

Accelerating positive change in electronic records management - Headline findings from a major research project

Julie McLeod, Sue Childs and Rachel Hardiman

Paper should be cited as:

McLeod, J., Childs, S. & Hardiman, R. (2011). 'Accelerating positive change in electronic records management - Headline findings from a major research project', *Archives & Manuscripts*, 39 (2), pp. 66-94.

Abstract (128)

This article outlines 10 headline findings from a 3-year multidisciplinary project, funded by the UK Arts and Humanities Research Council, on electronic records management (ERM). It also presents examples of solutions to try, or to avoid, grounded in experience. A range of strategies and tactics exist and, whilst their relevance and success is very contextualised, they could be adopted or adapted in many scenarios. The findings highlight the complexity of the ERM challenge, the inter-relationship of people, processes and systems/technology and the predominant and powerful role of people in accelerating positive change, or not. Two strategic conclusions are drawn which are particularly important for records professionals to address viz. the need to articulate a vision of successful ERM and to re-interpret records management principles in the electronic environment.

Introduction

The management of electronic records has been a significant issue for organisations for more than two decades. Despite the many guidelines, standards and software systems developed by national archives, coalitions, professional associations, research groups and commercial organisations, in 2005 McDonald¹ pointed out that the pace of change had been relatively slow. He argued that accelerated change was an imperative if organisations were to emerge from the continuing 'wild frontier' of the modern office that he had first discussed a decade earlier², and offered suggestions for accelerating the pace of change. These focussed on: establishing a business-driven vision of recordkeeping; enhancing awareness of recordkeeping concepts and the role of records in supporting an organisation; assigning accountability for records; designing an architecture for recordkeeping, and building capacity i.e. people with the knowledge and skills to make it all happen.³ It was McDonald's thinking which inspired the development of a research project called AC⁺erm - Accelerating positive Change in Electronic Records Management.

This article presents 10 headline findings which emerged from the project. It provides some specific examples of solutions to try, or to avoid, in terms of addressing key issues which emerged from the project's investigative phase as suggested by the project's participants and grounded in their experience. It does not attempt to capture the nuanced detail of the analysis of the data gathered. These will be the subject of other more focused articles. References to further detail and outputs available on the project website are included.

Project Aims and Objectives

The aim of the project was to investigate and critically explore issues and practical strategies to support accelerating the pace of positive change in managing electronic records, hence its name. It:

- investigated the issues and problems of electronic records management (ERM)
- challenged existing recordkeeping paradigms to position the development of an appropriate practical paradigm for ERM
- developed and shared examples of ERM strategies, tactics and practice through a major ongoing dissemination and participation activity; and
- is developing a contemporary critical view of the state of ERM globally at both the research and practical levels.

The project focused on one of McDonald's suggestions viz. designing an organisational-centred architecture for managing electronic records. It explored three perspectives: (i) people - including vision, awareness, culture, drivers and barriers; (ii) processes - including working practices, procedures, policies and standards; and (iii) systems/technology - in terms of the design principles for delivering effective recordkeeping. Overall it considered what (if any) vision organisations had for their office environment and for recordkeeping in the context of their mission; the drivers and influencers for ERM; the barriers to implementing ERM; what progress had really been made in ERM; what strategies, tactics and practical solutions were working or not working.

AC⁺erm was conceived in 2005 when the e-government vision of countries such as the UK and Malaysia had yet to be realised (and are still not a reality); SharePoint existed but had not registered on the radar screen for many records professionals and Twitter had not hatched. The project, funded by the Arts and Humanities Research Council (AHRC)⁴, ran for three years from January 2007 to March 2010.⁵ It was a very ambitious project in terms of both its scope and methodology. As the largest records management focused research project to be funded by the AHRC, and the first of its kind to include a separate yet related Doctoral student grant, it was also significant⁶.

Project Approach – The Methodology

The project adopted an innovative approach with several, then novel, elements. It comprised three main phases:

1. a comprehensive systematic review of the relevant literature validated by from practitioners and academics (Jan 2007-Dec 2009)
2. an investigation of the three facets of designing an organisation-centred architecture for ERM, using a combination of global electronic Delphi studies and UK face-to-face colloquia (Jan 2008-Oct 2009)
3. a major dissemination activity running throughout its life, using a variety of methods, based around a website and blog, with the use of tweets and emails (Jan 2007-Mar 2010).

1. The literature review

The literature review focused on ERM literature published since 1996 when the last comprehensive review on the topic was published.⁷ Using the systematic literature review methodology⁸, not previously used in the records management discipline, it aimed at a more objective, rigorous approach to selecting relevant, quality work from the huge amount of information available. Over 1700 items were reviewed. The review had two roles. First, it informed the initial questions for the Delphi studies; second, it enabled reviews of selected topics to be published (e.g. critical success factors, case studies) providing practical information for professionals.⁹

2. The investigative phase

The investigative phase explored the people, work process, and systems/technology aspects of ERM in sequence. A combination of a Delphi study and a colloquium was used each time.

The Delphi technique, developed in the 1950s to gather a consensus of 'expert' opinion through several 'rounds' of questions,¹⁰ was used to gather primary data from selected participants and develop a picture of 'expert' opinion on each facet. Each electronic Delphi study comprised one or more rounds to discuss and refine the issues arising from the literature review, followed by a round to rank the importance / urgency of addressing the issues in order to accelerate positive change in ERM. At least one round involved proposing and discussing solutions to the issues and the final round evaluated the solutions according to some pre-set criteria. The electronic format enabled anonymous and global participation with approximately 20 participants per study.

The participants' responses were analysed using a range of different approaches (e.g. theming, phenomenological analysis and statistical analysis) to provide a broad view of the data. This informed the development of a series of 'vignettes', the term used to describe different forms of outputs, that crystallised aspects of the findings, distilled the challenges and problems and presented possible solutions. They took the form of tools or exemplars that could be of use to different stakeholders and included 'games', pictures, a story and further analysis of key themes (e.g. actors and contexts, principles and methods of records management and the records management 'bottom line').¹¹

The analysed data was used as the basis for the colloquia. These could only be held in the UK but were deliberately held in different locations. Each event explored issues and solutions for one facet, validating and extending the data collected through face-to-face discussions between more people. Some vignettes were also tested. Opportunities were taken to share ongoing findings and final outputs at other events in Australia and Iceland, however, these were dissemination activities rather than colloquia attached to an investigation phase¹².

3. Dissemination

Dissemination occurred throughout the project to emphasise the urgency of the ERM issue, influence change during its lifetime and encourage widespread discussion, all in line with the aim of helping to accelerate the pace of positive change in ERM. It was a major activity. Findings were regularly placed on the project website, and announced on the project blog, listservs and, later, via Twitter. These totalled over 80 outputs, in different formats to reach different audiences; they were consolidated into 17 final outputs. Many presentations were made¹³ and a final colloquium, in the form of a Northumbria Witness Seminar Conference¹⁴, marked the formal end of the project. At the Witness Seminar the links and synergies, actual and desired, between research and practice in the field of records and information management, were discussed and debated by delegates and witnesses from the wider information management discipline, including members of the project's Expert Panel.¹⁵

The mixed methods used, mostly qualitative but also some quantitative ones, mean the findings are transferable and the outputs usable in different contexts by different organisations.¹⁶

Stakeholders and disciplines

Recordkeeping in the e-environment involves different stakeholder groups and is also trans-disciplinary because many disciplines can offer different perspectives on the problem and possible solutions. The project therefore deliberately engaged people from multiple disciplines and all stakeholder groups i.e. executives/senior managers, records professionals, IT/systems administrators and recordkeepers.¹⁷

The expert panel, which acted in an advisory capacity, was deliberately constituted to include the following disciplines:

- business, for the management perspective on the role and value of recordkeeping
- design, for the architecture
- health, a discipline which has seen a big push towards 'joined-up' e-records and where there are particular challenges
- law, for compliance and regulatory perspectives
- history, for the longer term archival and research perspectives
- IT systems and information/records management, for obvious reasons.

John McDonald, Consultant and author of the article that inspired the research, and Adrian Cunningham, Director of Strategic Relations at the National Archives of Australia, were key members of the panel, providing not only their e-records expertise but their organisational and strategic perspectives. Of the 10 active members, six were academics and four were not. They came from the public or private sector. One member was primarily an executive/senior manager; four were primarily information or records professionals; one was an IT/systems administrator and, whilst all were recordkeepers, four were primarily in that stakeholder group.

The investigative phase also involved all four stakeholder groups (though it was more difficult to engage senior managers and recordkeepers), either in the electronic Delphi studies or the colloquia. Participants included both academics and practitioners, and were from different sectors and different geographical locations, both in the UK and globally. In total, a large number of people (over 200) engaged in the research either remotely or in person; many others followed the dissemination activities.

Further details of the methodology are available on the AC⁺erm website; articles critically evaluating the approach adopted and the benefits/challenges of using the systematic literature review methodology are to be published separately¹⁸.

Headline findings

A varying number of issues emerged for each aspect investigated. The synthesis of all of the issues, their priority and the suggested solutions was discussed amongst the project team and expert panel members. As a result the following 'headline' findings emerged:

1. few organisations and/or individuals have articulated a vision for ERM
2. the people, process and systems/technology aspects of ERM are inextricably linked
3. people issues are predominant, fundamental and challenging
4. there is a wide range of critical success factors for ERM projects, applicable to all/most organisations
5. tactics and solutions for ERM are contextualised and complex
6. the success and/or failure of ERM implementations can be contingent on the presence/absence of small or accidental factors
7. there are few published in-depth critical case studies of success or failure, or post-implementation evaluation
8. proportionate and risk based approaches are needed
9. records management principles appear to be applicable for ERM, however practice needs to be adapted
10. records professionals may be part of the problem as well as part of the solution.

The following brief consideration of each of these 'headline' findings not only throws light on the status of ERM but also on the challenges that records professionals are addressing, how and with what degree of success.

Headline 1: Lack of articulated vision

It was interesting that few organisations had articulated a vision for ERM. A vision was sometimes implicit in the data gathered but not explicitly stated. So does the RM profession have such a vision? If we, as records professionals, do not have this vision then how will we know if we are succeeding? How can we, indeed can we, first convince and then support our organisations to better manage their information for their own benefit and potentially the benefit of others? We sought visions of successful ERM at the third colloquium¹⁹ and these included:

where traditional RM methods are dead and RM re-invents itself and becomes embedded in all business processes

ERM will be valued by everyone as an essential enabler. It will be automatic, ubiquitous and intrinsic without being a burden

Develop and embed information management in human behaviour using easy solutions and simple processes which align with IT and social responsibilities

Figure 1 shows photographs of their development using 'fridge phrases' and illustrations.

Insert Figure 1.

Headlines 2 and 3: People, process and systems/technology link and predominance of people issues

Whilst it was useful for the research design, and as an analytical tool, to separate out the people, process and systems/technology aspects of ERM, these aspects are so inextricably linked that the distinction between them cannot legitimately be drawn in modelling what actually happens. Participants identified people issues as part of all three facets investigated²⁰. They are predominant, fundamental and challenging because they concern culture, philosophical attitudes, awareness of records management and ERM issues, preferences, knowledge and skills. Views on how to tackle people issues varied enormously, for example:

it is crucial to engage people in any process that attempts to better organise our information and records. Process and culture change is never easy but people's resistance to change is usually based on 'fear' and this fear needs to be allayed. In our project associated with the introduction of EDRMS the cultural change for people relinquishing possession (it's my information) to understand that the information and records they create need to be managed according to the organisation's needs has been crucial. It's a battle still being fought! ... one has to start with the people and take them on the journey with you – leave them behind and the only one who will arrive at the destination will be you!

Why do lawyers generally have good records and information practices – because they get sued if they don't – why do companies in highly regulated environments keep better records – because there are consequences – legal and financial. If you work from the basic premise that you cannot make people do things – you can only invoke consequences if they don't do things – then there needs to be some punitive element to the individual to make them more likely to comply. If there are no consequences then why would you bother?

People 'make or break' the success of any system. In fact one participant suggested 'the people issues are a significant impediment or blocker to successful ERM solutions'. The Pareto principle applies: "the technology itself is less important than the people who will use it and the business processes it will support. Implementing EDMS software and expecting the technology to change organizational culture would be a mistake. The old 80-20 rule applies to implementation; for the most success, focus just 20 percent of the efforts on the technology and 80 percent on the cultural issue".²¹ A participant noted that 'Records and technology driven initiatives – they almost always fail'.

Headline 4: Critical success factors

The literature identified 17 critical success factors, most of which could be applied to any information system project. These ranged from aligning projects with business objectives and gaining the commitment and support of Chief Executive Officers, to approaching implementation projects not just as IT projects, and involving all levels within the organisation including external stakeholders. Communication, piloting and testing, change management, training and support for users, policies and guidelines were as critical as good planning and project management, and the existence or development of necessary 'infrastructures'. Equally so was demonstrating benefits.

Arguably these are well known, so why are they not addressed or addressed well enough?²² Perhaps the answer lies in the reason why so many IT systems implementations fail, viz. inadequate prior systems analysis, user and organisational needs analysis and/or change management:

the need to do proper analysis and apply to the business taking into account the needs of business units ... is not generally practiced because of the need for skilled staff and co-operation from the business to do this level of analysis but ultimately must return better results for an organisation

It is also time-consuming and costly.

Delphi participants discussed the question why change management techniques are so rarely used if ERM systems implementation requires their application. Responses included:

Because they are painful, and also deal with the unknown, and so inherently unsettling (just part of human nature)

Change management is a very difficult process, people have a natural aversion to it even in principle. It takes a brave management to start the process, and a skilled one to complete.

Most organisations do use them, but with varying levels of competence and effect. Selection of the appropriate method, the right people to execute it, disciplined project management and skilled, accurate and consistent communication are a challenging combination.

Because implementers do not really grasp why staff resist change.

Cynicism, failure of past initiatives in other areas.

Of course the other side of argument concerns what degree of change should be required on the part of users; this is part of the debate about taking approaches that are records centric, not user centric, and require a lot of change²³.

Headlines 5 and 6: Tactics, solutions and success – contextualised, complex, contingent

Whilst there are many critical success factors for ERM projects which are applicable to many organisations, the project revealed that how these factors are achieved in a specific organisation, i.e. the solutions that will work for that organisation, are contextualised and complex. The challenges lie in selecting those factors that have the most likelihood of success in a given organisation or context and then choosing the right implementation tactics. For example, a project champion may lead to a successful project but introduces the risk of dependence on one individual, so other people will be needed for its sustainability. Some participants said that the role and/or significance of the Chief Executive may mean involving them, others said it may mean working around them. A particularly interesting finding was that success and/or failure of ERM implementations can be contingent on the presence, or indeed absence, of small or accidental factors. For example, the presence/absence of an individual, an event, a coincidence or opportunity:

Whilst agreeing that all levels of organisation must be involved in ERM and chief executive must be onboard it does seem to need the drive and determination of 1 individual or team to push it forward

This confirms there is no easy, one-size-fits-all solution that can be articulated, meticulously planned and implemented.

Headline 7: Lack of critical case studies

Sharing expertise was one of the critical success factors to emerge from the literature. Paradoxically, whilst there are many published examples of ERM system implementation projects, there are few published in-depth critical case studies with lessons learned. Nor are there many post-implementation system evaluations. Confidentiality, competitive advantage and the lack of a no-blame culture are all contributory and possibly intractable factors in not publishing such case studies.

Perhaps more importantly, there is a lack of evaluation from the ERM perspective. A successful *project* does not necessarily lead, ultimately, to successful ERM. Similarly, a *successful system* implementation may or may not lead to *successful ERM*. Conflation of a project and/or an IT system with the holistic system(s) for managing electronic records is at best unhelpful and at worst misleading.

Headline 8: Proportionate risk based approaches

Given the exponential growth in the volume of information²⁴ and the knowledge that, in a changing environment we cannot be sure we are doing the right thing in response, risk based approaches are called for to address the ERM challenges in a timely fashion with the resources available. It is unrealistic to think we can manage on a record-by-record basis or even a granular record series basis. It is equally unrealistic to think we can capture metadata after the event, at some later point in a record's life. Also we do not need to apply a 'gold standard' to every record created. Perfection is not always necessary or achievable. We lived with imperfection in the paper world, why strive for (or have the notion of) perfection in the e-environment? We need to learn to live with uncertainty or, conversely, be comfortable with the certain knowledge that systems, solutions and media will have a shorter life (cycle) than they had in the past. We need to develop solutions that are fit-for-purpose, not perfect, taking account of the bigger picture. To what extent can we - should we - adopt a risk management mentality to managing e-records? What does this mean for developing suitable processes to ensure records are appropriately managed?

We do need to look at both impact and risk assessment to develop a range of good practice and improve efficiency and effectiveness to produce improved process models.

What is required is a *proportionate* approach based on sound analysis and risk assessment.

Headline 9: Suitability of records management principles and practice

Participants mostly suggested records management principles are fundamentally sound and appear to be applicable for ERM, although some 'may be questioned (e.g. what is a record)'. It is the practices that need to be changed.

Traditional principles and methods are a good starting point for managing e-records, but they cannot be used as they are with no review process, or assessing what changes will need to be made to adjust the method to the electronic environment. When implementing principles and methods to any recordkeeping environment, the applicability of the principles and methods to the environment must be assessed – for example, photographs are not e-records but they need to be kept at much cooler temperatures than paper records. The formats of the records always need to be taken into consideration.

This is surely correct in the context of evolution, though perhaps not when there is revolution. However, we do need to assess their applicability, appropriateness and interpretation in the particular business, recordkeeping and technology context. Witness the comment:

principles should (in theory at least) be broad enough to cater to all records and all environments regardless of their formats. Every principle should be interpreted and implemented in the context of the recordkeeping environment into which it is being applied. This does not change due to the environment being electronic. Rather it is the fact that the environment is electronic that becomes part of the context examined when determining how to implement the principles. Australia uses continuum theory for its records management (new theory to cater for a new environment – electronic). However the records management principles that it uses within this framework (eg appraisal, disposal, creation, capture &c) are quite basic and traditional principles – just revised a little for the new context.

It is the timing of the implementation of RM principles that needs to be different in the e-environment, e.g. metadata capture and appraisal needs to occur before information creation. As many systems used for managing electronic records are not EDRMS (e.g. office software) then RM principles need to be used at the systems design / conception phase. But is this happening?

Our implementation of the fundamental principles and their translation into implementation processes are not transforming quickly enough.

Headline 10: Records professionals

Refreshingly records professionals were open enough to recognise they may be part of the problem as well as part of the solution. On the positive side, records professionals take a holistic view and have the principles and tools to manage records; however their demands may be unrealistic or too constraining²⁵. Respondents identified a range of attitudes of records managers and their approaches to ERM that should be *avoided*:

Being more concerned with the records management profession than with the aims, expectations and perceptions of the enterprise, the public, your customers and key stakeholders.

thinking that an ERMS solve[s] the problem in an organisation

Assuming IT have same knowledge/understanding of what is meant by ERM as yourself

leave it solely to [records managers] as they will develop an idealised version for the idealised user.

isolation of records professionals – going it alone and not involving others early enough in process

try to get staff to appreciate RM principles, [don't] just focus on the business benefits.

oversell RM and its benefits.

Make the records practices visibly purist or onerous. This is likely to lead to the response “I am not a records clerk”

Publishing/issuing records schedules and believing that everyone will be able to make sense of and apply them.

Underestimating the extent of the effort involved and not acknowledging the skills needed to change behaviours.

But there are ways forward for records professionals:

records and information professionals need to demonstrate leadership rather than adopting a passive victim mentality. Our knowledge and expertise can enhance the roles and outputs of other professions, as theirs can ours.

With a proactive approach records professionals could work better with record management in an electronic environment

Develop the business process and technology implementations in ways that provide clear benefits to as many staff as possible while meeting records and information management principles and practices. This requires business analysis and IT staff to have a strong records and information management culture, and for records and information management staff to have a strong business analysis and IT culture.

Designing and implementing RM practices that mesh with work practices and are not overly intrusive is one of the most important and I think most often neglected aspects of records management. That said, although it shouldn't be intrusive and onerous, staff should be made conscious of the importance of records management and their responsibilities to keep records.

I think that professional recordkeepers need understanding of the roles of other professionals, in order to recognise allies and form constructive partnerships. Equally, all information professionals need sufficient literacy in allied professions (librarianship, archives and records management, management of moveable cultural heritage and image collections) to recognise and respect differences in management needs and information structure and preservation requirements. While convergence may bring many benefits, one size and one set of practice rules do not fit all.

How does this compare with other research? For example, do recordkeeping systems that are designed according to records management standards such as ISO 15489 or MoReq meet the requirements of records creators and users? A study of EDRMS users in four government sector organisations concluded that their design and implementation (based on ISO 15489 principles) was only partially consistent with the users' information seeking behaviours.²⁶ Users preferred to search for information using metadata, perhaps because of familiarity with simple-to-use Web search engines, despite being aware of the failings of this approach (eg reliance on appropriate and consistent metadata in titles). The study suggested they would also like to browse folder structures to retrieve information, particularly if they knew the location of a record or had filed it themselves.²⁷ However, the majority did not use the classification scheme, either due to lack of awareness or familiarity, perceived difficulty or lack of confidence. The authors suggested better training was key to improving the effectiveness of such systems for users.²⁸

Can we always rely on compliant, 'conscientious' employees to capture records into an electronic recordkeeping system? Gunnlaugsdottir's research into the use of ERMS in four different organisations in Iceland suggests not²⁹. Just because records managers 'capture records comprehensively into [sic] ERMS'³⁰ does not mean other employees will. Can we really expect records creators to spend time entering consistent metadata, using classification structures that are 'foreign' to them or systems that have no resonance to *their* reality, and doing things that have no obvious benefit to them? Bailey suggests not and advocates 'a benefits-led experience' offering 'a positive incentive to participate.'³¹

Practical solutions

In the Delphi studies many issues were discussed and many solutions to those issues were suggested. These included both those solutions that work and those to avoid because they impede progress. Participants gave reasons why and how they did or did not -, would or would not - work, illustrating them with examples from their own experience and/or perspective. Figures 2-4 share the solutions for the issue ranked as being the highest priority to address in terms of accelerating change in ERM, for each of the three perspectives investigated. The three issues were:

- | | |
|---------------------|--|
| People: | Executives and management: lack understanding of records management and their role within that
e.g. CEO must have vision and commitment if ERM is to succeed;
managers need to lead by example through changing themselves;
managers can fail to recognise the relevance and importance of recordkeeping; CIO background is almost invariably IT rather than IM |
| Processes: | Organisation-level records management policies
e.g. organisational-level policies that are fit-for-purpose and specific to the organisational context, and are really implemented - not just formalities or 'tick-the-box' exercises |
| Systems/technology: | Deciding on the appropriate approach to ERM within a given context:
e.g. dedicated EDRMS; using existing functionality in line of business, office and mobile systems; bolting on additional RM functionality to line of business, office and mobile systems; or some combination of these |

Figure 2 gives both solutions to try and those to avoid for the most urgent people issue. Figure 3 gives only the solutions that work for the most urgent process issue, and clearly shows that more of the solutions that were offered relate to people than to processes. Figures 2 and 3 not only illustrate

the diversity of solutions but also that the same solution might work in some contexts but should be avoided in others.

A range of systems/technology approaches to ERM exists. Is there a best approach to adopt and if so what is it? One of the rounds in the Delphi study of the systems/technology perspective explored this question. Participants were asked to evaluate the desirability of each approach and the likelihood of it being employed. Insufficient data were gathered to be conclusive, however, it tended to suggest that no one approach to ERM was 'the answer', either in isolation or in all contexts. If anything a combination of approaches is more likely. Deciding on the appropriate approach to ERM did not lend itself to exactly the same 'solutions' discussion that had occurred for the people and process issues. Instead participants were asked what the technology-specific factors were that had contributed to success or failure in implementing an information or records management system. Figure 4 captures only the negative characteristics or factors of five different systems/technology approaches to managing electronic records.

Insert Figures 2-4

These three figures provide examples of the analysed data from the Delphi studies. They précis participants' responses to some of the questions asked, responses which are based on the participants' views and/or experiences. These views and experiences may or may not be commonly shared. As presented here they do not contain the nuanced detail of the rich data set collected. They are purposely included only to illustrate the kinds of data that were synthesised to produce the headline findings presented above.

Discussion

Understanding the complexity of electronic records management, the range of issues and the quantity of disparate solutions for improving practice that emerged from the research is challenging. The findings confirm there is no 'one-size-fits-all' approach to successful ERM. Some of the solutions which did or could work in the experience of some participants were solutions that for other participants should be avoided. The project team is exploring the Cynefin sense-making / decision-making framework as a potential framework for further analysis of the findings. Based on complexity science this framework:

allows executives to see things from new viewpoints, assimilate complex concepts, and address real-world problems and opportunities.³²

It does so by defining five contexts or domains for viewing issues or problems, described as *simple*, *complicated*, *complex*, *chaotic* and *disorder*. Each one requires different actions and decisions. By identifying into which context an issue or situation fits it is possible to determine the most appropriate way to respond. Can we categorise the ERM challenge into one of these domains and if so which one? If we can then the framework offers a possible approach to helping us deal with the nature of the ERM challenge.³³

Of the 10 headline findings presented here there are two which are particularly important for records professionals to address. The first is the need to establish a vision of successful ERM One Expert Panel member offered a view of success:

success will consist of a situation whereby most organisations have cost-effective and user-friendly capture, management of and access to authentic electronic evidence of their decisions and activities for as long as that evidence is required.

This makes no reference to systems, technologies, programmes; they are the mechanisms for achieving success. In other words, a successful EDRMS implementation, a strong records management department, staff (managers and users) who know about and value records management may each contribute to achieving such success, but they are not the same thing as successful ERM. In fact they are not necessarily requisites for ultimate success.

The second important finding for records professionals to address is how records management principles are applied to realise success. Whilst it is perhaps unsurprising that the data suggested records management principles are fundamentally sound and appear to be applicable for ERM, we must re-interpret them and their application in the e-environment. For example, it has become a quasi-principle that 'records' must be held in 'recordkeeping systems', a term which encompasses more than just IT systems but whose problematic aspects are brought to the fore by such systems. Many corporate IT systems, such as most line-of-business applications, cannot be described as recordkeeping systems, since records with the characteristics required by core standards and definitions cannot be created or kept within them. However:

From the work we have been doing to prepare for eDRMS it is increasingly apparent that line of business applications often contain more significant business records than shared drives which contain massive quantities of "dross" records.

Unless we re-interpret our principles in the e-environment and our approach to their implementation then a large part of the data and information central to an organization's business—its genuinely 'vital' records—may not be considered to be records at all by records professionals and therefore not managed. As the nature of records changes in line with rapid changes in the nature of information and communication technologies used to create them, so must our strategies for managing them.

This echoes the views of Oliver et al³⁴ who suggest that *recordkeeping informatics* is a better approach to managing records today. 'Recordkeeping informatics encompasses all that needs to be known regarding the construction and destruction of information objects that evidence actions in and through space and time.'³⁵ This means 'not just knowing about managing records, but also about managing the systems and processes in which they are created captured managed and consumed.'³⁶ The authors outline five components that need to be considered in adopting an informatics approach to managing records. These are: evaluating and establishing the settings (ie the organisation's internal and external environment); business analysis (ie understanding the organisation's work, its functions and activities); access (to records across increasingly diverse systems and space); electronic document management and recordkeeping systems (the currently predominant solution for ERM); and service oriented architectures (ie 'integrated, agile and adaptable systems'³⁷ that are more appropriate for networked environments). Their choice of the term 'informatics' is, they say, significant because it 'signals the degree of difference from the established approaches to the management of current records worldwide' and 'is intended to convey the message that the issues and challenges of records is not simply the purview of a distinct occupational group known as records managers.'³⁸

Records professionals should empathise with their concept - after all they have always designed and developed recordkeeping systems and espoused the inextricable relationship between records and business processes. Whilst the authors do not explicitly advocate a proportionate and risk based

approach, this could readily form part of an informatics approach and hence address headline finding number eight above. It is certainly needed if individuals and organisations are to manage the exploding volumes of information.

Conclusions

Our research provides the largest global set of real evidence of its kind about ERM which supports, and in some cases refutes, what has been conjectured for some time but has remained largely anecdotal. It provides a deeper understanding of ERM issues, identifies those that are the most urgent to address and what is required for effective records management. The strategies, tactics and practical solutions for managing electronic records that emerged are grounded in expertise and experience. It is clear that there is a range from which to choose and, whilst their relevance and success is very contextualised, they can be adopted or adapted in many scenarios.

This article has focused on only the headline findings, some of which might have been anticipated, others not. In particular, new insight has been gained concerning the emphasis on contextualisation, complexity and contingency and on the inter-relationship of people, processes and systems/technology. Although a practical paradigm for ERM did not emerge from the research, what did emerge with force is the need to recognise the predominant and powerful role of people in accelerating positive change, or not. Records professionals are some of those people.

In conducting this research a range of recordkeeping stakeholders have been engaged. In sharing our analysis of the evidence gathered, the ideas and solutions in the form of findings and vignettes, both during and after the project, we are supporting others to accelerate positive change in electronic records management.

Whatever we do in response to a changing environment has a fairly equal chance of making things better, making them worse, or making little overall difference. Even the best-informed and most thoughtful can be quickly wrong-footed by developments. The essential problem facing records theorists and practitioners today is the same problem that has always faced those in the midst of change without any adequate precedent - how can we know what is persistent and what is transient? Is it possible to evaluate the risks of failing to judge correctly either way? As one participant said '[I]t's hard to be sure you are doing the right thing'. We *cannot* be sure we are doing the *right* thing, only the *best* thing at the time, with the knowledge and resources available. We need courage in taking action and making decisions.

Of the 10 headline findings there are two strategic ones that should be addressed, viz. the articulation of a vision of successful ERM and the approach to applying records management principles in order to realise that vision of success. Envisioning successful ERM means looking beyond a technology solution and includes aligning ERM to the business and demonstrating the benefits to the users. It does not mean perfection. It means more flexibility 'so that they [systems] may better balance and be responsive to individual, business and government recordkeeping needs'³⁹

Addressing these two issues provides the records management profession, academics as well as practitioners, to be less a part of the problem and more a part of the solution to accelerating positive change in electronic records management. Rather than risking extinction they 'risk' essentiality.

References

Note: unless otherwise stated all quotes are attributed to Delphi study participants

Figures

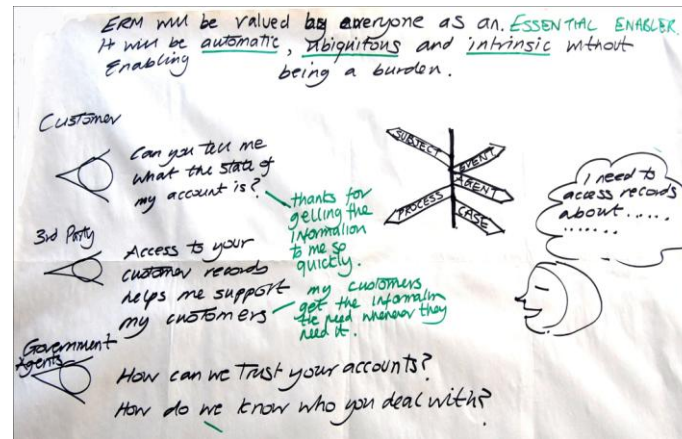
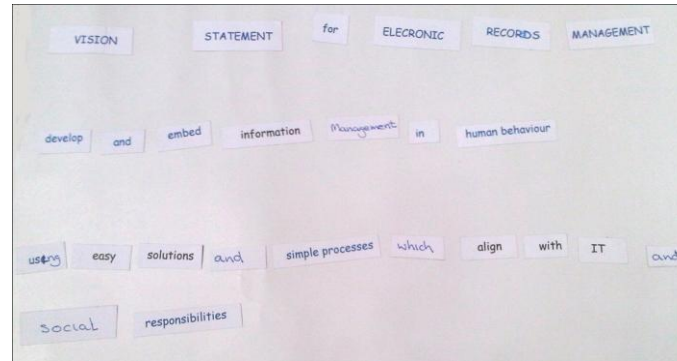
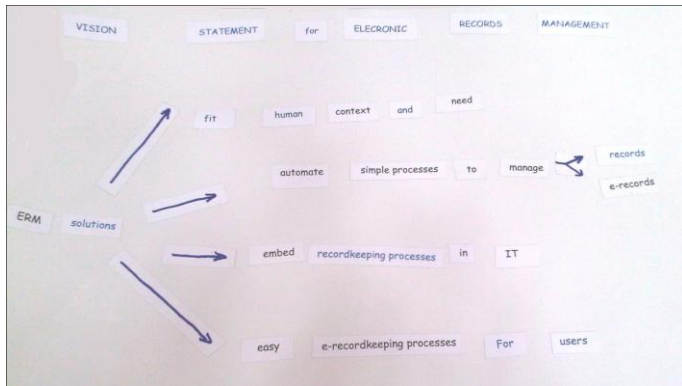


Figure 1. Photographs of the visions for ERM developed 'fridge phrases' and presented as illustrations

People

CEOs, executives and management lack understanding of RM and their role within that

Solutions that work

Accountability

Make senior managers responsible for missing records

Benefits

Link solutions to dealing with real problem
Promote/educate about RM/ERMS using individual benefits as examples

Education/development (non-records professionals)

Demonstrate problems of poor RM / value/benefits of RM/ERMS using real case examples
Promote/educate about RM/ERMS using individual business processes and requirements as examples

Holistic

Present holistic approach to IM rather than focus narrowly on RM

Less not more

Design ERM system that is easier to use

Organisational

Establish RM under legal corporate function
Establish single, board-level management role with IM as single corporate function

Planning

ERM systems requires organisation and planning from start

Relationships

Build 'virtual team' of key influencers and specialists
Engage personally with senior managers
Involved in ERMS development from outset
Make executive sponsorship a key personal mission

Solutions to avoid

Big stick

Compliance as a driver – senior managers may accept risk of poor recordkeeping

Use inaccurate 'scare stories' or poorly-understood legislation to support case

Introspection

Focus more on professional records concerns than on stakeholders' aims and expectations

Less not more

ERM systems for senior managers that cover activities previously undertaken by secretaries

Marketing

Bombard senior managers with information and ideas
Use generic, corporate RM selling points

Organisational

Situating RM under the IT corporate function

Planning

Working from the bottom up

Relationships

ERM implementation as a personal project of senior manager(s)
Go it alone as an organization's records manager
Proceed with solution without executive

Figure 2. The most urgent people issue to address with some of the suggested solutions that work and solutions to avoid

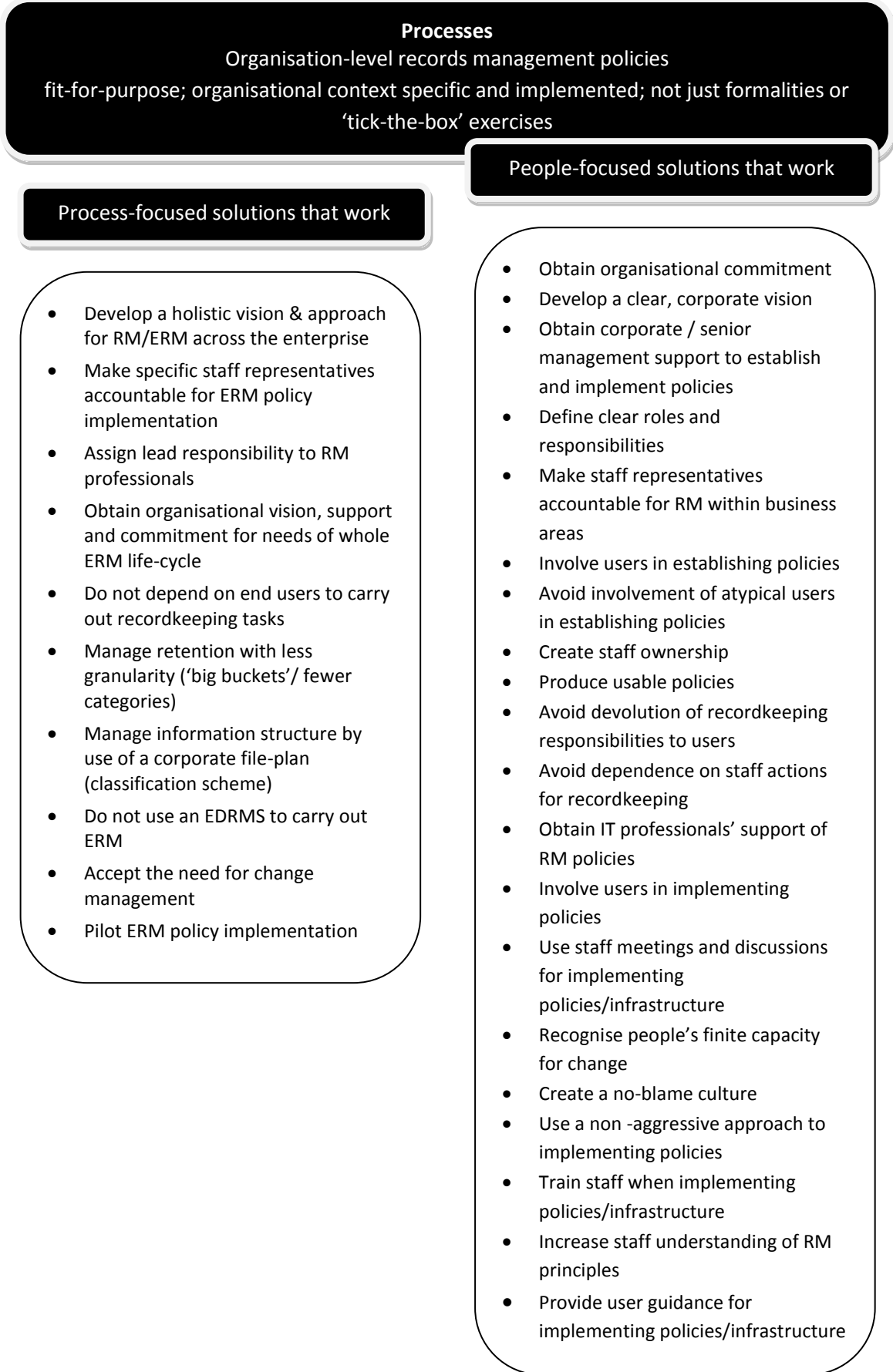


Figure 3. The most urgent process issue to address with some of the suggested solutions that work

Systems / Technology

Deciding on the appropriate approach to ERM within a given context

Dedicated EDRMS

- lack of use of middleware
- commercial, off-the-shelf (COTS) products used without consideration of degree of customisation required
- factors / reasons frequently non-technical
- requirement for users to declare records
- lack of ability to undeclare records after declaration
- increasing time spent on simple tasks
- lack of draft document area

Existing functionality in line-of-business, office & mobile systems

- lack of integration capability between SharePoint and older versions of MS Office
- organisations' preference for basic, cheap RM capability
- organisations fail to use full potential of systems
- use not strategically driven
- use driven by individuals / business units
- lack of exploitation by users
- metadata capture by users – users perceive

RM Functionality embedded in line-of-business, office & mobile systems

- major systems providers lack understanding of business processes
- major systems providers lack understanding of RM
- lack of ability for integration of different

EDRMS integrated with other corporate IT systems

- most EDRMS lack of integration
- most EDRMS lack interoperability
- poor EDRMS integration with IT other systems
- lack of products
- web interface preferred by vendors; 'thick client' interface preferred by users
- licensing costs

A combination of approaches

- combined ERM approach rare
- implementation expense exceeds expectations, e.g. SharePoint
- implementation at departmental level
- lack of analysis of gaps between current and future configuration
- lack of awareness of requirements for change management by organisation
- lack of investment in change management by organisation
- EDRMS licensing costs
- cost of integration

Figure 4. The most urgent systems/technology issue to address with some of the negative factors / reasons for failure of the approach

-
- ¹ John McDonald, 'The wild frontier ten years on'. In: J McLeod and Ce Hare (Eds). *Managing electronic records*. Facet, London, 2005.
- ² J McDonald, 'Managing records in the modern office: taming the wild frontier', *Archivaria*, vol. 39, Spring 1995, pp. 70-79.
- ³ McDonald, 2005, p.8.
- ⁴ Arts and Humanities Research Council www.ahrc.ac.uk The project team would like to acknowledge the support provided by the AHRC to help fund this research.
- ⁵ Northumbria University, 'AC⁺erm website', available at www.northumbria.ac.uk/acerm, accessed 7 January 2011.
- ⁶ Naomi Hay-Gibson, '*Risk and records management: Investigating risk and risk management in the context of records and information management in the electronic environment*', PhD thesis, Northumbria University, 2011.
- ⁷ Alf Erlandsson, '*Electronic records management: a literature review*' ICA, Paris, 1996, available at <http://icarchives.webbler.co.uk/7131/member-resources/ica-study-n10-electronic-records-literature-review.html>, accessed 7 January 2011.
- ⁸ NHS Centre for Reviews and Dissemination Systematic Reviews. '*CRD's guidance for undertaking reviews in health care*', University of York, York, 2009, pp 292.
- ⁹ S Childs, J McLeod and R Hardiman, 'Using the systematic literature review method in an information management discipline', article in preparation, 2011.
- ¹⁰ UG Gupta and RE Clarke, 'Theory and application of the Delphi Technique', *Technological Forecasting and Social Change*, vol. 53, 1996, pp 185-211.
- ¹¹ Northumbria University, 'AC⁺erm project: Vignettes', available at <http://www.northumbria.ac.uk/static/5007/ceispdf/vig.pdf>, accessed 7 January 2011.
- ¹² J McLeod, 'Toolkits for advancing practice', RMAA Post Convention Seminars 16 September 2008, Melbourne and 24 September 2008. J McLeod, 'ERM in a Web 2.0 world: accelerating positive change', IIM Seminar 11 September 2008, Sydney. J McLeod, 'AC⁺erm: Accelerating positive change in electronic records management'. Icelandic Records Management Association (IRMA), 9 April 2010, Reykjavik.
- ¹³ Northumbria University, 'AC⁺erm project website: Conferences and publications', available at http://www.northumbria.ac.uk/sd/academic/ceis/re/isrc/themes/rmarea/erm/diss/conf_diss/?view=Standard, accessed 7 January 2011.
- ¹⁴ S Childs, R Hardiman, N Hay-Gibson, E Lomas and J McLeod (eds), 'Examining the issues & challenges of email & e-communications', *Proceedings of the 2nd Northumbria Witness Seminar Conference, 24-25 Oct 2007, Northumbria University, Newcastle upon Tyne*, available at <http://www.northumbria.ac.uk/static/5007/ceispdf/wit2006.pdf>, accessed 7 January 2011.
- S Childs, S Heaford and J McLeod (eds), 'Exploring the essence of records management: engaging with experts', *Proceedings of the 1st Northumbria International Witness Seminar Conference, 4-5 May 2006, Northumbria University, Newcastle upon Tyne*, available at <http://www.northumbria.ac.uk/static/5007/ceispdf/wit2006.pdf>, accessed 7 January 2011.
- ¹⁵ J McLeod, S Childs and R Hardiman (eds), 'AC⁺erm Project: Transforming information and records management through research and development', *Proceedings of the 3rd Northumbria Witness Seminar Conference, 4 March 2010, Northumbria University, Newcastle upon Tyne*, available at http://www.northumbria.ac.uk/static/5007/ceispdf/coll_4.pdf, accessed 7 January 2011.
- ¹⁶ Northumbria University, 'AC⁺erm Project: Philosophical, Paradigmatic and Methodological Underpinnings', available at <http://www.northumbria.ac.uk/static/5007/ceispdf/method.pdf>, accessed 7 January 2011
- ¹⁷ 'ISO 15489-1 Information and documentation - records management. Part 1: General', ISO, Geneva, 2001, Clause 6.3 Responsibilities.
- ¹⁸ Northumbria University, 'AC⁺erm Project: Philosophical, Paradigmatic and Methodological Underpinnings', available at <http://www.northumbria.ac.uk/static/5007/ceispdf/method.pdf>, accessed 7 January 2011. S

Childs, J McLeod and R Hardiman, 'An innovative methodological approach to studying electronic records management: The AC⁺erm project' (in preparation). S Childs, J McLeod and R Hardiman, 'Using the systematic literature review method in an information management discipline', (in preparation, 2011).

¹⁹ Northumbria University, 'AC⁺erm Project colloquia and summaries: Colloquia 1-3 People, processes and technology', available at http://www.northumbria.ac.uk/static/5007/ceispdf/coll_1_3.pdf, accessed 7 January 2011.

²⁰ See Findings section: Northumbria University, 'AC⁺erm Final Report', available at <http://www.northumbria.ac.uk/static/5007/ceispdf/final.pdf>, accessed 7 January 2011

²¹ L Downing, 'Implementing EDMS: Putting people first', *Information Management Journal*, vol. 40, no. 4), 2006, pp. 44-50.

²² See for example: T M Somers and K Nelson, 'The impact of Critical Success Factors across the stages of Enterprise resource Planning Implementations,' *Proceedings of the 34th Hawaii International Conference on Systems Sciences (HICSS-34)*, 3-6 Jan 2001, Hawaii, available at <http://www.computer.org/portal/web/csdl/doi/10.1109/HICSS.2001.927129>, accessed 7 January 2011. H Akkermans and K van Helden, 'Vicious and virtuous cycles in ERP implementations: a case study of interrelations between critical success factors', *European Journal of Information Systems*, vol. 11, March 2002, pp. 35-46. C Shaw and D Wainwright, 'Developing a CSF causal loop model for managing IT projects: A case study of an inter-organisational healthcare pathology IT system', *Proceedings of International Conference on Information Systems ICIS 2007*, 9-11 Dec 2007, Quebec, Montreal, Canada, available at <http://aisel.aisnet.org/icis2007/24/>, accessed 7 January 2011.

²³ Steve Bailey, 'Managing the crowd: rethinking records management for the Web 2.0 world', Facet, London, 2008.

²⁴ Technology consultancy IDC estimates our digital universe is expanding tenfold every five years: 'the digital universe - information that is either created, captured, or replicated in digital form — was 281 exabytes in 2007. In 2011, the amount of digital information produced in the year should equal nearly 1,800 exabytes, or 10 times that produced in 2006' [an exabyte is a billion gigabytes]', IDC, 'The Diverse and Exploding Digital Universe', White Paper, March 2008, available at <http://www.emc.com/collateral/analyst-reports/diverse-exploding-digital-universe.pdf>, accessed 7 January 2011.

²⁵ See P Jones, 'The role of virtual folders in developing an electronic document and records management system: meeting user and records management needs', *Records Management Journal*, vol. 18, no. 1, 2008, pp. 53-60.

²⁶ P Singh, JE Klobas and K Anderson, 'Information seeking behaviours of electronic document and records management systems (EDRMS) users: implications for records management practices. Part 3', *Informaa Quarterly*, 25(2), pp. 48-55.

²⁷ Ibid, pp. 53-54.

²⁸ Ibid, pp. 54.

²⁹ J Gunnlaugsdottir, 'Registering and searching for records in electronic records management systems', *International Journal of Information Management*, 28 (4), pp. 298-304.

³⁰ Ibid, p. 301.

³¹ Bailey, 2008.

³² DJ Snowden and ME Boone, 'A leader's framework for decision making', *Harvard Business Review*, Nov 2007, pp. 69-76. (p70).

³³ CF Kurtz and DJ Snowden, 'The new dynamics of strategy: Sense-making in a complex and complicated world', *IBM Systems Journal*, vol. 42, no. 3, 2003, pp. 462-483. The framework is being used by Elizabeth Lomas, Northumbria University in a co-operative action research PhD project entitled 'Continued Communication', studying the challenges of managing records/data held within information communication systems, and involving 80 co-researchers. See also: S Childs, J McLeod and R Hardiman, 'Accelerating positive change in electronic records management – an empirical toolkit of solutions', *UK Academy for Information*

Systems Conference Proceedings, AIS (Association of Information Systems), 31 March - 1 April 2009, Oxford, available at <http://aisel.aisnet.org/ukais2009/18/>, accessed 7 January 2011.

³⁴ G Oliver, J Evans, B Reed and F Upward, 'Achieving the right balance: recordkeeping informatics. Part 1, *Informaa Quarterly*, 24(4), 2009, pp. 18-21; G Oliver, J Evans, B Reed and F Upward, 'Achieving the right balance: recordkeeping informatics. Part 2, *Informaa Quarterly*, 25(1), 2010, pp. 38-40.

³⁵ G Oliver, J Evans, B Reed and F Upward, 2009, p 19

³⁶ *Ibid*, p20.

³⁷ G Oliver, J Evans, B Reed and F Upward, 2010.

³⁸ G Oliver, J Evans, B Reed and F Upward, 2009, p 21

³⁹ G Oliver, J Evans, B Reed and F Upward, 2010, p52.