



METADATA

in the

DIGITAL LIBRARY

Building an Integrated Strategy with XML



RICHARD GARTNER

สำนักหอสมุด มหาวิทยาลัยเชียงใหม่

965

2450-

• 61658882
• 6165885
• 22065886

Metadata in the Digital Library

Building an Integrated Strategy with XML



Richard Gartner

๒๔๕.๖.๐ .-

Contents

Figures and tables	xi
Acknowledgements	xiii
List of abbreviations	xv
1 Introduction, Aims and Definitions	1
1.1 Origins	1
1.2 From information science to libraries	2
1.3 The central place of metadata	4
1.4 The book in outline	6
2 Metadata Basics	9
2.1 Introduction	9
2.2 Three types of metadata	10
2.2.1 Descriptive metadata	10
2.2.2 Administrative metadata	14
2.2.3 Structural metadata	18
2.3 The core components of metadata	19
2.3.1 Syntax	19
2.3.2 Semantics	20
2.3.3 Content rules	21
2.4 Metadata standards	23
2.5 Conclusion	23
3 Planning a Metadata Strategy: Basic Principles	25
3.1 Introduction	25
3.2 Principle 1: Support all stages of the digital curation lifecycle	25
3.3 Principle 2: Support the long-term preservation of the digital object	27
3.4 Principle 3: Ensure interoperability	29
3.5 Principle 4: Control metadata content wherever possible	30
3.6 Principle 5: Ensure software independence	31

3.7 Principle 6: Impose a logical system of identifiers	32
3.8 Principle 7: Use standards whenever possible	32
3.9 Principle 8: Ensure the integrity of the metadata itself	33
3.10 Summary: the basic principles of a metadata strategy	34
4 Planning a Metadata Strategy: Applying the Basic Principles	37
4.1 Introduction	37
4.2 Initial steps: standards as a foundation	37
4.2.1 'Off-the shelf' standards	38
4.2.2 Mapping out an architecture and serialising it into a standard	40
4.2.3 Devising a local metadata scheme	43
4.2.4 How standards support the basic principles	45
4.3 Identifiers: everything in its place	45
5 XML: The Syntactical Foundation of Metadata	53
5.1 Introduction	53
5.2 What XML looks like	54
5.3 XML schemas	56
5.4 Namespaces	57
5.5 Creating and editing XML	60
5.6 Transforming XML	62
5.7 Why use XML?	65
6 METS: The Metadata Package	67
6.1 Introduction	67
6.2 Why use METS?	67
6.3 The METS architecture	69
6.4 Identifiers within METS	70
6.5 The METS root element	71
6.6 The METS Header	72
6.7 Descriptive Metadata Section	73
6.8 Administrative Metadata Section	74
6.9 The File Section	77
6.10 The Structural Map	82
6.11 Structural Links and Behavior Section	85
6.12 Creating and using METS in practice	87
7 Descriptive Metadata: Semantics	89
7.1 Introduction	89
7.2 Dublin Core	89

7.3	MODS – the Metadata Object Description Schema	93
7.4	MARCXML	99
7.5	Other descriptive metadata standards	101
7.5.1	VRA Core	102
7.5.2	Text Encoding Initiative P5 Manuscript Description	102
7.5.3	Schemas from the sciences and social sciences	103
7.5.4	Using these schemas	103
7.6	Descriptive metadata: from semantics to content rules	104
8	Descriptive Metadata: Content Rules	105
8.1	Introduction	105
8.2	Why content rules are needed	105
8.3	Cataloguing rules	107
8.3.1	Established standards for cataloguing rules	108
8.4	Devising local guidelines	110
8.5	Controlled vocabularies	117
8.5.1	Name authorities	118
8.5.2	Subjects	121
8.5.3	Codes and dates	123
8.6	Creating local name authorities and thesauri: the MADS schema	124
9	Administrative and Preservation Metadata	127
9.1	Introduction	127
9.2	PREMIS: an overview	129
9.2.1	Technical metadata: the PREMIS Object entity	130
9.2.2	Digital provenance metadata: the PREMIS Event and Agent entities	133
9.2.3	Rights metadata: the PREMIS Rights entity	136
9.2.4	Using PREMIS with METS	138
9.3	Other useful schemas for administrative metadata	139
9.3.1	Technical metadata	139
9.3.2	Rights metadata	143
9.4	How much administrative metadata do we need?	145
10	Pathways to Interoperability	147
10.1	Introduction	147
10.2	Exchanging METS files	148
10.3	Metadata harvesting	151
10.4	The Semantic Web	153
10.5	Conclusion	157

11 Implementing the Strategy: Two Case Studies	159
11.1 Introduction	159
11.2 The Warburg Digital Library	159
11.3 The Warburg Iconographic Database	166
11.4 Conclusion	172
12 Summary and Conclusions	173
12.1 Introduction	173
12.2 The strategy in outline	173
12.2.1 The basic principles of a metadata strategy (Chapter 3)	173
12.2.2 Standards and identifiers (Chapter 4)	174
12.2.3 Syntax (Chapter 5)	175
12.2.4 Packaging the metadata (Chapter 6)	175
12.2.5 Descriptive metadata (Chapter 7)	175
12.2.6 Content rules (Chapter 8)	176
12.2.7 Administrative and preservation metadata (Chapter 9)	177
12.2.8 Enabling interoperability (Chapter 10)	178
12.3 Conclusions	178
Appendix: Sample MODS File Serialised from Data Model	181
Useful Resources	183
Key metadata standards referenced	183
Supplementary documentation and resources	185
Further Reading	189
References	195
Index	197