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SCHOOL OF GOVERNMENT**

Chair in E-Government

**Research Report 'E-mail Records Management
in 21st Century New Zealand Government'**

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Table of Contents

1. Introduction	6
2. Literature review	8
2.1. E-mail as a unique communication mode.....	8
2.2. E-mail use in the workplace	9
2.3. E-mail management strategies and behaviours	12
2.3.1. Identifiable strategies of individuals' e-mail management.....	12
2.3.2. Identification of e-mails to be retained	14
2.3.3. Managing messages of organisational value	15
2.4. Specific requirements for e-mail recordkeeping	17
2.5. Theoretical framework for this research	18
3. Legislation impacting New Zealand Government information handling practices.....	20
3.1. The Official Information Act, 1982	21
3.2. The Privacy Act, 1993.....	21
3.3. The Electronic Transactions Act, 2002	22
3.4. The Public Records Act, 2005	23
3.5. The role of Archives New Zealand.....	24
4. International developments in e-mail recordkeeping.....	26
4.1. E-mail messages as "public" records.....	26
4.2. Which e-mail messages need to be kept?.....	27
4.3. How should e-mail records be managed?	29
4.4. Current issues and future e-mail records management strategies.....	30
5. Research methodology.....	31
5.1. The online survey.....	31
5.1.1. Design and implementation of the online survey	31
5.1.2. Data collection	33
5.2. The focus group meetings	34
5.2.1. Design and implementation of the focus group meetings	34
5.2.2. Data collection	35
6. Research findings: The online survey	37
6.1. Profile of respondents	37
6.2. Technical environment.....	38
6.3. E-mail management.....	39
6.4. E-mail recordkeeping	42
6.4.1. Reasons why respondents retain e-mails in the workplace	42
6.4.2. Methods used by respondents to retain business e-mails	44
6.4.3. Managing business-related e-mails	46
6.4.4. Perceptions of e-mail recordkeeping within organisations.....	48
6.5. E-mail management information provided by organisations.....	49
6.5.1. Information provided to respondents on how to manage e-mails	49

6.5.2. Characteristics of e-mail recordkeeping policies.....	52
6.6. Comments regarding the identification and management of business e-mails	54
7. Analysis	56
7.1. Analysis of the survey findings.....	56
7.2. Analysis of the focus group meetings	58
7.3. Specific requirements for effective e-mail records management.....	64
8. Conclusion	66
9. Bibliography	67

List of Figures

Figure 1: Time spent handling e-mails at work, by occupation	40
Figure 2: Number of e-mails in the inbox in an average day, by occupation	41
Figure 3: Behaviours used by respondents to manage business e-mail accounts, by occupation	42
Figure 4: Reasons why respondents retain e-mails in the workplace	43
Figure 5: Methods used by respondents to retain business e-mails	44
Figure 6: Behaviours used by respondents to manage business e-mails.....	47
Figure 7: Individuals' perceptions of e-mail recordkeeping within their organisation	48
Figure 8: Information provided to respondents by organisations on how to manage e-mails.	50
Figure 9: Characteristics of e-mail recordkeeping policies.....	53

List of Tables

Table 1: Analysis of Different Modes of Communication (Jones, 2008, p.285)	9
Table 2: E-mail Management Strategies (Boardman & Sasse, 2004, p.587)	13
Table 3: Description of E-mail Strategies (Gwizdka, 2004, pp.1237-1238)	14
Table 4: Occupation of respondents	37
Table 5: Age of respondents and years respondents have used e-mail in the workplace.....	38
Table 6: Number of e-mail messages sent and received, by occupation.....	39
Table 7: Reasons why respondents retain e-mails in the workplace, by occupation.....	43
Table 8: Methods used by respondents to retain business e-mails when an EDRMS is (un)available	45
Table 9: Methods used by respondents to retain business e-mails when size limits are on place on their e-mail accounts.....	46
Table 10: Behaviours used by respondents to manage business e-mails when an EDRMS is (un)available	48
Table 11: Perceptions of e-mail recordkeeping within organisations when an EDRMS is (un)available	49
Table 12: Information provided by organisations on how to manage e-mails when an EDRMS is (un)available.....	51

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1. Introduction

Government agencies are becoming increasingly dependent on e-mail systems as communication and information transfer tools. On a daily basis, government employees send and receive numerous e-mails and, on behalf of their organisations, make decisions about how to manage them. Many e-mail messages contain information vital to the business of government, and therefore organisations must manage them in accordance with managerial, legal, and democratic requirements. Many formal, paper-based communications now take place electronically. With that, the responsibility for these public records has been transferred from agencies to individual users (Archives New Zealand, 2006). Government agencies need to ensure that e-mail messages critical to the business of government are managed appropriately and consistently by individual employees.

The New Zealand Public Records Act, 2005 outlines the legislative requirements for effective management of records from their creation to their disposal, regardless of their format, by all New Zealand government agencies. To ensure that their personal information management practices fulfil the requirements of the Act the recordkeeping responsibilities of individual employees as well as organisations are specified. Archives New Zealand provides the legislative framework and a series of guidelines for government recordkeeping to New Zealand government agencies. However, what behaviours and practices are individual employees actually using to manage business e-mails? Currently there is no empirical evidence about how individual employees in New Zealand government agencies identify and manage e-mail messages critical to the business of government.

Our research has focused on the following research questions:

1. How do individual employees across the New Zealand government identify and manage e-mail records of significant value and importance to their government agency?
2. To what extent are personal electronic record management practices of individual employees in line with legal requirements set out by the New Zealand Public Records Act (2005)?
3. What specifications for effective electronic record management across the New Zealand government can be identified? What recommendations to New Zealand government agencies can be made in this respect?

In this research project, on the basis of an extensive literature review, we have explored how individual employees of New Zealand government agencies identify and manage e-mails. We have looked at potential gaps between legal, democratic and managerial requirements for New Zealand government agencies and the recordkeeping behaviours of individual employees. Based on a combined analysis of research findings from an online survey among

New Zealand central government employees and focus group meetings with records managers and public servants, we have identified specifications for effective e-mail recordkeeping by New Zealand government agencies and make recommendations accordingly.

2. Literature review

In order to answer the research questions in this research activity we reviewed literature in the following areas:

1. Available academic literature in the broader field of e-mail management;
2. Relevant national regulatory and policy information; and
3. International documents presenting strategies in other jurisdictions on how to identify and manage e-mails and e-records more widely.

Sections 2, 3 and 4 of this report summarise the literature reviews in these respective areas.

2.1. *E-mail as a unique communication mode*

E-mail systems are computer-based communication systems that allow a 'sender' to write messages on a computer. Computers transmit these messages to the addressee's mail server where the 'receiver' can open and read them (Bälter, 1998, p.19). E-mail messages consist of two parts: the e-mail 'body' used for presenting the actual message, and the so-called 'metadata' consisting of content fields that guide the processing of the e-mail body. For example, the 'To' header is a metadata field and the addressee(s) is the content of that field (Bälter, 1998, p.20).

Initially, e-mail inherited concepts from traditional paper-based communications. For example, the first e-mails embedded the memo header and other aspects of the memo genre, hence reflecting the genre norms of the familiar memo (Yates, Orlikowski, & Jackson, 2008, p.66). However, the capabilities of e-mail created new opportunities for use above and beyond those offered by traditional paper-based communications for instance, including the following options (Yates et al., 2008, pp.66-67):

- E-mail allows for rapid asynchronous exchanges between senders and receivers, potentially bypassing intermediaries, such as secretaries;
- E-mail can be readily distributed and is easy to answer and forward;
- Previous messages – in whole or in part – can be included in any current message without difficulty, to provide context and continuity;
- Over time, the language of e-mail has become more informal than that of memos, allowing spelling and grammatical mistakes that most organisations do not tolerate in official paper-based communication.

These new opportunities make e-mail a communication mode not easily replicated. Jones (2008, p.273) explains it is a testament to e-mail's success that it is often used in preference to, and not just as a necessary substitute for, other modes of communication, such as

telephone or face-to-face conversations. The following model provides an overview of differences and similarities between various traditional and newly available communication modes:

	Number of people	Time and place	Interactivity	Immediate response?	Permanent record?
Face to face	One to one; some to some; one to many	Same time; same place	High	Yes	No (unless special efforts are made to record conversation)
Video conferencing	Some to some	Same time; most places	Medium to high	Yes	Possibly
Telephone	One to one (some to some with special set up)	Same time; different places	High	Yes	No (unless special efforts are made to record conversation)
E-mail	One to one; one to many	Any time; any place	Medium	No	Yes
SMS	One to one	Near time; different places	Medium	No	Possibly
IM	Mostly one to one	Same time; different places	High	Yes	Possibly
Wiki	Many to many	Any time; any place	Medium	No	Yes
Blog	One to many	Any time; any place	Low to medium	No	Yes

Table 1: Analysis of Different Modes of Communication (Jones, 2008, p.285)

In addition to providing a unique communication mode, the nature of e-mail text is also unique in that it takes elements of both written and spoken conversation (Baron, 2000, p.247). The impact of this in the workplace is that e-mail is informal, especially compared with traditional business writing; it develops a level conversational playing field; it encourages personal disclosure; and it can become emotional (Baron, 2000, p.249).

2.2. E-mail use in the workplace

E-mail has become an integral part of many people's lives, both within and outside the workplace. In a comprehensive survey based in the United States, 86 percent of those who used e-mail at work stated that e-mail is essential or important to their work (Fallows, 2002, p.2). In 2006, it was estimated that approximately 171 billion e-mails were sent every day, while the number of active mailboxes was estimated to increase from 1.4 billion to 2.5 billion

by 2010 (Rosi, 2007). Over the years, a substantial increase in the use of e-mails can be observed. For instance, in research comparing e-mail use between 1996 and 2006, Fisher, Brush, Gleave, and Smith (2006, p.310) found that the number of e-mails stored in individual e-mail accounts had increased ten fold; the average size of individual e-mail archives in 1996 was 2,482 messages, while the mean number of messages in 2006 was 28,660.

Available research demonstrates that due to the rapidly increasing quantities of e-mails, including attachments, delivered to people each day, many individual users have designated e-mail as a personal information management tool (Barreau, 1995, 2008; Boardman & Sasse, 2004; Ducheneaut & Bellotti, 2001; Whittaker, Bellotti, & Gwizdka, 2006). For instance, Whittaker et al. (2006, p.70) observed that people keep reference information delivered through e-mail in their (personal) e-mail folders for future use.

In general, in the workplace, e-mail appears to be used for three main functions, namely task management, personal archiving, and contact management (Whittaker et al., 2006, p.68). These three functions reconfirm the observation that users treat e-mail as a personal information management system. It is possible that the informal nature of e-mail text contributes to the use of the tool as a personal information management system.

However, besides supporting individuals in personal information management, e-mail also introduces issues for users. For instance, people experience information overload from the sheer volume of incoming e-mail and experience frustration due to the high percentage of spam they may receive (Jones, 2008, p.273). Dabbish and Kraut (2006) for instance concluded from their research that the impact of feelings of e-mail overload includes a reduced ability to coordinate work. They identified a set of factors that significantly increases feelings of e-mail overload for individuals, including the perceived importance of e-mail for work; the number of meetings per week; the number of subordinates; overall e-mail volume; and the percent of messages that are spam (Dabbish & Kraut, 2006, p.438).

A factor with potential to influence e-mail use at work significantly is the amount of unsolicited e-mails, or spam messages, received. Spam messages are essentially commercial in nature and often sent in bulk. Legitimate businesses may send some spam by inviting the recipient to buy a product or service, while other spam messages may attempt to trick people into divulging their bank account or credit card details. Many spam messages also contain offensive or fraudulent material or spread computer viruses. Current estimates suggest that around 120 billion spam messages are sent worldwide every day (Department of Internal Affairs, 2008).

Research however indicates that e-mail users are becoming more sophisticated when dealing with spam; 71 percent of respondents to a recent survey of American internet users employed

the filters offered by their e-mail providers or employers to block spam (Fallows, 2007, p.1). This research activity also found that while the volume of spam is increasing, the e-mail users surveyed were less bothered by it; reasons for this may be that the volume of the most offensive spam has decreased, or people are becoming more informed on spam and know how to handle it better (Fallows, 2007, pp.2-3).

In general, to understand why e-mail overload occurs Thomas et al. (2006) reviewed the e-mail logs of managers for one working week, conducted textual analysis on a representative e-mail string and facilitated a focus group with managers to explore potential reasons for e-mail overload. Thomas et al. (2006, pp.274-276) identified five key reasons for e-mail overload:

- E-mail is easy to distribute
- Users are never out of contact
- Users are able to multitask in new ways
- Tasks are highly complex
- Responses are expected to be immediate

Similarly, in earlier research towards the implications of e-mail overload in the workplace, Whittaker and Sidner (1996) observed that implications of e-mail overload included cluttered inboxes containing hundreds of e-mails. These e-mails comprised outstanding tasks, partially read documents and conversational threads. Whittaker and Sidner (1996, p.279) also identified the following types of e-mails that individuals do not delete immediately:

- Messages that require the recipient to execute an action
- Informational messages that do not require a reply, but that will take some time and effort to read
- Messages that are registered at their arrival, but dealing with them is delayed until a later point when its importance is more certain
- Messages that constitute threads of asynchronous conversations

Jackson, Dawson, and Wilson (2002) conducted an investigation to evaluate the effect of e-mail interruptions in the workplace. They did so through electronically monitoring employees' activities. They concluded that while e-mail is less disruptive than the telephone, the way that the majority of users handle their incoming e-mails has been shown to give far more interruptions than expected, particularly as a result of the cumulative nature of e-mails (Jackson, Dawson, & Wilson, 2002, p.81). However, in recent research, Hair, Renaud, and Ramsay (2007) observed that individual users respond differently towards e-mail and potential e-mail overload issues. They developed a typology of user orientations or predispositions towards e-mail based on results of an online survey into e-mail behaviours.

The following three types of orientation to e-mail can be distinguished (Hair et al., 2007, pp. 2801-2802):

- Relaxed: e-mail exerts no undue pressure. Those for whom this is the dominant orientation deal with e-mails as and when they see fit and refuse to allow anyone to exert long-distance pressure on them. E-mail is experienced as an asynchronous communication medium
- Driven: e-mail exerts pressure. Those for whom this orientation is dominant feel the need to reply instantaneously to e-mails and expect the same in return. Users experience e-mail as a synchronous communication medium.
- Stressed: E-mail exerts stress. Those for whom this orientation is dominant do not find e-mail a useful medium. Users find the pressure to respond is a negative factor.

Taking into consideration an individual's predisposition towards e-mail, e-mail processing in the workplace is further complicated as recordkeeping requirements have, in the most part, been decentralised and delegated to individual employees. Cox for instance perceives e-mail as a threat to the ability to control records and information systems, introducing a liability risk, and invasive to the proprietary information of the organisation (Cox, 2007, p.2). The increased use of e-mail has contributed to making "every employee with a computer a de facto records manager" (Kahn, 2006, p.47). Employees are making decisions on whether or not to create and retain e-mail messages on behalf of organisations; however relying on staff to categorise every e-mail properly at creation or receipt will likely result in user frustration and improper categorisation (Ward, 2006, p.s22).

2.3. E-mail management strategies and behaviours

2.3.1. Identifiable strategies of individuals' e-mail management

Research into how individuals manage e-mail suggests that there are various identifiable strategies reflecting differing levels of organising effort (Boardman & Sasse, 2004; Gwizdka, 2004; Malone, 1983; Whittaker & Sidner, 1996). Mackay for instance found that the use of e-mail is hugely diverse: individuals vary in their preferences, both in their willingness to manage incoming messages, to archive information for subsequent use, and to delegate or perform tasks (Mackay, 1998, p.352). Therefore, identified user strategies in fact provide a simplistic understanding of the different e-mail management approaches by individual e-mail users in his view.

The following research findings demonstrate the potential variety of identifiable individual user strategies towards e-mail management. Firstly, Whittaker and Sidner (1996, p.280) observed

the following three strategies for e-mail management amongst individual users in the mid 1990s:

- No filers: typically made no use of e-mail folders, but relied on full text search to find information. E-mail inboxes were large and over half of the messages had arrived more than three months prior. No filers purged items periodically by deleting large numbers of old messages or by moving them to a separate archive;
- Spring cleaners: dealt with the overloaded nature of their e-mail inboxes by intermittent clean ups, normally every one to three months. Spring cleaners made extensive use of folders and inboxes tended to be large, containing numerous conversational threads.
- Frequent filers: made daily reviews of their e-mail inboxes by filing or deleting messages. The inboxes contained only five percent of the total number of e-mails, made up almost entirely of e-mails less than one month old. Frequent filers made frequent use of folders.

In 2004, Boardman and Sasse (2004) expanded Whittaker and Sidner's e-mail management strategies based on an investigation into information management across electronic file management, e-mails and web bookmarks. As a result, they expanded the spring cleaner method into two further approaches, namely extensive filers and partial filers. The following table provides an overview of identifiable strategies according to Boardman and Sasse (2004, p.587) (Table 2):

Strategy	Characteristics	Organising Effort
No Filers	Do not file any messages	Organising neutral – low organising effort
Partial Filers	File only a few (<5) messages everyday	
Extensive Filers	Try to file many messages everyday	Pro-organising – high organising effort
Frequent Filers	File or delete most incoming messages everyday	

Table 2: E-mail Management Strategies (Boardman & Sasse, 2004, p.587)

Gwizdka (2004) distinguishes two e-mail management styles on each end of a continuum: at one end is the so-called 'cleaners' management style, with e-mail users immediately processing e-mails and proactively managing e-mail accounts; at the opposite end of the continuum is the so-called 'keepers' management style, where users let e-mails accumulate and only reactively manage their e-mail accounts. Gwizdka's continuum can be further described as follows (see Table 3):

Cleaners	Keepers
Read e-mails at specific times	Read e-mails all the time
E-mail tasks do not interrupt other tasks	E-mail tasks interrupts other tasks
Do not search in e-mail account	Search in e-mail account
Do not keep events in e-mail account	Keep events in e-mail account
Do not keep 'to do' messages in e-mail account	Keep 'to-do' messages in e-mail account
Send self reminding e-mails	Do not send self-reminding e-mails
<i>Pro-organising strategy</i>	<i>Organising-neutral strategy</i>

Table 3: Description of E-mail Strategies (Gwizdka, 2004, pp.1237-1238)

Furthermore, research findings suggest that professional role and personal characteristics of individual employees influence their e-mail management behaviours. For instance, Danis et al. (2005, p.1324) found that the occupation of an individual in an organisation (e.g. managers and non-managers) influences the way that e-mail messages are categorised. Similarly, research on potential factors associated with e-mail strain demonstrates that people with greater management responsibilities perceive e-mail as more important to their work (Dabbish & Kraut, 2006, p.438). Moreover, some research suggests that gender influences e-mail management behaviours. For instance, in research into the costs of responding to e-mail, Renaud, Ramsay, and Hair (2006, pp.326-327) found that women perceive e-mail to be more of a problem than men. They found that women appear to feel significantly more pressure to deal with messages; they check their e-mails significantly more often than men in similar occupations; and they tend to see e-mail as more disruptive to their work (Renaud, Ramsay, and Hair, 2006, pp.326-327).

2.3.2. Identification of e-mails to be retained

If we look at identifiable e-mail recordkeeping strategies and behaviours, the decision of whether to retain or delete e-mail messages usually is the responsibility of individuals who are sending and receiving the messages. Research findings demonstrate that individuals encounter difficulties when assessing the value of e-mails for their organisation and deciding whether they need to retain e-mail messages (e.g. Whittaker & Hirschberg, 2001). For instance, in many cases, the distinction between personal, transitory, and business messages is blurred. Moreover, people sometimes keep information that turns out to be useless and they sometimes take no steps to keep information that turns out to be useful (Bruce, 2005; Jones, 2004).

Public servants have the same responsibilities to manage business e-mails as they have with regard to other forms of business communications: that is, they need to manage “public

records” regardless of the format. These responsibilities include distinguishing between records and non-records, as well as properly preserving, maintaining, protecting, and disposing of all information according to approved retention and disposal schedules (Ginn, 2000, p.1). An added challenge to managing e-mails is, as e-mails are generally created, received, stored, and routed from users' computers, they can easily elude traditional records management programmes available in the public sector (Ginn, 2000).

In the New Zealand context, e-mail management presents specific issues in relation to the New Zealand Official Information Act 1982 (White, 2007; see also section 3.1 of this report). For instance, it is possible that low-level administrative e-mails that have been deleted will turn out to be relevant in a later Official Information Act request. Moreover, the (increasing) quantity of e-mails that public servants need to deal with can make responding to Official Information Act requests time consuming and costly. White (2007) observes that political officials may avoid e-mail because they consider it too risky and messages may be inadvertently released or leaked. They also believe that the culture of public sector agencies is becoming overly casual, because of the informal nature of e-mail communications on significant matters.

2.3.3. Managing messages of organisational value

When a government employee identifies an e-mail for retention, they have responsibilities to ensure the message maintains its “recordness” through appropriate management. Management of e-mails must be with the same integrity, authentication, and retention schedule as an equivalent paper document. This also means that the lifecycle of the e-mail needs to be managed based on legal requirements rather than on the requirements of the sender or recipient (Datskovsky & Moerdler, 2003).

Enneking (1998) distinguishes the following four main approaches available to manage e-mail of value to an organisation:

Approach 1: Print to paper

Printing e-mails to paper offers a number of advantages. For instance, individual employees usually are comfortable with paper records; the creation of a complete transaction record or file is relatively easy by integrating printed e-mails with related information items; and printed e-mails eliminate questions of technical obsolescence. However, printing e-mails to paper also has some disadvantages. For example, the 'intelligence' of the electronic document is eliminated in the sense that the searching and retrieval capabilities of an electronic system cannot be used and simultaneous multi-user access is no longer possible. Consequently, from a record management perspective, a printed copy of an e-mail has a lower status than its original electronic version.

Approach 2: Manage e-mail in an e-mail system

Using e-mail systems to manage e-mails has some advantages. For instance, the system automatically captures and preserves all relevant metadata; users are familiar with e-mail systems; and it is relatively easy to learn how to use e-mail systems. Moreover, e-mail systems provide some basic functionality that allows individual users to categorise items into folders; to set rules and filters to control the presentation of e-mails automatically; and to search for particular e-mails. In addition, managing e-mails in the native e-mail system requires minimal actions by users.

However, e-mail systems have certain disadvantages with regard to (electronic) recordkeeping. For instance, e-mail systems do not allow for the integration of e-mail messages with related information items. In addition, e-mail systems do not eliminate the need for intervention to index and manage the record items adequately. Ginn (2000) also points at the problem that, as e-mail systems usually do not have the capacity to maintain e-mail messages for the full retention period, organisations need to organise the retrieval, maintenance, or final disposition of e-mail records.

Approach 3: Capture e-mail in an e-mail vault solution

An approach introduced more recently is the use of e-mail archiving solutions. In general, e-mail vault solutions store all e-mails, regardless of their nature (e.g. business or personal). These systems do not necessarily provide recordkeeping functionality; rather they provide a form of automated secondary storage for messages. For example, e-mail archiving solutions store e-mails for a fixed period of time rather than on individual or event based retention schedules, and do not normally maintain an audit trail with regard to e-mail retention (Datskovsky & Moerdler, 2003).

Approach 4: Capture e-mail in an Electronic Document & Records Management System (EDRMS)

Capturing e-mail records in an EDRMS offer a number of advantages. For instance, an EDRMS usually manages e-mail records as records in a separate system with the assurance of all their record characteristics; the retention of e-mails is managed by using an EDRMS; and e-mail records can be kept with other related records which may have been created using other systems (McLeod & Hare, 2006). EDRMS systems also handle the secure destruction of e-mails, which makes this the preferred approach for many government agencies.

In research into the electronic recordkeeping practices of individuals at two United States universities, particularly focused on e-mails, Winget et al. (2006) found that respondents used a variety of mechanisms to store e-mails, and for this research, raised a risk that users do not intuitively recognise the instability of some forms of electronic media. Winget et al. (2006) found that 39 percent of respondents printed important e-mails, 17 percent stored the e-mail

electronically somewhere else (e.g. on a hard drive, a network drive, or on a physical medium such as a CD or DVD), and 44 percent stored the e-mail in their e-mail account.

While descriptions of these four approaches have not undergone significant change in the last ten years, currently, the most preferred e-mail retention approach in the public sector is the use of an EDRMS system.

2.4. Specific requirements for e-mail recordkeeping

Now that organisations are moving into electronic recordkeeping besides, or in replacement of, paper-based recordkeeping, the question emerges of what would contribute to the effectiveness of new electronic records management. Based on research towards e-mail recordkeeping in industrial information systems, Kim concludes that any recordkeeping system used for managing e-mails must provide the following functionality (Kim, 2007, p.344):

- Record retention
- Record destruction
- Auditing on e-mail users
- Auditing on the administrator
- Access control
- Evidence collection
- Policy management
- Compliance check

Besides a suitable recordkeeping system, McLeod and Hare (2006, p.116) indicate that an organisational policy with clearly defined roles and responsibilities is required for effectively managing and retaining e-mail records, along with guidelines that provide practical advice on what individual e-mail users need to do. This is further supported by research findings indicating that the solution to effective electronic recordkeeping is not purely a technical one; more emphasis should be put on organisational management of e-mail, both in the sense of appropriate e-mail identification by individual staff, e-mail management, and the long-term preservation of e-mail messages (Pennock, 2006). Pennock (2006) suggests that the organisational management of e-mail is sometimes overlooked in organisations, as it is often not well integrated into the overall recordkeeping framework and because responsibility for e-mail management is often not explicitly allocated to specific staff. Similarly, Ginn (2000) recommends that all organisations implement special programmes to train individual users in determining the record or non-record status of e-mail messages.

In practice however, Winget et al. (2006) found that, regardless of the records management approach, the existence of policy, the training provided, or the guidelines issued, few

employees are appraising their e-mails according to organisational standards and guidelines. The majority of employees are using personal instead of organisational criteria that varied widely from person to person. Winget et al. (2006) observed that the management of e-mails, including naming, are very personal decisions and that it is difficult to enforce guidelines that require employees to change their organisational strategies.

2.5. Theoretical framework for this research

The academic literature review presented above demonstrates that, to date, there is hardly any empirical research available on how government employees manage e-mail messages that are critical to the business of government (Meijer, 2006; Rocheleau, 2002). More generally, however, available research indicates that users have designated e-mail as a *personal* instead of an *organisational* information management tool (Barreau, 2008; Boardman & Sasse, 2004; Ducheneaut & Bellotti, 2001; Seow, Chennupati, & Foo, 2005; Whittaker et al., 2006).

Based on this knowledge, an important assumption in our research towards e-mail management behaviour of New Zealand central government employees is that e-mail users apply their *personal* information needs when they identify and manage e-mail messages in the course of their roles within New Zealand central government departments. As a result, the so-called 'Personal, Anticipated Information Need' (PAIN) theory offers an appropriate theoretical lens for this research in our view. This theory hypothesises that the anticipated need of information by individuals drives behaviours associated with collecting information (Bruce, 2005).

The following propositions form the basis of the PAIN theory (Bruce, 2005):

- Personal, anticipated information need is triggered by information events;
- Individuals have different sensitivity and reactions to their personal, anticipated information needs;
- Personal, anticipated information need predicts, but does not guarantee, future information usefulness;
- Personal, anticipated information need informs the investments and valuations that underpin the processes of personal information collection; and
- Sensitivity to personal, anticipated information need is a critical component of information literacy

In this research project, we have understood the personal, anticipated information need of a New Zealand public servant as an individual employee's need to identify and manage e-mail messages as official New Zealand government records on the basis of their professional role

and in anticipation of future information requirements within and to government. We have used available research findings as presented in the literature review as well as available New Zealand regulatory and policy guidelines to identify assumptions about potential e-mail management strategies and behaviour deployed by New Zealand government employees. In the next section of this report, we will further explore the specific legal context in which New Zealand public servants need to identify and manage public records.

3. Legislation impacting New Zealand Government information handling practices

Why is it important to ensure that employees in government organisations manage electronic records such as e-mails? The idea that access to government information is a general right of citizens is comparatively recent and is predicated on the notion that an informed electorate is vital to a healthy democracy. The demand for greater accountability to citizens has led to increased transparency, more open government, and citizen rights to information (Shroff, 2005). It also requires optimum recordkeeping standards and control over the archiving of government records. Furthermore, being able to defend government decision-making to the media and in the courts is becoming the measure of a competent democracy.

In New Zealand, this expectation of greater accountability to citizens is reflected in four inter-related pieces of legislation that regulate how records are managed and retained within Government agencies. Besides the original Archives Act of 1957 (now repealed) in chronological sequence, they are:

- The Official Information Act, 1982
- The Privacy Act, 1993
- The Electronic Transactions Act, 2002
- The Public Records Act, 2005

Together these Acts form the environmental background in which elected and appointed officials in New Zealand help to maintain transparent and accountable government. In addition, the set of legislation that supports the need for a good standard of recordkeeping by public offices and local authorities in New Zealand can be further extended to include (Archives New Zealand, 2008a):

- Local Government Official Information and Meetings Act, 1987
- Public Finance Act, 1989
- Health and Safety in Employment Act, 1992
- Financial Reporting Act, 1993
- Copyright Act, 1994
- Tax Administration Act, 1994
- Evidence Act, 2006

The four pieces of legislation that we will further discuss in this section are of significant importance for the purpose of this research towards effective electronic recordkeeping in 21st century New Zealand government: the New Zealand Official Information Act, 1982; the New Zealand Privacy Act, 1993; The New Zealand Electronic Transactions Act, 2002; and the New Zealand Public Records Act (PRA), 2005. Furthermore, we will discuss the role of Archives

New Zealand, the New Zealand government organisation responsible for assessing whether New Zealand government agencies meet the requirements of the PRA.

3.1. *The Official Information Act, 1982*

While the Archives Act of 1957 provided the informational foundation for the development of transparent and accountable government, the Official Information Act of 1982 demonstrated the determination of the New Zealand Parliament to ensure that it was realised. Section 4 of the Official Information Act reads as follows (Richards & Donnelly, 1996):

“To increase progressively the availability of official information to the people of New Zealand in order

- i) To enable their more effective participation in the making and administration of laws and policies; and
- ii) To promote the accountability of Ministers of the Crown and officials; and
 - a) Thereby to enhance respect for the law and to promote the good government of New Zealand;
 - b) To provide for proper access by each person to official information relating to that person;
 - c) To protect official information to the extent consistent with the public interest and the preservation of personal privacy.”

The passing of the Act reversed the previous official secrets presumption, inherited from similar British legislation, and declared that all government information is open, unless protected. The exemptions or exclusions that exist are minimal, and, in the most case, relate to national security. Although not directly related to Official Information Act administration, the work of Archives New Zealand in improving the management of state sector information provides the underpinning structure for the operation of the Official Information Act. Clearly, information that the New Zealand government cannot find or has not kept, they are unable to release to enquiring citizens according to the Official Information Act. Accordingly, the Public Records Act of 2005 is an essential component of the intentions underlying the Official Information Act (White, 2007, pp.47-49).

3.2. *The Privacy Act, 1993*

In 1993, New Zealand passed the Privacy Act to enhance protections for personal information, in which the personal access right for natural persons was removed from the Official Information Act and expanded (Shroff, 2005).

The Privacy Act 1993 (Shroff, 2005):

- covers personal information in both the public and private sectors
- regulates government data matching
- authorises the making of codes of practice to modify the privacy principles by making them stricter or more lenient to fit cases
- mandates the Commissioner to monitor and comment publicly on government policies and laws which affect personal information

The Act sets 12 privacy principles to guide behaviour; agencies are able to develop their own information handling policies and can use and disclose information if they have been clear about the purpose for having that information and have ensured that they have communicated the purpose to the individuals concerned. The intention is to ensure that information-handling policies are open and transparent and reflect the commitment to accountability as well as to fair and reasonable handling of information.

3.3. *The Electronic Transactions Act, 2002*

The purpose of the Electronic Transactions Act, 2002 is to “facilitate the use of electronic technology by -

- i) Reducing uncertainty regarding -
 - a) The legal effect of information that is in electronic form or that is communicated by electronic means; and
 - b) The time and place of dispatch and receipt of electronic communications; and
- ii) Providing that certain paper-based legal requirements may be met by using electronic technology that is functionally equivalent to those legal requirements.” (New Zealand Electronic Transactions Act, 2002)

This important acknowledgement of the contemporary role of Information and Communication Technology (ICT) in mediating communications ensures that electronic communications can meet specified legal requirements providing that particular provisions are met. These provisions include that the time and place of dispatch as well as the record of receipt of the electronic communications are retained. This acknowledgement has implications for the way that government records are prepared and kept and, indeed, what is considered to be a record for archival purposes. The Electronic Transactions Act, 2002, therefore helped to precipitate the repeal of the Archives Act of 1957 and its replacement by the Public Records Act of 2005. It also ensured that electronic communications, including e-mail and other forms of electronic communications, can be recognised as records for archival purposes.

3.4. *The Public Records Act, 2005*

The new features added to the Public Records Act, 2005 clearly reflect the impact of ICT and provide an appropriate framework for government and public offices to ensure that full and accurate records of public affairs are created and maintained (Shroff, 2005). The Act sets three key duties for organisations. Firstly, the Act requires all agencies to create and maintain full and accurate records of their activities and that agencies maintain these records in a recordkeeping system so they remain accessible over time. Secondly, it requires that no person may dispose of, or authorise the disposal of, records without prior approval from the Chief Archivist. Finally, the Act requires organisations to transfer records of archival value to Archives New Zealand at twenty-five years (Public Records Act, 2005). The need to become compliant with the Act now impacts every New Zealand public offices, including local authorities, state owned enterprises, and crown entities (Archives New Zealand, 2007b).

The Public Records Act therefore forms the foundation for the operation of the Official Information Act, in that it governs what organisations keep and consider for release. “The power of the Official Information Act is critically dependant on the quality of the public record, including both the information itself and its accessibility” (White, 2007, pp.47-49).

Significantly, the Public Records Act assigns responsibilities to Government employees to manage records that they create and use. Archives New Zealand (2006c) outlines these core recordkeeping responsibilities as the need to:

- Make records
- File and keep records
- Handle records with care
- Prevent illegal disposal of records
- Prevent unauthorised access to records
- Know their organisation’s records management policies
- Undertake all recordkeeping activities to the standards set under the Public Records Act

Not only does this assignment of responsibilities assist organisational compliance with the Act and encourage effective recordkeeping, ultimately it assists individuals and organisations to work efficiently while supporting government accountability. However, these individual responsibilities may place additional pressure on the personal information handling practices of public servants and alter their personal anticipated information needs. They may also contradict the existing assignment of responsibilities in government agencies.

3.5. The role of Archives New Zealand

“Good recordkeeping is simply good business practice and is an essential part of efficient government. Good recordkeeping supports day-to-day operations and enables the efficient management, retrieval and disposal of government information” (Archives New Zealand, 2007d). In response to the framework defined in the Public Records Act, Archives New Zealand is supporting Government agencies in “record creation, management, disposal and access, including by providing targeted advice and assistance to state sector agencies, training services and a framework of mandatory standards” (White, 2007, p.49). In addition, it has responsibility for assessing whether agencies meet the requirements of the Act. Commencing in 2010, the Chief Archivist will initiate independent audits of agency’s recordkeeping practices every five to ten years, and the Chief Archivist can inspect “central and local government recordkeeping incidents” and “work constructively with agencies to resolve any issues” (Archives New Zealand, 2007d). Parliament also receives annual reports on the state of government recordkeeping.

The findings from the 2007 Report on the Government Recordkeeping Survey provide us with an understanding of the current recordkeeping environment within New Zealand central government. Ninety percent of New Zealand departments have established policies on recordkeeping, 85 percent have a formal recordkeeping programme, and 49 percent of departments have an EDRMS to manage electronic records (Archives New Zealand, 2007a). Archives New Zealand state that formal recordkeeping programmes should include clear allocation of management and staff responsibility for recordkeeping, specific recordkeeping policies and procedures, and regular assessments of effectiveness (Archives New Zealand, 2007a, p.28).

In addition, the report states that sixty-seven percent of departments have procedures for creating and filing electronic mail (Research New Zealand, 2007, p.10). While this illustrates that the majority of Departments have electronic recordkeeping procedures in place specifically for e-mail, it also highlights that a number of them have no such procedures. Furthermore the report states that 54 percent of departments can no longer access electronic documents as they have been saved or archived without appropriate titles or other metadata, and 49 percent of departments have records that cannot be located (Research New Zealand, 2007, p.19). As a result, one of the key recommendations made by the Chief Archivist in the 2007 report is that public offices should take active steps to manage their electronic records, including e-mail, over time; these steps should include selecting systems designed to capture appropriate metadata, and planning for copying, conversion, or migration (Archives New Zealand, 2007a, p.28).

The role of Archives New Zealand is further extended through the need to ensure that Government digital information is managed in such a way that it is accessible, useable and

useful for both today's and tomorrow's New Zealanders. The Digital Continuity Strategy is a national strategy to ensure that information is trusted and accessible when it is needed, now and in the future, and beyond this that a framework is provided where individual agencies do not have to supply the resources for implementing digital preservation strategies and methodologies (Archives New Zealand, 2008b).

4. International developments in e-mail recordkeeping

In order to specify strategies and requirements for effective e-mail recordkeeping across the New Zealand government we explored overseas e-mail management strategies, policies and learning experience so far. We analysed web-based publications of five key archival and records management government agencies around the world, including:

- Archives New Zealand
- National Archives of Australia
- Library and Archives Canada
- The National Archives (United Kingdom)
- The National Archives (United States)

In our analysis we focused in particular on answering the following questions: under what circumstances can e-mail messages be acknowledged as “public” records?; which e-mails need to be retained by government organisations?; how should e-mails of critical value to the business of government be kept?; and what are current issues and strategies with regard to e-mail records management in other jurisdictions? Our findings suggest that, across these five jurisdictions, there is quite a consistent view in terms of understanding, implementation, issues, and future directions of e-mail records management in the public sector. A more detailed overview of our findings is presented below.

4.1. *E-mail messages as “public” records*

Across the identified government agencies, there is unanimous agreement that e-mails can be official records of an organisation (Archives New Zealand, 2006d; International Organization of Standardization, 2001; Library and Archives Canada, 2006; National Archives of Australia, 2007; Public Record Office, 1999; The UK National Archives, 2004; The National Archives and Records Administration, 2007). E-mail systems are standard in most business environments, and are widely used for the conduct of official government business. As such, e-mail messages provide a potentially important source of electronic public records.

Records are defined as “information created, received, and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of business” (International Organization of Standardization, 2001). The definition of records in the New Zealand Public Records Act, 2005 stresses that records can exist in any format; “record means information, whether in its original form or otherwise, including (without limitation) a document, a signature, a seal, text, images, sound, speech, or data compiled, recorded, or stored”. Essentially, the content and metadata of electronic records, e-mails or otherwise, must be created and managed to ensure that they continue to exist and

can still be accessed (Archives New Zealand, 2006c). Public records are records created by a public office (Archives New Zealand, 2006a).

The Library and Archives of Canada (2006) published the following guidelines to support Canadian public servants in understanding their responsibilities for managing e-mail records:

- Most e-mails are records
- E-mail records relating to the business of an institution must be kept
- E-mails must remain intact
- E-mails should be captured in a recognised records system
- E-mails must be managed efficiently and effectively
- The management of e-mails must be supported by corporate policies, guidelines and procedures
- Privacy and security controls must be applied appropriately

In New Zealand, between the Public Records Act 2005 and the Official Information Act 1982, agencies are legislated to keep information until they have permission to destroy particular records, and they are responsible for releasing information if requested, regardless of the format. In practice, public servants make constant judgements to decide what is worth keeping, either for their personal immediate use or for the longer-term departmental records (Archives New Zealand, 2006a).

4.2. Which e-mail messages need to be kept?

We also investigated how agencies recommend that public servants identify e-mails for retention. The National Archives of Australia (2007) state that where e-mails contain evidence of business transactions or are required for ongoing business, they form part of the official records of an organisation. The statutory definition of records within the United States includes all machine-readable materials made or received by an agency of the United States Government under Federal Law or in connection with the transaction of public business (The National Archives and Records Administration, 2007).

The process to identify e-mails for retention is a difficult one for individuals to make. Public servants must identify records based on the contents of the item rather than the format, which means that, as with other forms of correspondence, the value differs on a case-by-case basis. In addition, given the significant volume of e-mails sent and received each day it is not necessarily practical or desirable to manage single e-mail messages as formal business records. Consequently, the UK Joint Information Systems Committee (JISC) (2008) recommends identifying and capturing the small percentage of e-mails that need to be managed as records. Similarly, both Australia and Canada recommend categorising

messages to assist in the identification process. The Library and Archives of Canada's (2006) guideline e-mail management recommends the following actions based on the categories of e-mails:

- Records of the Government of Canada include e-mails created, collected, received, or transmitted during the normal course of business.
- Delete e-mails of a transitory nature once they have served their purpose. E-mail messages that are transitory may include forwarded e-mails, spam messages, information in the form of causal communication, electronic versions of documents used.
- E-mails whose content is of a personal nature are not records of the Government of Canada and the Library and Archives of Canada Act does not cover such e-mails. Delete these e-mails once their usefulness is completed.

Archives New Zealand (2006c) explains that records provide evidence of government activity at all levels, regardless of whether they are created in electronic or non-electronic formats, and are vital for government accountability and continuity (Archives New Zealand, 2006c). The following, based on criteria published by Archives New Zealand (2006a), provides a decision framework to identify public records. Public records should meet at least one of the following criteria:

- Generated as part of the conduct of the organisation's affairs
- Documents a function of the organisation, an action taken, or a decision made
- Documents the formulation of policy or a decision-making process
- Documents a change to organisational policy or procedures
- Has financial or legal implications
- Required for the operation or administration of normal business functions
- Approved by or reported to another individual, or internal or external body
- Sets a precedent
- Governed by legislation
- Affects or protect the rights and entitlements of citizens

In New Zealand, the General Housekeeping Records Disposal Authority allows public servants to delete personal and ephemeral e-mails once they are no longer administratively required, including personal correspondence, trivial work related material, and copies of documents (Archives New Zealand, 2005b).

4.3. How should e-mail records be managed?

We explored whether, and if so to what extent, the five archival institutions made different recommendations on how to manage e-mails of business value. Although in general recommendations are quite similar, the following different aspects can be observed:

In the UK, JISC (2008) highlight that everything possible must be done to ensure the recordkeeping properties of e-mails remain intact during any transfer to a recordkeeping systems, including:

- **Authenticity:** to demonstrate the authenticity of the e-mail, it is important that the systems capture all sender and recipient information with the e-mails.
- **Completeness:** the completeness of the e-mail as a record can only be assured if all component parts of the e-mail are transferred and remain together as a single record.
- **Reliability:** it is important to be confident that nothing has changed within the content of the e-mail record during the process of transfer to the recordkeeping system.
- **Fixity:** it is important to ensure and be able to demonstrate that the systems has not and cannot alter any elements of the e-mail once declared as a record. This includes changes to the content, but also to the transmission data and the content of any attachments.

The UK Public Record Office (1999, p.52) states that e-mail messages should be filed as records in the same way as other electronic records, with a common use of procedures and decision rules in identifying formal records; whether these are filed in an electronic system, printed to paper, or dealt with in some other way according to established procedures.

Archives New Zealand (2007c) state that all records must be maintained in a corporate system so that they are reliable and accessible over time. Moreover, Archives New Zealand (2005a) indicates that any electronic recordkeeping system utilised by a government agency must have the following functionality to capture e-mail records:

- Allow users to capture e-mails, including the text and attachments, as single records;
- Allow users to capture e-mails, including the text and attachments, from within their e-mail account;
- Allow users to choose whether to capture e-mails with attachments as text only, text with attachments, or attachments only;
- Ensure the capture of e-mail transmission data as recordkeeping metadata is persistently linked to the e-mail record; and
- Ensure users cannot amend the text of an e-mail and its transmission details captured in the recordkeeping system.

4.4. Current issues and future e-mail records management strategies

Looking at issues and strategies for future e-mail records management the following observations can be made.

Some institutions, such as JISC in the UK, are investigating the concept that e-mail management can no longer be left to individual members of staff to perform on a 'best efforts' basis and that a more proactive and coordinated approach is required (JISC, 2008).

Moreover, one of the key findings from a National Archives and Records Administration funded study to identify best practices in electronic records management in the United States was that although e-mail is a particularly important and ubiquitous form of electronic record, procedures for managing it are underdeveloped (Strickland, 2005). The study also found that disposing of electronic records is generally overly cumbersome and uncertain. In general, the researchers came to the conclusion that they have not found any acceptable interim solution. In the long term however, technical developments may offer a substantial contribution to solutions for more effective e-mail records management: *"In the long term, an electronic recordkeeping system facilitates resolving many of these problems because a records management system will automate disposition and provide employees with guidelines to determine record status. Of course records creators and custodians will still have to be trained and motivated to determine what is a record and to assign the correct file codes to the record"* (Strickland, 2005, p.65).

Furthermore, emerging approaches to records management provide technical options to better integrate recordkeeping technologies with other ICT developments, for example with business process systems. For instance, in a report on recordkeeping within the Australian public service, the embedding of records management capability as a standard feature in desktop productivity tools (i.e. e-mail, chat, document authoring and collaboration tools) is perceived as possibly the predominant recordkeeping architecture in future (Management Advisory Committee, 2007, p.46). Similarly, the Government of South Australia stated that ultimately automatic mechanisms that support capture and consequent transfer of non-transitory official e-mail to longer-term storage need to be implemented by agencies (Government of South Australia, 2006, p.16).

5. Research methodology

The research methodology of this study involved the collection of both quantitative and qualitative data. Firstly, we collected quantitative data through an online survey. Secondly, we organised two focus group meetings: a meeting with public servants and with records managers respectively.

The scope of the research for both the quantitative and qualitative phases was restricted to public servants employed at 35 New Zealand public service departments. These agencies make up a significant component of the New Zealand Central Government and have substantial dealings with the public through public service provision. Prior to initiating the data collection, we sought permission to conduct the research at the 35 public service departments. We notified Chief Executive Officers (CEOs) at each of the departments in writing, thus providing them with an opportunity to opt out or to contact the research team with any further questions.

5.1. *The online survey*

To gain empirical insights into the e-mail management methods and behaviours used by public servants across New Zealand central government departments, we selected an online survey method. This mode of data collection provides relatively easy access to an 'unknown' population, a low unit cost of data collection, and potential high speed of returns. An online survey instrument, being self-administered and computer-assisted, allows respondents time for thoughtful answers and the ability to check responses (Creswell, 2003; Fowler jr, 2002).

5.1.1. Design and implementation of the online survey

We designed the survey specifically for this research, using the PAIN theory as our theoretical lens, translating that lens to the context of New Zealand central government departments and incorporating hypotheses based on available research findings and existing New Zealand policy guidelines on e-mail identification, use, management and retention by individuals.

Prior to distributing the survey, we conducted a pilot meeting to solicit feedback on the online survey design. To facilitate this process, we invited Records Managers at the 35 public service departments to attend the meeting, of which eleven were able to attend this session. We obtained valuable feedback during this process, resulting in a slightly revised survey.

We received ethical approval from the School of Information Management's (SIM) Human Ethics Committee at Victoria University of Wellington to conduct the online survey. As names

and contact details of New Zealand central government employees are not publicly available, we employed a non-probabilistic snowball sampling method to recruit online survey participants. For instance, following the pilot, we invited Records Managers at the 35 New Zealand public service departments to disseminate to staff members an e-mail with a link to the online survey. Simultaneously, the project team arranged for the publication of an online survey participation invitation on the New Zealand Public Sector Intranet, which is accessible to public servants across the New Zealand central government. We did not perceive the restriction of recruiting survey respondents among e-mail and Internet users as a constraint to our research, as we wanted to know more about e-records management behaviour of individuals.

The survey was anonymous and we informed participants that we would only use the results for the purpose of the research. Consent to participate was obtained by completion of the survey. Additional information on the research was available on a university website and through a generic e-mail account set up specifically for this purpose.

We structured the survey into five sections, comprising twenty-seven questions. The survey contained mainly closed questions, comprising drop-down selection menus or ordinal scales to select appropriate answers. In addition, a number of open questions enabled respondents to provide further information on particular issues. Where participants responded to open-ended questions, we reviewed and coded the responses to identify key discussion themes.

We explain the purpose and foundations of each section of the survey more in detail below.

Section 1 - The technical environment

The first section of the survey asked respondents a series of questions designed to build a description of the technical environment at their organisation. Responses to these questions assisted in getting an insight into the participants' understanding of the technical environment they work within, as well as additional aspects, such as length of time they have been using e-mail at work. This was important contextual information to capture as the technical environment impacts the methods available to staff to manage e-mails of significant value (e.g. availability of an Electronic Document and Records Management System).

Section 2 - E-mail management

The second set of survey questions asked respondents about their work e-mail account and the e-mail messages they send and receive. Questions focused on the perceived number of messages e-mail users sent and received in an average day, messages in their inbox, folders in their e-mail account, and time spent handling e-mail messages. We based the structure of this section on research findings derived from work of Dabbish and Kraut (2006), Ingham (2003), Seow, Chennupati, and Foo (2005) and Winget, Chang, and Tibbo (2006).

This information assisted in developing a response to the first research question regarding how individual employees at New Zealand public service departments identify and manage e-mail records of significant business value.

Section 3 - E-mail recordkeeping practices

The third section of the online survey asked respondents questions on the methods and behaviours they use to manage e-mail messages of significant business value. The questions related to perceived retention and destruction of messages, methods employed to manage messages, and their ability to relocate and find messages saved by others. We based these survey questions on research findings derived from Bälter (1998) and Seow, Chennupati, and Foo (2005), as well as on New Zealand policy guidelines from Archives New Zealand (2006a; 2006b; 2006c; 2006e). Data gathered through responses to this section help us to understand the extent to which personal e-mail recordkeeping practices of employees at New Zealand public service departments are in line with legal, policy, and managerial requirements.

Section 4 - The organisation's information management policy, training, and education

The fourth section of the online survey asked respondents on their knowledge and understanding of the organisation's information management policy and requested details on the type of training and information they have received on their organisation's requirements to manage business e-mails. We also provided respondents with an opportunity to provide any general comments they had regarding the identification and management of business-related e-mails.

Section 5 - Personal profile

This set of survey questions focused on demographic details of survey respondents. We reminded respondents that participation in the survey was anonymous and it was optional for respondents to answer these questions therefore.

Responses to this section provided demographic details on the participants, including their age, gender, employer, role, and occupation. We based these questions on research findings derived from Seow, Chennupati, and Foo (2005), Gwizdka (2004), and Ingham (2003).

5.1.2. Data collection

The online survey was available between mid February 2008 and early May 2008. We received responses from 28 New Zealand departments, implying that, unfortunately, we did not receive any responses from seven public service departments. In addition, three of the departments employing eight percent of total New Zealand public service department employees (State Services Commission, 2007) accounted for 45 percent of all received

responses. From a total potential population of 40,445 individuals employed at the 28 responding departments (State Services Commission, 2007), we received 562 responses. We rejected 46 of these, as the respondents had completed less than 80 percent of the survey questions. Consequently, we used 516 responses (92 percent of received responses) in the analysis of the survey findings.

These limitations to our study lead on to response biases and therefore set restrictions to the extent in which the survey findings can be generalised. The following conditions have had an impact on our research:

- We were dependent on records managers and the use of the New Zealand public sector intranet for the recruitment of survey participants;
- There was variable support for the survey from senior management;
- At some departments, internet access for employees is restricted;
- General e-mail distribution issues or personal e-mail overload;
- Numerous requests to participate in surveys across the New Zealand public sector; and
- Work pressures for public service department employees shortly after the summer holiday period in New Zealand

Moreover, the scope of this research did not include examination or evaluation of the functionality of e-mail systems, or the use of e-mail storage solutions. In addition, we did not investigate appropriate or inappropriate use of e-mail messages and systems by public servants.

5.2. The focus group meetings

In order to understand in more detail e-mail management behaviours of New Zealand public sector employees we also organised a series of focus group meetings. Moreover, based on facilitated focus group discussions of the online survey findings and our analysis of international e-mail management strategies, we explored specific requirements for effective e-mail records management across New Zealand central government departments. In addition, upon invitation, we presented the survey findings and our analysis of international e-mail management strategies to staff of individual New Zealand government agencies as well as at a few public seminars (e.g. GOVIS).

5.2.1. Design and implementation of the focus group meetings

The project team held two focus group meetings with Records Managers and public servants respectively. Initially, we planned a third focus group meeting with senior managers from

central government; however, it unfortunately proved impossible to arrange an agreeable date within the project timeframe.

The meetings were voice recorded with consent from participants for administrative purposes to support the research team. We followed a set of guidelines to manage the focus group meetings, highlighting that the meetings would follow Chatham House rules, whereby participants would not discuss the information discussed during the meeting in other contexts.

We conducted both of the focus group meetings following a similar format. We introduced the participants to the research team and provided background information on the research project; we also outlined the purpose and expected outcomes of the meetings. Following this, we described the salient results from the online survey, and then facilitated feedback and discussion.

During the focus group meeting with public servants, we were particularly interested in exploring more fully their attitudes toward e-mail and understanding the specific behaviours they employed to manage business-related messages.

In addition, during the focus group meeting with Records Managers, we discussed the results of a literature search on strategies for e-mail recordkeeping in international public sector organisations across the short, medium, and long-term. In particular, we were interested to explore differences and similarities between the online survey results and Records Managers' observations and experience with regard to managing business-related e-mails within their organisation. We were also interested to understand if the international strategies provided any viable ideas or interesting concepts to address e-mail recordkeeping in the New Zealand public sector in their view.

5.2.2. Data collection

The project team invited Records Managers at the 35 New Zealand central government departments in writing to attend the focus group meeting. Five Records Managers attended the meeting held in Wellington in late July 2008.

To obtain a list of possible participants to attend the focus group meeting for public servants, we contacted Records Managers at the central government departments and requested the details of five randomly selected employees. Using the random number generator in excel, we identified the public servants to receive an invitation to the focus group meeting, supplemented with a list of Victoria University School of Government graduates working in central government. We held the public servants focus group meeting in mid August 2008,

attended by four public servants employed by four different New Zealand public service departments.

We recorded and transcribed both focus group meetings. This transcription provided a body of qualitative data to enrich and inform the quantitative data that emerged from the online survey results.

6. Research findings: The online survey

6.1. Profile of respondents

The profile of respondents to the online survey turned out to be reasonably comparable to the situation across the 28 participating New Zealand public service departments. For instance, the majority of respondents were female (51%) compared to 59% of female government employees at the 28 central government departments; the age distribution of respondents indicated a bell curve, which is a similar age distribution across New Zealand public service departments; and eighty nine percent of survey respondents were permanent employees. In addition, 41% of respondents were analysts or advisors, 27% were managers, 20% were administrative employees, and 12% were in other occupations.

Occupation of respondents	
Administrative staff	20% (<i>n</i> = 103)
Analysts or advisors	41% (<i>n</i> = 210)
Managers	27% (<i>n</i> = 135)
Other occupations	12% (<i>n</i> = 59)

Table 4: Occupation of respondents

With regard to the use of e-mail in the workplace, the survey findings show that respondents who have used e-mail in the workplace for the shortest period of time tended to be younger than those who have used e-mail in the workplace for the longest period of time (Table 5). Many respondents, particularly those 35 and under, had used e-mail for a significant number of years. In addition, 19 percent of respondents indicated that they had used e-mail at work for more than 15 years.

		Age of respondents				
		25 or under	26 - 35	36 - 45	46 - 55	56 and over
Years respondents used e-mail at work	5 years or less	n = 40	n = 36	n = 17	n = 5	n = 3
	6 to 10 years	n = 4	n = 59	n = 42	n = 33	n = 10
	10 to 14 years	n = 0	n = 29	n = 54	n = 51	n = 13
	15 years +	n = 0	n = 3	n = 32	n = 46	n = 19

Table 5: Age of respondents and years respondents have used e-mail in the workplace

6.2. Technical environment

The majority of respondents (62 percent) used Microsoft Outlook as the e-mail system in their workplace; other systems used included GroupWise (25 percent), Lotus Notes (ten percent), Mozilla (two percent), and other (one percent). Most respondents used a single e-mail account in their workplace (74 percent), while almost ten percent of respondents had delegated access to other e-mail accounts, and a further ten percent had access to shared e-mail account(s) to support business processes.

More than 75 percent of respondents were aware of size restrictions on their work e-mail account. However, many of these respondents were unable to quantify the size of this restriction. In addition, respondents provided a number of comments regarding the size of their e-mail account or limits placed on the size of outgoing messages. These comments suggest that while the majority of respondents knew that their organisation applied size restrictions to their e-mail account, many respondents did not understand why these size restrictions were in place and struggled to manage their e-mail account within these boundaries. For example, one of the respondents commented:

“I would like to have a larger memory for e-mails – the inbox seems to become full very quickly and I have to organise and move on e-mails when I would quite often like to leave them there for a while.”

Sixty two percent of respondents replied positive on the question whether they use an Electronic Document and Records Management System (EDRMS) to manage business-related e-mails. This finding indicates that a substantial number of respondents do not use an EDRMS to manage e-mails; however, not all New Zealand public service departments have

an EDRMS at present (Archives New Zealand, 2007a). Alternatively, respondents may not have been aware of an available system at their organisation; it is also possible that, although we provided a definition in the survey questionnaire, the EDRMS concept was not well understood by respondents.

6.3. E-mail management

Almost all respondents (89 percent) agreed to some extent that the use of e-mail was critical in their work. Three percent of respondents strongly disagreed with this statement.

The majority of overall respondents (71 percent) received fewer than 50 messages in an average day (please see Table 6). We found that managers were more likely to receive between 50 and 100 messages in an average day (39 percent) compared to analysts or advisors (17 percent), or to administrative staff (24 percent). Seven percent of managers received more than one hundred e-mails daily, in comparison with two percent of administrative staff, and two percent of analysts or advisors.

Most respondents (86 percent) sent fewer than 50 e-mails per day. We also found that 24 percent of managers sent between 50 and one hundred messages in an average day, compared to thirteen percent of administrative staff and six percent of analysts or advisors.

	Administrative staff	Analysts or advisors	Managers
Received fewer than 50 e-mails daily	74% <i>n</i> = 76	80% <i>n</i> = 169	53% <i>n</i> = 72
Received 50 to 100 e-mails daily	24% <i>n</i> = 25	17% <i>n</i> = 36	39% <i>n</i> = 53
Received more than 100 e-mails daily	2% <i>n</i> = 2	2% <i>n</i> = 5	7% <i>n</i> = 10
Sent fewer than 50 e-mails daily	84% <i>n</i> = 87	94% <i>n</i> = 196	73% <i>n</i> = 98
Sent 50 to 100 e-mails daily	13% <i>n</i> = 13	6% <i>n</i> = 12	24% <i>n</i> = 33
Sent more than 100 e-mails daily	3% <i>n</i> = 3	0% <i>n</i> =	3% <i>n</i> = 4

Table 6: Number of e-mail messages sent and received, by occupation

We asked respondents how much time they spent on handling e-mails in an average day. We defined 'handling e-mails' as the time spent on reading, organising, and deleting messages, excluding time spent taking care of the issues in messages. The majority of respondents (62 percent) spent less than one-hour handling e-mails daily, including 43 percent of respondents who spent between 30 and 60 minutes. In contrast, 38 percent of respondents spent more

than one hour handling e-mails in an average day, including five respondents who spent more than three hours reading, organising, and deleting messages.

There was little difference between the gender of respondents and time spent handling e-mails, for instance, 19 percent of male respondents and 18 percent of female respondents spent less than thirty minutes reading, organising, and deleting e-mails. In addition, the age of respondents did not affect the time spent handling e-mails, for instance 57 percent of respondents aged between 26 and 35 spent less than one hour handling e-mails, in comparison with 61 percent of respondents aged between 36 and 45. There was some difference in the time spent handling e-mails when analysed by the occupation of respondents: thirteen percent of respondents employed as managers spent between two and three hours handling e-mails, compared with only four percent of analysts or advisors (see Figure 1).

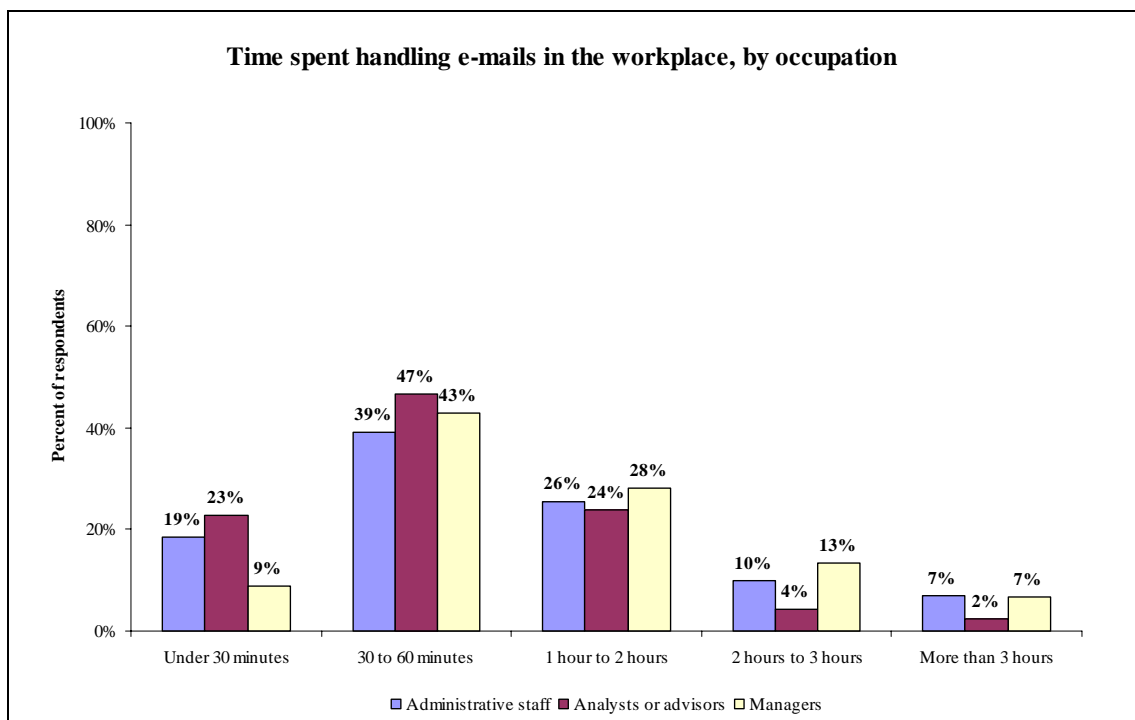


Figure 1: Time spent handling e-mails at work, by occupation

Almost half of the respondents (46 percent) indicated that they had fewer than fifty messages in their inbox on an average day, while 24 percent had more than 200 messages in their inbox. Male and female respondents had similar numbers of e-mails stored in their inboxes; however, the occupation of respondents did seem to influence how many e-mails were stored in the inbox (see Figure 2). Thirty nine percent of respondents employed as managers had more than 200 messages in their inbox on an average day, in comparison with ten percent of administrative staff.

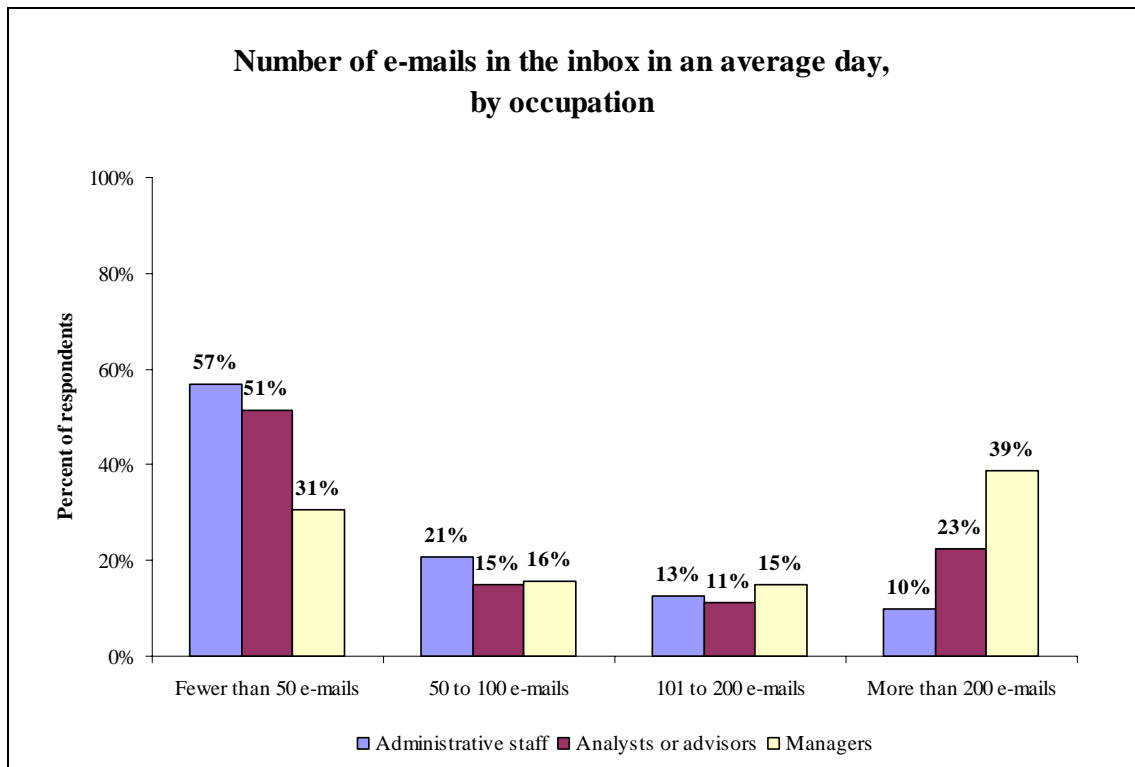


Figure 2: Number of e-mails in the inbox in an average day, by occupation

We asked participants to indicate the percent of spam messages that they received in an average day in their main work e-mail account. We found that, for 67 percent of respondents, spam messages amounted to one percent or less of all incoming messages. Moreover, for 92 percent of all respondents spam messages amounted to less than ten percent of all incoming messages in an average day.

The online survey also asked respondents to indicate if they used specific behaviours to manage their individual work e-mail accounts. Our findings indicate that the majority of respondents kept messages in their account as reminders of tasks to do (79 percent). Most respondents (74 percent) also checked their account as soon as a new message arrives. Fifty percent of respondents deleted e-mail messages once they had dealt with them, and 39 percent of respondents left e-mails in their account after dealing with them.

There was little difference between the behaviours used to manage e-mail accounts by male and female respondents. However, the occupation of respondents did seem to influence how respondents managed e-mail accounts (please see Figure 3). For instance, 63 percent of managers employed as respondents checked their account as new messages arrived compared to 80 percent of analysts or advisors. Forty four percent of managers kept their e-mail account small, compared to 67 percent of administrative staff.

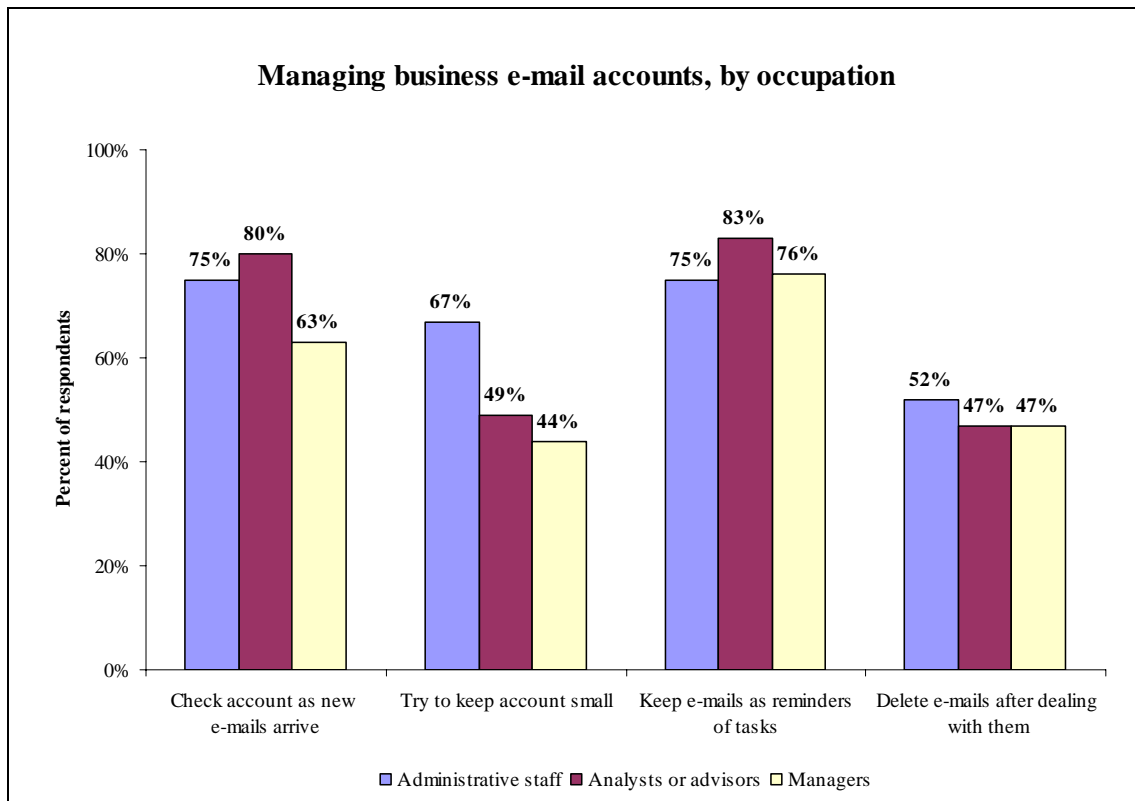


Figure 3: Behaviours used by respondents to manage business e-mail accounts, by occupation

6.4. E-mail recordkeeping

6.4.1. Reasons why respondents retain e-mails in the workplace

Respondents indicated that they commonly kept business-related e-mails because:

- they relate to an activity (84 percent);
- they report on a decision (86 percent); and/or
- to be certain of the content (85 percent)

It is important to note that these reasons are not mutually exclusive and it is possible that individuals could retain a single e-mail for all three of these reasons therefore. Only 35 percent of respondents indicated that they retain messages because they have been instructed to, suggesting that not all respondents have received e-mail recordkeeping instructions from their organisations (see Figure 4).

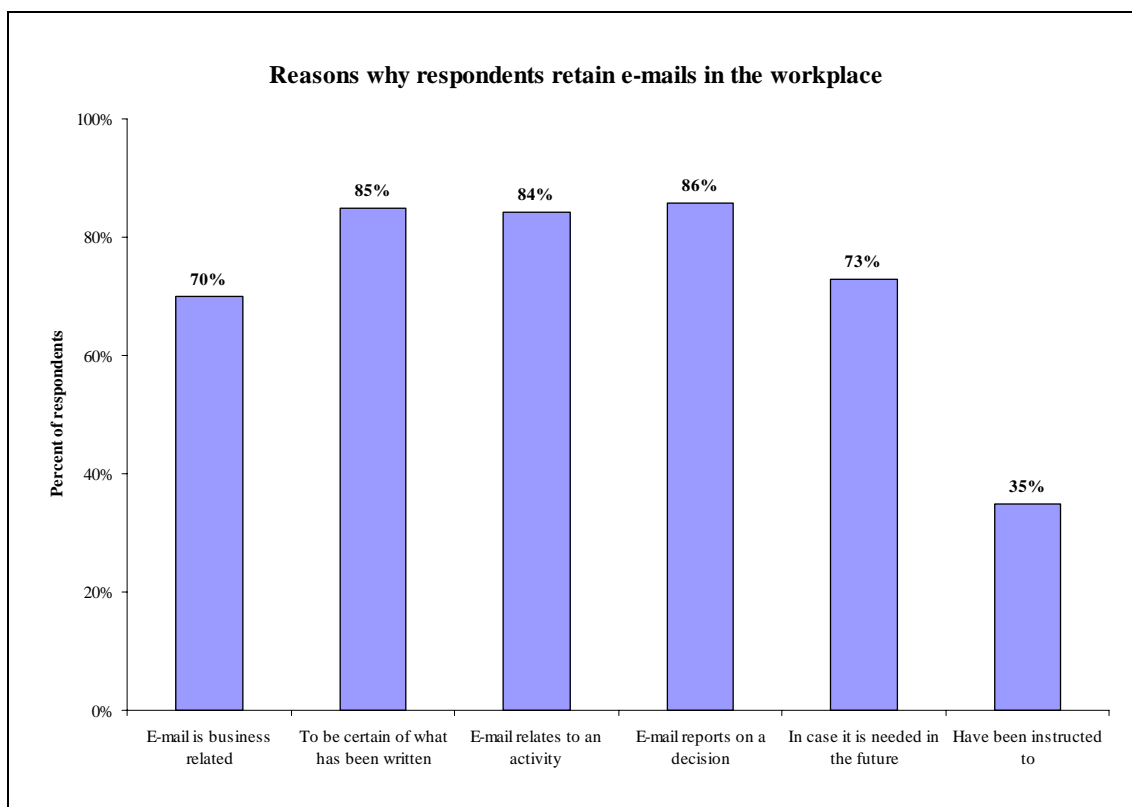


Figure 4: Reasons why respondents retain e-mails in the workplace

We found some differences in approaches between occupations of respondents and reasons why they kept business-related e-mails (please see Table 7). For instance, 88 percent of analysts or advisors kept e-mails to be certain of their content, in comparison with 80 percent of administrative staff, or 80 percent of managers.

	Administrative staff	Analysts or advisors	Managers
I keep business e-mails	70% <i>n</i> = 71	70% <i>n</i> = 148	67% <i>n</i> = 89
I keep e-mails to be certain of what has been written	80% <i>n</i> = 82	88% <i>n</i> = 183	80% <i>n</i> = 108
I keep e-mails because I have been instructed to	34% <i>n</i> = 35	33% <i>n</i> = 70	29% <i>n</i> = 39
I keep e-mails because they relate to a transaction or activity	81% <i>n</i> = 82	87% <i>n</i> = 182	78% <i>n</i> = 105
I keep e-mails because they report on activities or decisions	81% <i>n</i> = 83	88% <i>n</i> = 184	81% <i>n</i> = 109
I keep e-mails in case they are needed in the future	69% <i>n</i> = 71	76% <i>n</i> = 160	65% <i>n</i> = 88

Table 7: Reasons why respondents retain e-mails in the workplace, by occupation

6.4.2. Methods used by respondents to retain business e-mails

The survey also asked respondents to indicate how they retained important business e-mail messages (please see Figure 5). The most common method used by respondents (63 percent) was to retain business e-mails in their work e-mail account, while 57 percent of respondents saved business e-mails in an available EDRMS. These findings suggest that the majority of respondents use their work e-mail accounts as personal information management tools.

Furthermore, the research findings demonstrate that respondents used more than one method to manage business-related e-mails. Moreover, they suggest that single e-mail messages are stored in multiple ways. These findings highlight the lack of a consistent e-mail management approach across New Zealand public service departments.

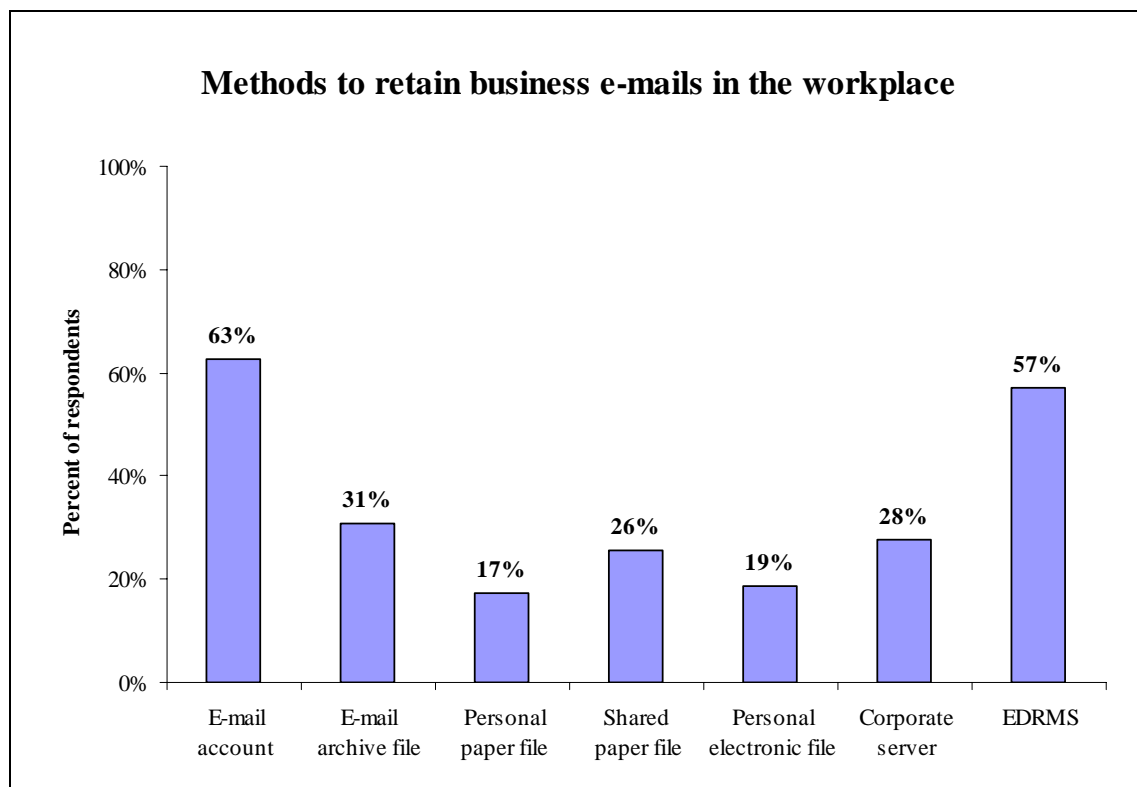


Figure 5: Methods used by respondents to retain business e-mails

Several of the methods identified to retain business e-mails essentially make the information contained in business e-mails inaccessible to the rest of the organisation, representing considerable potential loss of organisational information. These methods include managing e-mails of significant value in an e-mail archive file, such as a .pst file (31 percent); in personal electronic folders on work PCs or laptops (19 percent); and filing printed e-mails in personal files (17 percent).

We also investigated if the availability of an EDRMS influenced how survey participants managed e-mails. We found that, even when an EDRMS was available, respondents continued to use similar methods for the retention of business-related e-mails (please see Table 8). For instance, 55 percent of respondents working in an organisation with an EDRMS indicated that they kept e-mails in their work e-mail account. In addition, 21 percent of respondents with an EDRMS available indicated that they printed e-mails and then filed them in shared paper files. Surprisingly, 23 percent of respondents without the availability of an EDRMS in their organisation indicated that they saved business e-mails to an EDRMS. This finding may point at individuals' confusion with regard to electronic records management and EDRMS-related terminology.

	EDRMS available	EDRMS unavailable
I keep business e-mails in e-mail account	55% <i>n</i> = 173	74% <i>n</i> = 140
I keep business e-mails in .pst files	28% <i>n</i> = 88	34% <i>n</i> = 64
I file printed business e-mails in personal files	15% <i>n</i> = 47	20% <i>n</i> = 38
I file printed business e-mails in shared files	21% <i>n</i> = 64	35% <i>n</i> = 66
I save business e-mails on work computer	10% <i>n</i> = 32	29% <i>n</i> = 56
I save business e-mails to a corporate server	27% <i>n</i> = 83	30% <i>n</i> = 57
I save business e-mails to an EDRMS	79% <i>n</i> = 248	23% <i>n</i> = 43

Table 8: Methods used by respondents to retain business e-mails when an EDRMS is (un)available

In general, the focus of survey participants appears to be on storing e-mails in individual work accounts, rather than moving them to a central records repository or deleting them even when there is a legitimate reason to do so.

We also investigated whether the use of size limits on e-mail accounts influenced how respondents managed business e-mails, especially in relationship to using an EDRMS (see Table 9).

We found that the size of e-mail limits did not appear to influence whether or not respondents saved e-mails to an EDRMS. Sixty one percent of respondents who indicated that the size limit on their e-mail account was 100Mb or less saved e-mails to an EDRMS, in comparison with 67 percent of respondents saved e-mails to an EDRMS who indicated that they had no limit on the size of their e-mail account.

We also found that respondents with smaller e-mail accounts were less likely to keep messages in these accounts. Fifty eight percent of respondents, who indicated they had a size limit in place of 100Mb or less, kept e-mails in their account, in comparison with 73 percent of respondents with 500Mb or larger limit. In addition, 42 percent of respondents who indicated that they had a size limit in place of 100Mb or less had an e-mail archive file (a .pst file) in place to store business e-mails, in comparison with 29 percent of respondents with 500Mb or larger limit.

In addition, the results suggest that respondents who do not know the size limit in place on their e-mail account, did not display any consistent behaviours to store business-related e-mails.

	E-mail account	E-mail archive file	Personal paper file	Shared paper file	Personal electronic file	Corporate server	EDRMS
Don't know	62% <i>n</i> = 78	33% <i>n</i> = 41	25% <i>n</i> = 31	33% <i>n</i> = 40	26% <i>n</i> = 32	32% <i>n</i> = 40	50% <i>n</i> = 61
Less than 100 Mb	58% <i>n</i> = 52	42% <i>n</i> = 38	12% <i>n</i> = 11	17% <i>n</i> = 15	21% <i>n</i> = 19	23% <i>n</i> = 21	61% <i>n</i> = 56
100 Mb - 249 Mb	60% <i>n</i> = 74	19% <i>n</i> = 23	15% <i>n</i> = 18	23% <i>n</i> = 28	12% <i>n</i> = 15	24% <i>n</i> = 30	70% <i>n</i> = 87
250 Mb - 499 Mb	63% <i>n</i> = 17	30% <i>n</i> = 8	11% <i>n</i> = 3	12% <i>n</i> = 3	11% <i>n</i> = 3	12% <i>n</i> = 3	70% <i>n</i> = 19
500 Mb or above	73% <i>n</i> = 11	29% <i>n</i> = 4	20% <i>n</i> = 3	47% <i>n</i> = 7	13% <i>n</i> = 2	53% <i>n</i> = 8	67% <i>n</i> = 10
No Limit	33% <i>n</i> = 1	33% <i>n</i> = 1	0% <i>n</i> =	0% <i>n</i> =	0% <i>n</i> =	67% <i>n</i> = 2	100% <i>n</i> = 3

Table 9: Methods used by respondents to retain business e-mails when size limits are on place on their e-mail accounts

6.4.3. Managing business-related e-mails

The survey also asked respondents to indicate how they managed business e-mail messages based on a set of behaviours (see Figure 6). We derived this set of behaviours from policy guidelines published by Archives New Zealand (Archives New Zealand, 2005a; 2006b; 2006d; 2006e). The most frequently employed behaviour of respondents was to store attachments with related e-mail messages (85 percent). We found that only two percent of respondents changed the content of business e-mails. In comparison, 42 percent of respondents re-titled e-mail messages. An explanation for this relatively high percentage may be that, in some cases, the re-titling of e-mails is required by the agency's EDRMS (e.g. the inclusion of a title to the item while maintaining the subject line).

Eleven percent of respondents deleted e-mails of significant value automatically, without opening the messages. In addition, eight percent of respondents indicated that they deleted business e-mails of significant value. It is possible that this reflects occasions when

respondents delete copies of messages or previous discussion threads duplicated in the final message. A respondent further explained this particular situation as follows: *“Only the initiator is responsible for retaining the e-mail, with all discussion threads.”*

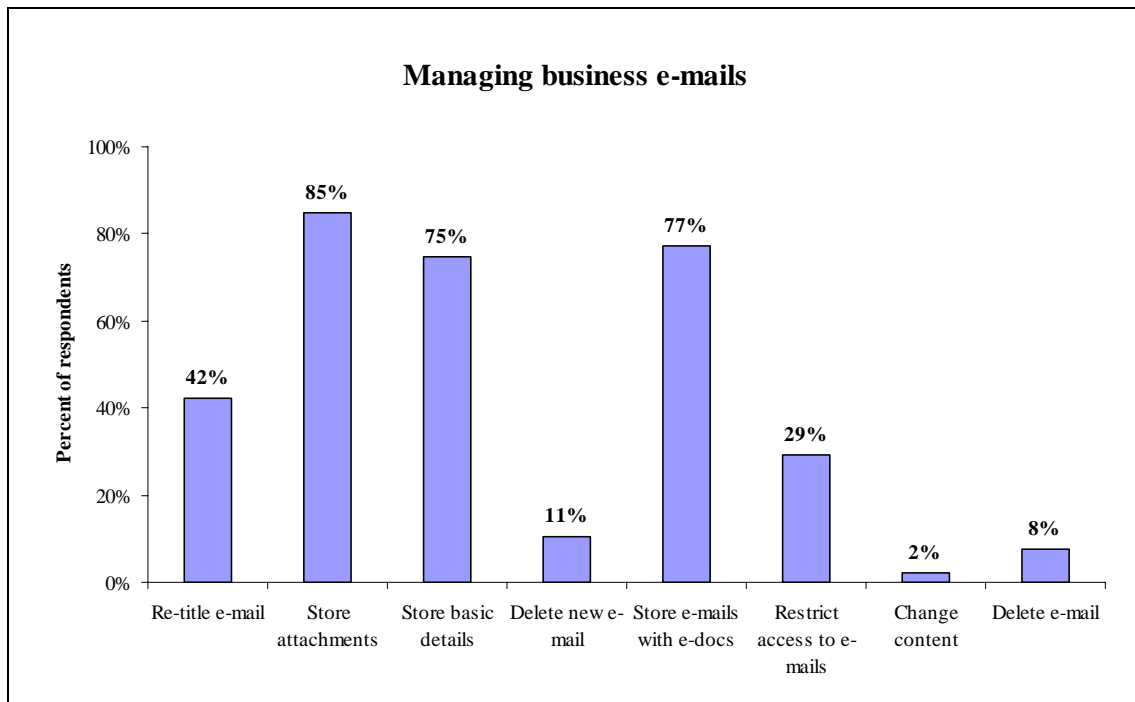


Figure 6: Behaviours used by respondents to manage business e-mails

Female and male respondents managed business e-mails in similar ways, for example 53 percent of female respondents tried to keep e-mail accounts small compared with 50 percent of the male respondents. Survey participants across the range of occupations also responded similarly to this question. However, we found that respondents employed as administrative staff, were more likely to restrict access to e-mails to themselves (39 percent) compared to 22 percent of managers. This may reflect situations where managers allow others delegated access to their e-mail accounts.

In addition, we found that respondents were less likely to keep e-mails restricted to just themselves if their organisation has an EDRMS (please see Table 10). The findings also show that, within organisations with an EDRMS available, respondents were more likely to store e-mails in context with other electronic documents (82 percent).

	EDRMS available	EDRMS unavailable
I re-title e-mails	49% <i>n</i> = 155	31% <i>n</i> = 59
I keep attachments with related e-mails	89% <i>n</i> = 279	80% <i>n</i> = 153
I store basic details with e-mails	77% <i>n</i> = 242	72% <i>n</i> = 136
I automatically delete e-mails	11% <i>n</i> = 33	11% <i>n</i> = 20
I store e-mails and electronic documents together	82% <i>n</i> = 256	70% <i>n</i> = 133
I keep e-mails accessible to myself	21% <i>n</i> = 65	41% <i>n</i> = 78
I change the content of business e-mails	2% <i>n</i> = 5	3% <i>n</i> = 6
I delete business e-mails of significant value	6% <i>n</i> = 20	10% <i>n</i> = 18

Table 10: Behaviours used by respondents to manage business e-mails when an EDRMS is (un)available

6.4.4. Perceptions of e-mail recordkeeping within organisations

We asked respondents to indicate how they find managing e-mails within their organisations and how well they perceive that others manage business e-mails. The results show that the majority of respondents (86 percent) find it easy to refer to e-mails that they have kept, whereas only 24 percent of respondents find it easy to refer to e-mails that others have kept (see Figure 7). While 73 percent of respondents find it easy to manage e-mails of significant value, only 45 percent of respondents agreed that their organisation manages e-mails of significant value well.

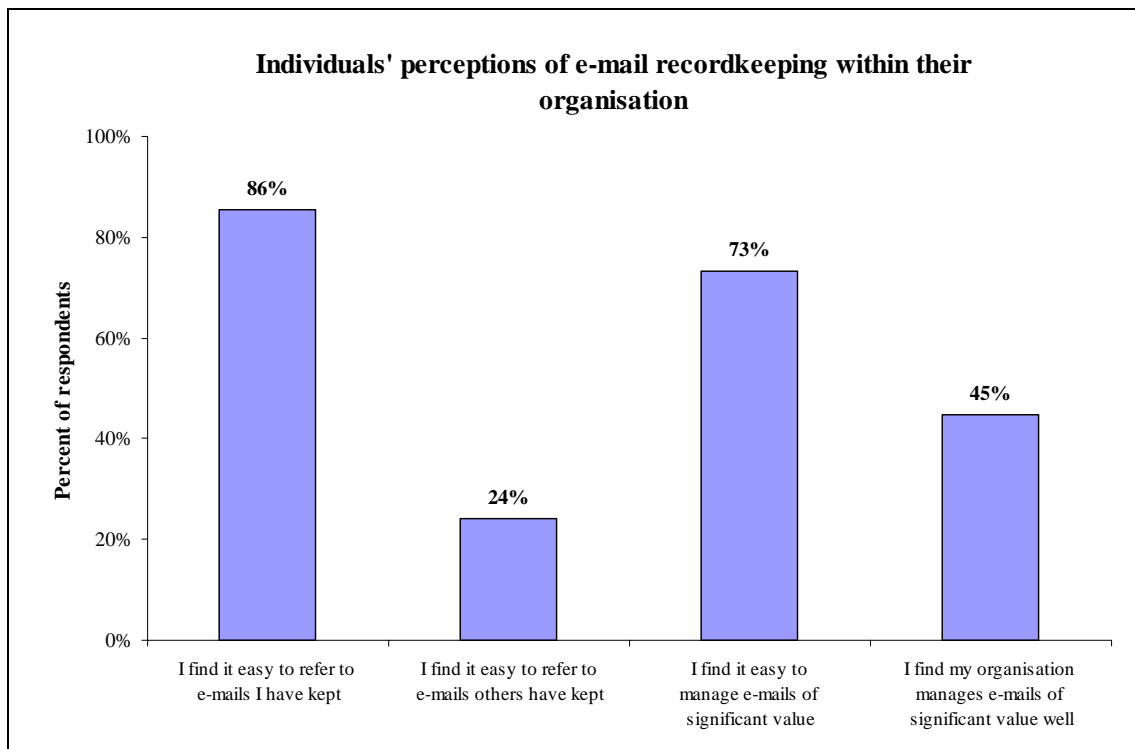


Figure 7: Individuals' perceptions of e-mail recordkeeping within their organisation

We found slight differences when we examined how respondents find managing e-mails within their organisation and how well they perceive that others manage business e-mails when an EDRMS was available (see Table 11). For instance, in those agencies where an EDRMS is available, 29 percent of respondents found it easy to refer to e-mails that others had kept, in comparison with only 17 percent of respondents without access to an EDRMS. In addition, almost 50 percent of respondents who used an EDRMS felt their organisation manages e-mails of significant value well, in comparison with only 36 percent of respondents without access to an EDRMS in their organisation. However, regardless of respondents using an EDRMS or not, most respondents found it easy to refer to e-mails that they personally have kept (85 percent and 87 percent respectively).

	EDRMS available	EDRMS unavailable
I find it easy to refer to e-mails I have kept	85% <i>n</i> = 267	87% <i>n</i> = 166
I find it easy to refer to e-mails that others have kept	29% <i>n</i> = 91	17% <i>n</i> = 33
I find it easy to manage e-mails of significant value	76% <i>n</i> = 237	69% <i>n</i> = 131
I find my organisation manages e-mails of significant value well	49% <i>n</i> = 155	36% <i>n</i> = 69

Table 11: Perceptions of e-mail recordkeeping within organisations when an EDRMS is (un)available

6.5. E-mail management information provided by organisations

6.5.1. Information provided to respondents on how to manage e-mails

Our findings show that, within the last 12 months, a substantial number of respondents had not received information explaining how to keep e-mails of significant value (please see Figure 8). Twenty six percent of respondents indicated that they had not received this information at all, while a further 24 percent had received this information, but not in the last 12 months. These results highlight a substantial gap in recordkeeping education across New Zealand public service departments.

Moreover, 32 percent of respondents had not received any information on how to identify e-mails for retention. This finding is supported by the research finding explained earlier that only 35 percent of respondents retain messages because they have been instructed to.

While the majority of respondents previously received information on how to use their organisation's e-mail system, 16 percent of respondents had not. Moreover, 25 percent of respondents who had used e-mail for less than one year had not received any information on how to use the e-mail system.

We also asked respondents if they had received information on the organisation's information management policies and official recordkeeping practices. Most respondents (86 percent) had received details on those policies. Similarly, most respondents (82 percent) had received information on recordkeeping, including electronic recordkeeping, and the New Zealand Public Records Act. These results suggest that while the majority of respondents have received details on their organisation's information management policies and electronic recordkeeping practices, there is a substantial knowledge gap among the respondents regarding how to identify e-mails for retention and how to retain and appropriately manage those business e-mails of significant value.

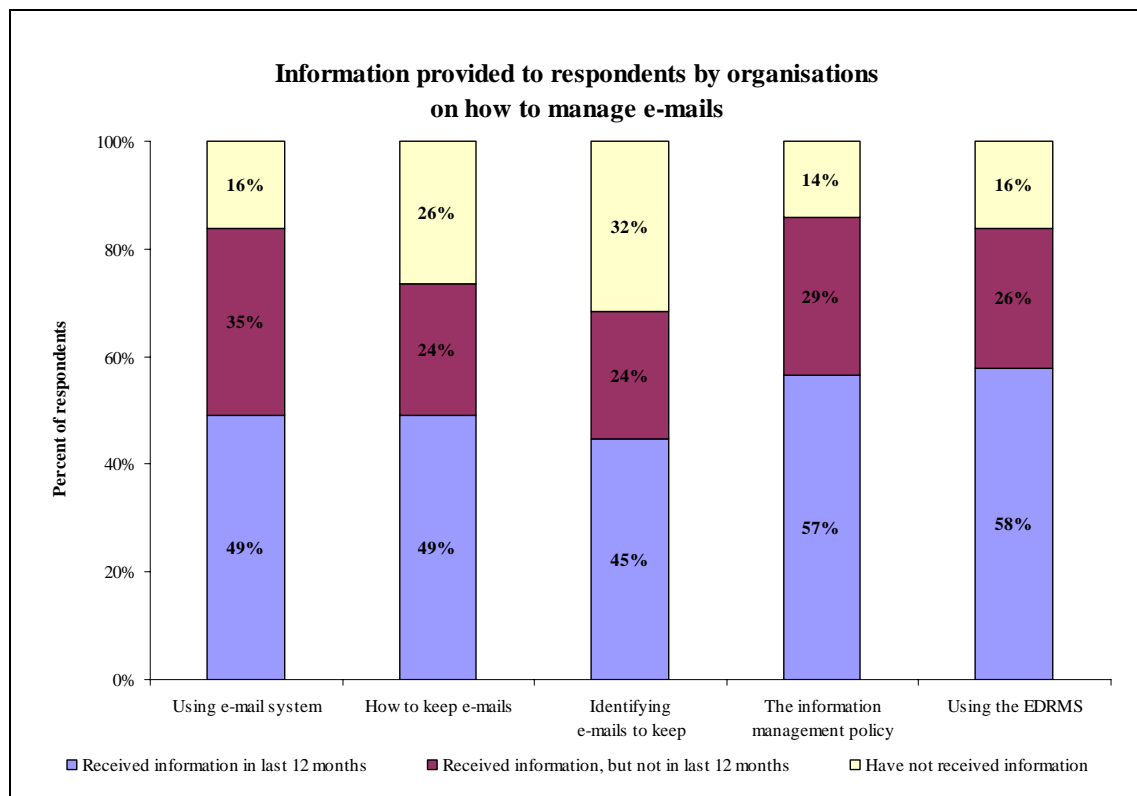


Figure 8: Information provided to respondents by organisations on how to manage e-mails

We also found that respondents with access to an EDRMS were more likely to have received information by their organisations on how to manage e-mails (please see Table 12). Fifty six percent of respondents with an EDRMS had received information in the last 12 months on which e-mails to retain; in addition, 62 percent of respondents with an EDRMS available had received information in the last 12 months on how to keep e-mails. Seventy percent of

respondents with access to an EDRMS had received training on how to use the system in the last 12 months, and 97 percent had received this information at some point during their employment.

In addition, 63 percent of respondents with access to an EDRMS had received information on their organisation's information management policy, in comparison with 47 percent of respondents who did not have access to an EDRMS. Interestingly, 39 percent of respondents who did have access to an EDRMS had received information on how to use the EDRMS. This finding may suggest that an EDRMS is being implemented at the time of online survey participation and respondents have not yet access to the system, or respondents received this information in a previous role.

	EDRMS available	EDRMS unavailable
I received information on which e-mails to keep in the last 12 months	56% <i>n = 174</i>	28% <i>n = 53</i>
I received information on how to keep e-mails in the last 12 months	62% <i>n = 194</i>	28% <i>n = 53</i>
I received information on my organisation's information management policy in the last 12 months	63% <i>n = 197</i>	47% <i>n = 87</i>
I received information on recordkeeping practices in the last 12 months	59% <i>n = 182</i>	46% <i>n = 86</i>
I received information on how to use the e-mail system in the last 12 months	54% <i>n = 169</i>	42% <i>n = 79</i>
I received information on how to use the EDRMS in the last 12 months	70% <i>n = 217</i>	39% <i>n = 73</i>

Table 12: Information provided by organisations on how to manage e-mails when an EDRMS is (un)available

Respondents employed as analysts or advisors were more likely than administrative staff or managers to have received information recently from their organisation on how to manage e-mails. For instance, 64 percent of analysts or advisors had received information on the organisations information management policy in the last 12 months, in comparison with 55 percent of administrative staff and 49 percent of managers. Moreover, 65 percent of analysts or advisors had received information in the last 12 months on how to use the EDRMS in comparison with 59 percent of administrative staff and 53 percent of managers.

6.5.2. Characteristics of e-mail recordkeeping policies

We asked respondents if their organisation had a policy that advised them on how to manage business e-mails. Twenty-nine percent of respondents were unaware of such a policy.

We asked the remaining 71 percent of respondents to summarise the policy in one or two sentences. The purpose of this analysis was to understand how respondents interpreted their e-mail recordkeeping responsibilities as outlined by their organisation, rather than conducting a comprehensive analysis on the appropriateness of the policy statements.

Thirty five percent of respondents did not respond to this part of the question, while 14 percent stated that, while they knew a policy exists, they could not find it or were unable to provide a summary of it. These findings suggest that respondents' lack of knowledge of their organisation's e-mail management policy is significant: 43 percent of respondents were unaware of their organisation's policy, were unable to locate the policy, or were unable to provide a summary of their policy.

Of those respondents who summarised their organisation's e-mail recordkeeping policy, the majority showed an adequate understanding or approach to managing e-mails of significant business value (see Figure 9). Forty percent of respondents referred to the approach or system used to retain business e-mails, e.g.:

"We should save all business related e-mails into our document system".

Thirty six percent of respondents mentioned the need to retain business e-mails based on the content of the items:

"If the e-mail is critical to business, e.g. in the case of a decision, then we are required to save it into a relevant location within our electronic data storage facility".

Respondents only made a few comments in relation to other key characteristics of e-mail recordkeeping policies. These included defining responsibility for identifying and retaining messages, how to approach multiple conversation threads in an e-mail chain, and the importance of appropriate naming, filing and maintenance of messages. In addition to these findings, eighteen respondents mentioned legislative requirements when describing their organisation's e-mail recordkeeping policy, including references to the New Zealand Public Records Act, the New Zealand Archives Act 1957, the New Zealand Official Information Act, and the New Zealand Privacy Act.

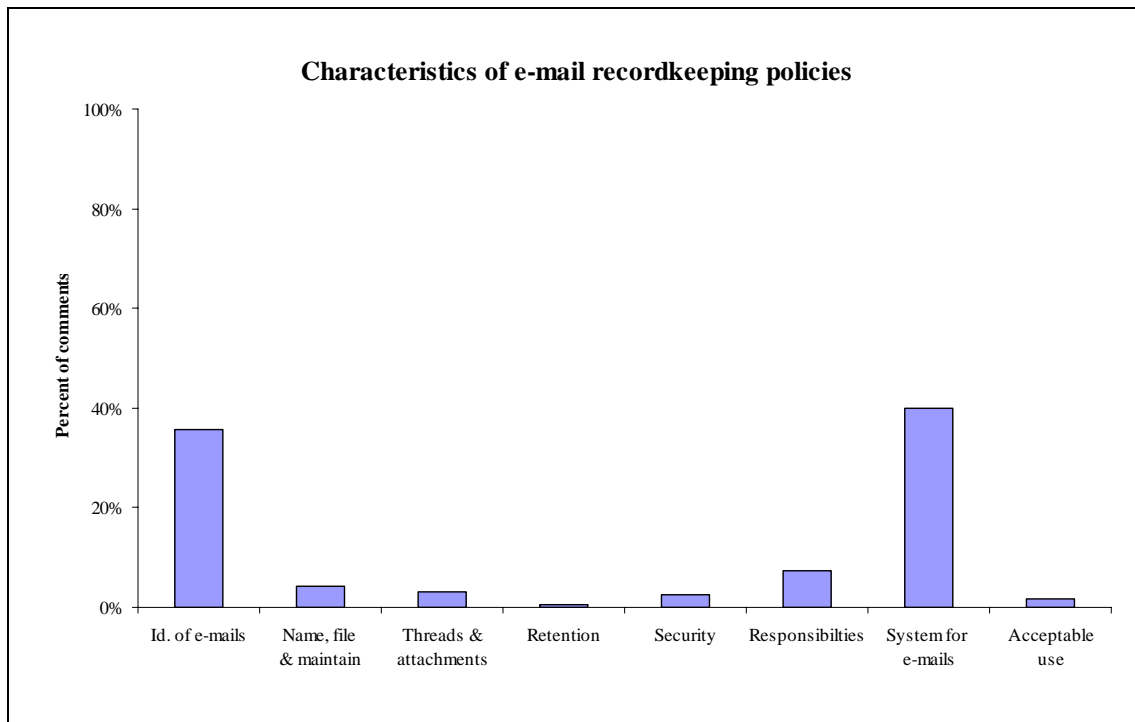


Figure 9: Characteristics of e-mail recordkeeping policies

A number of respondents also took the opportunity to highlight the impracticalities relating to their (interpretation of the) organisation's e-mail recordkeeping policy. One respondent further explains this situation as follows:

"We are supposed to store important mail in the EDRMS. The problem with using document management systems (that few people who make the decisions fully comprehend) is that this extra layer of process severely impacts on the time that we actually have to do any work at all (note that there are many other 'requirements'). ... Document management systems are (practically speaking) not as easy to use and manage as the theory (or 'sell') claims they will be. With data storage being so cheap these days why on earth don't we simply back up the mail folders instead?"

6.6. Comments regarding the identification and management of business e-mails

The survey also provided respondents with an opportunity to outline any additional comments on identifying and managing business-related e-mails.

The research findings show that a major concern raised by respondents includes the significant amount of time required to manage e-mail messages effectively:

“The majority of work these days is conducted by e-mail and requires time management principles to be applied. Managing e-mails is time consuming and difficult.”

Many respondents indicated that the need to appraise and save each message according to their organisation’s requirements is impractical and ineffective, particularly in relation to the number of messages that they send and receive on a daily basis.

Moreover, a number of respondents encountered difficulties when attempting to identify which e-mails to retain:

“The problem is not all records should be retained indefinitely, and determining which should be retained and which should be just kept as long as needed, is sometimes difficult. Sometimes something that was entirely trivial at the time can blow up to being highly significant at a later date.”

Respondents also expressed concerns about personal recordkeeping decisions made by their colleagues, highlighting the subjective nature of this decision-making process. Some respondents struggled to locate e-mails that were stored in central repositories; this in turn affected the likelihood of these respondents to use the central recordkeeping repositories, such as an EDRMS, provided by agencies:

“I know I should save e-mails to the document management system but find my own folder system vastly preferable so use that. Few others use the document management system for e-mails either, and it’s very hard to find things in, so it’s of limited value.”

Respondents pointed at the difficulty of storing threads of e-mail conversations, in particular how to identify when an e-mail conversation has concluded. Some respondents also have difficulties replying to messages saved into the EDRMS. To avoid this situation they would need to save only the final thread in an e-mail conversation.

Moreover, respondents raised a number of issues in relation to the role of the sender in improving their ability to manage messages they received. Issues included the use of subject lines; avoiding multiple subjects in the same message; and suitable use of e-mail as in some cases a face-to-face meeting or telephone call could be more appropriate.

Respondents also made a number of recommendations to improve e-mail recordkeeping within organisations, including the need for comprehensive training; the need for tighter integration between organisation systems; and the implementation of an EDRMS in organisations without an EDRMS so far. Some respondents mentioned the use of certain technologies that could improve their ability to manage business e-mails:

“Ideally the long term storage of e-mail correspondence in an EDMS needs to be integrated so that you can find them and the metadata about them almost as easily as you do in the e-mail system.”

7. Analysis

7.1. Analysis of the survey findings

This section of the report provides analysis of the survey findings in light of the literature review.

The results of this survey suggest that the majority of respondents find e-mail critical in their work. This finding is similar to Fallows (2002) and Seow, Chennupati, and Foo (2005, p.46) who in separate research found that the majority of respondents found e-mail essential or important to their work.

The survey results also illustrate that the role of respondents influenced the e-mail management practices they employ. For instance, managers responding to our survey sent and received more e-mails and spent longer handling e-mails compared to respondents in other occupations. Moreover, we found that managers employed different tactics to manage both e-mail messages and their e-mail accounts. Managers also received less information from their organisation on how to manage e-mails compared to respondents in administrative or analyst roles. These findings are analogous to Danis et al. (2005, p.1324) who found that the occupation of an individual (e.g. managers and non-managers) influences the way e-mails are categorised.

Unlike Renaud, Ramsay, and Hair (2006, pp.326-327) who found that women perceive e-mail to be more of a problem than men, the results of this survey showed little difference between male and female responses. The survey results suggest that gender does not influence the number of messages sent or received, the behaviours to manage e-mail messages, or to manage accounts.

Research focused on methods that public servants use to manage business e-mails, is somewhat limited; however, the work of Winget et al. (2006) and Seow, Chennupati, and Foo (2005) provide a basis for comparison.

Seow, Chennupati, and Foo (2005) found that organisations typically leave users to manage e-mail on their own. For instance, almost 60 percent of their respondents saved e-mails to personal folders on the desktop or filed hardcopies of messages in personal files; and only 4 percent saved e-mails to a corporate EDRMS (Seow, Chennupati & Foo 2005, p.51). In comparison, in research across two United States universities, Winget et al. (2006) found that 44 percent of respondents save important e-mails in their e-mail accounts, 39 percent of

respondents print e-mails, and 17 percent of respondents store e-mails electronically outside their e-mail account. Although there are substantial differences between these investigations, these results suggest that respondents to our survey are not unique in their preference to use e-mail as a personal information management tool, storing messages in their e-mail account or in personal electronic folders, or filing printed e-mails in personal paper files, for example.

In addition, the results of our survey show that, in general, the majority of respondents feel they manage e-mail messages effectively, while their colleagues do not. For instance, 76 percent find it difficult to refer to e-mails that others have kept. This finding is similar to Dawley and Anthony (2003, p.185) who found that e-mail users feel they do not require training on e-mail use, while their peers do.

Analysis of policy guidelines from Archives New Zealand identified a set of behaviours that we used to explore how respondents manage business e-mail messages. Some of these potential behaviours reflect individual responsibilities, while other behaviours reflect practices that would not be compliant with the PRA, such as re-titling e-mail or changing the content of an email message. Our survey findings demonstrate that 11 percent of respondents delete e-mails without opening them, suggesting that some respondents automatically delete messages without appraising the content. This would imply that e-mails are being disposed of without authorisation from the Chief Archivist, a key requirement of the PRA. Only two percent of respondents indicated that they change the content of e-mails, suggesting that, whilst two percent acts not in compliance with the PRA, the majority of e-mails are authentic and tamper-proof (Archives New Zealand, 2005a, requirement 1.37). Moreover, in line with the PRA, 75 percent of respondents indicated that they store basic details about senders, recipients, and time together with the business-related e-mail, ensuring that the capture of e-mail transmission data as recordkeeping metadata is persistently linked to the e-mail record (Archives New Zealand, 2005a, requirement 1.36).

One of the key recommendations made by the Chief Archivist in the 2007 Report on Government Recordkeeping (Archives New Zealand, 2007a) is that public offices should take active steps to manage their electronic records, including e-mail, over time. Our survey results suggest that agencies are attempting to improve e-recordkeeping practices of their employees by implementing systems, developing policies and providing training, for instance. Comments made by respondents suggest that many are aware of such initiatives within their organisation. However, regardless of current activities within their organisations, the survey results show that respondents continue to use e-mail as a personal information management tool rather than an information management tool for their organisation.

7.2 Analysis of the focus group meetings

To be able to explore further e-mail recordkeeping understanding and behaviours of employees at New Zealand public service departments, we facilitated two focus group meetings with Records Managers and public servants, respectively, where we discussed the survey findings. Moreover, in our discussions with the focus group participants, we further explored what may be specific requirements for effective e-mail records management within the context of New Zealand central government departments.

In general, focus group participants largely acknowledged the survey findings. Some of the participants explained to us:

“It is not how it should be - but it reinforces what we anecdotally know”

From the discussions in the focus groups, we learned that a wide range of contextual factors, individual strategies and experiences underpin these survey findings, leading to a more diverse picture of employees' e-mail management environment and behaviours within and across New Zealand public service departments. The following section provides an overview of the key findings from the focus group meetings.

E-mail critical to the business of government

Focus group participants agreed that email is critical in their work. In the perception of participants, obtaining a written record from people, also compared to an oral conversation for instance, turns out to be an important quality of using email. Other important motivations for using email are to communicate immediately with colleagues and to get access to colleagues who are physically at a distance (e.g. located in different regions or office buildings) or out-of-reach (e.g. out of office or in meetings). Also, in cases where there is no EDRMS system available to the agency or to specific organisational units within the agency (e.g. regional offices vs. head office), email is used for transferring data between colleagues. Often, information provided through email is used for decision making. Many public servants treat email as high priority therefore.

Managing e-mail creates time pressures for government employees

In line with the survey findings, focus group participants generally experienced e-mail as creating substantial time pressures on their work activities. Explanations for instance were that: individuals were notified of anything that happens; some individuals were used as a conduit to find out about information or who in the organisation to contact; and many had an experience of trying to respond as best as you can as *“your e-mail is generally open all day”*.

Moreover, some organisations have set a limited time to respond to emails, for instance responding to emails with issues or questions raised by Parliament. In addition, the media is

causing pressures in the sense that employees use email to approach colleagues quickly and directly for relevant information so to prepare an appropriate media response.

In addition, time pressures increase as employees are using email to report on progress of tasks and activities. Moreover, email offers the opportunity to keep other people in the loop by using carbon copy (CC) or blind carbon copy (BCC) functionality. This again leads to further time pressures on individual employees trying to manage emails.

Similar to the survey findings, focus group participants did not receive a lot of spam. Some perceived the agency's spam filter as a 'life saver'. Others perceived the agency's spam filter as more problematic as some filters block critical pieces of information, such as attachments. In addition, some organisations require their employees to go into the junk email folder once a day and delete spam messages, a requirement for which some organisations send out a daily reminder.

Strategies for managing incoming email messages

To be able to respond to large volumes of email messages, individuals and organisations developed strategies for managing incoming messages. For example, in several organisations, protocols were set up for email senders to use different keywords for classifying emails (e.g. urgent, action, FYI, meeting, query, comment), which then could go directly into corresponding folders of email receivers, helping them in identifying business-related email-messages. Another example was to show the first sentence of the e-mail message to e-mail receivers, which would help them with classifying incoming messages. Furthermore, a few organisations established a protocol that does not allow e-mail senders to copy in people for keeping them in the loop: if the matter is of importance, people are expected to speak to their colleagues rather than copy them into an email. Some organisations also have an unwritten organisational policy that, if somebody is on the next floor, employees should not send them an email, but go and talk to them.

We found that strategies for managing incoming e-mail messages only worked for a restricted time. Explanations were that the application of protocols is not always clearly instructed or monitored. Moreover, the regular use of an 'urgent' classification of e-mail messages turned out to have an opposite effect on people after some time.

E-mail management behaviour

Focus group participants occasionally deleted email messages without opening them, making judgements based on the email sender and/or subject line. Especially the subject line is of importance to employees for their assessment. Some respondents re-titled emails before storing them, so that they can retrieve emails better later on; an option that is not possible when respondents try to store re-titled e-mails in an EDRMS.

Anecdotally, some instances are known in which colleagues have automatically deleted business-related e-mails, such as a colleague who went on a long overseas business trip without having easy access to e-mail. As this individual receives hundreds of e-mails a day, he put a statement on his automated out-of-office reply saying that all received e-mail will be deleted; if the email was of important business value he kindly asked the email to be resend to one of his deputy colleagues.

Focus group participants indicated that sometimes they changed the content of emails in order to deal with sensitive parts included in business-related emails. In those instances, a common practice was to cut and paste the business-related content into a new e-mail message.

Focus group participants also discussed how to manage e-mail threads. In this situation most participants attempted to store only the very last message of an e-mail thread, but at times this could be difficult to identify and then to verify that the thread is complete.

In general, participants discussed difficulties in relation to responsibilities for storing business e-mails. For example, in some cases everyone who received the e-mail saved it and in other cases only the person who sent the message.

Strategies for storing emails

Focus group participants reported changes in how they and their colleagues stored emails over time. For instance, when government employees first got email, they usually kept emails in their personal e-mail account. However, after having lost e-mail messages a few times, people started to print out emails and store them in paper-based files. This practice became common amongst government employees for quite a long time. To focus group participants, survey findings indicating 17% of respondents printing and filing emails appear to demonstrate a shifting away from this traditional habit.

Nowadays, some organisations have a specific policy in place that discourages printing off emails and storing them in paper-based files. An explanation for this is that organisations want to be able to trace back electronic records, a functionality they would lose if employees print off emails and store them in paper-based files. In contradiction, a few agencies still have an official policy to print off all messages of critical business value and store them in the official, paper-based file.

Moreover, in organisations where they use, or have used, corporate servers with restricted storage space, several individuals used up their designated space too quickly and started to put their remaining e-mail messages and related files on disk. This situation explains why

substantial parts of corporate archives are on disk. Moreover, organisations may have different shared drives for specific policy areas, which may cause further confusion about where to store e-mails and related files. In some cases where shared drives are used instead of an EDRMS, documents attached to emails need to be stored separately.

In agencies with a corporate server instead of an EDRMS, business-related files are stored on the corporate server on a regular basis, for instance when a project has finished. Although storage capacity of the corporate server is unlimited in some cases, this situation implies that many business-related emails are stored in personal email accounts. Moreover, as many employees have email caps in place, storing emails often is a struggle, forcing people to store business-related emails on hard drives, in personal files or even to delete them.

Focus group participants discussed the impact of an increasing need to send and receive multimedia attachments. As these attachments become more commonly sent and received by public servants, they will require larger size limits on individuals' e-mail accounts; many are already struggling to manage their accounts within current quota limits.

Some organisations also store all sent and received email messages on a corporate server in 'dump' storage, as a 'public records safety net' solution. Several focus group participants indicated that, when there is such email storage available in the organisation and all sent and received emails are discoverable therefore, staff members are more circumspect on using email. They observed that some staff members have set up their own email storage so to prevent that their emails go into the email extender. A focus group participant expressed the general worry of increasing 'discoverability' as follows:

“Are we pushing informal decision making out into more informal environments all the time? Are we going to see our cafes swell even more as there is nowhere anyone can have a free and frank conversation? I sort of wonder as it is such a regulated environment: everything has to be captured”.

Participants also discussed that keeping everything leads to searching and appraisal problems. It was noted that there is no systematic storage or retrieval system available across New Zealand central government departments.

EDRMS

Nowadays, many New Zealand government agencies (but not all of them) have an EDRMS where employees can store all business-related files under specific categories (e.g. personal, business trivial and business critical); in at least one large government department, only part of the organisation has access to an EDRMS (head office vs. regional offices). Several participants indicated that, while using this cataloguing system, a huge amount of emails turns out to be 'business trivial'.

Focus group participants saw benefits of using an EDRMS compared to a situation where there is no EDRMS available. For example, some participants perceived a benefit of having search functionality with an EDRMS. However, focus group participants also pointed at substantial usability issues of EDRMS systems available in government agencies, leading to a situation where members of those organisations often find it easier and more convenient to keep business-related emails and their attachments in their personal e-mail account or files.

In addition, participants pointed at confusion across the New Zealand public sector that having an EDRMS implemented at an agency automatically would ensure compliance with the New Zealand Public Records Act. Another area of confusion identified by focus group participants is the terminology used in the area of records management (e.g. what is an EDRMS also compared to an email-system).

Organisation policy

Focus group participants recognised the survey findings demonstrating a substantial knowledge gap among respondents on their organisation's email records management policy. Organisation policies that government employees generally know are policies about security and personal use of email.

New Zealand government agencies have strict rules with regard to the security of electronic data. For instance, several agencies have adopted rules that do not allow employees to send specific work-related electronic data and/or attachments to their homes, or to store work-related electronic data on USB keys. Similarly, senior managers are required to take their own laptops on business trips, so that any downloaded confidential information would be stored on their own computer rather than sitting on a 'public' computer owned by a hotel or internet café.

Information on e-mail records management

Several focus group participants had not explicitly received information on e-mail records management from their organisation; most of them had received information about electronic data security and (excessive) personal use of email however. Information on e-mail records management is available in policy manuals, and focus group participants indicated that it is often expected that employees have read those manuals. In practice, this doesn't happen until something has been breached and the manual is pulled out for gaining advice on how to deal with the emerged situation. In general, staff members are not instructed on how to use email, they are expected to bring those skills and knowledge with them to the organisation. Focus group participants recommended a one page policy document coming from a higher authority as a way to more effectively increase individuals' knowledge about e-mail records management. Some also recommended bite sized training sessions.

Focus group participants indicated that the upcoming audit under the New Zealand Public Records Act (PRA) has raised awareness about e-mail records management within government agencies. Another important driver for e-records management is the increasing use of a variety of E-Government applications in relationships with customers and the fact that, from a government and a customer point-of-view, those Internet-based relationships cannot, and should not, be differently organised compared to traditional paper-based relationships for instance.

Some agencies have started dedicated organisation-wide projects on establishing compliance with the PRA. Participants stressed the importance of looking beyond the technology (e.g. implementing an EDRMS system) for developing an effective organisation-wide electronic data management solution, which is based on a supportive e-mail management culture in the organisation:

“good information management is about good business”.

One participant further explained this as follows:

“you provide the infrastructure for them to manage it but they have actually got to do it: that is where the culture comes in”

Another participant admitted:

“we have got the technology but we haven’t done the change management and that is huge. Individual staff members might save their emails but we don’t know if they are putting them in the right folders”.

Education and training

Participants mentioned the need for a stronger emphasis on the use of systems (both e-mail and EDRMS) and the changes involved in using these systems: shifting the behaviours of individual staff members is perceived to be one of the biggest challenges for achieving effective e-records management. For example, while people may be saving business-related e-mails, they may not save them in the right folders or in the right format. Focus group participants therefore recommended that staff training programmes should put more emphasis on the management of documents and the organisation of electronic records. Participants also recommended in training programmes to focus specifically on e-mail recipients and e-mail senders.

Recommendations for future email management

Most focus group participants felt that technology, such as an EDRMS with improved usability, would help them manage their e-mails:

‘Automation is the only way.’

Participants mentioned possibilities of future electronic recordkeeping functionality, such as automatic classification, storage, and appraisal solutions. Another important and related area for future email management was perceived in standardising processes within and across government agencies, and including email messages and documents. One participant pointed at an agency's long-term strategic plan in this respect:

“we have got a long-term plan of having a portal environment where staff will have the tools and the templates they need. Using these templates they can create documents when they need them and without the need to see a filing and communication system... all the metadata will have been created, all the storage is there: it all just happens behind the scenes. Depending on your role in the organisation determines what you see in that environment”

However, although technology was perceived to be important for future email management, focus group participants also acknowledged the major importance of the use of these technologies in government agencies and, with that, the cultural change that needs to be established. Most focus group participants perceived regular training of staff members, as opposed to initial training for instance, to be crucial for achieving the required culture change.

7.3 Specific requirements for effective e-mail records management

A combined analysis of the research findings from the online survey and the focus group meetings led us to identify the following requirements for effective e-mail recordkeeping across the New Zealand government.

An important research finding was that individual email management behaviour within and across New Zealand government agencies differs from regulatory and policy guidelines, even with technical solutions, such as an EDRMS, and/or comprehensive training in place. The problems we observed appear to be 'soft-system' problems, rather than 'hard-system' problems. Having an EDRMS does make a difference to research participants, but causes problems in terms of usability. Consequently, although technology is not the problem, it is not the sole solution either. We therefore recommend focusing on combined technical and socio-cultural solutions for effective e-mail management in New Zealand government organisations.

Findings from this investigation also demonstrate that individual departments and even units within departments are exposed to different email management environments, both in a technical, managerial and cultural sense. This situation implies that New Zealand government

agencies experience different mixtures of 'hard-' and 'soft-system' problems. Consequently, suitable approaches need to be tailor-made and agency-focused, rather than focused on offering whole-of-government solutions.

Further requirements for effective e-mail recordkeeping across the New Zealand government focus on improving the education and training made available to employees. Based on the research findings, any education programme should be ongoing, on the job, preventative rather than reactive, easy to access and understand (e.g. a one-pager instead of a policy manual) and address different training needs of e-mail senders and receivers. We recommend that, in designing effective education and training programmes, a useful distinction can be made between different roles of employees (e.g. administrative, manager, analysts or advisors).

For effective e-mail recordkeeping across the New Zealand government we perceive it of importance that awareness of the current e-mail management situation is raised at senior management levels of government. In that respect the 2010 independent audits of agency's recordkeeping practices may be both a stick and a carrot. Not only must individual agencies comply with the Public Records Act by then but the audits may offer an opportunity as well as access to resources to establish good recordkeeping practice and, with that, good business practice for efficient and effective government.

8. Conclusion

Similar to available research on e-mail management (e.g. Ducheneaut & Bellotti, 2001; Seow et al., 2005) our research findings demonstrate that individuals employed at New Zealand central government departments use e-mail as a personal information management tool: personal methods and behaviours formed the basis of e-mail management processes in government agencies, rather than organisational guidelines and needs. Time constraints, e-mail overload, difficulties to identify and classify messages, poorly created messages, lack of convenience, lack of usability of available EDRMS systems, and the inability to find messages stored in central repositories, were all concerns raised by research participants. These concerns offer explanations as to why respondents continue to use their individual work e-mail accounts to collect, store, organise, and retrieve business e-mail messages, even if an EDRMS is available.

It appears that, across New Zealand central government departments, anticipated personal information need drives respondents' email record-keeping behaviours. While the majority of respondents perceive e-mail as critical in their work, they display no behavioural consistency when managing e-mail messages. Moreover, respondents demonstrate a lack of clarity about their anticipated information needs in terms of managerial, legal and democratic requirements, their professional roles and their ability to predict future information usefulness. Consequently, these findings point at 'soft system' rather than 'hard system' problems, which will need to be addressed by a cultural change process if government agencies want to ensure effective organisational email record keeping.

While recordkeeping programmes, education programmes, and EDRMS systems are in place in most government departments, more than half of the respondents had not received information or training, and almost one third of respondents were unaware of an organisational policy relating to e-mail management. The substantial lack of individuals' knowledge and understanding of official e-mail management requirements indicates further opportunities for government agencies to support more consistent e-mail management by providing regular, tailor-made staff training sessions.

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