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Selection and Preservation of Digital Documentary Heritage

**Report from the Government Records Service,
the Government of the Hong Kong Special Administrative Region of
the People's Republic of China**

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Foreword

With the widespread use of digital information technologies, more and more records are created and received in digital forms. The selection and preservation of digital documentary heritage has become an increasing priority in all archival institutions, including the Government Records Service (“GRS”) of the Government of the Hong Kong Special Administrative Region of the People’s Republic of China (“the Government of the HKSAR”). As the central archives of the Government of the HKSAR, GRS is committed to identifying and preserving government records having archival value and enhancing public awareness of Hong Kong’s documentary heritage.

2. To prepare for the transfer of digital records from the government agencies to GRS for appraisal and retention and to ensure their authenticity, integrity, reliability and usability over time, we are reviewing our policy and strategies as well as developing tools to ensure that digital records are managed, selected and preserved properly and effectively. It is also important to digitise our existing archival collections so as to promote awareness, appreciation and the use of our documentary heritage. In the ensuing paragraphs, we are pleased to share the work being undertaken by GRS in meeting the challenges arising from the selection and preservation of digital documentary heritage as well as our digitisation strategy for archival records. We will also be happy to hear and learn from the other participants of this Conference about their knowledge and experience.

Selection of digital records in the Government of the HKSAR

3. GRS currently has an archival stock of more than 1.4 million records. Such archival records come in different media and formats. They include paper records, maps and plans, photographic materials, audio-visual materials, microforms and digital records dating from the 1840s to the present day. GRS appraises government records to determine which records possess archival value and should be permanently retained. Based on different conceptual models for selecting records and best practices on acquisition policies adopted by other overseas jurisdictions, GRS adopts a set of appraisal policy and guidelines for selecting archival records. The same general principles apply to the selection of digital records.

4. The paradigm shift due to the widespread use of digital information technologies presents unique challenges in records and archives management. The Government of the HKSAR's e-initiatives and the increasing use of electronic means to conduct business have significantly increased the quantity of born-digital records in various file formats. It is necessary for us to review our methods for the selection and preservation of the born-digital records. We believe there is no "one-size-fits-all" approach for the selection of digital records. GRS is actively reviewing its appraisal guidelines and workflow on selection of digital records and we place much emphasis on three major aspects, advancing the timing of appraisal, strengthening the level of technical expertise as well as enhancing our cooperation and collaboration with records creating agencies.

Timing of appraisal

5. Ideally, appraisal should be done at or near the moment when the records are created. We fully understand that digital records present unique challenges. Because technology is constantly evolving, selection of digital records should be done early and the appraisal decision should also be monitored, reviewed and updated over time. All along, GRS has been adopting a conventional approach whereby records of government agencies having potential archival value will be appraised by archivists upon the expiry of the retention period of the records according to the records retention and disposal schedules to determine the final disposal action (i.e. retention by GRS or destruction) for the records. However, to cope with the substantial growth in digital records, GRS is embarking on a full-scale review of government agencies' records retention and disposal schedules. Following this review, whether the government records should be retained by GRS as permanent archives or destroyed when time expired is specified in the records retention and disposal schedules at an early stage of the records' lifecycle as far as possible. The results will facilitate more

timely and efficient transfer of records with archival values, particularly those in electronic form, from government agencies to GRS for proper preservation.

6. We are also aware that the need for digital preservation should be identified at the planning stage and the digital records themselves should be appraised during the design and implementation stage of recordkeeping systems to ensure that functionalities for appraisal and disposal actions will be built into the system¹. GRS has been promoting electronic records management (“ERM”) and encouraging government agencies to implement electronic recordkeeping systems (“ERKS”) to manage both their digital and non-digital records in a consistent and integrated manner. This is to ensure that B/Ds’ digital records with archival value are properly managed and stored in an ERKS prior to its transfer to GRS for permanent retention. A proper ERKS can facilitate the appraisal in many ways such as providing an updated classification scheme and the metadata for different levels of records under the classification scheme.

Strengthening the level of technical expertise

7. The selection of digital records requires not only subject knowledge, but also a certain level of awareness about the types of media and software. On this aspect, we need to strengthen our knowledge and skill to appraise the technical aspects of the digital records, e.g. specifications of the records system, the technical characteristics of the records and the functionality of the systems. GRS endeavours to identify and provide our staff with necessary knowledge and training needed to establish the framework, governance, and systems required to manage and preserve digital records throughout the record’s lifecycle. As such, we have developed a structured training and development programme to equip GRS’ staff to face the challenges of paradigm shift, particularly in the wake of the extensive use of electronic means to conduct business resulting in substantial growth in digital records. The training programme is a combination of online courses / webinars established and organised by recognised professional bodies on archives and records management as well as digital preservation. Moreover, GRS has arranged its staff to attend duty visits and professional conferences overseas so as to widen their exposure to international best practices on digital preservation.

Cooperation and Collaboration

¹ *Digital Records Pathways: Topics in Digital Preservation, Module 5: from ad hoc to Governed – Appraisal strategies for gaining control of records in network drive, p9* Online print available at http://interpres.org/ip3/display_file.cfm?doc=ip3_canada_gs12_module_5_july-2012_DRAFT.pdf

8. Selection and preservation of digital heritage is not only the work of the archivists but a joint responsibility of the creating and / or transferring agencies (i.e. the government agencies) and the preserving agency (i.e. GRS). GRS endeavours to work with others who have responsibility for preserving documentary heritage, such as government agencies, the archives community in Hong Kong as well as the information technology professionals.

- *Communication with government agencies*

9. We believe that effective records management in different stages of the life cycle can facilitate the selection and preservation of archival records. Over the years, we have made significant efforts to help government agencies manage their records properly. To promote the awareness of proper preservation of digital records, GRS has published a range of publications on different records management topics including records creation and collection, records classification, records retention and disposal, metadata standard, preservation and microfilming, electronic records management, electronic recordkeeping system, managing and preservation of digital records, etc. Examples are “A Handbook on Preservation of Electronic Records”, “Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System”, “Recordkeeping Metadata Standard for the Government of the Hong Kong Special Administrative Region”, etc. In mid-2017, GRS uploaded more government records management manuals, guidelines and circulars onto its website for convenient access and information sharing purposes. We also organise records management training courses or seminars for government agencies on an ongoing basis with a view to promoting good records management practices.

- *Partnership with information technology professionals*

10. We have established a close partnership with the Office of the Government Chief Information Officer (“OGCIO”) of the Government of the HKSAR and we look to them for guidance on the latest development trends on information technology and technical solutions. Apart from implementing ERKS within the Government of the HKSAR, GRS is now working in collaboration with OGCIO to conduct a comprehensive study to develop a government-wide policy on the long-term preservation of digital records and to work out related strategies and solutions.

- *Liaison with archives community*

11. We have exchanged professional knowledge and experience on records management and digital preservation with local archives community through a visit programme. We continue to foster closer partnership and explore possible collaboration with the local archives community on preservation of and the use of documentary heritage.

Preservation of digital records

12. Preservation of digital records includes both born-digital records and digital objects which are digitised from archival materials originally in analogue domain. Thus, in the following paragraphs, we will share our recent work on digitisation and long term preservation of born-digital records.

Digitisation Strategy

13. GRS has been making steady efforts to digitise its holdings in order to enhance their accessibility by the public. Since 2001, we have been digitising GRS holdings based on criteria commonly adopted by overseas archives/libraries, e.g. physical condition of the items; users' demand or frequency of use; copyright restriction and personal data consideration.

Current situation of digitisation work

14. The digitisation work in GRS can be divided into two categories, namely, capturing of digital images from paper items of any format; and scanning of microfilmed images frame by frame to produce digital images of the archives. The captured digital images of the archives would be checked against the original archives for image quality and metadata accuracy. After the quality assurance procedures, all images will undergo optical character recognition processing to generate a layer of searchable text over the image of each page to facilitate searching of text in the archives. A thumbnail set of images will also be produced from the master copy by reducing the image size and resolution for fast retrieval from file servers and display in the personal computers in our reference area.

15. GRS has been producing microfilm surrogates from archival collection to replace the role of the original records for access purpose. Over 1 000 rolls of microfilm were digitised since 2014 and about 0.58 million digital images were produced. A high-speed microfilm scanner was deployed to boost the digital image capturing capability significantly.

16. Based on our digitisation plan (2013 to 2018), over 1.1 million digital images (about 30 000 archival holdings) were produced from digitising selected archival items, scanning microfilm collection and oversized map and architectural plan items to facilitate public access to these archival records up to 2016. Overall, we have digitised about 2 million digital images (about 80,000 archival holdings). This represents 6 % of our total archival stock.

Establishing a mass digitisation workflow

17. To expedite the progress of digitisation, GRS conducted a pilot project in 2015 to study the feasibility of mass digitising archives for public access in the long-run. Under this pilot project, about 5,300 archival records were digitised to produce over 520 000 digital images in 10 months with proper metadata input. The project has been a success and it laid the foundation for us to expand the scope of the digitisation of archival collection in mass scale. GRS now has plans to embark on mass digitisation of archival records starting from next year. The initial target is to digitise about 100 linear meters of records annually in the first few years. It is anticipated that the production target will be gradually raised in the years to come.

Long-term preservation of digital archival records – setting up of a digital archive

18. We attach great importance to the long-term preservation of born-digital records as well as digital objects which are digitised from archival materials originally in analogue domain to enhance their accessibility and usability over time. Since 2012, GRS has been working towards the development of strategies and solutions for long-term preservation of digital records. As digital records are technology dependent and may appear in different file formats, it is difficult to find a single solution which can address the problem of obsolescence in file formats as well as hardware and software in order to ensure the long-term accessibility of the records. An inter-agency task force has been established to conduct a study to plan and study the business and technical requirements. The task force conducted extensive research of the practices adopted in different countries and participated in various international conferences and seminars on relevant subjects. The task force also published a handbook to enhance the awareness of Government agencies on proper preservation of digital records and guide Government agencies to adopt best practices to preserve

digital records. Apart from this, GRS is also developing relevant standards for Government agencies to follow when transferring digital records with archival values to GRS for long-term preservation.

19. GRS is planning to set up a digital repository for the storage of digital archival records so as to pave the way for the establishment of a digital archive in the long run. GRS is now conducting research on different technical solutions and the implementation plan will be worked out at a later stage.

Conclusion

20. With the increasing use of electronic means in conducting business, most records created and collected in the course of business nowadays are in electronic form. The advancement in information technologies provides good opportunity for us to improve our services by providing online access to archival records in digital forms. However, we have to select and preserve our digital records carefully in order to promote awareness, appreciation and proper use of documentary heritage in our community.

21. Over the past years, the HKSAR archival authority has been working proactively to review our appraisal workflow and framework to keep pace with the change in international best practices in the selection of digital documentary heritage and acquire up-to-date knowledge and skills in long-term preservation of digital records. We are pleased to attend today's seminar which provides an excellent opportunity for us to learn from records management practitioners in EASTICA on how to make use of digital technologies to improve our archival business and meet the challenges of records and archives management in the digital era.

Government Records Service of the
Government of the Hong Kong Special Administrative Region
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