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Archives in the Digital Era: Revisited

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

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Foreword

The rapid changing digital environment and the widespread use of digital information technologies have offered many new opportunities for people to communicate in a different way through different media electronically. At the same time, they have brought about great challenges to archival institutions in the 21st century.

2. Nowadays, more and more records are created and received in electronic forms owing to the governments' e-initiatives and greater use of information technology. In the digital age, the speedy transmission of information in digital forms presents unique challenges in records management. Digital records are more vulnerable than records created in traditional ways because the storage media (such as magnetic tapes or CD-ROMs) could be fragile and inherently unstable; the access to the digital records is technology dependent; the digital records could be manipulated or deleted easily without being discovered; and there is insufficient self-evident and ready contextual information to enable that the records are understandable and usable over time. The characteristics of electronic records together with the ever-changing computing environment will give rise to the risks of uncontrolled accumulation of records, documents and

data; incomplete keeping of records; inadvertent destruction of records; and unauthorised tampering with records.

3. To deal with these challenges, it is necessary for us, as records management practitioners, to develop policy, strategies and tools to ensure that electronic records are managed properly and effectively. In the ensuing report, we will provide an overview of the work done by the Government of the Hong Kong Special Administrative Region of the People's Republic of China ("the Government of the HKSAR") in addressing the paradigm shift brought about by the widespread use of digital information technologies.

Electronic Information Management Strategy and implementation of electronic recordkeeping system

4. In 2011, the Government of the HKSAR promulgated the Electronic Information Management Strategy which covers three domains, namely content management, records management and knowledge management. The Strategy aims to help Government agencies to effectively and efficiently manage and share information through electronic means. Under its framework, all Government agencies are required to take forward electronic records management as an integral part of Electronic Information Management and adopt an electronic recordkeeping system (in short form as "ERKS") as a mandatory component to drive electronic records management in the Government of the HKSAR. As to content management and knowledge management, Government agencies may decide to implement them having regard to their business needs.

5. Against this background, the Government Records Service of the Government of the HKSAR (in short form as "GRS") has implemented an ERKS to manage both its electronic and non-electronic records to replace the paper-based recordkeeping system. An ERKS is an information system

with the necessary records management capabilities designed to electronically manage the creation, storage, retrieval, disposal and preservation of records. The implementation of an ERKS in GRS has not only helped users to manage both electronic records and non-electronic records in a consistent, integrated and secure manner but also set an example for other Government agencies to follow.

6. To drive electronic records management in the Government of the HKSAR, GRS has been taking an active role in encouraging and assisting more Government agencies to adopt an ERKS. In 2011, GRS promulgated the Government's recordkeeping metadata standard and functional requirements for implementing an ERKS for reference and compliance by Government agencies. These standards and functional requirements are developed by reference to the prevailing international standards such as those of the International Organization for Standardization (ISO), the International Council on Archives (ICA) and the Model Requirements (MoReq) for the Management of Electronic Records issued by the European Commission. GRS also issued a series of publications and manuals to provide practical guidelines on records management principles and requirements as well as records management best practices for Government agencies to manage aggregations and records in an ERKS.

7. At present, five Government agencies including GRS have implemented or are in the course of finalising their ERKS. In 2016, six Government agencies of a larger scale and with more complex recordkeeping requirements will be developing their ERKS. By 2017, some 15% of all Government agencies would have implemented ERKS. We have adopted this phased approach in order to ensure that any implementation issues can be comprehensively addressed and a more certain evaluation of costs and benefits can be made before full-scale rollout of ERKS across the Government of the HKSAR. We need to be prudent with the pace of ERKS rollout for mainly two reasons: first is financial accountability due to the substantial investment involved arising

from the high licence costs of commercial ERKS products, and second is that we need to make sure Government agencies are ready to take on this systemic challenge.

Making use of digital technologies to improve archival business

8. The Government of the HKSAR has been actively making use of digital information technologies to enhance the accessibility and usability of archival records through electronic means. To this end, GRS has been pursuing the following four initiatives.

(A) Digitisation of archival records

9. GRS has made steady efforts to digitise its archival holdings in order to make them more accessible to the public. As the digitisation process itself is expensive and labour-intensive, GRS has formulated and adopted a digitisation strategy since 2014 to prioritise the digitisation work for the archival collections.

10. Our first priority is to digitise archival holdings with significant value or risk. We need to preserve those fragile archival records on the one hand and to facilitate their accessibility and usability on the other. Besides, we need to address the problem of “content at-risk of format obsolescence”.

11. GRS provides digital surrogates for fragile archival records and ensures their accessibility over time. GRS has been migrating or reformatting content from at-risk media to digital formats for continued preservation and access. GRS also accords priority to those archival records with high accessibility rate and those where the copyright protection has expired or GRS is the copyright holder. In doing so, priority will be given to those archival records which have been in existence for over 100 years. GRS has been adhering to widely accepted international standards such as PD 5454:2012 Guide for the storage and exhibition of archival materials, British Standards Institution, 2012 and best practices

adopted by other national archives to ensure that the physical well-being of the archival records and the quality of digitised materials will not be compromised.

12. Up to 2014, GRS has already produced over 225,000 digital images from our archival collection. Taking into account the resources available, it is our target to produce 155,000 digital images annually.

(B) Production of digital images and microfilms simultaneously

13. At present, GRS is producing microfilm surrogates from its archival collection to replace the original copy for general access purpose. The production workflow is purely photomechanical in nature and the productivity could vary depending on the performance of the machine and equipment concerned. With the advance in digital technology, GRS is planning to acquire digital imaging equipment to speed up the creation of digital images to improve the preservation of the archival collection at source. The idea is to make use of specialised digital imaging equipment to create high quality digital images of our archival collection and at the same time produce the microfilms for long-term preservation. We believe that this initiative can achieve the objectives of enhancing the accessibility of our archival collection and at the same time, increasing the efficiency in digitisation and preserving our archival collection.

(C) Archiving of Government websites

14. To offer access for researchers, historians, scholars, and the public to Hong Kong's cultural and documentary heritage that exist in the cyberworld, GRS is exploring the feasibility of archiving those Internet websites of the Government of the HKSAR with high archival values on a regular basis by using suitable web archiving tools. We see the major challenges are the ever-increasing Internet collections which are growing at an exponential rate and the significant resources implications for storing these Internet websites as well as the effort for indexing and categorising

them before they could be accessible to the public. We are still in the initial stage of planning an Internet archives and would be grateful to learn from the experience of other archival institutions.

(D) Enhancement of Educational Resources Portal

15. To promote awareness, appreciation and proper use of documentary heritage in our community through convenient access to digital resources, GRS has developed an Educational Resources Portal in our website to promote the use of archival records in studying and learning. Plenty of photographs of different topics are provided in the Portal to arouse the interest of the public in our archival collection. The contents of the Educational Resources Portal are enriched regularly. At the moment, we have launched new thematic web pages, such as “*Behind the Postman Uniform: Deconstructing Post Office’s Records*”, “*Image of the Month*” and “*Recording Hong Kong: Historical documents in Public Records Office*”. To assist users in better understanding the collection, various new topical guides have also been uploaded to the Portal recently.

Long term preservation of digital information – setting up of a digital archive

16. We are fully aware of the importance of long-term preservation of digital records as well as the preservation of archival records through electronic means to enhance their accessibility and usability. GRS serves as the central archives of the Government of the HKSAR. It acquires and provides public access to Hong Kong’s archival records. It offers a rich heritage resource consisting of documents, photographs, movies, posters and other records tracing the governance and evolution of Hong Kong. With the rapid growth in electronic records in the digital era, it is one of our missions to build a digital archive with modern technologies.

17. We all understand that the setting up of a digital archive is not an easy task because the approach is contingent upon changes in information

technology, international standards and our own business processes. Unlike paper records, electronic records are stored in different formats which are supported by different hardware or software. It is therefore necessary for the digital archive to be set up with modern technologies which is based on international standards widely acceptable by archival institutions and is sustainable for the preservation of digital records over time.

18. GRS has been, since 2012, working towards the development of strategies and solutions for long-term preservation of electronic records. An inter-agency task force has been established to conduct a preliminary study to plan and study the business and technical requirements for long-term preservation of electronic records. The task force conducted extensive research of the practices adopted in different countries and participated in various international conferences and seminars on relevant subjects. While the approach of how to set up a digital archive has yet to be further examined, GRS has taken the first step to enhance the awareness of Government agencies on proper preservation of electronic records through publishing a handbook to guide Government agencies to adopt best practices to preserve electronic records as part and parcel of good electronic records management.

19. The handbook sets out good practices for preserving electronic records, e.g. tips for addressing media durability and proper handling of storage media. It also provides guidelines for Government agencies to establish and implement a departmental preservation programme which should include practices and procedures to refresh storage media and migrate electronic records from the existing ageing IT systems to upgraded systems.

20. There is no doubt that we would have to meet new challenges and open ourselves to new ideas given the scope and complexity of the issue concerned. As the digital archiving technology is still developing, we will

continue to look out for best practices among our counterparts in other countries and work towards the goal of setting up a digital archive which is sustainable for the preservation of digital records over time. To ensure the sustainability of the standard, we believe at this stage that the standard should be truly open and its usage is free from any proprietary or licensing restriction.

Conclusion

21. One of the major challenges faced by all archival institutions, including GRS, in the 21st century is how to change our records and archives management practices to address the paradigm shift brought about by the rapid development of the digital information technologies. The advancement in information technologies at the same time provides opportunities for us to improve the accessibility and usability of archival records so as to promote awareness, appreciation and proper use of documentary heritage in our community.

22. We are pleased to say that, over the recent years, the HKSAR archival authority has acquired fruitful and rewarding experiences in meeting the new challenges and opportunities brought about by the digital era. We are particularly delighted to be able to attend this seminar which provides an excellent opportunity for records management practitioners in EASTICA to share our experience on how to make use of digital technologies to improve our archival business. It also provides a platform for us to learn from each other how we fare in the digital transformation journey.