN and knowledge sharing (Aulawi et al., 2009; Skaik and Othman, 2015). The sub-constructs under which SN is considered for this study will be organizational culture and social interaction.

Culture or climate of an organization also plays a vital role in building a KSB of an individual (Rehman et al., 2011). The importance of understanding organizational culture is demonstrated through the congruence hypothesis, which states that individuals are more effective when their personal competences align with the culture of the organizations in which they work (Abbett et al., 2010). For knowledge sharing, organizational culture is important because knowledge sharing needs a supporting organizational culture (Huang et al., 2008).

When individuals within an organization build close relationships with one another, they devote time and resources to sharing knowledge (Huang, 2009). Zack (1999) asserts that knowledge sharing involves social interaction, which spurs knowledge sharing activities. Hence, Hypothesis 2 is presented below:

Ho2: There is no significant relationship between subjective norm and perceived SDGs actualization

Perceived behavioural control and knowledge sharing intention

Ajzen (1991) notes that the TPB differs from the TRA in its addition of PBC, and that behavioural control is self-evident: the resources and opportunities available to a person must to some extent dictate the likelihood of behavioural achievement. PBC refers generally to an individual's expectations of the degree to which they are capable of performing a given behaviour and the extent to which they have the pre-requisite resources to perform the behaviour (Ajzen, 2002). He added that it is a key determinant of KSB.

The concept of PBC is clearly expressed in Bandura's (1982, 1997) concept of perceived self-efficacy, which is concerned with judgement of how well one can execute required actions to deal with specific situations. However, the individual's attitude towards the act already shows this confidence. Thus, attitude towards the behaviour can overshadow the effect of PBC (Chiou, 1998). This justifies why self-efficacy was measured under attitude in this present study.

Perceived control can be used to predict the probability of a successful behavioural attempt (Ajzen, 1985). According to Tohidinia and Mosakhani (2009), organizations that aim to enjoy knowledge sharing advantages must pay attention to information technology (IT) as a decisive factor in knowledge sharing. They referred to Lin and Lee (2004), who discovered that PBC had a positive effect on intention to share knowledge. Also, lack of PBC may negatively affect intention to share knowledge (Ryu et al., 2003). Mahyarni et al., 2012) opine that IT significantly influences KSI. Hence, Hypothesis 3 is presented below:

Ho3: There is no significant relationship between perceived behavioural control and perceived SDGs actualization

Knowledge sharing intention (predicted jointly by A, SN and PBC) and perceived SDGs actualization

A central factor in the TPB is the individual's intention to perform a given behaviour which is influenced by attitude, subjective norm and perceived behavioural control. Intentions capture the motivational factors that influence a behaviour which reflects how hard people are willing to try and how much effort they will exert in order to perform the behaviour (Ajzen, 1991). These intentions according to Al Qeisi and Al Zagheer (2015) indicate that an individual is ready to perform a given action which is the immediate antecedent of behaviour.

The stronger the intention to engage in behaviour, the more likely its performance. However, behavioural intention can find expression in behaviour only if the behaviour in question is under volitional control (Ajzen, 1991). It represents a person's motivation, in the sense of his or her conscious plan or decision to perform certain behaviour (Conner and Armitage, 1998).

According to Pavlou and Fygenson (2006), TPB suggests that behavioural intention is the most influential predictor of behaviour; after all, a person does what he/she intends to do. Meanwhile, Ellahi and Mushtag (2011) opine that behavioural intention contains motivational aspects which determine an individual's intention to perform or not perform a behaviour. A number of researchers have reported a positive relationship between intention and the actual behaviour (Ryu et al., 2003). Thus, where there is high KSI (influenced relatively or jointly by A, SN or/and PBC), there will be a positive KSB, which will invariably help in the actualization of SDGs. Hence, Hypothesis 4 is presented below:

Ho4: Attitude, subjective norm and perceived behavioural control will have no joint influence on SDGs actualization

Methodology

Survey research design was adopted for the study in order to determine the status of library personnel regarding KSB in relation to SDGs. Structured questionnaire was used to elicit data from the 100 library personnel registered with the Nigerian Library Association, Anambra State Chapter in Nigeria, which constitute the population of the study. Given the manageable size of the population, total enumeration was adopted as the sampling technique to ensure utmost level of generalization.

The research instrument is an adaptation (used with modifications to suit the present study) of Tohidinia and Mosakhani (2010) which they subjected to convergent and discriminant validity and found that the instrument is reliable or fit for the study. The instrument was, however, pre-tested through a pilot study using 25 library personnel in University of Benin, Edo State and the result yielded a reliability coefficient of 0.89 Cronbach's alpha. The scale was therefore considered suitable and used for the present study. While descriptive statistics of frequency and percentage was used to analyze the demographic characteristics of the respondents, multiple regression analysis was used to analyze the data collected for the study.

Presentation of results

A total of 100 copies of the questionnaire were distributed, out of which 72 were completed and returned by respondents at the response rate of 72%. This is considered adequate for analysis since the standard acceptable for most research work is 60% (Dulle et al., 2010).

Table 1 shows the demographic distribution of the respondents according to their library type, gender, age, educational qualification and years of experience. It shows that most of the respondents, 32(44.4%), are from public libraries. Moreover, 50(69.4%) of the respondents are female as against their male counterparts who constituted 22(30.6%) of the respondents. On the age distribution, most of the respondents constituting 24(33.3%) were between 31 and 40 years. Meanwhile, on educational qualification, the result showed that most of the respondents who had either a Higher National Diploma or a Bachelor's degree, constituted 42(58.3%) of the respondents. In addition, most of the respondents constituting 22(30.6%) were in their early years of experience, between 1 and 5 years.

The hypotheses for the study were generated based on previous literature reviewed in the course of the study, showing relationships between variables of concern. This section therefore reports the result of hypotheses that were tested at 0.05 level of significance.

Hypothesis 1: There is no significant relationship between attitude and perceived SDGs actualization.

Table 2 showed that there is a relationship between attitude and perceived SDGs actualization by library personnel in Anambra State, Nigeria ($r = .863**$; $df = 71$; $p < 0.01$). This implies that the more positive the attitude of library personnel is towards SDGs, the more they perceive SDGs to be realizable on the set targets. Therefore, the null hypothesis is rejected and the alternative that states that there is a significant

Table 1. Distribution of respondents by demographic characteristics.

Characteristics	Frequency	Percentage (%)
Library Type		
Public Library	32	44.4
Academic Library	22	30.6
Information Centres	18	25.0
Gender		
Male	22	30.6
Female	50	69.4
Age		
22–30	20	27.8
31–40	24	33.3
41–50	20	27.8
51 and above	8	11.1
Educational Qualification (Degree)		
Diploma	10	13.9
HND/Bachelor's	42	58.3
Post Graduate Diploma (PGD)	10	13.9
Master's	8	11.1
PhD	2	2.8
Years of Experience		
1–5	22	30.6
6–10	20	27.8
11–15	18	25.0
16 and above	12	16.7
$N = 72$		

relationship between attitude and perceived SDGs actualization is accepted.

In order to establish the contribution of each indicator of attitude to SDGs actualization, matrix table is presented (Table 3):

a. There is a significant relationship between perceived self-efficacy and SDGs actualization ($r = .811**$; $N = 72$; $p < 0.01$).
b. There is a significant relationship between extrinsic reward system and SDGs actualization ($r = .883**$; $N = 72$; $p < 0.01$).

Hypothesis 2: There is no significant relationship between subjective norm and perceived SDGs actualization

Table 4 showed that there is a relationship between SN and perceived SDGs actualization by library personnel in Anambra State, Nigeria ($r = .826**$; $df = 71$; $p < 0.01$). This implies that the more favourable the subjective norm experienced by library personnel towards SDGs is, the more they perceive SDGs to be realizable. Therefore, the null hypothesis is rejected and the alternative that states that there is a significant relationship between SN and perceived SDGs actualization is accepted.

Table 2. Relationship between attitude and perceived SDGs actualization.

Variables	Mean	Std. Deviation	N	r	df	Sig (p)	Remark
Attitude	16.5228	2.40289	72	.863**	71	000	Sig.
SDGs actualization	26.1111	7.97806	72				

Table 3. Correlation matrix showing the relationship between each indicator of attitude and SDGs actualization.

		Percieved Self Efficacy	Extrinsic Reward System	Perceived SDG Actualization
Perceived Self Efficacy	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	72		
Extrinsic Reward System	Pearson Correlation	.932**	1	
	Sig. (2-tailed)	.000		
	N	72	72	
Perceived SDG Actualization	Pearson Correlation	.811**	.883**	1
	Sig. (2-tailed)	.000	.000	
	N	72	72	72

**Correlation is significant at the 0.01 level (2-tailed).

Table 4. Relationship between SN and perceived SDGs actualization.

Variables	Mean	Std. Deviation	N	r	df	Sig (p)	Remark
Subjective norm	16.5228	2.40289	72	.826**	71	000	Sig.
SDGs actualization	26.6528	8.15201	72				

Table 5. Correlation matrix showing the relationship between each indicator of SN and SDGs actualization.

		Organizational Climate	Social Interaction	Perceived SDG Actualization
Organizational Climate	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	72		
Social Interaction	Pearson Correlation	.974**	1	
	Sig. (2-tailed)	.000		
	N	72	72	
Perceived SDG Actualization	Pearson Correlation	.840**	.803**	1
	Sig. (2-tailed)	.000	.000	
	N	72	72	72

**Correlation is significant at the 0.01 level (2-tailed).

In order to establish the contribution of each indicator of SN to SDGs actualization, matrix table is presented (Table 5):

a. There is a significant relationship between organizational climate and SDGs actualization ($r = .840**$; $N = 72$; $p < 0.01$).
b. There is a significant relationship between social interaction and SDGs actualization ($r = .803**$; $N = 72$; $p < 0.01$).

Hypothesis 3: There is no significant relationship between perceived behavioural control and perceived SDGs actualization

Table 6 showed that there is a relationship between PBC and perceived SDGs actualization by library personnel in Anambra State, Nigeria ($r = .865**$; $df = 71$; $p < 0.01$). This implies that the more favourably disposed the library personnel are in terms of their behavioural control exercised towards SDGs, the

Table 6. Relationship between PBC and perceived SDGs actualization.

Variables	Mean	Std. Deviation	N	r	df	Sig (p)	Remark
Perceived behavioural control	16.5228	2.40289	72	.826**	71	000	Sig.
SDGs actualization	28.2917	7.85688	72				

Table 7. Correlation matrix showing the relationship between each indicator of PBC and SDGs actualization.

		Behavioural Control	Control Belief	Perceived SDG Actualization
Behavioural Control	Pearson Correlation	1	.960**	.848**
	Sig. (2-tailed)		.000	.000
	N	72	72	72
Control Belief	Pearson Correlation	.960**	1	.863**
	Sig. (2-tailed)	.000		.000
	N	72	72	72
Perceived SDG Actualization	Pearson Correlation	.848**	.863**	1
	Sig. (2-tailed)	.000	.000	
	N	72	72	72

**Correlation is significant at the 0.01 level (2-tailed).

Table 8. Joint contribution of attitude, SN and PBC on SDGs actualization by library personnel in Anambra State, Nigeria.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.873a	.762	.751	1.19883

ANOVAa

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	312.215	3	104.072	72.413	.000b
Residual	97.729	68	1.437		
Total	409.944	71			

more they perceive SDGs to be realizable. Therefore, the null hypothesis is rejected and the alternative that states that there is a significant relationship between PBC and perceived SDGs actualization is accepted.

In order to establish the contribution of each indicator of perceived PBC to SDGs actualization, matrix table is presented (Table 7):

c. There is a significant relationship between behavioural control and SDGs actualization $(r = .848**; N = 72; p < 0.01)$.
d. There is a significant relationship between control belief and SDGs actualization $(r = .863**; N = 72; p < 0.01)$.

Hypothesis 4: Attitude, subjective norm and perceived behavioural control will have no joint influence on SDGs actualization by library personnel in Anambra State, Nigeria

Table 8 showed the relative contribution of attitude, SN and PBC to the prediction of use of SDGs actualization by library personnel in Anambra State, Nigeria. The table showed a coefficient of multiple correlation (R = .873 and a multiple R^2 of .762). This means that 76.2% of the variance was accounted for by the three predictor variables when taken together. The significant of the composite contribution was tested at $p < .05$. The table also showed that the analysis of variance for the regression yielded F-ratio of 72.413 ($p < 0.01$). This implies that the joint contribution of the independent variables to the dependent variables was significant and the other variables not included in this model may have accounted for the remaining variance. Thus, the null hypothesis is rejected.

Table 9 reveals the relative contribution of the three independent variables to the dependent variable,

Table 9. Relative contribution of attitude, SN and PBC to the prediction of SDGs actualization by library personnel in Anambra State, Nigeria.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
I	(Constant)	9.443	.580		16.272	.000
	Attitude	.170	.086	.565	1.990	.051
	Subjective norm	-0.63	.068	-.214	-.924	.359
	Perceived behavioural control	.159	.074	.521	2.147	.035

[a]Dependent Variable: SDGs actualization.

expressed as beta weights, viz attitude ($\beta = .565$ $p < .05$), subjective norm ($\beta = -.214$, $p < .05$) and perceived behavioural control ($\beta = .521$, $p < .05$). Hence, out of the independent variables, it is attitude that significantly predicts SDGs actualization by library personnel the most, followed by PBC and lastly, SN.

Discussion of findings

On Hypothesis 1, the study revealed that perceived self-efficacy had a positive and significant influence on SDGs actualization ($r = .811**$; $N = 72$; $p < 0.01$) of library personnel in Anambra State, Nigeria. This correlates with previous studies that found a positive relationship between perceived self-efficacy and intention to share knowledge. Tohidinia and Mosakhani (2010: 619) carried out a study that revealed 'higher levels of perceived self-efficacy reinforced positive attitudes towards knowledge sharing'. They assert that their study was consistent with that of Bock et al., (2005) on the effect of anticipated reciprocal relationships on attitude toward knowledge sharing. Also, Alam et al. (2009) in Awodoyin et al. (2016) assert that self-efficacy affects an individual's readiness to share knowledge. Moreover, Allameh et al. (2012) in their study found that staff's belief in their abilities acts as a strong motivation to share knowledge with colleagues.

Also, the study revealed that extrinsic reward system had a significant relationship with SDGs actualization ($r = .883**$; $N = 72$; $p < 0.01$). Allameh et al. (2012) found that the expected organizational rewards influence the staff's attitude and intention for knowledge sharing significantly. Also, Al-Alawi et al. (2007) showed a positive relationship between the existence of a reward system aligned with sharing and knowledge sharing in organizations. Contrary to this finding, Tohidinia and Mosakhani (2010: 621) assert that among the factors considered influential on knowledge sharing, organizational rewards did not

demonstrate a significant relationship with attitude towards knowledge sharing.

The study showed that there is a significant relationship between attitude and perceived SDGs actualization by library personnel in Anambra State, Nigeria ($r = .863**$; df = 71; $p < 0.01$). This is in line with Ellahi and Mushtag (2011) and Allameh et al. (2012). It however contradicts the finding of Abdur-Rafiu and Opesade (2015) where they revealed that the attitudes of academics do not affect their KSIs.

On Hypothesis 2, the study found out there is a significant relationship between organizational climate and SDGs actualization ($r = .840**$; $N = 72$; $p < 0.01$). On organizational climate, Al-Alawi et al. (2007) conclude that knowledge sharing prospers with the presence of certain positive features in organization structure. Also, there is a significant relationship between social interaction and SDGs actualization ($r = .803**$; $N = 72$; $p < 0.01$). Whereas, on social interaction, Ellahi and Mushtag (2011: 10) reveal that 'the positive effect of social interaction ties on intention to share knowledge was confirmed which implies that social interaction has a significant positive relationship with knowledge sharing intention'.

The study showed that there is a relationship between SN and perceived SDGs actualization by Anambra State, Nigeria ($r = .826**$; df = 71; $p < 0.01$). This significant positive relationship between SN and perceived SDGs actualization revealed through KSI is found in previous studies of Mahyarni et al. (2012); Lin and Lee (2004); Chatzoglou and Vraimaki (2009) and Allameh et al. (2012). This is, however, contradictory to the findings of Abdur-Rafiu and Opesade (2015), Al Qeisi and Al Zagheer (2015) and Kuang et al. (2012) where no significant positive relationship between SN and KSI was found.

On Hypothesis 3, the study found out there is a significant relationship between behavioural control and SDGs actualization ($r = .848**$; $N = 72$; $p <$

0.01). In line with this, Abdur-Rafiu and Opesade (2015: 8) assert that PBC of academics has a predictive relationship (positive and significant correlation) with their intention to share knowledge. Thus, the more resources and opportunities individuals believe they possess and the fewer obstacles or impediments they anticipate, the greater should be their perceived control over the behaviour (Ajzen, 1991: 196).

The study revealed that control belief (using information and communication technologies (ICTs) as a reference) had a positive and significant influence on perceived SDGs actualization ($r = .863**$; $N = 72$; $p < 0.01$). This corroborates Al-Alawi et al. (2007) who in their study found a positive relationship between the existence of knowledge sharing information systems/technology and knowledge sharing in organizations. Also, Awodoyin et al. (2016) opine that tools and technologies are factors that affect librarians' intention to share knowledge.

Therefore, PBC had a significant relationship with perceived SDGs actualization by library personnel in Anambra State, Nigeria ($r = .865**$; df = 71; $p < 0.01$). In line with this, Abdur-Rafiu and Opesade (2015: 8) assert that PBC of academics has a predictive relationship (positive and significant correlation) with their intention to share knowledge. Thus, the more resources and opportunities individuals believe they possess and the fewer obstacles or impediments they anticipate, the greater should be their perceived control over the behaviour (Ajzen, 1991: 196).

On Hypothesis 4, the study showed that the joint contribution of the independent variables (A, SN and PBC) to the dependent variables (perceived SDGs actualization) was significant. Also, the study showed that the relative contribution of the three independent variables to the dependent variable, shows that attitude significantly predicts SDGs actualization, followed by PBC then lastly, SN. The implication of this is that an adjustment in any of the independent variables will influence the perceived SDGs actualization by library personnel in Anambra State, Nigeria.

From the TPB and the conceptual model of the study, it is seen that attitude, subject norm and perceived behaviour will influence intention to share information and knowledge on SDGs which will determine perceived SDGs actualization. This is because KSI will directly affect actual KSB, (Abdur-Rafiu and Opesade, 2015; Ellahi and Mushtag, 2011; Skaik and Othman, 2015). By implication, addressing the factors likely to predict KSI and by extension, actual KSB will help library personnel contribute to the actualization of SDGs.

Conclusion and recommendations

The objective of this study was to investigate the predictors of library personnel's KSB towards sustainable development goals (SDGs), using the theory of planned behaviour (TPB). The findings revealed that perceived SDGs actualization of library personnel was influenced by attitude, perceived behavioural control and subjective norm accordingly. The joint contribution of these three independent variables greatly contributes to the variance in SDGs actualization. This shows that for library personnel to contribute greatly to the realization of SDGs, they must ensure effective KSB on SDGs-related information. In view of this, the following recommendations are made:

- Management of libraries should set up an effective reward system that will motivate personnel to share SDGs-related information, thus increasing their contribution to the development agenda;
- Management of libraries should create a culture or climate within the library that encourages people to seek and share SDGs-related information;
- Management of libraries should foster a close relationship with library personnel and also encourage the same among library employees. On the part of library personnel, they should build trust among one another as well as develop good organizational citizen behaviour;
- Management of libraries should provide capacity building in the form of human resource development via workshops, seminars, conferences among others in a bid to increase the knowledge of personnel on issues pertaining to SDGs;
- Library personnel should engage in self-development in a bid to acquire more skills and knowledge on SDGs which will in turn spur a high rate of knowledge sharing;
- Library personnel should change their mindset (attitude) from knowledge hoarding to knowledge sharing which is vital to creating a knowledge sharing culture; and
- Management of libraries should provide infrastructural facilities like ICTs and knowledge repositories that will help facilitate knowledge sharing on SDGs.

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ORCID iD

Magnus Osahon Igbinovia ⓘ http://orcid.org/0000-0001-9104-2991

Supplemental material

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Author biographies

Magnus Osahon Igbinovia is a doctoral student at the Department of Library, Archival and Information Studies, University of Ibadan. He holds a Master's degree from University of Ibadan and a Bachelor's degree from Ambrose Alli University, Ekpoma. He is a Certified Librarian of Nigeria (CLN) and a library advocate. He is the recipient of the 2016 Young Library and Information Professional Award (yLIP) from the Nigerian Library Association (NLA). His current researches are on library and information services in the attainment of sustainable development goals, and the place of libraries in ensuring economic integration.

Ngozi P Osuchukwu is a Lecturer in the Department of Library and Information Science, Madonna University Nigeria. She holds a Master's Degree in Library and Information Science from Nnamdi Azikiwe University, Awka, Nigeria, where she is also currently doing her PhD in LIS. She is a Development Practitioner and coordinates programmes for a Non-Government Organization. Her research interests are community information, literacy, LIS development, women and children related issues, social justice and SDGs.

Open access repositories of Bangladesh: An analysis of the present status

Md. Hasinul Elahi ⓘ
East West University, Dhaka, Bangladesh

Muhammad Mezbah-ul-Islam
University of Dhaka, Bangladesh

Abstract

This study examines the present status of open access repositories in Bangladesh. The main aim of the study is to find out the characteristics of open access repositories, their development scenario and ranking in web repositories as well as to recommend some suggestions for the development of open access repositories in Bangladesh. The methodology includes a quantitative approach. The data were collected from OpenDOAR from 20 to 29 August 2017. The scope of the study is confined to Bangladeshi repositories indexed in the OpenDOAR database. The findings of the study show that the Bangladeshi repositories are embodied in the Ranking of Web Repositories. The study also clearly indicates the very slow progress of open access repositories in Bangladesh. The repositories in Bangladesh listed in OpenDOAR are mostly institutional in nature. The study also reveals that a maximum number of repositories are small in terms of collection. It can be easily summarized that there is a need for public awareness regarding the concept of open access repositories in Bangladesh to support research and development. This paper is the first attempt in Bangladesh to discuss and analyze the overall scenario of open access repositories. It also suggests some recommendations for developing the open access repository system in Bangladesh which will surely add value to the future research of open access in Bangladesh.

Introduction

One of the basic underlying principles for the development of a country is research. Research leads to breakthroughs and communicating the results of research is what allows us to turn breakthroughs into better lives to provide new treatments for disease, to implement solutions for challenges like global warming, and to build entire industries around what were once just ideas (SPARC, 2016). The invented or discovered facts from research influences the overall progress in every field. In research, access to the information is crucial. Brand (1987) stated that "Information wants to be free." Although, there are different patterns of access to information. One of the recent and most popular terms regarding this issue is "open access." The concept of open access (OA) is

not very old and it is largely influenced by the advancements in information and communication technologies (ICTs). The advancement in the field of ICTs resulted in the dramatic increase of journals, other educational resources and easy availability of the research outcomes to a wider audience (Singh, 2016). The term "open access" is present in three public statements in the 2000s: the Budapest Open Access Initiative (2002), the Bethesda Statement on Open Access Publishing (2003), and the Berlin Declaration on Open Access to Knowledge in the

Corresponding author:
Md. Hasinul Elahi, Department of Information Studies and Library Management, East West University, Dhaka-1212, Bangladesh.
Email: elahi.islm@gmail.com

Sciences and Humanities (2003) (Singh, 2016; Suber, 2012). However, these sources define the term open access differently.

The Budapest Open Access Initiative defined OA as:

> [....] By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited (Budapest Open Access Initiative, 2002).

Suber (2012: 4) defines open access as: "Open access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions." As mentioned by Suber (2012) there are two main vehicles for delivering OA to research articles: gold open access and green open access. Gold OA is related to OA journals and green OA is with the open access repositories (OARs). The important distinction between these two concepts is that authors (or funders) have to pay for gold. The dictionary meaning of the term "repository" refers to a receptacle or place where things are deposited, stored, or offered (http://Dictionary.com, 2016). As such, an OAR can be defined as an online database that makes the full text of items (or complete files) it contains freely and immediately available without any access restrictions, making the idea of gold OA a paradox (Pinfield, 2005). OARs have been created by almost all the leading academic institutes, research centers, government agencies, industrial organizations, documentation centers, libraries and information networks (Loan and Sheikh, 2016). The different institutions of Bangladesh also have OARs to support their research and development program. Thus, this study attempts to discover the present state of OARs in Bangladesh. The rest of the paper is organized as: OA initiatives in Bangladesh, literature review, objectives, methodology, findings and discussion, recommendations and finally conclusion with a brief summary of the study.

Open access initiatives in Bangladesh

Bangladesh emerged as an independent and sovereign country on 16 December 1971 following a nine-month war of liberation (Banglapedia, 2016). Bangladesh has a low literacy rate, estimated at 61.5% of total population (for males 64.6% and for females 58.5%) in 2015 (CIA, 2016) but the positive side is that the Government of the Peoples Republic of Bangladesh gives emphasis to the education sector. They allocated 490,090m takas for the education sector, which is 14.40% of the total budget (New Age, 2016).

The concept of OA is not very new and yet not popular at all. The OA movement in Bangladesh is being developed to reduce the huge pressure on library budgets from subscription to journals (Uddin et al., 2014). With the advent of ICTs in every sector, library and information professionals have also come to understand the needs and prospects of open access. The Government of Bangladesh has also encouraged OA initiatives through the Right to Information (RTI) Act, 2009.

A number of scholarly journals covering a wide spectrum of subjects are published in Bangladesh. Many of these journals are peer-reviewed, indexed and abstracted in premier indexing and abstracting periodicals (Islam and Akter, 2013). The matter of regret is that this huge amount of scholarly works has not been globalized due to the lack of open accessibility of these resources. To minimize this problem, BanglaJOL (Bangladesh Journals Online) was initiated in 2007, primarily aiming to promote the awareness and use of Bangladesh-published journals in all disciplines by providing access to tables of contents (TOCs), abstracts and full text on the Internet. BanglaJOL uses the Open Journals System created by the Public Knowledge Project based in Canada (BanglaJOL, 2016). Among these, Bangladeshi journals, only 17 have been indexed in the Directory of Open Access Journals containing 1813 articles (DOAJ, 2017). Again, Islam and Akter (2013) considered institutional repositories as the first step towards OA for research output. Uddin et al. (2014) identified that OA initiatives had been started in Bangladesh by the international health research institute, the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr, b). The attempt was made in 1997 by making publicly available icddr, b research in the *Journal of Diarrhoeal Diseases Research* (JDDR). Some other notable OA-related activities in Bangladesh as mentioned by UNESCO's GOAP (2017) are:

1. Organized Journal Quality Workshop 22–24 June 2014 which was organized by Bangladesh Academy of Sciences and facilitated by INASP's Sioux Cumming and Andy Nobes.
2. Arranged workshop on "Monitoring and Evaluation of Electronic Resource Use (MEERU)"

18–20, March 2014. The workshop provided participants with the skills to collect usage data from their institution to inform the selection and renewal of online resource subscriptions.

3. Arranged workshop on "Developing Research Communication Skills and Ethical Considerations" 18–20 February 2014 by Chittagong Veterinary and Animal Sciences University.

4. Organized workshop on "Improving research Communication Skills" 23–24 February 2014 by Bangladesh Association of Plant Taxonomists. This was an AuthorAID workshop aimed at young researchers in Bangladesh.

The most recent addition to OA initiatives in Bangladesh is the launching of "Open Access Bangladesh." This is a platform for promoting, sharing and advocating the success stories of the OA movement in Bangladesh as well as in the other countries of the world. This initiative would work for influencing the policy makers, managers, researchers, scholarly societies to adopt an OA policy for their research and to take forward the OA movement in Bangladesh. In Bangladesh, both public and private sectors are not fully aware of the importance of OA, especially the green route that is an OAR for promoting research and development. There are some leading public and private academic and research organizations who have their own institutional repositories. However, information regarding all these repositories is not available through any international directory and they are sometimes also not accessible themselves.

Literature review

Numerous studies have been done on the topic of open access which has been one of the hot issues for the past few years (Björk, 2013; Fox and Hanlon, 2015; Joint, 2008; Loan and Sheikh, 2016; Pinfield, 2005; Sahu and Arya, 2013; Shin, 2010; Singh, 2016; Utulu and Bolarinwa, 2009; etc.). Geographically, scholars have researched OA initiatives in the following countries: Bangladesh (Islam and Akter, 2013; Uddin et al, 2014), India (Singh, 2016), Zimbabwe (Kusekwa and Mushowani, 2014), Korea (Shin, 2010), Nigeria (Utulu and Bolarinwa, 2009), Greece (Chantavaridou, 2009), Spain (Bravo and Díez, 2007) and more. Considering the large volume of research on OA, the literature review of this study is purposely confined mostly to literature that discusses OAR practices in different areas around the world; although, for conceptual aspects and related issues, other literature is too consulted.

The introduction of the Internet and ICTs in the 1990s revolutionized the entire scholarly communication environment (Singh, 2016). The open forum for sharing knowledge and resources increases in popularity day by day. An OAR collects and preserves the intellectual output of a given institution in digital form and makes it accessible to end users. It includes materials such as research journal articles, preprints, post-prints, articles undergoing peer review, and theses and dissertations (Sahu and Arya, 2013). Different academic, government, private, and research organizations and institutions are coming forward to embrace the OA concept and try to establish their own repositories for sharing and communicating their respective research and knowledge. Over the past few years, the number of OARs have been growing at an average rate of one per day. There are approximately just over 1400 repositories around the world (Chan, 2016) while according to OpenDOAR (2017) there are more than 3000 OARs available. These are playing a vital role in publishing institutions' gray literature (Chantavaridou, 2009). These OA initiatives enhance the possibility of knowledge sharing among institutions crossing borders and eliminating time constraints; although, OARs have not been popularized yet in many areas of the world. Bravo and Díez (2007) identified that there is insufficient development of OARs in Spain; although it is possible to detect a growing tendency to create them. They also stated that these digital collections seem to be seeking visibility for scientific output such as theses, journals, works in progress, preliminary results and other fringe or unconventional literature at the present moment, without currently making use of academic teaching and learning materials or corpora relating to the cultural heritage. Shin (2010) revealed the challenges associated with Korea's national repositories and also provided some strategies to solve those challenges. Chantavaridou (2006) also identified the present status of OARs and the behavioral aspect regarding this issue in Greece. The fact is that the international research information environment has been dramatically shaped and developed by the contribution of OARs: an outcome that in itself has significant impact and influence within the organization, as well (Joint, 2008).

Fabian (2013) described and evaluated the OA adoption in the environment of the Czech Republic, from both the green road and gold road points of view. The issues related to the OA system is another issue of concern. Lee et al. (2015) explored the extent to which an institutional repository makes papers available and accessible on the open Web by using 170 journal articles housed in DigiNole Commons – the institutional repository at Florida State University. The trends towards the development of OARs are

increasing among higher education and research institutions (Singh, 2016). He argued that they serve as a means for the dissemination of the intellectual output of the institutions that may be a research organization or university to communities and to the public at large. OAR systems have been widely used in different institutions. Leng et al. (2016) guided an overview on OAR practices and also identified how two web portal repositories on Open Educational Resources (OER) materials were developed adopting a Japanese open source software, called WEKO. The findings of the study also revealed positive results emanating from university OAR development. These results showed how it strengthened the role of the librarian as manager of institutional assets by successfully making the content freely available from this open knowledge platform for reuse in learning and teaching. Loan and Sheikh (2016) assessed OARs in the field of the health and medicine (H&M) available in the Directory of the Open Access Repositories (OpenDOAR) by analyzing their various facets like geographical distribution, language diversity, collection size, content types, operational status, interoperability, updating policy and software used for content management.

Uddin et al. (2014) highlighted the importance of OA and institutional repository initiatives to the system of scholarly communication in Bangladesh. The paper explains research communities' benefits from OA, salient features of ICTs in Bangladesh, initiatives of institutional repositories in Bangladesh, and OA movements in Bangladesh. Islam and Akter (2013) provided an overview on the present status of institutional repositories in Bangladesh and also mentioned different OA initiatives that are developed to promote research and disseminate knowledge. They also proposed some suggestions for the respective authorities of different institutions to improve the present scenario. Shuva and Taisir (2016) also identified the present attitude regarding OA in Bangladesh. They attempted to detect Bangladeshi faculty members' awareness, perceptions, and use of OA journals. They also explored the motivational factors that influence the faculty members to choose OA journals for publication.

The above review of the literature shows that there is different and diversified literature on OARs all around the world. In Bangladesh, there is also some literature (Islam and Akter, 2013; Shuva and Taisir, 2016; Uddin et al., 2014) on the OA system. But there is still no work on the present status of OARs in Bangladesh as an independent issue. Thus, this study is an initiative to provide an overview of the current scenario of OARs in Bangladesh.

Objectives of the study

The main objectives of the study are to:

1. Find out the year wise development of open access repositories in Bangladesh;
2. Identify the geographical distribution of repositories in Bangladesh;
3. Analyze the characteristics of open access repositories of Bangladesh;
4. Identify the web presence of Bangladeshi open access repositories;
5. State some possible recommendation for overall development of the open access repositories in Bangladesh.

Methodology

The methodology includes a quantitative approach. The data were collected from OpenDOAR from 20 to 29 August 2017. OpenDOAR (Directory of Open Access Repositories) is supervised by SHERPA services which are based at the Centre for Research Communications at the University of Nottingham, United Kingdom and carried out initially in partnership with Lund University, Sweden. OpenDOAR is primarily a service to enhance and support the academic and research activities of the global community. OpenDOAR provides a quality-assured listing of OARs around the world. OpenDOAR includes over 2600 comprehensive and authoritative lists of institutional and subject-based repositories which is one of the largest online directories of repositories. It has also clear and constructive criteria for inclusion and exclusion of repositories (OpenDOAR, 2017). The scope of the study is confined to Bangladeshi repositories indexed in the OpenDOAR database. From the list of repositories mentioned in OpenDOAR, "Bangladesh" under Asia was selected and analyzed. The OpenDOAR listed 12 repositories of Bangladesh during the period of study (20–29 August 2017). The requisite data about these repositories were collected manually and transferred to a Microsoft Excel file for tabulation and generating statistical graphs and tables. The present study also consults with Ranking Web of World Repositories (RWWR) to identify the visibility of Bangladesh's OARs. RWWR uses web indicators to measure the global visibility and impact of the scientific repositories.

Findings of the study

Growth of open access repositories in the world

Figure 1 shows that Europe is the major contributor of OARs with 1558 repositories among 3448 repositories that are listed in OpenDOAR. The second highest number of repositories are from Asia (701) which clearly
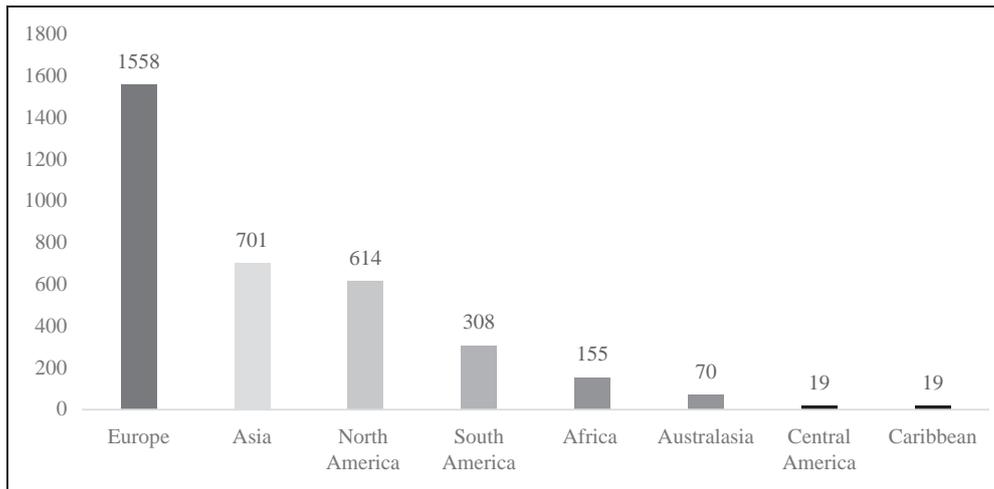
Figure 1. Extent of open access repositories around the world.
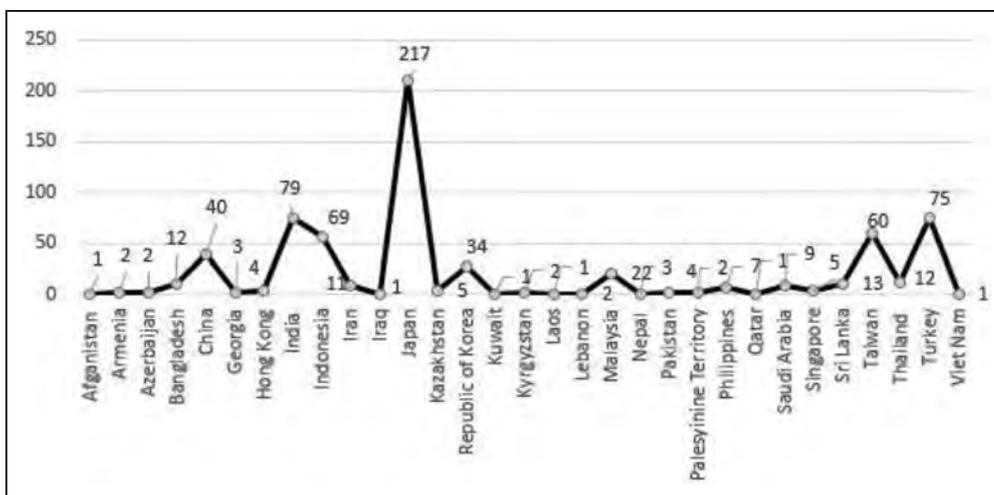
Figure 2. Open access repositories in Asia.

indicates that the awareness regarding OARs in this region is increasing. The North America continent has 614 repositories, and the least number of repositories are in Central America and Caribbean (19) which constitutes only a small part of the total repository.

Trends of open access repositories in Asia

From Figure 2 it is clear that Japan has the highest number of repositories (217) among other countries in Asia, followed by India (79), Turkey (75), Indonesia (69), Taiwan (69), and China (40), while Bangladesh has only 12 OARs. Some other countries have only one repository, e.g. Afghanistan, Iraq, Kuwait, Laos, Nepal, Qatar, and Vietnam.

Year-wise growth of open access repositories in Bangladesh

The first repository in Bangladesh was enlisted in OpenDOAR in 2008 (Figure 3). Figure 3 shows the

gradual development of repositories in Bangladesh from 2008 to 2017. The linear line indicates a steady development in increasing the number of OARs in Bangladesh. The rapid transition occurred during the 2012–2014 period. In this time, a maximum number of repositories had been listed in OpenDOAR.

Open access repository types in Bangladesh

There are mainly five types of repositories enlisted in OpenDOAR: Undetermined (a repository whose type has not yet been assessed), Institutional (an institutional or departmental repository), Disciplinary (a cross-institutional subject repository), Aggregating (an archive aggregating data from several subsidiary repositories), and Governmental (a repository for governmental data). Figure 4 reveals that there are mainly three types of repositories available in Bangladesh among which the number of institutional repositories is the highest (10).

Figure 3. Growth of open access repositories in Bangladesh.
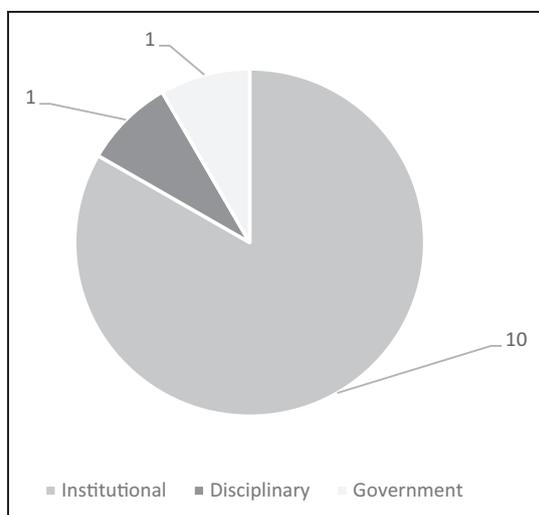
Figure 4. Types of open access repositories in Bangladesh.

Table 1. Open access repository size in Bangladesh.

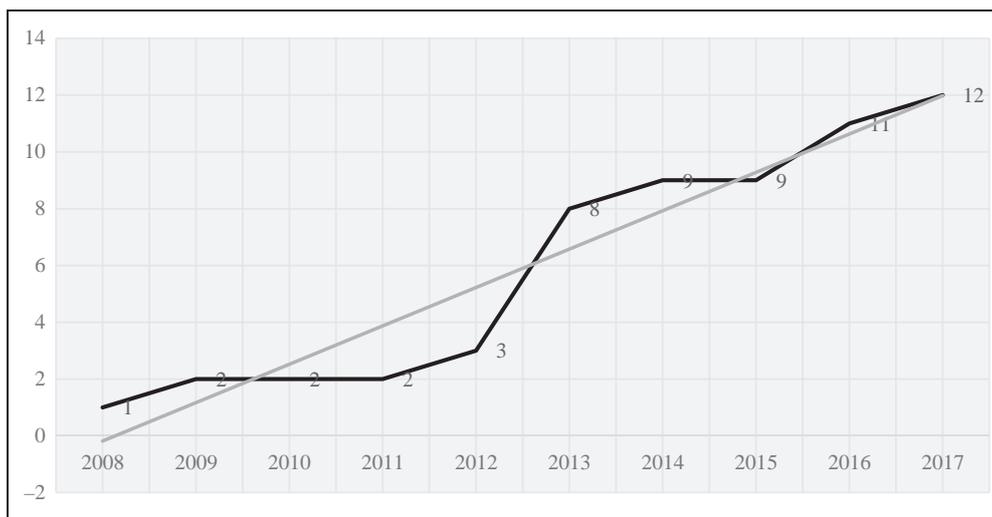| No. of Records	No. of Repositories	Name of the Repositories
<100	1	EWUDL
100–1000	6	DIUIDR, DUIR, EUDL, IUTDL, IUBLDR, SAULA
1001–2000	2	ELDM, EWUIR
2001–3000	0	–
3001–4000	0	–
4001–5000	0	–
>5000	3	ICDDRDRB, BRACUIR, KR

*EWUDL= East West University Digital Library, DIUIDR= Daffodil International University Institutional Digital Repository, DUIR= Dhaka University Institutional Repository, EUDL= Eastern University Digital Library, IUTDL= Islamic University of Technology Digital Library, IUBLDR= Independent University Bangladesh Library Digital Repository, SAULA= Sher-e-Bangla Agricultural University Library Archive, ELDM= E-Library on Disaster Management, EWUIR= East West University Institutional Repository, ICDDRDRB= International Centre for Diarrhoeal Disease Research Digital Repository Bangladesh, BRACUIR= BRAC University Institutional Repository, KR= Knowledge Repository.

Open access repository size in Bangladesh

Size of the repository is also one of the most important characteristics for consideration (Singh, 2016) in determining the present status of the OARs in Bangladesh. Table 1 shows that there are only three repositories (ICDDRDRB, BRACUIR, and KR) which have more than 5000 records in their repository; although a number of repositories (6) have 100–1000 records.

Software used in open access repositories in Bangladesh

Figure 5 reveals that there are mainly two types of software used in OARs within different institutions in Bangladesh: i.e. Greenstone (9) and DSpace (3). Although in a neighboring country like India there

at least four other softwares (i.e. Nitya, CALIBRE, Eprints, and Architexturez) used along with Greenstone and DSpace for maintaining their repositories (Singh, 2016).

Operational status of open access repositories in Bangladesh

Figure 6 indicates that among 12 repositories in Bangladesh, only one repository is running on a trial basis and other 11 repositories are fully operational in terms of service delivery and access.
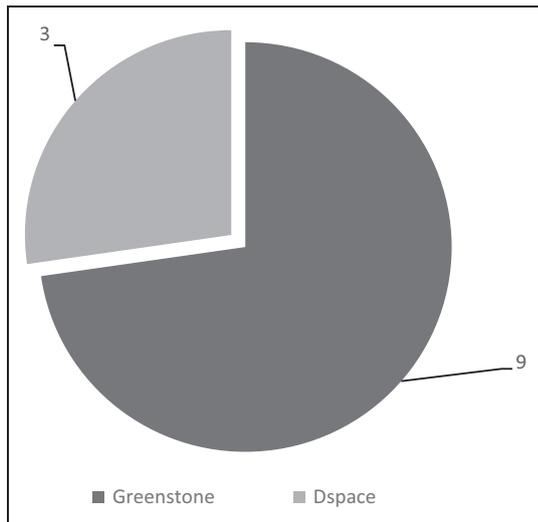
Figure 5. Types of open access repositories software in Bangladesh.

Table 2. Subjects of open access repositories in Bangladesh.

Subject	Frequency	Percentage
Management and Planning	1	3.13
Library and Information Science	2	6.25
Law and Politics	1	3.13
Education	1	3.13
Business and Economics	3	9.38
Social Sciences General	1	3.13
Language and Literature	2	6.25
Arts and Humanities General	2	6.25
Electrical and Electronic Engineering	1	3.13
Computers and IT	2	6.25
Architecture	1	3.13
Technology General	1	3.13
Health and Medicine	3	9.38
Mathematics and Statistics	1	3.13
Biology and Biochemistry	1	3.13
Agriculture, Food and Veterinary	1	3.13
Multidisciplinary	8	25

Content pattern of open access repositories in Bangladesh

From Figure 7, it is clear that the most common content type in the repositories of Bangladesh listed in OpenDOAR is journal articles, theses and dissertations (23%), followed by unpublished reports and working papers (20%), and then conferences and workshops (11%).

Subject diversification of open access repositories in Bangladesh

Most large institutions effectively hold all subjects in their repositories. They are therefore categorized as

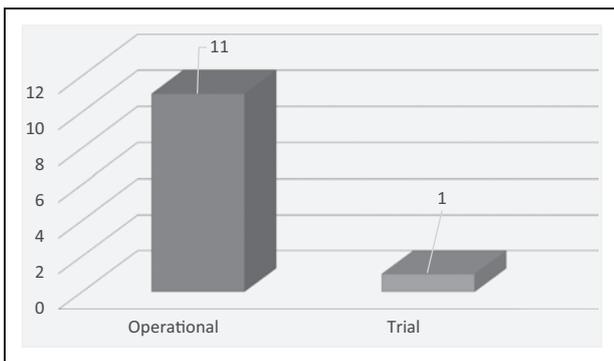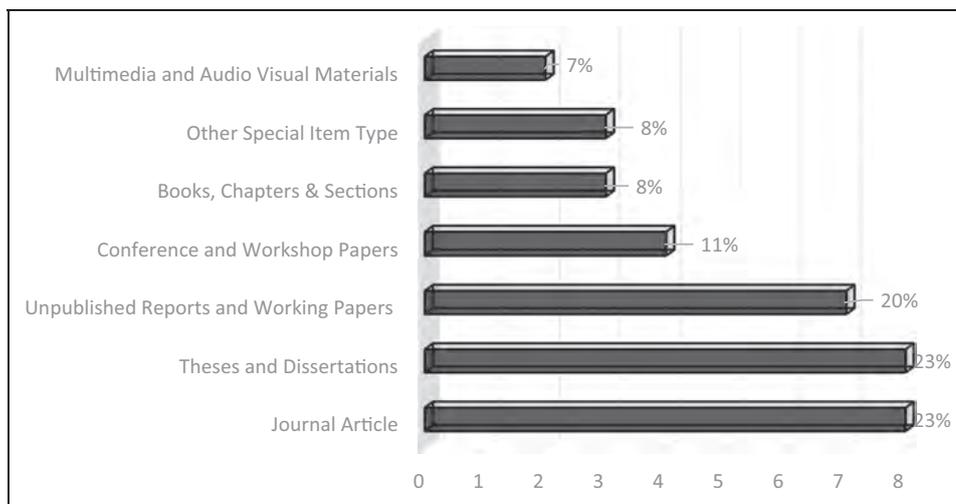**Figure 6.** Operational status of open access repositories in Bangladesh.

Figure 7. Content pattern of open access repositories in Bangladesh.

Table 3. Policies of open access repositories in Bangladesh.

Policy Pattern	Unknown	Unstated	Undefined	Unclear	Defined
Recorded metadata reuse policies	12.5%	-	87.5%	-	-
Recorded content policies	12.5%	-	75%	-	12.5%
Recorded submission policies	12.5%	-	62.5%	-	25%
Recorded preservation policies	12.5%	-	87.5%	-	-

Table 4. OAI-PMH compliance of open access repositories in Bangladesh.

OAI-PMH Compliant	No. of Repositories
Yes	6
No	6
Total	12

"Multidisciplinary" in OpenDOAR. On the other hand, specialist institutions (e.g. engineering and agricultural colleges) and disciplinary repositories only cover a few subjects, and these have been indexed individually (OpenDOAR, 2017). Most of the repositories in Bangladesh take a multidisciplinary subject approach. Table 2 shows that the multidisciplinary collections constitute 25% of the total repositories followed by Health and Medicine, Business and Economics (9.38%), Library and Information Science, Language and Literature, Arts and Humanities General, and Computer and IT (6.25%).

Policies of open access repositories in Bangladesh

In OpenDOAR, policy information includes metadata reuse policy, content policy, submission, and preservation policy. Table 3 indicates that the most covered topics are undefined regarding metadata (87.5%), content (75%), submission (62.5%), and preservation (87.5%). Again, only 12.5% of policies regarding content and 25% of policies regarding submission are defined.

OAI-PMH compliance of open access repositories in Bangladesh

OAI-PMH (Open Archives Initiative-Protocol for Metadata Harvesting) is the protocol used for harvesting the metadata descriptions of the records from the archives (Singh, 2016). OAI-PMH is a low-barrier mechanism for repository interoperability and provides an application-independent interoperability framework based on metadata harvesting (Lagoze et al., 2016). The Protocol has been developed by the Open Archives Initiative, thus setting interoperability standards in order to ease and promote the broader

and more efficient dissemination of content within the scientific community (INTECH, 2016). OAI-PMH compliancy makes all the repositories work together as a single entity and can search and retrieve desired documents all at once. From Table 4, it is clear that six out of 12 repositories follow the OAI-PMH protocols and other six repositories do not.

Bangladesh's open access repositories visibility on RWWR

The RWWR is an initiative of the Cybermetrics Lab, a research group belonging to the Consejo Superior de Investigaciones Científicas (CSIC) and the largest public research body in Spain (Ranking Web of World Repositories, 2016). RWWR indexed around 2275 repositories all around the world. Table 5 shows that only four repositories in Bangladesh are indexed in RWWR. Again, not all the repositories that are indexed in OpenDOAR are included in RWWR. This is a very low rate for any country and indicates a negative approach in terms of research and development.

Discussion

This paper is one of the first attempts of its kind to express the present scenario of OARs in Bangladesh. The study finds a positive vibe for establishing an OA platform for promoting research and development. Although the number is relatively low (12), it is satisfactory considering the socio-economic condition of Bangladesh. Neighboring countries like Pakistan, Afghanistan, Iran and other countries with similar socio-economic conditions also have a lesser number of repositories. Credit goes to iccdr, b which attempted to establish an OAR by making its journal publicly available (Uddin et al., 2014). After that most of the initiatives were undertaken by the academic institutions, especially the private university libraries. The study indicates a steady development of OARs in Bangladesh. The Government of Bangladesh also issued the Right to Information (RTI) Act 2009 in the *Bangladesh Gazette* on 6 April 2009, encouraging OA libraries and information centers (Islam and Akter, 2013). The number of records among these repositories also generates a clear idea regarding the positive

Table 5. Open access repositories visibility on RWWR.

Ranking	World Rank	Repository Name	Size	Visibility	Files Rich	Scholar
1	594	BRAC University Institutional Repository	227	754	633	648
2	1237	East West University Repository	1341	1422	1292	1095
3	1551	International Centre for Diarrhoeal Disease Research Digital Repository	918	1656	1603	1511
4	2034	E-Library on Disaster Management	1262	1938	1809	1768

attitude of the stakeholders in creating and managing OARs in this region. After establishing an OA platform, it is necessary to make it operational. The study clearly shows that a high number of OARs (11) are operational. Content and subject pattern of these OARs also covers a wide spectrum of knowledge which is essential for the overall development of the society instead of being developed in only one sector. Among these repositories, six repositories have OAI-PMH compliance while in 2013 this number was only two (Islam and Akter, 2013). But the visibility of these OARs on RWWR is not satisfactory at all. The organization and institutions should take necessary steps to be visible on RWWR.

Recommendations

The present status of OARs in Bangladesh is not really satisfactory. Although this research is limited to the repositories that are indexed in OpenDOAR, it clearly indicates poor awareness and initiative from certain institutes. Open access to scientific and technical information is a door for unlimited usage of these resources but most often this initiative is hindered by fear, negative thinking, lack of innovative thinking, administrative discouragement, lack of sharing mentality, etc. (Shuva and Taisir, 2016). It is important to take the following initiatives for promoting OARs in Bangladesh.

1. A massive orientation regarding the advantages of OARs should be initiated to encourage academic and other institutions. Open access to other repositories will not only enhance the research and development activities but also enable individuals and institutions to build a culture of "free-flowing information".

2. To overcome the negative thinking regarding OA is a huge challenge. A majority of senior researchers and academicians have not accepted the concept which was also indicated by Shuva and Taisir (2016). Action is needed to make them understand the whole concept of OARs.

3. The narrow mentality among different institutions to not share their knowledge and practices should be changed. Knowledge is something that, if confined to one individual or institution, will never flourish and be developed.

4. The predatory OARs and publication should be properly identified and banned to rescue the lost reputation of the open access system.

5. Repositories with excellent content should be awarded annually to promote OAR practices.

6. By creating institutional repositories, libraries can also define their leadership role in the present ICT era (Baron and Walters, 2004). This philosophy and positivity should be adopted by the information professional to develop an OA platform for different institutions.

Conclusion

This paper presented an overview on the present state of the art of OARs in Bangladesh. The study shows that the number of repositories indexed in OpenDOAR is lower in comparison to other countries of Asia. It clearly indicates the very slow progress of OARs in Bangladesh. The repositories in Bangladesh listed in OpenDOAR are mostly institutional in nature. The study also reveals that a high number of repositories are small in terms of collection. Only three repositories have more than 5000 records in their repositories (i.e. ICDDRDRB, BRACUIR, and KR). In Bangladesh, for maintaining these repositories DSpace and Greenstone software has been widely used while in neighboring countries like India, other software is used. This study also enumerates that many repositories are in operational nature and the majority of the content includes journal and articles, theses and dissertations, and unpublished reports on multidisciplinary fields. Again, one of the basic features of an OAR system is OAI-PMH compliance which is also not available for six repositories. The visibility of OARs of Bangladesh is also not at a satisfactory level. Since Bangladesh is a developing

country, OARs are needed at this time to boost research and innovation. For this purpose the free flow of information and knowledge practices is a must without any doubt. Thus, the institutions should come forward to take initiatives for creating open access platforms for each other.

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ORCID iD

Md. Hasinul Elahi ⓘ http://orcid.org/0000-0002-1026-323X

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Author biographies

Md Hasinul Elahi is a Lecturer in the Department of Information Studies and Library Management, East West University, Bangladesh. He obtained his BA(Hons) and MA degrees from the University of Dhaka with record CGPA. He also obtained the Dean's Merit List of Honor award for his excellent academic result in both examinations. Elahi also achieved the Abdul Aziz Chowdhury Scholarship for his brilliant academic success. At present, he is doing his MPhil Research on Service Quality. His research interest includes open access, open data, e-governance, Soft System Methodology (SSM), knowledge management, open data, information literacy, etc.

Muhammad Mezbah-ul-Islam is currently Professor and Chairman in the Department of Information Science and Library Management, University of Dhaka, Bangladesh. Prof Mezbah received his BA(Hons) and Master's in Library and Information Science from the University of Dhaka and gained his PhD from North-Eastern Hill University (NEHU), Shilling, Meghalaya, India under SAARC Scholarship. Dr Mezbah has a number of international and national awards/ scholarships and produced more than 50 publications for national and international refereed journals, papers, proceedings and as books & book chapters. He is a member of editorial boards of international and national journals. Dr Mezbah has more than 22 years of professional and teaching experience in universities, academic and research institutions. He has developed numerous projects for different local and foreign organizations. He has attended many conferences, workshops, seminars, etc. and has secured many research and travel grants from local and foreign agencies. He has been serving the community as an active member of academic committees.

The Pennsylvania Newspaper Archive: Harnessing an open-source platform to host digitized collections online

**Jeffrey A. Knapp, Andrew Gearhart, L. Suzanne Kellerman
and Linda Klimczyk**
Penn State University Libraries, USA

Abstract
Providing online access to historical newspaper content is a strategic priority for many libraries. As early adopters in hosting an in-house newspaper repository for its own scanned newspapers, Penn State University's online collection has grown substantially. New systems become necessary over time, however, due to system obsolescence, infrequent vendor upgrades, and maintenance and user needs. This was the case when the University Libraries adopted the open-source "Open ONI" platform in creating its Pennsylvania Newspaper Archive (http://panewsarchive.psu.edu), replacing its aging Olive Software ActivePaper Archive™ system. This paper chronicles the planning and design phases of the project, the adoption of the "Agile Scrum" project management framework, and the migration processes developed to transfer 450,000 pages of historical legacy newspaper content from a commercial system to an open-source system hosted in-house.

Introduction

In the early 1990s the Penn State University Libraries launched an investigation to consider using digital technology solutions to preserve its deteriorating paper-based collections. Among the most vulnerable in the collection were its archival materials and historic newspaper holdings. With limited staff expertise and funding to build the new technology infrastructure and software needed, the Libraries sought commercial vendors to provide these services. Many of these first-generation service solutions were proprietary solutions, resulting in a total reliance on the vendor to resolve technical issues, to improve functionality, or to respond to user demands for interface or feature improvements. Moreover, we had to yield to the technical demands of the software by following precise specifications for uploading digitized content for discovery and access. Utilizing a vended service for newspaper digitization and online access was the norm for over a decade, starting in 2003. However, in 2015 new library leadership and the release of "Open ONI," a state-oriented version of the Library of Congress' open-source software *Chronicling America* ("Chronam")

changed the way in which we could provide access to historical newspapers. Additionally, in 2015, we adopted the Agile Scrum project management methodology, which emphasized an agile teamwork approach to adapt the development of Open ONI for Penn State.

This paper chronicles our technological journey from relying on vendor-based proprietary software solutions to leveraging an open-source application. Included in the paper are the steps currently underway to migrate legacy newspaper content from the proprietary platform to Open ONI.

History of digital newspapers at Penn State
Testing digital image technology for decaying library collections

The Pennsylvania State University Libraries' first undertaking to convert analog paper content to digital

Corresponding author:
Jeffrey A. Knapp, Penn State University Libraries, 309 Paterno Library, University Park, PA 16802, USA.
Email: knapp@psu.edu

content occurred in 1992 just as digital scanning technology was emerging. As a member of a consortium of eight academic institutions known as the LaGuardia Eight[1]—in honor of their meeting site at New York's LaGuardia Airport—the University Libraries was eager to participate in developing digital technology solutions for libraries as a means to combat the pervasive problem of decaying library collections nationwide (Council on Library and Information Resources, n.d.). From the informal meetings of these eight institutions grew a commitment to investigate the current digital technology landscape and to set a strategy to develop local digital collections while agreeing to share their findings. Each institution chose a demonstration project to test the technology with the goal to "advance the use and utility of digital technology for preserving and improving access to intellectual works of national and international importance through cooperative action and a supportive multi-institutional infrastructure" (Council on Library and Information Resources, 1992). With funding from the recently established Commission for Preservation and Access[2] the University Libraries proposed to test the viability of digitizing archival materials. The remaining seven consortium partners chose different material types to test. Two archival collections from the Libraries' University Archives were selected for the test: (1) a collection of Pennsylvania agricultural county agents' reports; and (2) a series of business records and personal correspondence from prominent United States labor leaders and educators.

By June 1992 the Libraries received the approval and funding for its demonstration project from the Commission. Based on the favorable testing and research results published by Cornell University and the Xerox Corporation, the Libraries secured an agreement with Xerox to supply the DocuTech Production Publisher hardware and software, a first generation "print-on-demand" networked system, for its project (Kenney and Personius, 1992).

The defined scope of the University Libraries' demonstration project was to:

1. test the ability to create similar digital images from a considerable variation of source documents;
2. reconfigure portions of a dispersed archival collection while maintaining the original file integrity;
3. transmit digital files over data networks; and
4. provide print-on-demand capabilities for archival materials.

Difficulties plagued the project from its inception as the library staff struggled with the new electronic digital image system. The large, heavy, and cumbersome 11" x 17" flatbed scanner was installed as a networked system in the University Libraries while the printing and publishing component of the system was located elsewhere on campus at the University Business Services' print shop. Archival source documents consisting of business records and correspondence were scanned as proprietary 300 dots per inch bi-tonal images and saved to optical disks which could be retrieved, edited, and later printed on-demand at an output resolution of 600 x 600 dpi. At a 1993 conference, Kellerman reported that among the problems were: "countless system error messages, the lack of documentation to resolve problems, numerous software glitches, network printing software glitches, and equipment failures . . . .". Moreover, regular system upgrades to improve functionality and efficiency halted the project repeatedly throughout the demonstration's 18-month time frame. With each system upgrade, images previously scanned and stored on optical disks had to undergo conversion. At one point, over 30,000 images had to be converted which was the largest repository of digital images that the Xerox technicians had ever attempted to convert. Surprisingly, in the end, the digitized content was successfully converted. At the time, few digital standards existed to guide such conversions. Beyond the initial on-site training by Xerox technicians, no documentation or guidelines on how to scan various document types (e.g. line drawings, photographs, etc.) existed. Regular conference calls with consortium project managers were greatly welcomed as a means to discuss progress and to share "tips,"—in essence, building best practices and guidelines on the fly.

While the Libraries achieved a measure of success in digitizing archival collections, and having overcome a multitude of technical challenges, confidence and enthusiasm to attempt more digitization projects was high. For 10 years, from 1992 to 2002, the Libraries continued its digital libraries initiatives using the DocuTech system. However, as new digital technology solutions emerged featuring faster scanning devices, improved computer systems, and discovery and presentation tools, the Libraries sought new off-the-shelf digital solutions, which essentially ended the era of the Xerox DocuTech Production Publisher at the University Libraries.

OCLC's NEW newspaper digitization solution

On 28 May 2002, the Online Computer Library Center (OCLC) Digital and Preservation Resources announced that they had signed an agreement with

Olive Software to provide libraries with "the tools to digitize historical newspaper archives." This online announcement further explained that OCLC would become the "exclusive worldwide distributor of Olive Software to the library market with the goal of the new program being to help libraries preserve historical newspapers and open the content to online searchable access." Meg Bellinger, vice president of OCLC Digital and Preservation Resources, stated that through this partnership OCLC was taking a "leadership role in helping libraries preserve some of their most valuable resources" (Quint, 2002).

By 2003 the University Libraries signed on with OCLC and set its sights on a new digital initiative to scan and deliver the backfile of the Penn State University's student newspaper, the *Daily Collegian*. A meeting of librarians and staff from the *Daily Collegian* earlier in the year confirmed the urgency to digitize the paper and to make the online *Daily Collegian* archive a reality (Cheney, 2013).

Prior to digitization, access to the historical backfile of the *Daily Collegian* was limited and cumbersome at best. The University Libraries' News and Microforms Library and the Special Collections Library were the service points for the multitude of questions received about Penn State student life, student social behaviors, university happenings, and sporting events that could only be answered from the pages of articles, pictures, and editorials found in the *Collegian*. As early as the 1930s, the Special Collections Library had compiled a card file index of "important" people and events found among the *Collegian* pages. In 1984, the News and Microforms Library started its own *Collegian* index—including different types of events than the Special Collections Library was recording. Often, however, both indexes fell woefully short, omitting articles and information that researchers were hoping to locate. *Collegian* student reporters and editorial staff frequently needed article access to the historical issues for writing assignments. When their own *Collegian* morgue file was found inadequate, they too turned to the Libraries for assistance (Kellerman, 2007). As for physical access to the *Collegian* backfile, the paper was limited to the microfilm copies produced consistently each year starting in the 1970s, or found in fragile bound paper volumes housed in the Special Collections Library. For the earliest holdings, the issues only existed in paper format.

With the promise of an integrated newspaper system, by December 2003 the Libraries acquired and installed a single instance of ActivePaper Archive™ from OCLC and Olive Software as the solution for the *Daily Collegian* project. This system allowed for newspapers, regardless of format (e.g. microfilm, paper, or PDF files), to be transformed to a proprietary XML repository structure that included dates, articles, photographs, and advertisement publication information.

The first title targeted for the project was the *Free Lance*, which was published from 1887 to 1904. Following the *Free Lance*, the project continued moving forward to include each of the successive title changes of the paper through 1940. The number of years targeted for digitization was determined by the internal library funding available at the time. In some instances, paper issues had to be converted to microfilm first before digitization, as was the case with the backfile of the *Free Lance*. In other instances, existing print negative microfilm could be scanned directly. In other instances, poorly produced microfilm or badly scratched positive service copy film had to be rejected and paper issues assembled for re-filming (Kellerman, 2006).

A publication history of the *Daily Collegian*:

- Free Lance, monthly publication, April 1887–April 1904 (not previously microfilmed)
- State Collegian, weekly, 29 September 1904–10 June 1911 (on microfilm)
- Penn State Collegian, weekly; semi-weekly, 28 September 1911–30 May 1940 (had to be re-filmed due to poor quality)
- Daily Collegian, daily, 5 September 1940 – current (on microfilm)

The initial success of the *Daily Collegian* digitization project in 2003 prompted the Libraries to continue to digitize more newspaper holdings from microfilm and host them using the Olive Software application. Today, the Libraries' Olive Software repository boasts 500,000 newspaper pages. Titles and holdings currently online include: the *Daily Collegian*, 1887–2010; several Penn State branch campus newspapers; a substantial backfile of a Pennsylvania weekly farming newspaper, *Lancaster Farming*; and a collection of 116 rural Pennsylvania titles covering the United States Civil War era, from around the 1830s to the 1870s (Pennsylvania State University Libraries, n.d.).

Since 2003, multiple modifications and upgrades to the proprietary Olive platform were pushed out to resolve technical glitches. However, the user interface remained the same. As library practitioners and users became more familiar with Google, they requested similar search features, including crowd-sourced editing tools, for the Olive newspaper repository. In 2007, Google approached the University Libraries asking

permission to make the Olive newspaper repository accessible via their new News Archive Search product. After several months of crawling, testing the data, and fine-tuning search algorithms, the pilot testing ended without visible results. By 2014, the viability of retaining Olive's ActivePaper Archive™ platform to deliver historical news content was being questioned by the Libraries' administrative leadership as new platforms were being promoted, namely OCLC's CONTENTdm,[3] Veridian,[4] the Library of Congress' newspaper viewer,[5] the National Library of Australia's Trove portal,[6] and the Internet Archive.[7] Promised upgrades to address requests for new access and navigation solutions never materialized. Similarly, requests to Olive to meet the University's new web accessibility standards[8] failed.

Open-source solution: Open ONI

In 2005, the Library of Congress and the National Endowment for the Humanities started the National Digital Newspaper Program (NDNP), a nationwide newspaper digitization effort in the United States (Library of Congress, 2017; National Endowment for the Humanities, 2017). *Chronicling America* is the website the Library of Congress developed to offer free access to the newspapers digitized through the NDNP (Library of Congress, n.d.). The success of the NDNP prompted the Library of Congress in 2013 to release the source code for the *Chronicling America* application, called "Chronam." The release of Chronam made available the code to load and provide access to digitized newspaper pages for institutions to use locally for their own newspaper collections.

It turned out that Penn State was not alone in looking for a "free, easily deployed, flexible, plug-and-play system" (Dussault et al., 2017: 1) to meet our needs. Based on our experience with Olive, we recognized the difficulty in obtaining and maintaining a solution from a third party amid evolving technologies and user requirements. Likewise, developing our own custom solution suffered from the expensive need to allocate resources to create custom code as well as to maintain every aspect of the project.

In July 2015, participants from 10 institutions from across the United States met at the University of Oregon to explore the development of a state-oriented version of Chronam. This meeting brought together experts in Chronam, metadata, image and web accessibility standards, and development, along with a host of locally developed feature sets from a number of institutions. Expressed goals of the project were to implement a new data model that conforms to IIIF[9] and NDNP[10] lite standards, leverage individual features developed by institutions, update the Chronam code base to current versions, and provide a base theme that can be adapted easily for state-oriented use. This work would be provided by a community-managed group in a single public organization on Github (with open source code provided in repositories) and became the Open Online Newspaper Initiative, Open ONI. This community-driven, collaborative open source project would allow the libraries to create custom code where necessary while utilizing the common goals to create reusable code that could be leveraged by the entire community.[11]

Fortunately for us, a leader in this initiative joined us as Associate Dean for Technology and Digital Strategies. With her arrival, shortly after the initial Open ONI meeting, she was in a position to advise and to allocate resources to this project. Penn State was the first to be in production with Open ONI, followed by the University of Oregon deploying the second instance.

The Open ONI community has come together for several "code sprints" since its inception. A "sprint" is used to accomplish specific goals, define and plan what will be built, and determine what the end product will be (http://Scrum.org, 2017). Significant progress has been made to make Open ONI into a platform that can be utilized on a very customized basis without breaking from the master branch of the codebase. For example, a complete system for easily running Open ONI was established using Docker.[12] For some newcomers, Docker might be difficult to grasp in its entirety, but new users can now limit what they need to know to start. A Python developer can get started with the system without needing to understand how to install and administer all of the moving parts, so that theoretically, in fewer than 10 minutes, they can have Open ONI running in a development version. This allows developers to quickly get the code, run it, and see where changes can be implemented. This rapid time to develop is critical to the project's future growth, as it should make it easier to bring new developers onboard.

Open ONI utilizes a continuous delivery model, where single changes are quickly rolled out little by little to see if they work, as opposed to making large, major version updates in the hope that all the changes will work and be well received. While many of the technologies to implement continuous integration are monetarily free and open source; the inclusion of continuous integration is not without costs. The technologies are new and very rapidly evolving, meaning that developers must learn and keep up with the changing landscape.

Launch and near future

Using Open ONI, Penn State launched the *Pennsylvania Newspaper Archive* in March 2017 with basic functionality and features, at http://panewsarchive.psu.edu. It is being run in tandem with our Olive collection for the time being, until all of our local newspaper titles can be loaded into Open ONI. Because of this, we have no usage data specifically for the titles in the *Pennsylvania Newspaper Archive* currently. When the Olive application is shut down, we will be able to collect usage data.

Currently, 112 newspaper titles are loaded in the archive, consisting of 67,579 issues. We are now working on loading an additional 59 newspaper titles (for a total of 171 titles).

While the *Pennsylvania Newspaper Archive* is hosted on Penn State's servers, it is not branded as a Penn State service. This was a conscious decision. As the Land Grant institution charged with serving the Commonwealth of Pennsylvania, we envision the Archive as a statewide portal for newspaper collections from around the state, and discussions about this have already begun with the Carnegie Library of Pittsburgh, Temple University, the Free Library of Philadelphia, and the State Library of Pennsylvania in Harrisburg.

The University of Nebraska and University of Oregon, two of the main drivers in the creation of Open ONI (and early adopters of the Chronam software), also planned to launch Open ONI newspaper sites in 2017 (Dussault et al., 2017).

Literature review

The library science literature documents many examples of libraries creating digital collections, preserving newspapers, and utilizing open source software.

The creation of digital newspaper collections has been well documented, particularly through various conference papers presented at IFLA News Media Section meetings (IFLA News Media Section, 2018). Examples of state-level projects in the United States are in Texas, Vermont, and Kentucky, all of which were, like Penn State, part of the National Digital Newspaper Project (NDNP). Krahmer (2016) explored the benefits and issues involved in the *Portal to Texas History*, a state-wide project including many different collaborating libraries, similar to how Penn State looks to bring in other partner institutions. MacLennan and McMurdo (2013) documented their digitization process in Vermont, while Terry and Weig (2015) discussed the steps involved in handling the entire process in-house at the University of Kentucky.

The preservation of newspapers and case studies of preservation programs at different locations is also well covered. Some recent studies include programs in Croatia (Hasenay and Krtalic, 2010), Australia (Leigh, 2012), and Sweden (Nilsson, 2012), in addition to the aforementioned cases in the United States. Clearly, preserving historical newspaper content is a global concern.

Although our case shares many similarities with other published instances, our deployment of an open source platform for historical newspapers is unique. Open source software, usually defined as software for which the source code is freely available and may be modified or redistributed, has a long history with libraries. This is understandable, considering that libraries tend to be cost-conscious institutions that often depend on public funding. Popular applications for libraries include Integrated Library Systems (ILS) such as BiblioteQ, Evergreen, and Koha, and digital repository applications such as DSpace (Gkoumas and Lazarinis, 2015).

Open source software has many benefits besides the usually free price. Akintomide (2016) notes the robust user communities and constant development and refinement. Frequent reasons given for switching from commercial software to open source include dissatisfaction with vendor support, license and maintenance fees, metadata limitations, and a desire for new features—in short, a desire for increased self-control over library systems (Stein and Thompson, 2015).

It has also been noted that even though open source software licensing is often free, that does not mean that there are no costs associated with installing or running the software. There can still be costs for converting file types for use in the new system, the expertise for installing, configuring, and supporting the software, as well as the custom development (Breeding, 2017).

Migration

Penn State had two different sets of newspaper files to load into Open ONI: the newspapers we had scanned as part of the NDNP for the Library of Congress; and those we had scanned for ourselves pre-NDNP, which were in the Olive system. The latter set required the most attention because while the Open ONI project provided the needed features, it did not address the existing data from the Olive system. Systems like Olive often have their own unique format from which they can import data. Open ONI, however, relied on NDNP for defining the data structure. Initially, a team worked to evaluate the XML data structures of the Olive system in an attempt to determine how to

transform the data into a format that could then be restructured into NDNP format. Unfortunately, this was not possible because the Olive data structures were largely composed of unspecified data. Without knowing what all of the data elements were, we could not determine where they needed to go.

To solve the problem, we decided to go back to the most recent source material for images, publication metadata, issue metadata, and page level optical character recognition (OCR) data. The use of NDNP and MARC record data provided a cogent standard that met the needs of the project for the foreseeable future by providing a solid intermediate source from which Open ONI and any other potential future system could work. In the case of materials that had already been submitted as part of the NDNP, recovering the data to Open ONI involved the process of harvesting, verifying, and loading the batches from the Library of Congress's Chronam instance into a local Open ONI instance.

For the newspapers that we had scanned prior to the NDNP (e.g. our student newspaper, the *Daily Collegian*), the process was a bit more difficult. To ensure that these publications could get loaded, one was selected for a test run that possessed the greatest number of potential hurdles, one of which was that it was not included in the NDNP project. While this significantly increased the timeline to get to the first batch successfully imported, it ensured that the hurdles could be cleared with all of the subsequent publications.

Working with a third-party vendor to recreate and improve the OCR metadata and generating the correct NDNP formats in the batches was difficult, to say the least. The vendor had subcontracted to another vendor, which led to multiple communication breakdowns. Initial versions of the test batch did not have the correct data structures, did not have all of the XML files, and were not using the correct naming conventions for the files. After several extensive emails and batch rebuilds, the exact structure, naming conventions, and XML file contents were successfully hammered out.

Part of the process of loading an NDNP batch into Open ONI involves providing a MARC record that corresponds to each of the titles in the batch. Because the Library of Congress only accepted general interest newspapers into the NDNP, we had other local interest non-NDNP newspaper titles (i.e. those that were loaded into Olive, but were not part of the NDNP) that had no corresponding MARC records available through *Chronicling America*. This required us to patch Open ONI locally to allow loading of MARC records from an alternative source. We had to generate appropriate XML files from our local catalogs and edit them to make the structure of the MARC.xml files work with Open ONI. The remaining difficulties that surfaced were due to the ongoing transition between MARC and MARC21 metadata formatting and cataloging practices, which resulted in a moderately sized list of non-allowable fields in the customized MARC records.

Workflow loading

Automating the batch loading process

Once a method was created to massage the non-NDNP standard files into an acceptable format, the next item to consider was the process of actually loading all of the files into Open ONI. A workflow needed to be created that would smooth out the rough spots between all of the people involved in the processes of producing the file batches, building the MARC records, and getting them into the actual production web system. These steps were time-consuming, difficult to diagnose if something went wrong, and fraught with communication issues.

Having finite developer resources, it was decided to have the developer focus on actually developing the product, and have other personnel run the process of loading the files. The loading processes were automated as much as possible and scheduled to run over night, since some batches could take in excess of three hours to load (many batches consist of more than 10,000 pages, and it takes about one second per page to load). As the process gained momentum, and more than one batch was being loaded at a time, it became difficult to determine the progress of the load, since they could conceivably take days to complete. To alleviate this problem, the scripts were modified to allow loading of batches on demand throughout the work day, and even automatically notify team members via a collaboration tool called Slack,[13] as progress and any problems were encountered. This provided greater transparency and allowed the team to respond quickly to batch loading problems and speed up the process.

Multiple environments

Open ONI is run at Penn State as four different environments, or "instances," specified by how they are to be used. The first is the Production System, which is the instance of Open ONI that is the final version that is seen and used by the public. The Quality Assurance System (QA) is run separately as a place to test MARC records, test the batch construction, and look for any metadata errors. The Sandbox System is a

production-like system that replicates the Production System environment without introducing problems caused by quality assurance testing. As the name implies, this system is where developers can "dig in" and test things out before running them for the public. Finally, there is the local Developer System, which is used by the developers to create and modify the code whenever changes or updates are being implemented. Running these four separate systems initially put a great deal of stress on our network, because they all had different file systems that required the duplication of terabytes of images and files. To increase efficiency, we created a network file system that could share the batches between three of the four systems: Production; Quality Assurance; and Sandbox. Now only one copy of the data needs to be maintained for use on any of those three systems. The Developer System does not use the network file system, because it uses test batches of the large data set available elsewhere.

Current issues experienced

Over time, the workflow has improved significantly. The Developer Team now has complete control and visibility of the process of safely loading and excluding batches from the Quality Assurance and Production systems. Due to the architecture of Open ONI, we have experienced some problems in changing or correcting MARC record files once they have been loaded. Since Open ONI relies on "final" files, if information in a MARC record is incorrect, invalid, or faulty, the file batch must be completely purged from the system, before the corrected MARC records can be loaded. This can be an extremely time-consuming process, but progress has been made in streamlining the process of updating MARC record information.

Managing the project with Agile Scrum

Early on, it was decided that we would use a more flexible and responsive methodology for managing this project than we have used previously. The one we settled on was "Agile Scrum." "Agile" describes a framework of values and principles intended as an alternative to earlier "documentation driven, heavy-weight software development processes," allowing greater flexibility and responsiveness (Robinson, 2013). "Scrum" is a framework of processes for developing and sustaining complex products, "while productively and creatively delivering products of the highest possible value" (Schwaber and Sutherland, 2016: 3).

Basically, it works like this: A project team defines the requirements up front, define tasks needed to reach the goal, complete the tasks, and deliver a product which is then assessed by the customer. Work is completed in "sprints" of two to four weeks with a deliverable product as the outcome. Subsequent sprints build upon one another to form the final deliverable.

In order to take on a project like the migration of massive newspaper archives from proprietary software into an emerging open source solution, the path to completion was uncertain. This made the project ideal for the Agile Scrum methodology. In addition, managing digital projects requires a degree of flexibility and constant monitoring that differs from traditional library services, so a methodology tailored to continually defined deliverables made a lot of sense.

The roles and values within this methodology align well with the culture of collaboration and user-centered service of libraries. There are three main roles: the Product Owner; the Development Team; and the Scrum Master. The Product Owner is at the center of the product or service, determining its overall direction, and making sure that it meets the needs and expectations of stakeholders (patrons, users, etc.). An effective Product Owner is in frequent communication with stakeholders and defines requirements that best meet their needs. The Product Owner also works hand in hand with the Development Team, defines acceptance criteria, and signs off on deliverables.

The other two key roles in Agile Scrum are the Development Team and the Scrum Master. The Development Team is a self-organizing, cross-functional team of developers that completes the tasks assigned to them in order to create or improve the online product. The Scrum Master ensures that the methodology is followed and acts as a "servant-leader" for the Development Team by clearing obstacles, making sure sufficient resources are available, and clearing backlogged tasks (Schwaber and Sutherland, 2016).

Scrum's focus on software development, return on investment, and sales can be leveraged toward meeting the needs of library patrons. In libraries, we can think of "return on investment" as patron discovery and "sales" as library resource usage. With public-serving universities seeking ways of assessing the impact of their programs, taking an entrepreneurial mindset for web products is a natural step.

Possible future directions

As news content has migrated to many new media over the last century, e.g. radio, television, and Internet, a valid question would be whether Open ONI can

include them. At present, Open ONI is limited to files in the NDNP format, and developers are hoping to make it capable of ingesting files that are not in that specification (2018 interviews with K Dalziel, Digital Development Manager & Designer, University of Nebraska-Lincoln, and S Seymore, Digital Collections Metadata Librarian, University of Oregon). Until its ingest capabilities are made more flexible, Open ONI will require workaround procedures to get it to accept non-NDNP standard files.

Another feature on the wish list is to incorporate a method to correct OCR text (2018 interview with K Dalziel). Despite improvements in OCR technology over the years, anyone who has used historical newspapers from the 19th century can attest that decorative typefaces of the period and image quality can negatively affect the quality of the machine-readable text. Enabling developers, or even users, to correct this data would do much to improve the searchability of the content.

Improving the functionality of the system for regular maintenance and corrections in general is a high priority. Something akin to a Content Management System (CMS) is hoped for, that would allow a developer or administrator to add, remove, or correct content of any type without a work-intensive purge and full reload. Many newspaper history sites include historical essays written about different newspaper titles to provide helpful context to what users are reading. It would be useful and more efficient if a front-end CMS-like interface allowed editing function of this as well as other metadata (2018 interview with S Seymore).

Despite the limitations on file types for ingesting, some experimenting has taken place. We have looked into the possibilities for loading born-digital news content, e.g. web pages, in Open ONI. Since Open ONI was created as a platform for viewing scanned images of printed newspapers, web pages would need to be converted to static page images (such as TIFFs), and then have LCCNs and MARC records created for them. While this is possible, it is also very impractical for large-scale content loads like with printed newspapers. The only way this solution might be used is for very selective, curated collections of web articles, perhaps focused on a specific topic or event. These collections would be poor historical artifacts compared to printed newspapers, since the page layout, advertisements, and hyperlinks would differ from the original. But the possibility exists, which is an important consideration in light of how much born-digital news content is being lost on many levels.

Conclusion

Generally speaking, the use of open source software for digital library collections is a viable direction for libraries. We have discussed some of the costs and staff skillsets necessary to adopting open source software and recognize that it is not a solution for all cases. However, in assessing the pros and cons of open sources and commercial software, there is one item that is difficult to quantify: control. As customers—even in the best of vendor relationships—we in libraries will always be at the mercy of people who may or may not have the same priorities and vision for our collections. Even considering the limitations of open source software, controlling a collection's destiny is a very attractive feature. Libraries and librarians have been finding themselves increasingly in the role of customers licensing large online resource packages rather than that of skilled curators of collections built over time. Open source software allows libraries to customize features based on their patrons' needs without the burden of completely "reinventing the wheel."

Regarding Open ONI specifically, this project, while still in its infancy, shows great potential. With Penn State already launched, and Oregon and Nebraska soon to join, it has a promising community of developers in the United States. As of this writing, the limitations of file formats and title updating are being addressed. And as more developers come on board, there will be more people working on them. As momentum builds, it is conceivable that more states, particularly those currently using Chronam[14] for their newspaper collections, will be interested in the customizability of Open ONI.

Open ONI is available for anyone to use, regardless of country. It can handle non-English languages, and offers geographic customizability (within the MARC standard), allowing users to customize how to present newspaper titles by various geographic subdivisions, such as cities, counties, or states/provinces. Currently the major barriers for organizations already running other servers would be the costs for creating the image batches (scanning, OCR, etc.) and general operations costs (primarily disk space). Smaller organizations that do not run their own servers or do not have a web team of any kind would need to obtain these services at additional cost.

The Penn State University Libraries has been enormously fortunate to have the resources and administrative support required to take on a project like this. We recognize that not all libraries will be so fortunate. However, we are working diligently on pushing on through the challenges we encounter in order to

improve the software and smooth the path for others who will follow us on this journey.

The experience of creating the *Pennsylvania Newspaper Archive* on an open-source platform has been a positive one for Penn State. Although not as simple as adopting a commercial turn-key package, Open ONI has proven to us that with the necessary web development expertise, libraries with their own digitized newspaper collections are capable of hosting them entirely in-house. Open ONI, like any platform, has its limitations. But our experience signals possibilities for a future where libraries can begin to take control of their own collections online.

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Notes

1. LaGuardia Eight members included: Yale University, University of Southern California, Cornell University, The University of Tennessee, The Pennsylvania State University, Harvard University, Princeton University, and Stanford University.
2. The Commission for Preservation and Access established in 1985. Patricia Battin, head librarian at Columbia University was named it first president.
3. See: OCLC (2017) *Managing and presenting digital newspapers with CONTENTdm* Available at: https://www.oclc.org/content/dam/training/CONTENTdm/pdf/Tutorials/Working%20with%20Content%20Types/Managing%20%26%20Presenting%20Digital%20Newspapers.pdf.
4. Veridian, see: http://www.veridiansoftware.com/
5. Library of Congress' newspaper viewer, see: https://sourceforge.net/projects/loc-ndnp/
6. The National Library of Australia launched the Trove portal in August 2008. It was developed as the Library's online discovery service, including the Register of Australian Archives and Manuscripts, Picture Australia, Libraries Australia, Music Australia, Australia Dancing, Pandora web archive, ARROW Discovery Service, and the Australian Newspapers Beta service. See: http://trove.nla.gov.au/
7. Internet Archive pilot project to digitize newspapers, see: https://archive.org/details/newspapers
8. See Penn State's website accessibility standards at: http://accessibility.psu.edu/webpagetools/
9. International Image Interoperability Framework, see: http://iiif.io
10. National Digital Newspaper Program, see: https://www.loc.gov/ndnp/. "NDNP" can also refer to the NDNP's standard for image quality, metadata structure, and Optical Character Recognition (OCR). For details on the NDNP standards and guidelines, see: https://www.loc.gov/ndnp/guidelines/
11. For further detail on the community, see meeting notes at: https://docs.google.com/document/d/1_GFKl9x3WXB-7nXr8lxvgkXmLSaXW3NmhCR-3yKPlfg/edit#; and a code sprint example at: https://github.com/open-oni/open-oni/wiki/January-2016-Code-Sprint
12. For details on Docker, see: https://www.docker.com
13. For details on Slack, see: https://slack.com
14. As of 2016, there were five locations listed on the Chronam GitHub page: The Library of Congress; Oregon; New York State; North Carolina; and Montana. See: https://github.com/LibraryOfCongress/chronam/wiki/Sites-Using-ChronAm

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Author biographies

Jeffrey A. Knapp is the Larry & Ellen Foster Librarian for Communications for the Penn State University Libraries. He earned his Master of Science in Library Science from Clarion University of Pennsylvania in 2002 and joined Penn State in 2005, serving as an instruction librarian at the Altoona Campus. He was named the Foster Librarian at the University Park Campus in 2014, and is the liaison librarian for Penn State's Donald P. Bellisario College of Communications. His academic background includes international politics and history, with professional experience in marketing communications. He considers it his job to be interested in everything. His research involves the role of academic librarianship and potential futures for the profession in an ever-changing information environment.

Andrew Gearhart is a web systems developer for the Penn State University Libraries. Passionate about the advancement of knowledge, Andrew has been designing, building, and implementing management information systems since 1998. In 2014, he joined Penn State, as the Publishing Services Web Developer, where he focuses on implementing systems that support open access publication of digital scholarship and scholarly communications. In 2016, he co-authored a work entitled "Infrastructure for Open Access: Mechanics, Economics, Politics," exploring the difficulties and successes of a library-based open access publishing program.

L. Suzanne Kellerman is the Judith O. Sieg Chair for Preservation and Head of the Preservation, Conservation & Digitization Department at the Penn State University Libraries. She earned her Master's degree in Library Science from the University of Pittsburgh. She joined the Penn State University Libraries in 1985 serving as the field cataloger for the Pennsylvania Newspaper Project. Later in 1990 she became Penn State's first preservation librarian. Digital collections building was added to her department's core services in 1998, and in 2017 digital preservation was added. Preservation, conservation, and access of information resources in all formats remains her principal commitment and research focus. She has given numerous presentations and published on a wide array of topics including deacidification, disaster response and salvaging, collection digitization, project management, and digitization of historical newspapers. Digitization and open access of Pennsylvania newspapers remains her current research

interest. Currently Sue serves as co-Principal Investigator for the University Libraries' CLIR-funded *Digitizing Special Collections and Archives* grant to support the project *Beneath the Surface and Cast in Steel: Forging the American Industrial Union Movement Digital Project*.

Linda Klimczyk is the Assistant Head of the Department for Information Technologies at the Penn State University Libraries. She also serves as the manager of the Systems and Applications Support Unit. Linda manages library enterprise application support and local application development. She is responsible for the successful integration of library systems with university systems and data as well as integration with third-party solutions. Her interests and expertise focus around library data mining, identity and access, project management, process improvement, and advancing a welcoming and civil workplace culture.

Abstracts

Ana Ndumu, Lorraine Mon

آنا ندومو، ولورين مون

مجلّة الإفلا، 44،2

الـمُستخلص: يتناول هذا البحث تجارب أخصائيي المكتبات في بلدية "بلوفيلدز" في نيكاراغوا، وقد أجريت مقابلات شبه منظمة وأنشطة قائمة على منهج "الصوت والصورة" البحثي والذي يُعرف باسم "الفوتوفويس photovoice" لدراسة التنمية المهنية للمكتبيين، والعمليات الفنية اليومية، وطرق تلبية الاحتياجات المعلوماتية لشعوب "الكوستينيو" و"الميسكيتو" و"الراما" و"السومو" الأصلية، وكذلك شعوب "الكريول" التي تعود أصولها إلى أفريقيا. وتُشير النتائج إلى أن تقارير المكتبيين تتشابه مع المعلومات الراسخة عن مكتبات نيكاراغوا؛ فغالبًا ما تتميز المكتبات بطابع رسمي وترتبط بالتعليم؛ يُقدر المجتمع في نيكاراغوا المعرفة الشفهية أو المعلومات التي يتناقلها الناس شفويًا؛ عدد المكتبات العامة في نيكاراغوا قليل وهي تعاني من نقص الموارد مقارنة بالمكتبات الأكاديمية. وتُشير البيانات أيضًا إلى أن المكتبات التي تقع على ساحل المحيط الأطلسي تستطيع أن تعزز خدماتها من خلال مجالات التعاون المشترك وأيضًا من خلال تقديم خدمات قائمة على أسس ثقافية، كما أنه اتضح أن منهج "الصوت والصورة" أحد الأدوات الفعّالة في إجراء الأبحاث التي تشمل المجتمعات متعددة الثقافات.

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

مؤشرات التنبؤ بسلوكيات تبادل المعرفة بشأن أهداف التنمية المستدامة بين موظفي المكتبات في نيجيريا

Magnus Osahon Igbinovia Cln, Ngozi Perpetua Osuchukwu

ماغنوس أوساهون إجبينوفيا كلن، ونغوزي بيربيتوا اسوتشوكوو

مجلّة الإفلا، 44،2

الـمُستخلص: أُجريت هذه الدراسة لبحث مؤشرات التنبؤ بسلوكيات تبادل المعرفة لموظفي المكتبات وتأثيرها على تحقيق أهداف التنمية المستدامة وذلك باستخدام نظرية السلوك المخطط (TPB)، واعتمدت الدراسة على إعداد استبيان منظم لجمع البيانات من مئة موظف من موظفي المكتبات المسجلين في ولاية "انامبرا" بنيجيريا، وكان التعداد الكلي هو الأسلوب المستخدم للحصول على العينة السكانية. وكشفت

مجلّة الإفلا العدد 44،2

Transformation Strategies in Community Engagement: Selected Initiatives by Malaysian Libraries

استراتيجيات التحول في المشاركة المجتمعية: مبادرات مختارة من المكتبات الماليزية

Zawiyah Baba, Abrizah Binti Abdullah

زاوية بابا، وأبريزه بنتي عبد الله

مجلّة الإفلا، 44،2

الـمُستخلص: يتناول هذا البحث الاستراتيجيات والمبادرات التي طورتها المكتبات الماليزية بجميع أنواعها والتي تهدف إلى دعم دور المكتبات في تعزيز تبادل المعرفة والتكنولوجيا، فضلاً عن مساهمتها في رخاء المجتمع وذلك من خلال المشاركة المجتمعية، ويهدف البحث أيضًا إلى استكشاف التغيرات التي تحدثها المكتبات الماليزية في المجتمع من خلال هذه المشاركة المجتمعية. ويسلط البحث الضوء على بعض المبادرات المختارة التي اضطلعت بها المكتبات لدعم وصول أفراد المجتمع إلى المجموعات والخدمات والمناسبات المكتبية الخاصة، ويعرض أيضًا السبل التي استطاعت بها المكتبات الماليزية التواصل مع المجتمعات المحلية والدولية. ويظهر نجاح هذه المبادرات في سبع موضوعات ضمن استراتيجيات التحول وهي: (أ) الخدمات المدمجة، (ب) الجسور الإلكترونية وتكنولوجيا الإنترنت، (ج) الشراكات الاستراتيجية والمؤسسية، (د) المكتبات الريفية، (هـ) المكتبات المجتمعية، (ز) تنمية المجتمع القائمة على مواطن قوته، (ح) شؤون المكتبات على الصعيد الدولي. وعلى الرغم من أن المتعارف عليه أن المكتبات العامة هي التي تخدم المجتمع بوجه عام، يُقدم هذا البحث منظورًا لوجهات نظر من أنواع مكتبات مختلفة، ويؤكد على الرأي القائل بأن تقديم هذه الخدمات لا يجب أن يقتصر فقط على المكتبات العامة، ولكن يجب أن يضطلع مجتمع المكتبات بوجه عام والمكتبات الأكاديمية بوجه خاص بدورٍ في تفعيل المشاركة المجتمعية لتحويل خدمات المكتبات.

An investigation of the experiences of Nicaraguan Costeño librarians

دراسة لتجارب أخصائيي المكتبات في نيكاراغوا كوستينيو

مفهوم مستودعات الوصول الحر في بنغلاديش لدعم البحث والتطوير. وهذه الدراسة هي أولى المحاولات في بنغلاديش لمناقشة الوضع العام لمستودعات الوصول الحر وتحليله، كما أنها تقدم بعض التوصيات لتطوير نظام مستودعات الوصول الحر في بنغلاديش وستكون بالتأكيد إضافة للأبحاث المستقبلية حول مستودعات الوصول الحر هناك.

الدراسة أن نظام المكافآت الخارجي، ومعتقدات السيطرة، والتحكم السلوكي، والمناخ التنظيمي، وفعالية الذات الواضحة، وتحقيق أهداف التنمية المستدامة يقفوا عند P<0.05. وخلصت الدراسة إلى أنه حتى يساهم موظفي المكتبات مساهمةً كبيرة في تحقيق أهداف التنمية المستدامة، يجب عليهم أن يضمنوا أن تكون سلوكيات تبادل المعرفة سلوكيات فعّالة بشأن المعلومات المتعلقة بهذه الأهداف، ولذا يتعين على القائمين على إدارة المكتبات إنشاء نُظمًا من شأنها أن تعزز تبادل المعرفة، ومن المهم أيضًا أن يُطور موظفو المكتبات أنفسهم باكتساب المهارات والمعرفة اللازمة حول أهداف التنمية المستدامة، مما سينتج عنه معدلات مرتفعة في تبادل المعرفة.

The Pennsylvania Newspaper Archive: Harnessing an Open-Source Platform for Digitized Collections

أرشيف صحيفة "بنسلفانيا": إتاحة منصة مفتوحة المصدر للمجموعات المرقمنة

Open access repositories of Bangladesh: An analysis of the present status

مستودعات الوصول الحر في بنغلاديش: تحليل الوضع الراهن

Jeffrey A Knapp, Andrew Gearhart, L Suzanne Kellerman, Linda Klimczyk

جيفري أي ناب، وأندرو جيرهارت، وإل سوزان كيلرمان، وليندا كليمكزيك

مجلّة الإفلا، 44،2

Md. Hasinul Elahi, Muhammad Mezbah-ul-Islam

محمد هينول إلهي، ومحمد مزبه الإسلام

مجلّة الإفلا، 44،2

الـمُستخلص: يُعد إتاحة الوصول للمحتوى التاريخي للصحف أحد الأولويات الاستراتيجية للعديد من المكتبات. وفي هذا الشأن، ازدادت المجموعات الإلكترونية لجامعة ولاية بنسلفانيا زيادة كبيرة بالتزامن مع ازدياد قاعدة مستخدميها وذلك بصفتها ضمن أولى الجامعات التي وفرت مستودع داخلي لصحفها الممسوحة ضوئيًا. ولكن بمرور الوقت، أصبح هناك حاجة إلى توفير نُظم جديدة بسبب تقادم النظام القائم، والتحديثات المتغيرة التي يقدمها الموردون، إلى جانب الصيانة واحتياجات المستخدمين. كان هذا هو الحال عندما تبنت مكتبات الجامعة المنصة المفتوحة المصدر "أوبن أوني" Open ONI في إنشائها لأرشيف صحيفة بنسلفانيا (panewsarchive.psu.edu)، ليحل محل نظام الأرشيف "أوليف سوفتوير أكتيفبيبر" Olive Software ActivePaper المتقادم، ويسرد هذا البحث مراحل تخطيط المشروع وتصميمه، وتبني نظام إدارة المشاريع "أجيل سكروم" Agile Scrum، وعمليات نقل البيانات التي طُورت لنقل 500.000 صفحة من محتوى صحف التراث التاريخي من نظام مبيع إلى نظام داخلي مفتوح المصدر.

الـمُستخلص: تتناول هذه الدراسة الوضع الراهن لمستودعات الوصول الحر في بنغلاديش، والهدف الرئيس من هذه الدراسة هو التعرف على خصائص مستودعات الوصول الحر وعلى طرق تطويرها وترتيبها على مستوى المستودعات الإلكترونية، بالإضافة إلى تقديم بعض المقترحات لتطوير مستودعات الوصول الحر في بنغلاديش. وتتبع منهجية الدراسة منهجًا كميًا، وجُمعت البيانات من قاعدة بيانات "أوبن دور" OpenDOAR في الفترة من 20 إلى 25 نوفمبر 2016، ويقتصر نطاق الدراسة على مستودعات بنغلاديش المفهرسة في قاعدة بيانات "أوبن دور". وأظهرت نتائج الدراسة أن المستودعات في بنغلاديش تندرج في ترتيب المستودعات الإلكترونية، كما تشير الدراسة بوضوح إلى التقدم البطيء جدًا المصاحب لمستودعات الوصول الحر هناك، حيث أن معظم مستودعات بنغلاديش المُدرجة في "أوبن دور" ذات طبيعة مؤسسية، وتكشف الدراسة أيضًا عن أن أكبر عدد من المستودعات يحتوي على عدد قليل من المجموعات، ويمكن ببساطة تلخيص نتائج الدراسة في أن هناك حاجة لزيادة وعي الجمهور بشأن

摘要

Transformation Strategies in Community Engagement: Selected Initiatives by Malaysian Libraries

社区参与中的转型策略：马来西亚图书馆的部分精选举措

Zawiyah Baba, Abrizah Binti Abdullah

国际图联杂志，44 -2, 89-104

摘要：本文考察了马来西亚各类图书馆制定的策略和措施，这些举措旨在通过社区参与来加强图书馆在促进知识和技术交流以及社区福利方面的作用。文章探究了马来西亚的图书馆如何通过社区参与改变社会，并强调了图书馆为促进社区获取馆藏、服务和开展特别活动所采取的部分举措。此外，本文还介绍了马来西亚图书馆与本地和国际社会交流的方式。这些举措的成功体现于七个转型策略主题，即：(1)嵌入式服务；(2)桥接和网络技术；(3)战略和伙伴关系；(4)乡村图书

馆；(5)社区图书馆；(6)资产为本的社区发展；(7)国际图书馆事业。人们通常认为公共图书馆是为整个社区提供服务的图书馆，本文提供了其他类型的图书馆视角。文章强调了这些服务不应局限于公共图书馆，整个图书馆学界特别是学术图书馆都应当在图书馆服务转型的社区参与过程中发挥其作用。

An investigation of the experiences of Nicaraguan Costeño librarians

尼加拉瓜塞拉亚图书馆员从业经历研究

Ana Ndumu, Lorraine Mon

国际图联杂志，44 -2, 105–117

摘要：本文研究了尼加拉瓜布卢菲尔兹图书馆员的从业经历。为了考察图书馆员专业发展、图书馆日常运营以及如何满足塞拉亚人(Costeños)——或米斯基托(Miskitu)、拉玛(Rama)、苏木(Sumu)土著群体和非裔克里奥尔族(Creoles)的信息需求，研究者运用了半结构式访问和影像发声等研究手段。研究发现，图书馆员的陈述与尼加拉瓜图书馆的现有信息不谋而合：图书馆主要以正式形式存在并且与教育相关；尼加拉瓜社会看重口头知识和口述信息；与学术图书馆相比，尼加拉瓜公共图书馆的数量和资源较少。数据还显示，大西洋沿岸图书馆可以通过合作来提升服务。此外，本文还发现，在多文化社区中开展研究时，影像发声技术是一个有效的工具。

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

尼日利亚图书馆员工在可持续发展目标方面的知识共享行为预测

Magnus Osahon Igbinovia Cln, Ngozi Perpetua Osuchukwu

国际图联杂志，44 -2, 118–130

摘要：本研究运用计划行为理论(TPB)来探究预测图书馆员工的知识共享行为及其对于可持续发展目标实现的影响。研究使用了问卷调研方式，采用结构性问卷从尼日利亚阿南布拉州的100位注册图书馆员工中获取数据，并运用了全部枚举的抽样技术以获取总体样本。研究分析了外在奖励制度、信念控制、行为控制、组织环境与自我效能感和可持续发展目标的实现的相关性。研究结论是，图书馆员工如果要在实现可持续发展目标的过程中做出显著贡献，必须确保在可持续发展目标相关信息方面的有效知识共享。因此，在图书馆管理中应当建立有助于知识共享的机制。此外，图书馆员工自身应当提升实现可持续发展目标所需的技能和知识，而这也能够激发高度的知识分享。

Open access repositories of Bangladesh: An analysis of the present status

孟加拉国开放获取知识库：现状分析

Md. Hasinul Elahi, Muhammad Mezbah-ul-Islam

国际图联杂志，44 -2, 131–141

摘要：本文研究了孟加拉国开放获取知识库的现状。研究的主要目标是指明开放获取知识库的特征、发展情境和网络知识库排名，并对孟加拉国开放获取知识库的发展提出建议。研究方法包括定量法，收集的数据来源于2016年11月20-25日的OpenDOAR表格，研究范围则限于OpenDOAR数据库索引中的孟加拉国知识库。研究发现孟加拉国知识库均体现于网络知识库排名(Ranking of Web Repositories)中，但同时也明确指出，孟加拉国的开放获取知识库发展极为缓慢。OpenDOAR中列举的孟加拉国知识库大多数都是机构库。研究还表明，大量知识库的藏量都极少。总而言之，在孟加拉国，开放获取知识库这一概念需要引起公众关注，以支持相关研究和发展。本文是首次在孟加拉国尝试讨论和分析开放获取知识库的整体情况。此外，本文还为孟加拉国开放获取知识库体系提供了发展建议，这些建议必将有助于孟加拉国未来的开放获取研究。

The Pennsylvania Newspaper Archive: Harnessing an Open-Source Platform for Digitized Collections

宾夕法尼亚报纸档案库：利用开源平台建设数字馆藏

Jeffrey A Knapp, Andrew Gearhart, L Suzanne Kellerman, Linda Klimczyk

国际图联杂志，44 -2，142-152

摘要：提供历史报纸内容的在线获取是许多图书馆的一项战略重点。宾夕法尼亚州立大学是为自己扫描的报纸建设内部报纸数据库的早期实践者，其在线馆藏与其用户群一样大幅增长。但是，随着时间的推移，由于系统报废、供应商升级频率低以及维护和用户需求等原因，有必要建立新的系统。因此，该校图书馆采用了开源的"Open ONI"平台来创建宾夕法尼亚报纸档案库(panewsarchive.psu.edu)，以此取代旧有的Olive Software ActivePaper Archive™系统。本文按照时间顺序，介绍了项目的策划和设计阶段、"Agile Scrum"项目管理框架的采纳以及迁移过程。在这个过程中，五十万页的具有历史遗产价值的报纸内容从一个外购的管理系统迁移至一个内部管理的开源系统。

Sommaires

Transformation Strategies in Community Engagement: Selected Initiatives by Malaysian Libraries

Stratégies de transformation dans le cadre de l'engagement communautaire : une sélection d'initiatives prises par les bibliothèques de Malaisie

Zawiyah Baba and Abrizah Binti Abdullah

IFLA Journal, 44-2, 89-104

Résumé:

Cet article examine les stratégies et initiatives mises en œuvre au sein de tous les types de bibliothèques en Malaisie, dans le but de permettre aux bibliothèques de jouer un plus grand rôle pour favoriser l'échange du savoir et des technologies, ainsi que le bien-être des communautés en s'engageant à leur égard. Il étudie la façon dont les bibliothèques malaisiennes transforment la société grâce à un engagement communautaire. Il met en évidence certaines initiatives menées par les bibliothèques afin de promouvoir l'accès des communautés aux collections, services et manifestations spéciales. Il présente également les façons dont les bibliothèques malaisiennes ont su s'adresser aux communautés locales et internationales. Le succès de telles initiatives est démontré par sept thèmes du cadre des stratégies de transformation, à savoir: (a) services intégrés; (b) ponts réseau et technologie du web; (c) partenariats stratégiques et institutionnels; (d) bibliothèques rurales; (e) bibliothèques communautaires; (f) développement communautaire basé sur les acquis; et (g) bibliothéconomie internationale. Bien qu'on prétende souvent que les bibliothèques publiques sont celles qui desservent la communauté dans son ensemble, cet article se place depuis une perspective qui diffère d'autres points de vue bibliothécaires. Il insiste sur le fait que de tels services ne doivent pas être uniquement limités aux bibliothèques publiques. La communauté de la bibliothéconomie au sens large et plus particulièrement les bibliothèques universitaires doivent jouer un rôle dans l'engagement communautaire en transformant les services bibliothécaires.

An investigation of the experiences of Nicaraguan Costeño librarians

Une étude des expériences des bibliothécaires Costeño au Nicaragua

Ana Ndumu, Lorraine Mon

IFLA Journal, 44-2, 105-117

Résumé:

Cette étude s'intéresse aux expériences des bibliothécaires de Bluefields au Nicaragua. Des entretiens semi-structurés et des activités Photovoice ont été utilisés pour étudier le développement professionnel et le fonctionnement quotidien des bibliothécaires et déterminer des façons de répondre aux besoins en informations des Costeños – ou groupes indigènes Miskitu, Rama et Sumu, ainsi que Créoles descendant des Africains. Les constatations faites suggèrent que les récits des bibliothécaires correspondent aux informations déjà connues à propos des bibliothèques nicaraguayennes: ces bibliothèques ont essentiellement un caractère formel et en rapport avec l'enseignement; la société nicaraguayenne accorde de la valeur aux connaissances orales et aux informations transmises de bouche à oreille; et comparées aux bibliothèques universitaires, les bibliothèques publiques nicaraguayennes sont moins

nombreuses et manquent de ressources. Les données rassemblées suggèrent aussi que les bibliothèques de la côte atlantique peuvent renforcer leurs services par le biais de collaborations ainsi qu'en proposant des services à caractère culturel. En outre, la technique Photovoice s'est montrée un outil efficace pour mener des recherches portant sur des communautés multiculturelles.

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

Indicateurs des comportements de partage des connaissances en rapport avec les objectifs de développement durable par le personnel bibliothécaire au Nigeria

Magnus Osahon Igbinovia Cln, Ngozi Perpetua Osuchukwu

Résumé:

En utilisant la Théorie du comportement planifié (TCP), cette étude a été menée pour examiner les indicateurs de comportements de partage des connaissances par le personnel bibliothécaire et l'importance d'un tel partage pour atteindre les objectifs de développement durable. Pour cette étude, on a appliqué une méthodologie de recherche utilisant un questionnaire structuré afin d'obtenir des informations de 100 employés bibliothécaires enregistrés dans l'état d'Anambra au Nigeria. La technique d'échantillonnage employée a été un décompte global pour obtenir l'échantillon de population. L'étude a montré qu'un système externe de récompense, la croyance dans le contrôle, un contrôle comportemental, le climat organisationnel, l'efficacité personnelle perçue et l'actualisation des objectifs de développement durable avaient une valeur- P<0.05. Selon les conclusions de l'étude, pour que les employés bibliothécaires puissent vraiment contribuer à la réalisation des objectifs de développement durable, ils doivent avoir un comportement efficace de partage des informations relatives à ces objectifs. Par conséquent, les directions des bibliothèques devraient mettre en place des structures qui favorisent le partage des connaissances. Et les employés des bibliothèques devraient aussi se développer en acquérant les compétences et connaissances nécessaires à propos des objectifs de développement durable, afin de favoriser un meilleur partage des connaissances.

Open access repositories of Bangladesh: An analysis of the present status

Archives ouvertes au Bangladesh : une analyse de la situation actuelle

Md. Hasinul Elahi, Muhammad Mezbah-ul-Islam

Résumé:

Cette étude examine la situation actuelle des archives ouvertes au Bangladesh. L'objectif principal de l'étude est de déterminer les caractéristiques des archives ouvertes et leur scénario de développement ainsi que de classer les archives numériques et de faire quelques suggestions au sujet du développement d'archives ouvertes au Bangladesh. La méthodologie comprend une approche quantitative. Les données ont été obtenues de l'OpenDOAR (Registre des archives ouvertes) les 20-25 novembre 2016. La portée de l'étude se limite aux archives bangladaises indexées dans la base de données OpenDOAR. Les conclusions de l'étude montrent que les archives bangladaises sont incorporées dans le classement des archives numériques (Ranking of Web Repositories). L'étude montre aussi clairement les progrès très lents des archives ouvertes au Bangladesh. Les archives au Bangladesh répertoriées dans l'OpenDOAR sont principalement de nature institutionnelle. L'étude révèle aussi que la plupart des archives sont de petites tailles en termes de collections. On peut sommairement dire qu'il faut une prise de conscience publique à propos des archives ouvertes au Bangladesh afin de soutenir la recherche et le développement. Cet article constitue au Bangladesh la première tentative de discussion et d'analyse du scénario global concernant les archives ouvertes. Il fait aussi quelques recommandations pour développer le système d'archives ouvertes au Bangladesh, ce qui donnerait certainement plus de valeur à la recherche sur ces archives dans ce pays.

The Pennsylvania Newspaper Archive: Harnessing an Open-Source Platform for Digitized Collections

Les archives des journaux de Pennsylvanie : l'exploitation d'une plateforme d'archives ouvertes pour les collections numérisées

Jeffrey A Knapp, Andrew Gearhart, L Suzanne Kellerman, Linda Klimczyk

Résumé:

Fournir l'accès en ligne au contenu historique de journaux est une priorité stratégique pour de nombreuses

bibliothèques. L'université Penn State ayant adopté à un stade précoce l'hébergement interne d'archives de journaux pour ceux scannés par ses soins, sa collection en ligne s'est développée de façon aussi considérable que sa base d'utilisateurs. Avec le temps cependant, de nouveaux systèmes deviennent nécessaires, en raison de l'obsolescence des systèmes existants, des mises à jour irrégulières de la part des fournisseurs, des besoins en maintenance et des besoins des utilisateurs. Cela a été le cas lorsque la bibliothèque universitaire a adopté la plateforme d'archives ouvertes « Open ONI » lors de la création des archives des journaux de Pennsylvanie (panewsarchive.psu.edu), remplaçant ainsi son système vieillissant Olive Software ActivePaper Archive™. Cet article fait la chronique des phases de planning et de conception, de l'adoption du cadre de gestion de projet « Agile Scrum » et de la migration des processus développés pour transférer 500 000 pages de contenu historique de journaux patrimoniaux depuis un système commercial vers un système interne d'archives ouvertes.

Zusammenfassungen

Transformation Strategies in Community Engagement: Selected Initiatives by Malaysian Libraries

Tranformationsstrategien für das Engagement von Gemeinschaften: Ausgewählte Initiativen von Bibliotheken in Malaysia

Zawiyah Baba und Abrizah Binti Abdullah

IFLA-Journal, 44-2, 89-104

Zusammenfassung:

Diese Arbeit befasst sich mit den Strategien und Initiativen, die in unterschiedlichen malaysischen Bibliotheken mit dem Ziel entwickelt wurden, die Rolle von Bibliotheken bei der Wissensverbreitung und dem Technologieaustausch sowie dem Wohlbefinden der Gemeinschaft durch gemeinschaftliches Engagement zu stärken. Es wird dargelegt, wie Bibliotheken in Malaysia durch gemeinschaftliches Engagement die Gesellschaft verändern. Dazu werden ausgewählte Initiativen vorgestellt, in denen Bibliotheken den Zugang zu Beständen, Dienstleistungen und Sonderveranstaltungen erleichtern. Ferner werden die Wege erläutert, mit denen diese Bibliotheken die Verbindung zu lokalen und internationalen Gemeinschaften hergestellt haben. Der Erfolg dieser Initiativen wird anhand von sieben Transformationsstrategie-Themen illustriert, und zwar: (a) „Embedded Services"; (b) Brücken- und Netztechnologie; (c) strategische und institutionelle Partnerschaften; (d) Bibliotheken in ländlichen Gebieten; (e) Bibliotheken der Gemeinschaft; (f) durch Vermögenswerte gesicherte Entwicklung von Gemeinschaften und (g) internationales Bibliothekswesen. Während im Allgemeinen vor allem öffentliche Bibliotheken im Dienste der Gemeinschaft stehen, beschreibt dieses Papier die Perspektive anderer Arten von Bibliotheken. Es unterstreicht die Notwendigkeit, dass solche Dienste nicht auf öffentliche Bibliotheken beschränkt sein sollten. Die gesamte Gemeinschaft der Bibliothekswissenschaft und besonders Uni-Bibliotheken müssen nach Auffassung der Autoren eine Rolle bei dem gemeinschaftlichen Engagement zur Neuausrichtung der Dienstleistungen von Bibliotheken spielen.

An investigation of the experiences of Nicaraguan Costeño librarians

Untersuchung der Erfahrungen von Costeño-Bibliothekaren in Nicaragua

Ana Ndumu, Lorraine Mon

IFLA-Journal, 44-2, 105-117

Zusammenfassung:

Diese Arbeit untersucht die Erfahrungen von Bibliothekaren in Bluefields, Nicaragua. Anhand von semi-strukturierten Interviews und Photovoice-Aktivitäten wurden die professionelle Entwicklung, der berufliche Alltag von Bibliothekaren und die Lösungen untersucht, mit denen sie den Informationsbedarf von Costeños (Küstenbewohner) oder von den Ureinwohnern Miskitu, Rama und Sumu sowie von den ursprünglich aus Afrika stammenden Creolen decken. Den Ergebnissen zufolge stimmen die Berichte der Bibliothekare mit den bekannten Informationen über Bibliotheken in Nicaragua überein: Die Bibliotheken sind hauptsächlich formell und auf Bildungsfragen ausgerichtet und die Gesellschaft Nicaraguas schätzt mündliches Wissen oder Mund-zu-Mund-Informationen. Im Vergleich zu anderen Uni-Bibliotheken gibt es außerdem weniger öffentliche Bibliotheken und diese klagen über fehlende Ressourcen. Aus den Ergebnissen lässt sich auch ablesen, dass Bibliotheken an der Atlantikküste ihre Dienstleistungen durch Zusammenarbeit sowie durch kulturelle Dienstleistungen besser verankern können. Im Übrigen wurde die Photovoice-Technik als effektives Mittel zur Durchführung von Studien bei multikulturellen Gemeinschaften bewertet.

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

Vorhersagefaktoren für den Wissensaustausch zu nachhaltigen Entwicklungszielen bei Bibliotheksmitarbeitern in Nigeria

Magnus Osahon Igbinovia Cln, Ngozi Perpetua Osuchukwu

IFLA-Journal, 44-2, 118-130

Zusammenfassung:

Ziel der Studie war die Frage, anhand welcher Faktoren sich mittels der Theorie geplanten Verhaltens (TPB) vorhersagen lässt, ob Bibliotheksmitarbeiter ihr Wissen teilen und welche Auswirkungen dies auf die Erreichung von SDGs hat. Für diese Studie wurde mit einer Befragung gearbeitet. Zur Datenerhebung wurde ein strukturierter Fragebogen bei 100 eingetragenen Bibliotheksmitarbeitern im Bundesstaat Anambra, Nigeria, verwendet. Als Auswahlverfahren zur Erzielung einer Stichprobengröße für die Bevölkerung wurde die vollständige Enumeration gewählt. Die Studie zeigte, dass ein extrinsisches Belohnungssystem, Kontrollüberzeugungen, Verhaltenskontrollen und Organisationsklima die Selbsteffizienz und die Verwirklichung von SDGs zu $P<0.05$ realisieren. Damit Bibliotheksmitarbeiter umfassend an der Realisierung von SDGs mitwirken, so das Fazit der Studie, müssen sie effektiv SDG-bezogene Informationen weiterleiten. Das Management von Bibliotheken sollte daher so eingerichtet sein, dass der Wissensaustausch gefördert wird. Außerdem sollten Bibliotheksmitarbeiter die entsprechenden Fähigkeiten und Kenntnisse über SDG weiterentwickeln können, was dann wieder zu einem höheren Wissensaustausch führt.

Open access repositories of Bangladesh: An analysis of the present status

Open-Access-Repositorien in Indien: Eine Analyse des Status quo

Md. Hasinul Elahi, Muhammad Mezbah-ul-Islam

IFLA-Journal, 44-2, 131-141

Zusammenfassung:

Diese Studie stellt den Status quo der Open-Access-Repositorien in Bangladesch dar. Hauptziel dieser Studie war es, die Charakteristika der Open-Access-Repositorien, ihre Entwicklung und ihr Ranking in Web-Repositorien aufzuzeigen und Empfehlungen für die Entwicklung von Open-Access-Repositorien in Bangladesch auszusprechen. Dazu wurde ein

quantitativer Ansatz gewählt. Die Datenerhebung aus OpenDOAR fand vom 20.-25. November 2016 statt. Die Studie beschränkte sich auf Repositorien in Bangladesh, die in der OpenDOAR-Datenbank gelistet waren. Die Studienergebnisse zeigen, dass die Repositorien in Bangladesch im „Ranking of Web Repositories (RWWR)" vertreten sind. Außerdem stellte die Studie den überaus langsamen Fortschritt von Open-Access-Repositorien in Bangladesch heraus. Die in der OpenDOAR-Datenbank gelisteten Open-Access-Repositorien in Bangladesch sind meist institutioneller Natur. Außerdem haben die meisten Repositorien nur kleine Bestände. Der Schluss liegt nahe, dass hier ein öffentliches Bewusstsein für das Konzept von Open-Access-Repositorien in Bangladesch geschaffen werden muss, um Forschung und Entwicklung weiter voranzutreiben. Diese Arbeit ist der erste Anstoß in Bangladesch zu einer Diskussion und Analyse der Gesamtsituation von Open-Access-Repositorien. Die Studie bietet außerdem Empfehlungen zur Entwicklung eines Systems mit Open-Access-Repositorien in Bangladesch, die für die weitere Forschung von Open Access in Bangladesch sicher wertvoll sind.

The Pennsylvania Newspaper Archive: Harnessing an Open-Source Platform for Digitized Collections

Das Zeitungsarchiv von Pennsylvania: Ausrüstung einer Open-Source-Plattform für digitalisierte Bestände

Jeffrey A Knapp, Andrew Gearhart, L Suzanne Kellerman, Linda Klimczyk

IFLA-Journal, 44-2, 142-152

Zusammenfassung:

Die Bereitstellung eines Online-Zugangs zu historischen Zeitungsartikeln ist für viele Bibliotheken ein strategischer Schwerpunkt. Als eine der ersten Hosts für ein Zeitungsrepositorium im eigenen Haus für selbst eingescannte Zeitungen ist die Online-Sammlung der Penn State University im gleichen Maße wie die Nutzerbasis erheblich gewachsen. Aufgrund der Beschränkungen des Systems, unregelmäßiger Hersteller-Upgrades sowie in Bezug auf Pflege und Nutzerbedarf sind jedoch inzwischen neue Systeme erforderlich. Genau dies war der Fall, als die Universitätsbibliothek mit der Erstellung ihres „Pennsylvania Newspaper Archive (panewsarchive.psu.edu)" die Open-Source-Plattform „Open ONI" eingeführt hat, welches das veraltete Softwaresystem ActivePaper Archive™ ersetzen sollte. Diese Arbeit ist eine chronische Darstellung der Planungs- und

Entwicklungsphase des Projekts, der Einführung des Projektmanagementrahmens „Agile Scrum" und der Migrationsprozesse, die den Transfer von 500.000

Seiten historischen Zeitungsinhalts von einem herstellergebundenen System in ein im eigenen Hause gehostetes Open-Source-System bewältigen sollten.

Рефераты статеи

Transformation Strategies in Community Engagement: Selected Initiatives by Malaysian Libraries

Стратегии трансформации при вовлечении сообществ: избранные инициативы библиотек Малайзии

Завиях Баба и Абризах Бинти Абдуллах

Аннотация:

В данной работе рассматриваются стратегии и инициативы, разрабатываемые малазийскими библиотеками различных типов, направленные на расширение роли библиотеки в процессе обмена знаниями и технологиями, а также в процессе формирования благосостояния сообществ посредством вовлечения самих сообществ. В документе исследуется, каким образом библиотеки Малайзии трансформируют общество за счет вовлечения сообществ. В работе подчеркиваются отдельные инициативы, предпринимаемые библиотеками с целью расширения доступа сообществ к коллекциям, услугам библиотек, а также к специальными мероприятиям. Здесь также представлены пути налаживания малазийскими библиотеками контактов с местными и международными сообществами. Успех данных инициатив представлен в виде стратегии трансформации по семи направлениям, а именно: (a) интегрированные услуги; (b) шлюзы и веб-технологии; (c) стратегическое партнерство и партнерство между учреждениями; (d) сельские библиотеки; (e) библиотеки сообществ; (f) развитие сообществ с привлечением активов; и (g) международное библиотечное дело. В то время как часто утверждается, что публичными библиотеками являются те библиотеки, которые служат сообществу в целом, в данной работе представлено видение ситуации с точки зрения иных видов библиотек. Здесь особо отмечается мнение, что такие виды услуг не должны быть ограничены лишь публичными библиотеками. Библиотечное сообщество в целом, и в особенности библиотеки учебных заведений должны сыграть определенную роль в вовлечении сообществ в процесс трансформации библиотечных услуг.

An investigation of the experiences of Nicaraguan Costeño librarians

Изучение навыков библиотекарей Атлантического побережья Никарагуа

Ана Ндуму, Лорейн Мон

Аннотация:

Настоящее исследование посвящено навыкам библиотекарей в Блуфилдсе, Никарагуа. С целью исследования профессионального развития библиотекарей, их повседневной деятельности и методов, используемых для удовлетворения информационных потребностей населения побережья: коренных народов москито, рама, суму, а также имеющих африканское происхождение креолов, были использованы слабоструктурированные опросы и приемы по методу фотоголоса. Результаты показывают, что мнения библиотекарей совпадают с общепризнанной информацией о библиотеках Никарагуа: библиотеки преимущественно имеют формальный характер и образовательный уклон; в обществе Никарагуа ценятся устные знания или информация, передаваемая из уст в уста; и по сравнению с библиотеками учебных заведений публичные библиотеки Никарагуа малочисленны и располагают недостаточными ресурсами. Эти данные также позволяют предположить, что библиотеки Атлантического побережья могут улучшить свою работу посредством сотрудничества, а также путем оказания услуг, основанных на культурных особенностях. Кроме того, выяснилось, что метод фотоголоса является эффективным средством проведения исследований в многонациональной среде.

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

Факторы прогнозирования схем поведения, связанных с обменом знаниями, и их влияние на достижение целей устойчивого развития среди сотрудников библиотек в Нигерии

Магнус Осахон Игбиновиа Клн, Нгози Перпетуа Осучукву

Аннотация:

Настоящее исследование проводилось с использованием Теории запланированного поведения (ТЗП) и имело своей целью определить факторы прогнозирования схем поведения персонала библиотек, связанных с обменом знаниями, и их влияние на достижение целей устойчивого развития (ЦУР). Исследование проводилось путем опроса, в рамках которого использовалась стандартизированная анкета для получения данных от 100 зарегистрированных сотрудников библиотек в штате Анамбра, Нигерия. В качестве метода выборочного исследования использовался общий подсчет для получения выборочной группы. Исследование показало, что внешняя система вознаграждения, контролирующие убеждения, поведенческий контроль, организационный климат, воспринимаемая самоэффективность и ЦУР актуализируются при P<0.05. В рамках настоящего исследования получен вывод, что персоналу библиотек для оказания существенного влияния на достижение ЦУР необходимо обеспечить эффективную схему поведения, связанную с обменом знаниями по вопросам, касающимся ЦУР. Следовательно, руководству библиотек стоит создать структуры, способствующие расширению обмена знаниями. Кроме того, персонал библиотек должен развивать собственные знания и навыки, связанные с ЦУР, что будет способствовать высокому уровню обмена знаниями.

Open access repositories of Bangladesh: An analysis of the present status

Репозитории со свободным доступом в Бангладеш: анализ текущей ситуации

Мд. Хасинул Элахи, Мухаммад Мезбах-уль-Ислам

Аннотация:
В данной работе рассматривается текущая ситуация с репозиориями со свободным доступом в Бангладеш. Главной задачей данного исследования является определение свойств репозиториев со свободным доступом, сценариев их развития, их места в иерархии сетевых репозиториев, здесь также приводятся некоторые предложения относительно развития репозиториев со свободным доступом в Бангладеш. В рамках проведения исследования используется количественный метод. Сбор данных проводился на ресурсе OpenDOAR с 20-25 ноября 2016 г. В рамках данного исследования рассматривались только репозитории из Бангладеш, включенные в базу данных OpenDOAR. Исследование показало, что бангладешские репозитории входят в Рейтинг сетевых репозиториев. Результаты исследования четко указывают на очень медленный процесс развития репозиториев со свободным доступом в Бангладеш. Бангладешские репозитории, перечисленные в OpenDOAR, преимущественно относятся к каким-либо учреждениям. Также в рамках данной работы было установлено, что подавляющее количество репозиториев малы с точки зрения объема размещенных в них материалов. Можно с легкостью сделать вывод, что существует потребность в информировании общественности о принципах репозиториев со свободным доступом в Бангладеш, целью которого является поддержка научно-исследовательских и опытно-конструкторских разработок. Настоящее исследование является первой попыткой обсудить и проанализировать общую ситуацию с репозиториями со свободным доступом в Бангладеш. В нем также содержатся некоторые рекомендации относительно развития системы репозиториев со свободным доступом в Бангладеш, которые несомненно повысят значимость будущих исследований в области свободного доступа в Бангладеш.

The Pennsylvania Newspaper Archive: Harnessing an Open-Source Platform for Digitized Collections

Архив газет Пенсильвании: использование платформы с открытым исходным кодом для оцифрованных коллекций

Джеффри А Кнапп, Эндрю Геархарт, Л Сьюзан Келлерман, Линда Климчук

Аннотация:

Для многих библиотек одной из стратегических первоочередных задач является обеспечение онлайн доступа к содержанию исторических газет. Будучи первопроходцем в размещении внутреннего репозитория газет, включающего собственные сканированные газеты, онлайн коллекция Университета штата Пенсильвания выросла так же существенно, как и база ее пользователей. Однако с течением времени возникает потребность в новых системах, обусловленная устареванием действующей системы,

нерегулярным обновлением и обслуживанием системы поставщиком, а также потребностями пользователей. Так и произошло, когда библиотеки Университета перешли на платформу "Open ONI" с открытым исходным кодом для создания своего Архива газет Пенсильвании (panewsarchive.psu.edu), заменившего устаревающую систему Olive Software ActivePaper Archive™. В данной работе изложена

хронология фаз планирования и разработки проекта, принятие структуры управления проектом под названием "Встреча-летучка", а также описаны процедуры перемещения, разработанные для переноса 500 000 страниц газет, содержание которых имеет историческую ценность, из системы, действующей на коммерческой основе, в систему с открытым исходным кодом, размещенную на локальном ресурсе.

Resúmenes

Transformation Strategies in Community Engagement: Selected Initiatives by Malaysian Libraries

Estrategias de transformación en el ámbito de la participación comunitaria: algunas iniciativas de bibliotecas malayas

Zawiyah Baba y Abrizah Binti Abdullah

Resumen:

En este documento se examinan las estrategias y las iniciativas desarrolladas en bibliotecas malayas de todo tipo con vistas a realzar el papel de las bibliotecas en la promoción de los conocimientos, el intercambio de tecnología y el bienestar comunitario por medio de la participación comunitaria. Se analiza el modo en que las bibliotecas están transformando la sociedad malaya a través de la participación comunitaria. Se destacan iniciativas acometidas por las bibliotecas encaminadas a promover el acceso de la comunidad a colecciones, servicios y eventos especiales. Asimismo, se explican las formas en las que las bibliotecas malayas han llegado a las comunidades locales e internacionales. El éxito de las iniciativas se pone de manifiesto en siete estrategias de transformación, a saber: (a) servicios integrados; (b) puentes y tecnología web; (c) asociaciones estratégicas e institucionales; (d) bibliotecas rurales; (e) bibliotecas municipales; (f) desarrollo de comunidades basado en recursos; y (g) biblioteconomía internacional. Aunque suele decirse que las bibliotecas públicas son las que sirven a la comunidad en su conjunto, en este documento se ofrece los puntos de vistas de otros tipos de bibliotecas. Se hace hincapié en que dichos servicios no deben limitarse a las bibliotecas públicas. La comunidad de ciencias de la documentación en su conjunto, y especialmente las bibliotecas universitarias, deben desempeñar un papel en la participación de la comunidad a la hora de transformar los servicios bibliotecarios.

An investigation of the experiences of Nicaraguan Costeño librarians

Una investigación sobre las experiencias de los bibliotecarios costeños nicaragüenses

Ana Ndumu, Lorraine Mon

Resumen:

En esta investigación se estudian las experiencias de los bibliotecarios de Bluefields, Nicaragua. Se investigaron el desarrollo profesional y las tareas diarias de los bibliotecarios, así como las formas de satisfacer las necesidades de información de los costeños, es decir, los grupos indígenas Miskitu, Rama y Sumu, así como los creoles de descendencia africana, a través de actividades de fotografía y voz y entrevistas semiestructuradas. Los resultados indican que los relatos de los bibliotecarios coinciden con la información tradicional sobre las bibliotecas nicaragüenses: las bibliotecas son predominantemente formales y orientadas a la educación; la sociedad nicaragüense valora los conocimientos orales y la información de viva voz; y, en comparación con las bibliotecas universitarias, las bibliotecas públicas nicaragüenses son menos numerosas y carecen de recursos. Los datos también indican que las bibliotecas de la costa Atlántica pueden reforzar sus servicios mediante colaboraciones y servicios culturales. Cabe destacar que la técnica de fotografía y voz resultó una herramienta muy eficaz para realizar una investigación en la que participaron comunidades multiculturales.

Predictors of knowledge sharing behaviour on Sustainable Development Goals among library personnel in Nigeria

Indicadores de la conducta de intercambio de conocimientos sobre los Objetivos de Desarrollo Sostenible entre el personal bibliotecario de Nigeria

Magnus Osahon Igbinovia Cln, Ngozi Perpetua Osuchukwu

IFLA Journal, 44-2, 118-130

Resumen:

El estudio se realizó para investigar los indicadores de las conductas de intercambio de conocimientos del personal bibliotecario y sus implicaciones para el logro de los ODS, utilizando la teoría del comportamiento planificado (TPB, por sus siglas en inglés). El estudio se realizó a través de encuestas, con un cuestionario estructurado para recabar datos de 100 miembros de personal bibliotecario del estado de Anambra, en Nigeria. La técnica de muestreo adoptada para obtener la muestra poblacional fue la enumeración total. El estudio situó el sistema de recompensas extrínseco, la creencia de control, el control conductual, el clima organizativo, la autoeficacia percibida y la actualización de los ODS en $p <$ 0,05. El estudio concluyó que para que el personal bibliotecario contribuyera de forma significativa a los ODS debía garantizarse una conducta efectiva de intercambio de conocimientos sobre la información relacionada con los ODS. Por lo tanto, el personal directivo de las bibliotecas debía establecer estructuras de promoción del intercambio de conocimientos. Además, el personal bibliotecario debe adquirir las destrezas y los conocimientos necesarios sobre los ODS, que estimularán en gran medida el intercambio de conocimientos.

Open access repositories of Bangladesh: An analysis of the present status

Depósitos de acceso libre de Bangladesh: análisis de la situación actual

Md. Hasinul Elahi, Muhammad Mezbah-ul-Islam

IFLA Journal, 44-2, 131-141

Resumen:

En este estudio se examina la situación actual de los depósitos de acceso libre de Bangladesh. El objetivo principal del estudio es determinar las características de los depósitos de acceso libre, su escenario de desarrollo y la clasificación en depósitos web, así como hacer algunas recomendaciones para el desarrollo de dichos depósitos en Bangladesh. La metodología incluye un enfoque cuantitativo. Los datos se recogieron a través de OpenDOAR del 20 al 25 de noviembre de 2016. El ámbito del estudio se limita a los depósitos de Bangladesh indexados en la base de datos OpenDOAR. Los resultados del estudio muestran que los depósitos de Bangladesh están contenidos en el Ranking de Depósitos Web. El estudio también pone claramente de manifiesto el lento progreso de los depósitos de acceso libre en Bangladesh. Los depósitos de Bangladesh incluidos en OpenDOAR tienen un carácter eminentemente institucional. El estudio también revela que un gran número de depósitos son pequeños en términos de fondos. Se deduce fácilmente la gran necesidad de concienciación pública en cuanto al concepto de depósitos de acceso libre en Bangladesh para respaldar la investigación y el desarrollo. Este documento constituye el primer intento en Bangladesh por debatir y analizar la situación general de los depósitos de acceso libre. También ofrece algunas recomendaciones para desarrollar el sistema de depósitos de acceso libre en Bangladesh, que a buen seguro aportarán valor a la investigación futura sobre el acceso libre en Bangladesh.

The Pennsylvania Newspaper Archive: Harnessing an Open-Source Platform for Digitized Collections

Pennsylvania Newspaper Archive: uso de una plataforma de código abierto para colecciones digitalizadas

Jeffrey A Knapp, Andrew Gearhart, L Suzanne Kellerman, Linda Klimczyk

IFLA Journal, 44-2, 142-152

Resumen:

El suministro de acceso online al contenido de prensa histórica es una prioridad estratégica para muchas bibliotecas. La colección online de la Universidad Estatal de Pensilvania, pionera en el alojamiento de un depósito de periódicos escaneados, ha crecido tanto como su base de usuarios. No obstante, con el tiempo se hacen necesarios nuevos sistemas, debido a la obsolescencia de los actuales, las escasas actualizaciones de los proveedores y las necesidades de mantenimiento y de los propios usuarios. Esto fue lo que ocurrió cuando las bibliotecas universitarias adoptaron la plataforma de código abierto «Open ONI» para crear su Pennsylvania Newspaper Archive (panewsarchive.psu.edu) en sustitución de su antiguo sistema Olive Software ActivePaper Archive™. En este documento se describen las fases de planificación y diseño del proyecto, la adopción del marco de gestión de proyectos «Agile Scrum» y los procesos de migración desarrollados para transferir 500 000 páginas de contenido de prensa histórica legado de un sistema patentado a un sistema de código abierto alojado en la propia universidad.