

# SEPARATE, MERGED, AND SEPARATE ONCE AGAIN

Un-mulvering the Mulvered Records

Lucas Mak

Michigan State University Libraries

# Agenda

- ⦿ Background
- ⦿ Project objective
- ⦿ Roadblocks
- ⦿ Design of XSLT
  - Processing logic
  - Sample codes
- ⦿ Results
- ⦿ Limitations

# Background

- ◎ Thesis and dissertation cataloging at Michigan State University Libraries
  - Current practice: Separate-record approach
  - Pre-2007 practice:
    - Mulvered records: Print & Microform on the same record
    - Either:
      - Cataloged print on OCLC and added microform info locally → no record for microform in OCLC
      - Cataloged print and microform separately on OCLC and merged two records into one locally
    - 7387 titles with mulvered records

# Sample Record 1

- Only print format cataloged on OCLC

=LDR 01170ntm a2200289 i 4500

=001 6725371

=007 he\alb---bucu

=008 800918s1978\\|xx|\\|\\|\\|b|\\|\\|00010\eng\d

=035 \\\$a6725371

=040 \\\$aEEM\$cEEM

=049 \\\$aEEMt [c.1]

=099 \\\$a119 661 THS

=100 1\\\$aNell, Arthur Frederick.

=245 14\$aThe perceptions of three groups--pastors, principals, and teachers--regarding the authority/responsibility of pastors and principals in Lutheran elementary schools\$h[paper, microform]/\$cby Arthur Frederick Nell.

- =260 \\\$c1978.
- =300 \\\$a[3], xvii, 272 [i.e.282] leaves ;\$c29 cm.
- =502 \\\$aThesis (Ph.D.) - Michigan State University. Dept. of Administration and Higher Education, 1978.
- =504 \\\$aBibliography: leaves 266-272.
- =533 \\\$aMicrofiche.\$bAnn Arbor, Mich. :\$cUniversity Microfilms,\$d1979.\$e4 microfiche ; 11 X 15cm.
- =610 20\$aLutheran Church\$xEducation.
- =610 20\$aLutheran Church\$xClergy.
- =650 \0\$aSchool principals\$zUnited States.
- =907 \\\$a.b10169568\$b080128\$c980608
- =998 \\\$ath\$amc\$b980604\$cm\$da\$e-\$feng\$gmui\$h4\$i2
- =935 \\\$aAAB7743
- =952 \\\$a.i10190855\$b31293100635014
- =952 \\\$a.i43406956

# Sample Record 2

- Both print and microform cataloged on OCLC

=LDR 01197ntm a2200349la 4500

=001 68121939\ (Paper)

=001 68123932\ (Microfiche)

=003 OCoLC

=005 20060503015036.0

=007 he\amb\\\bac

=008 060503s2005\\|xx\\|\\|\\|\\|bm\\|000\0\eng\d

=035 \\\$a68121939 (Paper)

=035 \\\$a68123932 (Microfiche)

=040 \\\$aEEM\$cEEM

=049 \\\$aEEMT\$aEEM#

=099 \\\$a138 867 THS

=100 1\ \$aKim, Jongbo.

=245 10\$aSouth Korean police officers' job attitudes and job performance \$h[paper, microform] /\$cby Jongbo Kim.

=260 \\\$c2005.

=300 \\\$aix, 81 leaves ;\$c29 cm.

=502 \\\$aThesis (M.S.)--Michigan State University. School of Criminal Justice , 2005.

=504 \\\$aIncludes bibliographical references (leaves 78-81).

=533 \\\$aMicrofiche.\$bAnn Arbor, Mich. :\$cUniversity Microfilms,\$d2006.\$e 1 microfiche ; 11 x 15 cm.

=650 \0\$aPolice\$zKorea (South).

=650 \0\$aPolice\$zKorea (South)\$xAttitudes.

=650 \0\$aVocational guidance.

=650 \0\$aJob satisfaction.

=907 \\\$a.b50020602\$b080204\$c060503

=998 \\\$ath\$amc\$b060503\$cm\$dt\$e-\$feng\$gxx \$h0\$i2

=994 \\\$aC0\$bEEM

=952 \\\$a.i69490405\$b31293027362833

=952 \\\$a.i69490417

# Summary of Main Characteristics

MARC Fields	Characteristics
001	1 (print) or 2 (print, microform)
007	For microform
008	Form of item (byte 23): Blank
099	Call no. for print
245\$h	[paper, microform]
533	Reproduction note for microform
952	\$a: Item record no. for print & microform \$b: Barcode

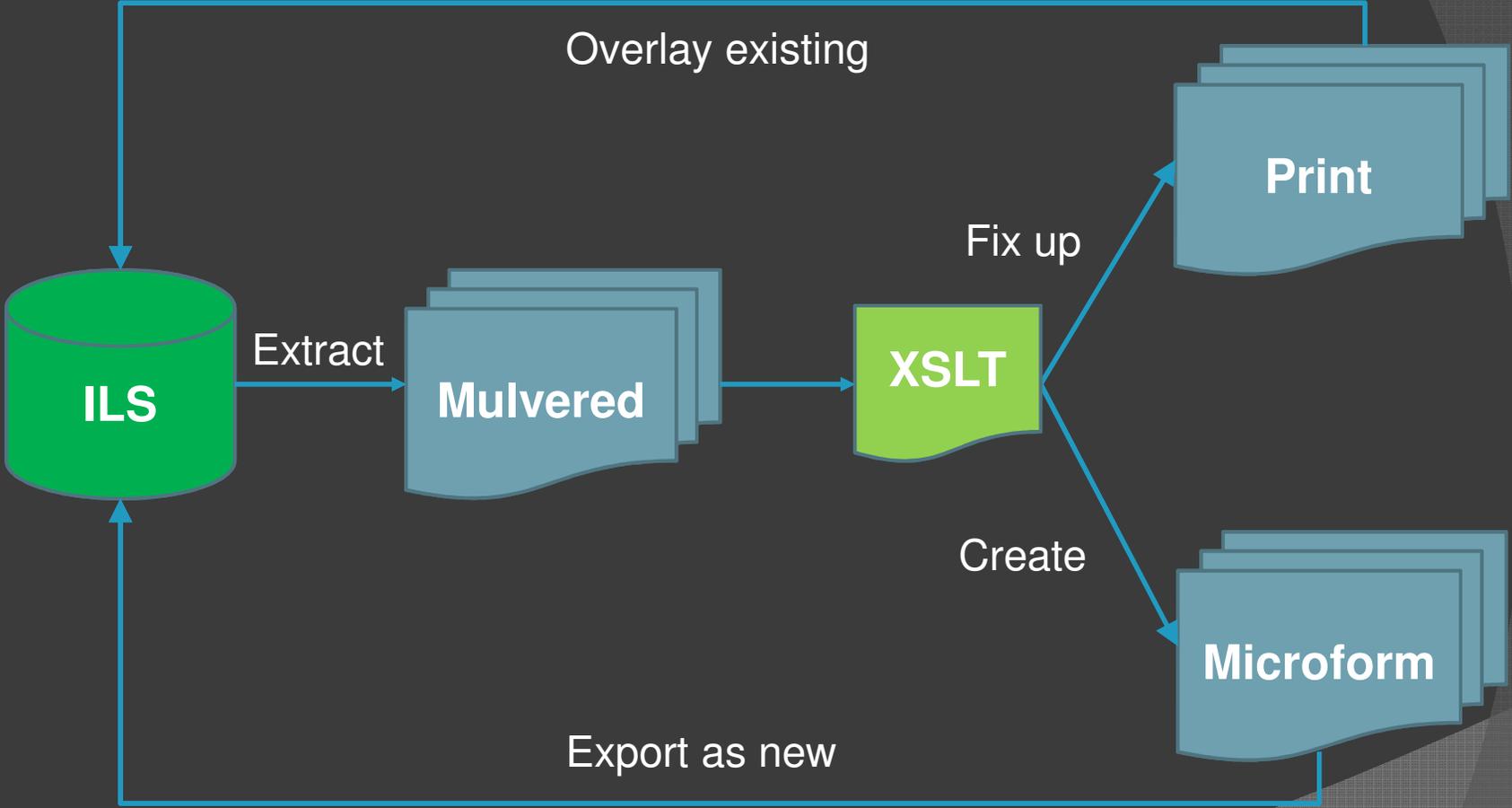
# Objective

## ◎ Un-mulvering

- One record for print, one record for microform
  - Record for print:
    - Turn mulvered record into print record by removing info only pertaining to microform (e.g. 533)
      - Overlay the original record
      - Delete item records pertaining to microform after overlay
  - Record for microform:
    - Create new microform bib record by
      - Transferring data only pertaining to microform to the new record (microform 001, 007, 533)
      - Copying, with/without modification, common data into the new record (008, 245 etc.)
    - Create new item record by copying info from original item record for microform
- To process records by XSLT

- ◎ XSLT (Extensible Stylesheet Language Transformations)
  - Within the family of XML
    - Case sensitive
    - Current version: 2.0
    - Unicode compliant
    - File extension: .xsl
  - “Transformation” means:
    - Manipulation of documents by creating a new document based on the original document
    - Output can be in XML, HTML, XHTML, text, PDF, etc.
  - <template>
    - Contains set of instructions to be executed when a template is called explicitly or invoked based on a matching node
    - Modularity & Reusability
      - Multiple templates in a XSLT
      - Multiple XSLTs in a pipeline
  - Multiple inputs and outputs

# Workflow



# Roadblocks

- ◎ Loss of items over the years
  - 46 titles with print only
  - 11 titles with microform only
  - Need to determine which title has what format(s)
- ◎ Multiple microform formats
  - Some titles have both microfiche and microfilm formats → need to be split into 3 records (1 print, 1 microfiche, 1 microfilm)

# Loss of items

- ⦿ Determine available format by location code in item record
  - “mc” = Microfiche/ Microfilm
  - “th” or other branch locations = Print
  - Most reliable since 049 (location in bib) did not get updated when format was lost/added
- ⦿ Bib records extracted from ILS do not contain item location
  - =952 \\\$a.i69490405\$b31293027362833
  - =952 \\\$a.i69490417

# Export item info separately from ILS

Millennium Cataloging · MSU Libraries · Staff · Lucas Wing Kau Mak

File Edit View Go Tools Admin Reports Help

Create Lists Functions

Review Files

All

Export BIBLIOGRAPHIC Information

Fields to be exported

Line	Type	Field	
1	ITEM	RECORD #	Append
2	ITEM	LOCATION	
3	ITEM	BARCODE	Insert
4	ITEM	CALL #	
5	i	VOLUME	Delete

Field delimiter: ,

Text qualifier: "

Repeated field delimiter: ;

Maximum field length (0-1000): <none>

File:  Browse

OK Apply Saved Export Save This Export Close

Records

File	Title	Created [date/ti...]
196	yer/lc betwe	2-08-2011 / 11:...
195	yer/lc serials	2-08-2011 / 11:...
129	DMC digital c	0-13-2011 / 16:...
147	Merged Thes	2-06-2011 / 11:...
151	MSU ETD De	2-15-2011 / 04:...
106	IDP reprint	3-23-2011 / 18:...
323	LM MeL.Cat p	2-03-2011 / 11:...
327	dewey items	3-26-2010 / 12:...
322	feddoc items	3-26-2010 / 10:...
385	Executive Le	7-07-2009 / 15:...
386	LM Billed Ite	5-02-2011 / 14:...
324	LM patrons r	3-23-2010 / 17:...
366	patron addre	2-11-2009 / 14:...
383	LM patrons e	3-23-2010 / 18:...
376	DELEG, kjw(3	3-05-2009 / 10:...
346	Patron recor	0-21-2010 / 14:...
92	Vinyl project	3-04-2011 / 11:...
77	vet med jour	1-02-2011 / 09:...
118	Math new bo	1-11-2012 / 12:...
74	Vet missing	2-02-2011 / 14:...
336	NEW BOOKS	2-10-2010 / 08:...
482	...	...

- Merge item info into extracted bib by matching up item record no.

```
<itemData>
  <itemNumber>i43406956</itemNumber>
  <callNumber>Nell, A - 4 fiche</callNumber>
  <location>mcths</location>
  <copyNumber>1</copyNumber>
</itemData>
```

```
<marc:datafield tag="952" ind1=" " ind2=" ">
  <marc:subfield code="a">.i43406956</marc:subfield>
</marc:datafield>
```

```
<marc:datafield tag="952" ind1="" ind2="">
  <marc:subfield code="a">.i43406956</marc:subfield>
  <marc:subfield code="c">Nell, A - 4 fiche</marc:subfield>
  <marc:subfield code="d">mcths</marc:subfield>
  <marc:subfield code="g">1</marc:subfield>
</marc:datafield>
```

- Base on item location info in MARC 952 to determine what record(s) to be generated

“mc” & print location(s)

- Print record (overlay)
- Microform record (export as new)

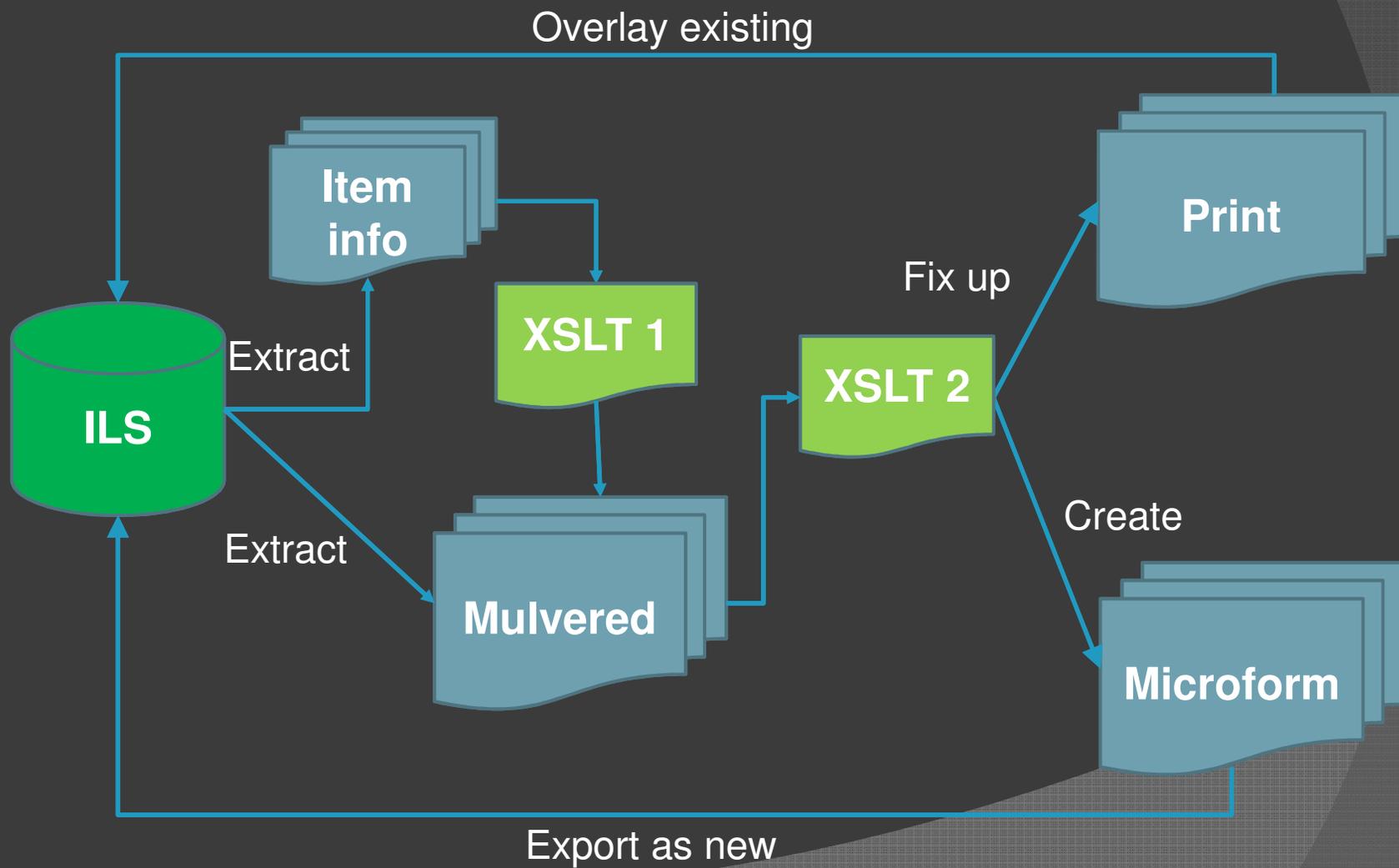
“mc” & NO print locations

- Microform record (overlay)

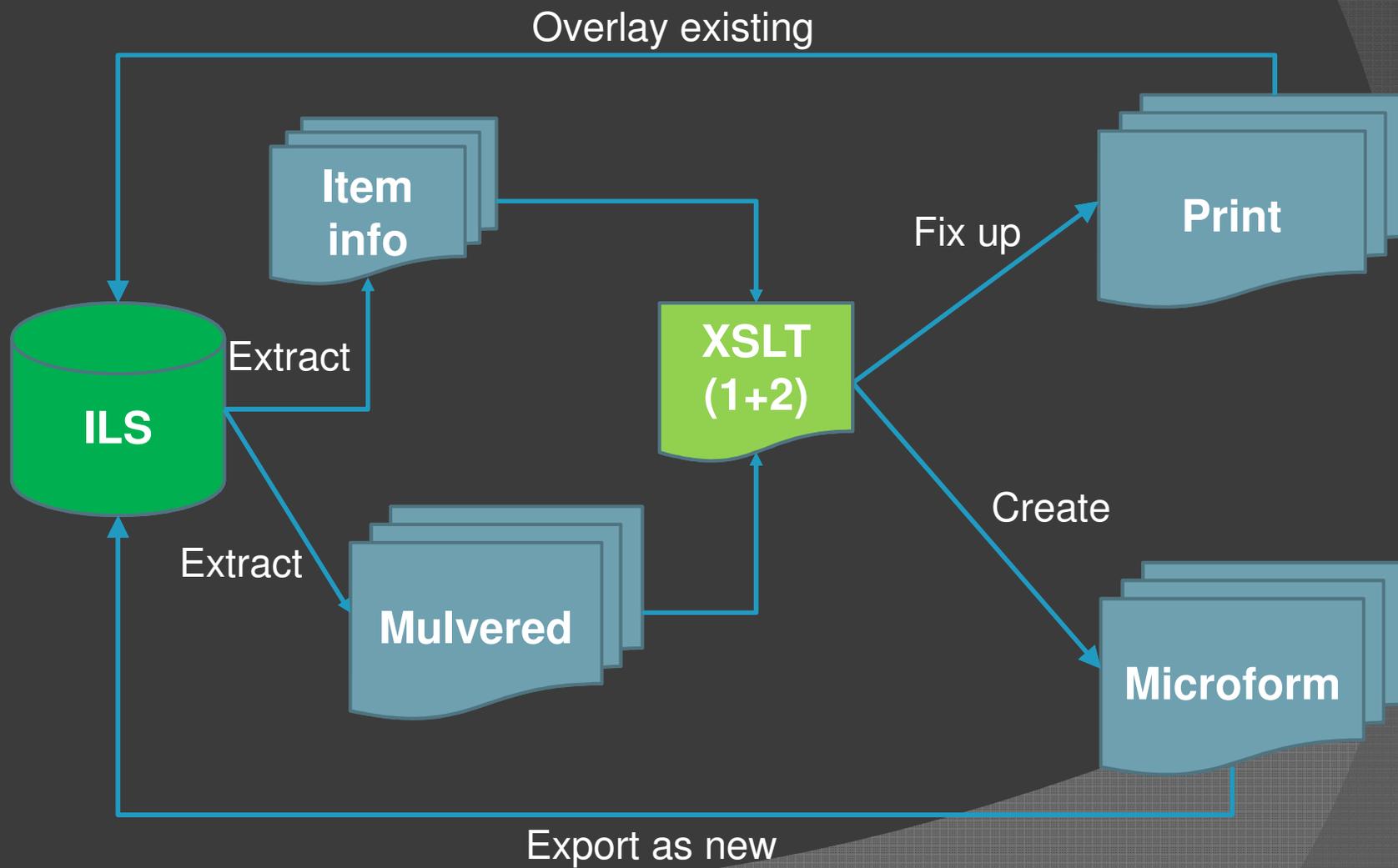
Print location(s) & NO “mc”

- Print record (overlay)

# Workflow



# Alternative workflow



# Multiple microform formats

- ◎ Some titles have microfiche and microfilm on the same record
- ◎ Similarity
  - Both microfiche and microfilm use “mc” as item location
- ◎ Differences
  - Call# system
    - Microfiche: Goetz, S - 3 fiche
    - Microfilm: 24354 THS Microfilm
  - Two MARC 533 (reproduction note)
    - One for microfiche, one for microfilm

- Microfiche

- =533 \\\$a**Microfiche**.\$bAnn Arbor, Mich. :\$cUniversity Microfilms,\$d1979.\$e4 microfiche ; 11 X 15cm.

- Microfilm

- =533 \\\$a**Microfilm**.\$bAnn Arbor, Mich. :\$cUniversity Microfilms,\$d 1973.\$e1 microfilm reel ; 35 mm.

- Solutions

- Base on number of 533 to determine how many microform record(s) to be generated
- Use MARC 533\$a to pull appropriate call# from MARC 952

```
<marc:datafield tag="533" ind1=" " ind2=" ">
  <marc:subfield code="a">Microfiche.</marc:subfield>
  <marc:subfield code="b">Ann Arbor, Mich. :</marc:subfield>
  <marc:subfield code="c">University Microfilms,</marc:subfield>
  <marc:subfield code="d">1990.</marc:subfield>
  <marc:subfield code="e">3 microfiche ; 11 X 15cm.</marc:subfield>
</marc:datafield>
<marc:datafield tag="533" ind1=" " ind2=" ">
  <marc:subfield code="a">Microfilm.</marc:subfield>
  <marc:subfield code="b">Ann Arbor, Mich. :</marc:subfield>
  <marc:subfield code="c">University Microfilms,</marc:subfield>
  <marc:subfield code="d">1990.</marc:subfield>
  <marc:subfield code="e">1 microfilm reel ; 35 mm.</marc:subfield>
</marc:datafield>
```

```
<marc:datafield tag="952" ind1="" ind2="">
  <marc:subfield code="a">.i4190056x</marc:subfield>
  <marc:subfield code="b">31293024285797</marc:subfield>
  <marc:subfield code="c">24354 THS Microfilm</marc:subfield>
  <marc:subfield code="d">mcths</marc:subfield>
  <marc:subfield code="g">1</marc:subfield>
</marc:datafield>
<marc:datafield tag="952" ind1="" ind2="">
  <marc:subfield code="a">.i30010949</marc:subfield>
  <marc:subfield code="b">31293007695152</marc:subfield>
  <marc:subfield code="c">109 460 THS</marc:subfield>
  <marc:subfield code="d">th</marc:subfield>
  <marc:subfield code="g">1</marc:subfield>
</marc:datafield>
<marc:datafield tag="952" ind1="" ind2="">
  <marc:subfield code="a">.i41617502</marc:subfield>
  <marc:subfield code="c">Goetz, S - 3 fiche</marc:subfield>
  <marc:subfield code="d">mcths</marc:subfield>
  <marc:subfield code="g">1</marc:subfield>
</marc:datafield>
```

# Design of XSLT

## Processing logic

- Both print and microform available

- Go through the record twice\*

- 1<sup>st</sup> pass for print record
    - 2<sup>nd</sup> pass for microform record\*

- \* When both microfiche & microfilm are available → 3 passes (print, fiche, film)

- One format available

- Go through the record once (print/ microform\*)

- \* When both microfiche and microfilm are available → 2 passes (one for microfiche, one for microfilm)

- 5 templates
  - Format determination template
  - Print data template
  - Microform templates
    - Microform only (949 overlay command)
    - Microform with print (949 item generation command)
  - Common data template
    - Data common to both formats
    - Reusable

## ◎ Format determination template

1. Parse item location info in MARC 952 as a variable
2. Determine which location(s), aka format(s), is available
3. Invoke different combination of “Print data”, “microform only”, and “microform (with print)” templates accordingly

## ◎ Print data template

- To copy print 001, 049, 245 with adjustment
- To copy 008, 099 as is
- Generate 949 overlay command
- Invoke “common data” template

## ◎ Microform data templates

- To copy microform 001, 008, 245 with adjustment
  - 008: Add “a” (microfilm) or “b” (microfiche) in Form byte (byte 23) based on 533\$a
  - 245\$h: replace “[paper, microform]” with “[microform]”
- To copy 007, 533 as is
- To generate 049, 099
  - 099: Copy call# from item info stored in 952
- 949 command
  - Overlay command if microform is the only available format
  - Item record generation if print is also available
- Invoke “common data” template

## ◎ Common data template

- Copy fields not touched by other templates mostly without adjustment  
e.g. leader, subject headings (6XX), thesis note (502), imprint date (260\$c), physical dimension (300), etc.

# Sample Codes

- Pulling microform call# from item info in 952

<!-- Create a variable called "microformat" -->

```
<xsl:variable name="microformat"
select="replace(marc:datafield[@tag='533']/marc:subfield[@code='a'],'mic
ro','")"/>
```

<!-- Find 952 that has the correct microform call# syntax -->

```
<xsl:for-each
select="marc:datafield[@tag='952'][matches(marc:subfield[@code='
c'],$microformat,'i')]">
```

<!-- Generate MARC 099 -->

```
<marc:datafield tag="099" ind1=" " ind2=" ">
```

```
<marc:subfield code="a">
```

<!-- Copy call# from MARC952\$c -->

```
<xsl:value-of select="marc:subfield[@code='c']"/>
```

```
</marc:subfield>
```

```
</marc:datafield>
```

```
</xsl:for-each>
```

## ◎ 949 item record generation command

<xsl:for-each

select="marc:datafield[@tag='952'][matches(marc:subfield[@code='c'],\$microformat,'i')]">

<marc:datafield tag='949' ind1=' ' ind2='1'>

<!-- Insert "o" (Lib Use Only) as item status -->

<marc:subfield code='s'>o</marc:subfield>

<!-- Insert "mcths" as item location -->

<marc:subfield code='l'>mcths</marc:subfield>

<!-- Test if "barcode no." (952\$b) exists -->

<xsl:if test="marc:subfield[@code='b']">

<marc:subfield code='i'>

<xsl:value-of select="marc:subfield[@code='b']"/>

</marc:subfield>

</xsl:if>

<!-- Test if "volume no." (952\$e) exists -->

<xsl:if test="marc:subfield[@code='e']">

<marc:subfield code='c'><xsl:value-of  
select="marc:subfield[@code='e']"/></marc:subfield>

</xsl:if>

<!-- Copy "Copy no." from 952\$g -->

<marc:subfield code='g'><xsl:value-of  
select="marc:subfield[@code='g']"/></marc:subfield>

<!-- Copy "Call #" from 952\$c -->

<marc:subfield code='a'><xsl:value-of  
select="marc:subfield[@code='c']"/></marc:subfield>

# Results

- ⦿ Total mulvered: 7387 records
- ⦿ Total un-mulvered: 14722 records
  - Microform: 7346 records
  - Print: 7376 records

# Limitations

- ◎ Loan info (history & current status) on microform item records
  - Transfer of current loan status can be included in the process but ...
    - Only meaningful if the whole process is done after library is closed and before it is re-opened
    - Not possible since records for loading need to be reviewed in a record load meeting
  - Solution
    - Original microform item record of title with microform checked out needs to be moved over and attached to new microform bib manually

# Limitations

- ⦿ Linkages between microfilm bib records
  - Multiple titles on one microfilm reel
  - Manually relinked

# Questions?

Lucas Mak  
Metadata & Catalog Librarian  
Michigan State University Libraries  
[makw@mail.lib.msu.edu](mailto:makw@mail.lib.msu.edu)