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The new trend for digital record management in Bangladesh University Libraries

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Abstract

Purpose: The purpose of this study is to explore the present practicing situation of DRM in the university libraries of Bangladesh. The more particular objectives are: to identify the present preservation scenario of DRM; to find out the problems of DRM which are facing archivists for long term preservation; to identify the necessary tools and technologies for DRM; to explore the ways to overcome the existing problems.

Design/Methodology/Approach: Survey methods were used for gathering data using a well-structured questionnaire. The questionnaire was sent to the respondents of some selected public and private universities in Bangladesh.

Findings: The findings revealed that there are some hindrances to practice DRM, such as lack of stable preservation software, shortage of skilled IT personnel, allocation of insufficient budget, shortage of digital records, lack of proper training of library professionals and provided some suitable suggestions such allocation of adequate fund, infrastructure development, recruitment of IT knowledgeable professionals, the simplicity of the intellectual property act, the willingness of authority regarding the implementation of DRM, frequently training arrangements for library professionals for the advancement of DH in the university libraries of Bangladesh.

6. Originality/value: The insights and views of the respondents regarding DRM tools and technologies obtained from this study are original and unique.

Keywords: Digital Record Management, E-archives management, Digital Tools, Digital preservation, University Library, Bangladesh.

1. Introduction

Since the invention of the alphabet, people tried to write their intentions, dreams, hopes, experiences, and imagination on writing materials for the next generation. From that time, people have been trying how to preserve those writing long term for their successors. Preservation efforts have been continued until today. But the instruments and methods of preservation have been updated as a result of the shift in writing materials, the invention of ICT, after all the demands of the era. People are now living in the digital age. They are accustomed and interested to conduct as much of their life as possible in a digital environment. As the digital solution is more reliable, quicker, cheaper, more readily available, countless people can also use it in a timely and user-friendly manner. It can be said that there are massive facilities in the digital solution. So with these services, archival records are being produced and digitally managed. According to Özdemir (2019), the archives are legally responsible for maintaining national memory through the transfer of records that are now almost always, created in a digital environment. With the advancement of digital records and the growing sophistication of information systems, the ability to shape the creation, processing, and preservation of digital records to serve the purpose of producing, storing, and rendering available, accurate records is likely to rely on the implementation of a deeper and more integrated blend of archival theory, concepts, and computational theory methods (Marciano et al., 2018). At present, records are produced in digital form almost every country in the world and are not produced according to uniform standards. 'The protection of electronic records created by information staff is of great risk if requirements for the production, management and preservation of electronic records are not available within the organization (Millar, 2004; Chigariro and Khumalo, 2018). It is, therefore, necessary for the proper management of digital archival records to have the greatest effect of digital records on users. According to Rahman (2020) appropriate rules, regulations and technology are required to handle digital records effectively and efficiently.

Digital Record Management (DRM) and Electronic Record Management (ERM) are used as interrelated terms. At the beginning of the Internet, DRM was launched in developed countries. However, developing countries are still trying to progressively build and maintain digital records. While Bangladesh is a developing country, many of the country's university libraries are trying to provide world-class library services to their clients. As a result, several university libraries have started DRM services, some university libraries will start DRM very soon, and some university libraries have not been aware of DRM services, but are now attempting to start DRM services for their library patrons.

The objectives of this study are the discovery of the current scenario of practicing DRM services, the awareness of library professionals about DRM, challenges and ways to address the barriers to the implementation of DRM in the university libraries of Bangladesh. To meet the objectives, 8 public universities (Government University) and 5 private university libraries were selected to collect DRM data. However, this study would be very useful for all information scientists in Bangladesh as well as the international arena to know about RDM practicing the status of university libraries in Bangladesh and to inspire library professionals who have not yet started DRM in their libraries.

Review of Literature

1.1. The concept of DRM

Digital documents are records that have been generated, communicated and stored by means of computer technology and may be 'born digitally' created using computer technology or may have been transformed to digital form from their original format, e.g. paper document scans. According to Nyampong (2015). "digital or e-records may be as text files (files produced by word processing programs or by other software); data files (computer processable files that store numeric and sometimes textual information as quantitative values so that, numbers can be manipulated using arithmetic processes); analogue audio and visual records (sound documents and images to be played back); disaggregated data (information collected through remote sensing systems); databases (structured collection of interrelated data); machine instruction sets (records created by the action of intelligent machines); image files (records containing computer processable images that generally exist as hard copy before being converted into images) and digital documents (files consisting of numeric data, images or sound recorded digitally in one uniform structure)" (National Archives of Australia, 2014; Ambira et al., 2019).

1.2. The changing mode of records preservation format

Writing materials have evolved from the early history of alphabets to the present era. Record preservation systems, formats, techniques and methods are also being updated. Immediately after a few years, the library preserved the materials in the microfilm, microfiche, disk, etc. "There are modern formats of records, for example, micrographics in the form of microfilm, microfiche and photographic film, video, audio cassettes, films, and electronic or digital media" (Molepo and Cloete, 2017; Motsi, 2004). At present, however, microfilm, microfiche and disk are not used as record storage materials in the library. Extensive changes have taken place following the use of ICT and the internet in the library for information, records and document processing and preservation. According to Asogwa (2012), since then, computer-based information systems and the Internet have revolutionized the way business is done and the way electronic records and archives are developed, handled and accessed.

1.3. Digitized and born-digital records

There is a common practice whereby digitized and born-digital documents are handled within the organization. According to Maroye (2017), paper and electronic documents still coexist today, and this co-existence is sometimes also mandatory. Fritz (2018) revealed that with the growth of digitized and born-digital collections, librarians and archivists face several decades of change as they navigate analog and digital landscapes. According to Chigariro and Khumalo (2018) without strategies in complex environments, governments will invest in e-records management systems which will fail to meet the reasons for which they were created for as records and archives management personnel and national archival institutions will deal with such records haphazardly and clumsily. Sandusky (2017) stated that archivists and record managers face a flood of incoming born-digital materials in a wide range of formats for which conventional pencil and paper practices are not entirely acceptable. Archivists and

their colleagues have expanded and adapted these practices to include born-digital records in the wider sense of handcrafted arrangement and explanation (Dooley, 2015; Sandusky, 2017)

1.4. The obsolescence of technologies of DRM

The obsolescence of technology is one of the most extraordinary barriers to the preservation of digital documents. Johnson (2014) observed that "our common perception of threats to digital records is centered around two widely reported issues, namely format obsolescence and data loss." Chigariro and Khumalo (2018) argued that technology is complex and ever-changing, and thus, research trends will show whether researchers and scholars are researching related issues that are associated with technological developments. According to Fritz (2018), as technological changes continue to have an impact not only on the way the archives are used but also on the quality of the collections, archivists must conserve and provide access to a wide variety of print and digital source materials. Helfert et al. (2017) argued that technological obsolescence is a challenge to the ability to preserve electronic information." According to Yadav, (2016), that "there are two main reasons that are responsible for the fragility of digital records, one is technological obsolescence in which software programs and other technologies can be superseded by a newer one and consequently old technologies and software become out of use and another is media degradation".

1.5. Suitable rules, legislation, and infrastructure for DRM

Suitable rules, legislation, and infrastructure are needed for managing DRM effectively and efficiently. According to Ambira et al. (2019), the shortage of a consistent mechanism for managing electronic records presents a major risk to the continuity, stability and efficiency of services delivered by e-government platforms. Management of electronic archives and records in organizations may not be effective if the policies and infrastructures developed are not supported by trained and skilled staff and the presence of appropriate and frequent staff training (Asogwa, 2012). Sustainable digital preservation is designed to ensure the continuity and long-term accessibility of digital assets at a fair resource management level (Fritz, 2018). Inappropriate management of electronic records also creates gaps in the consistency of data used by government ministries, but it would be beneficial for government ministries to exchange cross-cutting data, which is hindered in cases where policies for exchanging information and maintaining electronic records do not exist (Ambira, et al., 2019),

From the literature review, it is evident that DRM is very important for the organizations as well as its proper management will be significant in maximizing impact for users.

2. Aims and objectives

The aim of this study is to explore the present practicing situation of DRM in the university libraries of Bangladesh. The more particular objectives are:

- i. to identify the present preservation scenario of DRM in university libraries of Bangladesh;

- ii. to find out the problems of DRM which are facing archivists for long term preservation;
- iii. to identify the necessary tools and technologies for DRM;
- iv. to explore the ways to overcome the existing problems;

3. Research Methodology

Both qualitative and quantitative methods have been used to carry out this study. A structured questionnaire was formulated to collect data from the respondents. The questionnaire was sent to the selected 8 public and 5 private university library professionals and IT professionals working in the selected libraries. 195 questionnaires were sent to the respondents via e-mail from 12 August 2020 to 15 August 2020. 152 (77.94 per cent) of the respondents sent their responses by email. Among the 152 responses, 138 (90.78 per cent) completed the questionnaire properly and the remaining 14 (9.21 per cent) responses were not properly completed. As a result, these 14 responses were not evaluated in this study. Quantitative data were analyzed using MS Excel and qualitative data was thematically analyzed.

4. Result of the study

4.1. Profile of the respondents

Figure 1. shows that the highest number of respondents 33 (24%) were cataloguers, while the lowest number of respondents 7 (5%) were junior librarians. The second-highest number of respondents 30 (22%) were assistant librarians and followed by 25 (18%) deputy librarians, 22 (16%) IT officers, 11 (8%) librarians and 10 (7%) documentation officers.

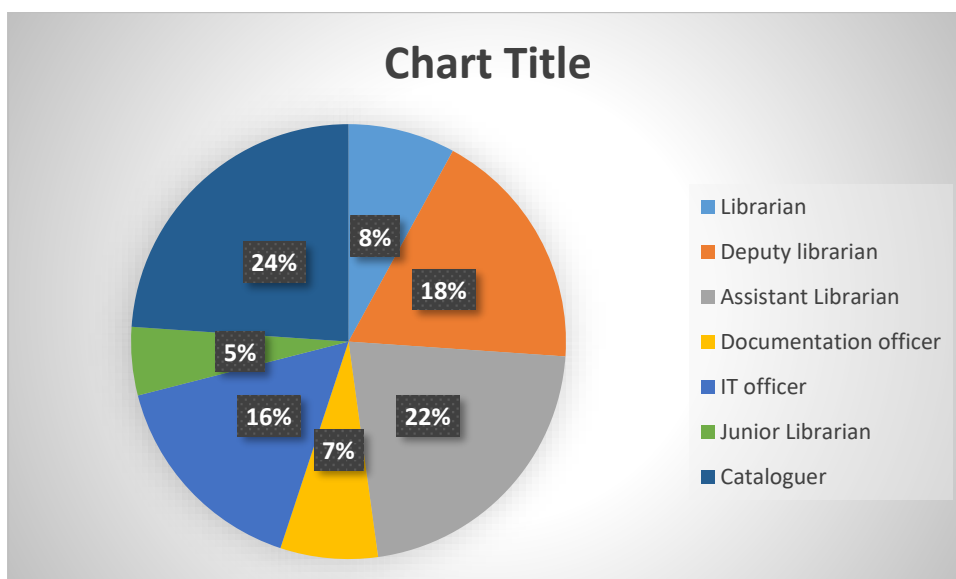


Fig. 1. Profile of the respondents

4.2. Present DRM status of selected university libraries in Bangladesh

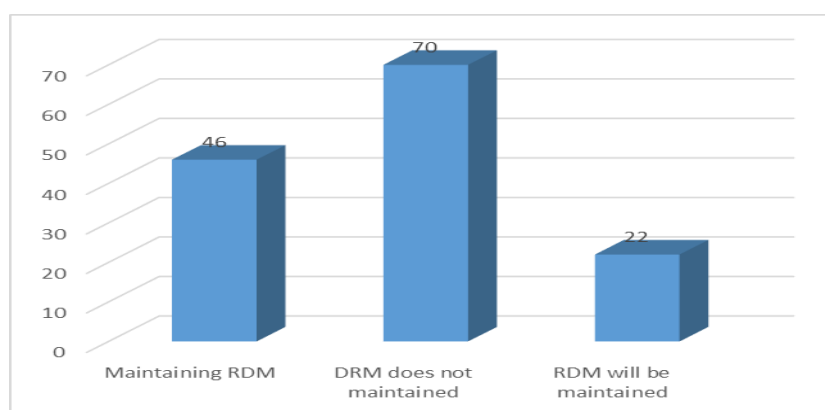


Fig. 2. Preservation status of DRM

An open-ended question “What is the present preservation status of DRM of your university libraries?” it was in the questionnaire. The answer to this question is set out in Figure 2. 46 (33.33 per cent) respondents stated that they maintain RDM in their university libraries. 70 (50.72 per cent) have revealed that they do not have DRM in their university libraries. 22 (14.49 per cent) indicated that they are not maintaining DRM at present, but will be launching RDM services within a short period of time.

4.3. The problems archivists are facing for long term preservation

The problems of long-term preservation	No. of respondents	Percentage
Lack of stable preservation software	52	37.68%
Shortage of skilled IT personnel	45	32.60%
Allocation of insufficient budget	22	15.94%
Shortage of digital records.	11	7.97%
lack of proper training of library professionals	8	5.79%

Table 1. The problems of long-term preservation

The open-ended question "What problems do archivists face for long term preservation?" was included in the questionnaire. The response to this question is given in Table 1. The highest number of respondents 52 (37.68 per cent) found that stable preservation software is the key hindrance to long-term preservation of DRM by archivists, while the lowest number of respondents 8 (5.79 per cent) indicated that lack of adequate training of library staff is a hindrance to long-term preservation of DRM. The second-highest number of respondents 45 (32.60 per cent) revealed that qualified IT personnel are not available in the library, followed by 22 (15.94 per cent) respondents indicated indicated a lack of budget allocation and 11 (7.97 per cent) rspondents mentioned that a lack of digital records is an obstacle to the long-term preservation of DRM.

4.4. The benefits that users enjoy after introducing the DRM.

The benefits of DRM	No. of respondents	Percentage
Access from anywhere any time	40	28.98%
Same document can be used by many users at a time	31	22.46%
Cost-effective	15	10.86%
No physical boundary	23	16.66%
Easy information retrieval	19	13.76%
Easy navigation	10	7.24%

Table 2. The benefits of DRM

4.5.Respondents were asked what kind of benefits they are getting from the RDM. The response to this question is given in Table 2. The highest number of respondents 40 (28.98 per cent) indicated that "RDM users can access from anywhere at any time," while the lowest number of respondents 10 (7.24 per cent) mentioned that "DRM users can navigate easily." The second-highest number of respondents 31 (22.46 per cent) indicated that "multiple users could use the same document at a time," followed by 23 (16.66 per cent) respondents indicating that "no physical boundary," 19 (13.76 per cent) respondents indicated that "simple retrieval of information," and 15 (10.86 per cent) respondents indicated that it was cost-effective.

4.6. Tools and technologies are required for DRM

Required tools and technologies for DRM	No. of respondents	Percentage
Software	47	34.05%
Computers	47	34.05%
High-speed Internet	47	34.05%
Electricity	47	34.05%

Optical Character Recognition	32	23.18%
Skilled manpower	25	18.11%
Scanner and scanning software	13	9.42%

Table 3. Required tools and technologies for DRM

The open-ended question "What types of tools and technologies are required for DRM?" was included in the questionnaire. The answer to this question can be found in Table 3. The highest number of respondents 47 (34.05 per cent) indicated that software, computers, high-speed Internet, electricity are necessary tools and technologies for DRM, while the lowest number of respondents 13 (9.42 per cent) stated that scanners and scanning software are the tools and technologies required for DRM. The second-highest number of respondents 32 (23.18 per cent) reported that Optical Character Recognition (OCR) is the tools and technology needed for DRM, followed by 25 (18.11 per cent) respondents who indicated that qualified staff are essential for DRM services.

4.7. The way of overcoming the existing difficulties of DRM

The way of overcoming the existing difficulties of DRM	No. of respondents	Percentage
Allocation of adequate fund	41	29.71%
Infrastructure development	41	29.71%
Recruitment of IT knowledgeable professionals	41	29.71%
The simplicity of the intellectual property act	35	25.36%
The willingness of authority regarding the implementation of DRM	23	16.66%
Frequently training arrangements for library professionals	10	7.24%

Table 4. The way of overcoming the existing difficulties of DRM

The open-ended question "How the existing difficulties of DRM can be mitigated?" was included in the questionnaire. The response to this question is given in Table 4. The highest number of respondents 41 (29.71 per cent) indicated that the allocation of adequate funds, infrastructure development and recruitment of IT knowledgeable professionals could resolve the current difficulties of DRM, while 10 (7.24 per cent) indicated that the regular training of library professionals could alleviate the existing difficulties of DRM. The second-highest number of respondents 35 (25.36%) indicated that the simplicity of the Intellectual Property Act could eradicate the current difficulties of DRM, followed by 23 (16.66%) respondents mentioned that the willingness of the authority to enforce DRM in the library could ease the existing difficulties of DRM.

Conclusion

Archives are very important elements for scholars, teachers and students, and are thus considered to be the country's most valuable asset. Digital records are rising massively all over the world. Now digitization and born-digital records are the demand of the era. According to Martin and Vacca, (2018), the process of digitization and online diffusion of memory and archives amplifies opportunities for the dissemination of knowledge. Proper management of digital records is significant for getting more benefits from it. Electronic Information Management is also an effective method for handling the information resources of organizations in an organized manner, but it all depends on the institution's readiness to pursue such an initiative (Asogwa, 2013). Massive amounts of digital records are being produced from different wings of the government every year if it not be managed properly the purpose of archiving would be hampered. Özdemir, (2019) stated that the huge volumes of digital information created across government, coupled with its complexity and lack of organization, will most likely result in more, rather than less, information is kept for permanent preservation. The aim of this study was to identify the current status of practicing DRM in the university libraries of Bangladesh. The results showed that 33.33% of respondents retained RDM in their university libraries. Even though a good portion of respondents revealed that they do not maintain DRM in their libraries. However, many professionals have become aware of the importance of DRM services in the university libraries in Bangladesh and have indicated that they will soon start DRM services in their libraries.

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