

DIGITIZATION OF ARCHIVAL MATERIALS: THE CASE OF NATIONAL ARCHIVES OF ZAMBIA

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Abstract

The article reviews the digitization project done at the National Archives of Zambia. The patrimony of the National Archives of Zambia is immense and of unquestionable historical relevance. However, it suffered from both a lack of exposure and from an outdated system of record keeping and consultation. While not many interested parties were able to access the materials directly, those who did contributed unwittingly to their gradual destruction: when associated with other external agents, physical consultation can be greatly detrimental. The article reveals that the objectives of the project were to safeguard and ensure the preservation of the most valuable and perishable components of the archival patrimony of the National Archives of Zambia; to render them more accessible and facilitate their future fruition by a broader number of researchers and interested parties; to enable a select group of the National Archives of Zambia's members of staff to gain theoretical knowledge and practical experience in electronic records management and website design; and to enhance the national and international visibility of the National Archives of Zambia by increasing awareness of its holdings. The article discusses the activities that were undertaken to achieve

each objective and the contribution made by external players. The article concludes by assessing the challenges posed by the project, the experience gained and lessons learnt.

Keywords: Digitization, District notebooks, National Archives of Zambia

Introduction and context

Archives administration in Zambia is the mandate of the National Archives of Zambia (NAZ) within the Ministry of Home Affairs. This mandate is derived from the National Archives Act Chapter 175 of the Laws of Zambia, 1995 edition. The Act is meant to provide for the preservation, custody, control and disposal of public archives including public records in Zambia. The archives that were digitized were the district notebooks.

To understand how these district notebooks originated, it is important to highlight the historical development of the country in terms of the administration which was involved. Zambia was a colony of Great Britain and the process of colonizing Zambia started with the British South African Company (BSAC). The BSAC was granted a charter in 1891 that led to the formation of North-Eastern Rhodesia in South Central Africa. With this development, Graham and Halwindi (1970) submit that the office of the administrator was created under the North-Eastern Rhodesia Order in Council of 1900 which formally placed the North-Eastern Rhodesia under the BSAC administration. In this regard, the civil service as such was established under the Civil Service of North-Eastern Rhodesia Rules and Regulations by Government Notice 1 of 1901.

Additionally, North-Western Rhodesia in South Central Africa was formed and administered from 1891. In 1899, the North-Western Rhodesia Order in Council was passed which formally established the administration and gave statutory rights to the Company. The BSAC amalgamated North-Western Rhodesia with North-Eastern Rhodesia to form Northern Rhodesia in 1911. The amalgamation of the two administrators and departments in North-Eastern Rhodesia

and North-Western Rhodesia was meant to be a cost saving measure.

Before the arrival of the BSAC, the administration of the territories was in the hands of chiefs whose authority depended largely on personality and military strength. During this time, information was passed from one authority to another orally and this went on from generation to generation. Oral history played a major role at this stage. "Oral tradition" was a sporadic way of keeping records, hence traditional chiefs had other ways of preserving the national folklore records; they had shrines and relics, the equivalents of archival buildings and archives respectively.

The arrival of the BSAC administration saw the imposition of direct rule over many areas that had been controlled by the traditional chiefs. It is at this stage that we see the beginning of written records. However, Mukula (1982:1) contends that "when the white men came they relied greatly on this oral tradition". They compiled written records from oral tradition. The 'oral tradition' form of records management was harnessed with the 'written word' to produce written records about Zambia. Some of the major historical records about Zambia have their source in 'oral traditions'. The BSAC and the appointed commissioners who ran the affairs of the then North-Western Rhodesia and North-Eastern Rhodesia and subsequently Northern Rhodesia created the archives that have been digitized.

While the BSAC's records form the earliest available documentary collection (1890s-1924), the district notebooks are the most requested items among the National Archives of Zambia's holdings. Mukula (1973) noted that the district notebooks were a unique and valuable source of historical, political, administrative, ethnographical and anthropological information. They were kept at district administrative stations (bomas). Entries were made in these notebooks by district officials on a wide range of administrative and historical subjects. In many cases they contain the only written sources of tribal histories. The Notebooks were vulnerable to wear and tear as a result of heavy usage and their weight. They cover the period from the 1890s to 1964. A number of district notebooks were summarized in "Calendars" (for Western Province, Luapula Province, Northern Province and Copperbelt) but the other five provinces have not been described

as yet. The need to create an extensive database for all district notebooks was obvious.

The district notebooks have an immense and unquestionable historical relevance. However, many interested parties were not able to access the materials directly, and those who did contributed unwittingly to their gradual destruction. In this regard, it was hoped that by improving the existing systems for the preservation of the Zambian cultural heritage, and its future accessibility, the digitization project would promote the growth and diffusion of cultural consciousness, 'one of the essential instruments of general development and the improvement of quality of life.'

Objectives and activities

To achieve this, the following were the objectives and activities of the project.

1. To safeguard and ensure the preservation of the most valuable and perishable components of the archival patrimony of the National Archives of Zambia through digitization.

1.1. Studying the series of colonial district notebooks and British South Africa Company's materials and recommending them for digitization.

1.2. Installation and the configuration of the purchased hardware and software. Thus, the selected records would be transferred onto optical support systems. The resulting digital archive will consist of a series of CDs, which are universally regarded as the most modern and secure form of record keeping. A crucial dimension of the work to be conducted was to ensure the high quality of the images reproduced on computer and their adherence to the originals. The problems posed by the difficult electronic legibility of some of the original documents will be overcome through the adoption of the most advanced adjusting techniques.

2. To render them more accessible and facilitate their future fruition by a broader number of researchers and interested parties.

2.1. The task would involve the production of comprehensive summaries and indices for all of the digitized documents. The summaries and indices would enable students and scholars to identify the entries bearing on their researches through simple keyword searches.

2.2. To facilitate the study of the digitized documents, a multimedia room will be established. The software and hardware available therein will provide users with the means to consult and, if necessary, print the chosen documents at a fee to be established.

3. To enable a select group of National Archives of Zambia's members of staff to gain theoretical knowledge and practical experience in electronic records management and website design, and in the selection and indexing of archival materials (training on the job).

3.1. The theoretical and practical training of a selected group of National Archives members of staff will be done throughout the duration of the project.

4. To enhance the national and international visibility of the National Archives of Zambia by increasing awareness of its holdings.

4.1. The creation of a website would go a long way towards ensuring the attainment of this objective.

4.2. The website will be so structured as to make its fruition conditional upon the payment of the National Archives of Zambia's current membership fee.

5. To assist the National Archives of Zambia in playing a significant role in the sphere of Zambian cultural tourism.

5.1. The digitization would result in the creation of a database of information relating to traditional cultural practices and ceremonies of outstanding tourism potential.

5.2. Since digitization will significantly reduce the need for their physical consultation, the most ancient and precious among the district notebooks and BSAC records will be displayed in a permanent exhibition to be set up upon completion of the project.

The Project Team

The project team consisted of the then Acting Director, Mr Chrispin Hamooya, who hired two consultants, Dr Marja Hinfelaar, an Historian, and an Information Technology Consultant, Mr Mauro Sanna. These were assisted by eight members of staff of the National Archives of Zambia.

The specific tasks performed by the appointed Historian were to:

- Train NAZ's members of staff in the selection and indexing of archival records for the purpose of digitization
- Study the voluminous collection of the district notebooks and recommend them for digitization
- Recommend which sections or entries of the collections are to be digitized
- Produce comprehensive summaries and indices for each of the sections or entries selected
- Produce the contents for the National Archives website and set up a permanent exhibition.

The specific tasks performed by the appointed IT Consultant were to:

- Train NAZ's members of staff in the use of the hardware and software for digitization and in the creation and updating of a website
- Install the hardware and software purchased for the project.
- Digitize the district notebooks recommended by the Historian
- Design a website

Timeframe

The project lasted for one calendar year, which was from September 2004 to September 2005. The actual work is set out in Appendix I. It is important to note that the actual work was done according to UNESCO, IFLA/ICA (2002: 1-5) guidelines for digitization projects for collections and holdings in the public domain, particularly those held by libraries and archives. There are ten guidelines and comments on how each guideline was met are given.

1) Reasons for digitization

- To increase access
- To improve services to an expanding group of users by providing enhanced access to the institution's resources
- To reduce the handling and use of fragile and heavily used original materials
- To give the institution opportunities for the development of its technical infrastructure and staff skills capacity
- To take advantage of financial opportunities, for example the likelihood of securing funding to implement a program, or of a particular project being able to generate a significant income.

Comment from National Archives Digitization Project

The aim of the project was to increase accessibility of historical materials to the public, to reduce the handling of fragile materials and to develop human resources and technical infrastructure.

2) Criteria for selection

- Intellectual content of the material
- Level of demand from public
- For cultural institutions starting their first digitization project, a good rule of thumb is that selecting the most heavily used parts of their collections will normally give the greatest added value because it will satisfy the majority of people they try to serve.
- If the material being considered as a candidate for digitization lacks detailed cataloguing or descriptive data, it is essential for future access to such materials to create such data.

Comments from National Archives Digitization Project

The district notebooks are the most valued and most consulted collection at the National Archives, covering the whole of Zambia, and were therefore chosen as the first collection of historical documents to be digitized.

3) Technical requirements and implementation

- Image quality
- Resolution
- Bit depth
- Image enhancement processes
- Compression
- The equipment and its performance
- Operator judgment and care
- Setting up of standards
- Decision on reference points
- Spatial resolution
- Tonal reproduction

All image files that are produced by a digital image project must be organised, named and described in a way that fits the purposes of the project.

Comments from National Archives Digitization Project

The first step in the technical requirements and implementation was to acquire the book scanner Bookeye. This scanner is specifically designed for this type of work.

To obtain a perfect image with the scanner we had to check the following settings:

- Format
- Type of document
- Brightness
- Contrast
- Resolution

The second step was to clear up the image (image enhancement process) with the graphics software Adobe Photoshop 6.0. With this software we could manipulate all the images to obtain a perfect image without unnecessary details. At the end of this process all the files (images) were then saved in pdf format. The third and last step was to put all the data inside the database Alchemy to index and to record the digital repository.

Each file was saved with the name of the document. When we put the files in the database the structure was as follows: Province (example Luapula), and District (example Kawambwa). The key fields for each file are the following: Number of page; Keyword; Province; District; Volume; Reference Number; File Format and File Size.

After this process, each document was easy to retrieve and to identify with the internal tools of the software (search tool). Because of the high level standards of the equipment, quality control was already in-built. For the training of NAZ staff, we used the concept of “training on the job”, in which we supervised the NAZ staff throughout the process of digitizing (scanning, image enhancement process, indexing) and ensured they kept the standards set.

4) Need for pilot project

Comments from National Archives Digitization Project

When all equipment and software was obtained and installed, the consultants and the Director decided to use the digitization of the Luapula Province district notebooks as a pilot project, in which all the technical standards (see third guideline above) were set. After exposing the results to outsiders (historians in and outside Zambia) and making the necessary adjustments, the consultants were now ready to start the training programme and digitize other Notebooks.

5) Legal aspects

If digital images are accepted as a replacement for source documents and are intended to serve that purpose, it must be guaranteed before conversion that:

- The source documents have no intrinsic value
- The informational content (and if needed the physical appearance) of the documents has been adequately captured and cannot be changed
- The legal requirements are met
- The means for retrieving and preserving the digital images are in place.

However, in most digitization projects and programmes, source documents or analogue surrogates of them are kept and can be scanned if the digital images are lost or corrupted.

Comments from National Archives Digitization Project

Controls have been put in place to ensure that the image has been adequately captured (see quality control under no. 3). The researcher will read the documents in pdf format, and will be unable to make additions or changes to the image or the database. A back-up system is in place in which the original scanned image is preserved. If the researcher insists on checking the original document, the district notebooks are always accessible.

6) Budgeting

Cost recovery

Areas of expenditure: staff development facilities management, operational expenses, selection and preparation of source material for digitization, digital conversion, metadata capture, data management, managing storage and delivery systems.

Comments from National Archives Digitization Project

Maintenance and replacement of equipment has to be carried by charging a user fee. The digitized district notebooks (one province per DVD) can be bought at a price.

7) Human resource planning

Recommendations

- Provide leadership
- Empower the right people
- Form partnerships with early adaptors for capacity building
- Develop new technical and managerial skills

Comments from National Archives Digitization Project

It was decided that two people be trained at the time, for a period of one month. The training consists of a short theoretical explanation of the digitization process followed by hands-on experience. The trainees were engaged in digitizing all district notebook of one particular province, and carrying out the whole process of scanning, imaging and construction of the database, supervised by the two consultants. An important aspect of the training concerns quality control. In turn they helped the consultants to train the next two members of staff. In

this way, it was ensured they had a full understanding of the process.

8) Development and maintenance of web interfaces

Recommendations

- Develop digital content
- Building a web team
- Website production and management
- Introducing web-based services

Comments from National Archives Digitization Project

The website was created. The staff of the National Archives of Zambia were trained on how to create a website and maintain it.

9) Preservation of digital content

Recommendations

- Associated preservation and access as organizational objectives
- Set digital preservation policies before you begin scanning
- Adhere to international standards and adopt current best practice
- Avoid dependency on proprietary software
- Assign administrative, descriptive, structural and preservation metadata to all digital objects
- Identify a trusted digital repository committed to the long-term management of your digital resources

Comments from National Archives Digitization Project

The images have been saved in pdf format that is an international standard to read documents. This software is freeware and accessible through the internet at www.adobe.com. In order to preserve all the digitized and indexed documents, they were recorded on digital repositories like CD and DVD.

10) Project management

Recommendations

- Prepare an itemized budget of organizational, operational and staffing costs to assess the feasibility of the project
- Develop a planning matrix to manage the operational tasks
- Establish a tracking system to monitor and report on production

Comments from National Archives Digitization Project

The pilot project taught the consultants that it is possible to digitize the notebooks of one province a month.

Conclusion

The digitization was successfully done according to the planned schedule. However, there were a few challenges amongst which was the actual training of the assistants. Whereas all trainees had a good grasp of the skills involved, the level of skills achieved depended on whether the staff members had previous computer experience or not. Unfortunately, most of them had little knowledge about computers. It is thus recommended that for training in this area, trainees should have some basic computing skills. Furthermore, the National Archives of Zambia is understaffed implying that whilst being trained, staff members had to do other jobs. The implication of this was that the assistants could not get fully acquainted with some technical aspects of the digitization process. The other challenge is the fact that digitization is a monotonous work. This led to the assistant making mistakes easily. Overall, the consultants did a tremendous job that led to the continuation of the digitization project through the continued support of the Finnish Embassy. It is thus recommended that highly trained personnel in the area of digitization are hired to do the job. Additionally, the digitization project should be systematically programmed whilst ensuring that work is done according to the outlined schedule.

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Appendix I: The projected plan

Month	Historian	IT Consultant
September	Theoretical training of assistants in the study, selection, indexing and summarizing of archival records.	Installation and configuration of the hardware and software. Assembling of the multimedia room.
October	Study and selection of the documents to be digitized in collaboration with assistants. (TOJ)	Theoretical training of research assistants in the use of the required hardware and software.
November	Study and selection of the documents to be digitized in collaboration with assistants. (TOJ)	Theoretical training of research assistants in the use of the required hardware and software.
	Christmas break.	Christmas break.
January	Compilation of comprehensive indices for the digitized documents in collaboration with assistants. (TOJ)	Digitization of the documents selected by the historian in collaboration with assistants. (TOJ)
February	Compilation of comprehensive indices for the digitized documents in collaboration with assistants. (TOJ)	Digitization of the documents selected by the historian in collaboration with assistants. (TOJ)
March	Compilation of comprehensive indices for the digitized documents in collaboration with assistants. (TOJ)	Digitization of the documents selected by the historian in collaboration with assistants. (TOJ)
April	Compilation of comprehensive indices for the digitized documents in collaboration with assistants. (TOJ)	Digitization of the documents selected by the historian in collaboration with assistants. (TOJ)
May	Compilation of comprehensive indices for the digitized documents in collabo-	Digitization of the documents selected by the historian in collaboration with

	ration with assistants. (TOJ)	assistants. (TOJ)
June	Compilation of comprehensive indices for the digitized documents in collaboration with assistants. (TOJ)	Digitization of the documents selected by the historian in collaboration with assistants. (TOJ)
July	Preparation of website contents. (TOJ)	Training of NAZ staff to create and update the website.
August	Preparation of website contents. (TOJ)	Creation and design of website (TOJ)
September	Planning and setting up of the permanent exhibition with NAZ staff.	Planning and setting up of the permanent exhibition with NAZ staff.

TOJ = Training on Job