Chapter XVII
Formal Ontology for Media Rights Transactions

Adam Pease
Articulate Software, USA

Godfrey Rust
Rightscom/Ontologyx, UK

ABSTRACT

Rightscom (a UK-based media and rights consultancy), is working with Articulate Software (a formal ontology consultancy) and with another system developer to create a large-scale metadata integration and transaction management system, founded on an ontology-based metamodel. Previous versions of this system have utilized lightweight schema and conventional Semantic Web technologies such as OWL. This has become unwieldy, and does not take advantage of latest technologies. Our current version employs formal ontology development in the logical language of SUO-KIF and involves reuse of an extension of a large formal ontology – the Suggested Upper Merged Ontology (SUMO) - and its associated ontology management system, called Sigma. In particular, integration with a large ontology will give the Rightscom model greater coverage of more domains and expand business opportunities to supporting more kinds of transaction management applications. By utilizing an open source technology core, Rightscom will be able to leverage a larger and more robust set of technologies for our clients than would be possible with a proprietary system developed entirely in house. A key challenge in this work is maintaining customer-specific vocabularies and descriptions that are more appropriate in different contexts than the generic explanations in SUMO, that also conform to the central SUMO model.

CURRENT SITUATION

The 21st century has already seen a revolution in the provision of media content in digital form. In many domains, from academic articles to teenage rock band recordings, on-line delivery has become the method of choice for the consumer, and therefore the producer. In most other domains
it seems certain to follow before the century is a quarter through.

This seismic shift away from the physical to the virtual has created an identity crisis in the content industries, and a corresponding headache for systems developers. Businesses such as record companies, journal and book publishers which for decades (and in some cases, centuries) have dealt with the creation and distribution of physical products, typically specializing in one particular mode such as print or audio, are inhabiting a strange new world which challenges every commercial assumption and operates at increasingly frightening levels of granularity. In a domain where anyone anywhere can produce and exploit media of any type in any combination then everyone in the value chain is – to some degree - a multimedia producer, rights controller, aggregator and provider. A parallel identity crisis is overshadowing the library world.

In this situation there is a rapidly growing need for formal ontology. The scope of content metadata – whether for workflow, description or rights management – has burst the banks of traditional methodologies.

Rightscom\(^1\) is a content/media industry consultancy providing advice and technology in this marketplace. It has developed a data architecture (the Contextual Ontologyx Architecture or COA) to meet the requirement for flexible and extensible metadata management. Rightscom’s ontology-based solutions operate under the brand name Ontologyx.

The COA evolved from earlier work in the <indecs> project\(^2\), particularly concerned with establishing interoperability in multi-media rights and policy metadata. However, its MetaModel is not domain specific.

The COA is based on a conceptual data model (the Context Model) extensible to any level of granularity into domain ontologies. The COA approach aims to combine the best principles of data modelling, taxonomy and formal ontology. The expression of COA which is used as the basis of application and ontologies is the COA MetaModel, which extends the Context Model with a number of standard attribute types.

With the COA MetaModel as its basis, Rightscom has developed a large ontology (or more accurately, a group of integrated ontologies) covering media, “content” and rights.

COA is being applied in three main ways. The first is in industry messaging standards. The music industry’s DDEX\(^3\) message standards (for reporting online music content, usage and accounting) are managed by Ontologyx through a COA ontology. The prototype text industry licensing messages (ONIX For Licensing Terms\(^4\)) is based on the COA MetaModel. The MPEG21 Rights Data Dictionary, ISO 21000-6 (ISO 21000-6, 2005) is based on an earlier iteration of the indecs/COA modelling.

Secondly, the COA MetaModel and ontology is used as a basis for systems design. The use case referenced in this chapter is for the design of a new rights management system an international multi-media rights and product licensing organization to be implemented in 2008. The client has office in four continents, licensing the use of music, text and other media such as audio and video clips and printed music to a variety of organizations and institutions. Its market is primarily business to business but with some movement into direct consumer services. The scope and complexity of its business is growing steadily.

Thirdly, the MetaModel and ontology is used as a basis for a ‘Translator’ tool providing many-to-many transformations between different metadata schemas. This tool is also used in the current client implementation\(^5\).

The client in this use case is an archetypal “rights intermediary”: an organization managing the exploitation of rights, most but not all of which have been acquired from others. The systems requirement they face is characteristic of all rights intermediaries in the digital age, and can be summarised as the requirement to be able to manage any kind of right in any kind of resource
Related Content

E-Retail Adoption in Emerging Markets: Applicability of an Integrated Trust and Technology Acceptance Model
[www.igi-global.com/article/e-retail-adoption-in-emerging-markets/157393?camid=4v1a](www.igi-global.com/article/e-retail-adoption-in-emerging-markets/157393?camid=4v1a)

The Personalization Privacy Paradox: Mobile Customers’ Perceptions of Push-Based vs. Pull-Based Location Commerce
[www.igi-global.com/chapter/personalization-privacy-paradox/41240?camid=4v1a](www.igi-global.com/chapter/personalization-privacy-paradox/41240?camid=4v1a)

Information and Technology Management (ITM): Competitive Advantage through Customer Relationship: The Case of an Automobile Dealership
[www.igi-global.com/chapter/information-technology-management-itm/50774?camid=4v1a](www.igi-global.com/chapter/information-technology-management-itm/50774?camid=4v1a)

Social Implications of Distance Education in Alaska
[www.igi-global.com/chapter/social-implications-distance-education-alaska/29129?camid=4v1a](www.igi-global.com/chapter/social-implications-distance-education-alaska/29129?camid=4v1a)