
SPIRT Recordkeeping Metadata Project - Conceptual and Relationship Models

Full Title:

SPIRT Recordkeeping Metadata Project

Dates:

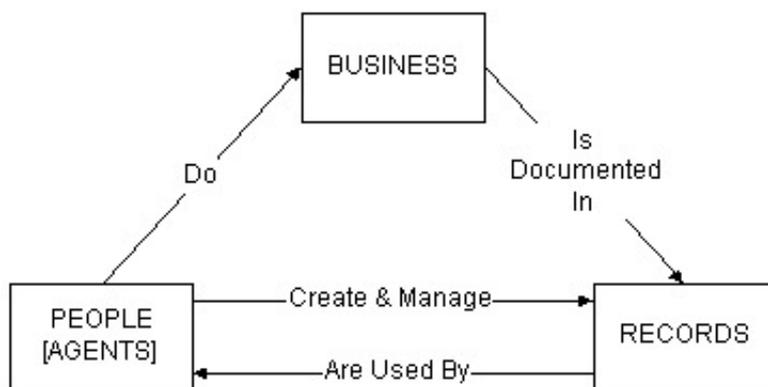
1998 - 1999

Conceptual and Relationship Models: Records in Business and Socio-legal Contexts

Conceptual Models

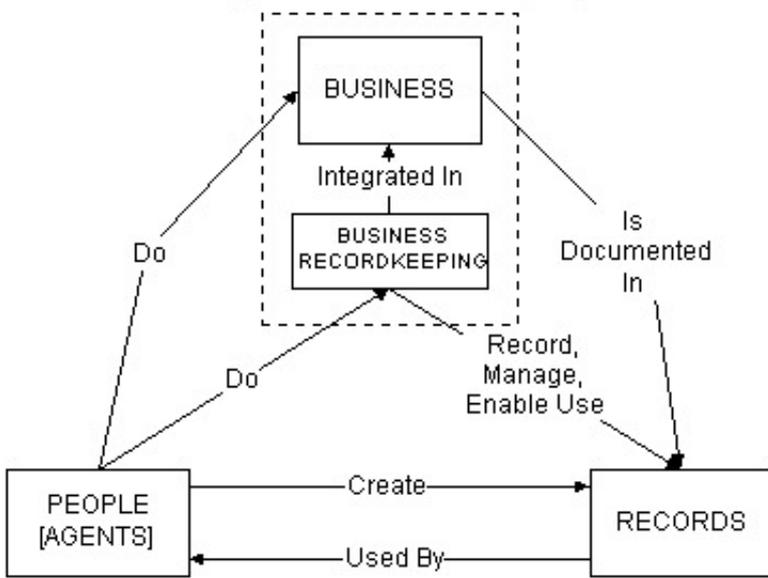
Three high level Conceptual Models have been developed to provide the conceptual framework for the Recordkeeping Metadata Project.

Figure 1: The Business



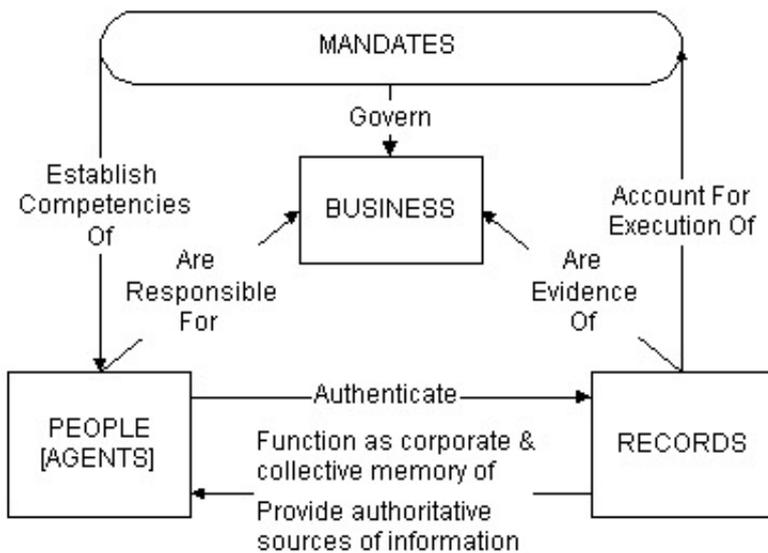
People do business of all kinds with each other. In the course of doing business, they create and manage records. The records created in the course of doing business capture in documentary form the business done. In the conceptual models developed by the Project, the term Business was defined in the very broadest sense to encompass social and organisational activity of all kinds

Figure 2: Recordkeeping



Optimally recordkeeping forms an integral part of any business activity.

Figure 3: The Business Context



People do business in social and organisational contexts that are governed by external mandates (e.g. social mores and conditioning, laws, regulations, standards, best practice codes, professional ethics) and internal mandates (e.g. corporate culture, policies, administrative instructions, delegations, authorities). Mandates establish in both formal and informal ways who is responsible for what, and govern social and organisational activity and recordkeeping behaviours. Authentic records of social and organisational activity provide evidence of that activity and function as corporate and collective memory. They also provide authoritative sources of value added information as they capture both the content and context of the interactions they document. And they account for the execution

of the mandate – internally and externally, currently and over time.

The Models were developed in the context of records continuum thinking and practice in Australia, with particular reference to the work of Frank Upward in developing the Records Continuum Model, and Chris Hurley's writings on archival description, the Australian series system, and the functional context of recordkeeping . They also draw on [David Bearman's](#) insights into recordkeeping systems, records as metadata encapsulated objects and item level control, as well as his pioneering work on the Business Acceptable Communications model.

The Australian series system, with its emphasis on describing both context and records entities, and the complex, dynamic relationships between them, was also a key reference point for the Models. The conceptual framework of the Project extends Peter Scott's revolutionary approach to archival description, as outlined by Terry Cook:

Scott's fundamental insight was that the traditional archival assumption of a one-to-one relationship between the record and its creating administration was no longer valid. He also demonstrated clearly that administrations themselves were no longer mono-hierarchical in structure or function, but ever-changing, complex dynamisms, as were their record-keeping systems. He therefore developed the Australian series system approach as a means for describing multiple interrelationships between numerous creators, and numerous series of records, wherever they may be on the continuum of records administration: in the office(s) of creation, in the office of current control, or in the archives ... In effect, Scott has moved archival description from static cataloguing to a dynamic system of multiple interrelationships ... Although he worked in a paper world, his insights are now especially relevant for archivists facing electronic records, where – just as in Scott's system – the physicality of the record has no importance compared to its multi-relational contexts of creation and contemporary use.

Terry Cook, "What is Past is Prologue: A History of Archival Ideas Since 1898, and the Future Paradigm Shift", *Archivaria* 43 (Spring 1997): 38-39

(For more information about the Australian Series System, see the following papers, published in *The Records Continuum: Ian Maclean and Australian Archives first fifty years*, edited by Sue McKemmish and Michael Piggott (Clayton: Ancora Press in association with Australian Archives, 1994): Mark Wagland & Russell Kelly, "The Series System – A Revolution in Archival Control", pp. 131-149; Chris Hurley, "[The Australian \(Series\) System: An Exposition](#)", pp. 150-172; and Sue McKemmish, "[Are Records Ever Actual?](#)", pp. 187-203. See also Peter Scott, "The Record Group Concept: A Case for Abandonment", *American Archivist* 29, (no. 4, October 1966): 493-504.)

The Models were also influenced by the international discourse on electronic recordkeeping and archival description, in particular Terry Cook's exploration of the concept of the archival fonds and insights into the "conceptual relationships between creating structures, their animating functions and the resulting records." (Terry Cook, "The Concept of the Archival Fonds: Theory, Description, and Provenance in the Post-custodial Era", in *The Archival Fonds: From Theory to Practice*, ed. Terry Eastwood, (Ottawa: Bureau of Canadian Archivists, 1992): 38.)

The concept of mandate used in the Models draws on the work of the University of

Pittsburgh “Functional Requirements for Evidence in Recordkeeping Project” on warrants for recordkeeping in organisational contexts, in particular the work of Wendy Duff (see “Harnessing the Power of Warrant”, *American Archivist* 61 (Spring 1998): 88-105), and on the writing of Sue McKemmish on the broad social mandates found in sociology, creative writing and reflective narratives for the role of personal recordkeeping in witnessing to individual lives and constituting part of society’s collective memory and cultural identity (“[Evidence of Me ...](#)”, *Archives and Manuscripts* 24, no. 1 (May 1996): 28-45).

Relationship Models

A significant aspect of the Australian series system is its emphasis on describing relationships between records and provenance entities. In describing the capacity of the Australian series system to depict relationships between records and agencies, Terry Cook recently stated that:

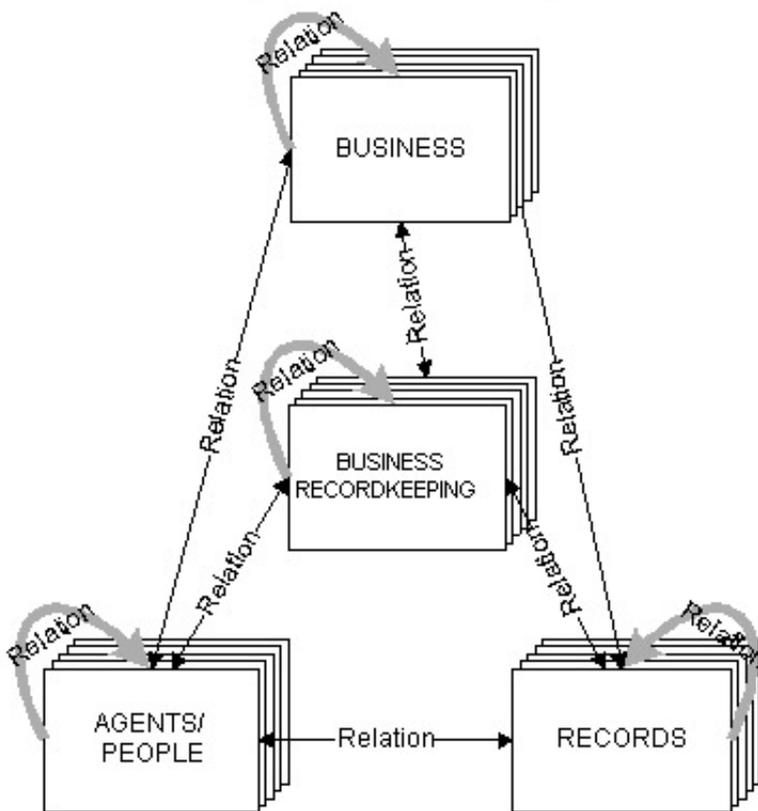
Australian archivists are now testing enriching this contextuality by adding other multiple relationships based on formal functions and the larger ambient provenance contexts beyond those of the immediate creator. All these interrelationships are not fixed one-to-one linkages, as in most archival descriptive approaches (despite some cross referencing), but rather exist as many-to-one, one-to-many and many-to-many relationships: between many series and one creator, between many creators and one series, between many creators and many series, between creators and other creators, between series and other series, and between series and creators to functions, and the reverse.

(Terry Cook, “The Concept of the Archival Fonds: Theory, Description, and Provenance in the Post-custodial Era”, in *The Archival Fonds: From Theory to Practice*, ed. Terry Eastwood, (Ottawa: Bureau of Canadian Archivists, 1992) : 38.)

The Project is extending this tradition. The Recordkeeping Metadata Schema enables relationships to be set up between Business, Agent, and Record entities at any layer of aggregation and through time. Business to Business, Business Recordkeeping to Business Recordkeeping, Agent to Agent, and Record to Record relationships can also be depicted in and through time. Any single Agent, Business, Business Recordkeeping or Records entity may have relationships with like or unlike entities that extend through layers of aggregation in ways which establish a rich envelope of contextual metadata.

The following model was developed to depict these complex, multiple relationships.

Figure 4: Relationships

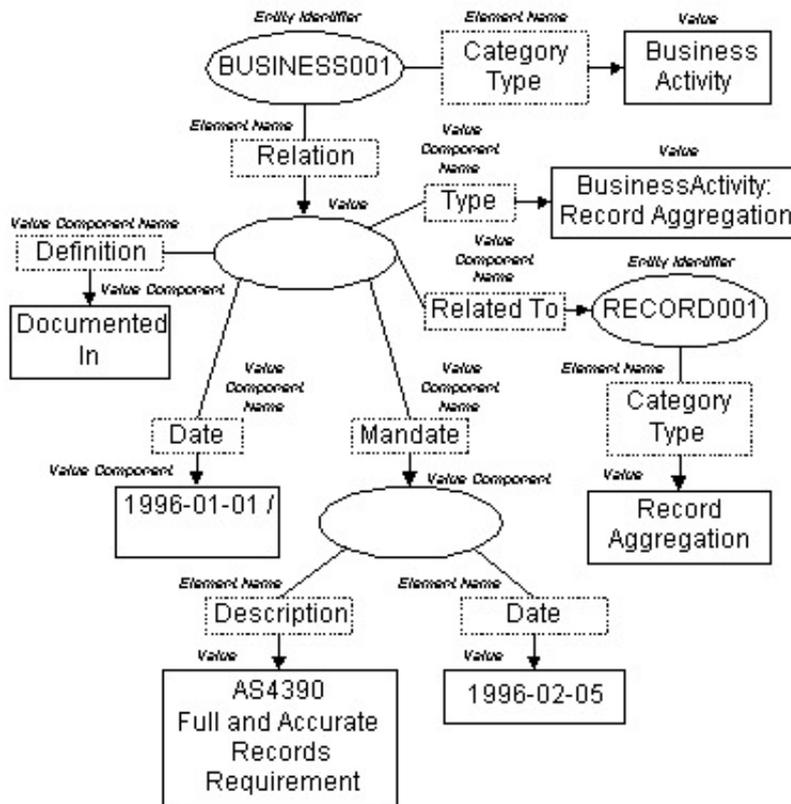


The RKMS currently employs a simple taxonomy of one-one relationships between entity types. Although, unlike many metadata sets which depict relationships as simple binary associations, the RKMS describes several aspects of relationships. The Relation element and its qualifiers include:

- ID of the related entity
- the type of the relationship, e.g. Business Function-Business Activity, Organisation-Business Function, Record Object-Record Aggregation, Organisational Unit-Record Aggregation.
- a definition of the relationship, e.g. whole-part, responsible for, controlled by
- the date/date range of the relationship
- description of the mandate that authorises or governs the relationship, and
- the business rules associated with the relationship.

The Project has developed Relationship Models using RDF notation. An example of a Relationship Model follows. It relates to the Business Activity level of the RKMS hierarchy. At this level the following relationships may exist between a Loan Application Management business activity (BUSINESS001), and the Loan Application Records (RECORD001)

Figure 5



This RDF diagram can be read as follows. The entity BUSINESS001 is a Business Activity, and the entity RECORD001 is a Record Aggregation. The BUSINESS001 is related to RECORD001. This relationship has a number of aspects:

- The type of relationship is Business Activity to Record Aggregation.
- The relationship started on the 1st of January 1996, and has not yet ended.
- The relationship is defined as “Documented In”, i.e. the Business Activity BUSINESS001 is documented or “recorded” in the RECORD001 aggregation of records.
- The relationship is mandated by the “Full and Accurate Records Requirement” of the *Australian Standard: Records Management, AS 4390*, as defined on 5th February 1996.

This diagram illustrates contemporaneous relationships within one layer of the conceptual model (the Business Activity layer). Within this layer in the above diagram, it would also be possible to build in relationships between the Loan Officer (an Agent entity, belonging to the Category Type, Organisational Unit) and the Loan Management Business Activity, and between the Loan Officer and the Loan Application Records. The relationships could be further described using the qualifiers specified in the Relation element. These qualifiers provide for specification of the type of relationship, definition of the relationship (e.g. the Loan Officer is responsible for Loan Management, the Loan Officer creates the Loan Application Records), the date range of the relationship, and the mandate governing the relationship (e.g. the Loan Officer is delegated to undertake the Loan Management activity

by the Loan Management Authority, dated 1999-02-07). Other relationships within this layer might include the relationship between the Loan Application Records and the Loan Application Register that controls them.

As Figure 4 also illustrates, the RKMS enables depiction of relationships across layers, within entities, and through time. In our example, it would be possible to build in the following kinds of relationships:

- The inheritance relationships between the Loan Officer and agents previously or subsequently responsible for the business activity of Loan Application Management
- The whole-part relationships between the Loan Application Management business activity and the business transactions that are part of the activity
- The previous-subsequent relationships between the successive business transactions in the Loan Application Management process
- The hierarchical relationships between the Loan Officer position and the Loans Department of the Bank, and between the Loans Department and the Bank itself
- The whole-part relationships between individual Loan Applications and the Loan Application Records.

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