

## Cumming and Knight

### Abstract

In today's era of information abundance, archives, paradoxically, are under more threat than ever before. Using a range of examples from current recordkeeping environments in the NSW public sector, the authors explore the issues that are threatening our ability to maintain an archival record of contemporary society. After examining business systems, digital disposal and social media, the authors ask whether recordkeeping professionals are in fact contributing to their own professional demise. They then outline a range of strategies that need to be considered by all recordkeeping professionals who wish to maintain an ongoing archival record of society.

### Introduction

Today the world is living in an era of information abundance, unlike anything that has been seen before. The volume, richness and extent of today's information universe is truly extraordinary. Globally, the amount of data created, collected and shared in 2009 was 800,000 petabytes (.80 zettabytes). In 2011 it was 1.8 zettabytes. By 2020 this figure will be 35 zettabytes. One zettabyte is equivalent to the content of 260,000,000,000 DVDs. <sup>1</sup> International Data Centre research figures show that information volumes are increasing by 57% annually. <sup>2</sup> Globally people are creating more information than ever about their work and social lives and the depth of the data being created is extraordinary: repositories of thoughts, ideas and transactions that have never existed before; vast online contextual networks of social and business relationships; film, audio and photographic records that are radically expanding our traditional text-based heritage. And in terms of management, the capacities of systems to create, store and mine these extensive volumes of data are increasing in both scale and sophistication every day.

Now then really should be a golden age of recordkeeping. Archival institutions should be documenting organisations and contemporary society to a depth and extent that they have never been documented before. The authors' research, however, suggests that this is not the case. In today's information-rich society the evidence presented in this paper suggests that the recordkeeping profession with its millennia-old heritage of recordkeeping responsibility, could be on the verge of being unable to fulfil one of its key mandates: to carry forward a stable archival record from today into the future.

This paper suggests that, in current business environments, today's records of long term value – the archives of the future – are at critical risk. Using a range of case studies and examples from the New South Wales public sector, the authors demonstrate how challenges to recordkeeping in the contemporary business environment are threatening the creation and ongoing maintenance of today's archives.

The authors argue, however, that there is still time for the recordkeeping profession to respond to these challenges. In an information society, the capacity to control, contextualise, manage, authenticate and preserve a stable and sustainable record will be highly prized. If recordkeeping professionals can respond now to the challenges before them and actively engage with the record creation environment, records of long term value will be sustained. To not do so, however, is to risk professional oblivion and to jeopardise the ongoing archival record.

---

<sup>1</sup> *Sydney Morning Herald*, 8 July 2012

<sup>2</sup> David Rosenthal, 'Let's just keep everything forever in the cloud', <http://blog.dshr.org/2012/05/lets-just-keep-everything-forever-in.html>, May 2012

## **Threats to the recordkeeping profession and a stable archival record**

Decisions, actions and attitudes in the contemporary business environment are jeopardising the short and long term sustainability of information resources and consequently a stable archival heritage. With a specific focus on the management of business systems, digital disposal and social media, the following sections identify some of the key risks threatening contemporary archives.

### **The challenges posed by business systems**

Across all sectors, a considerable amount of the business that was previously documented by paper-based records is now being performed in business systems. Discussions with a range of NSW public sector organisations indicates that a medium to large government organisation will have 80 to 120 discrete, active business systems in operation at any one time.<sup>3</sup>

In the authors' experience in the NSW public sector, it is often the case that little thought is given to the information and recordkeeping needs of business systems when they are designed and purchased. This is often because:

- staff harbour the erroneous assumption that business systems don't need to create and keep records
- staff are not aware of the information sustainability challenges posed by the use of proprietary hardware and software
- staff involved in system selection are not aware of the organisation's information requirements, or
- corners are cut and stringent analysis is sacrificed in the push to meet project deadlines.

As a consequence, many business systems in use across government are not natively configured to make and manage records. And unlike traditional business practices, records are not automatically generated in business systems as by-products of the business process. Generally, business systems are built on the principles of non-redundancy so that they are fast, agile, manipulable and capable of evolving to meet current and future business requirements. Recordkeeping requirements are antithetical to these principles and are based instead on notions of redundancy, fixity and stability. As a consequence, recordkeeping principles are not built in as native functionality in active business environments which means that, in many systems the archival records of the future may not even be created.

As an example, an emergency services agency in NSW had a geographical information system to manage critical incidents. While the right data was created in this system to enable the agency to manage these incidents, the data was overwritten when new incidents occurred. When their handling of a specific incident was challenged in court, the agency had no stable, fixed record of the emergency management actions they had taken in the area under question.

Other common practices in relation to business systems that impact on current archival records include:

- System configuration and metadata definition that do not consider the information, sustainability and accountability needs of long term records.
- Poor documentation of system configuration.

---

<sup>3</sup> This figure is based on a number of meetings and discussions held by the authors with records managers across the NSW public sector.

- Frequent system migration and upgrade, increasingly with 18 month to 5 year timeframes. Stored data is complex and expensive to carry through system change and to export into new business systems, particularly when configuration documentation is poor.
- Data that is no longer required for immediate business is often not migrated to new systems and is 'orphaned' with no consideration of its ongoing need and no responsibility assigned for its management.

Migrations and upgrades of business systems in particular are often poorly planned and executed and often result in the loss or corruption of records. Earlier this year a very large NSW government organisation had a database recording client needs for a government service that was provided by external parties on the organisation's behalf. This database supported an \$80 million dollar program for these client services. Late last year the database was migrated from one platform to another and, post migration, it was revealed that there were 'unsolved data integrity and system functionality issues that represented a significant risk to the welfare of their clients and a risk to the payment of providers'.<sup>4</sup> Some of the information that staff required to operate the service was lost completely. As a consequence, the service either was not able to be provided to vulnerable clients, or, if it was provided, specific client needs could not properly be catered for. In the wake of the data loss the agency was named in Parliament, there was a frenzy of adverse media scrutiny and two senior officers were disciplined and then stood down. This example shows how critical data is easily lost in business system migrations and this jeopardises a stable archival record.

The following case study also helps to illustrate the challenges of maintaining robust and useable information of long term value in business systems. Another organisation was coordinating a large government project using a common collaboration software package as its project management system. The physical assets being developed in this project needed to be managed for extensive periods of time and consequently key records about these assets were going to be required for long periods to support the ongoing maintenance of these assets.

At the conclusion of the project ongoing responsibility for the assets was passed to another government organisation. The inheriting organisation needed to migrate the contents of the collaboration system to their business environment. In doing so they encountered the following challenges:

- The documents in the collaboration environment had minimal titling and descriptive metadata.
- The logic of the collaboration system's structure and configuration was unclear to anyone not directly involved with the business operations and system structure and configuration had not been documented. By the time the system was scheduled for transfer, few staff involved in the business operations were still employed by the organisation. The configuration difficulties made it very challenging to identify the information needed to support the asset management.
- The structures of the collaboration system environment and the system environment of the target organisation were incompatible, with no alignment between system hierarchies and classifications. This meant a direct one-to-one migration was impossible.
- The target organisation did not own or operate the collaboration system software. Significant time elapsed before this organisation deployed the system internally and was a position to accept the transferred system.

---

<sup>4</sup> *Sydney Morning Herald*, 3 March 2012

These kinds of challenges are not unique and in fact are widespread across many business system environments, and each can inhibit the creation and maintenance of a stable archival record.

### **The challenges of digital disposal**

Another example illustrating how contemporary decisions, actions and attitudes are affecting the archival value records in contemporary creating environments is in the management of digital disposal.

It has already been established that the volumes of data created today are vast. This presents significant cost and management issues for many contemporary organisations. Despite this, in the current era of financial constraints, most organisations do not allocate funding to accountably manage data volumes. In fact, in the authors' experience, most organisations do not manage or control data volumes at all.

One of the reasons that information growth remains unchecked is that there is a widespread perception that digital storage is cheap. It needs to be acknowledged that digital storage containers are genuinely cheap and that their cost has fallen remarkably in recent years. For example, in the year 2000 the disk cost per gigabyte of storage was \$US9.14. In 2010 the price was \$0.08.<sup>5</sup> What is not so widely understood, however, is that the management of all this stored data is not cheap. The technology spend on software to manage digital information has doubled between 2000 and 2010. These increases mean that 'we are spending as much on storage 10 years later, when the price of the raw materials – disk drives – has dropped to 1% of what it was'.<sup>6</sup> From a business perspective, these significant and ongoing storage cost increases are unsustainable. Indeed digital preservationist David Rosenthal has calculated that to maintain all the data that the world will create in 2018 will cost 100% of Gross World Product. He concludes, 'We are going to have to throw stuff away'.<sup>7</sup>

It must be acknowledged, however, that in addition to being financially unsustainable, current information retention practices threaten the actual survival of contemporary archival records. Money that could be used to preserve records of archival value is being wasted on unnecessary data maintenance but, more significantly, records of archival value risk being lost within the vast volumes of accumulated data.

Research conducted by State Records NSW suggests that organisations are not proactively identifying and managing their records of long term value in the digital environment. For example, in a 2010 survey, State Records contacted fifteen organisations performing strategic government business operations and asked them to identify how their current records of archival value were being stored and managed. Each of the organisations surveyed had comprehensive, whole-of-organisation disposal coverage that had been in place for at least five years. Of the fifteen organisations surveyed, only three were actually able to report on the location, condition and management frameworks around their high value archival records, but none of the responding organisations reported on archival-value records contained in systems other than their corporate electronic document and records management systems (EDRMS).

The realities of digital data mean that, unless long-term records are identified at or close to their creation and active intervention and management of key records is performed, it is possible that these records will not survive. Digital disposal is therefore a key tactic to

---

<sup>5</sup> Barclay T Blair, The Origin of Information Governance by the Numbers, 28 October 2010, <http://barclaytblair.com/2010/10/28/origins-of-information-governance-powerpoint/>

<sup>6</sup> Barclay T Blair, The Origin of Information Governance by the Numbers, 28 October 2010, <http://barclaytblair.com/2010/10/28/origins-of-information-governance-powerpoint/>

<sup>7</sup> David Rosenthal, 'Let's just keep everything forever in the cloud', May 2012, <http://blog.dshr.org/2012/05/lets-just-keep-everything-forever-in.html>

promote digital longevity, as well as a tool for managing the increasing storage and management costs of expanding data volumes, but in reality it is not occurring.

In 2011 State Records conducted another survey on digital disposal practices across government. The survey was voluntary, and its results are therefore not definitive, but its findings are nonetheless of interest. Only 32% of survey respondents reported that they had destroyed digital records from an EDRMS using authorised disposal rules. Just 9% had destroyed records in line of business systems and half the respondents reported that 'my organisation has not decided how to manage retention and disposal requirements in business systems', indicating that no disposal action or planning is occurring in the majority of business system environments. Concerningly, the survey also revealed that a large proportion of agencies do not sentence their records at creation, and instead view disposal as a retrospective process to be considered only when active business use of the data is complete. Indeed, for genuine cost reduction purposes, paper record disposal was seen by a number of respondents as the priority, with one survey respondent stating, 'The digital records can wait. They are not a priority.'<sup>8</sup>

The major outcome of failing to implement digital disposal is that organisations are drowning in their digital data. Governance of the data is impossible at these volumes and either does not happen or happens on a very small scale. It also becomes significantly harder to identify what records are of long term or archival value or to plan for the management and protection of these records through time. Without proactive planning and management, there is a significant risk that long term value records will not survive to be transferred into archival collections. A sobering statistic: in the same disposal survey, 80% of respondents reported that they were not confident that their organisations could maintain high value digital records for periods of more than ten years. This is a genuine threat to the ongoing archival record.

### **The challenges of social media and emerging business systems**

The challenge to archival recordkeeping, however, does not simply come from an inability to flag the high value information within the vast information volumes currently being created. An additional problem arises because, in digital systems, records may not be created and kept in the first place.

In NSW government, the lack of recordkeeping in social media systems can be noted as an emerging trend. In May 2012 State Records surveyed NSW government organisations about their social media use.<sup>9</sup> This survey identified widespread social media use across government. The survey was voluntary, and its results are therefore not definitive, but 79% of respondents reported that social media is actively used in their organisations. While many use social media for general promotional or publicity reasons, it is important to note that significant or high risk business is also moving to these environments. For example, 38% of respondents reported using social media as a mechanism for open feedback and public consultation, 38% for providing advice, 24% for emergency management and 10% for collaborating with external business partners.

The functionality offered by social media applications and the business purposes they are serving mean that, conceivably, these applications could become mainstream, core business systems in the short to medium term. For example, internal collaboration systems could start to replace email. Wikis could start to replace intranets or project management systems. Facebook could start to replace formal consultation mechanisms.

---

<sup>8</sup> State Records Authority of NSW, Digital disposal survey, December 2011, <http://futureproof.records.nsw.gov.au/the-problems-of-identifying-which-digital-records-to-keep-and-which-to-throw-away-survey-shows-digital-disposal-is-hard/>

<sup>9</sup> State Records Authority of NSW, 'State Records Social media and recordkeeping survey results', May 2012, <http://futureproof.records.nsw.gov.au/state-records-social-media-and-recordkeeping-survey-results/>

Organisations need to anticipate this change and ensure that records of key social media applications can be captured and managed.

The survey results reveal, however, that recordkeeping is not being actively considered in many social media environments. 60% of respondents said they are not capturing social media records, and 22% said they are only capturing some of their social media records. Of those who are not capturing records, more than one in three said that they were not interested in investigating tools for the capture and management of their social media records.

A key risk with all social media systems is that they are not designed to keep long term stable records. These are systems generally owned by third parties and stored in the cloud. If long term value business information is not regularly extracted from these systems and imported into corporate applications, there is the real risk that strategic business information, which may be needed as archives, will be lost.

This concern is evidenced by recent independent research. After analysing a variety of social media systems which were widely used during the 2011 Egyptian Revolution, researcher Hany SalahEldeen concluded that 11% of social media content about the Revolution was lost within one year.<sup>10</sup> Proactive management of archival value records is therefore required in the social media environment and it is often not occurring.

### **The need for information governance**

The practices outlined in this paper point to a widespread lack of coordinated information governance in organisations. Earlier this year, Gartner predicted that by 2016, 20% of Chief Information Officers in regulated industries will lose their jobs for failing to implement information governance effectively across their business systems.<sup>11</sup> Predictions like these should be disturbing to those charged with maintaining archival heritage. If organisations now are finding themselves without the records, accountability and management frameworks to support their strategic business operations, then the chances of stable archival records surviving into the future must be slim.

### **Are recordkeeping professionals contributing to their own demise?**

The above examples illustrate that changes in the business and technological environment have resulted in a vast increase in challenges for recordkeeping professionals. But is the profession rising to these challenges or contributing to its own demise? In their work the staff at State Records have developed an understanding of the state of recordkeeping in NSW Government and from that perspective it is clear that in some ways recordkeeping professionals are contributing their own obsolescence.

Recordkeeping professionals in some organisations are continuing to focus on traditional recordkeeping practices, managing paper records and EDRMS. A number are not stepping out of their comfort zones to manage records outside of traditional environments, including records in business systems or social media applications. Some do not have the necessary skills, or the willingness to undertake further professional education to develop these skills. Surveys conducted of both senior management and ICT indicate that these stakeholders, largely dismiss recordkeeping concerns.<sup>12</sup>

---

<sup>10</sup> Hany SalahEldeen, Web Science and Digital Libraries Research Group, Old Dominion University, 'Losing my Revolution', February 2012, <http://ws-dl.blogspot.com.au/2012/02/2012-02-11-losing-my-revolution-year.html>

<sup>11</sup> '2012 SharePoint Survey showcases governance concerns', *Image and Data Manager*, March 2012, <http://idm.net.au/article/008919-2012-sharepoint-survey-showcases-governance-concerns>

<sup>12</sup> State Records NSW, *ICT attitudes to records and recordkeeping: survey report*, September 2010, <http://www.records.nsw.gov.au/recordkeeping/topics/records-management/ict-attitudes-to-records-and-recordkeeping-survey-report> and State Records NSW, *The view from the Top*, September 2002, <http://www.records.nsw.gov.au/recordkeeping/resources-for/chief-executives/executive-summary-view-from-the-top>

It is too simplistic to blame recordkeeping professionals entirely for the situation, however. A variety of factors are at play, many of which are beyond their control.

One of the biggest factors is that recordkeeping professionals are chronically under-funded and under-resourced. The National Archives and Records Administration's *2011 Records management self-assessment report: an assessment of records management programs in the Federal Government*<sup>13</sup> reported that there is approximately one full time staff member with assigned records management duties for every 1460 Federal Government employees. While there are no equivalent benchmark studies in Australia, anecdotal evidence suggests that recordkeeping in the Australian government sectors is similarly under-resourced. In many business environments it would appear that the staffing levels in records areas mean that daily recordkeeping challenges take up all staff time and that staff have little opportunity to be strategic or plan for long term recordkeeping issues.

Another factor inhibiting strategic recordkeeping practice is the effect of administrative change. In the NSW government sector, administrative change has been widespread and constant in recent years. The large scale changes to organisational structures and functional responsibilities have impacted significantly on the management of information. In this kind of environment it is difficult for recordkeeping professionals to be anything but reactive.

Unfortunately reactive behaviours reinforce stereotypes that recordkeeping professionals are filing clerks who 'sort out the existing mess' rather than proactively plan for the future management of critical business information. Poor perceptions of the role of recordkeepers may also result in continuing poor financial and human resourcing.

In addition, it is not easy for recordkeeping professionals to obtain skills quickly so that they can reinvent themselves. Professional education in our industry, both formal and informal, is not always keeping pace or addressing the new skill bases needed by practitioners. Education providers and industry associations need to work harder to address these gaps.

Recordkeeping tools, advice and procedures are also inhibiting the profession's ability to strategically manage records of long term value. In *State Records 2011 Digital disposal survey*, 40% of respondents indicated that the official disposal tools themselves were inhibiting effective record sentencing and destruction. This was due to the complexity of the tools, non automatable triggers, and the fact that they operate at an activity and not a process level and the fact that they may not necessarily cover all records generated in business systems.<sup>14</sup>

Much recordkeeping advice and practice continues to be based on the assumption that records will be managed in an EDRMS. However nearly one in five respondents to *State Records Digital disposal survey* indicated that their organisation did not have an EDRMS. Anecdotally, the evidence suggests that even where they have been deployed, the actual business use of EDRMS is limited. The records manager of one large government organisation with very high accountability requirements reported that even with significant organisational awareness of the value of information, only 13% of staff actively use the corporate EDRMS. More strategies, other than EDRMS specific guidance, will be needed to ensure all archival records currently being created in organisations can be captured and maintained.

---

<sup>13</sup> National Archives and Records Administration, *2011 Records management self-assessment report: an assessment of records management programs in the Federal Government*, May 2012, <http://blogs.archives.gov/records-express/?p=1651>

<sup>14</sup> State Records Authority of NSW, *Digital disposal survey*, December 2011, <http://futureproof.records.nsw.gov.au/the-problems-of-identifying-which-digital-records-to-keep-and-which-to-throw-away-survey-shows-digital-disposal-is-hard/>

The metadata needed by archival authorities to contextualise and authenticate records is proving difficult to extract from record creation environments, and is either not adequately created in these environments or is substantially corrupted by its migration between systems or iterations of systems. Many archival transfer procedures are also not configured to ingest collections of digital records. These issues are also inhibiting abilities to maintain and preserve effective archival records.

## **Recommendations for the recordkeeping profession**

So given these challenges and impediments, how does the recordkeeping profession translate its skills and capacities to remain relevant in a changing world and to ensure an ongoing archival record in the future?

The authors recommend the following strategies:

### ***Be strategic***

While the authors acknowledge that there are serious impediments such as poor resourcing, it is essential that recordkeeping professionals take more strategic roles in their organisations. They need to use their understanding of organisational business to define areas of highest risk and where records of long term value need to be created. For these areas recordkeeping professionals need to channel their scant resources into guaranteeing that:

- suitable formats are used
- records are captured in whatever environments they reside
- the value and longevity of records is known from the start
- records are managed strategically from the time they are created.

Recordkeeping professionals need to be involved in system design, to define recordkeeping requirements and align them closely to business processes and outcomes. They need to be providing analysis and input when records are being moved to the cloud or when new business applications, such as those supporting social media, are adopted. They need to be adding recordkeeping clauses to contracts when organisational business is being outsourced. They need to promote the creation of high risk or high value records and to sustain these through time.

In the experience of the authors, if recordkeeping professionals do not take this role, no one will.

### ***Collaborate***

Good recordkeeping impacts on corporate governance and business capacity. Both of these issues can be used as drivers to initiate conversations with executives, chief information officers, ICT staff, business areas, system owners, users and other parties who have a vested interest in the ongoing maintenance and useability of core business information. These conversations can help to change stereotypes and may result in support and better resourcing.

Collaboration can allow recordkeeping professionals who may not be completely proficient in the technology to learn from system owners and ICT and enhance their skills. It also gives them the opportunity to contribute their unique skills and insights, giving their perspectives about issues like the business benefits of destroying superseded information, information integrity, risk mitigation and accountability and the effective governance and management of business information both in the short and long term. It can also help them to win allies to further their objectives and safeguard the archives of the future.

## **Destroy**

Recordkeeping professionals need to accept their professional responsibility to actively encourage the routine destruction of time-expired business information. Without this destruction, it will be impossible to identify and manage the strategic core of business information that needs to be maintained into the future.

In organisations, disposal needs to be promoted as a proactive, flexible and strategic process designed to protect and manage core business records. Recordkeeping professionals should use disposal authorities as active information management tools, with their principles applied in system design, raised in discussions with ICT colleagues and considered in planning exercises for migration and other ICT initiatives.

## **Educate**

In a 2010 survey of New Zealand government Chief Information Officers, the number one corporate information management risk identified was that 'the organisation is not aware of the value of the information it holds'.<sup>15</sup> Recordkeeping professionals must assist organisations to be aware of the value and strategic importance of their corporate information so that resources can be allocated to its management before it is too late.

Recordkeeping professionals must outline the risks and challenges confronting corporate business information, explain why these are real strategic concerns that threaten business performance, and outline what can collaboratively be done to help. Recordkeeping professionals need to see advocacy, communication and education as a key part of their role.

Equally importantly, recordkeeping professionals need to keep educating themselves, keeping abreast of current thinking in the industry and related industries and throwing themselves into continuing professional development.

In addition, it is essential that those organisations who provide the recordkeeping professionals themselves with education and support – records and archival authorities, professional associations and education providers – adapt to meet new needs resulting from contemporary challenges. They need to keep reinventing their tools, advice, guidance and training to ensure the profession remains relevant and archives are given the best opportunity for survival.

## **Conclusion**

This paper has identified the serious threats jeopardising today's archives. It contains some uncomfortable truths about:

- the serious challenges to records and the recordkeeping profession brought about by recent business and technological changes
- responses by some recordkeeping professionals that may be contributing to the profession's demise, and
- impediments including inadequate disposal and transfer tools.

However, it is hoped that recordkeeping professionals and their support networks will be able to seize the opportunity to become more strategic, collaborate with and educate key stakeholders and promote the destruction of short term records. Such adaptation and change may assist the profession to meet the challenges of contemporary recordkeeping head on and protect archival records now and into the future.

---

<sup>15</sup> Archives New Zealand, *Digital Information at Risk Survey*, December 2010, <http://archives.govt.nz/digital-information-risk-survey>