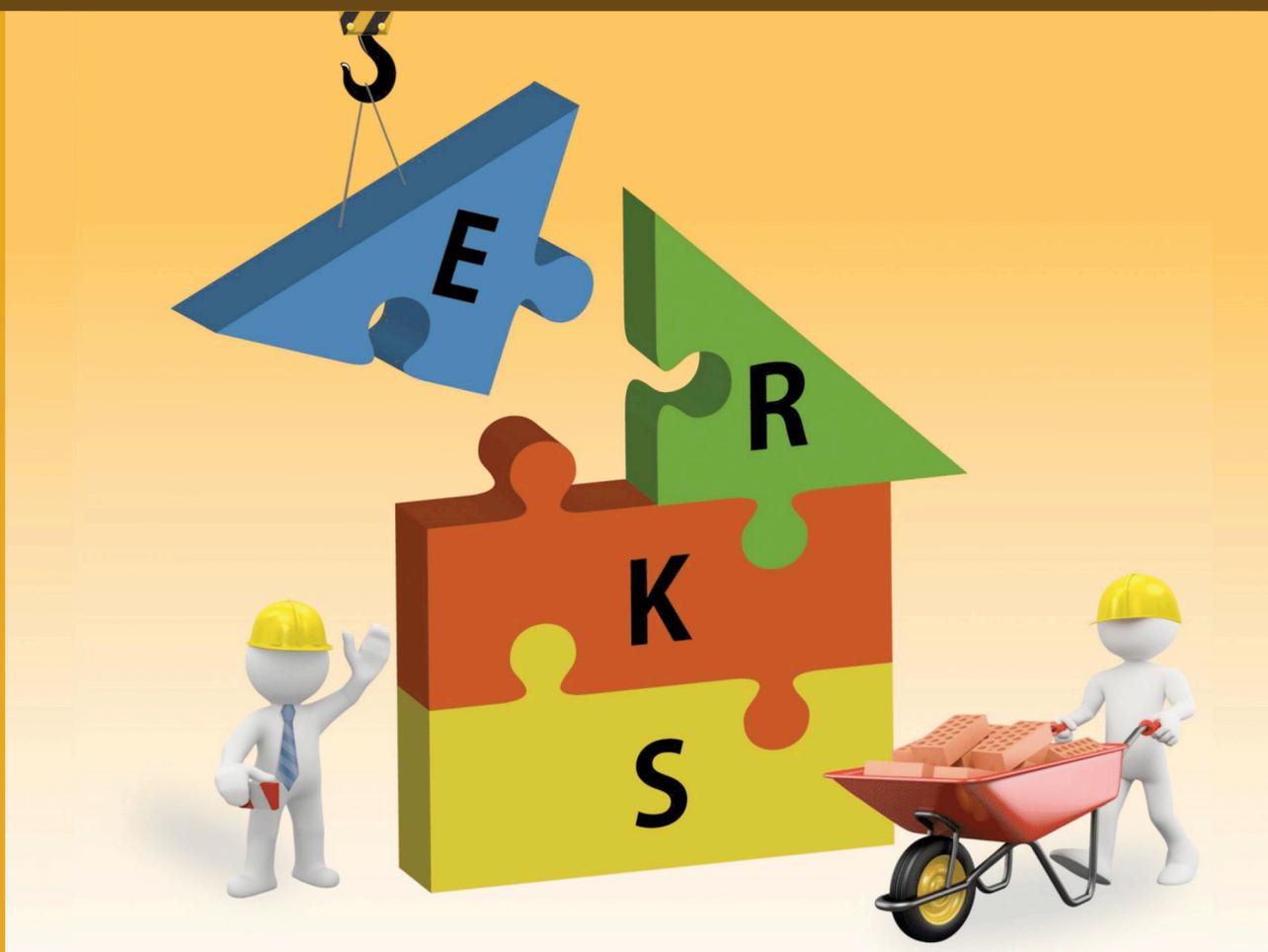


# Guidelines on Implementation of an Electronic Recordkeeping System: Key Considerations and Preparation Work Required





# **Guidelines on Implementation of an Electronic Recordkeeping System:**

## **Key Considerations and Preparation Work Required**

**Government Records Service**

January 2015 *(with minor updates in April 2017)*

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## Abbreviations

ADRM	Assistant Departmental Records Manager
BCFMS	Bar-coding File Management System
B/D	Bureau and/or department
CCGO	Central Cyber Government Office
CM	Content management
COTS	Commercial-off-the-shelf
DRM	Departmental Records Manager
EDMS	Electronic document management system
EIM	Electronic information management
ERKS	Electronic recordkeeping system
ERM	Electronic records management
FR of an ERKS	Functional Requirements of an Electronic Recordkeeping System
GRS	Government Records Service
ITMU	Information Technology Management Unit
KM	Knowledge management
OGCIO	Office of the Government Chief Information Officer
RKMS	Recordkeeping Metadata Standard for the Government of the Hong Kong Special Administrative Region
RM	Records management

## Chapter 1

# Introduction



### Background

1.1 Records are valuable resources of the Government to support evidence-based decision making and to meet operational and regulatory requirements, and are essential for an open and accountable government. Records management (RM) is therefore an important common function of bureaux and departments (B/Ds).

1.2 With the growing need for proper management of electronic and non-electronic records in a consistent and integrated manner, it is the Government's RM policy to pursue electronic records management (ERM) in B/Ds.

1.3 In line with the Government's electronic information management <sup>1</sup> (EIM) strategy promulgated by the Office of the Government Chief Information Officer (OGCIO) in May 2011<sup>2</sup>, B/Ds are

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<sup>1</sup> EIM covers three domains, namely content management (CM), RM and knowledge management (KM).

<sup>2</sup> Government's EIM strategy was promulgated vide OGCIO Circular No. 1/2011 entitled "Electronic Information Management Strategy and Framework". The Circular is available on the Central Cyber

required to take forward ERM as an integral part of EIM. As such, B/Ds should develop or adopt an electronic recordkeeping system (ERKS), either as a stand-alone system or as a part of an integrated EIM solution<sup>3</sup>, to drive ERM in the Government.

1.4 To support government-wide implementation of ERKS, the Government Records Service (GRS) first promulgated in May 2011 the **Functional Requirements of an Electronic Recordkeeping System**<sup>4</sup> (FR of an ERKS), and in May 2012 the **Recordkeeping Metadata Standard for the Government of the Hong Kong Special Administrative Region**<sup>5</sup> (RKMS) for reference and compliance by B/Ds in developing or adopting an ERKS in accordance with the Government's RM policy and ERM requirements.

1.5 To facilitate B/Ds' implementation of an ERKS, OGCIO is developing common shared ERKS services<sup>6</sup> under the government cloud platform as an implementation option to help B/Ds reduce costs and time in their EIM implementation, and to ensure consistency and interoperability.

### ERKS implementation guidelines

1.6 Implementation of an ERKS is a complex project involving people, process and technology. To assist B/Ds to face the challenges in implementing an ERKS, GRS has developed a series of ERKS implementation guidelines in providing guidance to B/Ds to initiate, plan and implement an ERKS in their organisations. The series of ERKS implementation guidelines comprises the following -

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Government Office (CCGO) ([http://itginfo.ccco.hksarg/content/cir/docs/OGCIO\\_Cir\\_201101.pdf](http://itginfo.ccco.hksarg/content/cir/docs/OGCIO_Cir_201101.pdf)).

<sup>3</sup> While an ERKS could be implemented as a stand-alone system or as a part of an integrated EIM solution, it is assumed in the context of this document that a stand-alone ERKS is implemented. B/Ds may make reference to the "Government-wide Framework for Electronic Information Management" promulgated by OGCIO (<http://itginfo.ccco.hksarg/content/eim/download.asp>) for integration among CM, RM and KM.

<sup>4</sup> **Functional Requirements of an Electronic Recordkeeping System** is available on CCGO (<http://grs.host.ccco.hksarg/erm/s04/435.html>).

<sup>5</sup> **Recordkeeping Metadata Standard for the Government of the Hong Kong Special Administrative Region** is available on CCGO (<http://grs.host.ccco.hksarg/erm/s04/457.html>).

<sup>6</sup> As of publication of this document, details of the common shared ERKS services are yet to be announced. B/Ds may refer to the EIM theme page on CCGO (<http://itginfo.ccco.hksarg/content/eim/index.asp>) for the latest information.

- (a) ***Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies***<sup>7</sup> - This publication aims to provide practical guidance and tips for B/Ds to formulate effective approach and ways to drive ERM and improve records management as part of their organisational EIM strategies;
- (b) ***Manual on Evaluation of an Electronic Recordkeeping System***<sup>8</sup> - The Manual aims to provide guidance for B/Ds to evaluate an ERKS with the functional requirements of an ERKS and RKMS developed by GRS. It has been completed in the form of an exposure draft;
- (c) ***Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System***<sup>9</sup> - This handbook prescribes RM principles and best practices to manage aggregations, records and their associated recordkeeping metadata and audit trails in an ERKS; and
- (d) This document - ***Guidelines on Implementation of an Electronic Recordkeeping System: Key Considerations and Preparation Work Required***.

1.7 The key objectives of the series of ERKS implementation guidelines are to -

- (a) guide B/Ds to map out their current and future RM requirements and needs so as to identify gaps, inadequacies and improvements that should be addressed in implementing an ERKS;

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<sup>7</sup> ***Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies*** are available on CCGO (<http://grs.host.ccg.hksarg/erm/s04/4222.html>).

<sup>8</sup> ***Manual on Evaluation of an Electronic Recordkeeping System*** is available on CCGO (<http://grs.host.ccg.hksarg/erm/s04/4232.html>).

<sup>9</sup> ***Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System*** is available on CCGO (<http://grs.host.ccg.hksarg/erm/s04/4262.html>).

- (b) present key considerations and tasks which should be considered, reviewed and/or performed by B/Ds in initiating, planning and undertaking a successful implementation of an ERKS;
- (c) guide B/Ds to comply with the Government's RM policy and requirements relating to an ERKS and its implementation;
- (d) guide B/Ds to establish a governance mechanism and define clear roles and responsibilities for managing and maintaining an ERKS in their organisations;
- (e) guide B/Ds to identify, assess, prevent and mitigate risks associated with implementation of an ERKS; and
- (f) guide B/Ds to identify, assess and monitor resource requirements, costs, benefits and efforts associated with implementation of an ERKS.

## **Purpose**

1.8 This document has been developed to provide practical guidelines to assist B/Ds in -

- (a) assessing current RM environment and mapping out future RM needs and requirements;
- (b) formulating an effective approach and ways to drive electronic records management;
- (c) selecting and procuring a suitable ERKS solution;
- (d) identifying critical success factors and key considerations for planning and implementing an ERKS in B/Ds;
- (e) developing requirements specification of an ERKS; and
- (f) formulating implementation approach and rollout strategy.

## Audience

1.9 This document is intended to be used by government officers, in particular the senior management overseeing the planning and implementation of ERKS projects as well as the Departmental Records Managers (DRMs), Assistant Departmental Records Managers (ADRM)s and IT staff of Information Technology Management Units (ITMUs) in B/Ds who are responsible for -

- (a) initiating, planning and implementing an ERKS compliant with the Government's RM policy and ERM requirements in their B/Ds;
- (b) designing, developing and maintaining IT infrastructure, information security, system integration, scalability of information systems, etc. in relation to the implementation of an ERKS in their B/Ds;
- (c) specifying requirements of, selecting and procuring an ERKS solution; and
- (d) managing and maintaining an ERKS compliant with the Government's RM policy and ERM requirements.

## Scope

1.10 While this document focuses on RM issues in the implementation of an ERKS, it also covers some of the technical issues involved briefly for completeness' sake. ITMUs of B/Ds should provide more in-depth and relevant input on the technical side. Where necessary, B/Ds may seek technical advice from OGCI0.

1.11 Given that the common shared ERKS services should provide a consistent and interoperable platform to suit the common RM requirements of B/Ds, it is expected that the majority of B/Ds will adopt this implementation approach. Therefore, this document will focus on the preparation work involved in pursuing this implementation approach. However, the considerations for adopting other implementation

approaches will also be discussed in Chapter 6 for reference by B/Ds.

### **Assistance and support from GRS**

1.12 As far as the ERKS implementation guidelines are concerned, GRS is responsible for -

- (a) reviewing, updating and supplementing the guidelines as and when necessary; and
- (b) providing RM advisory support and assistance to B/Ds to initiate, plan and implement an ERKS in accordance with the Government's RM policy and ERM requirements.

1.13 GRS has developed relevant requirements and standards for compliance and reference by B/Ds in developing or adopting an ERKS. A list of ERM standards and guidelines that are in force is at **Appendix 1**. In addition to these ERM standards and guidelines, B/Ds should also comply with the mandatory RM requirements as prescribed in General Circular No. 2/2009 entitled "Mandatory Records Management Requirements" and other relevant Government RM requirements and standards.

1.14 To tie in with the service-wide implementation of ERM, GRS has developed a dedicated theme page to promote ERM and the use of an ERKS to government officers on the Central Cyber Government Office (CCGO) (<http://grs.host.cngo.hksarg/erm/>). Besides introducing ERM concepts, standards and best practices, the theme page also provides the latest information on the Government's initiative in taking forward ERM and shares B/Ds' experience in ERKS implementation with records managers, RM staff, IT staff and records users. B/Ds are encouraged to visit the theme page for updates on the guidance and case studies for ERKS implementation.

1.15 A glossary of key RM terms used in this document and other terms related to ERM is available on the ERM theme page (<http://grs.host.cngo.hksarg/erm/s11/11.html>).

## Updating

1.16 This document will be updated and supplemented from time to time having regard to the feedback obtained and experience gained by B/Ds in implementing ERKSs in their respective organisations.

## Further information

1.17 This document is available on CCGO (<http://grs.host.ccgo.hksarg/erm/s04/4252.html>) for reference by B/Ds.

1.18 Enquiries arising from this document should be addressed to Senior Executive Officer (Record Systems Development) 1 on 2195 7750 or Executive Officer (Record Systems Development) 1 on 2195 7783.

### Key points of Chapter 1

- B/Ds should observe and comply with Government's ERM standards and guidelines to ensure compliance with Government's RM policies and ERM requirements.
- B/Ds should make reference to the guidelines promulgated by GRS for assistance in overcoming the challenges in the implementation of an ERKS.

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## Chapter 2

# Building the Foundation for Success in Implementing an ERKS



### Introduction

2.1 The development and implementation of an ERKS is a process which poses various challenges to B/Ds. It calls for meticulous planning and careful execution to make the implementation successful and to reap the maximum benefits of ERM.

2.2 With reference to the implementation experience in overseas jurisdictions and also the experience in implementing ERKSs by early adopter B/Ds locally, this chapter aims to discuss the critical success factors throughout the implementation process for a successful ERKS implementation to help B/Ds overcome the challenges and build the foundation for success.

### Critical success factors for implementing an ERKS

2.3 B/Ds should develop a high level implementation plan to initiate, plan and implement an ERKS when developing their organisational EIM strategies. When converting this high level implementation plan into a

detailed implementation plan, various critical success factors, as well as the associated considerations to address the challenges they would encounter in the implementation, should be taken into account.

2.4 The critical success factors can be grouped into different categories according to the different stages of implementation. Please see **Figure 2.1** below.

*Figure 2.1: Critical success factors*



### **Before implementation**

#### *Policy*

2.5 Proper planning is the key to the success of project implementation. In conducting the study for the organisational EIM strategies, B/Ds should formulate organisational ERM policy and strategies and integrate them as part of corporate RM programme. This is of

utmost importance as it is a core foundation stone for a successful ERKS implementation.

2.6 With the RM policy and strategies to take forward ERM in place, the roles and responsibilities of staff on managing records should be clearly defined. Specifically, B/Ds should carefully consider whether such roles and responsibilities defined in the prevailing RM policy and practices would need to be fine-tuned or adjusted in accordance with the implementation of an ERKS.

### *Corporate Culture*

2.7 The readiness of a B/D in adopting an electronic approach to manage records would be substantially affected by the corporate culture regarding RM. B/Ds should foster a corporate culture of taking responsibilities on RM among all staff members and adopting electronic means to manage records.

### *Senior management support*

2.8 The leadership, commitment and on-going support from senior management are crucial to the successful implementation of an ERKS because it would influence the availability of the required resources, funding and staff for implementation, as well as system take-up across the B/D. With senior management to champion the project, B/Ds would have greater capacity for a successful implementation.

2.9 For example, according to the implementation experience of an Australian government agency, the senior management of the agency demanded that all correspondence to the Secretary and Deputy Secretary's office should bear a reference number from its ERKS. This greatly encouraged branch heads and their directors to use the system and thus smoothed the transition.

2.10 Possible ways for the senior management to show commitment and support for the ERKS implementation include their chairing and/or

participating in key project meetings and training sessions, and monitoring the project status.

2.11 In order to gain the commitment and support from senior management, it is important for B/Ds to present a sound and justifiable business case for the ERKS implementation. Please refer to Chapter 5 for development of a business case.

### *User involvement and engagement*

2.12 Given the long established practice of the paper-based recordkeeping system and the impact of an ERKS implementation on many aspects of B/Ds' operation, B/Ds should expect a significant change in RM procedures. Implementing an ERKS may require staff to work in a different way. One such example is users will no longer need to request a paper file and wait for it to be despatched to them for retrieving the records therein. In the ERKS environment, users can retrieve records directly from the ERKS by just a few mouse clicks.

2.13 The expectation for changes should be communicated with all stakeholders from senior management to frontline staff as early as practicable. In fact, the communication process may take some time and B/Ds should therefore consider starting the process during the planning stage.

2.14 For example, B/Ds could organise briefings to announce the planned implementation of an ERKS at an early stage to all potential ERKS users. B/Ds should also involve users of different roles in the implementation through various means such as briefings and user acceptance tests as appropriate so that their concerns and views could be reflected and properly addressed in the implementation process. This could effectively encourage user involvement to gain buy-in and ownership for the ERKS implementation.

2.15 As mentioned above, since the conversion of the high level implementation plan into a detailed implementation plan requires the

consideration of a wide range of factors, having the stakeholders briefed and engaged early would help prepare them to face the change and help the project team get hold of the operation details in different divisions/sections.

### *Business processes analysis*

2.16 B/Ds need to analyse business processes for incorporating RM processes into business operations. B/Ds may conduct business process re-engineering studies, as part of an ERKS implementation, to link recordkeeping with business needs and to streamline business processes to enhance operational efficiency. Business process re-engineering should be studied early in a comprehensive manner to assess the changes that need to be made to facilitate a successful implementation of an ERKS.

### *Development of RM practices and guidelines*

2.17 The implementation of an ERKS would unavoidably affect the prevailing RM procedures. B/Ds should develop RM practices and guidelines to guide staff members to manage records in the electronic environment. Please refer to ***Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System***<sup>10</sup> for guidance on developing RM practices and guidelines for compliance and reference by B/Ds' staff for the use, management and maintenance of their ERKSs.

## **During implementation**

### *Training and support*

2.18 With the implementation of an ERKS, the roles and responsibilities of various stakeholders would need to be refined. Knowledge and skills for managing records in an ERKS also need to be developed. This calls for a thorough and timely change management

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<sup>10</sup> ***Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/4262.html>).

process which would empower the stakeholders to own and embrace the ERKS, as well as reducing their reluctance in the transition. Training, in particular, is an important change management activity.

2.19 B/Ds should provide timely and suitable training and support to help staff adapt to the ERKS environment and ensure compliance with the Government's and departmental RM policy and requirements.

2.20 B/Ds should consider analysing the training needs and the type and amount of training required having regard to the skill levels of staff. Appropriate content and delivery format of training should be identified for different groups of users to address their specific needs. Please refer to Chapter 10 for more considerations regarding training.

### **After implementation**

#### *On-going governance and review*

2.21 On-going governance structure and resources should be made available to monitor and maintain the ERKS after implementation so as to ensure that the records managed and stored in an ERKS are authentic, reliable and complete. In addition, the ERKS and the departmental RM policies and practices should be reviewed periodically to ensure that they meet the prevailing needs of B/Ds. Please also refer to paragraphs 9.31 to 9.32 for considerations regarding on-going management and maintenance of an ERKS.

### **Total system approach to implementing an ERKS**

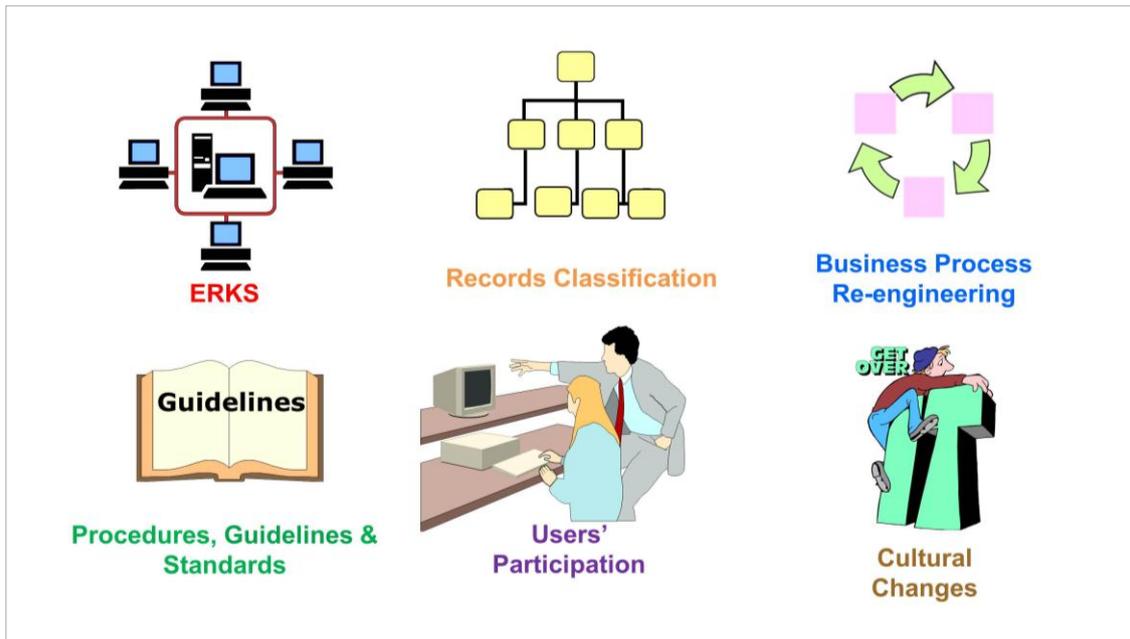
2.22 As revealed in the aforementioned critical success factors, implementation of an ERKS is not just about procurement of hardware and software. It involves profound cultural changes in appreciating the importance of RM, adopting new mode of RM, re-defining roles and responsibilities of staff, enabling integration of business processes with recordkeeping functions and activities, etc. While an ERKS provides an enabling technology to effectively manage records in a hybrid

recordkeeping environment (under which both electronic records and non-electronic records co-exist), it should be accompanied by -

- (a) a departmental RM policy to give a solid backing for incorporating RM into day-to-day business operations;
- (b) written procedures and clearly defined roles and responsibilities of staff on the operation, security control, maintenance and use of the ERKS to ensure the authenticity, reliability, integrity and usability of the records kept in the system;
- (c) systematic and logical records classification scheme(s) to facilitate understanding, retrieval and use of records, and to provide an appropriate basis for security classification, access control and retention and disposal of records; and
- (d) training and support to ensure compliance with the recordkeeping requirements, practices and guidelines.

2.23 For a successful implementation of ERKS, B/Ds should therefore assess the relevance of the above critical success factors having regard to their current state of RM before embarking on the ERKS project, and adopt a total system approach (**Figure 2.2**) to take into account a full range of critical factors to make the implementation a success.

Figure 2.2: Total system approach



### Key points of Chapter 2

- In order to ensure compliance with Government's RM policies, mandatory RM requirements and ERM standards, B/Ds should plan the implementation of an ERKS in a meticulous manner.
- B/Ds should take into account a wide range of critical success factors before, during and after the ERKS implementation to make the implementation a sustainable success.
- B/Ds should also take into account their own specific requirements and adopt a total system approach in the implementation process.

## Chapter 3

# Establishing Good Governance of Project Implementation



### Introduction

3.1 This chapter introduces the importance of establishing good governance of project implementation, the key stakeholders for implementing an ERKS, and their roles and responsibilities in the governance structure.

### Importance of good governance

3.2 Records are the basis on which decisions are made, services provided, and policies developed and communicated. The processes and procedures of how records are created, retrieved, accessed and managed in a departmental RM programme all have a significant bearing to a B/D and its staff. The introduction of an ERKS may impact on the roles and responsibilities in relation to RM as well as the mode of operation and the working procedures of virtually all staff in a B/D, including records users, records managers and other RM staff, and IT staff.

3.3 Therefore, a strong project governance is required to ensure that

the ERKS implementation project meets the project objective, and the ERKS and the associated practice, procedures, training and support, etc. are suitable and useful to the B/D and its users. In addition, it is also critical that the ERKS project is properly managed to ensure that it is implemented on schedule and in a cost-effective manner.

### **Key stakeholders for implementing an ERKS**

3.4 As mentioned in Chapter 2, in order to make an ERKS implementation a success, the contribution from different stakeholders is essential. It is therefore necessary to pull together a team of people who have the requisite skills and knowledge to manage the implementation of an ERKS. Wide-scale involvement and collaboration of the following key stakeholders is critical to the successful implementation of an ERKS -

- (a) senior management;
- (b) DRM and RM staff;
- (c) IT staff;
- (d) records users; and
- (e) vendor community.

### *Senior management*

3.5 Undoubtedly, senior management's full support is essential to the ERKS implementation. Senior management should demonstrate its commitment to the implementation by directing and providing the resources to implement, maintain and continually improve the RM programme (including the ERKS), relevant practices and procedures, training and support, etc. B/Ds should note that such commitment should be communicated widely and visibly to staff, e.g. through internal circulars, staff meetings, bulletins, etc., so that all staff are fully aware of the senior management's commitment.

### *DRM, RM staff and IT staff*

3.6 DRM, records managers and IT staff all play crucial roles in the planning, design and implementation of the ERKS. Implementation of an ERKS is a process requiring significant inputs from both RM and IT. While IT plays an important role in the ERKS implementation, an ERKS is far beyond an information system alone. The RM elements play a crucial role in system planning, development and implementation in order to serve business, accountability and evidential purposes. Close collaboration between RM and IT stakeholders is essential to ensure the broadest understanding of requirements and to maximise the implementation benefits.

3.7 Under the ERKS environment, RM staff (including records managers and records officers) will manage records within a new context and a different set of skills and competencies will be needed. For example, RM staff will need to be accustomed to the ERKS environment and accept new responsibilities for the RM processes such as assigning a records retention and disposal schedule to an aggregation (e.g. a folder) within the ERKS. RM staff, especially those registry staff predominantly involved with filing duties in the paper-based recordkeeping system, should be upskilled in the area of managing electronic records.

### *Records users*

3.8 Implementation of an ERKS will have a significant impact on the RM practices and procedures for all records users. For example, records users will no longer need to print out e-mail records for filing after the implementation of an ERKS; instead, they capture e-mail records directly from the e-mail system to the ERKS. As a result, it is important to ensure active participation by and input from records users so as to make the ERKS beneficial to their work and minimise resistance from them.

### *Vendor community*

3.9 ERKS solutions available in the market usually support system

configuration to meet different specific requirements of user organisations. Therefore, the implementation experience and technical expertise of vendors are essential for system implementation, including proper configuration of the ERKS. In order that the ERKS is suitably designed and properly implemented, the vendors should also have good understanding of the Government's RM and IT requirements as well as B/Ds' specific requirements on business, operation and RM.

### **Skills, knowledge and expertise required**

3.10 The diversified concerns of stakeholders and the sophisticated nature of ERKS implementation would unavoidably increase the complexity of the project and the associated risks. Hence, it calls for people with the necessary skills, knowledge and expertise to implement the project successfully. A B/D will need to draw on skills, knowledge and expertise in the following areas -

- (a) RM - improving the departmental RM programme and complying with Government's RM requirements;
- (b) IT - working on the technical architecture, systems integration and rollout, and ensuring compliance with IT security and other IT requirements;
- (c) project management - ensuring that the project is run in a timely and cost-effective manner;
- (d) change management - managing the impact of change to the way records are created, accessed and managed; and
- (e) business analysis - assisting business owners to map out their business requirements and identify room for improvements.

3.11 Staff members with a suitable mix of skills and expertise are therefore required in the planning and implementation of an ERKS.

3.12 Apart from in-house personnel, a B/D may also need to draw on external resources such as contractors and service providers to assist with

the implementation project. If required, B/Ds may consider engaging external professional support (e.g. consultancy services) with specific experience in ERKS implementation in case internal resources and expertise may not be sufficient in tackling the implementation challenges.

3.13 In addition, as an ERKS will continue to evolve after implementation, B/Ds need to draw on the above skills, knowledge and expertise not only during the implementation, but also after the ERKS is rolled out. The required skills, knowledge and expertise may however vary at different stages of the ERKS's life cycle. For example, after an ERKS has been implemented and electronic records have been stored in the ERKS which need to be kept for long periods, B/Ds should study the issue of preservation of electronic records and the expertise needed for digital preservation to make the ERKS sustainable. Planning carefully for the timing and impact of skill sets required will help B/Ds in ensuring that the resources are utilised efficiently and effectively.

3.14 In order to sustain the on-going maintenance and further development of the ERKS within their organisations, B/Ds should consider practical options for developing and retaining the required skills, knowledge and expertise of in-house personnel, e.g. through training and knowledge transfer, etc. in the course of ERKS implementation and in the longer term.

### **Setting up a governance structure**

3.15 The involvement of a diversified profile of specialists in taking care of the ERKS implementation will present substantial challenges in terms of project management. In order that the project is properly managed and executed for achieving its objectives, a strong governance structure comprising both in-house resources and resources from contractors and service providers is necessary. The organisation's stakeholders should be properly represented in the governance structure for the ERKS implementation, including the senior management, representatives of different business areas, people with RM and IT expertise, and users of the ERKS.

3.16 When drawing up the roles and responsibilities within the governance structure for the implementation of an ERKS in their organisations, B/Ds should make reference to section I and Appendix A of the “Practice Guide to Project Management for IT Projects under an Outsourced Environment” [S19]<sup>11</sup> issued by OGCIO on the generic roles and responsibilities in a typical project governance structure.

3.17 The roles and responsibilities of the governance structure for implementing an ERKS in a B/D should be agreed upon by all participants and fully documented in writing.



#### **RM terminology**

It is important that all members of the project team have a shared understanding with the terminology that will be used as part of the project. For example, the term “archive” may be interpreted by IT members of the project team to mean “copying or transferring computer files for storage”, which is different from what it means from the RM perspective. Another typical example is the term “record”. “Record” is usually interpreted by IT members as an entry in a database table, but this is different from what the records manager interprets.

### **On-going management of the ERKS**

3.18 Implementing an ERKS is not a one-off exercise. Not only should the ERKS be properly managed and maintained on a day-to-day basis, it should also be kept updated and enhanced to cope with technology advances and new or updated business, operational and RM needs, in order to ensure the authenticity, integrity, reliability and

<sup>11</sup> S19 is available on CCGO (<http://itginfo.ccgohksarg/content/pgpm/index.asp>)

usability of government records stored and managed within it. Therefore, there is a continued need for the governance of the ERKS after system rollout to oversee the enhancements and changes made to the ERKS and to monitor the on-going management and use of the ERKS.

3.19 B/Ds should consider how the governance body for the on-going management and maintenance should be formed as its structure may not be the same as that for the ERKS implementation project and the resources involved may change over time. For example, after the ERKS has been running smoothly for some time, meetings of the governance body for the on-going management and maintenance of the ERKS (often named as a maintenance committee) may be held quarterly instead of monthly.

3.20 Governance structures may also be needed for other relevant subjects, e.g. the departmental records classification scheme and the departmental recordkeeping metadata standard<sup>12</sup> developed by B/Ds. If considered appropriate, the governance structure of the ERKS may also take up the governance role of these subjects.

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<sup>12</sup> Please refer to Chapter 7 of RKMS for details on the governance of the departmental recordkeeping metadata standard.

### Key points of Chapter 3

- A good project governance is required to ensure that the ERKS project meets its objective and the ERKS is suitable and useful to the B/D and to its users.
- Involvement and collaboration of the key stakeholders is essential to the successful implementation of an ERKS. Different stakeholders should be properly represented in the governance structure and their interests and needs should be taken into account in the implementation.
- Governance of an ERKS does not end with its rollout. Suitable governance to monitor the on-going management and use of the ERKS is necessary.

## Chapter 4

# Assessing Current RM Environment and Mapping out Future RM Requirements



### Introduction

4.1 This chapter provides guidelines to B/Ds to assess the current RM environment in their organisations and map out the future requirements on RM, and to facilitate such requirements to be implemented in the ERKS projects.

### Review on RM policy, programme, practices and procedures

4.2 It is Government's RM policy that each B/D should establish a comprehensive RM programme for proper management of government records and review it regularly to meet Government's RM requirements and the specific operation and RM needs of a B/D.

4.3 In particular, according to paragraph 25 of General Circular No. 2/2009 entitled "Mandatory Records Management Requirements"<sup>13</sup>, B/Ds should review their RM practices regularly to ensure that their RM programme is functioning effectively. Through such self-assessment,

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<sup>13</sup> General Circular No. 2/2009 is available on CCGO (<http://ref.ccgo.hksarg/csogc/en/c200902e.pdf>).

B/Ds will be able to assess their compliance with the mandatory RM requirements and adoption of good practices as promulgated in the related General Circulars, Administration Wing Circular Memoranda and RM publications and guidelines.

4.4 Besides, in accordance with Administration Wing Circular Memorandum No. 5/2012 entitled “Establishment of Departmental Records Management Policies”<sup>14</sup>, B/Ds should establish departmental RM policy in their organisations and monitor their staff’s compliance with the departmental RM policies. B/Ds should also review the policies at least once every two years to cope with changing circumstances.

### **Addressing RM issues in the context of developing organisational EIM strategies**

4.5 When developing the organisational EIM strategies<sup>15</sup>, B/Ds should have undertaken a comprehensive departmental review<sup>16</sup> to address all the key RM issues before implementing the EIM initiatives, including the implementation of an ERKS.

4.6 As far as RM is concerned, having regard to the results and findings of the departmental review, B/Ds should include in B/Ds’ organisational EIM strategies the gaps, inadequacies, challenges and opportunities for improving RM in their organisations and the priorities and deliberate plan of improvement action. B/Ds should also consider ways and means to implement the improvements as soon as practicable.

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<sup>14</sup> Administration Wing Circular Memo No. 5/2012 is available on CCGO (<http://ref.cgo.hksarg/csocm/en/m201205e.pdf>).

<sup>15</sup> The implementation of an ERKS can commence before the completion of their organisational EIM strategies. In such case, B/Ds should address the key RM issues in a comprehensive departmental review during the planning stage of implementation of an ERKS.

<sup>16</sup> Please refer to Chapter 2 of the *Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies* (<http://grs.host.cgo.hksarg/erm/s04/4222.html>) for details of the review of RM issues in the context of developing organisational EIM strategies.

## Assessing the current RM environment

4.7 Having regard to the reviews conducted as mentioned in paragraphs 4.3, 4.4 and 4.5 above and the improvement made to address the RM issues as a result of the reviews conducted, B/Ds should have a general understanding and a baseline performance of their RM policy, programme, practices and procedures.

4.8 In order to plan for the ERKS implementation, B/Ds should collect more in-depth information on the records, such as the type, format, volume and growth rate of records held in their organisations, and how the records are created, captured and managed in the existing recordkeeping system (usually a paper-based recordkeeping system). One possible way to collect the information is through conduct of a records survey. The ensuing paragraphs provide guidelines to B/Ds on how a records survey can be conducted to collect that information.

### Records survey

4.9 A records survey assists B/Ds to collect detailed information on the users, records, and how users create, capture, use and manage records for mapping out the future RM needs of a B/D and the requirements and specifications of its ERKS.

4.10 For example, B/Ds need to know how records are created/captured to determine what necessary configuration or customisation of the applications in question (e.g. e-mail systems or a departmental business information system) will be required to facilitate records creation/capture. B/Ds may also need to know how many records will be created/captured in the system each month, and whether and how many of the legacy paper files are required to be converted into digital form and migrated into the ERKS, in order to plan the storage requirements.

### *Information to be collected in the records survey*

4.11 The information to be collected in a records survey includes volumetric information, such as the number of users, records, etc. and descriptive information on how RM is performed in the B/D, and the functions and features users need from the ERKS.

4.12 In addition, the information collected in the records survey will also serve as a baseline for measuring the performance of the ERKS against the investment put in the project. Please refer to paragraphs 5.8 to 5.10 for the development of RM-related performance indicators.

4.13 **Appendix 2** of this document provides some sample information to be collected in the records survey. B/Ds may collect additional information as they consider necessary. If some of the information such as number of records is available through other means, the information can be collected by those means instead of the records survey as appropriate.

4.14 The project team may start off the records survey by reviewing the departmental review conducted in the context of developing the B/D's organisational EIM strategy and supplementing and updating it in the records survey. Other available information on RM may also be referenced, such as the existing RM policies, practices and procedures, records inventory<sup>17</sup>, and the business rules for records creation and collection<sup>18</sup>.

### *Approach for conducting the records survey*

4.15 The approach to be taken for conducting a records survey is subject to the size of a B/D and complexity of the B/D's primary functions and activities. The records survey can take the form of questionnaires,

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<sup>17</sup> According to General Circular No. 2/2009 entitled "Mandatory Records Management Requirements", B/Ds should maintain an accurate inventory of record.

<sup>18</sup> According to Administration Wing Circular Memorandum No. 4/2012 entitled "Guidelines on Creation and Collection of Records", B/Ds should establish, document and promulgate business rules for records creation and collection.

workshops or interviews, or a combination of them. It may be conducted by the project team of the ERKS project or a specialised task force as considered appropriate by the B/D.

4.16 The records survey can identify key stakeholders' views on the performance of the current recordkeeping system, its shortcomings, and the new functions and features they desire from the new system. Given the RM practices in different divisions/sections may vary significantly, the survey will allow the project team to understand the RM practices adopted in different divisions/sections and collect any specific requirements needed to facilitate their operations in the ERKS environment.

4.17 B/Ds may make reference to Appendix 2 of the *Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies* and **Appendix 2** of this document to develop a set of key questions for questionnaires or interview. These questions will ensure the study is thorough and focused. Core questions can be supported by supplementary and follow-up questions as appropriate to gather the evidence on the RM issues.



#### **Management sponsorship**

It is crucial to have top level sponsorship for the project. The invitation to complete the questionnaires or attend the workshop or interview issued by the project team should be signed by the project owner or a senior member of the management. The invitation should provide a short introduction and description to RM and the ERKS project and make it clear that the project is of a very high priority and that the co-operation of every staff member is sought and expected.

## Mapping out future RM requirements

4.18 After collecting the relevant information from divisions/sections through the use of questionnaires, workshops and/or interviews, the project team should then analyse the information to provide a basis for mapping out the RM requirements of the B/D in various aspects, including -

- (a) whether and how departmental RM policy, processes, practices and procedures can be applied or adopted in the ERKS environment;
- (b) whether any functionality or features are required for the ERKS to meet departmental business, operational and RM requirements, on top of FR of an ERKS and RKMS promulgated by GRS;
- (c) whether and how the records classification scheme(s) should be enhanced for use in the ERKS;
- (d) whether and how the records retention and disposal schedules should be revised for use in the ERKS;
- (e) how the roles and responsibilities of users will change in working in the ERKS environment;
- (f) the scope for data conversion and migration;
- (g) whether the ERKS should be integrated with other IT applications or systems; and
- (h) what change management and staff training programme is necessary.

4.19 The analysis of the records survey will have a bearing on the scope and implementation plan of the project. A B/D should carefully review and update if necessary the implementation plan of an ERKS proposed in its organisational EIM strategy.

#### Key points of Chapter 4

- Improvements to the existing RM programme may need to be put in place before implementing an ERKS. The first step that a B/D should take is to assess the current RM environment.
- It is advisable for B/D to conduct a records survey to facilitate an in-depth understanding of various operational matters for assessing the current RM environment. The results collected and analysed from the records survey provide a basis for a B/D to map out its future RM requirements.

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## Chapter 5

# Developing a Business Case



### Introduction

5.1 This chapter introduces the considerations for developing a business case for implementation of an ERKS.

### Benefits of developing a business case

5.2 A business case is a description of the reasons and justification for undertaking a project, based on the estimated costs of the project, the risks and the expected business benefits and savings.<sup>19</sup> Developing a business case is a structured way to demonstrate the justification for the project. A well-defined business case will enable senior management to decide whether to support the proposed project before significant resources are committed to its development, and will serve as a basis for preparing the funding application.

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<sup>19</sup> Adopted from section 6.1 of “Practitioner Guide on PRINCE” [G38] issued by OGCI (http://itginfo.ccgo.hksarg/content/sm/docs/G38.doc).

## RM-related considerations for developing a business case

5.3 While a blueprint for a B/D's EIM implementation, including the implementation of an ERKS in its organisation, has been laid down in the organisational EIM strategy, the B/D should develop the business case on the basis of its organisational EIM strategy and the analysis results of the records survey as detailed in paragraphs 4.9 to 4.17. The key RM-related considerations are detailed in paragraph 4.18.

5.4 These RM-related considerations will have a bearing on the scope, cost and implementation plan of the ERKS project. Therefore, deliberations should be given to whether any external support (e.g. consultancy services) are required to achieve the above and other tasks, and whether the implementation plan<sup>20</sup> is realistic, having considered the current RM environment and the future RM requirements of the B/D, for inclusion into the business case.

5.5 Given that the implementation of an ERKS is a sophisticated process, having a properly developed business case in place will help B/Ds monitor and evaluate whether the project is proceeding according to the objectives of the project during the implementation process.

## Contents of a business case

5.6 Since the characteristics of B/Ds may vary, the contents of a business case may not be the same across different B/Ds. While B/Ds would have their specific needs to address, a typical business case for the implementation of an ERKS may cover the following information and factors -

- (a) objectives of the project;
- (b) summary of the existing RM environment and how the

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<sup>20</sup> More guidelines on how to develop an implementation plan of an ERKS are available in the *Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies* (<http://grs.host.ccg.hksarg/erm/s04/4222.html>).

- implementation of an ERKS will improve RM;
- (c) business benefits of implementing an ERKS, including the impact and effect the ERKS will have on business immediately after implementation and beyond;
  - (d) project budget;
  - (e) options and recommendations;
  - (f) implementation plan; and
  - (g) stakeholders' involvement and change management initiatives.

5.7 The above list serves only as a reference for B/Ds and is not intended to be exhaustive. B/Ds may make reference to section 6.1 of "Practitioner Guide on PRINCE" [G38]<sup>21</sup> issued by OGCIO for general guidelines on business case for IT projects and include additional items in their business case to suit their specific business and operational needs.

### **Development of RM-related performance indicators**

5.8 Implementing an ERKS requires investment of a B/D in terms of financial resources, manpower and time. It is therefore important to evaluate the implementation of an ERKS with suitable indicators.

#### *Drawing up performance indicators*

5.9 Given that the scope of ERKS implementation projects of individual B/Ds varies<sup>22</sup> and the approach for implementation<sup>23</sup> may not be the same, it would be unrealistic to identify a "standard" set of performance indicators across different B/Ds. Nonetheless, some general consideration on the performance indicators is given below -

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<sup>21</sup> G38 is available on CCGO (<http://itginfo.ccg.hksarg/content/sm/docs/G38.doc>).

<sup>22</sup> An ERKS may be implemented as a stand-alone system, or a module of an integrated EIM solution having integration with a number of business information systems.

<sup>23</sup> For example, B/Ds may roll out an ERKS to all their staff in one go, or using a phased approach to roll out the system to different sections or groups of staff with necessary business process re-engineering and automation built in over time. Please refer to Chapters 6 and 9 for more details on the implementation and rollout approach of an ERKS.

- (a) savings in staff efforts or more efficient use of staff time due to improved effectiveness and efficiency in managing records;
- (b) storage space savings and cost savings from equipment and consumables such as filing cabinets, paper, printer cartridges, etc.;
- (c) improved access to records by all appropriate staff;
- (d) improved security and access control;
- (e) improved accountability through the creation and preservation of records as reliable and authentic evidence;
- (f) improved ability to share records with other staff, in particular those in different physical locations; and
- (g) increased flexibility when accessing and using records, such as access outside office hours, enabling staff to respond more effectively and quickly to business requirements.



### **Records sharing**

It is a common phenomenon that, under the paper-based environment, duplicate sets of records across different registries are kept due to the physical distance between divisions/sections and the impracticality of sharing files. Sharing of records in an ERKS will, as a result, greatly reduce these duplicate sets of records and result in reduction in storage and other costs.

### *Assessing the benefits*

5.10 B/Ds should consider the indicators to assess the benefits carefully such that different performance measurement methods should

be considered and evaluated. Besides quantitative indicators, B/Ds should consider adopting qualitative performance measurement methods such as conducting surveys, focus group discussions or interviews, etc. to measure the business benefits from the users' perspective. In conducting the records survey as detailed in Chapter 4, B/Ds can also build in the necessary indicators in the survey so that these indicators can be used as references for evaluation of the ERKS implementation during and upon completion of the project.

#### Key points of Chapter 5

- It is important for B/Ds to develop a proper business case to gain senior management support and serve as a basis for funding application. Development of a realistic implementation plan and allocation of sufficient resources are of utmost importance to the successful implementation of an ERKS.
- B/Ds should take into account a wide variety of factors in developing a business case. Among others, special emphasis should be put on reviewing RM-related issues.

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## Chapter 6

# Determining Implementation Approach



### Introduction

6.1 After mapping out the future RM requirements and developing a business case, the next step is to determine the implementation approach of an ERKS and select a suitable ERKS solution for the B/D.

6.2 This chapter aims to provide guidance for B/Ds to formulate a suitable and robust ERKS implementation approach and select an appropriate ERKS solution as necessary.

### Implementation approach

6.3 As discussed in Chapter 1, OGCI0 is developing common shared ERKS services<sup>24</sup> to facilitate implementation of ERKS in B/Ds. Since the services provide a consistent and interoperable platform to suit the common RM requirements of B/Ds, it is expected that the majority of B/Ds will adopt the common shared services for implementation of an

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<sup>24</sup> As of publication of this document, details of the common shared ERKS services are yet to be announced. B/Ds may refer to the EIM theme page on CCGO (<http://itginfo.cgo.hksarg/content/eim/index.asp>) for the latest information.

ERKS. Having said that, B/Ds may, according to their specific RM and business requirements, consider adopting one of the following two other common approaches on their own to implement an ERKS -

- (a) procuring a commercial-off-the-shelf (COTS) ERKS solution with a certain degree of system configuration and/or customisation; or
- (b) developing an ERKS from scratch.

6.4 The characteristics of the three implementation approaches are discussed in the ensuing paragraphs.

### **Adopting common shared ERKS services**

6.5 The common shared ERKS services are centrally provided by OGCIO under the government cloud platform to facilitate wider and faster implementation of ERKS in the government. As the services are provided on the government cloud platform, B/Ds which use the services would obviate the need to procure their own hardware and system software for implementing an ERKS.

6.6 The services have been assessed to have complied with the mandatory requirements prescribed in the FR of an ERKS and RKMS promulgated by GRS, and should therefore suit the common RM requirements of B/Ds.

6.7 In addition, B/Ds adopting the services will enjoy other typical advantages of cloud-based services. To name just a few, the scale of subscription (e.g. disk space) can be easily adjusted to meet operational needs, and the on-going maintenance of hardware and system software will also be taken care of by the services.

6.8 B/Ds should consider, in particular if they have specific RM and business requirements for implementation, whether and how well the common functionality and features available in the common shared services can address the needs of the B/Ds. Customisation is in general

not recommended in the common shared services. B/Ds with specific needs should consult OGCIO and consider whether such customisation will affect the common design and configuration of the services.

### **Procuring a COTS ERKS solution with a certain degree of system configuration and/or customisation**

6.9 ERM has been a proven solution for managing records in a consistent, efficient and integrated manner for over a decade in overseas jurisdictions. There are many ERKS solutions available in the market, and a large proportion of the products are branded internationally and have been adopted by multinational corporations and public organisations. With a certain degree of system configuration and/or customisation, these COTS ERKS solutions should meet the mandatory requirements set out in FR of an ERKS and RKMS promulgated by GRS.

6.10 Should B/Ds consider, after evaluating the suitability of common shared ERKS services, that they prefer to source alternative ERKS solution for greater flexibility for configuration and/or customisation, they might consider the approach to procure a COTS ERKS solution from the market. The major advantage of this approach is that it provides B/Ds with the flexibility of developing specific functionality and features that suit B/Ds' business and operational needs, while enjoying the advantage of adopting a mature ERKS solution with proven implementation histories.

6.11 Nevertheless, B/Ds should ensure that the selected COTS solution with the customised functionality should meet the government's RM policy and ERM requirements, relevant IT security requirements, as well as the specific RM, business and operational needs of the B/Ds.

6.12 Please see paragraphs 6.17 to 6.26 below for considerations for selecting an ERKS solution.

### **Developing an ERKS from scratch**

6.13 Developing an information system from scratch by a B/D (also

referred to as the “bespoke” approach) is a common approach for the development and implementation of information systems which suit the specific business needs of a B/D. In the context of implementing an ERKS, a bespoke ERKS will provide a B/D with tailor-made functionality and features to satisfy all its specific business, operational and RM needs.

6.14 In addition, developing an ERKS from scratch will save the licence maintenance fees that are required to be paid to the supplier of a COTS solution on a recurrent basis, usually being a portion of the price of the licence fee to be paid annually.

6.15 Indeed, it is unavoidable that the bespoke approach requires a longer design and development schedule, higher development cost, and hence involves greater risks. B/Ds should carefully consider the efforts required for the design, development and testing, maintenance efforts including those for system enhancement and upgrading, and the expertise in RM and IT required for both the implementation stage and on-going management.

6.16 Again, B/Ds should ensure that the ERKS developed should meet the government’s RM policy and ERM requirements, relevant IT security requirements, as well as the specific requirements of the B/Ds.

### **Selecting an ERKS solution**

6.17 As mentioned above, B/Ds may determine to procure an ERKS solution from the market for system configuration and/or customisation to meet the government ERM requirements and their specific RM and business needs.

6.18 While “shopping” for a most suitable ERKS solution, B/Ds should not be distracted by the whistles and bells as marketed by the ERKS solutions but should conduct thorough research and assessment of the potential solutions with reference to government’s ERM requirements and B/Ds’ specific needs, among others. B/Ds are advised to adopt a systematic approach to assess the suitability of potential ERKS solutions

and document the decision and underlying rationale by consolidating them into an evaluation report as appropriate.

6.19 In assessing the suitability of potential ERKS solutions, B/Ds should focus on the following considerations -

- (a) functionality and features;
- (b) support from vendor and contractor;
- (c) user's acceptance; and
- (d) cost-effectiveness.

### *Functionality and features*

6.20 It is imperative to look into how well the potential solution meets the government's ERM requirements, including the FR of an ERKS and RKMS, and also the specific RM and business requirements of the B/D. If a large portion of the requirements cannot be met out-of-the-box or by configuration alone (i.e. customisation is required), the efforts required for design and implementation, and hence the time and cost necessary, will probably be very large.

6.21 The comparison among ERKS products can be made from the product specification or information provided by the vendors, and B/Ds may also request for demonstrations of system functionality and features by the vendors of the potential products. B/Ds should pay special attention to fundamental design issues in relation to their specific needs and ensure that those requirements are supported by the product. For example, the product should support multiple system administrators to set the access control and permissions if a B/D proposes to adopt a decentralised mode of managing the records classification scheme including its access control.

6.22 Besides the system functionality, B/Ds should also consider from a wider perspective the "customisability" of the products. The capability for customisation is one of the important considerations for the

implementation of an ERKS because it would severely affect the project delivery schedule and the associated costs. For example, if an ERKS product has a robust development architecture and a complete set of tools is available for building additional functional modules, the efforts for delivering additional functions could be comparatively low, thus speeding up the project delivery and reducing the associated cost.

### *Support from vendor and contractor*

6.23 Given the sophistication of ERKS solution, the availability of sufficient vendor support is of utmost importance. Since many available vendors that provide the ERKS solutions may be with international background, B/Ds should pay special attention to whether the relevant vendor could provide sufficient local support that matches the needs and requirements of the B/Ds. For example, if a major problem arises during user acceptance testing or after the system goes live, can the vendor provide efficient local support to solve the problem; or the necessary support can only be provided by a subject expert who is overseas and working in another time zone?

### *Users' acceptance*

6.24 When selecting the ERKS solution, the users' experience would likely affect their learning curve and how well they are willing to adopt the electronic mode of recordkeeping. For example, if the function menus are intuitive to users, or the user interface is similar to that of existing information systems, the users' experience will definitely promote the adoption of the selected ERKS.

6.25 Furthermore, B/Ds should also take users' opinions on the functionality and features into consideration in the selection of the ERKS solution so as to enhance users' confidence and willingness to adopt the ERKS.

### *Cost-effectiveness*

6.26 As implementing an ERKS project would involve a substantial

amount of resources, B/Ds are advised to evaluate critically the proposed ERKS solution from a value-for-money perspective so as to ensure that the resources are well spent on the ERKS to meet the RM needs effectively. Please also refer to paragraphs 6.28 to 6.30 below.

### **Implications of different implementation approaches**

6.27 There is no single “best” implementation approach of an ERKS that suits the requirements and needs of all B/Ds. Different implementation approaches have their respective strengths and weaknesses, and B/Ds should take into account their own circumstances to determine the most suitable implementation approach to them. Some general implications and considerations of determining the implementation approach are set out in the ensuing paragraphs.

#### *Estimated costs*

6.28 Undoubtedly, adequate funding is of paramount importance for the implementation of an ERKS. B/Ds should gauge all costs associated with the ERKS implementation, including non-recurrent and recurrent costs, as well as indirect costs before determining the approach of implementation.

6.29 Non-recurrent costs include the costs for hardware, software, system development and implementation services, provision of user training, and for the procurement of security risk assessment and audit service, etc. Recurrent costs are costs incurred regularly for hardware and system maintenance services, licence maintenance fees, support services, and training costs for new users, etc. Besides, indirect costs such as those costs for upgrading the IT infrastructure and the users’ PCs, etc. should also be taken into account when assessing the implementation approaches.

6.30 In particular, B/Ds should pay attention to the licensing model of the ERKS solution because this would have a significant impact on the recurrent costs. For example, some solutions may charge a relatively low

price for the initial implementation but then charge a substantial percentage of the original project cost as the annual maintenance fee; some solutions may set a minimum order quantity (say 10 or 50) for the procurement of additional licences, thus limiting the flexibility for B/Ds to procure a small amount of additional licences. Hence, B/Ds should also take into account the licensing model along with their long term operational needs when calculating the estimated costs.

### *Resources*

6.31 Apart from the costs for implementation and on-going maintenance, B/Ds should also consider other tangible and intangible resources required for different implementation approaches. Examples of tangible resources include manpower, equipment, venues (e.g. for digitisation of legacy paper records), etc., while intangible resources refer to knowledge and expertise on RM and IT, support from senior management and other key stakeholders, training capabilities, etc.

6.32 Since the amount of resources required varies with different implementation approaches, B/Ds should be well aware of their own capabilities and determine the implementation approach accordingly. For example, developing an ERKS from scratch by a B/D itself would require the most resources among the three implementation approaches, especially in terms of expertise in RM and IT.

### *Schedule*

6.33 The delivery schedule of a project is often one of the dominant considering factors for the implementation approach. Larger extent and complexity of customisation would mean longer development and implementation timeframe, which in turn introduces higher risks for project slippage. B/Ds should assess prudently the delivery schedule having regard to the extent and complexity of the customisation required when determining the implementation approach.

### Key points of Chapter 6

- B/Ds should determine a suitable implementation approach and select an appropriate ERKS solution in considering their specific RM and business requirements.
- Common shared ERKS services provided centrally helps B/Ds in reducing costs and time in implementing an ERKS.
- For greater flexibility to develop system functionality and features that suit B/Ds' specific business and operational needs, B/Ds can consider procuring a COTS ERKS solution with a certain degree of system configuration and/or customisation or developing an ERKS from scratch.
- B/Ds should adopt an overall approach in determining the implementation approach so that relevant factors including costs, resources, schedule and users' acceptance are well taken into account.

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## Chapter 7

# Developing Requirements Specification



### Introduction

7.1 As set out in Chapter 4, a B/D should map out its future RM requirements. For the procurement and implementation of an ERKS, these RM requirements need to be transformed into detailed specification.

7.2 This chapter highlights the consideration involved in developing requirements specification in relation to RM for the implementation of an ERKS. As technical requirements fall beyond the scope of this document, B/Ds should approach their ITMUs or OGCI/O for advice in this regard as appropriate.

### Stakeholder engagement

7.3 As discussed previously in Chapter 4, key stakeholders should be appropriately involved in the records survey so as to identify, among others, the new functions and features they need from the new system. In transforming these requirements to specification, key stakeholders

should also be engaged so that their views and concerns can be taken into account accordingly in developing the requirements specification.

### **Government RM policy and requirements**

7.4 In developing the requirements specification, B/Ds should ensure compliance with the Government RM policy and ERM requirements, including the FR of an ERKS and RKMS.

7.5 The requirements set out in FR of an ERKS and RKMS are high-level requirements. B/Ds should set out their detailed requirements in the requirements specification. In particular, use of workflow is an optional requirement set out in FR of an ERKS. B/Ds are encouraged to consider using workflow functions in the ERKS in order to enhance operational efficiency, facilitate the automation of RM activities and integrate RM processes with business tasks, e.g. automatic capture of records. In such case, specific requirements on the workflows should be included in the specification.

7.6 On the foundation of the common RM requirements specified in the FR of an ERKS and RKMS, B/Ds may specify additional functionality to meet their specific business and RM needs. In the circumstances, the general principle of preserving the authenticity, integrity, reliability and usability of records should be ensured and the additional functionality as specified should not compromise the purpose of an ERKS.

7.7 For example, B/Ds may include in their ERKS specification the requirement for bringing up a record periodically (e.g. quarterly) to a user or a group of users to facilitate a timely reminder for action. However, such bring up function should not allow any user to amend, remove or add any content to the record. Otherwise, the authenticity and integrity of the record will be compromised.

7.8 Developing requirements specification of additional functionality to address B/Ds' specific business and RM needs does not necessarily apply only when a B/D selects to implement an ERKS from scratch (i.e. the

bespoke approach). B/Ds may also specify such additional functionality even if it has selected to implement the ERKS through subscribing to the common shared service or by adopting a COTS with a certain degree of system configuration and customisation, although whether and how these additional functionality is to be configured or customised into the solutions might be a consideration in the implementation approach to be adopted. Please refer to Chapter 6 for the formulation of implementation approach for an ERKS.

### **Integration with other information systems**

7.9 B/Ds should carefully consider the need to have the ERKS integrated or interfaced with prevailing information systems. From the information collected in the records survey in relation to the electronic records created in the information systems such as the B/D's e-mail systems as mentioned in Chapter 4, a B/D should consider whether and how to integrate the ERKS with these information systems for capturing records from the information systems into the ERKS for storage and management.

7.10 B/Ds should note that in most cases integration with existing information systems will require additional specification, design, configuration, testing and implementation, possibly with assistance from the service provider of the information systems in question.

7.11 As the integration of the ERKS with different information systems would vary, B/Ds are advised to state the requirements clearly and specifically to avoid misunderstanding and misinterpretation.

### **System development and configuration**

7.12 When developing the aforementioned requirements specification, B/Ds should ensure that the specification would be well understood by the relevant vendors and contractors so that the requirements are to be fulfilled no matter what implementation approach is adopted. Careful planning at this stage is important to avoid resulting

in significant schedule and resource implications at a later stage. On the other hand, implications to the resources required and proposed implementation plan may need to be monitored and re-assessed as necessary.

7.13 B/Ds should note that improper configuration of an ERKS solution may compromise the authenticity, integrity and security of records. Therefore, B/Ds should check and verify the system configurations during testing stage to ensure compliance with the specified requirements. The vendor should also be carefully cautioned that such incorrect configurations may compromise the function of an ERKS.

#### Key points of Chapter 7

- Key stakeholders should be involved and engaged early in developing requirements specification so that their needs and views could be taken into account.
- B/Ds should take into account their own specific RM and business needs when developing the requirements specification but such requirements should not compromise the purpose of an ERKS.
- Integration of the ERKS with prevailing information systems should be considered and specified clearly to avoid misunderstanding and misinterpretation.

## Chapter 8

# Reviewing and Enhancing Records Classification Schemes



### Introduction

8.1 An effective records classification scheme facilitates understanding, retrieval and use of records and provides an appropriate basis for RM activities such as security classification, access control, retention and disposal of records and protection of vital records. It is critical to the successful implementation and use of an ERKS. This chapter provides guidelines on reviewing and enhancing the records classification schemes of B/Ds for adoption in the ERKS environment.

### Importance of a records classification scheme

8.2 Records classification is a systematic identification and arrangement of records into categories according to logically structured conventions, methods, and procedural rules represented in a classification system.

8.3 A records classification scheme (also known as file plan) is a plan or list in which records of an organisation are categorised according to its

business functions and/or contents of the records and a coding system expressed in symbols (i.e. alphabetical, numerical, alphanumerical, or decimal, etc.) that correspond to aggregations of records and are affixed to the records so categorised.

8.4 To facilitate a wide range of RM activities, including identification, capturing and retrieval of records, security and access control as well as retention and disposal, records should be systematically organised according to a records classification scheme. An effective records classification scheme is conducive to effective RM. According to General Circular No. 2/2009 entitled “Mandatory Records Management Requirements”, B/Ds should -

- (a) adopt the standard classification scheme for all their administrative records;
- (b) establish their classification schemes for programme records; and
- (c) review their records classification schemes every two to three years.



**Can a search engine replace the records classification scheme?**

Some people may suggest that it should be possible to save all electronic records in one single computer storage device without proper records classification system in place, since the computer program may allow for sophisticated searches. While it is true that an automated system could provide handy and quick searching and retrieving functions, it would still be difficult or impossible to locate an electronic record if the terms used to search for it are not specific or accurate enough to match the actual words or phrases used within or associated with the record, or if the different versions of the

words or phrases are used interchangeably (e.g. acronyms and full names, British English spelling versus US English spelling, etc.). Therefore, a proper classification of records would be instrumental to ensure effective search and retrieval of the electronic information.

In addition, electronic records should be organised to facilitate their management as a group, rather than as disorganised items. Records retention and disposal requirements should be applied to records on group basis so that they could be handled in the same manner and at the same time. It is particularly important to ensure that all records are managed in a consistent manner. It is a serious maladministration or even a breach of the law that a record that ought to have been kept has been destroyed or a record that should have been destroyed was kept in error. Managing records in an aggregate and organised manner is the only efficient and effective way to ensure consistency and reliability in RM.

## Reviewing and enhancing the records classification scheme

8.5 B/Ds should follow the principles and guidelines to establish and review their records classification schemes set out in the relevant requirements and guidelines, including Appendix II to General Circular No. 2/2009 and GRS' RM Publication No. 3 - Subject Filing<sup>25</sup>. In the course of developing their organisational EIM strategies, B/Ds should have reviewed and assessed whether their records classification schemes should be revised and enhanced prior to implementing an ERKS.<sup>26</sup>

8.6 The ensuing paragraphs set out some issues of concern which B/Ds should take into account when reviewing and enhancing their

<sup>25</sup> GRS' RM Publication No. 3 - Subject Filing is available on CCGO (<http://grs.host.cngo.hksarg/pub3.htm>).

<sup>26</sup> Please refer to *Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies* (<http://grs.host.cngo.hksarg/erm/s04/4222.html>).

records classification schemes prior to ERKS implementation.

### *Organisation-wide records classification scheme*

8.7 Owing to the physical constraints of the paper-based filing system, sharing of files among different divisions/sections is difficult and therefore each division/section keeps its own set of administrative files for instance. In the context of using an ERKS, sharing of records becomes possible and so there may not be a need for each division/section to keep its own set of administrative files as in the paper-based environment. To maximise the benefits of an ERKS, B/Ds may consider consolidating files of the same nature and assigning proper access rights to the appropriate officers. However, it is usually not possible simply to adopt the existing paper-based classification scheme for the management of electronic records in an ERKS. It is therefore necessary that the existing paper-based records classification scheme should be reviewed and refined before it is put to use in the ERKS environment. B/Ds should note that the legacy records classification scheme should continue to be maintained for the purpose of retrieving the legacy paper files until all such legacy files are disposed of (i.e. destroyed or transferred) or re-classified using the new records classification scheme.

8.8 Implementation of an ERKS provides a good opportunity to make improvements and develop a better environment to meet a B/D's operational and RM needs. A new or revised records classification scheme is often necessary in order to manage both electronic and non-electronic records in a co-ordinated manner. In particular, if the classification scheme being used in the paper-based environment is inadequate in one way or another, it should not be transferred or replicated for the ERKS.

8.9 While the complexity of a records classification scheme will depend on a wide range of factors such as the size of the B/D, complexity of its functions and the level of autonomy of its divisions and sections, B/Ds may consider adopting a single records classification scheme in an ERKS setting covering both administrative and programme records of their

organisations. Many of the benefits of implementing an ERKS lie in the value of sharing records. Therefore, adopting a single records classification scheme organisation-wide can encourage and facilitate staff from different divisions and sections to use common parts of the records classification scheme for sharing of information and records.

### *Characteristics of a good records classification scheme*

8.10 A well-structured and effective records classification scheme will -

- (a) support business, operational and RM requirements;
- (b) be easy to understand, use and maintain;
- (c) be precise to facilitate quick identification and retrieval of records;
- (d) be complete and comprehensive;
- (e) be flexible and expandable allowing for changes in the nature of work and records over time;
- (f) be fully documented so that all the rules and structures used to classify records are consistent; and
- (g) be reviewed and revised on an on-going basis, to cope with changes over time.

8.11 The goal of an effective records classification scheme is to enhance usability of access to records throughout the organisation. Therefore, besides considering the needs and requirements of the records managers, it is essential to keep the users' operational needs and understanding in mind. Users will resist a scheme that is too complex and difficult to use.

### *Who should be involved in the enhancement?*

8.12 Since the records classification scheme is to be adopted by the whole B/D, apart from records managers with experience in records

classification, users and RM staff in various divisions/sections should also contribute to the enhancement of the records classification scheme. It is recommended that the DRM or ADRM with experience in records classification should co-ordinate the enhancement exercise. B/Ds may also consider engaging external consultants with significant experience in the development of classification schemes and in ERM to assist in the enhancement, if necessary.

### *Review and enhancement process*

8.13 The review process usually starts with reference to existing records classification schemes and works in an iterative manner involving RM staff in various divisions/sections towards an effective classification scheme.

8.14 During the review and enhancement process, B/Ds should bear in mind the required characteristics of a good records classification scheme as set out in paragraph 8.10 above. They may make reference to GRS' RM Publication No. 3 - Subject Filing and the checklist at **Appendix 3** of this document for guidelines and tips for developing an effective records classification scheme.

### *Deploying the enhanced records classification scheme*

8.15 Depending on the size of a B/D and complexity of its functions, before the enhanced records classification scheme can be put into use in an ERKS, there may be a need to pilot the enhanced records classification scheme in selected divisions/sections by classifying records to the enhanced scheme and by mapping the existing files to the enhanced scheme to see if it fits in the operational needs of users. Feedback collected from users should be taken into account to further refine the records classification scheme.

8.16 After finalising the records classification scheme, approval of the new records classification scheme from the DRM<sup>27</sup> of a B/D is necessary

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<sup>27</sup> Paragraph 8 of General Circular No. 2/2009 stipulates that new classification schemes for a B/D

before it is deployed for use in an ERKS.

### Naming conventions

8.17 In tandem with establishing a well-structured and effective records classification scheme, B/Ds should also consider standardising the way in which folders and records are named. Naming conventions or other controlled language facilitate better management of information in an ERKS by -

- (a) linking records relating to the same purpose;
- (b) providing greater consistency in titling aggregations and records by providing standardised headings or keywords that staff should use in their titles;
- (c) improving the effectiveness of searching for and retrieving information when required;
- (d) encouraging common use of language for similar work; and
- (e) improving the sorting of records into logical sequences.

8.18 Please refer to **Appendix 4** for some general tips for naming conventions of aggregations.



#### **Naming conventions**

If your B/D has existing naming conventions that are working well and are used by staff, these conventions could be adopted for use in the ERKS. If not, they should be developed and tested in consultation with your B/D's end users before the new ERKS goes live.

## Documentation of a records classification system

8.19 Besides the records classification scheme, a records classification system comprises and is supported by finding aids and tools (e.g. scope notes, file index and cross-referencing rules, thesaurus/controlled vocabulary) and file manual. B/Ds should maintain appropriate documentation to enhance the accuracy of filing records and speedy retrieval of aggregations and records, and facilitate on-going maintenance of the records classification system.

### Key points of Chapter 8

- The existing paper-based classification scheme is usually not adequate to be adopted directly for the management of electronic records. B/Ds may revise or develop a new classification scheme for use in the ERKS.
- A records classification scheme should be well-structured and effective to enhance usability of access to records throughout the organisation. It is essential to keep the users' operational needs and understanding in mind.

## Chapter 9

# Other Key Implementation Issues



### Introduction

9.1 Besides formulating the approach for implementation and specifying the requirements of an ERKS as discussed in Chapters 6 and 7 respectively, there are other key implementation issues which will have an effect on the overall implementation plan and should be thoroughly considered before the implementation of an ERKS starts.

9.2 This chapter provides B/Ds with guidelines on the considerations on the following key implementation issues -

- (a) data conversion and migration;
- (b) handling of new paper records;
- (c) rollout approach;
- (d) business continuity and disaster recovery plan;
- (e) provision of support services; and
- (f) on-going management and maintenance.

## Data conversion and migration

9.3 In the review conducted when developing the organisational EIM strategies<sup>28</sup>, B/Ds should have considered, from a strategic point of view, whether there is a need to conduct data conversion for existing non-electronic records and migration of existing electronic records into an ERKS. If such need is confirmed, B/Ds should assess the magnitude of work involved and the implications in terms of cost and time with reference to the results and findings of the records survey as discussed in Chapter 4.

### *Need for digitisation*

9.4 Converting existing paper records into digitised form for management in an ERKS will surely improve the accessibility of records; for instance, it allows concurrent access by multiple users and supports search for the record content. However, the conversion process can be costly, time consuming and technically challenging. Under most circumstances, it is not necessary nor practical to digitise all existing paper records for management in an ERKS.

9.5 B/Ds should therefore approach the issue based on the business needs and the cost-and-benefit analysis for the migration. Here are a few questions for B/Ds to consider when assessing the need for conversion of existing paper records and the volume of such records -

- (a) What is the retrieval rate of the records and the need for concurrent access? If the records are to be retrieved by one or two officers in the same office, the need for retrieval may not justify the efforts for digitisation.

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<sup>28</sup> The implementation of an ERKS can commence before the completion of their organisational EIM strategies. In such case, B/Ds should address the key RM issues in a comprehensive departmental review during the planning stage of implementation of an ERKS.

(b) Are the records to be digitised worthy of long-term retention? If the records are going to be kept for a short period of time, say two years, the cost of scanning will likely far outweigh any storage costs incurred.

(c) How are the scanned records to be “profiled” so that they can be found? What naming convention will be used? What other data for accessing the records will be needed? How much of this data can be captured automatically and how much will have to be input manually?

(d) Are there any legal concerns associated with replacing paper records with electronic ones? The B/D needs to be able to confirm the authenticity and integrity of the scanned copies, and there may be legitimate reasons for retaining the originals instead of or as well as providing electronic versions.<sup>29</sup>

(e) Are the paper-based originals suitable for scanning? If the quality of the electronic product is not high enough, the original may need to be retained for evidential or information purposes. It is important to test the scanning process before committing to widespread scanning projects, in case some records are not suitable for scanning and must be retained in their original form.

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<sup>29</sup> If a B/D prepares to destroy the original records after digitisation and before the expiry of the approved retention period governing the records, it should refer to the guideline on “Disposal of Original Records (for records that have been digitised and stored in a digital form)” for the procedures to seek prior agreement of GRS Director for early destruction of original records. The guideline is available on CCGO (<http://grs.host.cgo.hksarg/erm/s04/415.html>).

- (f) How long should electronic and paper copies be retained? Once a paper record is scanned, the B/D needs to clarify if the original will be destroyed immediately or if it will be kept for a certain time, if not permanently. The B/D will also have to determine which version will be considered the authoritative record, if both are to be retained.

### *Digitisation approach*

9.6 After the need for digitisation and the magnitude of work involved are confirmed, B/Ds could consider whether the conversion is to be conducted in one go or by phases, and whether it is done by in-house staff or outsourced to a contractor. Inevitably, the selected approach will have implications on the cost, time and efforts required.

9.7 **Appendix 5** outlines some major considerations that B/Ds might have to ponder in the selection of the conversion approach for reference.

### *Technical standards*

9.8 Irrespective of the conversion approach to be deployed, B/Ds should establish technical standards for the scanning outputs, including file format, image resolution, colour management, etc. For example, B/Ds should designate file formats based on open and non-proprietary standards to ensure the accessibility of digital copies by different software systems over time. B/Ds should also capture or supplement the necessary metadata of the digitised records during the conversion and migration. These key metadata elements are essential to support efficient and effective RM in the ERKS over time.



### Migration of electronic documents

Some B/Ds adopt an electronic document management system (EDMS) or use shared network drives for sharing documents and information. However, as an EDMS and network drives do not possess the necessary RM functionality to safeguard the authenticity, integrity, reliability and usability of records, existing electronic documents stored in an EDMS or network drives should not be migrated to and registered as records in an ERKS.

### Handling of new paper records

9.9 Even after the implementation of an ERKS, B/Ds would continue to receive incoming paper correspondence, such as letters from the public, or create outgoing paper records. While an ERKS possesses functionality to manage non-electronic records together with electronic records in a consistent and seamless manner, how these paper records are to be managed in the ERKS is an issue that B/Ds should get prepared for and carefully consider. Particular considerations that need to be addressed include -

(a) Will your B/D have any particular limitations on the creation of paper files after implementation of an ERKS? B/Ds should bear in mind that the management of paper files, in particular the retrieval and tracking, should be dealt with properly in tandem with the ERKS.

(b) What should be done with incoming and outgoing paper correspondence? Should it be scanned and captured into the ERKS? Should there be different

treatment to different types of correspondence? B/Ds should consider whether the practices and procedures for the different treatments, if any, are practical and can be easily followed by the users and RM staff.

- (c) If paper correspondence is scanned into the ERKS, can the original paper records be destroyed? If so, when? If B/Ds consider that it is justified to destroy the original records before the expiry of the approved retention period governing the records, it may consider to put up a recommendation in writing<sup>30</sup> to GRS for destruction of the original records.

9.10 While digitising paper records for management in the ERKS supports easy retrieval and management, there may be legal, security or business reasons under certain circumstances to continue keeping certain records in paper form. Examples include -

- (a) classified records (e.g. CONFIDENTIAL records) that cannot be captured into the ERKS if the B/D's IT environment has not met the relevant requirements;
- (b) signed copies of contracts, agreements, delegations and other legal documents; and
- (c) copyrighted materials not permissible to be scanned and stored in an information system.

9.11 B/Ds should consider whether the paper records received/created should be scanned into the ERKS or continued to be kept

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<sup>30</sup> Please refer to the guideline on "Disposal of Original Records (for records that have been digitised and stored in a digital form)" for the procedures to seek prior agreement of GRS Director for early destruction of original records. The guideline is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/415.html>).

in paper form, having regard to the information collected in the records survey as described in Chapter 4, including the business rules for the creation/collection of records and the types and amount of such records received during the business processes. The considerations mentioned in paragraph 9.5 above are also relevant.

### **Rollout approach**

9.12 Implementation of an ERKS will bring profound changes to the existing departmental RM processes, practices and procedures which are commonly geared to a paper-based recordkeeping environment. To minimise the disruption to business activities while realising the benefits of adopting an ERKS, B/Ds need to assess the scale and magnitude of the work involved, and select an appropriate rollout approach depending on their own circumstances.

9.13 B/Ds may roll out an ERKS in -

- (a) a “big bang” approach; or
- (b) a phased approach.

Both approaches have their own merits and B/Ds should consider the pros and cons and select the most appropriate way for the rollout.

#### *“Big bang” approach*

9.14 “Big bang” approach means that the ERKS is rolled out to all users within the whole organisation in one go. In other words, all users will start to manage records in the ERKS at the same time.

9.15 As the changeover of all RM procedures across the B/D is done at the same time, there are many pre-rollout activities that need to be carried out prior to the “big bang”, and that could be resource intensive. For instance, B/Ds will have to acquire and install all necessary hardware (e.g. server, scanner, etc.) and software (e.g. ERKS system, client plugins, etc.), complete relevant documentation including procedural guidelines

and user manuals to cover all business areas, and provide appropriate training and support to all users before the “big bang”. As this approach is large in scope and it requires forethought and conscious decision making, the “big bang” approach is sometimes considered as a relatively risky strategy, in particular for large B/Ds.

9.16 There are, however, advantages to the “big bang” approach that may outweigh the risks. While the anxiety level is high, it is relatively short-lived due to the rapid rollout. Total implementation is fast so the momentum of the project is maintained. It also minimises the costs and the confusion of running electronically and on paper in the organisation at the same time.

9.17 “Big bang” approach is usually a preferred approach for small B/Ds, or if business operations are more or less uniform across the B/Ds.

### *Phased approach*

9.18 Instead of an implementation happening at a single instance, the phased approach allows small changes occur over time to minimise the risks to on-going operation.

9.19 In this approach, B/Ds could switch from the paper-based recordkeeping system to an ERKS by phased rollouts, either by divisions/sections, by geographical location of an office, or by modules<sup>31</sup>. The phased approach takes the conversion one step at a time, and eventually deploys the ERKS to the whole B/D.

9.20 Although a systematic and well considered plan is required for the different phases of rollout, users can gain experience during the initial implementation phase, which in turn can smoothen the rollout of subsequent phases. For example, training materials and exercises can be refined with reference to the feedback of first phase users.

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<sup>31</sup> For example, a B/D may select to roll out the module to integrate with a departmental business information system at a separate instance.

9.21 Having regard to the above, B/Ds should note that the duration of a phased implementation would take much longer than the “big bang” approach, as the conversion has to be done in parts of the organisation in sequence. Also, B/Ds have to create temporary interfaces or measures between the co-existing paper-based recordkeeping system and ERKS to avoid confusion.

### *Parallel run*

9.22 In addition to the “big bang” approach and the phased approach as discussed in paragraphs 9.14 to 9.21 above, B/Ds may consider whether a parallel run should be adopted at the start of implementation of an ERKS.

9.23 A parallel run means that records will be managed both in the ERKS and the existing paper-based recordkeeping system at the same time for a specified transition period. After that transition period, the paper-based system would be terminated and no records should be allowed to be added to it.

9.24 During the parallel run, users can take time to adapt to the new procedures of operating an ERKS while still working with the conventional paper files. If the ERKS does not work properly due to any unforeseen circumstances, the B/D can use the paper-based recordkeeping system as a backup until the problems are fixed. Therefore, adopting a parallel run can be considered as a way to reduce the risk of the rollout process.

9.25 However, adopting a parallel run will involve additional cost and efforts as the B/D has to fully operate both the paper-based recordkeeping system and the ERKS during the transition period. B/Ds should make good preparation of extra personnel for supporting a stressful period of simultaneously running two systems. Besides, B/Ds should also ensure data consistency between the two systems, e.g. changing the security classification of a record both in the paper-based system and in the ERKS.

9.26 According to General Circular No. 2/2009 entitled “Mandatory Records Management Requirements”, e-mail correspondence should be printed-and-filed for record purpose unless otherwise agreed by GRS. B/Ds must obtain GRS’ approval for dispensing with the print-and-file practice before the end of parallel run period.<sup>32</sup>

### *Retention of legacy recordkeeping systems*

9.27 B/Ds should consider if there are significant operational needs and benefits to keep the legacy paper-based recordkeeping systems in parallel with the use of an ERKS. B/Ds need to examine the implications and the estimated costs for maintaining the legacy paper-based recordkeeping system and the pros and cons of doing so. Unless there is a genuine need to retain the legacy paper-based recordkeeping system, B/Ds should stop using the legacy system (i.e. no records should be added to the legacy paper files) after ending the parallel run upon obtaining GRS’ approval to dispense with the print-and-file practice.

### **Business continuity and disaster recovery plan**

9.28 Loss of electronic records in a disaster can be crippling for B/Ds, especially when data on digital storage devices can be more susceptible to damage in a disaster than other physical formats such as paper. In this connection, B/Ds should be proactive in matters of business continuity to ensure that appropriate practices and procedures are in place to minimise such risks. B/Ds are advised to develop, implement and maintain an effective business continuity and/or disaster recovery plan to cover their records stored and managed in the ERKS.

9.29 Typically, a business continuity and/or disaster recovery plan will comprise of measures and corresponding actions to prevent or minimise the impact of a disaster, and disaster recovery and restoration procedures

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<sup>32</sup> B/D can make a request to GRS to dispense with print-and-file practice for management of e-mail after completion of a self-assessment of the ERKS and associated RM practices and guidelines in accordance with the **Manual on Evaluation of an ERKS** (<http://grs.host.ccg.hksarg/erm/s04/4232.html>).

to be followed when a disaster occurs. B/Ds should take the initiatives of developing the business continuity and/or disaster recovery plan to ensure the continuation of business in the event of a disaster.

### **Provision of support services**

9.30 If a B/D chooses to procure a COTS ERKS solution with a certain degree of system configuration and customisation built in, or develop an ERKS from scratch by itself, it is advised to pay particular attention to the provision of support services by the vendor. Considerations such as whether support staff is available on-site or only help desk services are provided, and in case of a COTS ERKS, whether the support services cover only the COTS product without the customisations or the whole solution are important as they will affect the costs and how system issues are tackled and solved.

### **On-going management and maintenance**

9.31 Implementation of an ERKS is by no means a one-off exercise. B/Ds will need to make an on-going resource commitment to support the sustainable operation and maintenance of the ERKS, including system administration, security control, records quality assurance, software upgrades, system enhancement, user training and support, etc.

9.32 To facilitate the system sustainability, B/Ds should incorporate provisions for the on-going maintenance of the ERKS into the implementation plan, and develop related procedures and guidance for the stakeholders.

### Key points of Chapter 9

- It is generally not necessary nor practical to digitise all existing paper records for management in an ERKS. B/Ds should critically assess whether and how existing paper records should be digitised and migrated to an ERKS.
- B/Ds should consider the approach to handle incoming paper records in the ERKS environment. Issues such as whether these paper records should be scanned and managed in the ERKS and the disposal of the original paper records should be carefully considered.
- B/Ds should determine whether to roll out the ERKS in a “big bang” or phased manner having regard to their own circumstances. B/Ds may also consider adopting a parallel run during a transition period to reduce the risk of the rollout process.

## Chapter 10

# Change Management and Training



### Introduction

10.1 Given the long-standing history of the paper-based recordkeeping system in place in B/Ds, the challenges associated with the transition from a paper-based recordkeeping system to the new mode of performing RM in an electronic manner should not be underestimated.

10.2 Indeed, it has been emphasised throughout the previous chapters of this document that implementation of an ERKS would change the way how records would be managed across an organisation. Change management initiatives including training should therefore be properly planned and launched at the right timing to help smoothen the transition process.

### Planning change management

10.3 Change management involves the study and analysis on the impact of the ERKS implementation upon an organisation and its stakeholders, and the development of corresponding strategies and action

plans to manage the impact in a positive way.

10.4 The areas where B/Ds can focus on in planning change management activities in order to build and enhance engagement and empowerment of stakeholders will be briefly discussed in the ensuing paragraphs.

#### *Maintaining senior management support*

10.5 The implementation of an ERKS would have significant strategic importance to B/Ds. Obtaining steer from senior management and maintaining their support is critical in ensuring, among others, appropriate resources would be allocated to the implementation and the project is implemented with the necessary momentum.

#### *Raising awareness of the ERKS project*

10.6 Given that there is usually initial reluctance from users to the changing recordkeeping environment, the change management plan should address the issue of raising the staff awareness of the ERKS project as early as possible. This would allow time for them to digest and adjust psychologically and operationally to adapt to working in the ERKS environment.

#### *Addressing users' concerns*

10.7 One of the most commonly seen reasons for the fear or reluctance to adopt a new mode of operation is that the new procedures would interrupt the existing working procedures and bring additional workload to staff. Therefore, B/Ds should actively address issues and concerns raised by users during the change management activities and provide them with solid and concrete solution as far as possible.

10.8 B/Ds can also emphasise how the transition from the existing paper-based recordkeeping system to the ERKS environment would benefit the users and the B/D as a whole. With the benefits and

challenges being clearly communicated with stakeholders with active response and solid support, it would effectively engage their support and alleviate their worries and concerns.

10.9 One possible factor to ensure smooth transition to the ERKS is the system usability and this involves both procedural and operational perspectives. For example, if the system is designed in an intuitive and user-friendly manner, users would not only be more willing to adapt to the system but would also substantially smoothen their learning curve.

#### *Developing communication plan and establishing on-going communication channels with users*

10.10 It cannot be over-emphasised that engagement of stakeholders is the key factor of change management. On-going communication could help facilitate long-term engagement from stakeholders. Hence, it is important for B/Ds to develop a suitable communication plan to determine who to communicate, when to communicate and what to communicate.

#### *Training*

10.11 Last but not least, training is an essential way to empower users with the necessary skills and capabilities to master the transition from paper-based recordkeeping system to ERKS environment smoothly. The rest of this chapter will discuss on the considerations of developing a comprehensive training plan.

#### **Developing training plan**

10.12 Development of a comprehensive training plan would be critical for the smooth adoption of ERKS. In order that the training programme suits the needs of a B/D, the following factors should be taken into consideration -

- (a) scope of training (i.e. what should be covered in the training);

- (b) type of training to be provided (i.e. how should the training be organised to suit the needs of different stakeholders);
- (c) target of training (i.e. who should receive the training); and
- (d) resources for training (i.e. trainers, training materials, venues, etc.)

### Scope of training

10.13 One of the key objectives of ERM training is to assist users to understand the overall RM policy and framework behind the adoption and use of the ERKS. This would establish a common ground and understanding on how different users in a B/D can make better use of the ERKS in a consistent and coherent manner to improve RM in the organisation. This overview is important in helping especially records managers and other RM staff understand the ERKS from a wider perspective.

10.14 The focus of the training should not only be on the procedures required for operating the ERKS, but also the good practices in performing RM tasks and the reasons behind those practices and procedures. Therefore, apart from the application training of the ERKS (i.e. how to operate the system) which is common to the implementation of information systems, B/Ds should also include in the training programme specific modules or sessions on the RM policy, practices and procedures of their own organisations to facilitate users in understanding the reasons behind the procedures and to promote good RM culture in the B/Ds.

10.15 While B/Ds have established, for the paper-based recordkeeping system, RM practices and procedures with the roles and responsibilities of different users clearly defined, these practices and procedures would have to be adjusted to facilitate the migration to an ERKS environment.<sup>33</sup> For

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<sup>33</sup> B/Ds should make reference to *Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System* (<http://grs.host.cgo.hksarg/erm/s04/4262.html>) for guidance for developing RM practices and guidelines for compliance and reference by B/Ds' staff to use, manage and maintain their ERKSs.

example, in the paper-based system, if there is an e-mail sent to multiple recipients in a B/D and the different recipients pass the same e-mail record to a registry for filing, it would be easily spotted by the registry staff and duplication could be avoided. However, in an ERKS setting, it would be more common for a subject officer to capture an e-mail record directly from his/her mailbox in the e-mail system into the ERKS. Hence, if there were no rules for the capturing of records to define who should capture an e-mail record into the ERKS in the case of multiple recipients, the system would end up with multiple copies of the same e-mail record.

### **Type of training**

10.16 Apart from the classroom training or hands-on workshops which are typical for training purpose in relation to information systems, B/Ds should also consider, based on the needs of their users and the functionality of the ERKS, other types of training. There is no limitation on the type of training to be conducted as far as the appropriate skills and knowledge are passed effectively to the appropriate users.

10.17 For example, intensive workshops for scanning paper records can be organised for users who will perform scanning operations having regard to the specific operation procedures and the limited number of users. Such workshops may focus on document preparation, selection of scanning profiles, scanner operation and inputting of metadata, etc. Online tutorials of common functionality may also be developed for easy reference by users. As for system administration functionality, one-on-one training can be conducted by the contractor to the system administrator(s) to facilitate skill transfer.

### **Target of training**

10.18 Essentially, training should be provided to all users of the ERKS to ensure that they all understand the departmental RM policy and practices and how they are implemented in the ERKS. In addition, this would facilitate them to use the system in a consistent and coherent manner.

10.19 Users of different roles would need different knowledge and skills to handle their work. For example -

- (a) Records users focus on the daily operation like capturing records, searching and retrieving records and handling workflows if implemented;
- (b) RM staff need knowledge on handling RM tasks such as re-classification, creation of aggregations, performing records scheduling and disposal, etc.;
- (c) System administrator would need solid technical knowledge and skills to handle various system maintenance and management tasks.

10.20 While the daily operation of ERKS for a typical user would resemble each other, there might be varying practices and conventions adopted by different divisions/sections in a B/D. This is especially important in the case of handling programme records in the respective divisions/sections.

10.21 As such, B/Ds should consider the needs of different roles of users and the practices adopted by different divisions/sections and arrange different sessions of training to different users as appropriate. Given the unique operational needs involved in different divisions/sections, B/Ds may engage the records managers in the respective divisions/sections and adopt the train-the-trainer approach to empower and equip the records managers so that they could co-ordinate and deliver such training for their own staff.

### **Resources for training**

10.22 B/Ds should consider what resources should be required for the provision of training materials and the training sessions. Common options include -

- (a) the contractor to prepare the training materials and deliver the training directly for all users;

- (b) the contractor to prepare the training materials and train the trainers, who in turn deliver further training to end users;
- (c) using in-house resources to prepare the training materials and deliver the training.

10.23 Depending on the specific needs of a B/D, the above options could be used in a mixed way to address the different needs. For example, B/Ds may ask the contractor to prepare training materials and provide the application training to all users while using the train-the-trainer approach to prepare records managers of divisions/sections for delivering further training regarding the RM policy and practices to their own staff.

10.24 The timing to provide training to users should also be carefully planned. Application training, for example, should not be conducted too early before the system rollout as users might have forgotten the relevant procedural steps and found the system functionality unfamiliar by the time of system rollout.

10.25 B/Ds should also take into account other resources such as venues, computers (which have been installed with the ERKS and connected to the training environment, as appropriate), facilitators (who will provide assistance and facilitation to users when they are doing exercises during hands-on training) and availability of users (e.g. whether users will be involved in any major events of the B/D and are not available for training) when developing their training plan. Sufficient resources, including time, manpower and financial resources, should be allocated for training in the business case.

### **On-going training and induction training**

10.26 As the ERKS supports the on-going management of records in an organisation, training should not be considered as a one-off exercise before system rollout. On-going training is important in continually supporting users to use the ERKS properly and effectively, collecting

feedback on system functionality and performance from users, and reinforcing the culture of good RM practices in the organisation.

10.27 On-going training can be conducted in the form of user group discussion or experience sharing workshops to build a supporting atmosphere among colleagues and alleviate the concerns of users during the transition. B/Ds may also consider organising regular meetings with RM staff and records users to share with them the latest development of the ERKS system and collect their views. These sessions would also help users from different divisions/sections in exchanging views and sharing experience so that the B/D could benefit as a whole.

10.28 In addition, B/Ds can also consider providing training materials for users to refresh themselves. Step-by-step tutorials and exercises can be effective tools for this purpose.

10.29 Besides, training is particularly important for new staff. B/Ds should provide new staff with necessary ERKS training as part of their induction training so that they are competent to perform their RM roles and responsibilities.

### Key points of Chapter 10

- While ERKS implementation would bring about substantial benefits, its challenges should not be underestimated. Change management should be well planned to ensure a successful ERKS implementation.
- Training is an important part for empowering users to be equipped with essential skills and techniques to master the ERKS. Training is also important to ensure the RM practices and procedures are understood and properly adhered to by the users through the use and management of the ERKS.
- Besides conventional hands-on training on how to operate the system, B/Ds should consider other types of training to facilitate their users to acquire the necessary knowledge and skills of the ERKS and the RM practices underpinning the use of the system.
- On-going training could help build a supporting atmosphere among colleagues and alleviate the concerns of users especially during the early stage of adoption to the ERKS environment.
- ERKS training should be provided to new staff as part of their induction training.

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# Appendices



- Appendix 1** List of ERM Standards and Guidelines Issued by GRS
- Appendix 2** Sample Information to be Collected in a Records Survey
- Appendix 3** Tips for Enhancing a Records Classification Scheme
- Appendix 4** Tips for Naming Conventions of Aggregations
- Appendix 5** Comparisons of Approaches to Convert Paper Records
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## Appendix 1

## List of ERM Standards and Guidelines Issued by GRS

### A. Publications related to ERKS

1. ***Functional Requirements of an Electronic Recordkeeping System***<sup>34</sup> (FR of an ERKS) (version 1.2) (September 2016) which prescribes the essential functionality of an ERKS to carry out and support RM functions and activities common to B/Ds. B/Ds should comply with all the mandatory requirements specified in FR for ERKS when developing or adopting an ERKS.
2. ***Recordkeeping Metadata Standard for the Government of the Hong Kong Special Administrative Region***<sup>35</sup> (RKMS) (version 1.1) (September 2016) which specifies a core set of recordkeeping metadata to be created, captured, used, managed and maintained in an ERKS to support efficient and effective management of records throughout their life cycle. B/Ds should follow and comply with all the mandatory requirements specified in RKMS when developing or adopting an ERKS.
3. ***Manual on Evaluation of an Electronic Recordkeeping System***<sup>36</sup> (September 2016) which aims to assist B/Ds in evaluating and validating the compliance of an ERKS and the associated departmental RM policies, practices and procedures governing the use, management and maintenance of an ERKS with the Government's RM policy and ERM requirements. B/Ds must use this Manual as the basis for evaluating and validating the compliance of their ERKSs with the system requirements specified in FR of an ERKS and RKMS.

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<sup>34</sup> ***Functional Requirements of an Electronic Recordkeeping System*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/435.html>).

<sup>35</sup> ***Recordkeeping Metadata Standard for the Government of the Hong Kong Special Administrative Region*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/457.html>).

<sup>36</sup> ***Manual on Evaluation of an Electronic Recordkeeping System*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/4232.html>).

4. ***Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies***<sup>37</sup> (December 2013) which aims to assist B/Ds in reviewing RM issues in the context of developing their organisational EIM strategies.
5. ***Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System***<sup>38</sup> (January 2015) which prescribes RM principles and best practices to manage aggregations, records and their associated recordkeeping metadata and audit trails in an ERKS.
6. This document, being one of the guidelines in the series of ERKS implementation guidelines, provides guidance for B/Ds to undertake preparatory work including reviewing and enhancing records classification scheme(s) prior to implementing an ERKS.

#### **B. Publications related to other aspects of ERM**

7. ***Guideline on the Management of Electronic Mail***<sup>39</sup> (October 2001) which provides guidance to help B/Ds identify, create, file and manage e-mail records.
8. ***Disposal of Original Records (for records that have been digitised and stored in a digital form)***<sup>40</sup> (August 2011) which sets out the essential issues to be considered by B/Ds on early destruction of original records after digitisation, and the proper procedures for seeking approval for such destruction from GRS.

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<sup>37</sup> ***Addressing Records Management Issues in the context of Developing Organisational Electronic Information Management Strategies*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/4222.html>).

<sup>38</sup> ***Handbook on Records Management Practices and Guidelines for an Electronic Recordkeeping System*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/4262.html>).

<sup>39</sup> ***Guideline on the Management of Electronic Mail*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/442.html>).

<sup>40</sup> ***Disposal of Original Records (for records that have been digitised and stored in a digital form)*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/415.html>).

9. ***A Handbook on Preservation of Electronic Records***<sup>41</sup> (July 2013) which provides guidelines for B/Ds to establish and implement a departmental preservation programme and to adopt proper measures and practices to preserve their electronic records to meet legal and regulatory requirements, business and operational needs and evidence purpose.

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<sup>41</sup> ***A Handbook on Preservation of Electronic Records*** is available on CCGO (<http://grs.host.cngo.hksarg/erm/s04/464.html>).

## Appendix 2

# Sample Information to be Collected in a Records Survey

1. B/Ds should collect more in-depth information on the users, records, and how the users create, capture, use and manage the records for mapping out the future RM needs and the requirements and specifications of the ERKS. One possible way to collect the in-depth information is through a records survey. The information collected would supplement and update the comprehensive departmental review<sup>42</sup> completed in the context of development of an organisational EIM strategy to address key RM issues.
2. The information can be grouped into three areas, namely -
  - (a) users,
  - (b) records, and
  - (c) descriptive information on how RM is performed in a B/D.

## Users

3. A key volumetric information to start with in the records survey is the number of users of the ERKS and an indication of their roles and responsibilities. Examples of some of the roles include -
  - (a) DRM who oversees the departmental RM programme of the B/D;
  - (b) ADRM who assists the DRM in monitoring the RM routines;
  - (c) records managers who can perform major RM functions including maintenance of the records classification scheme;

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<sup>42</sup> Please refer to Chapter 2 of the *Guidelines on Mapping out Implementation of an Electronic Recordkeeping System in the Context of Developing Organisational Electronic Information Management Strategies* (<http://grs.host.cgo.hksarg/erm/s04/4222.html>) for details of the review of RM issues in the context of developing organisational EIM strategies.

- (d) RM staff who can perform day-to-day RM functions, e.g. creation of folders;
- (e) records users with rights to capture/create records;
- (f) records users with read only access; and
- (g) system administrators.

## Records

4. For the existing non-electronic records, the following information may be collected -
  - (a) the type and amount of records, i.e. number of files/ring binders, etc. (for paper records) and number of relevant containers or objects (for other non-electronic records);
  - (b) the amount of storage or cabinet space occupied;
  - (c) the overall growth rate of records;
  - (d) the level of retrieval made of the records, e.g. how many files a records user retrieves in a month, and for what purpose (for answering enquiries, for re-purposing, for generating statistical data, etc.);
  - (e) the current finding aids including how file lists are kept, e.g. using Bar-coding File Management System (BCFMS) or a spreadsheet, and how files are titled or numbered; and
  - (f) (in the case where the paper records are to be digitised and stored in the ERKS for management) the average number of pages per file, the size range of documents, whether they contain colour information, greyscale or black-and-white.
5. For the electronic records, similar information may be included in the records survey -
  - (a) the amount of electronic records, i.e. the approximate amount of disk space occupied;

- (b) the formats of electronic records;
- (c) the applications used to create/annotate and view electronic documents/files;
- (d) the growth rate of electronic records;
- (e) the level of retrievals made of the electronic records; and
- (f) whether the records are managed in a business information system and whether they are stored online, near line or offline.

### How RM is performed in a B/D

6. B/Ds should also collect information on the RM practices adopted in the various divisions/sections and users' views on the performance of the current recordkeeping system and the new functions and features they need from the ERKS. Below are some sample questions to be included in the records survey -

#### Create/capture of records (which should be covered in business rules)

- (a) Who determines what records should be created/captured?
- (b) Who is responsible for printing e-mail records for the purpose of putting them in paper files?
- (c) Who is responsible for filing printed e-mail records?

#### Use of records

- (d) How frequent do you need to send records in paper form to other records users within the B/D?
- (e) How frequent do you need to send records in paper form to users outside the B/D?
- (f) How frequent do you need to borrow/lend files from other divisions/sections?
- (g) How frequent do you need to retrieve old records (say created more than 3 years ago) from paper files?

- (h) Do you encounter difficulties in locating and retrieving records in paper files? What are the difficulties? How often do you NOT find the records you want?
- (i) Is it an established practice to cross-reference records between files and records?

Access and control

- (j) Who determines the access rights of a file? What are the criteria for determining the access rights of a file?
- (k) Who determines the security classification of a file? What are the criteria for determining the security classification of a file?

## Appendix 3

# Tips for Enhancing a Records Classification Scheme

1. Does the records classification scheme cover all key business functions?
2. Does the records classification scheme separate programme records from administrative records?
3. Is the records classification scheme systematic, logical, consistent and scalable?
4. Does the records classification scheme group records into mutually exclusive, meaningful groups and understandable records series (subject groups)?
5. Is the scope of sub-classes too wide, resulting in too many folders of different but similar subjects inside it? Is so, consider creating sub-classes underneath the specific sub-class for further grouping of folders.
6. Does the records classification scheme provide robust security and access control for records?
7. Does the records classification scheme support conduction of RM functions, e.g. vital records protection, records retention and disposal, etc.?
8. Does the records classification scheme follow the structure specified in the RKMS, e.g. a sub-class contains only child sub-class(es) or folder(s) but not both?

## Appendix 4

# Tips for Naming Conventions of Aggregations

Below are some general tips for naming conventions of aggregations. B/Ds may include additional rules in their departmental naming conventions with reference to their business and RM needs, and the restrictions of their ERKS, if any.

1. Use unique, concise, complete and meaningful titles. Avoid ambiguous terms such as “General” and “Miscellaneous”.
2. Strike a right balance between keeping titles short and ensuring specificity of an aggregation.
3. Use common elements to form titles of aggregations, such as function/activity/subject, personal name, organisation/body/committee name, project name, place name, date, etc.
4. Arrange elements in structured and predictable manner - from general to specific, e.g. ERM advisory services--CEDB.
5. Use minimal articles (“a”, “an”, “the”), prepositions (e.g. “on”, “at”, “in”) and conjunctions (e.g. “and”) as far as practicable.
6. Use standardised abbreviations and acronyms to keep the title length of aggregations manageable.
7. Use consistent separators, e.g. Expenditure--Photocopying.
8. Avoid using special characters like slash (/), back slash (\), asterisk (\*), question mark (?), angle brackets (<>) and pipe symbol (|) in title.
9. Use consistent spelling, e.g. use “organisation”, not “organization”.

## Appendix 5

## Comparisons of Approaches to Convert Paper Records

In-house	Outsourced
<b>(A) Availability of records</b>	
The original records will be available for access during the digitisation or the unavailable time is relatively short	The original records might be unavailable to the B/D for a longer period of time if the conversion is conducted at the contractor's site
<b>(B) Security</b>	
Greater control can be exercised over the physical security of the records	Less control can be deployed to the security of the records, as physical transfer by vendors is required, inducing risks of damage and loss
In-house staff is capable to handle classified information	Records with restricted information might risk expose to the vendors and additional measures should be taken to alleviate the risks
<b>(C) Resources</b>	
Purchasing or leasing of equipment(s) and/or software(s) is required	Only services are required, which covers all necessary resources
B/Ds might have to pay for the regular maintenance costs and incidental costs associated with technical infrastructure problems	Vendors will take care all the costs associated with technology problems that arose during the scanning
Temporary accommodation is required for the in-house scanning operation	If the conversion is conducted at the contractor's site, no additional accommodation is required

In-house	Outsourced
<b>(D) Knowledge and skills</b>	
<p>Dedicated and specifically skilled staff is required on operating the equipment which might not be available in B/Ds</p>	<p>Trained and experienced operators can be expected</p>
<p>In-house staff has a better understanding to the business and has the knowledge in inputting business-specific metadata, if any</p>	<p>Contractors do not have the knowledge of the business context and will require additional instruction on the inputting of business-specific metadata</p>

## Appendix 6

# References

1. Archives New Zealand, ***What to Consider prior to Implementing an IT Solution to a Recordkeeping Problem***, June 2006
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7. Office of the Government Chief Information Officer, ***Practice Guide to Project Management for IT Projects under an Outsourced Environment*** [S19], Version 2.1, March 2011
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