

Going global: Developing globally harmonised software specifications for records*

Adrian Cunningham

For at least the past 15 years our profession has held it to be self-evident that good electronic recordkeeping requires good electronic recordkeeping systems. Much of our professional energy during that time has been directed towards helping organisations to design and implement native software applications that provide good recordkeeping functionality. We have adopted the standards setting role with a fierce vigour and commendable enthusiasm. We have done this both at national and jurisdictional levels, but also globally – most notably through the development of the leading international standards ISO 15489 (Records Management) and ISO 23081 (Metadata for Records).

* © 2008 National Archives of Australia. Adrian Cunningham has worked at the National Archives of Australia since 1998, where he is currently Director, Strategic Relations and Personal Records. This paper was presented to the International Congress on Archives in Kuala Lumpur, 23 July 2008. It also will be published by the International Council on Archives' *Comma* Journal.

Software vendors have responded to these efforts and escalating market interest by developing a range of electronic document and records management software applications that supply much of the functionality sought, with user interfaces and software architectures of varying levels of sophistication. Arguably, our efforts at influencing the global software market have been hamstrung by too much information and not enough coordination. Since the late 1990s we have witnessed a confusing proliferation of jurisdiction-specific statements of requirements for electronic records management software. A short list of just some of these follows, by way of illustration:

- United States of America Department of Defense's Design Criteria Standard for Electronic Records Management Software Applications 5015.2 (2007 – Version 3)
- European Union's MoReq (Model Requirements for the Management of Electronic Records (2001))
- Germany's DOMEA Concept Requirement Catalogue (2005)
- Norway's NOARK 4 Norwegian Recordkeeping System: Functional Description and Specification of Requirements (2000)
- United Kingdom National Archives' Requirements for Electronic Records Management Systems (2002)
- National Archives of Australia's Specifications for Electronic Records Management Systems Software (2007)
- Archives New Zealand's Electronic Recordkeeping Systems Standard (2005)
- Victoria's Victorian Electronic Records Standard (1999–2007)

While there are usually good administrative and legal reasons why individual jurisdictions need to issue their own statements of software requirements, the cumulative impact of this proliferation on the global software industry can be counterproductive. Vendors understandably say that it is difficult, if not impossible, for a single software product to comply with so many different statements of requirements. This is notwithstanding the fact that many of the statements of requirements are often heavily based on pre-existing requirements issued by other jurisdictions.

By 2005, therefore, it seemed clear to the National Archives of Australia (NAA) that there was a strong business case for the world's leading archival institutions to work together to develop a single globally harmonised statement of requirements that all of our jurisdictions could endorse and use as the basis for developing or revising jurisdiction-specific requirements where necessary. The NAA sounded out colleagues in a range of counterpart institutions internationally and established that these colleagues understood the need to work together and were prepared to commit resources to such a collaboration.

The NAA submitted a formal project proposal to the International Council on Archives' Program Commission, which was promptly endorsed and allocated to its Electronic Records and Automation Priority Area, responsibility for which rested with Scottish National Archivist George Mackenzie. Indeed, so enthusiastic was George Mackenzie that he offered to host the first meeting of the project team at the National Archives of Scotland in Edinburgh.

As well as securing endorsement for the project by the International Council on Archives (ICA), the NAA also sought involvement and sponsorship by the Australasian Digital Recordkeeping Initiative (ADRI). ADRI is an initiative of the Council of Australasian Archives and Records Authorities (CAARA), which includes the ten public records institutions in Australia and New Zealand:

- National Archives of Australia
- Archives New Zealand
- Public Record Office Victoria
- State Records New South Wales
- ACT Territory Records
- Archives Office of Tasmania
- Northern Territory Archives Service
- Queensland State Archives
- State Records South Australia
- State Records Office Western Australia.

The vision of ADRI is that all governments in Australia and New Zealand implement a uniform approach to making, keeping and using digital records to ensure accountability and the long-term protection of vital cultural heritage.

The members of the international project team represented the following archival institutions:

- National Archives of Australia
- Archives New Zealand

- National Archives and Records Administration (USA)
- Bundesarchiv (Germany)
- The National Archives (UK)
- National Archives of South Africa
- National Archives of Malaysia
- National Archives of the Netherlands
- National Archives of Sweden
- Archives Directorate of France
- Cayman Islands National Archives
- Queensland State Archives.

At its first meeting in Edinburgh in September 2006, the project team defined the scope of the project and agreed on lead agencies for individual modules of work, with attendant timeframes. It was agreed that there should be three main modules of work that should be finalised for publication before the ICA Congress in Kuala Lumpur in July 2008. The three modules and their lead agencies were as follows:

1. overview document and statement of principles (NARA and NAA)
2. high-level requirements and guidelines for electronic records management system software (Archives New Zealand)
3. guidelines and requirements for managing records in business systems (NAA and Queensland State Archives).

We agreed that the lead agencies should spend up to ten months developing drafts of the various modules and that the team would meet again in Australia in September 2007 to discuss and revise the

drafts. The aim then was to finalise exposure drafts for web release in early 2008, with a comment period lasting for about eight weeks so that the project team could meet again in April 2008 (in Koblenz, Germany) to consider the comments and finalise the drafts for editing and publication.

During the initial meeting in Scotland the project team spent a lot of time discussing consultation and liaison strategies with stakeholder groups. Obviously the memberships of both the ICA and ADRI were primary stakeholders. Other important stakeholders included:

- software vendors/industry groups
- governments
- private sector organisations
- International Standards Organization
- International Records Management Trust.

We agreed that every effort should be made to reach out to these different groups, not just to make them aware of our project, but also to seek their expert input and comment. The International Standards Organization's Records Management Committee (TC46/SC11) was identified as an especially important liaison – not just because we were basing our work squarely on the foundations of the ISO standards mentioned above, but also because we envisaged that the products of our project could, in time, be considered for possible adoption as ISO standards. Project Team member Hans Hofman of the Netherlands, who is also a member of ISO TC46/SC11, agreed to be a formal means of liaison between the two groups.

Another very important liaison was with the European Union's MoReq2 project. In 2006 the EU announced major project funding for the development of a second edition of its Model Requirements for the Management of Electronic Records. Governance of the MoReq2 project was the responsibility of the EU's DLM (Digital Lifecycle Management) Forum, with the work being guided by the DLM Forum's Scoping Report for the Development of MoReq2 (2006).

Clearly, there was no point in the ICA endeavouring to compete with MoReq2 – a project that was bound to exert a major influence on the software vendor community, not just within Europe. Fortunately, the ICA had been identified by the DLM Forum as a key stakeholder in the MoReq2 project. As such, our project team was granted formal liaison status in the bureaucratic apparatus built by the EU to support the MoReq2 process. ICA project team member Göran Kristiansson from the National Archives of Sweden was appointed by the ICA as the formal liaison person between the two projects. In addition, a number of other European members of the ICA Project Team (notably members from Germany, the United Kingdom and France) were also active members of the DLM Forum. In effect we decided that providing input into the development of MoReq2 would be a fourth module of work for our ICA Project Team.

While not wishing to develop a statement of requirements that would compete in the same space as MoReq2, the ICA project team was nevertheless acutely aware that Europe could not pretend to (nor was it trying to) speak for the whole world. We determined that the wider ICA membership, which consists of a large number of developing

countries in Africa, Asia, Central America, the Caribbean and the Pacific, needed a statement of requirements for electronic document and records management systems (EDRMS) that were fit for the purposes and realities of less wealthy countries. While it was clear to us that MoReq2 would be highly technical and granular, we wanted to produce an ICA set of requirements that were more principles based and less daunting for the ICA membership at large. For that reason we agreed that Archives New Zealand's Electronic Recordkeeping Systems Standard represented an appropriate high-level set of model requirements that could be used as a starting point for our deliberations.

With the aim of adopting a principles-based approach to our work, Module 1 (Overview and Statement of Principles) provided an important foundation for the more detailed statements of requirements and guidelines that can be found in Modules 2 and 3. We identified twelve principles that should guide the development of all software applications that are intended to be used to make and keep records. The first four of these principles relate specifically to records, while the remainder relate more to systems:

1. Electronic business information has to be actively managed and maintained as evidence of business activity.
2. Business information has to be linked to its business context by metadata.
3. Business information has to be kept and remain accessible to authorised users for as long as required.

4. Business information has to be able to be disposed of in a managed, systematic and auditable way.
5. Systems for capturing and managing business information have to rely on standardised metadata as an active, dynamic and integral part of the recordkeeping process.
6. Systems have to ensure interoperability across platforms and domains and over time.
7. Systems should rely as far as possible on open standards and technological neutrality.
8. Systems should have the capacity for bulk import and export using open formats.
9. Systems must maintain information securely.
10. Most metadata should be system generated.
11. Systems should support business information management as an organic part of the business process.
12. It should be as easy as possible for users to create/capture records of business activity.

In Module 1 we also devoted a lot of attention to implementation issues. Good software is only one component of successful electronic business information management in organisations. Other components include: policy frameworks; business process analysis; project management; change management; risk management; sustainability; capability development; quality management; configuration management; and corporate culture.

While Module 2, led by New Zealand, represented a high-level consolidation and statement of consensus based on a decade or more of work done in different jurisdictions, Module 3 was the piece of work

that our ICA project team felt was breaking new and exciting ground. The focus of both our Module 2 and MoReq2 was on electronic document and records management software products. It was the view of the ICA project team, however, that many organisations will legitimately wish to capture and manage their records in line-of-business applications rather than in stand-alone records management applications. In other words, rather than expecting organisations to create records in one application and then manage them in a separate application, it is logical for organisations to want to do both within a single business system.

We defined business systems as 'automated systems that create or manage data about an organisation's activities'. These include applications whose primary purpose is to facilitate transactions between an organisational unit and its customers, for example:

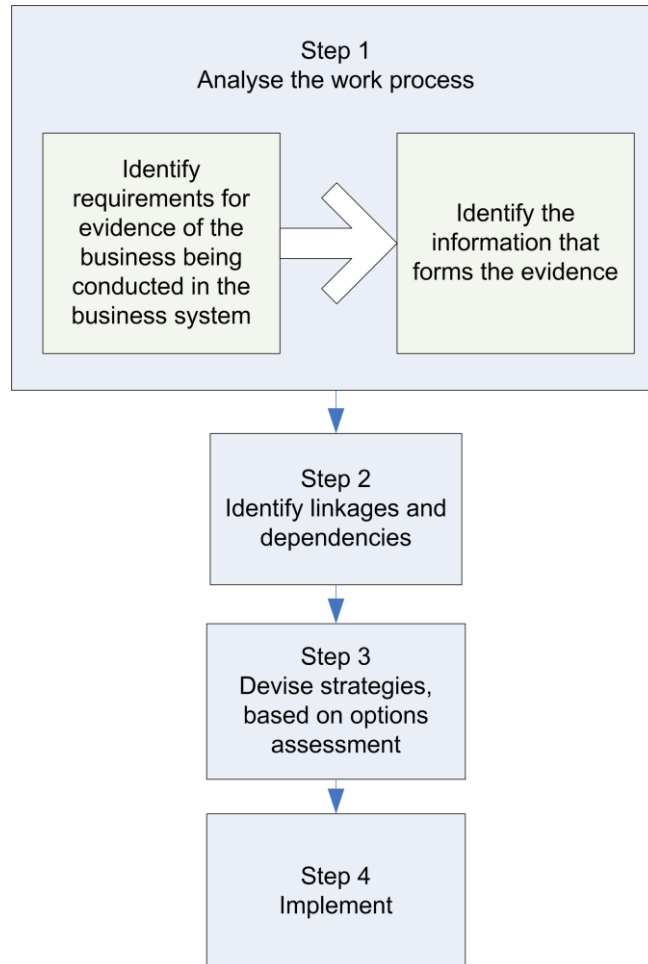
- an e-commerce system
- client relationship management system
- purpose-built or customised database
- human resources systems.

The challenge, as we saw it, was to provide the designers of business systems with guidance on the essential records-specific functionality that they need to build into such systems if they are to achieve both good business and good recordkeeping outcomes within a single system. Most statements of requirements for EDRMS aim to be comprehensive. That is, they aim to list all of the functional requirements necessary for a fully functional EDRMS application. Our

project team determined that guidance for records functionality in business systems did not need to be comprehensive – it only needed to focus on those aspects of functionality that are uniquely essential for recordmaking and recordkeeping. As such, our aim for Module 3 was for a much smaller set of functional requirements than would be the case for our Module 2, and indeed MoReq2.

Business systems often have characteristics that provide serious recordkeeping challenges. They often hold data that is frequently updated, able to be transformed (ie manipulable) and is non-redundant (ie only current data is held, while old data is overwritten). In comparison, records have to be fixed at a point in time and need to be inviolate. Traditional records management processes often do not sit comfortably within business systems – they are often seen as hindering rather than supporting the conduct of business.

The most important part of Module 3 for the key target audience of ICT professionals and designers of business systems is, therefore, an explanation of what records are and how to determine what the record should comprise within the context of a given line of business system. Answering the question ‘what does the record need to be and what should it consist of’ necessarily requires dialogue between business owners, records staff and business systems developers/administrators. Work process analysis is absolutely critical.



Having determined what records need to be captured during the work processes, the next set of questions involve essential systems functionality for recordkeeping. This functionality falls into four broad areas as follows:

Creating Records in Context

- *Creating a fixed record*
- *Record metadata*
- *Management of aggregations*
- *Records classification tools*

Managing and Maintaining Records

- *Metadata configuration*
- *Record duplication, reclassification, extraction and closure*
- *Reporting on records*
- *Online security processes*

Supporting Import, Export and Interoperability

- *Import*
- *Export*

Retaining and Disposing of Records

- *Compliance with disposition authorisation regimes*
- *Disposition application*
- *Review*
- *Destruction*
- *Disposition metadata*
- *Reporting on disposition activity*

Scoping, drafting, consulting on and then finalising three substantial modules of work in addition to liaising with the MoReq2 project, all in less than two years, was a substantial achievement. All the more so when this required consensus and input from twelve different archival institutions on five continents. Sixteen sets of detailed comments on the exposure drafts were received from eight countries. These comments came from a variety of sources including national archives, software vendors, standards committees, private consultants and other peers and experts. The three modules are now available on both the [ICA website](#) and the [ADRI website](#).

Future work currently under consideration by the ICA and its members includes:

- actively engaging software vendors
- developing an international software testing regime based on the modules
- developing an interactive web-based self-assessment tool
- developing testing scripts for the functional specifications
- developing process mapping and data modelling
- developing the modules as ISO standards
- ongoing refinement of Module 3
- developing more detailed implementation guidance
- mapping the ICA requirements to MoReq2 and US DoD 5015.2.