Developing Data Maturity Metrics for the ITMD Project

ITMD Annual Workshop:
Reporting Data Maturity Improvements for the ITMD Project
April 16, 2020
Data Maturity Model

• Lots of discussion about developing a Tribal Data Strategy for the ITMD project and developing a measure of success for data management
  • Respond to recent ISRP review – *quantify progress for reporting*
• CTUIR DNR DMM Model presented at ITMD workshop in Toppenish, WA on April 17, 2019
• Prototype DMM sent out last Fall
• NPT and YNF completed an initial evaluation of several of their data sets
FY2019 ITMD SOW

• Colleen inserted a work element and several tasks into the FY2019 BPA Contract SOW (Sept 2019 to Sept 2020)
• Committed to a variety of deliverables of reporting on a draft DMM tools
• Statistics and lessons learned, separate from the BPA annual report

Denise will include DMM metrics as part of ITMD annual report in the future
Development and Implementation of the ITMD DMM

- Agree on framework and contents of model
- Agree on methodologies for assessing data sets
- Identify which data sets will be used for assessment (linked to ITMD project)
- Define annual report contents that will demonstrate effectiveness of data management funding
## CTUIR Data Management Maturity Model

<table>
<thead>
<tr>
<th>Key Drivers</th>
<th>Low End</th>
<th>Improved</th>
<th>Strategic</th>
<th>Managed</th>
<th>Optimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location Process</td>
<td>Paper and/or some electronic</td>
<td>Paper and/or some electronic</td>
<td>Electronic and/or paper</td>
<td>Can be fully electronic/mobile</td>
<td>Fully electronic/mobile</td>
</tr>
<tr>
<td>Data Standards, unit, time</td>
<td>Follows standards defined by data stakeholders for compliance</td>
<td>Project applies internally developed data standards</td>
<td>Project applies all existing DMR Data Standards to all datasets</td>
<td>Project utilizes fully developed data standards</td>
<td>Data Maturity, participates in formalized national standards for information management and interoperability</td>
</tr>
<tr>
<td>Data/Backup</td>
<td>Data/Access/Work files: TYPICALLY stored in a single location, replication is used to ensure data integrity</td>
<td>Data/Access - network shared drive/regularly backed up</td>
<td>Centralized databases - backup set in place</td>
<td>Integrated centralized database management and backup</td>
<td>Replicated, coordinated, automated backup and recovery database</td>
</tr>
<tr>
<td>Use of Data (files/tables)</td>
<td>Duplication of files and tables is common, causing inaccuracies and inefficiencies to maintain data consistency</td>
<td>Most tables link to common tables, occasional duplication</td>
<td>Fully relational with strong process for expectation data</td>
<td>Formatted model with processes.</td>
<td></td>
</tr>
<tr>
<td>Metadata</td>
<td>Transcription, filing, user name, user access, paper loss</td>
<td>Transcription, user name, user access</td>
<td>Transcription, user name</td>
<td>User exit</td>
<td>User exit</td>
</tr>
<tr>
<td>Auditing</td>
<td>Difficult/manual</td>
<td>Network access to files/Manual/Minimal recording</td>
<td>Limited Role-based authorization introduced</td>
<td>Full internal/external authorized party access to data set</td>
<td>Full internal/external authorized party access to data set</td>
</tr>
<tr>
<td>Reporting</td>
<td>Manually created on demand</td>
<td>Some automated reports/Manual most used</td>
<td>Automated reports and maps for most documents</td>
<td>Can be fully automated, ad-hoc data is available</td>
<td>Fully automated, ad-hoc data is available</td>
</tr>
<tr>
<td>Analytical Analysis</td>
<td>Difficult</td>
<td>Difficult</td>
<td>Routine</td>
<td>Routine</td>
<td>Routine with visualization</td>
</tr>
<tr>
<td>Information</td>
<td>Tools only (E.g., Access, etc.)</td>
<td>Some improved forms, mostly Excel/Access tables</td>
<td>Documented web forms/some User Experience designed forms/image/Export</td>
<td>User Experience designed system, mostly standards compliant ($38, etc.)</td>
<td>Optimized of Information, standard compliant ($38, etc.)</td>
</tr>
<tr>
<td>Decision Making Process</td>
<td>Manual</td>
<td>Manually, same tools/role</td>
<td>Some automated, manually defined</td>
<td>Can be fully automated</td>
<td>Fully automated, any configuration is possible</td>
</tr>
<tr>
<td>Process</td>
<td>Catch basic transcription errors, basic range limits, basic set validation</td>
<td>Clearly defined methodology for range limits and exceptions, regulatory applied</td>
<td>Advanced system(s) also addressing to standard methodologies</td>
<td>Independent verification process, adherence to standard methodologies</td>
<td>Accepts/declines, automatically validated next step, forms standard validated</td>
</tr>
</tbody>
</table>
Data Management Maturity Model At-A-Glance*

*CMMI Institute
Framework and Contents

- Create framework and create a list of key drivers
- Each driver would be ranked annually
  - 1-5, 1-10, A-F, Red/Yellow/Green, etc.
  - Clear definitions and check boxes so rankings are repeatable and transparent
- The rankings would be added up in some way to compare year to year
  - Average, Weighted Average, Matrix, etc.
- Data set ranking change from year to year (hopefully improving)
  - Compared to itself, compared to other data sets, cumulative rankings to evaluate systems
- Identify barriers, funding adequacy, staffing issues, etc.
Methodology

• Define which drivers will be evaluated for each data set (one set of key drivers?)
  • Do we need all 11 or are there fewer “Key Drivers”
  • Describe the activity that each driver encompasses
  • Maybe categories or process areas instead of drivers?
• Define maturity level characteristics
  • Create a checkbox or descriptions that ensure standardized, objective, repeatable evaluation of status
  • Create text space to capture barriers to progressing, comments/descriptions of status for future reference
Select Data Sets for Evaluation

• Identify which data sets will be evaluated on an annual basis for ITMD project
  • Each tribe identify # key data sets
  • Ensure these are data sets within control of the ITMD data stewards
  • Ensure these data sets are long-term priority and not intermittent or temporary
• Identify key regional priorities (NOAA, BPA, NPCC)
  • Create ability to communicate status of these data sets and needs
Define Annual Report Contents

• Create template
  • Include pertinent cells that demonstrate status and trends of key data sets
  • Include bullet comments to demonstrate barriers or accelerants
  • Details to track internal issues
  • More general summaries to report to the region

• Create schedule for completing assessments
  • Timeline for partners process (tribal data stewards)
  • Timeline for project reporting (CRITFC ITMD staff)
Work Plan:
Monthly workgroup meetings and some possible longer webinars to complete tasks

- April
  - Agree to proceed (today)
- May
  - Agree on Categories, Process Areas, Drivers
  - Agree on how to select data sets
- June - July
  - Define maturity level characteristics for each driver
- August
  - Partners select X data sets to prototype new process

*CRITFC staff will provide material prior to each meeting*
Discussion