Discover the Power of DDI Metadata

Monday March 31, 2014 Workshop North American DDI User Conference <naddi>

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Schedule

- Introductions
- Brief background of DDI
- Exercise 1
- Getting started
- Examples
- Integration into a data lifecycle workflow
- Exercise 2
- Wrap-up

Brief Background of DDI

- What is DDI?
 - Data Documentation Initiative
 - http://www.ddi-alliance.org/
- An international specification
 - Not yet a formal ISO standard
 - Goal
- Formats documentation for a social science data file
 - More useful than a word or text file
- Supports the entire research data lifecycle

- Creates a standard format
 - Used to mark up codebooks
 - Meaningful and consistent
 - Metadata is both human and machine readable
- Gives codebook level details such as
 - dataset contents, variable labels, summary Statistics and frequencies
 - Also question text for each variable
 *as long as it was entered when marking up the document

- DDI website (http://www.ddialliance.org/what)
 - Excellent resource
 - FAQ
 - Tools
 - Markup Examples
 - Metadata Resources

- Facilitates the creation of metadata
- Expressed in XML
 - XML Schema
 - A way of tagging text for meaning, not appearance
 - Older version of DDI used DTD (Document type definition)
 - Defines
 - Which tags are available
 - The order the tags will appear in a document
 - Whether the tags are required or optional
 - Whether the tags are repeatable or not

Example of DDI Compliant Codebook

```
<?xml version='1.0' encoding='UTF-8'?>
<codeBook version="1.2.2" ID="ctums_82Moo2oXCB_E_2004_ann_person-file">
 <docDscr>
  <citation>
   <titlStmt>
    <titl>
     Canadian Tobacco Use Monitoring Survey, 2004: Annual, Person File
     </titl>
     <subTitl>
     Annual, Person File
    </subTitl>
    <altTitl>
     CTUMS 2004: Annual, Person File
     </altTitl>
     <parTitl>
     Enquete de surveillance de l'usage du tabac au Canada, 2004: Annuel, Personne
    </parTitl>
     <IDNo>
     ctums_82Moo2oXCB_E_2004_ann_person-file
    </IDNo>
   </titlStmt>
   <rspStmt>
    <a href="AuthEnty affiliation="Queen's University.">AuthEnty affiliation="Queen's University.</a> Social Science Data Centre">
     Cooper, Alex
    </AuthEnty>
   </rspStmt>
```

- Benefits of DDI
 - Interoperability
 - Rich content
 - A single document with multiple purposes
 - On-line subsetting and analysis
 - Increased search capability
 - precision in searching
 - More visibility for the data because it is web-based
 - Research is no longer on just one computer

- Challenges
 - Complexity
 - Level of researcher buy-in
 - Need for tools
 - Changes in workflow
 - Access to metadata

- History
 - Started in 1995
 - The director of ICPSR, Richard Rockwell, constituted a Committee on metadata
 - Quebec City
 - Developed a draft list of codebook elements
 - An international committee

- Norwegian Social Science Data Services
- Harvard University
- American University
- Statistics Canada
- Health Canada
- Bureau of the Census
- University of Michigan
- Bureau of Labor Statistics
- ICPSR

- Yale University
- ESRC Data Archive (UK)
- University of California, Berkeley
- University of Southern Denmark
- The Roper Center
- Zentralarchiv für Empirische Sozialforschung (GESIS)

- Bjorn Henrichsen
- Micah Altman
- Atle Alvheim
- Grant Blank
- Ernie Boyko
- Bill Bradley
- Cavan Capps
- Bill Connett
- Cathryn Dippo
- Pat Doyle
- Dan Gillman
- Peter Granda

- Ann Green
- Peter Joftis
- Ken Miller
- Tom Piazza
- Karsten Boye Rasmussen
- Richard Rockwell
- Jostein Ryssevik
- Merrill Shanks
- Peter Solenberger
- Rolf Uher
- Mary Vardigan

- 1996: Prepared first DTD (document type definition)
 - Set up markups/specifications
- 1997: Received funding from the NSF
 - Specifications translated to XML
- 1999: Beta testing
 - Reports were submitted
- 2000: DDI Version 1 published
- 2001 : First DDI training
- 2001: Received funding from Health Canada

- 2002: DDI Alliance charter drafted
- **2003**
 - DDI 2 published
 - DDI Alliance established
 - First Steering Committee meeting
 - Final meeting of original Committee
- Continues to evolve
- Not a one-time thing

- Now branched into 2 separate development lines or metadata standards
 - DDI Codebook
 - aka DDIC
 - Formerly DDI2
 - This was the original one
 - DDI Lifecycle
 - aka DDIL
 - formerly DDI3
 - Supports the research data lifecycle
 - The one new users are learning

- DDI Alliance
 - Self-sustaining
 - Membership organization
 - Members have a voice in the development of DDI
 - Membership documents are all online
 - Charter, bylaws, member forms, ...
 - Publications are all one line
 - Newsletters, annual reports, ...
 - http://www.ddialliance.org/alliance

• Who is Using DDI?

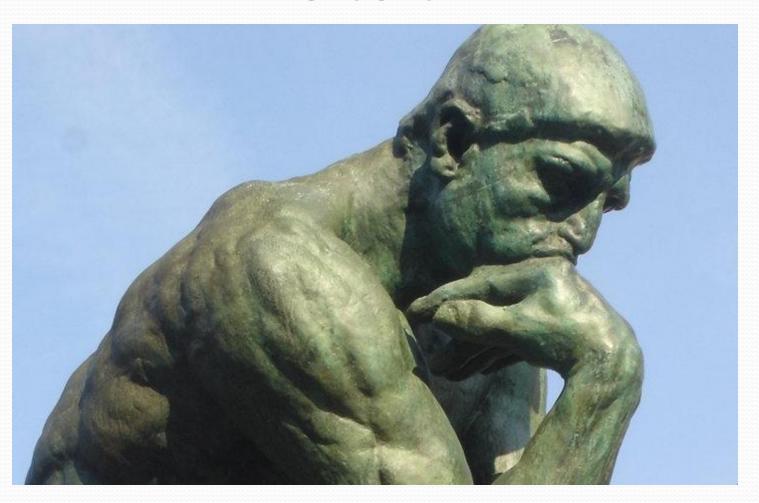
- International
 - CESSDA Data Portal (European quantitative social science datasets)
 - Australian Social Science Data Archive
 - DAMES Project (UK)
 - DataFirst at University of Cape Town
 - Data Liberation Initiative (Statistics Canada)
 - General Social Survey (US)
 - ICPSR (Interuniversity Consortium for Political & Social Research)
 - Israel Social Science Data Center
 - Philippines National Statistics Office
 - Statistics New Zealand
 - Vision of Britain (historical view between 1801 and 2001)
 - World Bank (International Household Survey Network)

Global DDI



- What Health Projects are using DDI?
 - Altarum Institute (US)
 - Systems research for better health
 - Centers for Medicare/Medicaid Services (CMS) Denominator File Project
 - The Global Fund to Fight AIDS, Tuberculosis and Malaria
 - MIDUS Series
 - Midlife in the US: A National Study of Health and Well-Being
 - The Tromsø Study (Norway)
 - to determine reasons for high mortality rates due to different diseases
 - UNICEF, Child Information
 - Monitoring the Situation of Children and Women (global development data)

Time to think!



Exercise 1

- As a researcher, what metadata do you *absolutely* need?
- How do you want it to *streamline* your research?
- What metadata would you like to have, if it is available, but it is *not integral* to your research?

Getting Started with DDI

- Daunting at first
 - Process is broken down into steps
- Lots of help available
 - DDI Alliance
 - Colleagues
 - Other researchers
- DDI List-serv
- DDI Best Practices
 - Work in progress
 - Feedback always welcome

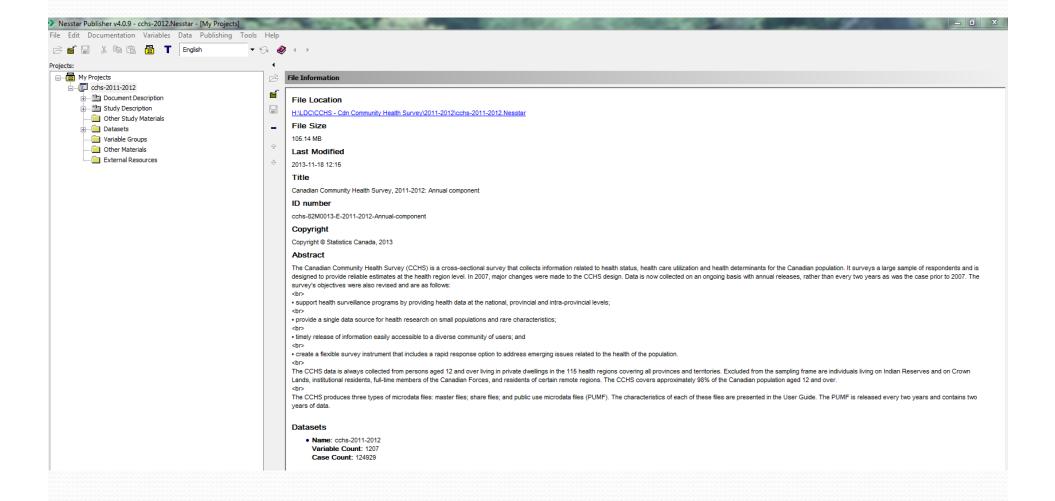
- Tools to help you get started
 - http://www.ddialliance.org/resources/tools
 - Drop down menu
 - Browse a list
 - Choose the one that will suit your purposes
 - License choices
 - Commercial
 - Freeware
 - GNU Lesser General Public License (LGPL)
 - For different versions of DDI

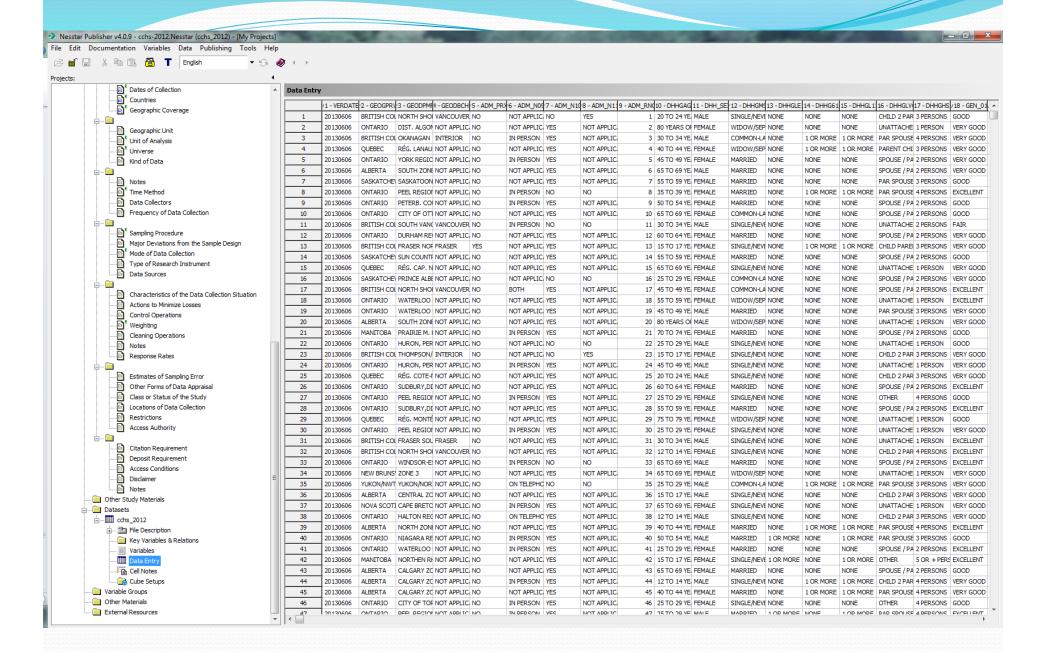
- One tool: Nesstar Publisher
 - Norwegian Social Science Data Services
 - Data management program
 - Freeware
 - Data and metadata conversion and editing tools
 - Enhance datasets
 - Combine catalogue and contextual information
 - Merge DDI documents with markup for different sections of the DDI for the same study
 - Merge variable descriptions from SPSS/SAS with DDI

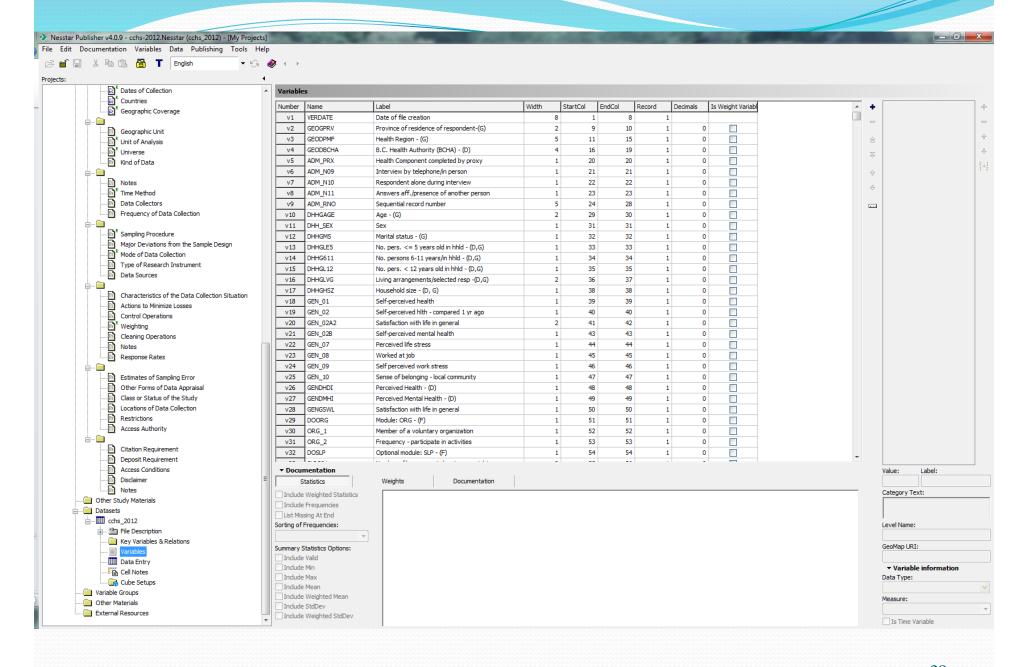
- Nesstar Webview
 - Metadata
 - Any associated documentation
 - Variable groups
 - Conduct basic analysis
 - Subsetting
 - Crosstabs
 - Bonus

- Nesstar Webview
 - Downloading
 - Documentation
 - PDF format
 - Export files with study descriptions and question text
 - Data exported in format of choice
 - SPSS, SAS, Stata, ASCII, ...

- Nesstar drawbacks
 - For advanced statistical analysis -
 - it is best to download the data and use a statistical analysis package
 - Must have access to a server to publish the dataset
 - Not intuitive when starting to markup datasets
 - Not intuitive for first-time user in Webview
- Not a drawback, just a consideration
 - Uses DDI Codebook standard







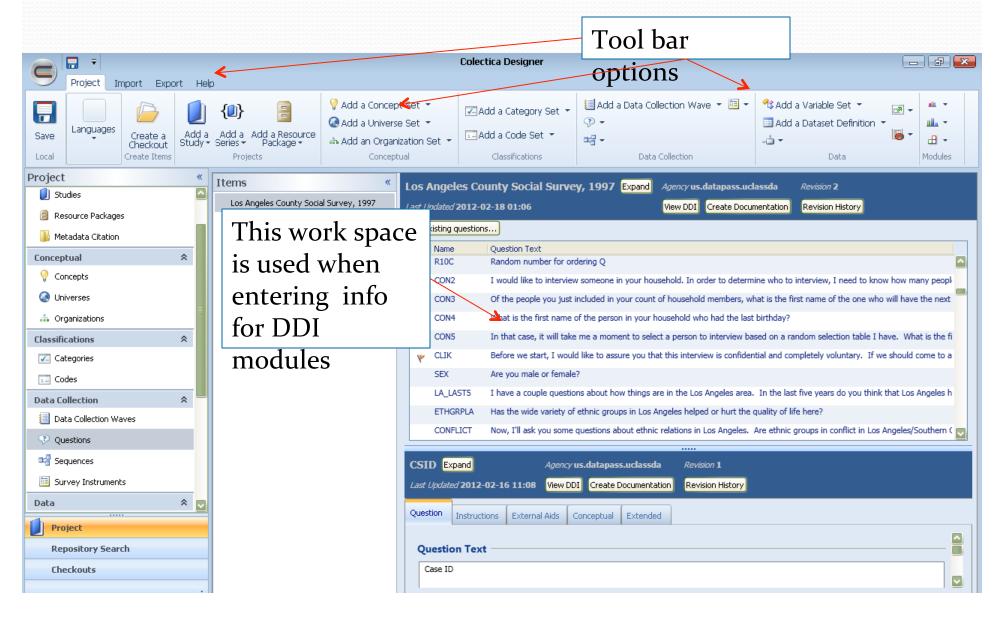
- Another tool: Colectica for Excel
 - Based in the US
 - Freeware
 - Documents variables and datasets directly from within Excel
 - Can be used to produce detailed (item-level) metadata for studies already completed
 - Creates metadata and documentation for surveys
 - Saves metadata directly in the Excel file
 - When the file is shared, so is the metadata

- Colectica for Excel
 - Allows direct importing and documenting of Stata data files (.dta) and SPSS data files (.sav)
 - Will automatically import variable names, labels and code lists from the data file
 - This metadata will be added to the documentation that is already stored
- Uses DDI Lifecycle (DDI version 3.1)
 - Allows us to manage the entire life cycle of a study as well as manage our legacy materials
 - Records audit trail through versioning

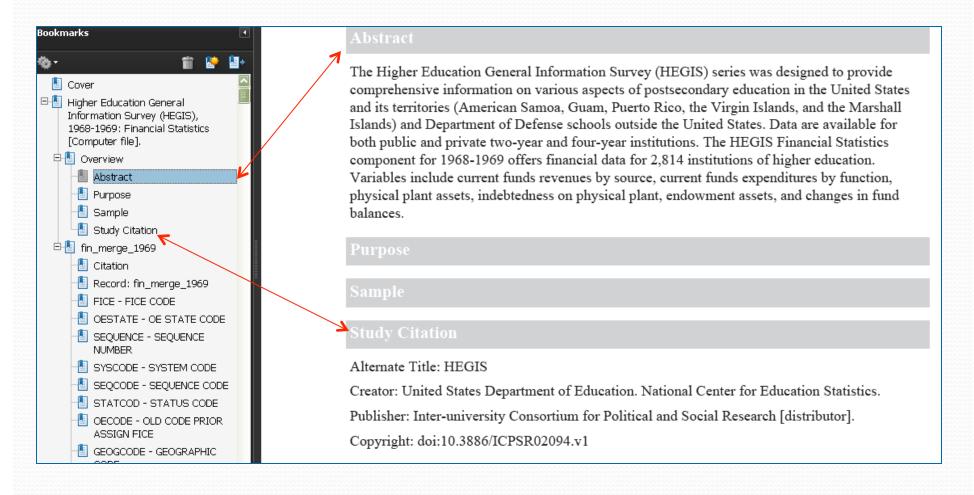
- Colectica Reader
 - Free tool
 - To view the metadata
 - No specialized software is needed
 - Generates documentation for variables and code lists
 - PDF, Word, HTML

- Other options available from Colectica
 - Colectica Portal
 - Allows you to browse, search and view the contents of the Repository on the web
 - Free
 - Colectica Repository
 - To store the metadata on a server
 - Not free

Colectica workspace



Example codebook from Colectica (PDF)



Getting Started with DDI (cont'd)

- Remember the two types of DDI?
 - DDI Codebook (DDIC) and DDI Lifecycle (DDIL)
 - Two separate programs
- Challenge
 - How to go from DDIC to DDIL?
 - Even though DDIL is fast becoming the more preferred one, if you are already using DDIC, it would be too much work to convert to DDIL
 - Insufficient resources to do this conversion for most institutions (people, \$)

Getting Started with DDI (cont'd)

- The latest news
 - Nesstar has created a new API
 - Hopefully be able to publish DDI Lifecycle to DDI Codebook on the Nesstar server
 - This integration has been implemented between Nesstar and Colectica
 - Will allow users greater opportunities for
 - Expanded metadata production
 - Improved data publication and visualization

Next ...

- We have
 - learned the history of DDI
 - seen who is using it
 - learned how it can streamline our research
 - seen some tools that will help us use it
- Next, we will look at examples of DDI in 2 tools
 - These are to show you how important it is to have tools that will interpret it for you so you don't have to know XML

Examples of using DDI

- Check out how Nesstar Webview works
 - Video Tutorial 1: Accessing Health of Houston Survey Data (2 min)
 - http://www.youtube.com/watch?v=NNvcSixsOEg
 - Video Tutorial 2: Looking at Survey Variables in Nesstar (3 min)
 - http://www.youtube.com/watch?v=xkBGC-5K_Bk
 - Video Tutorial 3: Using the Tabulation Function in Nesstar (4 min)
 - http://www.youtube.com/watch?v=qqTlN5mVRdg

Examples of using DDI (cont'd)

- Check out how Colectica works
 - 11 videos to choose from
 - all are 2 minutes or less
 - http://www.youtube.com/user/Colectica
 - How to Open an Existing Study
 - User Interface Overview
 - Export DDI 3
 - Generate Documentation

Back in 15!



Review

- We have learned
 - the history of DDI
 - who is using it
 - how it can streamline our research
- We have seen
 - 2 tools and examples
 - Nesstar and Colectica for Excel
- Remember
 - There are 2 different lines of DDI development
 - DDIC and DDIL

Data Lifecycle Workflow

- Integrating Metadata and Research Data Management into a data lifecycle workflow
 - What metadata
 - When or where to integrate it
 - What does research data management have to do with this

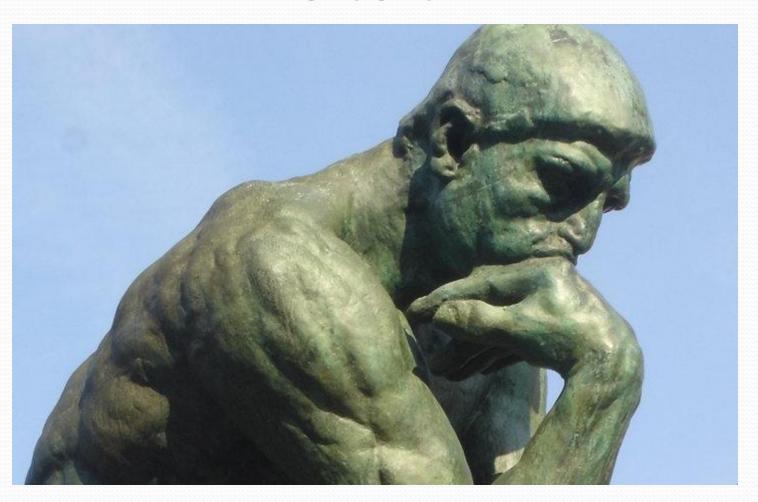
Data Lifecycle Workflow (cont'd)

- DDI Metadata accompanies and enables
 - Data conceptualization
 - Collection
 - Processing
 - Distribution
 - Discovery
 - Analysis
 - Repurposing
 - Archiving

Data Lifecycle Workflow (cont'd)

- Remember
 - More efficient and easier to capture information about all stages of the research workflow at the time of its occurrence rather than after the fact

Time to think!

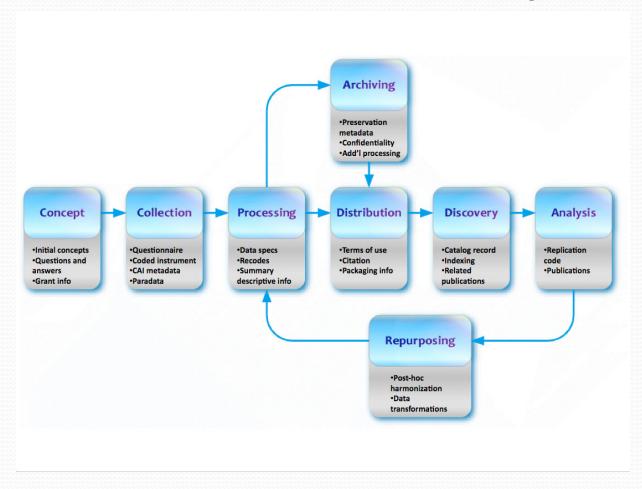


Exercise 2

• When or where would you like to see metadata integrated into a data lifecycle workflow?

• What does research data management have to do with this?

DDI Research Lifecycle



DDI Lifecycle 3.2



http://www.ddi-alliance.org/



Workshop Materials

- To access materials from this workshop
 - They will be on the NADDI Conference website
 - They are also here:

http://www.library.carleton.ca/content/na-ddi-north-american-ddi-user-conference

References

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- GNU. GNU operating system. Retrieved March 18, 2014 from http://www.gnu.org/
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