

UNDERSTANDING METADATA

WHAT IT IS, WHY WE NEED IT, & HOW WE USE IT

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August 17th 2019



OUTLINE

I. What is metadata?

- A. What's always been there
- B. Structure made clear
- C. An architecture of language

II. Why do we need metadata?

- A. Discoverability
- B. Interoperability
- C. Improved data management

III. How do we use and create metadata?

- A. Systems and tools
- B. Collection needs
- C. Data dictionaries

IV. Summary

WHAT IS METADATA?

What's Always Been There

Structure Made Clear

An Architecture of Language

METADATA: WHAT'S ALWAYS BEEN THERE!

- ▶ **Metadata = Underlying structure** of bibliographic resource description
 - ▶ We know the typical information we use to find a resource
 - ▶ We know what these values are/how they're organized intuitively
 - ▶ But computers don't!
- ▶ **Metadata = “Data about data” for machine readability**

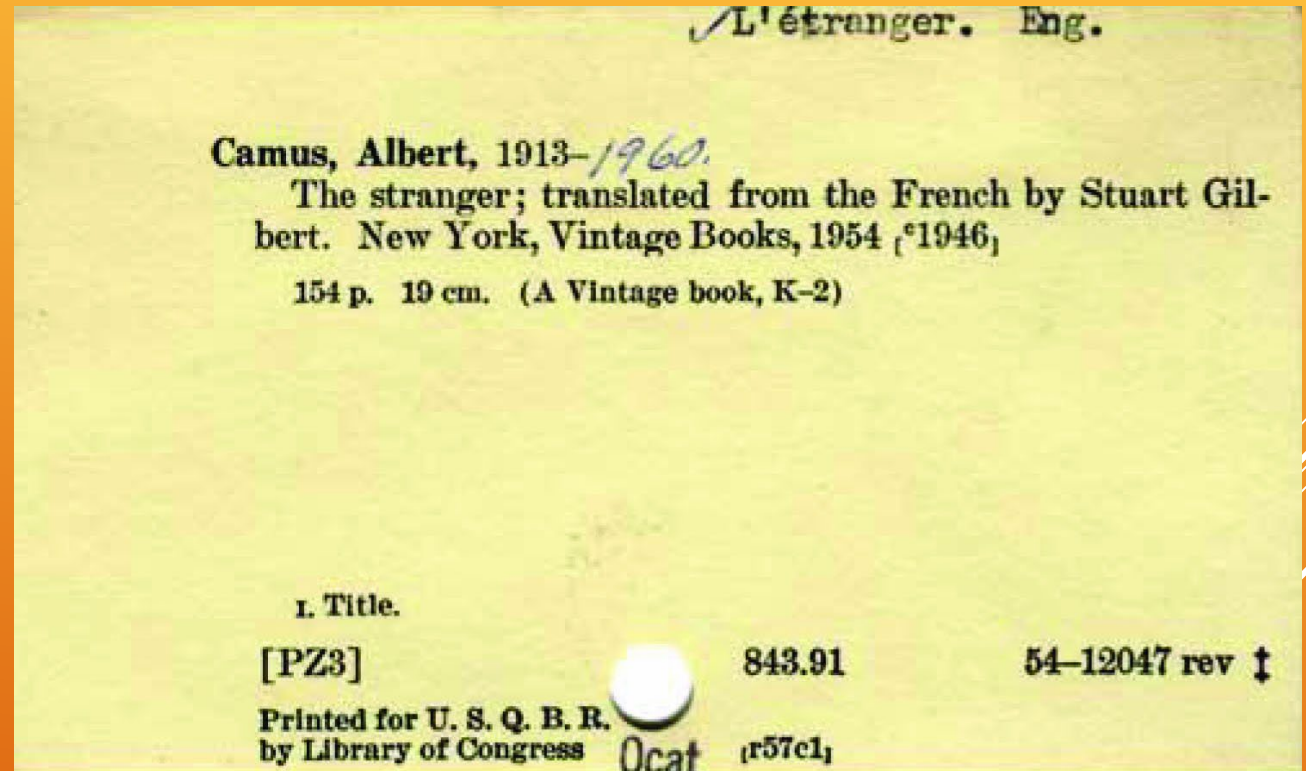


Image retrieved from:

Chronical Books (2013, Oct.) Card Catalog: 30 Notecards from the Library of Congress. Amazon. 1 Aug. 2019. Retrieved from: <https://www.amazon.in/Card-Catalog-Notecards-Library-Congress/dp/1452114323>.

Metadata is bibliographic description digitized!

METADATA: STRUCTURE MADE CLEAR

- ▶ **Metadata = bibliographic description for digital discoverability**
 - ▶ How you **organize** resource description
 - ▶ How you **label** aspects of resource description
 - ▶ How you **format** values for resource description
- ▶ **Clearly labeled data = increased resource retrieval**
 - ▶ Search queries matched with labeled data values
 - ▶ Most relevant resources turn up

```
<?xml version="1.0" encoding="utf-8"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:dc="http://purl.org/dc/elements/1.1/">
  <rdf:Description>
    <dc:title>Homage to Catalonia,</dc:title>
    <dc:creator>Orwell, George,1903-1950.</dc:creator>
    <dc:type>text</dc:type>
    <dc:publisher>London, Secker and Warburg</dc:publisher>
    <dc:date>[1938]</dc:date>
    <dc:language>eng</dc:language>
  </rdf:Description>
</rdf:RDF>
```

Image retrieved from:

Wikimedia Commons (n.d.) File:Dublin core.jpg. *Wikimedia Commons*. 4 Aug. 2019. Retrieved from: https://commons.wikimedia.org/wiki/File:Dublin_core.jpg.

Goal: Resource discoverability and user access

METADATA: AN ARCHITECTURE OF LANGUAGE

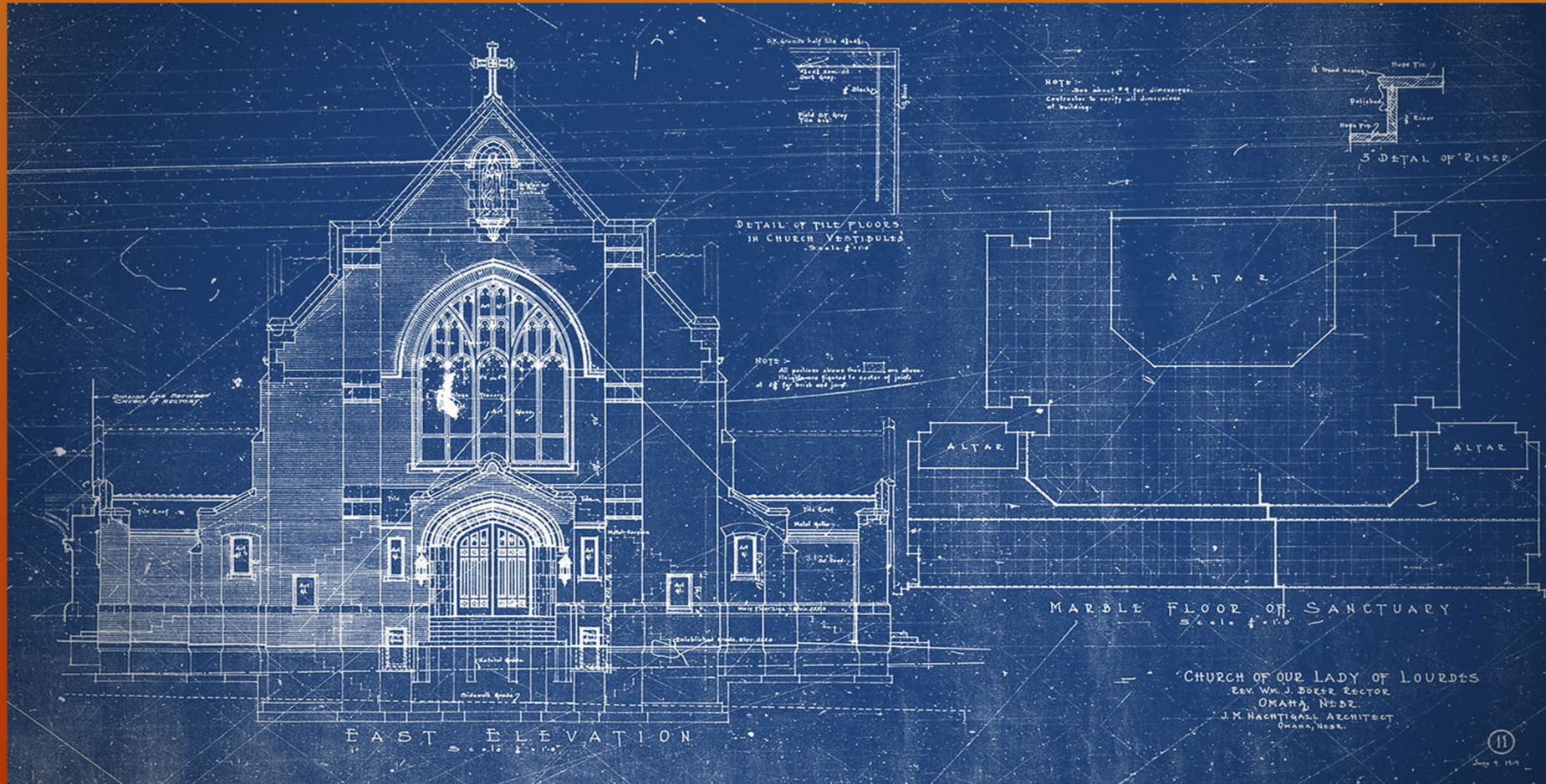


Image
retrieved from:
Hightower, B.
(2016.) Just Don't
Call Them
Blueprints.
HiWorks. 12 Nov.
2018. Retrieved
from:
<https://www.hiworks/blog/2016/2/15/just-dont-call-them-blueprints>.

Every blueprint needs doors & windows...

WHY DO WE NEED METADATA?

Discoverability

Interoperability

Improved Data Management

DISCOVERABILITY: PRECISE LANGUAGE

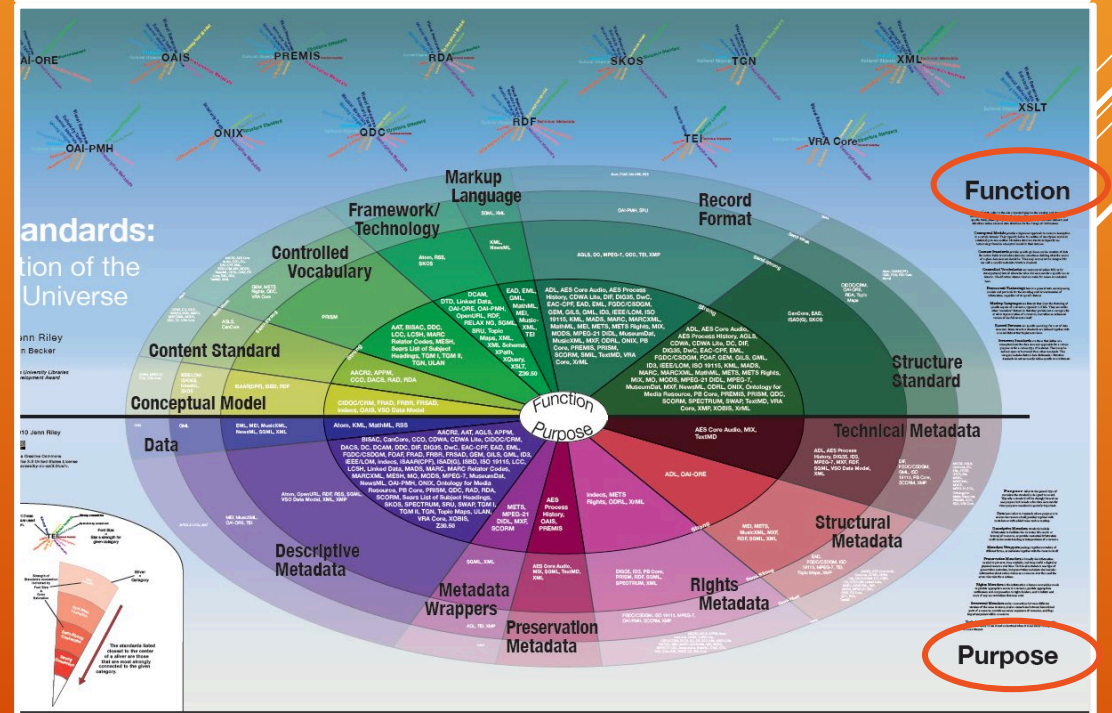
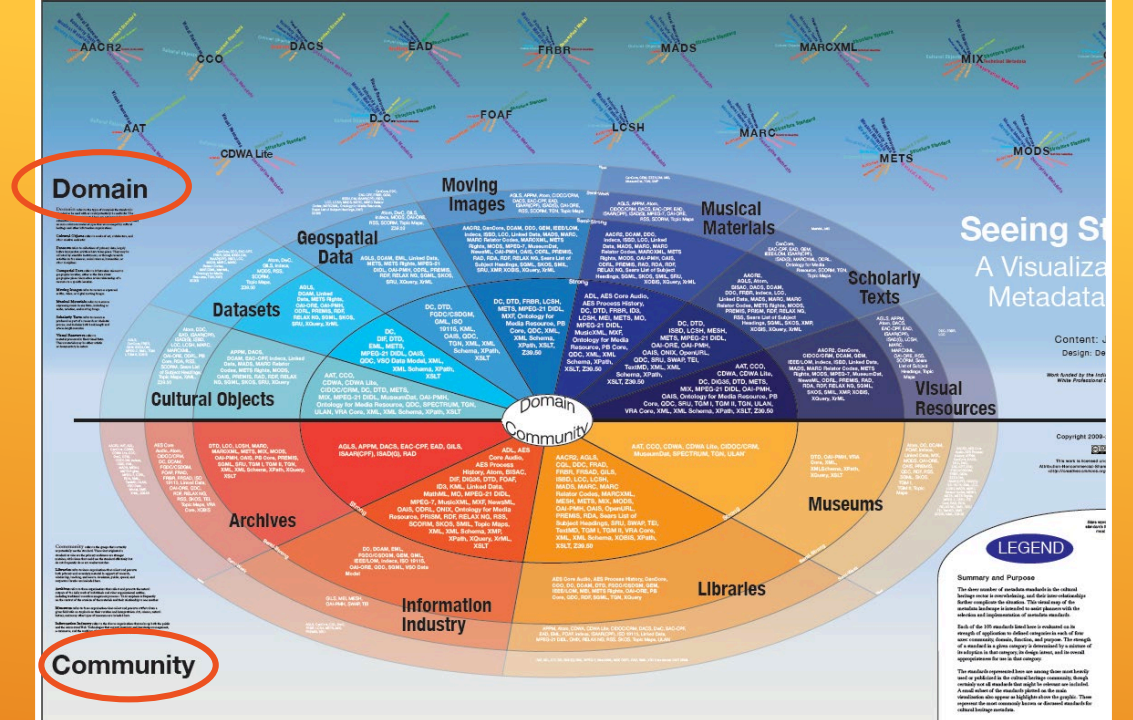
- ▶ Words/descriptors become access points
- ▶ What details enable user access?
 - ▶ Content
 - ▶ What is a resource/collection **about**?
 - ▶ What resources does a collection **contain**?
 - ▶ Who created/contributed to a collection?
 - ▶ Context
 - ▶ How did this resource/collection come to be?
 - ▶ When were contents created?
 - ▶ Why is this resource/collection important?
 - ▶ What other materials may be relevant?
- ▶ What schemas/vocabularies best capture this description?

More description = greater discoverability

INTEROPERABILITY: UNIVERSAL LANGUAGE

- ▶ Goal: comprehensible, exchangeable metadata
- ▶ Open metadata standards
 - ▶ Non-proprietary
 - ▶ Widely adopted
 - ▶ Committed, knowledgeable development teams
- ▶ Controlled vocabularies
 - ▶ Consistent terminology
 - ▶ Authority terms

Riley, J. (2010.) Seeing Standards: A Visualization of the Metadata Universe. Indiana University Libraries.



EFFICIENT DATA MANAGEMENT: CONSISTENT LANGUAGE

▶ Expanded & Improved Metadata

- ▶ Greater resource description
- ▶ Improved resource maintenance
- ▶ Accountability
- ▶ Includes:
 - ▶ Preservation Metadata
 - ▶ Technical Metadata
 - ▶ Administrative Metadata
 - ▶ Structural Metadata
 - ▶ Contextual Metadata
 - ▶ Historical context
 - ▶ Research context

▶ Repositories

- ▶ Safe, controlled environments
- ▶ Established authorities & metadata protocols
- ▶ Batch processing & automated workflows
 - ▶ Efficient management
 - ▶ Uniform practices

▶ Data Manipulation & Analysis Tools

- ▶ Conform huge quantities of metadata
- ▶ Consistent metadata = accurate data

Good metadata improves digital management practices.

HOW DO WE USE & CREATE METADATA AT OSU?


Systems and Tools

Collection Needs

Data Dictionaries

SYSTEMS & TOOLS: WHAT RESOURCES DO WE HAVE?

- ▶ Our team works with 2 content management systems:
 - ▶ CONTENTdm (OSU Digital Collections)
 - ▶ DSpace (ShareOK)
- ▶ Both use Qualified Dublin Core (DC Terms)
 - ▶ 15 fields
 - ▶ DC: The “Founding Father” of metadata schemas!
 - ▶ Can supplement with local customized metadata as needed
- ▶ Each system has specific rules for element usage and value formats



Dublin Core Elements		
Rights	Contributor	Creator
Subject	Coverage	Title
Publisher	Identifier	Description
Type	Date	Source
Relation	Format	Language

Image retrieved from:

SERP GO. (6 March 2019). Dublin Core Metadata Element Set and Schema [Blog post]. <https://www.serpgo.com/dublin-core-metadata-element-set-and-schema/>.

What metadata parameters are there?
How can we use them to meet our needs?

COLLECTION NEEDS: WHAT MATERIAL DO WE HAVE TO DESCRIBE?

- ▶ **Collection contents vary**
 - ▶ Text-based research papers will be treated differently from images
 - ▶ Even similar types of material will be treated differently
 - ▶ Student theses vs. faculty publications
 - ▶ Photographs vs. posters
- ▶ **Systems have established rules**
 - ▶ Precise elements available
 - ▶ Acceptable value formats (punctuation)
- ▶ **We have to analyze and determine what available elements best answer our resource description needs**

**What guidelines do we need to set up for metadata creation?
What will cover collection needs while respecting system setup?**

DATA DICTIONARIES: OUR GUIDELINES TO METADATA CREATION

- ▶ **Data dictionary = set of guidelines on how to create metadata for a particular collection**
 - ▶ **Lists fields/elements to use**
 - ▶ **Stipulates value formats and/or standard values**
 - ▶ **Dates**
 - ▶ **Language**
 - ▶ **Contributor names**
 - ▶ **Points to resources/registries for additional values/information on the field**
 - ▶ **Type values**
 - ▶ **Name standardization**
 - ▶ **Illustrates other formatting rules affiliated with DSpace and CONTENTdm**
- ▶ **Each collection will have a data dictionary**

You have help! When in doubt, feel free to ask!

YOUR GUIDEBOOK

DataDictionary_ETD_scanned - Excel

File Home Insert Page Layout Formulas Data Review View Acrobat Tell me what you want to do... Madison Chartier Share

Clipboard Font Alignment Number Styles Cells Editing

E17

	A	B	C	D	E	F	G	H
1	Field Name	Value	Schema	Comments	Registry	Examples		
2	filename			should match file and osu.filename				
	dc.contributor.advisor			Enter last name, first name middle name, suffix. Use a space between initials.		Ghemjar, A. J.		
3								
	dc.contributor.author			Enter last name, first name middle name, suffix. Use a space between initials.		Acay, Lemi Daghan		
4								
	dc.contributor.committeeMember			Enter last name, first name middle name, suffix. For multiple authors enter all in one field. In DSpace the names will be separated by double pipelines () and no space. Use form of the name for OSU authors, if found, from the OSU Graduate Faculty Database. Use a space between initials. http://graduatefaculty.okstate.edu/				
5								
	dc.date.issued		W3C-DTF	yyyy-mm-01. Unless other day is specified, then enter as YYYY-MM-DD use abstract supplied by author		Chandler, J. P. Leslie, David, Jr. 2004-05-01		
6								
	dc.description.abstract							
7								
	dc.format	application/pdf	IMT					
8								
	dc.rights	Copyright is held by the author who has granted the Oklahoma State University Library the non-exclusive right to share this material in its institutional repository. Contact Digital						

Sheet1

Ready

FROM DICTIONARY TO METADATA

Data Dictionary

Field Name	Value	Schema	Comments	Registry	Examples
dc.contributor.advisor			should match file and osu filename. Enter last name, first name middle name, suffix. Use a space between initials.		Ghemjar, A. J.
dc.contributor.author			Enter last name, first name middle name, suffix. Use a space between initials.		Acay, Lemli Daghan
dc.contributor.committeeMember			Enter last name, first name middle name, suffix. Use a space between initials.		
dc.date.issued		W3C-DTF	Use a space between initials. http://graduatefaculty.okstate.edu/yyyy-mm-01. Unless other day is specified, then enter as YYYY-MM-DD use abstract supplied by author		Chandler, J. P. Leslie, David, Jr. 2004-05-01
dc.description.abstract					
dc.format	application/pdf	IMT			
dc.rights	Copyright is held by the author who has granted the Oklahoma State University library the non-exclusive right to share this material in its institutional repository. Contact Digital				

- Excel Workbook
- Elements on the left
- Instructions on formatting
- Examples of possible/expected values
- Links to additional resources

Metadata file

ID	dc.contributor.advisor	dc.contributor.author	dc.date.issued	dc.description.abstract	dc.format	dc.rights	dc.subject
00047263	Ferrill, M. Palmer	Willard, Edward Pay;Shahmin, James E.	5/1/1970		application/pdf	http://hdl.handle.net/en_US	Engineering
00046672	Ewing, Larry L.	Venkatasubshu, Ganu;Desjardins, Claude	5/1/1970		application/pdf	http://hdl.handle.net/en_US	Physiology
0010c3da	Scruggs, M. Marguer	Bierbauer, Ruth Ann;Jorgenson, O. Elaine	5/1/1997		application/pdf	http://hdl.handle.net/en_US	Home Economics
001595e8	Mapo, Harry P.	Lehr, John A.;7a3k3Eppin, Francis M.	5/1/1997		application/pdf	http://hdl.handle.net/en_US	Agricultural Economics
0018c8ba	Wiebelt, John A.	Williams, Roger Alle Norton, Joseph R.	5/1/1967		application/pdf	http://hdl.handle.net/en_US	Mechanical Engineering
001c68b3	Hansen, Don B.	Wichitsavong, Tha Meek, Gary K. Nab, 7/1/2007		This study examines	application/pdf	http://hdl.handle.net/en_US	Accounting
002d4716	Brown, Pamela U.	Mosdenbach, Joy Lynn Davis, Charles Robert		This qualitative stud	application/pdf	http://hdl.handle.net/en_US	Education
0033c4f6	Key, James P.	Quarles, Thomas Adi;Terry, Howard Robert			application/pdf	http://hdl.handle.net/en_US	Agricultural Education
003718e1	Powell, Richard C.	Hashmi, Faqir Mian;Bandy, Donna K. W, 7/1/1992			application/pdf	http://hdl.handle.net/en_US	Physics
0044f042	Johannes, Arland H.	Yoo, Hong Jim;7d7f9 Robinson, Robert Lo	5/1/1993		application/pdf	http://hdl.handle.net/en_US	Chemical Engineering
0047613a	Hair, J. Alexander	Garris, Glen Irwin;2 Sauer, John R. Hon			application/pdf	http://hdl.handle.net/en_US	Entomology
00577704	Kenney, Mary Alice	Sandoval, Wendy M;Winterfeldt, Esther	7/1/1982		application/pdf	http://hdl.handle.net/en_US	Home Economics
005e9f5c	Kavanaugh, Raphael	Martin, Lynda;atsa Leonog, Jerrold K. W, 5/1/1996			application/pdf	http://hdl.handle.net/en_US	Human Environmental Science
005f1b39	Omtvedt, Irvin T.	Cunningham, Peter J;Whiteman, Joe Bee	5/1/1969		application/pdf	http://hdl.handle.net/en_US	Animal Breeding
0062e723	Wilson, Rick L.	Hardgrave, Billy Chai;Eastman, Kenneth K.	7/1/1993		application/pdf	http://hdl.handle.net/en_US	Business Administration
00696426	Jorgenson, D. Elaine	Miller, Karen Payne;Sisker, Orvalynn P			application/pdf	http://hdl.handle.net/en_US	Home Economics
0069e9ef	Beames, Calvin G., Jr	Noble, Donald James;Newcomer, W. Stan			application/pdf	http://hdl.handle.net/en_US	Physiological Sciences
006b2eb3	Murphy, Phillip J.	McSwain, Nancy Hall;Sandvold, Kenneth C.	7/1/1978		application/pdf	http://hdl.handle.net/en_US	Psychology
007cc7e6	Jungers, Richard P.	Tontz, Len Elmer;f0:St. Clair, James Kenr	7/1/1976		application/pdf	http://hdl.handle.net/en_US	Educational Administration
0080504b	Crow, Frank R.	Manges, Harry Leo;3 Schroeder, E. W. S	8/1/1969		application/pdf	http://hdl.handle.net/en_US	Engineering
009f68d1	Lay, Tyler	Chahghosh, Mostafa;Russell, Bruce W. E, 7/1/2012		Improved methods	application/pdf	http://hdl.handle.net/en_US	Civil and Environmental Engineering
00a1a6bb	Bronsen, B. Wade	Tumussime, Ermani;Eppin, Francis M.		This dissertation con	application/pdf	http://hdl.handle.net/en_US	Agricultural Economics
00b125ad	44fa-4630-a13a-eeb Simpson, Michael L.;12cd452-2e4e-dfff			Qualitative research Teaching and Curriculum Leads	application/pdf	http://hdl.handle.net/en_US	Education
00b43dd1	12bb-4fc9-a13b-f712 Loezt Urquiola, Erick R.;:bb24336d7-75fb-41		5/1/2012	Compared to natural	application/pdf	http://hdl.handle.net/en_US	Veterinary Pathobiology
00b597d3	Marsden, W. Ware	Christensen, Roland Berg; Milton E. Got	3/1/1967		application/pdf	http://hdl.handle.net/en_US	Higher Education
00b9e2a2	Sharda, Ramana	Gupta, Ashish;7881Wilson, Rick L. Het	5/1/2007		application/pdf	http://hdl.handle.net/en_US	Management Science and Information Systems
00c544de	West, John B.	Waite, David Alan; Norton, Joseph R.	5/1/1972	While emails have i	application/pdf	http://hdl.handle.net/en_US	Management Science and Information Systems
00cc38be	Yen, Gary G.	Lee, Seok-Beom;32:Whiteley, James Rot	5/1/2002		application/pdf	http://hdl.handle.net/en_US	Electrical Engineering
00d43ad3	Usry, Milton F.	Crosser, Rick Lynn;3:Kimbrell, Janet L. H			application/pdf	http://hdl.handle.net/en_US	Business Administration
00e56e3c	Moretti, Peter M.	Cutbirth, James W.;:Lowery, R. L. Yhaja			application/pdf	http://hdl.handle.net/en_US	Mechanical Engineering
00e72010	Eisenberg, Margaret Sun, Tzeli Julia;377d Metchev, Ulrich Gh		7/1/1987	This thesis is divid	application/pdf	http://hdl.handle.net/en_US	Biochemistry
00e7ae6b	Katz, Sheldon	Zerger, Thomas E.;4 Coggeli, James W.	5/1/1996		application/pdf	http://hdl.handle.net/en_US	Mathematics

- Comma-separated values file (.CSV)
- Elements are header row
- Each row will be a record
- Each cell contains appropriate metadata following DD guidelines

WHAT YOU CREATE!

remed_preppedForStudents - Excel

File Home Insert Page Layout Formulas Data Review View Acrobat Tell me what you want to do... Madison Chartier Share

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11 A A Wrap Text General Normal Bad Good Neutral Calculation Check Cell

id

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
1	id	dc.contrib	dc.contrib	dc.contrib	dc.contrib	dc.contrib	dc.contrib	dc.date.is	dc.date.is	dc.descrip	dc.descrip	thesis.deg	dc.descrip	dc.descrip	dc.format	dc.format	dc.identif	dc.identif	dc.langua	dc.langua	dc.note[]	dc.publish	dc.publish	dc.relatio	dc.right
2	000f2e1-	Terrell, M. Palmer	Willard, Edward Pay	Shamblin, James E.	5/1/1970						Engineering			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
3	00046d71-	Ewing, Larry L.	Venkateshshu, Ganj	Desjardins, Claude	5/1/1970						Physiology			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
4	0010c3da-	Scruggs, M. Marguer	Bierbower, Ruth Anr	Jorgenson, D. Elaine	#####						Home Economics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
5	001595e8-	Mapp, Harry P.	Lehr, John A.::47a33	Epplin, Francis M.	5/1/1997						Agricultural Economics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
6	0018ccb-	Wiebelt, John A.	Williams, Roger Alle	Norton, Joseph R.	5/1/1967						Mechanical Engineering			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
7	001cc683-	Hansen, Don R.	Vichitsarawong, Tha	Meek, Gary K. Nab	7/1/2007						Accounting			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
8	002dd718-	Brown, Pamela U.	Modenbach, Joy Lyn	Davis, Charles Rober	#####						Education			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
9	0033c4f6-	Key, James P.	Quarles, Thomas Ad	Terry, Howard Rober	#####						Agricultural Education			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
10	003718e1-	Powell, Richard C.	Hashmi, Faqir Mian::	Bandy, Donna K. W	7/1/1992						Physics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
11	0044f042-	Johannes, Arland H.	Yoo, Hong Jin::7fd73	Robinson, Robert Lo	5/1/1993						Chemical Engineering			application/pdf	https://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
12	0047613a-	Hair, J. Alexander	Garris, Glen Irwin::2	Sauer, John R. Hon	#####						Entomology			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
13	00577704-	Kenney, Mary Alice	Sandoval, Wendy Mc	Winterfeldt, Esther	7/1/1982						Home Economics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
14	005e9f5c-	Kavanaugh, Raphael	Martin, Lynda::a95a	Leong, Jerrold K. W	5/1/1996						Human Environmental Science			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
15	005fb199-	Omtvedt, Irvin T.	Cunningham, Peter J	Whiteman, Joe Be	5/1/1969						Animal Breeding			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
16	0062e723-	Wilson, Rick L.	Hardgrave, Billy Cha	Eastman, Kenneth K.	7/1/1993						Business Administration			application/pdf	https://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
17	00696426-	Jorgenson, D. Elaine	Miller, Keren Payne:	Sisler, Grovalynn P	#####						Home Economics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
18	006a9cef-	Beames, Calvin G., Jr	Noble, Donald Jame	Newcomer, W. Stanl	#####						Physiological Sciences			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
19	006b2e3b-	Murphy, Philip J.	McSwain, Nancy Hall	Sandvold, Kenneth C	7/1/1978						Psychology			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
20	007ccc7e-	Jungers, Richard P.	Tontz, Len Elmer::f0:	St. Clair, James Kenr	7/1/1976						Educational Administration			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
21	0085054b-	Crow, Frank R.	Manges, Harry Leo:::	Schroeder, E. W. G	8/1/1969						Engineering			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
22	009fc86d-	Ley, Tyler	Ghashghesh, Mostafa	Russell, Bruce W. E	7/1/2012						Civil and Environmental Engine			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
23	00afa6bb-	Brorsen, B. Wade	Tumusiime, Emman	Epplin, Francis M. t	#####						Agricultural Economics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
24	00b125ad-	44fa-4630-a31a-aebe	Simpson, Michael L.::	12cdad52-2e4e-4dff	#####						Qualitative research			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
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26	00b597d3-	Marsden, W. Ware	Christensen, Roland	Berg, Milton E. Gof	5/1/1967						Higher Education			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
27	00be1ea2-	Sharda, Ramesh	Gupta, Ashish::e788	Wilson, Rick L. Klet	5/1/2007						While emails have ir			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
28	00c5d4de-	West, John B.	Waite, David Alan::8	Norton, Joseph R. I	5/1/1972									application/pdf	http://hdl.handle.n	en_US					Oklahoma State University	Copyrig			
29	00cc38be-	Yen, Gary G.	Lee, Seok-Beom::82:	Whiteley, James Rok	5/1/2002						Electrical Engineering			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
30	00d43ad3-	Usry, Milton F.	Crosser, Rick Lynn::b	Kimbrell, Janet I. H	#####						Business Administration			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
31	00e56e3c-	Moretti, Peter M.	Cutbirth, James W.:::	Lowery, R. L. Yhaja	#####						Mechanical Engineering			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
32	00e72010-	Essenberg, Margaret	Sun, Tzeli Julia::3f7d	Melcher, Ulrich Gh	7/1/1987						This thesis is divide			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		
33	00e7aeeb	Katz, Sheldon	Zerger, Thomas E.::4	Cogdell, James W.	5/1/1996						Mathematics			application/pdf	http://hdl.handle.n	en_US						Oklahoma State University	Copyrig		

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Ready

SUMMARY

- ▶ **Metadata makes a huge impact!**
 - ▶ **Enables resource discoverability**
 - ▶ **Open metadata standards like DC**
 - ▶ **Controlled vocab. & authority terms**
 - ▶ **Improves data management**
 - ▶ **Consistent standardized values = better collection assessment**
 - ▶ **Self-evaluation = continued development**
 - ▶ **Broadens user access**
 - ▶ **OSU and beyond!**
 - ▶ **Digital access = universal access**
- ▶ **We're a key part of that!**

Metadata is what drives modern academic libraries!

THANK YOU!

QUESTIONS?

madison.chartier@okstate.edu