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Australian Public Sector Adoption of EDRMS: A Preliminary Survey

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Abstract
Governments around the world are placing increasing emphasis on effective corporate recordkeeping within both private and public sector organisations, with some governments mandating such approaches: for example, The State Government of South Australia has required all its agencies to have 'an adequate records management program' in place by the end of 2009 (State Records of South Australia 2007). These demands are often met through the implementation of centralised electronic records management solutions – frequently, Electronic Document and Records Management Systems (EDRMS) – but not all implementing organisations adopt an EDRMS solution in the most optimal way; and many such systems fail to meet organisational needs, or gain acceptance form all (or even most) users. This paper reports on a Web-based survey of Australian public sector EDRMS implementation at three levels (federal, state and local government) and forms the first component of a multi-part investigation of Australian public sector records management. This preliminary survey was designed to identify the EDRMS solutions adopted by government agencies, as well as any guidelines or frameworks used in designing and implementing those solutions.

Keywords
Records management, Electronic records, EDRMS, Web-based survey

INTRODUCTION
Increased government legislation in recent years has triggered significant public sector interest in record-keeping systems. The implementation of such systems assists public sector organisations to comply with State and federal legislation, such as the State Records Act (State Records of South Australia 2008b) or the Freedom of Information Act (Department of the Prime Minister and Cabinet 2008), both of which require availability and accessibility of information for the public; and require that all records be maintained in good order and condition. While government requirements for improved record-keeping are clear, the level of compliance with these regulations and laws remains unknown.

This paper reports on the results of a preliminary survey of Australian public sector implementation of Electronic Document and Records Management Systems (EDRMS) – information systems-based record-keeping solutions providing a complete solution for organisational records management, which can be applied at all three levels (federal, state and local) of the Australian public sector.

The paper is divided into four sections: we begin with the background and motivation for the conduct of this survey; followed by a discussion of the research method selected. The next section reports on the research findings; and the paper concludes with a discussion of results, including directions for future research.

BACKGROUND AND MOTIVATION
This survey is part of a larger project designed to investigate current records management activities within the Australian public sector, with the aim of developing a sound theoretical framework for successful EDRMS implementation. The overall goal of the project is to assist public sector agencies to tailor and apply the framework to their specific needs. The survey reported in this paper was designed to ‘set the scene’ for the more
in-depth investigations which follow (some of which are already underway). The research question for the present survey is:

“What is the current level of EDRMS implementation in the Australian public sector?”

This research question is of considerable interest as, while many state archive authorities have conducted surveys on Records Management generally; none of these surveys has investigated the current level of EDRMS implementation nationwide. Examples of these government surveys include:

- The State Records of New South Wales Records Management Survey, conducted annually since 1996, to assess performance in improving the quality and keeping of official records across the New South Wales Government (State Records New South Wales 2000). The most recent report comes from a survey conducted in late 2004 to judge public office compliance with the State Records Act (State Records New South Wales 2007b). In addition to the Records Management Survey, this agency also conducted a brief Information Survey on Digital Recordkeeping to gather information about records issues and practices (State Records New South Wales 2005);

- The State Archives of South Australia Government Records Survey from 1998 and 1999. The purpose of these surveys is to provide an overview of records management practices within the State Government under the State Records Act 1997. It was planned to conduct similar surveys annually (State Records of South Australia 1998), although only the reports from 1998 and 1999 are publicly available.

- The Northern Territory Archives surveys from 2005 and 2006 to assess the level of records management compliance with Records Management Standards pursuant to the Information Act 2002 within the Territory’s public sector organisations (Northern Territory Archives Service 2006).

- On a less official level, the RMAA (Records Management Association of Australasia) has also conducted surveys about records and information management from time to time. The most recent available result is that of a survey concerning Enterprise Content Management activities, which included a number of questions relating to records management more generally, in 2006 (Records Management Association of Australasia 2008).

None of these surveys, however, provides empirical data concerning the current level or quality of electronic record keeping systems implementation within the Australian public sector. Given the focus of our own project, we saw a need to obtain a broad-based understanding of just how actively Australian public sector agencies are pursuing the goal of enterprise-wide electronic record-keeping. We conducted a short and very specific Web-based survey to answer this question, as a first step towards developing an EDRMS implementation framework.

The survey consists of six questions, the first four of which are concerned with gathering data on electronic recordkeeping system implementation, while the final two invite respondents to participate in a subsequent follow-up survey and/or case study.

The justification and background for the first four questions are as follows:

Question 1:

- Does your organisation have an effective official electronic recordkeeping system?

The National Archives of Australia (2007) have identified one of the Commonwealth Government’s future goals as the creation of a whole new recordkeeping system over the next 5-10 years. The State Records Acts in all States require public agencies to abide by a number of obligations related to records management, such as the establishment and maintenance of a records management program which complies with certain standards and codes of practices (State Records New South Wales 2008); or to ensure the accessibility of digital records as long as they are required (State Records Commission of WA 2008).

Another example of the increasing emphasis State governments are placing on effective records management is the requirement by the South Australian government under the Across-Government Records Management Strategy that electronic recordkeeping systems meeting the standards set by the State Records Act are to be implemented in all South Australian State Government agencies by 2009 (State Records of South Australia 2007).

The need for all public sector agencies to deploy an effective electronic recordkeeping system to meet these obligations is clear. The purpose of our first question, therefore, is to determine the level of availability of such systems within the public sector – in the context of the regulations and standards being mandated by current and future legislation.
Question 2:

- Which of the following functions does this system do?

There are a wide variety of different electronic records management systems on offer for government agencies, including (inter alia): Electronic Document and Records Management (EDRM); Electronic Records Management (ERM); Enterprise Content Management (ECM); and Enterprise Knowledge Management (EKM) systems (Stringer 2006).

Despite the difference in terminology, providers of these systems all claim to provide electronic recordkeeping functions (Nguyen et al. 2007). With such a wide variety of products available, we wanted to understand which functions Australian public sector organisations saw as most important for their record-keeping systems.

Question 3:

- What is the system’s name?

To assist public sector organisations to select an electronic recordkeeping system which complies with the required obligations, standards and legislation, several State Records Authorities have set up panels to assess and approve a variety of Records Management products. Public agencies can be confident when selecting a compliant product, knowing that this system will make it easier for them to comply with the law. They also save time and cost during the tendering process.

The list is of compliant products is, however, by no means universal across all States and Territories:

- In South Australia, the EDRMS panel has approved the products Trim and Objective (State Records of South Australia 2008a).
- In Victoria, products which are fully compliant products with VERS (Victorian Electronic Records Strategy) include: Trim Context 6.2, Objective 7.3, BluePoint Content Manager 7.5, eDOCS RM, VERS VEO edition 6, IBM Filenet P8 Records Manager 4 (Public Record Office Victoria 2008a). All Victorian public sector agencies are required to use VERS-compliant systems within the next 10 years (Public Record Office Victoria 2007).
- In NSW, approved products include: Trim + supplementary, Objective 7, P8 + Records Manager (State Records New South Wales 2007c).

This question was designed to provide an insight into the use of compliant products by public agencies.

Question 4:

- Did your organisation follow any guidelines in the process of implementing this system?

Australia is unusually rich in record-keeping standards and frameworks – an area which is otherwise only covered by ASO 4390/AS ISO 15489. DIRKS (Designing and Implementing Recordkeeping Systems) is the official methodology of the National Archives of Australia, developed to guide Australian government agencies through the design and implementation of record-keeping systems which comply with specific records management requirements under the NSW State Records Act 1998 (State Records New South Wales 2007a). This methodology is also used outside Australia (Hofman 2006), although it is not officially accepted.

VERS, developed by the Public Records Office Victoria is “a framework of standards, guidance, training, consultancy and implementation projects, which is centred on the goal of reliably and authentically archiving electronic records” (Public Record Office Victoria 2008b).

Question 4 investigates whether Australian public sector agencies follow either of these official guidelines/standards when implementing electronic recordkeeping systems. The answer to this question is also designed to be useful in the context of our larger project to determine the use of available guidelines for the implementation of records management systems.

RESEARCH METHOD

Surveys are a very popular quantitative data collection technique and have been used since the earliest forms of census were developed – having since evolved into the most widely used technique in sociology studies (Neuman 2003). Surveys are used to “describe, compare, or explain individual and societal knowledge, feelings, values, preferences and behavior” (Fink 2006 p.1). They also provide a standardised measuring instrument in which identical questions are asked and presented to the target population (Sapsford 2007). Rea and Parker (2005 p.5) state that surveys are the best method of collecting data for “determining with a known level of accuracy, detailed
and personal information about large populations”; in comparison to other alternatives such as direct measurements or observations.

The research question “What is the current level of EDRMS implementation in the Australian public sector?” seeks an objective description of the current adoption levels of EDRMS within a large population—the Australian public sector. This led us to adopt a survey as the most appropriate method of collecting data to answer this research question.

There are, of course, many different ways of undertaking a survey, including mail questionnaire, telephone interview and face-to-face interview (Neuman 2003). With the widespread acceptance of the Internet, however, email and Websites have become very commonly used as effective survey channels (Kaye et al. 1999; Yun et al. 2000). Many studies have been conducted to examine the feasibility of these survey methods and to identify ways of improving their usability (Couper et al. 2001; Schleyer et al. 2000; Solomon 2001; Wyatt 2000; Zhang 2000).

This survey was essentially exploratory in nature, since there is no existing objective information available on this topic. Data were analysed using MS-Excel 2007 but, because of the survey’s focus, only comparatively simple descriptive analytic techniques were used.

Why Web-based survey?

The commonly cited advantages of Web-based surveys include: low cost, fast and efficient data collection (Schleyer et al. 2000); inclusive (even hard-to-reach population); faster and cheaper data analysis; rapid update of questionnaire content (Wyatt 2000); easy to access (just a mouse click-away from a survey invitation email), easy to answer format (just a click on the answer choice); and attractive colour and design (Solomon 2001).

We decided to use a Web-based survey because this matched the nature of our research question. Our survey population is large and has a nation-wide (the Australian public sector) distribution. The Web-based method enabled the survey to reach a wide variety of geographically-distributed organisations with minimum cost and time. This approach has the additional benefits that the potentially large volume of survey data can be automatically collected and imported into a spreadsheet for analysis, helping to reduce data entry errors, time, and effort.

Issues with Web-based surveys

Web-based surveys are not the most appropriate method for every research project. Problems associated with this type of data gathering technique have been raised by some researchers:

Coverage bias and participants’ level of computer literacy might hinder the rate of response (Schleyer et al. 2000)

Even assuming this issue is still valid (computer literacy is becoming increasingly common) this does not present a problem for the present survey, because the target participants are records managers/CIOs/CEOs whose daily jobs require the use of computers and the Internet.

Sampling procedures need to be conducted so that the entire target population has an equal chance to participate in the survey (Schleyer et al. 2000). Since no complete list of all Australian public sector agencies at any of the three levels of government (federal, state or local) was available, however, we were only able to identify a random sample of targets.

Survey sample selection

The goal of this survey was to identify and contact all agencies within the Australian public sector. Given the lack of a comprehensive list, we could only make a diligent attempt to identify and contact as many organisations as possible.

Local government: a list of local councils was obtained from the website of the Australian Local Government Association (http://www.alga.asn.au);

State government: a list of State government agencies was obtained from a portal created by the federal government (https://govforms.business.gov.au/) and cross-referenced with the official website of the Australian Federal Government (http://www.australia.gov.au);

Federal government: a list of Australian federal government departments and agencies was obtained from the Australian Government Online Directory (http://directory.gov.au/).

Using these lists, email addresses were collated for CEO/CIO/administration or enquiries staff. This required considerable effort as, for example, federal government organisations are often very large and highly specialised. In these cases, therefore, an initial contact was made to identify the specific details of the target participants (i.e.
records managers/EDRMS managers/CIO/CEO), before a follow-up invitation to participate in the survey was sent out to specific individuals.

In addition, the State Records (state archives) bodies of all States were contacted to obtain potential lists of records managers. This turned out to be useful as one of these organisations recommended posting the survey on the RMAA’s list server, which contains the most extensive and up-to-date list of records managers nationwide.

Survey administration

The survey questionnaire was open for a period of two months (mid February to mid April). Initially the survey was hosted on the University’s own website, but a technical problem was detected after the first batch of email invitations (89 emails) had been sent out and it was decided to subscribe to a professional tool, SurveyMonkey, which has been widely used by many major organisations, including (inter alia): the European Commission, RMAA, the Assoc. for Computing Machinery; and the Australasian Conference on Information Systems. The initial invitation was supplemented by extensive follow-up to increase the response rate.

RESEARCH RESULTS AND DISCUSSION

Survey invitations were sent to 1,289 participants at three levels of Australian government – more specifically, 568 local government councils, 687 State government organisations and 34 Federal government entities. In addition, an unspecified number of participants were invited via the RMAA list server. 27 refusals were received from organisations not wishing to participate in the survey, relating to lack of time or lack of staff qualified to respond. A further 66 invitations were returned due to technical problems (mailbox full, non-existent email account, unable to be delivered, etc.).

In total, 385 responses were received – translating into a response rate of roughly 32%. The following subsections discuss the responses to each question:

Electronic recordkeeping system uptake by the Australian public sector

The results show that organisations in the Australian public sector are generally progressing towards the implementation of an effective recordkeeping system – such a system was said by respondents to be in use in approximately two thirds of public agencies. Almost 18% of the organisations surveyed were in the process of implementing and about 10% were in the process of planning for a new recordkeeping system. 1.3% of the responses revealed no electronic recordkeeping system in place; and a similar percentage said they had an ineffective existing system, but were planning the adoption of a new system.

Interestingly, nearly 4.7% of the agencies had no plan to upgrade to a new recordkeeping system, which suggests they were not happy with their current situation – but it was not clear whether this was because there was no system in place or because the existing system was not effective. One organisation had implemented some parts of a fully featured system and planned to implement the remaining features in the future, while several organisations had begun an implementation but had no plans to implement all features of the solution they had purchased.

In conclusion, around 93% of all surveyed organisations claimed to have an effective electronic recordkeeping system, or to be in the process of planning and/or implementing an electronic recordkeeping system. This result appears to suggest that the public sector is progressing towards compliance with the laws and regulations on effective and efficient records management. An interesting question remains, however – how will the remaining 5% of organisations abide by the government’s requirements without implementing electronic recordkeeping systems, taking into account the increasing prevalence of ‘born-digital’ records in all organisations?

Functions of respondents’ recordkeeping systems

The results indicated that around 80% organisations with an electronic recordkeeping system in place selected their system so as to be able to handle document management, or document + content management, in addition to managing electronic records. This preference also applied to two thirds of those organisations which were in the process of implementing or planning a new system. This would seem to suggest that agencies are genuinely looking for solutions to all their records and document management problems, rather than simply responding to government calls for enterprise-wide record-keeping systems – which is very encouraging!

There were some unexpected results: 7.5% of organisation preferred knowledge management facilities incorporated into their records management systems, while about 10% of existing systems were reported to manage records only (either electronic or hardcopy, or both). Two organisations claimed to have systems capable of managing corporate information from documents and records, facilitating the transition from content to knowledge. Four organisations implemented systems that are capable of records management (TRIM and
RecFind) but did not fully utilise these solutions – managing documents alone, rather than both records and documents and, in one case, managing only paper-based documents.

6.5% of respondents were using systems which supplement Records Management with a knowledge management component. Another 3% had either selected a system which handled electronic records only, or had gone to the other extreme and selected an integrated solution which managed all forms of information (documents, records, contents, and knowledge).

Among those organisations which did not currently have a recordkeeping system in place, approximately one in six (about 3% of respondents) were still in the selection stage.

The results indicated that most of the public sector organisations responding to the survey preferred their system to be capable of managing either: documents + records; or documents + content + records.

**Choice of recordkeeping system**

The results confirmed TRIM as the most popular recordkeeping product (about two fifths of all responses) currently in use in the public sector, followed by Dataworks (one fifth of all responses). Other choices included systems from InfoVision (InfoVision/InfoXpert), KnowledgeOne (DocFind/RecFind), Open Text (PowerDocs/Hummingbird/Livelink), Objective; and IT Vision (SynergySoft) – in descending order of preference.

About 3.5% of respondents opted to develop a proprietary in-house system to manage records. A small number of organisations were using: BluePoint, systems from Civica (Authority/Domino.Doc), or IBM’s Lotus Notes/Lotus Domino, Documentum and FileCM (around 1% to 3% for each group). Other systems to receive a mention by single organisations included Lava, Vitesse, Meridio, imageREAL, Local Government Enterprise, Vignette and Staffware, Dataworks with Merlin and Alchemy.

For organisations in the process of implementing or planning a new system, TRIM remained the number one choice (about 35%). A quarter of all respondents were undecided about which system to purchase. Almost 12% of respondents favoured Objective. Smaller numbers of respondents had selected other systems, including: Hummingbird, RecFind, SynergySoft and Local Government Systems, while Dataworks, InfoVision and Sharepoint were each chosen by 2 organisations only.

Some agencies were in the process of selecting a solution and were considering solutions such as Dataworks and InfoVision, or planned to use TRIM combined with Objective. Meridio, Domino.Doc, Lotus Domino and Interwoven were also seen as potential solutions – but each of these had only been considered by a single organisation.

Responses to this question suggested that certified products are currently used in around half the surveyed public organisations; and are the preferred choice for almost half the organisations planning or implementing a new recordkeeping system. Some States only require agencies implementing a new system to prove compliance with standards, rather than insisting they implement a new solution – so that approximately half the public organisations which are not currently using a compliant product appeared happy with their existing recordkeeping system, even though it might not be an approved solution certified by their State Records authority, because there was no pressure on them to change. In those States where all agencies are required to be compliant – whether by modifying their existing record-keeping solution, or by implementing an entirely new solution – attitudes were naturally rather different.

It is difficult to understand, however, why those organisations implementing or planning a whole new system would not wish to adopt an approved solution which will reduce the cost of tendering, comply with legal standards, integrate more effectively with other organisations; and provide a proven fit-for-purpose solution to their record-keeping needs. By choosing a system which has not been certified, organisations need to prove compliance with standards and thus need to exercise additional diligence during the selection and implementation processes.

**Guidelines for recordkeeping system’s implementation**

The results show that almost 30% of organisations implementing a recordkeeping system in the past did not follow any guidelines/methods or standards during the implementation process. The official guidelines from the National Archives of Australia – DIRKS and the Australian methodological framework for Records Management on which DIRKS was developed (ASO 4390/AS ISO 15489), was used by fewer than 25% of the responding organisations. Almost 17% of respondents were not sure or had no idea what guidelines had been used in their organisations, mostly because the system was already in use when they were employed. Guidelines and standards from the various State Archives bodies were utilised in about 8% of the responding organisations. The Victorian government’s electronic record-keeping standard, VERS, was used during the implementation process by about 5.5% of organisations.
Around 2% - 3% of respondents reported the use of PRINCE2 or AAA keywords for councils, while more than 6% had developed their own methodology for their EDRMS implementation project. Some organisations claimed to use a combination of DIRKS, VERS and PRINCE2. One organisation used DoD 5012.2 – a Design Criteria Standard for Electronic Records Management Software Applications by the US Department of Defence – and another claimed it had used Zachman (a framework designed to enable the description of an organisation’s structure!). Several organisations purchased their systems and followed the providers’ recommendations for installation.

For those organisations in the process of implementing or planning a new recordkeeping system, DIRKS was the preferred method for about 23% of respondents. A similar percentage of respondents indicated they had not yet decided on whether to use a particular set of standards or a framework for their EDRMS implementation process. Amazingly, about 15% of organisations had no intention of using any type of guideline, standard or methodology for their implementation project! The remainder of the respondent organisations which had not yet implemented an enterprise-wide solution planned to use VERS, PRINCE2 or a combination of these methods, intended to seek assistance from their vendor, or would use their local State Records guidelines, AAA keywords for councils or, finally, intended to use their own home-grown methodology to implement their record-keeping system.

To summarise this rather complex set of responses: methods and standards used for the implementation of records management range from project management methodologies (PRINCE2, home-grown project methodologies, vendors’ consultancy, etc.) to generic standards and proven records management methodologies (VERS2, AAA keywords for councils, DoD 5012.2). DIRKS – the only domain-specific official guideline for records management system implementation projects – is only in use by, or intended for use by a relatively small number of the responding organisations (about one quarter). Many organisations did not or do not plan to use any guidelines/frameworks during their implementation project.

This led to the question of why DIRKS is not more widely used. Is it because decision makers are not aware of this methodology, or because DIRKS is not a practical fit for all agencies? Answers to our final question suggested that public organisations are in need of an effective, tailored and appropriate set of guidelines for record-keeping system implementation projects. This area appears to be currently in a somewhat confused state, as organisations do not (or cannot) differentiate between methodologies for successful system implementation and guidelines for an effective and reliable records management program. This might be a possible explanation for, or at least a major contributor to, many failed electronic record-keeping implementation projects in practice. Table 1 summarises the findings of the survey questionnaire.

Table 1. Summary of the major findings of this survey

<p>| Question 1: Electronic recordkeeping system uptake by the Australian public sector | Findings: The public sector is progressing towards compliance with the laws and regulations on effective and efficient records management. |</p>
<table>
<thead>
<tr>
<th>Category</th>
<th>Organisations which currently have a recordkeeping system in place</th>
<th>Organisations which are currently in the process of planning or implementing a new recordkeeping system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Findings</td>
<td>About 2/3 of the surveyed organisations claimed to have an effective recordkeeping system in place</td>
<td>About 28% are either in the planning or implementing process of a new recordkeeping system</td>
</tr>
<tr>
<td></td>
<td>About 5% are not happy with the existing system but have no plan to upgrade into a new system</td>
<td></td>
</tr>
</tbody>
</table>

| Question 2: Functions of recordkeeping systems | Most favourite electronic systems with functions of managing documents and records; or documents, contents and records | 79% | 63% |

| Question 3: Choice of recordkeeping system | Certified products are only used in about half of the organisations | TRIM – most popular (38%), followed by Dataworks (20%) | TRIM – most popular (35%) |

| Question 4: Guidelines for recordkeeping system’s | | | |
Many organisations did not or do not plan to use any guidelines/frameworks during their implementation project. DIRKS – the only domain-specific official guideline for records management system implementation projects – is only in use by, or intended to be used by, a relatively small number of the responding organisations.

Almost 30% of organisations use about 25% of the organisations use about 23% of the organisations use

CONCLUSION

This paper has reported on the current level of EDRMS implementation within the Australian public sector. Our findings suggest that the Australian public sector is working towards compliance with government mandates and is, in general, implementing electronic record-keeping systems. Unsurprisingly, organisations prefer systems that incorporate all content management requirements, including the management of online content and documents as well as records.

It appears that TRIM is the preferred product for a significant proportion of our respondents and this solution clearly dominates the Australian public sector. Surprisingly, however, half of all responding organisations opted for a product which had not been certified as compliant by their State records authority. This raises the issue of why a government agency would choose to divert from a certified product to one where compliance needs to be established – are there benefits in some of the alternative products which are great enough to make the extra effort of gaining approval from the local State records authority worthwhile? This also raises the issue of standardisation for potential future exchange of documents between government agencies.

Finally, the majority (77%) of EDRMS implementation projects do not follow DIRKS – the only (official) methodology for records management system implementation in Australia. Most organisations use an implementation process of some sort, but not a specific records management implementation methodology.

Several questions arise as a direct result of this survey – specifically, the preference for compliant products and the relative unpopularity of DIRKS. This survey targeted a nation-wide population, identifying as many public organisations as possible. Because we sought responses from the RMAA list server, as well as from identified public sector agencies, however – and also because it was not always clear to whom we should address our invitation email within the agencies targeted – we are not entirely certain of the actual response rate of this survey. This should be kept in mind when interpreting the results, because they are not necessarily representative of the entire public sector. The results do, however, establish strong demand for a practical framework for electronic record-keeping system implementation projects. This is particularly important in the context of government agencies anxious to ensure their records management system implementations comply with State and federal government mandates.

The next steps in this project include the identification of the motivating factors when choosing an implementation method; and an investigation of the factors which influence the choice of records management system provider. These are the next steps on the path towards identifying requirements for public sector EDRMS implementation; and will provide the foundation for a larger project, the development of an EDRMS implementation framework.

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