

## Information Management Advice 37 Keeping Digital Records Accessible

### Introduction

*Digital information is a vital business resource, critical for business activity and efficient operations. The volume of digital information in business systems is dramatically increasing and any loss of this information could put business operations at risk.*

*Easy to create, share and use, digital information is also vulnerable. System change, technology change, format change and the passage of time can lead to business information becoming inaccessible. It is vital that organisations put in place strategies to ensure that critical information is available and usable for as long as it is needed.*

*Preserving access to records can be more difficult in the digital environment. Digital records are dependent on hardware, software and media which change frequently. This rapid rate of technology change puts the continued accessibility of digital records at risk if they are not managed effectively.*

*There are important steps that agencies can take today to ensure that digital records remain accessible for as long as required.*

*TAHO is currently undertaking research and development work in digital preservation, including planning for a future digital archive. Additional advice on digital preservation strategies will be provided as this work progresses.*

### **IF YOU DO NOTHING, DATA LOSS WILL HAPPEN**

Here are 10 Strategies for managing digital business information and preventing data loss.

### **Know your Records**

Know:

- What records you have (and what you need to have)
- How the records are used, both within your agency and by others who may need the information
- How long they need to be kept.

Planning for preservation activities should be based on a sound understanding of how long digital records need to be kept and how the records are used for your business.

Know what business systems you have and the technological dependencies, software licence and support costs that apply to each system.

Know what information is created and kept in each system, Know how old the information is, the format it is in, how it is described, its content and how much of it you have.

Know how information relates to business processes, how it can be reused and how long it needs to be kept, to meet business and legal requirements.

Retention and disposal schedules authorised by the State Archivist provide the authority for the disposal of records.

*For further advice on the process of developing a schedule or on developing an Information Asset Register see the TAHO website.*

### **Know where your records are located**

Ensure you know where all your business records are kept. Most organisations have digital records stored in many different places – in centralised databases, on removable storage media, in personal or network folders or managed by contractors or service providers on their behalf (e.g. in ‘the cloud’).

This profusion of environments means that many businesses don’t know exactly what digital information they have or where it is. This can put business information at risk of loss. Know what you have and where it is stored so you can effectively use, control and manage your information.

Regardless of location, state records must be controlled and identified to allow monitoring of accessibility. Records not managed in appropriate systems lose authenticity, and may be lost completely.

*For further advice on the process of developing an Information Asset Register see the TAHO website.*

### **Design systems to support your records**

Most business systems are not designed to maintain long-term access to information, whereas many state records need to be kept for longer than the life of the system. It is vital then that digital records are able to be easily exported from old systems into replacement systems.

Implement strategies and processes to ensure that all business records are managed effectively in identified corporate systems with appropriate recordkeeping functionality.

Use risk assessment techniques to prioritise records based on:

- importance for ongoing business operation
- retention period (especially permanent value records)
- current risk of loss

Include recordkeeping requirements when specifying and procuring new systems and upgrading existing systems. In particular, the ability to:

- dispose of records in accordance with differing retention periods
- the ability to inherit data, and
- to export records at the 'end of life' of the system are essential.

This consideration of recordkeeping requirements can be built into internal agency approval processes for new systems.

### **Limit the number of file formats you use**

File formats are the mechanisms by which different types of digital information are encoded and stored. The average Australian business uses between 20 and 50 different file formats. This is too many, as each file format will, in the short to medium term, need its own preservation strategy. This scenario is too hard and too costly, so restrict the number of file formats you use. This will simplify the preservation challenge, and decrease the costs involved in keeping digital records accessible over time.

Monitor the types of file formats coming into an agency, for example through Machinery of Government changes such as transfer of functions from other agencies.

### **Use open and/or common file formats**

Open formats are not owned by any software companies and are supported by a wide range of software and hardware. Open formats are less at risk of becoming inaccessible because they are generally very stable and easier to migrate. Using these formats, wherever possible, for record creation or migrating records to these formats can save money and effort over time. Examples of open formats include PDF, HTML, XHTML, ODF, JPEG and FLAC.

Some file formats present greater risks to the continued accessibility of records than others. File formats may be open and non-proprietary (such as XML or ODF); open and proprietary (such as Adobe Flash or MP3); or closed (such as Microsoft's .doc format and camera native digital image formats). Some file formats are so common as to be considered de-facto standards (such as Microsoft formats); others are very specialised and rare.

Open formats are at less risk of becoming inaccessible because the technical specification is published, meaning that a tool to read them can be developed by anyone when needed.

Very common file formats, even if proprietary, are also at less risk of becoming inaccessible due to market demand for translators or migration pathways, even if the format is no longer supported by the original vendor. The more open and more common a file format is, the less the risk of loss of access.

*For further advice on Digital Preservation Formats see the TAHO website.*

### **Dispose of digital records when you can**

Keeping digital information indefinitely is expensive and potentially very complex. Digital storage, despite falling prices per gigabyte, is becoming a greater cost for business as volumes increase at a much faster rate than the decline in storage costs.

Disposing of digital records, as with physical records, as early as possible in accordance with authorised disposal schedules, will save on storage and also reduce the volume and complexity of information requiring management.

Organisations can save money and mitigate risk by destroying information when it is appropriate to do so. You need to know how long information should be kept to meet business and legal requirements before you dispose of it.

Agencies need an active disposal program that includes digital records.

*For further advice on Disposal see the TAHO website.*

### **Describe your records well**

All records, including digital records, need to be described well so they can be found, used and managed. Implement strategies to enable systems and staff to easily or automatically apply necessary descriptions (also known as metadata) to business information.

Good recordkeeping metadata assists preservation over time by capturing information on:

- relevant title information
- format or preservation requirements
- security and disposal requirements
- business process information and information concerning use of or actions performed on the information
- technical dependencies, such as file format and media information
- any migration or conversion activities and
- essential characteristics which preserve and ensure authenticity

Ensuring metadata is captured and maintained from the time a record is created is essential for ensuring the authenticity, manageability and useability of information over time.

### **Reduce Duplication**

Reducing non-essential copies of digital information and only creating records actually required for business will reduce storage load, server and energy costs and preservation requirements. If records exist in both paper and digital forms, it is important to consider issues including:

- versioning and control
- identifying, controlling and disposing of duplicates
- authenticity and accountability concerns that may arise as a result of slight variations between versions of what is purportedly the 'same' records What is the 'true' record and how are staff to know this?

- reducing storage costs associated with paper-based duplicates

'Non-essential' does not include copies made for the purpose of backup or disaster recovery. However, do ensure that backups are not retained for longer than necessary.

*For further advice on Developing a recordkeeping policy and Managing Backups see the TAHO website.*

## **Manage Migration**

Migration is a preservation activity that transfers digital information from one hardware or software configuration to another or from one generation of technology to another. Migration is necessary because the many protocols and software components that enable digital information to be read and used are constantly evolving.

Without migration, access to digital information would be lost. Migration is one of the primary ways of overcoming hardware and software obsolescence. However, like all digital preservation strategies, migration carries risks.

Migration changes the format, and therefore can present risks to the integrity, and even the existence, of important business information.

Plan migration carefully. Migration projects must be designed to mitigate risks associated with migration and to protect the authenticity, integrity and accessibility of information.

## **Start Now**

Digital information is becoming more complex as greater capacities evolve. If your business uses complex information types, including CAD drawings, purpose-built databases, dynamic web pages, digital photographs, digital sound or video files, you need to be aware that these types of information may be difficult to manage in the long term.

If you require ongoing access to these types of information to meet business and legal needs, you need to start planning now how you will manage these complex information types.

While few agencies currently have the capacity or resources to develop and implement a comprehensive digital preservation strategy, all agencies can take some of the above steps to reduce risk and gain greater control over their records requiring longer-term retention.

Consider setting priorities based on:

- your most valuable business records
- what records are at risk of loss
- what actions may complement existing projects (for example, if you are currently developing a retention and disposal schedule, use the opportunity to analyse what longer-term records are in digital form).

Delaying consideration of preservation issues to the end of a system lifecycle is not cost-effective. Agencies will continue to create increasing volumes of digital records in increasingly complex forms. Without action now, the challenges will become even greater in the future.

## Further Advice

For more detailed advice, please contact:

Government Information Strategy Unit  
Tasmanian Archive and Heritage Office  
91 Murray Street  
HOBART TASMANIA 7000  
Telephone: 03 6165 5581  
Email: [gisu@education.tas.gov.au](mailto:gisu@education.tas.gov.au)

## Acknowledgements

- This Advice is based on State Records NSW's advice *How to avoid information loss in the digital age: 10 strategies for managing digital business information*.
- Queensland State Archives Public Records Brief Keeping digital records useable - *Ten steps for ensuring the continued accessibility of digital records*

## Information Security Classification

This document has been security classified using the Tasmanian Government Information Security classification standard as PUBLIC and will be managed according to the requirements of the Tasmanian Government Information Security Policy.

## Document Development History

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State Archivist