

Digital Records Curation Programme

Week 3:

Digital and Hybrid Records Management

Week 2 Recap

What did you learn?

- Class on Fundamentals of Computing
- Workshop on Programming

Learning outcomes:

At the end of this class you will be able to:

- explain, at a high level, the history of the development of digital record-keeping systems
- explain the benefits and problems of using EDRMSs
- understand what standards for functional requirements are and how they can be used in designing record-keeping systems
- understand other approaches to digital record-keeping, particularly techniques that can be applied in low resource environments

Digital Record-Keeping Systems

We will be discussing:

- Terminology of digital records management
- History of digital record-keeping systems
- Move towards integration with other business systems
- International standards for record-keeping functional requirements
- Hybrid record-keeping systems

Terminology

- Record
- Digital archives
- Metadata
- Record-keeping system

Computerisation

Record-making and record-keeping practices changed with computerisation.

How?

Computerisation

Michael Moss argued that computerisation and access to the internet resulted in the 'disappearance of secretaries (who typed letters), managers now typing their own communications (largely emails), the closure of registries where files were maintained and stored, the closure of libraries and the takeover of information systems by computer scientists' (p.6). This was the decentralisation of the control of corporate records, a move from creation by secretaries and storage and circulation by registries, to creation by all officers, storage on their personal computers or shared network drives and circulation by email.

History of digital record-keeping systems (1)

- **1960s:** Several users were beginning to be able to access computer simultaneously, rise of networking and remote access
- **1970s:** Tape libraries held machine-readable information, records tended to be printed out (belief that had to be paper to be reliable)
- **1981:** IBM brought out personal computers (PCs) – affordable and accessible for private and business use. The owner or user decided when and how to use and what information to store on it
- **Mid-1980s:** networked computers and beginning of the internet. Client-servers combined autonomy of the PC with control of the mainframe environment

History of digital record-keeping systems (2)

- Powerful new networks enable instantaneous information sharing across geographical boundaries and organizational hierarchies.
- Shared records make provenance & ownership more complex, are stored separately from operating units, often under control of information systems or IT.
- Digital records provide evidence of entire work processes and need to be maintained digitally (paper becoming a convenience copy)
- IT maintaining records centrally or end-users managing own records
- Archivists and records managers realising that systems need to be designed with record-keeping in mind and both organisational culture and operational procedures are needed to manage digital records

Creating Digital Records

The purpose of digital records management is to preserve and facilitate access to digital records for as long as they are required.

How do we do this?

Digital Record-keeping Systems

- Software application specifically intended to manage and document capture, maintenance and disposal of records, maintaining content, context, structure and links among records to enable their accessibility and support their value as evidence
- AKA electronic document and records management system (EDRMS) or electronic records management system (ERMS)
- Might be enterprise content management systems (ECMS) where the primary function is records management
- May also provide for the management of physical records or both physical and digital records

Systems play a key role in ensuring reliability and accessibility

EDRMS (1)

In the late 1990s and 2000s, Electronic Document and Records Management Systems (EDRMS) were developed to attempt to centralise control again over record creation and management.

EDRMSs perform many of the same tasks that traditional registry systems performed with hardcopy records.

What were the problems with the EDRMS approach?

EDRMS (2)

James Lappin wrote in 2010:

“The EDRMS approach has been found not to be a universal panacea. Some organizations made it work, but others failed to complete costly and complex EDRMS projects. The pipeline of new EDRMS projects has slowed to a trickle.”

Michael Moss wrote in 2015: “EDRMSs have been a failure”.

Functional Requirements

EDRMS tasks, analogous to the ones performed by that traditional registry systems, need to be articulated as **functional requirements**.

Standards for Functional Requirements

Standards for functional requirements for digital records management have a long history:

- the first version of Norway's NOARK standard appeared in 1984.
- Other national standards have been developed by Australia, Brazil, Canada, Finland, Germany, Malaysia, The Netherlands, New Zealand, Romania, Russia, South Africa, Switzerland and the United Kingdom.
- The first English language standard was Canada's RDIM (Records/Document/Information Management (RDIM): Integrated Document Management System for the Government of Canada) in 1996.

International standards for record-keeping functional requirements

- US DoD Electronic Records Management Software Applications Design Criteria Standard (<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/501502std.pdf>)
- MoRec2010 outlines essential elements for records system to ensure records properly managed, accessible and retained as long as needed (<https://sysresearch.org/moreq/>)
- ICA-Req (<https://www.ica.org/en/ica-req>)
- ISO 16175 in 3 parts: overview; specification for dedicated digital RM systems ; specification for general business systems

What if we could make existing business systems manage records properly?

Development of an international standard (ICA-Req) sets out functional requirements for digital records management that contemplates the incorporation of the records management functionality into native applications (in Module 3 of the standard).

Jean Dryden discussed ICA-Req in her column on standards in the *Journal of Archival Organization* (8, 2010). She claimed that its authors 'broke new ground when they made an important distinction between ERM systems and business systems. ERM systems include record-keeping functionality... Business systems, on the other hand, are designed to conduct business, and rarely include record-keeping functionality...' (Dryden 2010, p.261).

Integration with other Business Systems

Business systems are IT systems that create and/or manage data about an organisation's activities, hold dynamic data which is constantly updated and can be manipulated (e.g. to produce reports) and hold current data

- What are the other business systems?
- Are they creating records and can they manage records?
- How can they integrate?

ICA-Req

- Module 1: Overview and Statement of Principles: background information, organisation, fundamental principles and additional context;
- Module 2: Guidelines and Functional Requirements for Records in Electronic Offices: a global high-level statement of core and optional requirements, including application guidelines and a compliance checklist; and
- Module 3: Guidelines and Functional Requirements for Records in Business Systems: guidelines and generic core and optional functional requirements for records in business systems.

How can ICA-Req be used?

- Reviewing record-keeping functionality in existing software.
- As a design specification for in-house software development / re-development.
- Evaluating software considered for purchase.
- Procuring, deploying and configuring electronic records management software.
- Developing jurisdiction-specific specifications and standards.

<https://www.ica.org/en/ica-req-implementation-guidance>

<https://www.ica.org/en/ica-req-module-2-training-material>

<https://www.ica.org/en/ica-req-module-3-training-material>



ICA

International Council
on Archives

Principles Functional Requirements

for Records in Electronic Office Environments

MODULE 2

Guidelines and Functional
Requirements for Electronic
Records Management
Systems

CREATE

3.1 Capture

Records are created in a diverse range of formats, may comprise multiple individual objects (compound records), and are transmitted by a wide range of communication channels (workflows, email, postal mail). Electronic records management systems must capture the content, structure and context of records to ensure they are reliable and authentic representations of the business activities or transactions in which they were created or transmitted. This is known as ‘point of capture’ metadata and should in itself be captured as a record; it should not be possible to alter any of these metadata features without changes being tracked and auditable.

3.1.1 Capture processes

The electronic records management system **must**:

1	Enable integration with business applications so that transactional records created by those applications can be captured within the electronic records management system (including email, see Requirements 21–25).
2	Indicate when an individual record is captured within the electronic records management system.

3	Prevent the alteration of the content of any record by any user or administrator during the process of records capture. See also Requirements 88 and 89.
4	<p>Prevent the destruction or deletion of any record by any user, including an administrator, with the exceptions of:</p> <ul style="list-style-type: none"> • destruction in accordance with a disposition authority (see Section 3.6: Retention and disposal); and • authorised deletion by an administrator (see Section 3.8: Administration).
5	Support manual naming of electronic records, and allow this name to be different from the existing file name (including email subject lines used to construct record titles). If the existing filename is taken by default, the electronic records management system must allow this name to be amended at the time of capture.
6	Allow an administrator to alter the metadata of a record within the system if required, to allow finalisation/correction of the record profile. Any such action must be captured in a records management metadata.
7	Any revision or alteration of the records management/capture metadata must be captured as additional records management metadata.
8	Alert a user to any failure to successfully capture a record.
9	Be able, where possible and appropriate, to provide a warning if an attempt is made to capture a record that is incomplete or inconsistent in a way which will compromise its future apparent authenticity.

Hybrid record-keeping Systems

Paper records + digital records = hybrid records which need to be managed together

- Need to specify the medium of master record – born digital, manage digitally
- Need to be aware of duplication within and across media – need processes to weed off duplicates as soon as possible
- Need to manage all records, regardless of media
- It is best to try to synchronise the way paper and digital records are managed to make it more streamlined for end-users and records managers

Paper record-keeping Systems

Paper systems may be filing systems, registry systems or no system

- There are many challenges to managing paper records
- Paper record-keeping systems, like digital ones, require policies and procedures
- Policy and procedure will depend on the legal and cultural environment

As with digital records, systems play a key role in ensuring the reliability and accessibility of the records

Any questions?

Group work: Functional Requirements

MoReq and ICA-Req are different standards for the same thing: functional requirements for digital records management systems.

In groups, analyse the section of MoReq you are given and present a summary of its key points to the class.

You have 20 minutes to analyse and develop the key points which you should take 5 minutes to deliver.

Other Techniques for Managing Digital Records

We will be discussing:

- Challenges to managing digital records
- Modern workplaces and records management stakeholders
- Non-technological success factors
- Managing digital records in the existing IT platform
- Low cost technological solutions

Challenges

- Recognising records and distinguishing them from other types of information
- Ensuring that the record is complete and reliable
- Halting the proliferation of information and records
- Establishing firm links between related records which reside in different systems
- Maintaining accessibility, authenticity and usability across software changes

The Modern Workplace

- The modern working environment relies on computer technology and digital records to support and further its business
- Computer technology has become increasingly complex and often consists of a number of different in-house systems and external services
- Staff can access the server from a distance
- Software and data may be on laptops, desktops at home, smart phones, tablets or in the cloud – plus end-users still like paper copies

The Stakeholders

- Records management Champion
- End-users in favour of records management
- End-users not seeing the need for records management
- IT team
- Human resources team
- The records manager

Non-technological Success Factors

- Qualifications and experience of records managers
- Interpersonal skills of records managers
- Organisational culture
- Workforce behaviour and training
- Fit-for-purpose processes and procedures

Managing records in the existing IT platform

- Establishing file naming conventions and version control
- Introducing classification schemes for shared network drives
- Working with IT to close down personal storage
- Limiting or banning the use of certain storage media
- Applying rules to email inboxes
- Ensuring regular back ups
- Fixing forms – the PDF/A, JPEG2000
- Incorporating records management functionality into business systems

Digital RM without an EDRMS?

- Can we do digital records management without an EDRMS? How?

Digital Records Management without an EDRMS

- File naming conventions and version control
- Classification schemes in shared network drives, as a basis for retention scheduling
- Working with IT to close down personal storage
- Limiting or banning the use of certain storage media (aligning with info security policy)
- Applying behavioural rules to email inboxes
- Ensuring regular back ups
- Incorporating records management functionality into business systems
- Fixing forms – the PDF/A, JPEG2000

Group Exercise: Low Resource Solutions

Imagine an organisation without an EDRMS. In groups discuss and come up with a plan for improving digital record-keeping using the existing resources. Think about:

- IT provision and how to control records through the lifecycle
- Record-keeping expertise
- Policy and procedures
- Training and change management

Conclusion

- Records management is equally about human behaviour and fit-for-purpose processes and procedures as technological and physical vehicles and repositories in which the records are transported and reside.
- It is possible to identify actions that can be taken together or in isolation to move organisations towards better mastery of its records, thereby aiming to meet accountability, transparency and societal objectives.
- For organisations without resources to hire a records manager/archivist and/or without budgets for EDRM systems or state of the art digital repositories it is still possible to successfully implement hybrid paper and digital records management without costly EDRM systems.

Any questions?



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