



# **Report of the 2005 Information Survey on Digital Recordkeeping**

**REPORT OF THE 2005 INFORMATION SURVEY ON DIGITAL RECORDKEEPING**

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## **Report of the 2005 Information Survey on Digital Recordkeeping**

This is the report of the findings of the first information survey to be undertaken by State Records within the new monitoring framework, the 2005 Information Survey on Digital Recordkeeping. The report:

- provides detailed analysis of the results of the 2005 Information Survey on Digital Recordkeeping and highlights issues and trends; and
- may also be used by public offices for benchmarking their own performance and for identifying priorities for further improvements.

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- Executive summary
- Introduction
- Survey results
- Appendix A: Statistical data from the 2005 Information Survey – Digital Recordkeeping
- Appendix B: Tables based on data from the 2005 Information Survey – Digital Recordkeeping

## **Executive summary**

This survey is State Records first information survey and provides an opportunity to inquire more deeply into the topic of digital recordkeeping by public offices. The data from the survey will help State Records understand better how digital recordkeeping is being implemented and managed within the NSW public sector. Important challenges lie ahead for State Records and for public offices as business is increasingly undertaken in the digital environment, and the dependency on digital recordkeeping grows accordingly. Underpinning this dependency must be robust and reliable digital records, managed in appropriate systems and accessible for long as required.

While there are issues associated with all aspects of records management in the digital environment, an analysis of the responses has highlighted two specific areas of concern: email management and the management of long term digital records and digital State archives.

### ***Email management***

The responses to the questions about email quantities and management are alarming. The quantity of emails generated is vast, but perhaps of greater concern is the issue of how they are managed.

Of concern to State Records is the large percentage of emails recording business transactions which are not being captured into recordkeeping systems - 75% of respondents reported that between 0% and 40% of business emails were being captured. For State Government agencies the estimated figure (across the sector) for business emails not captured into recordkeeping systems per year is approximately 119 million, while for universities the estimated figure is 850 million. While these figures are only projections, and they may be an overestimate of the business emails that should be captured and managed as records, nevertheless they do provide an indication of the scale of the issue. It is difficult to pinpoint the reasons for such high figures and it may reflect poor overall management of email use, lack of clear guidance to staff about recordkeeping responsibilities and lack of systems that will manage email appropriately.

Improving email management and minimising the risk posed by poor practices has been on the State Government agenda for sometime. However, it is still proving to be a challenging area for public offices. In reality, the proportions of emails that need to be managed as records are likely to be only a small percentage of the overall emails that are sent and received everyday by public offices. The management of these "business" emails is unlikely to improve significantly without improvement in the overall management of all emails.

### ***Management of long term digital records***

While there is some uncertainty about the extent to which recordkeeping will be 100% digital in the next 5 to 10 years, the unmistakable overall trend is towards fully digital business processes, and most public offices expect to be heavily dependant on digital recordkeeping (over 60% digital) by 2015. Of those digital records a significant quantity will require long term or archival management. This increasing dependency on digital records will pose a challenge for public offices. 25% of respondents indicated that they did not feel confident that digital records would remain accessible for as long as required. This concern is further reinforced by the fact that 38% of respondents had some equipment/technology dependent records that were either not accessible or accessible with some difficulty. The reasons for these difficulties included software and hardware obsolescence and records left in old systems and databases rather than migrated to new systems.

These responses reflect the complexities that face public offices in managing digital records. It is clear that there is a continuing need for State Records to provide advice, assistance, and tools to public offices for managing long term records within the public office's recordkeeping and digital storage systems.

### ***Management of digital State archives***

It is anticipated that digital State archives will come from two main sources within public offices: electronic document and records management systems storing the more common formats, and specialised business systems. Provided electronic recordkeeping best practice is followed, State archives in sound records management systems should not pose insurmountable problems for archival management, as successful transfers of such records as archives have occurred in both the Commonwealth and Victorian jurisdictions. In the short-term at least, it is expected that records from such systems will form the bulk of digital State archives transferred to State Records' custody once suitable digital archives facilities and processes are operational. The quantity of records being managed in this way is still relatively small, but survey respondents anticipate high levels of growth in the quantity of data in these systems in the near future.

The management of State archives in specialised business systems is potentially much more challenging, both technically and administratively. Quantities are much greater, with 782.9 gb of State archives across 22 business systems in just 8 NSW Government agencies, and a possible 5.468 terabytes across the 64 largest agencies. Transferring inactive records out of such systems to State Records' custody will not be an easy task, as the recordkeeping functionality/adequacy of metadata, etc. is likely to be extremely variable, and it will be difficult to apply standard processes across a wide variety of tailored applications. Public offices will expect extensive advice and assistance with the issue of digital archival management, and additional resources will be required to provide this assistance.

A large percentage of public offices (81%) indicated an intention to transfer at least some digital records to State Records' custody as State archives, while 94% expressed a wish to maintain at least some of their State archives 'in house', in a distributed management arrangement. The latter should not be seen as an 'easy option', either for State Records or the public offices concerned. The challenges associated with this approach in the digital environment are likely to be considerable, with the potential complications of technological obsolescence, risks associated with migration, inconsistencies and inadequacies with metadata, and possibility of high costs in the longer term. It remains to be seen whether the interest in 'distributed management' of digital archives remains at the high level revealed in the survey when State Records has facilities for transfer, and the full implications of in-house management become clearer to agencies.

To date, government archival authorities have been concentrating on developing processes and facilities for the management of digital archives in archival custody, and it is appropriate that State Records should give priority to making similar provisions in this area. However, it is clear that not all digital archives will necessarily be suitable for this regime. Much remains to be done by State Records and other institutions to develop adequate policies and detailed guidance to assist public offices both to transfer digital archives, and to preserve and manage them 'in house', ensuring that the integrity of the records is maintained, and that they remain accessible for archival research purposes.

This process will be greatly assisted by the work of the Australasian Digital Recordkeeping Initiative, which brings together representatives of all the federal, state and territory records and archives authorities in Australia and New Zealand with the aim of developing common or compatible approaches to the preservation and management of archives in electronic form.

## Introduction

This section contains:

- Monitoring framework
- Background to survey topic
- Survey questionnaire
- Survey pool
- Response rate
- The report
- How to use this report

## Monitoring framework

On 1 October 2004 the new framework for monitoring activities covering all aspects of the *State Records Act 1998* commenced. The monitoring framework is available from State Records' website.

The framework outlines the purpose of monitoring, the roles and responsibilities of both State Records and public offices and monitoring arrangements for 2004 to 2008. The framework recognises that there are limited resources for monitoring, so any monitoring must not place an unreasonable burden on public offices or State Records.

Under the monitoring framework, State Records in addition to its monitoring surveys (the Records Management Surveys), will be conducting short surveys for information gathering purposes on records issues and practices. These information surveys will only be conducted with a small sample of public offices and would not be compliance oriented. Results of these surveys will be reported to all public offices.

The information survey is likely to become a key mechanism by which State Records can determine how practices and processes are performed in public offices, where there may be shortfalls, and how these shortfalls could be better addressed. Data obtained from the survey is used for planning purposes and may also be incorporated into State Records' annual report. It is envisaged that public offices can use the survey data as a tool for progress and improvement in recordkeeping.

## Background to survey topic

Digital recordkeeping is a key issue for government records and archives authorities in Australasia. State Records is part of the Australasian Digital Recordkeeping Initiative (see [www.adri.gov.au](http://www.adri.gov.au)), a collaboration of all ten national, state and territory public record institutions in Australia and New Zealand. The aim of the Australasian Digital Recordkeeping Initiative is to pool resources and expertise to find better ways to ensure that digital records are preserved and made accessible for the future. The results of State Records' information survey will be shared with the ADRI partners and will assist in progressing ADRI's work in preserving digital records.

Since the late 1990s, two of the major government archival institutions in Australia (the Public Record Office of Victoria and the National Archives of Australia) have made substantial progress on developing and piloting repositories and associated systems and procedures for the custodial management and preservation of digital archives. Both of these institutions now have functioning digital repositories, able to accept the transfer of archives in digital format.

Drawing in particular on the work of the National Archives (which has developed customised software facilitating the 'normalisation' of various formats using XML), State Records has, since 2003, prepared business cases to support bids for funding to pilot the National Archives approach to digital preservation in New South Wales. To date, these bids have not been successful. It is anticipated that the findings of this survey will provide important additional concrete evidence in support of future funding submissions.

## **Survey questionnaire**

The 2005 Information Survey on Digital Recordkeeping was the first information survey to be conducted by State Records.

State Records needs accurate information on how public offices perform records management activities, the issues and the trends, in order to plan and develop appropriate tools and guidance. The 2005 Information Survey focused on digital recordkeeping, in active recordkeeping systems, and in planning for the management of longer term digital records.

One of the strategies that State Records intends to pursue for the management and storage of digital State archives, is the development of a digital archives repository. In order to develop such a facility, State Records requires detailed information on the quantities of digital records already held in public offices, the expected growth of these quantities over the next 5 to 10 years, and technical information on the types of files and formats held in business systems.

The survey questionnaire drew on questionnaires on digital recordkeeping and records management issues developed by the National Archives of Australia, Queensland State Archives, and Archives New Zealand. State Records is very grateful to these records and archives authorities for their assistance with the 2005 Information Survey.

The survey questionnaire asked participating public offices to advise State Records as to how practices and processes are performed, as opposed to an assessment of compliance with obligations and requirements under the State Records Act. The questionnaire was divided into a number of areas relating to digital recordkeeping and included 82 questions. Different types of questions were used in the questionnaire to enable respondents to select appropriate responses and to include comments and detailed responses. The questionnaire reflected State Records' need not just for statistical or quantitative data, but also for qualitative data on the topic of digital recordkeeping. The last section of the questionnaire allowed survey participants to provide feedback to State Records.

The survey questionnaire was designed as an online survey and the survey data was collected via State Records' website. It was collated automatically and was available in electronic form for analysis and reporting purposes.

## **Survey pool**

As the Information Survey was a targeted survey, the survey pool was selected so that it comprised organisations subject to the State Records Act and included a range of different types of organisations within the jurisdiction of the Act: NSW Government agencies, State owned corporations, local government bodies and universities. Public offices selected for the survey were also known to have long term records and State archives in digital format and were located in the Sydney metropolitan area.

Area health services were excluded from this survey because of the widespread amalgamations which occurred among the area health services in late 2004.

As the survey pool comprised small to very large organisations and was representative of the broad categories within the jurisdiction of the State Records Act, findings of the survey can be seen to be indicative or representative of the jurisdiction.

### **Response rate**

The survey commenced on 20 July 2005 and ran until 3 August 2005, a period of 6 weeks. Extensions were granted to a number of public offices to assist them submit a completed survey return.

Of the 21 public offices who were invited to participate in the survey, 16 public offices were able to complete the survey and forward a response for inclusion in the survey results. Five public offices were unable to complete the survey due to changes in personnel and the implementation of significant records management projects within the organisation.

State Records would like to thank all public offices for their participation and cooperation during the survey.

### **The report**

This report includes a discussion of each survey question, an examination of results and an analysis of what the responses indicate.

### **How to use this report**

This report can be used by public offices to assess their records management performance by:

- benchmarking against the statistical data, and
- examining and assessing the results of individual questions.

### **Benchmarking**

Benchmarking is a process of comparison between an accepted standard and an organisation's service, outputs or performance. The outcome is to identify areas of improvement.

This report can be used as the basis of a benchmarking exercise. Public offices interested in benchmarking should use the statistical data contained in Appendix A to this report. Comparisons can be drawn from the overall performance of public offices and the individual public office's survey response, in order to identify areas where the public office is underperforming and priorities for improvement.

### **Results of individual questions**

This report examines each question in detail and discusses relevant guidance and advice available. Public offices seeking information to improve performance should refer to the discussion and links available at each section.

## Survey results

This section contains

- Survey statistics
- Information about public offices
- Recordkeeping culture
- Recordkeeping systems
- Email management
- Volume of digital information and digital records
- Types of systems and digital records
- Management of digital State archives
- Accessibility to equipment/technology dependent records
- Feedback to State Records
- Appendix A: Statistical data from the 2005 Information Survey – Digital Recordkeeping
- Appendix B: Tables based on data from the 2005 Information Survey – Digital Recordkeeping

## Survey statistics

The statistics used in the survey report are based on a simple statistical analysis of the number of responses for each question. To improve readability, statistics used in the text of this report have been rounded to the nearest whole figure. In some instances this means that the percentage total does not equal 100%.

As this is a survey using a small number of organisations, we have also included the numbers of respondents, in brackets, after the percentage statistic, to further assist readability and clarity of results, for example 19% (3 respondents) advised that they were confident that digital records will remain accessible for as long as required.

Statistics for the survey are available at Appendix A of this report. These statistics are also suitable for benchmarking and comparative analysis purposes. It should be noted that only questions where statistical responses were required or given are included in the Appendix.

Information about the quantities of digital data has been used as the basis of tables available at Appendix B of this report. The purpose of these tables is to draw out information about the amount of digital data held by public offices and to scope the dimension of the digital challenge facing State Records and public offices.

It should be noted that the survey pool is not intended to be a representative or statistical sample and that caution has been taken in extrapolating figures from the responses. The findings are intended to be indicative only.

## Information about public offices

This is the first Information Survey that State Records has conducted. As with the 2004 Records Management survey, State Records collected information about the types of organisations participating in the survey in order to be able to analyse the survey data for the differences, similarities and experiences of the constituent sectors.

With the exclusion of the area health services from the information survey, four major sectors of the jurisdiction were surveyed (NSW Government agencies, State owned corporations, local government bodies and the universities).

**Question ii What type of public office is your organisation?**

Of the survey pool of 16 public offices

- 3 were local government bodies
- 10 were Government agencies
- 1 was a State owned corporation, and
- 2 were universities.

**Question iii What size is your organisation?**

This question sought data on the size of the public offices, to gain a better understanding of the spread of organisational size and to gauge the possible scale of records management operations. Each public office was asked to report on the number of full time equivalent staff (FTE) in their organisation. Sizes were defined as 'very small' (less than 20), 'small' (20–80), 'medium' (80–250), 'large' (250–1 000), and 'very large' (more than 1 000).

No respondents reported that they are 'very small' organisations, 6% (1 respondent) are 'small' organisations, 25% (4 respondents) are 'medium' sized organisations, 38% (6 respondents) are 'large' organisations, and 31% (5 respondents) are 'very large' organisations.

We analysed this result further to determine how the different types of organisations in the survey sample featured across the size categories. We found that:

- the three councils in the sample are large and very large organisations (2 councils are large, 1 is very large)
- the two universities in the sample are very large organisations
- the one State owned corporation in the sample is a medium sized organisation, and
- the ten Government agencies in the sample are predominantly medium to very large organisations (1 is small, 3 are medium, 4 are large, and 2 are very large).

**Recordkeeping culture**

The questions in this section of the survey questionnaire were designed to provide State Records with an understanding of the recordkeeping culture in public sector organisations. Respondents were reminded that the use of the term 'digital records' meant those records which have been 'born digital' or have been digitised.

**Question 1 How interested is senior management in digital recordkeeping and digital recordkeeping initiatives?**

25% (4 respondents) reported that senior management was very interested in digital recordkeeping and digital recordkeeping initiatives, 50% (8 respondents) reported that senior management was interested, while 25% (4 respondents) reported that senior management have some interest in digital recordkeeping. It was pleasing to note that no respondents reported that senior management was 'not interested' or that they 'haven't raised digital recordkeeping issues with senior management'.

Of those organisations who were 'very interested', 1 respondent was a state owned corporation and 3 were Government agencies.

**Question 2 Is your organisation confident that all its digital records will remain accessible for as long as required?**

19% (3 respondents) reported that they were confident that all digital records would be accessible for as long as required, 50% (8 respondents) were 'reasonably confident', 25% (4 respondents) were not confident, and 6% (1 respondent) did not know.

Interestingly, only Government agencies were 'confident' of accessibility to digital records. Of those organisations who were 'not confident', 25% were Councils, 25% were universities, and 50% were Government agencies.

**Question 3 Do all staff (including agents and contractors) receive training and guidance in capturing emails, digital documents, and digital records into the recordkeeping system?**

56% (9 respondents) reported that all staff receive training and guidance in capturing emails, digital documents and digital records into the organisation's recordkeeping system, while 44% (7 respondents) reported that only some staff receive training and guidance.

Of those organisations which reported that only 'some staff' receive training and guidance, 57% (4 respondents) were Government agencies, 29% (2 respondents) were universities, and 14% (1 respondent) were councils.

**Question 4 Does this training occur within the organisation's induction program?**

63% (10 respondents) reported that records management training occurs within the organisation's induction program, while 38% (6 respondents) reported that records management training does not occur within the induction program.

Of those organisations which reported that records management training does not occur within the induction program, 17% (1 respondent) were councils, 17% (1 respondent) were universities, and 67% (4 respondents) were Government agencies.

**Question 5 Are staff aware of their responsibilities in capturing emails and digital records?**

56% (9 respondents) reported that the staff of their organisation are aware of responsibilities to capture emails and digital records, while 44% (7 respondents) reported that some staff are aware of their responsibilities.

It was pleasing that none of the survey respondents reported that staff were 'not' aware of their responsibilities.

Of those organisations which reported that only some staff are aware of their responsibilities, 29% (2 respondents) were universities and 71% (5 respondents) were Government agencies.

**Question 6 What area in your organisation is responsible for setting policy and procedures for managing digital records, including emails?**

81% (13 respondents) reported that the Records Management Unit was responsible for setting policy and procedure for managing digital records, 50% (8 respondents) reported

that the Information Technology area was responsible, 13% (2 respondents) nominated Corporate Services, 6% (1 respondent) nominated Administration, while 25% (4 respondents) nominated Other.

It should be noted that respondents were asked to select as many of the options that applied in their organisation. By the range of statistics outlined above, many of the organisations surveyed have responsibility for policy and procedures for digital recordkeeping shared between different units of the organisation.

**Question 7 Please enter further details for the 'other' item you entered above.**

25% (4 respondents) nominated 'Other' in Question 6 as one of the areas within the organisation that is responsible for setting policy and procedures. These respondents were asked to provide further details. Some respondents noted that policy was the responsibility of another area such as the Knowledge Management Branch or individual business units, and another organisation noted that policy was developed by the records management unit but approved by the Vice Chancellor.

**Question 8 Additional comments on recordkeeping culture.**

All respondents were provided with additional space in which to further comment on the recordkeeping culture of their organisation.

Comments touched on the following issues:

- a range of attitudes to digital recordkeeping within the organisation, including some executive awareness of the issues
- awareness of recordkeeping amongst staff of the organisation and the profile of records management within the organisation has increased through the implementation of digital recordkeeping initiative, and
- training which has been undertaken to equip staff to undertake their recordkeeping responsibilities, including capturing digital records into recordkeeping systems.

Interestingly, one respondent noted that "the IT staff are increasingly records conscious and also see our electronic recordkeeping project as a part of the push to improve service delivery".

**Commentary on results**

The information provided on the recordkeeping culture within public offices gave State Records' a useful perspective about public offices' attitudes and practices.

It was pleasing to see that many senior managers in public offices are interested in both digital recordkeeping generally, and in specific initiatives and implementations. It was also noted that most public offices were either confident or reasonably confident that their digital records would remain accessible over time. However 25% of respondents did not feel confident that digital records would remain accessible for as long as required (Q2).

Responses to the training questions in this section of the survey provided a valuable perspective on how public offices are able to convey important information to staff about capturing digital records into recordkeeping systems. Training is identified as an ongoing activity, and the majority of respondents (63%) do include records management training in induction programs (Q4). However, it is of concern that 44% of respondents reported that only some staff received training and guidance in capturing emails (Q3), digital document and digital records into the recordkeeping system, and further that 44% of

respondents reported that only some staff are aware of their responsibilities to capture emails and digital records (Q5). It is essential that all staff who are involved in business activities and who create and receive business emails and digital records know how to capture those records into recordkeeping systems. Providing training and guidance to staff so that they are able to perform their work appropriately, including fulfilling their recordkeeping responsibilities, is essential in any business operation.

## **Recordkeeping systems**

The questions in this section relate to the different types of systems used to capture and control records within public offices. State Records was interested to know whether public offices use EDMS (electronic document management system) or ERDMS (electronic records and document management system), which systems are used, how widely they are used in the organisation, and what types of records are stored and managed in such systems.

### ***Question 9 Does your organisation use an EDMS or ERDMS system?***

88% (14 respondents) reported that their organisation uses an EDMS or ERDMS system, while 13% (2 respondents) reported that they do not use this type of system.

### ***Question 10 What EDMS or ERDMS system do you use?***

Due to the structure of the survey questionnaire, only those 14 respondents who nominated that their organisation uses an EDMS or ERDMS system were able to respond to Question 10.

Of the organisations which use an EDMS or ERDMS system, 11 respondents use TRIM, 1 respondent uses Objective, and 2 respondents nominated that they use an alternative system to those listed.

### ***Question 11 Please enter further details for the 'other' item you entered above.***

Two respondents to Question 10 nominated 'Other' as the type of system that they use in their organisation. These respondents were asked to provide further details. These respondents noted that they use Lotus Notes – Document Manager (previously known as Domino.Doc) and DataWorks.

### ***Question 12 Is this system used?***

Due to the structure of the survey questionnaire, only those 14 respondents who nominated that their organisation uses an EDMS or ERDMS system were able to respond to Question 12.

57% (8 respondents) noted that the EDMS or ERDMS system is used organisation wide, 29% (4 respondents) reported that the system is being implemented within the organisation, and 7% (1 respondent) reported that it is used only within specific business units or work groups. A further 7% (1 respondent) nominated 'Other' for this question.

### ***Question 13 Please enter further details for the 'other' item you entered above.***

One respondent to Question 12 nominated 'Other' for how the system is used in their organisation. This respondent was asked to provide further details. The respondent noted that the use of all functionality of TRIM is limited within the organisation. A number of areas within the organisation have access to TRIM but do not have use of all functions. However the organisation uses a web client to allow access to information in the TRIM database for all users within the organisation. The organisation currently has 600 users.

**Question 14 Does this system store and manage?**

Due to the structure of the survey questionnaire, only those 14 respondents who nominated that their organisation uses an EDMS or ERDMS system were able to respond to Question 14.

Respondents were asked what types of records were stored and managed in the EDMS or ERDMS system:

- 100% (14 respondents) store and manage digital documents
- 93% (13 respondents) store and manage emails
- 93% (13 respondents) store and manage digital images of paper records
- 86% (12 respondents) store and manage digital photographs, and
- 29% (4 respondents) nominated that they store and manage other types of records in the system.

**Question 15 Please enter further details for the 'other' item you entered above.**

Four respondents to Question 14 nominated that they store 'Other' types of records in the system. These respondents were asked to provide further details. Other types of records stored in the system include:

- plans
- videos
- audio (sound files), and
- maps.

**Question 16 Additional comments on recordkeeping systems.**

All survey respondents were provided with additional space in which to further comment on the recordkeeping systems used in their organisation.

Comments touched on the following issues:

- planning and implementation of new EDMS or ERDMS products and further developments for existing systems, and
- migration of previous databases, including legacy records from other organisations, into the EDMS or ERDMS product.

One organisation also advised that the capture of digital records into the ERDMS product was not a universal activity across the organisation. It was noted that as the functionality of the product was demonstrated, the numbers of staff using the product were increasing.

**Commentary on results**

The information provided on the use of recordkeeping systems within public offices demonstrates that the majority of respondents use EDMS and ERDMS systems to some extent throughout their organisations. While many of the respondents indicated that the use of EDMS and ERDMS systems was organisation-wide, there are a number of organisations in which the implementation is limited or partial. From the comments received it is clear that many public offices are working towards greater coverage and increased use of EDMS and ERDMS through their organisation, however it is recognised that this is a significant challenge particularly for large and very large public offices.

It was interesting to note that these systems are being used to manage and store a wide range of records and formats.

## **Email management**

The questions in this section relate to the management of email within public offices. We were interested to know what quantities of email are sent and received, what percentage of these emails relate to business transactions, and what percentage of these business emails are being captured into recordkeeping systems. In addition, we wanted to learn how public offices store and manage email, what happens to email accounts when an employee leaves the organisation, and whether the public office is able to access emails easily when they are required.

### ***Question 17 Approximately how many emails does your organisation create and receive each day?***

Based on analysis of the size of organisations, respondents reported the following:

- Very large organisations create and receive approximately 7,200 to 600,000 emails a day
- Large organisations create and receive approximately 2,000 to 100,000 emails a day
- Medium sized organisation create and receive approximately 3,000 to 75,000 emails a day, and
- Small sized organisations create and receive approximately less than 300 emails a day.

An analysis of organisation type presents a different view of the quantities of email created and received each day:

- Government agencies create and receive approximately 280 and 100,000 emails a day
- State owned corporations create and receive approximately 75,000 emails a day
- Councils create and receive approximately 4,500 and 40,000 emails a day, and
- Universities create and receive approximately 600,000 emails a day.

Estimating the quantity of emails created and received was a difficult task for our respondents. One respondent noted that they were only able to give an average, as the use of the email system fluctuated during the year, depending upon the business cycle.

It should also be noted that educational institutions have the largest quantity of email each day. This may be explained by the type of business conducted by the organisation and the fact that email accounts are provided to both staff and students of the organisation.

### ***Question 18 Approximately how many emails does your organisation create and receive yearly (1 July 2004 – 30 June 2005)?***

Based on analysis of the size of organisations, respondents reported the following:

- Very large organisations create and receive approximately 2.1 and 150 million emails yearly
- Large organisations create and receive approximately 70,000 and 25 million emails yearly

- Medium sized organisation create and receive approximately 1 to 2 million emails yearly, and
- Small sized organisations were unable to estimate the quantity of emails created and received yearly.

An analysis of organisation type presents a different view of the quantities of email created and received each year:

- Government agencies create and receive approximately 70,000 and 25 million emails a year
- State owned corporations create and receive approximately 2 million emails a year
- Councils create and receive approximately 1.6 million and 10 million emails a year, and
- Universities create and receive approximately 150 million emails a year.

Two respondents were unable to estimate the quantity of emails created and received yearly.

While educational institutions have the largest quantity of email per year, if this figure is examined in conjunction with that reported in Question 17, it is possible that the yearly quantity of emails has been underestimated.

***Question 19 Please estimate what percentage of these emails would record information regarding business transactions or activities?***

Respondents estimated the percentage of emails recording information regarding business transactions or activities. Results include:

- 50% (8 respondents) reported that 61% - 80% of emails include this type of information
- 25% (4 respondents) reported that 41% - 60% of emails include this type of information
- 6% (1 respondent) reported that 21% - 40% of emails include this type of information, and
- 19% (3 respondents) reported that 0% - 20% of emails include this type of information.

Those organisations which reported that 61% - 80% of emails recording business transactions or activities included all four types of organisations included in the survey sample.

***Question 20 Please estimate what percentage of these business emails is captured as records into a corporate recordkeeping system (print & file, or captured into an electronic system)?***

56% (9 respondents) reported that 0% - 20% of business emails are captured into the corporate recordkeeping system, 19% (3 respondents) reported that 21% - 40% of business emails are captured in the corporate recordkeeping system, and a further 19% (3 respondents) reported that 41% - 60% of business emails are captured. Only 6% (1 respondent) reported that 61% - 80% of business emails are captured into the corporate recordkeeping system.

***Question 21 How does your organisation store and manage emails?***

88% (14 respondents) reported that they store and manage email in the original email system, 88% (14 respondents) reported that they store and manage email by printing and filing the emails, 69% (11 respondents) reported that they use an ERDMS package to save emails, 63% (10 respondents) reported that they save emails to directory folders, and 25% (4 respondents) nominated Other.

It should be noted that respondents were asked to select as many of the options that applied in their organisation. By the range of statistics outlined above, many of the organisations surveyed use a variety of strategies for storing and managing email.

**Question 22 Please enter further details for the 'other' item you entered above.**

Four respondents to Question 21 nominated 'Other' as one of the options to store and manage email. These respondents were asked to provide further details. Respondents noted that they use alternate types of technology to store and manage emails, such as the K-Vault Email Archive System or a separate client system in Lotus Notes. Respondents also noted that while print and file is still the strategy for managing emails, the organisation is moving towards implementing an ERDMS system.

**Question 23 Rate how well staff in your organisation understand the processes to capture emails as records.**

56% (9 respondents) reported that staff had a satisfactory understanding of the processes required to capture emails as records, 25% (4 respondents) reported that staff had a limited understanding of the processes, 13% (2 respondents) reported that staff had a good understanding, while 6% (1 respondent) reported that staff had no understanding.

Of the four types of organisations, only one Government agency reported that staff had no understanding of the processes to capture emails as records.

**Question 24 Does your organisation have policies or procedures for dealing with records stored in email folders for individuals once an employee has left your organisation or "abandoned email accounts"?**

56% (9 respondents) reported that they had policies or procedures for dealing with records stored in email folders of former employees or "abandoned email accounts", 44% (7 respondents) reported that they did not have policies or procedures.

Government agencies and councils tend not to have policies and procedures in this area.

**Question 25 How are records, stored in email folders, captured into recordkeeping systems once an employee has left the organisation?**

Respondents reported the following processes:

- email alerts sent to manager on receipt of resignation letter to ensure that emails are captured into the ERDMS before individual leaves the organisation, and
- if process is not completed before individual leaves organisation, then staff members taking over work area are responsible for capturing emails.

Alternatively some respondents reported that

- emails of previous employees are stored off-line and available if required
- emails are also captured on back up tapes
- emails are deleted from the system after an employee leaves, and

- in one organisation the capture of emails can only take place prior to the departure of the employee.

A number of organisations advised that they intend to address this issue in policy and procedures in the future.

**Question 26 Can you organisation easily locate emails for FOI applications, subpoenas or discovery orders?**

38% (6 respondents) reported that they are easily able to locate emails for FOI applications, subpoenas or discovery orders, 38% (6 respondents) cannot easily locate emails, and 25% (4 respondents) nominated Other.

**Question 27 Please enter further details for the 'other' item you entered above.**

Four respondents to Question 26 nominated 'Other' as one of the options in locating emails for FOI , subpoenas or discovery orders. These respondents were asked to provide further details. Respondents noted that:

- emails could be located but that it would be a time-consuming process
- concerns about retrieval rate, and
- IT can search across all emails to locate the emails required.

**Question 28 Additional comments on email management.**

All survey respondents were provided with additional space in which to further comment on email management in their organisation.

Comments touched on the following issues:

- difficulties in estimating figures for questions 17 and 18 as systems tend to include all types of emails created and received including SPAM
- need to undertake more work within the organisation to ensure staff capture email into ERDMS
- emails can be retrieved from K-Vault system but it would be reliant upon full text searching
- guidance for staff being developed to assist them in determining what emails are State records and need to be captured into the system, and
- proliferation of email servers is part of the issue in managing emails in a very large organisation.

**Commentary on results**

The results demonstrate that there is a very large quantity of emails created and received in all public sector organisations. It is important to note that the quantity of email created and received is likely to be determined by the type of business transactions the public office undertakes, but with each organisation, the quantities are significant. Some very large organisations, like universities, have massive quantities of email to manage.

Of concern to State Records is the large percentage of emails recording business transactions which are not being captured into recordkeeping systems - 75% of respondents reported that between 0% and 40% of business emails were being captured (Q20) and, further, 56% reported that 20% or less were captured into recordkeeping systems. This is an interesting response when compared with the results of the 2004

Records Management Survey where we asked the question "Are systems and procedures in place and operating for capturing and managing email as records" and 77% responded that they did have systems and procedures in place to capture and manage emails as records while 23% of public offices responded that they do not. In that earlier survey respondents were not asked what proportion of business emails were managed in such systems. Looking at the two responses together indicates that email capture and management remains a major issue and potential risk for both public offices and NSW Government.

Further estimates of the quantities of business email managed by the respondents are given in Tables 4.1 - 4.4 in Appendix B. For State Government agencies the estimated figure (across the sector) for business emails not captured into recordkeeping systems per year is approximately 119 million, while for universities the estimated figure is 850 million. While these figures are only projections, and they may be an overestimate of the business emails that should be captured and managed as records, nevertheless they do provide an indication of the scale of the issue.

The estimates of the quantities of business emails not captured are alarming. It is difficult to pinpoint the reasons for such high figures and it may reflect poor overall management of email use, lack of clear guidance to staff about their recordkeeping responsibilities and lack of systems that will manage email appropriately. Public offices need to give clear guidance to staff and have procedures and tools in place to enable the capture of business emails (which are only a proportion of all emails) into recordkeeping systems. Without that management framework many public offices will struggle with ever increasing email storage problems which may well prove overwhelming.

Also of concern to State Records were the results of Questions 26 and 27. Over 60% of respondents indicated that they could not easily locate emails for FOI applications, subpoenas or discovery orders. A public office's inability to easily and efficiently locate and retrieve emails for FOI, subpoenas or discovery orders, places the organisation at some risk.

## **Volume of digital information and digital records**

These questions related to the volume of digital information and digital records held in storage in public offices' systems. State Records was interested in gaining an appreciation of the quantities involved, the types of systems in use, and plans or strategies for managing these digital records over time.

### ***Question 29 How much digital information is currently stored across all of your organisation's electronic systems?***

Respondents were reminded that when estimating this quantity that they should be considering more than just digital records stored in corporate servers and drives and offline. Respondents were also reminded that they should not include storage used for applications.

Providing an estimate of digital information stored across all systems was a challenge.

Based on analysis of the size of organisations, respondents reported the following:

- 4 very large organisations estimated that they have 3.5 – 100 terabytes of digital information
- 1 very large organisation estimated that they have 435 gigabytes of digital information

- 6 large organisations estimated that they have between 100 gigabytes – 12 terabytes, and
- 4 medium sized organisations estimated that they had between 84 gigabytes – 3 terabytes of digital information.

An analysis of organisation type presents a different view of the quantities of digital information held in public offices:

- Government agencies estimated between 168 gigabytes to 20 terabytes
- Councils estimated between 435 gigabytes to 2 terabytes,
- State Owned Corporations estimated 84 gigabytes, and
- Universities estimated between 4.9 and 100 terabytes.

Universities store the largest quantity of digital information. This may be explained by the type of business conducted.

***Question 30 How many gigabytes of digital information is currently stored in your organisation's EDMS or ERDMS system?***

Providing an estimate of digital information stored in the EDMS or ERDMS system was a challenge. Only 14 of the 16 respondents were able to respond to this question.

Based on analysis of the size of organisations, respondents reported the following:

- 5 very large organisations estimated that they have between 0.5 – 138 gigabytes
- 5 large organisations estimated that they have between 3.4 – 92 gigabytes, and
- 4 medium sized organisations estimated that they have between 6.5 – 76 gigabytes.

An analysis of organisation type presents a different view of the quantities of digital information held in EDMS or ERDMS systems:

- Government agencies estimated between 0.5 - 44 gigabytes
- State owned corporations estimated 76 gigabytes
- Councils estimated between 82.5 – 138 gigabytes, and
- Universities estimated between 13 – 69 gigabytes.

***Question 31 Please estimate the increase during 2005 – 2006 of the total amount of bytes of digital information stored in your organisation's EDMS or ERDMS system?***

44% (7 respondents) estimated that the total amount of digital information stored in their EDMS or ERDMS system would increase by 100% or more in the next financial year. These respondents were from across all four types of organisations surveyed.

Other respondents nominated the following:

- 19% (3 respondents) estimated a growth of 1% - 20%
- 19% (3 respondents) estimated a growth of 41% - 60%
- 13% (2 respondents) estimated a growth of 21% - 40%, and
- 6% (1 respondent) estimated a growth of 81% - 100%.

**Question 32 How many gigabytes of digital information is currently stored in your organisation's Human Resources (HR) system?**

Providing an estimate of digital information stored in the Human Resources system was a challenge. Only 15 of the 16 respondents were able to respond to this question.

Based on analysis of the size of organisations, respondents reported the following:

- 5 very large organisations estimated that they have between 1 – 47 gigabytes
- 6 large organisations estimated that they have between 0.5 – 28.7 gigabytes, and
- 4 medium sized organisations estimated that they have between 0.3 – 1.3 gigabytes.

An analysis of organisation type presents a different view of the quantities of digital information held in the Human Resources systems:

- Government agencies estimated between 0.5 – 28.7 gigabytes
- State owned corporations estimated 0.3 gigabytes
- Councils estimated between 2.25 – 15.5 gigabytes, and
- Universities estimated between 25 – 47 gigabytes.

**Question 33 How many gigabytes of digital information is currently stored in your organisation's Finance system?**

Providing an estimate of digital information stored in the Finance system was a challenge. Only 15 of the 16 respondents were able to respond to this question.

Based on analysis of the size of organisations, respondents reported the following:

- 5 very large organisations estimated that they have between 12 – 50 gigabytes
- 6 large organisations estimated that they have between 0.5 – 25 gigabytes, and
- 4 medium sized organisations estimated that they have between 0.5 – 32 gigabytes.

An analysis of organisation type presents a different view of the quantities of digital information held in the Finance system:

- Government agencies estimated between 0.5 - 50 gigabytes
- State owned corporations estimated 5 gigabytes
- Councils estimated between 12 – 25 gigabytes, and
- Universities estimated between 45 – 50 gigabytes.

**Question 34 List the Top 5 Business Systems used in your organisation which hold records and/or State archives.**

The purpose of this question was to gain an appreciation of the types of business systems which are used in public offices and the quantities of long term and archival records which are captured in such systems. Respondents were asked not to include EMS/ERDMS, Financial or Human Resources systems in their list.

Responses to this question were received from 16 respondents. All respondents identified more than one business system which related to specific functions of the business conducted by the public office. As these systems are specific to functions of the respective public offices, details are not provided in this report.

**Questions 35 – 39 Estimations of the percentages of total gigabytes held in each system, percentage of State archives held in the system, and percentage of records in the system which have a long term retention but are not required as State archives.**

Questions 35 through to 39 provided survey participants with an opportunity to details on the quantity and types of information stored in each of the business systems identified in Question 34.

Questions 35(a), 36(a), 37(a), 38(a), and 39(a) asked respondents to estimate for each of the systems identified in Question 34, the percentage of their organisation's total gigabytes that was held in these systems. This estimation was designed to provide State Records with information on the size of the systems in comparison to the total amount of digital information stored by each organisation. Understanding the size of business systems likely to hold long term digital records or State archives will assist State Records in scoping and building an appropriate sized digital archives solution.

Estimates provided fluctuated between 1% and 49% of the total gigabytes held by public offices. Many of the systems form a small percentage of digital information stored by public offices, although at least 4 respondents had systems which hold a significant percentage of the organisation's digital information. It should also be noted that some survey participants were unable to estimate the percentage of gigabytes

Questions 35(b), 36(b), 37(b), 38(b), and 39(b) asked respondents to estimate for each of the systems identified in Question 34, the percentage of records in each system which are State archives. This estimation was designed to provide State Records with information on the likely quantities of records which may need to be transferred to a digital archives solution.

Estimates fluctuated between 0% and 100% depending upon the public office and the records created and captured into the business systems. Six respondents reported that they had significant percentages of State archives in their business systems. It should also be noted that some survey participants were unable to estimate the percentage of State archives held in their organisation's top five business systems.

Questions 35(c), 36(c), 37(c), 38(c) and 39(c) asked respondents to estimate for each of the systems identified in Question 34, the percentage of records in each system that are required to be kept for long term retention (more than 10 years) but are not required as State archives. This estimation was designed to provide State Records with information on the likely quantities of records which would need to be stored within a public office's business systems over the long term.

Estimates fluctuated between 0% and 100% depending upon the public office the records created and captured into the business systems. Eight respondents reported that that they had significant percentages of long term retention records in their business systems. It should be noted that many of these eight respondents also had multiple systems holding long term retention records. It should also be noted that some survey participants were unable to estimate the percentage of records requiring long term retention in their organisation's top five business systems.

**Question 40 Please estimate the increase during 2005-2006 of the total amount of bytes of digital information stored across your organisation's electronic systems.**

44% (7 respondents) estimated that the total amount of digital information stored in the organisation's systems would grow by 21% - 40% during the next financial year. These respondents were from across all four types of organisations surveyed.

Other respondents estimated growth of systems as follows:

- 31% (5 respondents) at 1% - 20%
- 13% (2 respondents) at 81% - 100%,
- 6% (1 respondent) at 41 - 60%, and
- 6% (1 respondent) estimated growth as 100% or more.

**Question 41 Does your organisation have plans in place for a transition to 100% digital records (ie no longer creating or maintaining paper records)?**

Only 31% (5 respondents) have plans in place for the transition to 100% digital records, 69% (11 respondents) do not have such plans.

Organisations that are planning for this transition include councils, state owned corporations, and Government agencies.

**Question 42 Please briefly describe your strategy and timing if you answered "yes" above**

The five respondents who nominated that they had plans for the transition to 100% digital records were asked to provide further details. They noted that:

- strategies are still in development
- one council nominated that all records were digital since April 2004
- strategy is dependent upon the implementation of ERDMS and new software, and that
- 100% digital records may be ambitious.

**Question 43 In 5 years time, approximately what percentage of all records held by your organisation is expected to be only in a digital format?**

31% (5 respondents) estimated that 41-60% of all records would be digital by 2010. These respondents were from councils, state owned corporations, and Government agencies.

Other respondents estimated the percentage of all records to be digital by 2010 as follows:

- 19% (3 respondents) estimated 21-40%
- 13% (2 respondents) estimated 61-80%
- 13% (2 respondents) estimated 81-100%, and
- 25% (4 respondents) did not know what percentage of all records would be digital by 2010.

**Question 44 In 10 years time, approximately what percentage of all records held by your organisation is expected to be only in a digital format?**

44% (7 respondents) estimated that 81-100% of all records would be digital by 2015. These respondents were from across all types of organisations surveyed.

Other respondents estimated the percentage of all records to be digital by 2015 as follows:

- 19% (3 respondents) estimated 41-60%

- 13% (2 respondents) estimated 61-80%, and
- 25% (4 respondents) did not know what percentage of all records would be digital by 2015.

**Question 45 Additional comments on the volume of digital information and digital records.**

All respondents were provided with additional space in which to further comment on the volume of digital information and digital records held in their organisations.

Comments touched on the following issues:

- difficulties in estimating figures for this section of the questionnaire, particularly questions 29, 31 and 40
- indication that there is interest in organisations in working digitally and advantages seen in reducing costs from less duplication and increased accessibility
- discussion about paper-based records which are held by organisations and whether these records would be converted to digital records
- indication that an organisation's website should also be considered as a major business system due to the quantities of data stored in it, and
- proliferation of applications in some organisations, which may hold digital records.

**Commentary on results**

**Quantities of data and growth estimates**

While the business activities of organisations determine how many digital records are created, all organisations report the likelihood of significant growth of their digital data. The estimates for the quantities of digital information currently held varied from 84 gigabytes to 100 terabytes and all respondents reported that the quantities would grow. For example, one organisation noted that its digital storage capacity would increase from 2 terabytes to 4 terabytes in a 12 month period.

**Records management systems**

Overall, records management systems are bigger than Human Resources and Finance systems in terms of storage. This is particularly interesting as many organisations advised that they were in the process of implementing new records management systems or moving to new records management software. These systems have a greatly improved capacity to manage a wide range of common formats (including Word documents, email, spreadsheets, etc.).

A detailed analysis of the survey data on EDMS and ERDMS systems is given in Appendix B, tables 3.1-3.4.

Some of the conclusions from this analysis are:

- The low quantities of data for State Government agencies confirm anecdotal evidence that take-up of high end EDMS/ERDMS systems is still at a relatively early stage
- An average expected growth in data of 32.4% over the current financial year for this sector indicates relatively rapid expansion in the use and population of such systems

- Higher figures for the larger local councils participating in the survey (312 gb for 3 councils compared with 88.4 gb for 8 State Government agencies) confirm the more extensive use of such systems in the local government sector.

Increasing the availability and appropriate utilisation of the capacity of quality records management systems across government will be one of the key factors in improving long-term and archival digital preservation.

### **Long-term digital data**

While there is some uncertainty about the extent to which recordkeeping will be 100% digital in the next 5 to 10 years, the unmistakable overall trend is towards fully digital business processes, and most public offices expect to be heavily dependant on digital recordkeeping (over 60% digital) by 2015.

Estimates of long-term digital data in major business systems are given in Tables 2.1 - 2.4 in Appendix B. While the estimates of proportions of digital records that are either long term retention or State archives varied widely, it is apparent that there is a significant quantity of digital records which will require long term or archival management. This increasing dependency on digital records will pose a challenge for many public offices. 25% of respondents indicated that they did not feel confident that digital records would remain accessible for as long as required (Q2). This response is a reflection of the complexities and resource requirements that face public offices in managing digital records. It is clear that there is a continuing need for State Records to provide advice, assistance, and tools to public offices for managing long term records within the public office's recordkeeping and digital storage systems.

### **Digital State archives**

It is anticipated that digital State archives will come from two main sources within public offices: electronic document and records management systems storing the more common formats (see above), and specialised business systems. The former should not pose insurmountable problems for archival management (provided electronic recordkeeping best practice is followed), and successful transfers of such records as archives have occurred in both the Commonwealth and Victorian jurisdictions. The quantity of records being managed in this way is still relatively small (88.4 gb in the 8 State Government agencies providing figures, or an estimated **628.9 gb** across the 64 largest State government agencies), and only a proportion of this quantity is likely to be required as State archives. However, responding agencies estimate high levels of growth in the quantity of data in these systems in the near future.

The management of State archives in the second category (those in specialised business systems) is potentially much more challenging, both technically and administratively. In particular, transferring inactive records out of such systems to State Records' custody will not be an easy task, as the recordkeeping functionality/adequacy of metadata, etc. is likely to be extremely variable, and it will be difficult to apply standard processes across a wide variety of tailored applications.

Tables 1.1-1.4 in Appendix B give an indication of the scale of the challenge. The 8 agencies that supplied figures reported holding a total of 782.9 gb of State archives across 22 business systems. Using an average of 97.86 gb per State Government agency, this gives a projected estimate of **5.468 terabytes** across the 64 largest State government agencies. Finding suitable archival solutions for the permanently valuable digital records in the 22 diverse systems reported on in the survey will entail a considerable commitment for State Records and the State Government agencies concerned. This cannot be done within existing resources, especially as State Records will be expected to provide a degree of assistance in this area across the whole public sector.

## **Types of systems and digital records**

The questions in this section were designed to gain an appreciation of the types of systems and digital records held in public offices. If State Records is to design and build facilities and systems which would ensure the long term storage and management of such records, then we need to be aware particularly of the different formats in which digital records are being created.

### **Questions 46a – 46c Standard Desktop Applications**

88% (14 respondents) indicated that standard desktop applications such as Microsoft Office, Lotus Notes, IBM Smartsuit and OpenOffice made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to indicate the most commonly used types of files in these systems:

- Microsoft Word, Excel, Powerpoint (94%)
- PDF (94%)
- Microsoft Access (81%)
- Microsoft Project (81%)
- RTF (Rich Text Format) (56%)
- Lotus Notes (38%)
- Delimited Text (31%)
- ASCII files (31%)
- XML/XHTML (31%)
- Other (JPEG, GIF, MAPINFO) (19%)
- IBM Smartsuit (Lotus Word Pro, Lotus 123, Lotus Freelance Graphics) (6%)
- Star Office and OpenOffice.org, Writer, Calc, Impress (6%)

### **Questions 47a – 47c Email systems**

69% (11 respondents) indicated that email systems made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to indicate the most commonly used types of files in these systems:

- MS Outlook 'msg' (38%)
- Novell Groupwise (25%)
- Lotus Notes (25%)
- MS Outlook 'pst' folder (19%)
- MIME (6%)
- TRIM 'mbx' (6%)
- RFC822 message (6%)
- Mbox (6%)
- Other (6%)

### **Questions 48a – 48c Databases**

75% (12 respondents) indicated that databases made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to indicate the most commonly used types of files in these systems:

- MS Sqlserver (63%)
- Oracle (38%)
- Informix (25%)
- Sybase (25%)
- Other (Universe, Pervasive SQL, Filemaker Pro, PIVITOL) (25%)
- IBM DB2 (13%)
- MySQL (6%)
- Delimited text (6%)
- PostgreSQL (0%)

#### **Questions 49a – 49c Intranet/Internet Files**

Only 19% (3 respondents) indicated that Intranet/Internet systems made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to indicate the most commonly used types of files in these systems:

- HTML (38%)
- XML/XHTML (31%)
- Plaintext (eg ASCII) (13%)
- Other (pdf, MSCMS) (13%)

#### **Questions 50a – 50c Digital Photographs**

31% (5 respondents) indicated that digital photographs made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to indicate the most commonly used types of files in these systems:

- JPEG (31%)
- TIFF (31%)
- GIF (25%)
- BMP (19%)
- PNG (6%)
- Other (ECW) (6%)

#### **Questions 51a – 51c Digital audio and digital video**

Only 13% (2 respondents) indicated that digital audio and digital video made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to indicate the most commonly used types of files in these systems:

- Other (MP3 for sound files, DMI for video format) (6%)
- MPEG (0%)
- AVI (0%)
- Quicktime (0%)
- RealVideo (0%)

### **Questions 52a – 52b Geospatial data**

19% (3 respondents) indicated that geospatial data made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to describe the types of files used in these systems:

- Tif
- Oracle
- In-database Vector
- Georeferenced imagery

### **Questions 53a – 53b Technical Drawings**

Only 6% (1 respondent) indicated that technical drawings made up more than 10% of the digital information stored on the organisation's electronic systems.

The respondent was unable to describe the types of files used in these systems.

### **Questions 54a – 54b Scanned Paper Records**

25% (4 respondents) indicated that scanned paper records made up more than 10% of the digital information stored on the organisation's electronic systems.

Respondents were asked to describe the types of files used in these systems:

- PDF
- Tif
- JPG
- GIF

### **Question 55 Additional comments on the types of systems and digital records.**

All respondents were provided with additional space in which to further comment on the types of systems and digital records held in their organisations.

Comments included further details on types of files stored in EDRMS systems (for example, MS Office documents, Adobe PDF, and zip files containing other files in compressed form).

### **Commentary on results**

As expected, the survey revealed a wide diversity of systems and file types of which the majority are in some type of proprietary format. This diversity and dependency of formats poses challenges for the long term management of digital records by public offices and their preservation and accessibility as State archives. It is acknowledged worldwide that any digital archives facility will need to be able to convert records to non-

proprietary formats for preservation. The issue of using appropriate formats and reducing dependency on proprietary formats is equally important for the management of long term records by organisations.

The considerable quantities of scanned records (with potentially wide variation in technical standards, quality and adequacy of metadata) will pose particular challenges, especially if, as is likely in many cases, it is also deemed necessary to retain as archives the original source records, which are often likely to be in poor physical condition. In the case of some of the more specialised records (such as geospatial data), the distributed management approach may be more appropriate than transfer of custody to State Records.

## **Management of digital State archives**

The questions in this section were designed to understand how public offices are planning to manage long term digital State records or digital State archives. These questions will assist State Records' planning for a digital archives strategy.

### ***Question 56 Does your organisation hold electronic/digital records which are State archives, in any of the following classifications?***

One of the issues with managing long term digital records or digital State archives, is an awareness of the security classifications that these records may have. Digital storage solutions need to ensure that security classifications are managed appropriately.

44% (7 respondents) advised that they hold digital records, which are State archives, which have the classification of *Commercial in Confidence*, *Cabinet in Confidence*, or *Personnel in Confidence*. 31% (5 respondents) advised that they hold digital records which have the classification of *Protected* and 13% (2 respondents) hold digital records which have the classification of *Highly Protected*. 56% (9 respondents) advised that this question was not applicable.

### ***Question 57 How would the organisation prefer to manage its digital State archives?***

To assist State Records with its planning, we were interested to know how survey participants would prefer to manage their organisation's digital State archives.

75% (12 respondents) advised that they would prefer to manage digital State archives through a combination of transfer and in-house management. 19% (3 respondents) advised that they would prefer to manage digital State archives within their organisation, while 6% (1 respondent) would prefer to transfer all digital State archives to State Records.

### ***Question 58 Would your organisation be interested in receiving more information about being involved in a pilot to transfer digital State archives to State Records' custody?***

56% (9 respondents) would be interested in receiving more information about being involved in a pilot to transfer digital State archives to State Records' custody. These respondents included councils, universities, and Government agencies.

### ***Question 59 Additional comments on long term digital records and digital State archives.***

All respondents were provided with additional space in which to further comment on the management of long term digital records and digital State archives.

Comments included:

- strategies for digital archives are under development and yet to be implemented
- identification of State archives in recordkeeping systems and business systems requires more attention, and
- careful consideration of technologies and migration strategies to ensure long term access to the State archives.

### ***Commentary on results***

A large percentage of public offices (81%) indicated an intention to transfer at least some digital records to State Records' custody as State archives. A desire to transfer records in this format is increasingly becoming a reality rather than merely a theoretical possibility. State Records has had formal requests to this effect from several agencies in the past two years. Unfortunately, these requests have had to be declined, in the absence of facilities or processes to manage such material as archives. It is pleasing to note that agencies are beginning to give serious consideration to the issue of archival management, with more than half of the respondents expressing interest in receiving more information about possible involvement in a pilot project to transfer digital records as State archives.

94% of public offices expressed a wish to maintain at least some of their State archives 'in house', in a distributed management arrangement. It is important to note that this should not be seen as an 'easy option', either for State Records or the public offices concerned. Even with paper-based records, many public offices wishing to maintain custody of their State archives have found it difficult to meet the necessary requirements, particularly in relation to storage and documentation.

The challenges associated with taking this approach in the digital environment are likely to be substantially greater, with the added complications of technological obsolescence, risks associated with migration, inconsistencies and inadequacies with metadata, and potentially considerable costs in the longer term. Different solutions may be needed for situations where digital records require permanent retention for business purposes (while simultaneously being designated as State archives), in addition to the 'standard' scenario where records are deemed to be inactive after a period of time. It remains to be seen whether the interest in 'distributed management' of digital archives remains at the high level revealed in the survey when State Records has facilities for transfer, and the full implications of in-house management become clearer to agencies.

There are also likely to be substantial policy challenges to address. One area likely to come under pressure is the principle of free public access to State archives. Public offices bearing the cost of maintaining certain records indefinitely may well wish to charge for archival access, especially where charges are levied for current business use of the same records.

To date, government archival authorities have been concentrating on developing processes and facilities for the management of digital archives in archival custody. It is clear that not all digital archives will necessarily be suitable for this regime. Much remains to be done by State Records and other institutions to develop adequate policies and detailed guidance to assist public offices in this area, to ensure that the integrity of the records is maintained, and that they remain accessible for archival research purposes.

## **Accessibility to equipment/technology dependent records**

The questions in this section were designed to gain an appreciation of the issues and current practices used in public offices to maintain accessibility to equipment or technology dependent records. Following on from the *2004 Records Management Survey*, State Records was also interested to gather further information from public offices that had identified in their 2004 survey response, that some of their organisation's equipment/technology dependent records were not accessible.

### ***Question 60 Did your organisation identify in the 2004 Records Management Survey (Question 20) that some equipment/technology dependent records were not accessible?***

38% (6 respondents) reported that they had identified in the 2004 Records Management Survey that some equipment/technology dependent records were not accessible. 63% (10 respondents) reported that they had not identified this in their response to the 2004 Records Management Survey.

### ***Questions 61 – 66 Further information on inaccessible equipment/technology dependent records***

Due to the structure of the survey questionnaire, only those 6 respondents who nominated that they have some equipment/technology dependent records which are not accessible were able to respond to Questions 61 to 66.

Question 61 asked respondents what types of records identified in Question 60 were inaccessible. Responses included:

- some records which require older hardware, for example records stored on 5 ¼" disks
- some databases which were not migrated as these databases were of a short term retention
- records which were not migrated to new systems, and
- superseded databases.

Question 62 asked respondents to estimate the quantity of records and the date range of the records identified in Question 60. From answers provided, these records range from 1970s through to 1990s. Estimating quantity of records was more difficult, although one organisation estimated that 0.5 gigabytes was inaccessible.

Question 63 asked respondents to advise State Records on the retention periods of those records identified in Question 60. Most respondents were unable to advise as to whether the records were short or long term retention or State archives. Two respondents were able to advise that the inaccessible records were short term retention (required to be kept for less than 30 years) and one respondent advised that the inaccessible records were long term retention (required to be kept for more than 30 years).

Question 64 asked respondents to advise State Records on the technologies or equipment would be required to make those records identified in Question 60 accessible. Two respondents noted that they would require 5 ¼" floppy disk drives to access information stored on these types of disks. Another respondent advised that they would require access to older database structures. One respondent advised that although the organisation had a number of older databases including a DOS based application, access to these older databases was still available via two computers in the organisation. However access could be an issue in the future as computers were being upgraded in the organisation, an access to the older databases may be problematic after the upgrade.

Question 65 asked respondents if they had had to retrieve equipment/technology dependent records identified in Question 60 and whether there had been issues in retrieving these records. Four respondents noted that they have not had to retrieve the records. Two respondents noted that they had retrieved the records. Retrieval of records in these cases had required the repair of a database structure or access to the databases via two computers in the organisation.

Respondents noted the following issues in relation to retrievability of these records:

- have not retrieved records as we don't have 5 ¼" disk drives, and
- no one could retrieve records as the organisation did not know what older electronic records it holds.

Question 66 asked respondents to advise State Records of other issues or barriers in relation to technology/equipment dependent records identified in Question 60. The following issues were noted:

- cost
- databases developed in-house or by contractors often harder to manage due to lack of supporting documentation or long term knowledge of database structure
- documenting documentation of migration
- not being able to access microfilm technologies because of equipment failure
- prior to 1998 is a 'black hole' as electronic records disappeared because of movement from one platform to another, and
- upgrading of desktops in organisation is assisting in locating older applications and databases.

**Question 67 How does your organisation store digital records or digital documents?**

All 16 survey participants were asked the remaining questions in this section of the survey.

100% (16 respondents) reported that they use an internal backup data storage system to store digital records or digital documents. 88% (14 respondents) use a network or PC hard drive to store digital records or digital documents, 13% (2 respondents) use an external data storage provider, while 19% (3 respondents) nominated that they use an 'other' means to store digital records or digital documents.

It should be noted that respondents were asked to select as many of the options that applied in their organisation. By the range of statistics outlined above, many of the organisations surveyed use a variety of strategies for storing digital records or digital documents.

**Question 68 Please enter further details for the 'other' item you entered above.**

Three respondents to Question 67 nominated 'Other' as one of the options to store digital records or digital documents. These respondents were asked to provide further details. Respondents noted that they use alternate types of technology to store digital records including off-site backup tapes, a failover system located in another unit of the organisation, and removable storage media.

**Question 69 What media/format do you store digital records or digital documents?**

94% (15 respondents) reported that they use magnetic media (for example tapes, reels, and disks) to store digital records or digital documents.

Other responses for this question included:

- 75% (12 respondents) use optical media (for example CD-ROM, WORM, rewritable disks)
- 69% (11 respondents) use print and file
- 25% (4 respondents) use film media (for example slides, microfilm/microfiche, cinematographic [movie] film, negative, aperture cards), and
- 6% (1 respondent) use 'other'.

It should be noted that respondents were asked to select as many of the options that applied in their organisation. By the range of statistics outlined above, many of the organisations surveyed use a variety of formats for storing digital records or digital documents.

**Question 70 Please enter further details for the 'other' item you entered above.**

One respondent to Question 69 nominated 'Other' as one of the formats to store digital records or digital documents. This respondent was asked to provide further details. The respondent nominated network drives as a type of media or format used to store digital records or digital documents.

**Question 71 How do you currently maintain accessibility to digital records, emails, or digital documents of long term value (ie greater than 5 years from the time of creation)?**

81% (13 respondents) reported that they maintain accessibility to digital records, emails or digital documents of long term value by migrating these to the current operating system.

Other responses to this question included:

- 50% (8 respondents) retain original technology
- 50% (8 respondents) maintain records in universal formats such as XML or PDF
- 44% (7 respondents) store records offline, and
- 13% (2 respondents) nominated 'Other'.

It should be noted that respondents were asked to select as many of the options that applied in their organisation. By the range of statistics outlined above, many of the organisations surveyed use a variety of strategies to maintain accessibility to digital records.

**Question 72 Please enter further details for the 'other' item you entered above.**

Two respondents to Question 71 nominated 'Other' as one of the strategies used to maintain accessibility to digital records, emails, or digital documents of long term value. These respondents were asked to provide further details. One respondent nominated printing and filing as an additional strategy, while the other respondent noted that in their very large organisation there was an enormous variety of strategies used to maintain accessibility to these records.

**Question 73 Does your organisation have digital records in systems which are no longer active or have been decommissioned?**

Respondents were reminded to include any inherited systems from predecessor or defunct organisations when answering this question in the survey.

56% (9 respondents) reported that they have digital records in systems which are no longer active or have been decommissioned. 44% (7 respondents) reported that they do not have digital records in inactive or decommissioned systems.

***Question 74 Have the digital records in the inactive/decommissioned system/s been migrated to new and active systems?***

31% (5 respondents) reported that digital records in the inactive/decommissioned system/s have been migrated to new and active systems, while 69% (11 respondents) reported that digital records have not been migrated to new systems.

***Questions 75 – 77 Further details on digital records in inactive/decommissioned systems***

Due to the structure of the survey questionnaire, only those 11 respondents who nominated that digital records have not been migrated to new systems were able to respond to Questions 75 to 77.

Question 75 asked respondents to identify the quantity of records and the date range of records held in inactive/decommissioned systems identified in Question 74. Most respondents were unable to identify the quantity of records held in these systems and the date range of the records.

Question 76 asked respondents if records held in inactive/decommissioned systems identified in Question 74 were held offline. Only one respondent noted that the digital records are held offline, while two respondents noted that the digital records have not been retired to offline storage.

Question 77 asked respondents to estimate what percentage of records held in inactive/decommissioned systems identified in Question 74 were State archives. Five respondents were able to estimate what percentage of these digital records are likely to be State archives. Results range from 0% to approximately 10%.

***Question 78 Has your organisation implemented any metadata standards (either in part or in full) to define the information that is kept about digital records and their management?***

44% (7 respondents) reported that their organisation had implemented metadata standards, 25% (4 respondents) are preparing to implement metadata standards, and 31% (5 respondents) have not implemented metadata standards.

***Question 79 Which metadata standards has your organisation implemented or is planning to implement?***

81% (13 respondents) have implemented or are planning to implement the New South Wales Recordkeeping Metadata Standard (NRKMS).

Other responses to this question include:

- 19% (3 respondents) have implemented or are planning to implement the Australian Government Locator Service (AGLS)
- 13% (2 respondents) have implemented or are planning to implement Dublin Core (DC)

- 6% (1 respondent) has implemented or are planning to implement sector specific metadata (for example ANZLIC, EdNA), and
- 13% (2 respondents) noted that this question was not applicable to their organisation.

It should be noted that respondents were asked to select as many of the options that applied in their organisation. By the range of statistics outlined above, many of the organisations surveyed use a number of metadata standards.

**Question 80 Please enter further details for the 'other' item you entered above.**

No respondents to Question 79 nominated 'Other'.

**Question 81 Has your organisation planned for the long term accessibility of this metadata?**

31% (5 respondents) have planned for the long term accessibility of metadata, 31% (5 respondents) are in preparation for the long term accessibility of metadata, while 38% (6 respondents) have not planned for the long term accessibility of metadata.

**Question 82 Additional comments on accessibility issues.**

All respondents were provided with additional space in which to further comment on accessibility issues for digital records and digital State archives.

Responses included:

- one organisation is currently reviewing content management systems for managing intranet and internet sites, and
- high level of awareness of accessibility issues in organisation and that the IT Directorate is actively planning to manage these aspects.

**Commentary on results**

The responses to these questions highlight a number of important issues for organisations as they become increasingly dependent on digital recordkeeping to support business. 38% of respondents had some equipment/technology dependent records that were either not accessible or accessible with some difficulty (Q60). The reasons for these difficulties included software and hardware obsolescence and records left in old systems and databases rather than migrated to new systems. While it is not possible to comment on whether the records which were inaccessible were critical to business or not, two organisations reported that they had taken steps to retrieve records which had required some effort.

It is encouraging to note that 81% of respondents have implemented or are planning to implement the New South Wales Recordkeeping Metadata Standard (NRKMS) in relation to their digital records (Q79). The use of other types of metadata such as the Australian Government Locator Service (AGLS) is also positive. However, it is of some concern that 38% of respondents have not planned for the long term accessibility of the metadata.

56% (or 9 respondents) reported that they have digital records in inactive or decommissioned systems (Q73). Of those 9 respondents, 5 further responded that they had not migrated records in the inactive or decommissioned systems to new and active systems. The likelihood that records in inactive or decommissioned systems will become increasingly hard to access overtime poses a risk for organisations as records they may need for business may not be readily available to them.

## **Feedback to State Records**

The last section of the survey questionnaire was an opportunity for public offices to provide feedback to State Records on the topic of this survey.

Comments touched on the following issues:

- Potential for digital information and storage needs to increase over time
- Difficulty in estimating figures for the questionnaire due to implementation of new systems
- Storage of digital information by shared service providers and recognition that information in financial and human resources systems managed by shared service providers are State records
- Survey was challenging and presented a significant amount of work to complete but was a useful both in assessing current resource application to the management of electronic records and for future planning

State Records thanks all public offices for their feedback and participation in the 2005 Information Survey – Digital Recordkeeping.