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INDIGENOUS KNOWLEDGE IN A VIRTUAL CONTEXT: SUSTAINABLE DIGITAL PRESERVATION. A LITERATURE REVIEW

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Abstract

[STILL NEED]

Introduction

The basis of this paper stems from the second African Library Summit, held in 2013. At that event Professor Lawton Hikwa of the National University of Science and Technology of Zimbabwe (NUST) and the author co-facilitated a workshop on Indigenous Knowledge (IK) and digitisation. From discussions at this workshop the following question was posed:

- Are there long-term sustainable African digital preservation plans or policies in place to have these heritage materials still available and accessible in the far foreseeable future?

To discuss this question, a brief overview of the concept of digital preservation and the challenges of digital preservation is needed.

Digital preservation

Digital preservation must not be confused with the concept of digitisation for preservation. Digitisation for preservation is the conservation of "traditional, analogue materials such as books, maps, and other paper items into an electronic, digital copy" (Perry 2014). In contrast to this concept, digital preservation is the conservation of all digital items. These digital items include born-digital material, such as emails and websites, as well as items digitised from analogue materials (Conway 2010). Digital preservation is a set of processes, activities and management of digital information over time to ensure its long term accessibility (Mukasa 2012:75). Without preservation, access is not reliable over time.

The challenge of digital preservation

The literature review of Perry (2014) on digitisation and digital preservation identified the following challenges:

- Changing formats and obsolescence of technology

- Untrained staff and human error
- Authenticity and reliability of material
- Standardization
- Copyright and cost issues, and
- Awareness

The first challenge, Changing formats and obsolescence of technology, was a challenge that I had to face two years ago in my workplace. Scanned images were saved as back-up on CDs and DVDs. When we tried to access the images some were corrupted and inaccessible in less than 10 years after transferring them to this medium. Changing formats and obsolescence is one of the big and ongoing challenges that a digital archivist has.

The second challenge, untrained staff and human error, is a reality for those institutions where archivists, librarians and museum scientists must take the responsibility for digitisation and digital preservation, but have not received any training. Newly qualified professional staff members usually do receive training, but not all institutions can afford a qualified professional.

Talking about authenticity and reliability of material, Bee (2008) states that if digital preservation processes are diligently followed, 99.65% accuracy can be obtained. There is always the possibility during large digitisation projects that errors or data loss can happen.

The challenge of standardization is also closely related to this paper's research problem. Perry (2014) mentioned in her literature review that there is "no universally, agreed-upon set of standards" for metadata used in digitisation. Although there are existing standards and standardized repository frameworks, Perry (2014) did not mention any African-based standards in her review.

The fifth challenge, copyright and cost issues, is a grey area and can be a minefield for professionals. Just finding the copyright holders of material long donated to the archives or the heirs to such material is often daunting. In the framework of indigenous knowledge, confronting the fear of the people requested to expose information held privately for many years is in itself a challenge. Both Reinhardt (2013) and Han (2015) address the cost of the correct storage and preservation of digital material.

With regard to the last challenge mentioned, Awareness, Perry (2014) emphasises that "it is vital that librarians and archivists make the public aware of the importance of digital preservation."

Research Method

The method of a literature review was decided on. A literature review is "a systematic search of published work to find out what is already known about the intended research topic" (Robinson & Reed 1998).

The research problem for this paper was to establish if there are any African digital preservation plans and policies described in scholarly articles.

The word "plans" refers to the following standard types:

- Digital preservation standards for metadata
- Repository framework standards

Digital preservation strategies, such as bitstream copying, refreshing, technology preservation, migration, emulation, etc.

The time-frame applied to the review was from January 2013 to March 2015. This was to continue with the information gathered for the IK workshop of 2013. It was decided to limit the review to journal articles.

The main databases consulted, were Emerald, Ebsco and ProQuest.

The keywords and search terms used included 'digital preservation', 'sustainable digital preservation', and 'indigenous knowledge' in various combinations.

Keep in mind that this study was a preliminary exploration and not an in-depth research exercise.

Findings

The number of articles within the parameters of 2013 – 2015 was limited and especially when it was focussed on Africa. The best results were obtained when the wider keywords of "digitisation and indigenous knowledge" or "preservation and indigenous knowledge" were used. The applicable articles could then be selected from the results. Most of the material was published before 2013 with the bulk between 2005 and 2010. The main contributors were from the USA, India, Australia and Africa.

Most of the literature deals with the use of Indigenous Knowledge for various sustainable development support and the ways in which this fast-vanishing knowledge can be captured to be preserved and disseminated to communities. Papers cover areas such as the role of libraries and especially public and community libraries in facilitating such digitisation and often housing digitised

collections. Articles discuss how librarians, archivists, museum scientists and others can assist communities with recording, in whatever form or format, indigenous knowledge.

Looking at two of the results from Africa these followed the above findings.

Plockey (2014) concentrates on the role and training of public librarians as well as providing infrastructure to "enhance the process of converting information into a digital format". She concentrates on Indigenous Knowledge and mentions provision of infrastructure and providing a policy framework, but does not mention long-term preservation.

Owiny (2014) explores possible uses of social media and other technologies to "Create, Preserve, and Disseminate Indigenous Knowledge and Skills to Communities in East Africa". She also champions the utilisation of libraries and librarians in the endeavours. The lack of infrastructure and other challenges are also discussed.

The literature of 2013 to 2015 does not contain indications of how the digital materials are going to be preserved for long-term access and survival. Mutula (2014: 363) supports these findings in his study of digital heritage preservation management in Eastern Africa. He found that several challenges hampering digital heritage preservation management exist and defeat the goals of preserving national heritage. He concludes that "efforts should be geared towards the enactment of digital heritage preservation strategies and policies, as well as deploying cloud and grid computing technologies at institutional and national levels to address the storage needs of digitization, and to overcome software and hardware technological obsolescence".

Mukasa and Kamusiime in 2012, which falls outside the scope, do discuss the importance of the preservation and long-term sustainability of the digitised material. It is, however, in general terms without practical plans for implementation.

It is not only on our continent that the preservation and long-term management play second fiddle. Maron and Pickle reported for the Association of Research Libraries (ARL) in February 2013 on the "Sustainability of Digitized Special Collections in ARL Libraries" and found "libraries are spending far more to create new resources than they are on maintaining and enhancing the ones they have already created. Aggregate figures show the cost of ongoing support for all digitized special collections is just a fraction of the amount spent in any one year to create new ones, and the raw figures often represent small fractions of someone's time. This suggests a scenario where digitized collections, once created, are intended to essentially run without much active management, a situation that could ultimately hamper the ability of these institutions to sustain their projects and achieve the impact they desire" (Maron 2013: 2).

Conclusion

Looking at the findings, the following questions need to be asked:

Is there a real need with regard to digital preservation on the African continent that requires further investigation?

If yes, who should take the responsibility for this investigation? For example: a continental workgroup or a specific organisation with input from everyone.

As digitisation and digital preservations lie near to my heart, I would like to suggest a small workgroup to investigate this matter further to get clarity on the scope, timeframe, and resources (human and infrastructure), as well as the estimated cost. This report can then be used to decide if further action is needed.

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