A Background Paper for a Conversation on a Single Minded approach to Recordkeeping Informatics

Gillian Oliver, Barbara Reed, Frank Upward, and Joanne Evans

1 Introduction

The four of us first set out the elements of recordkeeping informatics as a new disciplinary structure for managing digital information in 2009/10[1] but the idea has not gone far to this point and we wish to bring others in on our conversation.

There is nothing particularly new about recordkeeping informatics. We could give it a history that goes back to the earliest forms of civilization. The recordkeeping element indicates it is concerned with recording information about agents (usually people) in action. The informatics element indicates it focuses on the way we represent, and process recorded information. In combination the term covers the way we capture, archive, and disseminate recorded information as evidence using modern (i.e. currently available) communication and information technologies. What is still new for many archivists and records managers is the emphasis upon establishing it as a discipline, a singularity of mind.

The single mind is also not a new concept. For example, in 1998 the Australian Law Reform Commission, when reviewing the Commonwealth Archives Act noted that:

> "The management of Commonwealth records should be an integrated *continuum* [our emphasis] supported by
> - a legislative regime clearly defining objectives and responsibilities
> - a coordinated 'single mind' approach at a policy level by the various organisations with records management responsibilities[2]

This reflected and resonated with the emerging community of practice (including within our National Archival Authority) that at the time were articulating continuum conceptualisations of recordkeeping in various academic and practitioner contexts.

In promoting this agenda Australasian archivists have until recently failed to get many others from different recordkeeping cultures (including in Australia) to fully understand records continuum practices. In North America, for example, the continuum approach is often treated as if it is an alternative strategy to those developed under the banner of the life-cycle of records. In the life-cycle model there is a linear baton changing relationship between archivists and records managers. From a continuum perspective that is a dysfunctional bi-polarity. It is not that there are not differences between current and historical recordkeeping tasks, but that we need to be wary of linear thinking about the archive that treats it as the 'old stuff'. In records continuum theory the archive does not have a back or front end. It is the archive and far from being at rest at the back end is in perpetual movement through spacetime. The need for this style of thinking is particularly apparent in relation to the lifespan of objects in digital information ecologies where the expensive nature of recovering context forensically and the massive expansion of possibilities within the management of recorded information render simple cyclical models out of date. They

---

[1] Gillian Oliver, Joanne Evans, Barbara Reed and Frank Upward, 'Achieving the Right Balance', Parts 1 and 2, in the *Records Management Association of Australia Quarterly* Vol. 25 No 4 (2009) pp. 18-22 and Vol. 26 No.1 (2010) pp. 42-45

[2] Australian Law Reform Commission, Draft Recommendations Paper 4, Review of the *Archives Act 1983*, http://www.austlii.edu.au/au/other/alrc/publications/draftrecs/4/ALRCDRP4.html accessed contemporaneously. The final report is strongly critical of Commonwealth Government recordkeeping - see the ALRC report 85, Australia's Federal Record, A review of the Archives Act 1983

cover up too much random complexity in the lifespan of information objects and regularly create impossible post-creation descriptive tasks.

The Australian approach dates back to the late 1950's in paper information ecology[3] and at a pragmatic level is premised on the idea that we need strong connections between current and historical recordkeeping tasks. This was pointed to and reinforced recently by James Lappin in his suggestion that we need to link MoReq and OAIS models for managing records and archives.[4] The notion of linkages is crucial. The recordkeeping single mind is not a uniform mind. It is an inter-connected and networked one. In fact, the ALRC acknowledged that the single mind would be applied across a very diverse array of activities and processes hence the need for continuum approaches. The Commission described the fragmentation of overall responsibility for current records in the Commonwealth Government pointing out that even within individual agencies there was often no single records authority. Older records were mainly the responsibility of (what was then called) Australian Archives, which also provided some advice about current records. There was no single piece of legislation dealing comprehensively with Commonwealth recordkeeping across current and historical tasks.

Is the ALRC's records single mind the same thing as a recordkeeping one? Strictly speaking it is not although in Australian government circles at the time the term records management and recordkeeping were usually regarded as synonyms. A recordkeeping mind clearly puts the process ahead of the thing; a records mind is fixed upon the end product. The recordkeeping single mind will put the creation, capture, organisation and pluralisation of recorded information about our actions ahead of the record or the archive as an area of study.

2 Digital convergence and the creation of information sludge

At the heart of the need to focus on the formation of recorded things ahead of managing the things themselves in the twenty-first century is the issue of convergence. Once our information storage processes converged into paper media, now they converge into digital forms of storage. In the period of paper convergence we established different forms of repositories according to the nature of the actions (e.g. government, organisational, and personal repositories for archives, libraries and museums). These physical divisions are no longer tenable in a digital and networked information age but we have yet to find new ways to maintain the necessary forms of differentiation. In our current converged state we cannot reliably even say what a record is as it blurs into data, documents, information, the archive, and the plurality of archives. Unless we can maintain some levels of distinction will we be left with nothing but information sludge?

What is the danger of information sludge and why do we still need to differentiate between different types of recorded information? For archivists the answer to this question is that without such distinctions we run the risk of increasing the trend towards what the economic journalist Tim Harford has described as endemic failure, which for archivists and historians helps point us towards an inbuilt inability in the face of expanding complexity to build and use collective memory to make better decisions about our future.[5] Why, to give but one example which academics in the USA have begun asking, can a bank like J Pierpont Morgan continue to rack up

[3] For a history of the early origins of the records continuum approach see Frank Upward 'In search of the Continuum - Ian Maclean's 'Australian Experience' Essays on Recordkeeping', in McKemmish S. and Piggott, M., *The Records Continuum*, Ancora Press, Melbourne, 1994

[4] http:thinkingrecords.co.uk/2012/07/13/why-a-link-between-moreq2010-and-the-oais-model-would-benefit-both-records-managers-and-archivists/ accessed 16 July 2012. Lappin uses the term lifecycle, but in context shows an understanding of the singularity of mind across the lifespan of recorded information that is at the heart of records continuum thinking.

[5] Tim Harford, *Adapt: Why Success Always Starts with Failure*, Little Brown, London 2011. .

trading loss after trading loss?[6] In an exploration of the recent expansion of complexity, Upward, McKemmish and Reed gave more examples of the failure of collective memory while also demonstrating our growing inability to connect our recordkeeping processes with new demands for archival access. The authors argued that we do not know where the bodies are buried both literally and metaphorically, we regularly implement government schemes that fail because they do not set up systems that include archival feed-back loops, and globally we have allowed the endemic failures caused by bad memory to intrude into areas as significant as economic stability and climate change.[7]

How widespread is this collapse of collective memory? Are we really insufficiently concerned with how to maximise the benefits of the technological changes for the sort of decision-making that is needed for the governance of our affairs in and over spacetime? For Australians these are rhetorical questions. Everywhere you look across our democracy there are signs that we are struggling to manage events in ways that look after the life chances of future generations, manage our mutual associations in civil fashion, govern our activities for the greater good, or provide for forensically based investigation of past activities. Of course we always have struggled in these areas (and always will), but there are too many signs that western democracies in the face of a massive expansion in recorded information are failing to find new ways to adequately address how to use memory and evidence (archives and records) within our spacetime management processes.

3 Why we need recordkeeping informatics

Our management of the future, as we argue above, has always been problematic, but never before have we been faced with such a rapid expansion of complexity within which to make our decisions, or with more ambiguously constructed types of evidence to use in that decision-making. A modern recordkeeping informatics interventions program on behalf of evidence could help us extract records management and archival administration from the grip of their 'things on shelves' past by renewing our focus on the millennial old connections between recordkeeping and governance.

The notion of renewal is important in the above paragraph. We need a recommencement of the past not a repetition of it. The Australian Law Reform Commission in the 1990's saw the problem clearly enough but in calling for the Australian government to rebuild its 'records single mind' is there more than a hint of nostalgia? In our forms of governance Australia was an off shoot of British imperial expansion of the nineteenth century which had been built upon the close relationship between recordkeeping and sound administration over expanding tracts of land. But Weberian styles of administration were being left behind for a reason. They were seen as imposing red tape upon our actions and slowing down our adoption of new information and communication technologies. In the 1980's Peters and Waterman in their book 'Search for Excellence' went as far as to argue that documentation is clearly identified as a feature which is **not** present in companies with the strong cultures characteristic of excellence:

> Without exception, the dominance and coherence of culture proved to be an essential
> quality of the excellent companies. Moreover, the stronger the culture and the more it
> was directed toward the marketplace, the less need was there for policy manuals,
> organization charts, or detailed procedures and roles[8]

---

[6] http://www.bbc.co.uk/podcasts/series/bizdaily In the Balance: Collective Memory. Sat, 19 May 2012
[7] F.Upward, S.McKemmish and B. Reed, 'Archivists and Changing Social and Information Spaces: A Continuum Approach to Recordkeeping and Archiving in Online Cultures' in Archivaria No.72, Fall 2011, pp. 197-237
[8] T.H Peters and R.H Waterman, In Search of Excellence, Harper and Row, New York 1982, p. 75

The organisational man was being admired because he had no memory outside of his oral culture! Peters and Waterman were looking for innovation and of course new methods never come fully formed with manuals, charts, procedures or other trappings of a Weberian bureaucracy. However, if innovative companies do not have such elements governing their recordkeeping processes logic would suggest that over spacetime they will also be characterized by endemic failure. It seems almost to be poetic justice (from the viewpoint of spacetime logic) that the USA with its 'keep it simple' business mentality from the 1980's still lingering on has more recently had widespread problems with such 'excellent' rogue innovators as Enron and with equally innovative rogue financiers.

What makes the misdiagnosis of excellence in the USA in the 1980's particularly unfortunate was that our technologies were changing in ways that could have been used to support the creative evolution of better corporate governance. Instead companies in many jurisdictions have been tied up by the new red tape, cumbersome information reporting requirements. Rogue companies can easily subvert such pie in the sky faith in information. As the Australian archivists Glenda Acland argued in the 1990's we needed archivists to become auditors of recordkeeping processes. Unfortunately we are still waiting for them to emerge.[9]

Recordkeeping informatics is of course a many-edged sword and there is a delicate balance between oversight and undue interference. Recordkeeping can support any form of governance and in the twentieth century it was particularly effective in supporting totalitarian regimes. The twenty-first century challenge for democrats is to use our expanding information and communication technologies to support participatory forms of governance, to foster the maximum access to evidence of our actions, and to develop auditing techniques that can help minimize corruption and promote transparency and accountability for our actions - and do so in ways that are acceptable within the communities being governed by the archive.

4 The Building Blocks: Continuum informatics and metadata

In our original article we pointed out that there were two main building blocks for recordkeeping informatics. One was a continuum approach to informatics. Digital convergence makes the need for the continuum approach clearer than ever. Informatics in the twenty first century will involve a blending and merging of the twentieth century information specializations including the management of data, cultural heritage, recordkeeping, publishing, text, forensic studies of past actions and events, semiotics, hermeneutics, systems design or any other area impinging on our information and communication processes.

There are other generally accepted characteristics of a continuum that also need to be borne in mind. One is its exponential expansion. In our information technologies and our production of information objects there can be no denying that we are witnessing just such an expansion. Another is a relationship between convergence and chaos. The continuum of recorded information is indefinitely divisible, as our above list of information specializations last century indicates, but our old divisions are being overthrown. The operation of a continuum always produces unexpected outcome. As we move through time and into different spaces our existing patterns are always being disturbed and new ones are being formed. The continuum naturally generates greater complexity as one point rubs against another and generates something new.

These basic elements of continuum philosophies are abundantly apparent in the modern production of recorded information yet some archivists are desperately trying to work on this side of complexity. Things are seemingly so complex we are collectively willing to ignore process, overlook the galloping expansion of recorded information, ignore the proliferation of unexpected

---

[9] Glenda Acland, 'Archivist – Keeper, Undertaker or Auditor?', *Archives and   Manuscripts,* 1991, Vol. 19, No. 1, pp. 91–5

outcomes and limit convergence to a few components (libraries and archives) amongst an extensive array of twentieth century specializations that are merging with each other.

Working this side of complexity, however, will not help us to establish necessary differentiations between an expanding array of types of recorded information. We will be flirting with turning our archives into rubbish dumps. We can search vast document bases using modern retrieval componentry, but will we be able to assess the worth of the material when we find it?

This problem brings us to the second building block, metadata. Again we can see examples here of the way we are shying away from the relative truth of expanding complexity. All information professionals find it easy to formulate metadata schemes relating to the things they used to manage separately within their specializations. Archivists and records managers, for example, have produced records metadata schemes which deal with individual information objects, the sort of things that were once held in paper form on shelves and our now held in digital form on servers or accessible using them.[10] Records metadata helps us produce and place individual objects and is useful but in the multiverse of metadata schemes it struggles to gain attention. Recordkeeping metadata on the other hand puts process ahead of the thing and is essential within all other metadata schemes if we are to use the objects with any authority.[11] It gives us information about the processing of objects, including the processes of aggregating them with other information objects and their movement into other times and spaces including the web of relationships established during their creation, capture, organisation and pluralisation.

There have been general schemes developed at research level for such relational recordkeeping metadata[12] but they need to be brought to bear on our applications. In the electronic records management discourse of the 1990's this would have been done selectively under the name of risk management. It can still be called this, but what has become obvious is that our expanding complexity makes it much more difficult to determine the nature and type of those risks and to address them adequately. If we are to avoid the growing expansion of the culture of endemic failure and create recordkeeping informatics as a modern discipline for the formation of evidence we need to take control of certain risk determination and audit functions ourselves rather than depend upon others whose 'single mind' is elsewhere and who lack the skills and knowledge needed to address problems with recordkeeping processes. To get mandates to conduct recordkeeping audits recordkeeping professionals will have to be seen as major agents in

- developing and promoting recordkeeping cultures,
- making new connections between our business processes and the way records about our actions are captured and archived particularly when developing, tailoring or applying web-based applications,
- and reconstructing our rules and regulations, strategies, and tactics for the operation of archival access regimes no matter how old the material is or where it is being stored.

We will look briefly at each of these below starting with recordkeeping cultures.

---

[10] See for example the technical report, ISO 23081-3, Information and Documentation: Managing Metadata for Records, Part 3, Self-Assessment Method, 2011.

[11] We are of course using the word 'authority' in a sociological sense, not in terms of an absolute. Can we use the recorded information with more authority than would be the case if the metadata was absent?

[12] For the foundation of a recordkeeping metadata approach see Glenda Acland, Kate Cumming and Sue McKemmish, The End of the Beginning: The Spirt Recordkeeping Metadata Project, 1999, http://www.infotech.monash.edu.au/research/groups/rcrg/publications/asaq99.html

5 A single minded approach to the promotion of recordkeeping cultures

Needless to say, the Peters and Waterman characterisation of excellent cultures [13] does not correspond with our view of a recordkeeping culture. To develop and promote an organisational culture that accords a high value to information as evidence, it is necessary first of all to establish a clear diagnosis of the existing culture. Only then can attention be directed to identifying and implementing appropriate strategies.

In this initial diagnostic stage, culture must be considered in the context of the influences that shape it, including the features of the technological environment (both internal to the organisation as well as the broader regional capabilities), legislation, and standards. More difficult to tease out, but just as essential, are the more indistinct factors relating to national, occupational and corporate cultures.

The identification and evaluation of these settings provide the framework which will highlight the relevant features that need to be addressed in order to develop and promote a culture that is conducive to good recordkeeping. The framework consists of three levels of influences, with the most fundamental factors (and hardest to change) at the base. The critical factor here is respect for recordkeeping, or the extent to which it is accepted by members of the organisation that it is necessary to manage information for the purposes of accountability and to support ongoing business activities. This is familiar territory for recordkeepers; perhaps less familiar but very relevant to our single minded approach is assessment as to what preferences are manifest in information behaviours. For instance, do people normally ask colleagues how to carry out procedures rather than referring to formal written guidelines? Do staff willingly share information with colleagues inside and outside their workgroup?

The final two features to be considered at this fundamental level both relate to information technology. Usage of more than one language (especially if they include different character sets or diacritical marks such as accents) must be taken into account when specifying requirements for information systems; policies relating to digital information must take into account the capability and capacity of the regional technological infrastructure of the wider environment.

Overlaying these values, attitudes and behaviours in a second tier of influence are the recordkeeping skills, knowledge and experience of employees. This applies to all members of the organisation, not just those who are employed to have oversight of recordkeeping activities. This area cannot be tackled in isolation from the underlying fundamental characteristics, understanding these will help in the development of appropriate strategies.

The aspects that need to be addressed are information related competencies and awareness of environmental requirements relating to recordkeeping. Information related competencies covers information and digital literacy. The specifics of the dimensions of information and digital literacy required will vary from organisation to organisation and according to the role and responsibilities of the individual. They will be shaped by the technologies that are used. For instance, an EDRMS or a networked shared drive environment will have quite distinct competency requirements.

To achieve the real and sustained change essential for the development of a recordkeeping culture we need to be creative and look beyond standard training approaches. Recognising that values and attitudes to recordkeeping are significant, and likely to be embedded in behaviours points to the need to explore approaches and techniques developed in psychology, for example by using cognitive priming [14] or applying 'fun theory' to recordkeeping tasks [15]

---

[13] Peters and Waterman, op.cit., p.75

[14] Bargh, J.A., Chen, M. Burrows, L. Automaticity of social behaviour: Direct effects of trait construct on stereotype activation on action. Journal of Personality and Social Psychology, 71, 230-244, 1996.

[15] http://www.thefuntheory.com/

The uppermost and most superficial level of the framework reflects the features of the recordkeeping culture that are unique to that particular organisation. This implies that these characteristics are the most susceptible to change. The two features of the framework at this level are information architecture, and employees' trust of organisational information systems.

As an example of the significance of this three tier approach consider some of the dangers in moving to that form of cloud computing in which products, services and software are outsourced to a single supplier. Shifting to that framework is a basic architectural issue that is easy enough to decide upon, particularly when there is a need to appear to save on annual costs by moving to ongoing service costs - but is the architecture really what you want. Is it, for example, too elephantine when your major need is for web-based agility? Underneath that architectural decision there are other major questions to be asked. For example, will your workplace recordkeeping skills be undermined thereby risking to the organisation's ongoing success? At the basic level of operation will the contracts being drawn up reflect the need for records that have some authority where necessary and will recordkeeping audits be carried out to ensure that the service is actually being delivered in ways that meet your standards?[16]

6 A single minded approach to the connections between recordkeeping informatics and business process analysis

In the 1990's in Australasia (as well as other places) there was a widespread realization that it was not enough to know how to manage records as end products of our actions. We had to manage the business of recordkeeping systems, meeting 'operational business needs, accountability requirements and community expectations' [17] We needed to understand the purposes, functions, activities and transactions connected to those needs, requirements and expectations along with the business processes, classification techniques, and flow of work in order to effectively generate and manage documentation of our actions. There was also a less generally held recognition that we needed to archive recorded information in ways that built and maintained documentation over time in ways that retained some contact with the occurrences which gave rise to it in the first place. In digital information ecologies the archival trail has to be built progressively as the objects move through spacetime.

It was always going to be a difficult task to maintain the archival trail, but the difficulties have increased. Our notions of what constitutes a recordkeeping system are in flux. Current and historical recordkeeping tasks have begun to blend and merge together in ways that we will only be able to manage by lifting our game in relation to the application of recordkeeping metadata in the way we capture records and form archives. Within this current flux in the formation and use of evidence about our actions a tension is emerging between the top-down technocratic approach to the management of information and the bottom-up creative evolution of our web based information and communication apparatuses. The technocrats in some governments and organisations still hope to implement large scale organisation wide information systems by standardizing formats, controlling business processes, dominating our strategies and structures, determining our relationships with suppliers and trying to work within twentieth century architectures for the dissemination and retrieval of recorded information about our actions. In those architectures the agent that created the recorded information had a general (although qualified) right of control until business purposes had been exhausted. Top-down control, however, is often being subverted by the unexpected outcomes of the chaos drive within the

---

[16] For a detailed analysis of this style of cloud computing from an archivits's perspective see NARA Bulletin 2010-05, Guidance on Managing Records in Cloud Computing Environments September 08, 2010 http://www.archives.gov/records-mgmt/bulletins/2010/2010-05.html...

[17] Australian Standard *AS4390-1996*, *Records Management*. Homebush, NSW.

modern continuum of recorded information (think, for example, of WikiLeaks, Twitter and Facebook).

On the other hand the creative drive within our web applications offers an agile, open, and bottom-up approach to our business processes. It will be interesting to see how this tension plays itself out over the next few decades (particularly in relation to open-source software and cloud computing) but without a much stronger recordkeeping informatics presence we can safely assume that the chaos will continue to expand.

Both top-down and bottom-up approaches will be producing records, as will whatever new patterns for the expansion and control of our actions emerge from the tension between the two approaches. Agile computing processes, however, are much more amenable to the creative evolution of recordkeeping principles and methods. Within such processes recordkeeping is not a subordinate activity but the life-blood for the success or failure of the application. Interventions in support of recordkeeping within our business processes, classification techniques, and workflow can accordingly be directed at the construction of information objects that evidence our actions in and through space and time without placing any additional burden on our business processes. From such interventions archivists and records managers can build up their knowledge and skills in the new digital information ecology application by application. They can recursively and expansively address issues such as what documentation to create, how to record information, how to organise the archive, and how to bring the 'app' and its archive into the archival multiverse.[18]

7 A single minded approach to access

The fragmentation of access frameworks vividly demonstrates the lack of a recordkeeping single mind. Confusion, contradiction and irreconcilable competing claims lead to chaos and evasion because of that lack of coherence. Our legislative frameworks are disconnected to each other, despite the original intentions of legislators to develop complementary access regimes within freedom of information and archival domains. With the lack of coherence, access to records are being written into domain specific legislation, such as the proposed reform of Australia's National Security where, it is argued, that 'The provisions are detailed and complex in relation to record keeping (sic), retention and destruction and can present a barrier to effective information sharing both within an agency and between agencies.'[19] The imperatives for organisations to share records and information through collaborative information systems is also responsible for the preconditions in the SIPRNET system's broad access permissions leading to the downloading of the caches of information exposed in the WikiLeaks cablegate affair. Similarly, the recent 'open data' initiatives in the US, UK, Australia, NZ and no doubt beyond, are rediscovering basic recordkeeping truths about documenting context but by creating artificial distinctions about formats, are disconnecting datasets from good recordkeeping and information management rules. The publishing industry is being fundamentally challenged by the academic research community over access to research data and results funded by public money.[20]

---

[18] For an explanation of the multiverse see the work of the Pluralizing the Archival Curriculum Group, 'Educating for the archival multiverse' *American Archivist* Vol. 74, No. 1 (Spring/Summer (2011), pp. 69-101

[19] 'Equipping Australia against emerging and evolving threats' A Discussion Paper to accompany consideration by the Parliamentary Joint Committee on Intelligence and Security of a package of national security ideas comprising proposals for telecommunications interception reform, telecommunications sector security reform and Australian intelligence community legislation reform, July 2012, Attorney General's Department, Commonwealth of Australia. www.aph.gov.au/Parliamentary_Business/Committees/House_of_Representatives_Committees?url=pjcis/nsl2012/index.htm

[20] Ian Sample 'Free access to British scientific research within two years' The Guardian, July 15, 2012 http://www.guardian.co.uk/science/2012/jul/15/free-access-british-scientific-research

Outside of government frameworks the technology of social media, end-user enabled recordkeeping and archiving are providing fundamental challenges to organizations where ownership and responsibility for data is in the hands of end-users, despite organizational imperatives. The application of clever web based applications have actively been embraced by individuals, but not so avidly by organisations as they fundamentally do not connect with organizational systems. The boundaries between personal and organizational are being challenged, but it is also true that organisations have not applied a coherent and single minded approach to information governance (including access). The social dimension of recordkeeping is absent in organizational frameworks and in its absence, a chaotic and non-coherent environment leaves organisations at risk through fundamentally flawed and piecemeal recordkeeping.

Within organisations recordkeepers have not stepped up to the mark in effective ways to assert the relevance of their experience and knowledge in creating and managing access to organizational records. The format-blindness which insists on creating division between records (often characterized as a paper issue) and data in information systems evidencing business action, is being used quite deliberately as a means of side stepping recordkeeping requirements, not assisted by our professional failure to step up.

The contradictory, and chaotic environment of the organization in relation to competing claims imposed on the access environment – greater access to increase transparency and accountability versus the excessively heavy handed crack down on mechanisms that seek to achieve just that – are a fertile breeding ground for just the type of uncoordinated and uncontrolled environment in which corruption and misdeeds can flourish.

Meanwhile back within the fortress walls of determinedly custodial 'archives', contradictory imperatives on access also reign. A reduction in the formalized closed access periods in the UK, followed by Australia, provides an illusion of greater openness disconnected from, if not outright refusing to acknowledge, that public access occurs in multiple environments disconnected to formal archival institutions. Archival access regimes in different jurisdictions (even within Australia) follow different rules with some requiring individual examination of records prior to public release. Archives are (by and large) not receiving digital records in the same linear transfer processes that applied in the paper world, and even if they were, their systems are not reengineered to enable access to the material they get. Rethinking of the archival systems is needed for contextualization of digital records, regardless of where they live in the distributed information universe. So while archivists can pat themselves on the back for being involved with wonderfully creative digital humanities scholarship, this relies on digitized resources, not born digital resources, and uses our archival systems as exemplars of complex publicly available information: a great thing, but a very long way from where we should be on these issues. How well are we defining what records are in a complex connected, data-intensive world? And if archives do receive what we are artificially designing as records from complex information systems, how well and how effectively will the public be able to get access to and use of these things?

Access is one of the most interesting aspects of the recordkeeping agenda, exposing in immediate ways its connection to political and social concerns. The building of a single minded approach in such a complex and contested area must begin with coherent and consistent theoretical frameworks, brought into specific applications in an evolutionary manner.

Conclusion

At a recent conference of archival educators and researchers the development of recordkeeping informatics was added to the many grand challenges facing archivists. Some of the particular challenges include developing current and historical source registers, developing network maps of sources, building participatory network structures, developing recordkeeping audit processes and procedures and developing rating techniques with a strong justice component for 'archivally

approved applications'.[21] Such challenges point to how recordkeeping Informatics offers the prospect of establishing the required single minded approach to current and historical recordkeeping tasks in all their environments of application. They also illustrate the difference between a recordkeeping based approach to archival activities and a records based approach. The latter would be more likely to focus on the challenges involved in building detailed systems for controlling the objects rather than on the pre-conditions for the evolution of such systems.

Creativity, consistency, coherence and the capacity to tailor recordkeeping interventions within a multitude of implementation environments, technologies, societal and technical spaces is the goal. Without the single minded concentration on the recordkeeping processes that produce evidence of actions (records) within the framework of broader information management, we will be left with information sludge, and an environment of increasing chaos – an environment that places us all at risk of underhand practices, unwelcome social consequences, and at a professional loss as to how to operate within the reality of ever-increasingly complex digital ecologies.

---

[21] The Fourth Annual Archival Education and Research Institute (AERI) University of California Los Angeles July 9 – 13, 2012