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## **EDMS, ERMS, ECMS or EDRMS: Fighting through the Acronyms towards a Strategy for Effective Corporate Records Management**

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### **Abstract**

*Records management has been receiving increased attention around the world over the last two decades as governments issue ever more laws and regulations about the management of corporate records. An electronic system to manage records effectively is the ultimate goal of every organisation in both the public private sectors – whether to support the development of E-Government or to conduct business legally. Such systems are not yet clearly defined, however, as the obvious confusion and inconsistency of nomenclature makes very clear. This paper highlights the problem and calls for research into this essential but currently ignored area.*

### **Keywords**

Records management, Electronic records, enterprisewide systems, EDRMS, ERMS, EDMS, ECMS, EKMS

### **Introduction**

Following the 2002 introduction of the US Public Company Accounting Reform and Investor Protection Act (often referred to as the Sarbanes-Oxley Act), in response to a series of recordkeeping-related business scandals, global interest in records management across all areas of business has increased dramatically. For the first time, US organisations and those of companies in other countries which share trading arrangements with the US are legally required to implement a formal records management system: failing to do so may lead to 20 years in jail (Stephens 2005a). This move towards regularising the previously somewhat cavalier approach to records management has led to similar provisions in a number of other countries – but it is still not clear to the majority of private and public sector organisations how they can best provide safe, effective and, above all, simple methods of protecting their corporate records. E.g. a 2005/2006 study in Switzerland has shown that organisations feel compliance comes at a cost but also forces organisations to think more about what has to be done: that is, compliance is not only a cost factor but can also be seen as a first step to increased operational efficiency. However looking more closely at international organisations in Switzerland, a different picture is revealed. While all sectors show some of the influences of compliance, the pharmaceutical industry reports almost no change in its recordkeeping, while the financial sector is extremely sensitive, especially regarding limitation periods (Stettler et al. 2006).

This paper investigates the current status of the wide variety of approaches to corporate recordkeeping systems. We begin by defining records management and explaining why it is so important to 21<sup>st</sup> century organisations. We then analyse the available records management systems, endeavouring to classify them into a set of easily understood groups (no easy task!); and finally we highlight the emerging problems facing private and public sector organisations striving to ensure their own records are managed effectively.

### **What is Records Management?**

There are a variety of definitions for records management (Yusof & Chell 1998) and the terms “records management” and “recordkeeping” are often used interchangeably – even governments cannot agree on a precise definition of this term.

The National Archives of Australia uses the expression “recordkeeping” to refer to a very precise set of activities which must be followed for effective recordkeeping:

*The making and maintaining of complete, accurate and reliable evidence of business transactions in the form of recorded information. Recordkeeping includes: the creation of records in the course of business activity and the means to ensure the creation of adequate records; the design, establishment and operation of recordkeeping systems; and the management of records used in business (traditionally regarded as the domain of records management) and as archives (traditionally regarded as the domain of archives administration).* (National Archives of Australia 2007c).

In the UK, “records management” is defined less clearly in terms of activities as:

*The function of creating, organising and maintaining records to ensure they provide evidence of activity, decision-making and policy. It includes the establishment of links between related records, swift and accurate filing and accessibility when required and scheduled destruction or transfer to an archives repository as appropriate in a timely fashion* (Crockett 2006 p4).

In the US, “records management” is defined as:

*The planning, controlling, directing, organizing, training, promoting, and other managerial activities involved in records creation, maintenance and use, and disposition in order to achieve adequate and proper documentation of the policies and transactions of the Federal Government and effective and economical management of agency operations* (National Archives of US 2007b).

These definitions are very similar to each other in terms of the ways that records management handles the creation, management and maintenance of records as evidence of activities. However, for the purpose of this paper, we will use the definition provided by the National Archives of Australia as favoured because it also includes the “means to ensure the creation of adequate records”. Corporate recordkeeping today cannot exist in isolation from the computerised creation and archiving of documents and records – In this modern time, together with the advancement of technology, for an information system to adequately create and effectively manage records it must not only be included, but must be a crucial component and is an important part of any effective 21<sup>st</sup> century recordkeeping system.

## **Why is Records Management So Important?**

Records management has gradually moved from a position on the very periphery of organisational attention towards a far more central legal requirement for both public and private sector organisations, primarily as a result of the introduction of a variety of laws and regulations related to the provision of accurate corporate records as and when needed. These laws, while frequently stimulated by awareness of the flagrant misuse of formal recordkeeping which occurred at the height of the dot.com boom in the late 1990s (Ackman 2002; Holtzman, Venuti & Fonfeder 2003; Office of the Press Secretary 2002), are also a response to the changing nature of records and documents themselves. Whether ‘born digital’ (Findlay 2002) or ‘made digital’ (Duff 2006; Fuzeau 2003), documents and records are now more accessible than ever before – and consequently lend themselves very effectively to management by enterprise-wide software solutions.

The Sarbanes-Oxley Act 2002 introduced in the US is arguably “the single most significant piece of federal legislation in decades” from a records management perspective, according to Stephens (2005a p99). Further pressure on recordkeeping practices has been provided by the enactment of a variety of national statutes related to public access or right to information: the Freedom of Information Act, for example, was enacted in the UK in 2000 (Shepherd & Ennion 2007); while Sweden enacted the Freedom of the Press Act in 2003 (Granath, Alariksson & Axelsson 2004) which states in Chapter 2 Article 1 that every Swedish subject shall have free access to official documents.

The examples of laws and regulations relating to records management provided below are mostly based on examples drawn from Australia, the UK and the US because of their extensive available information and their strong influence on records management practices worldwide (Bantin 2002; Erlandsson 1996; Gouanou & Marsh 2004; Hofman 2005; Ryan 2005; Willis 2005).

### **In Australia:**

- Australia's Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act (CLERP 9), which has been in force since July 2004, substantially strengthens disclosure requirements for listed Australian companies (Swire 2004)
- Chapter 17 of Australia's Intellectual Property Rights, as a result of the US-Australia Free Trade Agreement (FTA), provides: stronger protection to copyright owners; enhanced intellectual property enforcement; and reinforcement of Australia's existing framework for industrial property protection (Clarke 2004; DFAT 2004);

- The Australian Corporations Law of 1989 (revised in 2001) authorises the use of electronic record media in business recordkeeping, with the condition that the information must be able to be reproduced at any time in written form (Stephens 2005b);
- The Archives Act 1983, the Freedom of Information Act 1982 and the Privacy Act 1988 all apply to recordkeeping in government agencies (National Archives of Australia 2007b);
- Other laws relate to recordkeeping include: the Evidence Act 1995 and the Electronic Transactions Act 1999 (National Archives of Australia 2007b)

#### **In the US:**

- U.S. Federal Rules of Bankruptcy, Civil & Criminal Procedure, and the Federal Rules of Evidence affect five related areas of recordkeeping: early attention to issues relating to electronic discovery; accessibility; privilege; the application of Rules 33 (Interrogatories) and 34 (production of documents) to electronically stored information; and sanctions (Neale 2004);
- The US Patriot Act, passed on October 24, 2001, has provided US federal agencies with enormously extended powers for access to information and information sharing (Jaeger, Bertot & McClure 2003; United States Department of the Treasury 2007);
- The Sarbanes-Oxley (SOX) Act, passed by the US Congress in July 2002 as a direct reaction to the accounting scandals of 2001-2002, was designed to reduce corporate fraud and conflicts of interests, and to increase financial transparency and public confidence in business (Plotkin 2003);
- Basel II ("International Convergence of Capital Measurement and Capital Standards, a Revised Framework"), published in June 2004 by the Basel Committee on Banking Supervision, requires financial services institutions to identify/quantify their operational risks and show they have taken all necessary measures to reduce those risks (BIS 2004);
- The E-Government Act 2002 requires the accessibility, usability, and preservation of government information (National Archives of US 2007a)

#### **In the UK:**

- The Public Records Act 1958 requires the maintenance of permanent preserved records in proper conditions. This Act clearly identifies the creation, preservation and disposal of records (National Archives of UK 2007);
- The Modernising Government White Paper requires all central government agencies to create and manage records electronically (Prime Minister and the Minister for the Cabinet Office 1999);
- The Anti-Terrorism, Crime and Security Act 2001 requires the retention of communication data for the protection of national security (Ekweozor & Theodoulidis 2004);
- The full implementation of the Freedom of Information Act 2000 in 2005 requires public agencies to consider information as corporate evidence of activities (Screene 2005)
- The Data Protection Act 1998 which came into force in 2000 emphasizes the responsibilities of records managers to comply with the protection principles relating to personal data under their control (Public Record Office 2000);

#### **In the European Union:**

- IAS 2002-2005: in 2002 the European Union joined more than 90 countries either requiring or accepting International Financial Reporting Standards (IFRS) by 2005 – further increasing the demands on financial record-keeping and access (Tweedie 2003);
- The European directives on electronic signatures (especially the directive for a European community framework for electronic signature 1999) and the digital economy have had a significant influence on the laws and regulations in France (Fuzeau 2003) as well as other EU states.

It is clear from this substantial (but by no means exhaustive) list of new and revised laws and regulations from only a small group of countries that government attitudes towards the creation, maintenance and provision of corporate records has changed significantly over the past 10 years. Given the many high profile cases of attempted fraud still coming to light (the on-going problems identified in the United Nations Oil-for-Food

program, for example, show just how widespread and entrenched this problem is), it seems likely that government recordkeeping requirements in all countries will continue to be tightened over time.

Shepherd (2006) has summarised the following benefits of keeping good records for both private and public sectors:

- Good records provide evidence for business activities which protect organisations from business fraud
- Good records assist in the process of decision-making based on a comprehensive view of previous activities
- Good records provide evidence of organisations' legal business activities which conform to laws, regulations and standards.
- Good records support the audit process within the private sector; and accountability in public sector
- Good records help with research and cultural heritage preservation.

The problem is how to provide a formal, enterprise-wide environment in which corporate records can be created, stored, maintained, produced as needed – and retired when no longer required. Not surprisingly, given the ubiquity of enterprise-wide software solutions for a range of major corporate functions, ranging from logistics to customer relationship management, a wide variety of electronic approaches to recordkeeping and management have been developed over the past 10 years. In the next section of this paper, we analyse these solutions and attempt to provide a taxonomy for corporate electronic records management.

## What is the Role of Electronic Records Management Systems?

There are two major reasons for using software systems to manage records: firstly, paper-based records management systems are too readily susceptible to physical destruction. A notable example comes from France where, in 2002, almost all the (physical) records kept in a Records Centre in Roye, Picardy, which served both public and private sector organisations, were destroyed by fire (Fuzeau 2003), with one hospital management group alone losing over 180,000 records! The second motive for moving to an electronic recordkeeping system is less dramatic, but every bit as important and relates to the huge variety of electronically created ('born digital') documents in different formats and in different media (e.g. word processing files, image files of various types, PDF files, spreadsheets, emails, websites etc.) which all depend upon electronic recordkeeping techniques, if their creators are to be able to work with them reliably in the future.

The National Archives of Australia (2007a) has identified one of the Commonwealth Government's future goals as being the creation of a whole new recordkeeping system within the next 5-10 years. The definition of records from the National Archives of Australia already quoted in this paper, however, emphasised the need for a: "means to ensure the creation of adequate records", because the use of technology is not an absolute solution in and of itself. To be sufficient, an electronic records management system must provide satisfactory functionality to meet all the recordkeeping standards. But what the 'satisfactory functionality' of such a system might be is still an open question.

There are a limited number of case studies in the literature about the implementation of a records management system. These case studies report on the implementation of systems with a variety of different names: electronic records management systems, electronic document systems or electronic document and records management systems – and even enterprise content management systems, or enterprise knowledge management systems. Fuzeu (2005) described two case studies of French private sector companies using an 'electronic records management system'. Similar case studies of organisations using 'electronic records management systems' have been reported by Gregory and Loussouarn (Gregory 2005; Loussouarn 2006). In other case studies, the name of the system used to manage records is a 'document management system' (Dhérent 2006; Schroeder Jr 2006). Wilkins, Holt & Swatman (2007), Smyth (2005), William (2005) and Maguire (2005) all describe the implementation of an approach to enterprise-wide records management called Electronic Document and Records Management Systems (EDRMS). Johnston and Bowen (2005) reviewed a number of published and unpublished case studies about organisations which had implemented an 'electronic records management system', an 'electronic document management system' or an EDRMS. Benfell (2002) reported on an organisation's future approach to the integrated EDRM system from more limited EDM and ERM systems.

Ekweozor and Theodoulidis (2004) categorised records retention software into ERMS and EDMS, differentiating these systems on the basis of whether the documents maintained were forensic or not. Sprehe (2004 p55) has suggested a framework for the integration of ERMS and EDMS, arguing that "merging the functionality of EDMS with the requirements of ERMS provides for the reuse of electronic information and

ensures the integrity and retention of the electronic records”. The UN (2006 p11) also requires electronic records to be kept in an EDRM system which “controls how records are created, ensures that all the components needed for them to be considered reliable are in place, and manages them over time up to the point they are either permanently archived or destroyed”.

**So, what are they talking about? Why this plethora of names?**

Stringer (2006) has categorised electronic records management systems into five major types on the basis of the claims made by the manufacturers themselves: Electronic Document and Records Management (EDRM), Electronic Document Management (EDM), Electronic Records Management (ERM), Enterprise Content Management (ECM) and Enterprise Knowledge Management (EKM) systems. She also classified the solution providers for each of these categories, including major software solution providers such as Fuji Xerox, HP, Sun, Objective Corporation and Synergy (to name but a few).

**This naming confusion has leads to some major concerns about the solutions on offer: what are these systems all about? Do they provide similar functionalities under different names? And, if they do provide different functionalities, which systems will provide the ‘proper’ solution to records management needs?**

Given the lack of clarity in the material provided by the software manufacturers, the only way of answering these questions was to undertake a ‘quick and dirty’ evaluation of these systems themselves, so as to understand what functionalities each group of solutions offers; and whether they provide the needed functionality for corporate recordkeeping in today’s environment.

Table 1 summarises the five types of system and identifies some of the better-known representatives of each type. The reason we chose these representative systems for each category is from the name of the product they claim themselves to be on their website.

Table 1: A preliminary categorisation of corporate records management software solutions

<b>ECM Enterprise Content Management</b>	<b>EDRM Electronic Document &amp; Records Management</b>	<b>EDM Electronic Document Management</b>	<b>ERM Electronic Records Management</b>	<b>EKM Enterprise Knowledge Management</b>
FileNet (IBM)	Meredio (Meredio Ltd.)	InfoRouter (Active Innovations Inc.)	Oracle Records Management 10g (Oracle)	ExactSoftware (e-Synergy)
Docushare (Fuji Xerox)	InfoXpert (InfoVision)	InQuest IQ9 (InQuest Technology)	QRMS (Quest)	KnowledgeOne (KnowledgeOne Corporation)

State Records of South Australia (SRSA) has established a panel to approve Electronic Document and Records Management System solutions which meet the South Australian Government’s recordkeeping and ICT technical standards and commercial requirements. SRSA has developed a Functional Compliance Requirements document for the provision of EDRMS, but so far only two solutions and providers – Tower Software’s TRIM and Objective Corporation’s Objective – have met the requirements. It seemed logical to use this document, regarded as a trail-blazer by public sector procurement organisations within and outside Australia, to see whether the listed features of each of the systems identified in Table 1 could meet SRSA’s requirements for EDRMS. The analysis, which appeared to be such a straightforward process, in fact made matters more, rather than less, confused. No unambiguous answers could be found for the questions with which we started the analysis, because:

- SRSA’s functionality requirements are very detailed, while the software providers’ advertised features are very general. It was therefore impossible to identify exactly which features are included and which are not
- Secondly, SRSA’s currently approved EDRMS solutions, TRIM and Objective, which meet the recordkeeping requirements of the South Australian Government, does not really assist in allocating these products to categories in Table 1. Tower Software’s website identifies TRIM as an ECM, rather than as an EDRMS. Objective Corporation also provides an ECM solution: EDM and ERM are only two of several modules offered in their integrated ECM solution (others include Foundation Content Repository, Drawing Management, Workflow and Web Content Management). So, are these system identified and approved by SRSA as EDRMS really EDM and ERM modules of an ECM solution? Does this mean that the term ECM is wider than EDRMS? Or is this simply ‘marketing speak’ on the part of TRIM and Objective Corporation?

- Finally, most of the corporate records management software providers themselves advertise their products using a range of different names. IBM's FileNet Enterprise Content Management is a range of products which includes Content Manager, Email Manager, Records Manager, Web Site Manager etc. Similarly, KnowledgeOne K1 is claimed to be a Knowledge Management solution which includes components such as Records Management System, Electronic Document Management System, Workflow System and Complaint Management System.

The analysis which was initially intended to clarify the terminology confusion, therefore, instead created more confusion. Our initial belief was that there needed to be a universally agreed term and set of functionalities for each type of corporate records management system, depending on its purpose: managing documents, managing records, managing both document and records, managing 'knowledge' (itself a very obscure term which has never yet obtained an unambiguous definition). Such a set of functionalities would not only help an organisation to select the right product for its specific legal requirement, but would also enable government agencies to consistently monitor organisations' records management and guide the system providers in producing the right products. In a report on the importance of Enterprise Document and Records Management, Meridio Ltd. (2006 p18) – one of the EDRM providers – noted that a key consideration in adopting a records management solution is "What standards exist for eDRM systems and for the related technology?"

The result of our analysis, however, indicated that it is by no means easy to identify exactly how these systems differ – indeed, it may well be that no definitive set of distinctions can be made (apart from the obvious difference between records and documents which do not have any forensic features, such as personal emails unrelated to the organisation).

## Conclusion

This paper set out to clarify a major concern for private and public sector organisations considering an enterprise-wide records management solution – how to select a product which will meet the organisation's specific needs?

Yet the software providers themselves do not appear to have identified any unambiguous set of functionalities which would distinguish, say, Records Management from Document Management – or Content Management either. The unfortunate organisation faced with a decision on which solution to purchase, therefore, has little external information against which to measure the offerings of the various software providers or even a simple label to identify the adequacy of a proposed system.

The only really useful information available to would-be purchasers of enterprise records management solutions appears to be the Functional Compliance Requirements for EDRMS developed by State Records of South Australia. Table 2 summarises how the two successful software solutions match these guidelines, and also includes the only other two solutions from Table 1 which meet any of SRSA's requirements (the remaining software solutions met none of the requirements).

Table 2: Compliance with SRSA's Requirements for EDRMS Solutions

SRSA Functional Compliance Requirements for EDRMS	Tower Software's TRIM	Objective Corporation's Objective	InfoVision's InfoXpert	Fuji Xerox's Docushare
<b>1. General Solution Requirements</b>				
Capture and Management of Records	✓	✓	✓	✓
<b>2. Risk Management Requirements</b>				
Capture and Management of Records	✓	✓		
Storage	✓	✓		
Tracking and Version Control	✓	✓	✓	✓
Disposal	✓	✓		
Functional Continuum	✓	✓		
Migration	✓	✓		
Conversion	✓	✓		
<b>3. Reporting</b>			✓	
Business Process Management	✓	✓		
Report Generation	✓	✓		
Audit Reports	✓	✓		
<b>4. Metadata</b>				
Capture	✓	✓		
Maintenance	✓	✓		
Accuracy	✓	✓		
<b>5. Accessibility</b>				
Appropriate Access	✓	✓		
Classification	✓	✓		
Searching and Retrieval	✓	✓	✓	
<b>6. System Integrity</b>				
Security	✓	✓	✓	
Reliability	✓	✓		
<b>7. Support</b>				
Maintenance	✓	✓	✓	
Training	✓	✓	✓	
Support	✓	✓	✓	

Clearly, this paper has provided only a very preliminary analysis of enterprise records management solutions – but this limited view has made clear the need for careful, rigorous evaluation of organisation's needs before any decision about a solution can be made. The paper forms the first output of a larger project which focuses on the full range of criteria for enterprise records management uptake and acceptance. Later work will include detailed discussions with software providers, as well as case studies of implementing organisations. The final product of this overarching project will be a framework for the effective uptake of corporate records management systems, currently an area of limited research despite its obvious usefulness for both private and public sector organisations.

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## Appendix 1

### The websites describing the products and functionalities of the systems

Towersoft

<http://www.towersoft.com/global/Documents/Common/TRIM+Context+6+Overview+Brochure++NA.pdf>

Objective

<http://www.objective.com/Products/Modules/index.html>,

FileNet (IBM)

[http://www.filenet.com/English/Products/Content\\_Manager/](http://www.filenet.com/English/Products/Content_Manager/)

DocuShare (Fuji Xerox)

<http://www.fujixerox.com.au/productDetail.do?code=docushare4>

Meridio (Meridio Ltd.)

<http://www.meridio.com/products/meridio/>

InfoXpert (InfoVision)

[http://www.infovision.com.au/Products\\_infoXpert\\_1\\_Intro.html](http://www.infovision.com.au/Products_infoXpert_1_Intro.html)

InfoRouter (Active Innovations Inc.)

[http://www.inforouter.com/Document\\_Management\\_Features.asp](http://www.inforouter.com/Document_Management_Features.asp)

InQuest IQ9 (InQuest Technology)

<http://www.inquesttechnologies.com/DocumentManagement.aspx>

Oracle Records Management 10g (Oracle)

<http://www.oracle.com/technology/products/orecordsmgmt/index.html>

QRMS (Quest)

<http://www.qrms.com/software.asp>

ExactSoftware (e-Synergy)

[http://www.exactamerica.com/esynergy/pdf/factsheet/MAS1546\\_Knowledge\\_Document\\_Management.pdf](http://www.exactamerica.com/esynergy/pdf/factsheet/MAS1546_Knowledge_Document_Management.pdf)

KnowledgeOne (KnowledgeOne Corporation)

<http://www.knowledgeonecorp.com/products/knowledgeone.htm>

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