



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

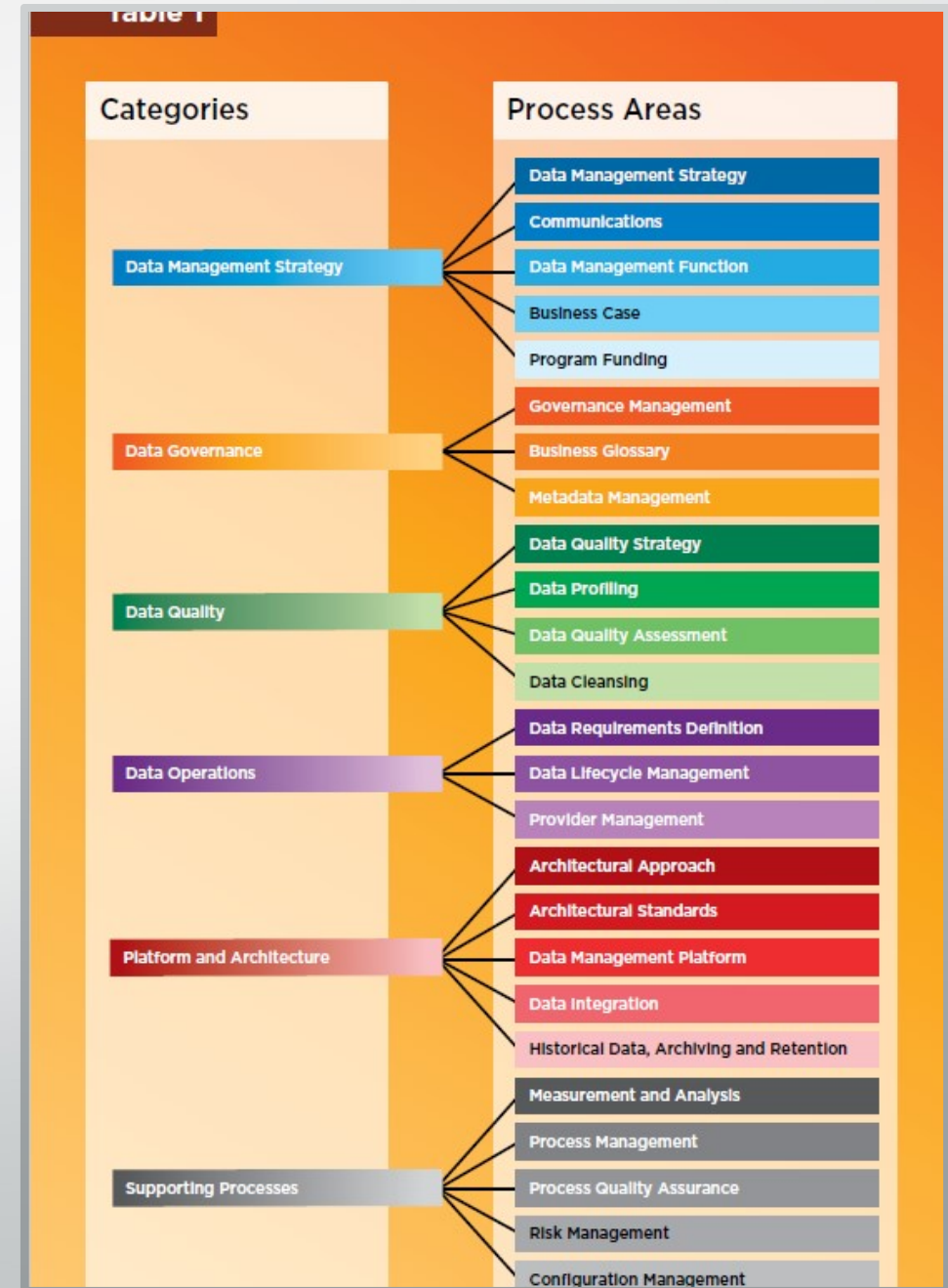
- Agree on framework and contents of model
- Agree on methodologies for assessing data sets
- Identify which data sets will be used for assessment (linked to ITMD project)
- Define annual report contents that will demonstrate effectiveness of data management funding

CTUIR Data Management Maturity Model

	Ad-hoc	Improved	Standards	Managed	Optimized
Key Drivers	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Collection Process	Paper and/or some electronic	Paper and/or mostly electronic	Electronic and/or some paper	Can be fully electronic/mobile	Fully electronic/mobile
Standards (units, time)	Follows standards defined by data collector for compliance	Project applies internally consistent data standards	Program applies all existing DNR Data Standards to all datasets	Program participates and uniformly applies formalized DNR Data Standards process	DNR Data Standards participate in formal state/national standards for interoperability, continuously improving
Storage/Backup	Excel/Access/Word files - LOCALLY stored. Backup: None or occasional and manual.	Excel/Access - network shared drive / regular, automated backup	Centralized database (as backend at minimum) / regular automated backup.	Integrated Centralized database/ regular, automated backup	Integrated, Fault-tolerant, Centralized database
Organization of Data (files/tables)	Duplication of files and tables is common, causing inaccuracies and requiring manual updates to make changes	Since data is in a single location, duplication is less common and eliminated when found.	Most tables link to common tables, occasional duplication	Fully relational with change process for organization data.	Formalized data model with consistent processes.
Risks	Transcription, file loss, user error, paper loss	Transcription, user error, file confusion	Transcription, user error	User error	User error
Access/Sharing	Difficult/manual	Network access to files / manual / filesharing permission	Login / Role-based authorization introduced	All internal/external authorized parties have access	All internal/external authorized parties have access to data services
Reporting/Mapping	Manually created on demand	Some automated reports/maps, mostly manual	Automated reports and maps for most datasets	Can be fully automated, ad-hoc tools available	Automated ad-hoc interactive
Operational analysis	Difficult/economically unfeasible	Difficult	Possible with technical staff assistance	Routine	Routine with visualization
User Interface	Tools only (Excel, Access, etc.)	Some improved forms, mostly Excel/Access tables	Dataset-based web forms / some User Experience designed forms / Import / Export	User Experience designed system, mostly standards compliant (508, etc.)	Optimized User Experience standards compliant
Deployment Process	Manual	Manual, some tools to help.	Some automated, manually defined	Can be fully automated	Fully automated any configuration destination
Quality Process	Catch basic transcription errors, applies basic range limits.	Clearly defined methodology using range limits and other qualifiers regularly applied.	Automated QA rules applied according to standard methodologies.	Independent verification process, metrics and possibly statistical analysis to validate	Accept external updates, automated reporting applied including national standards

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