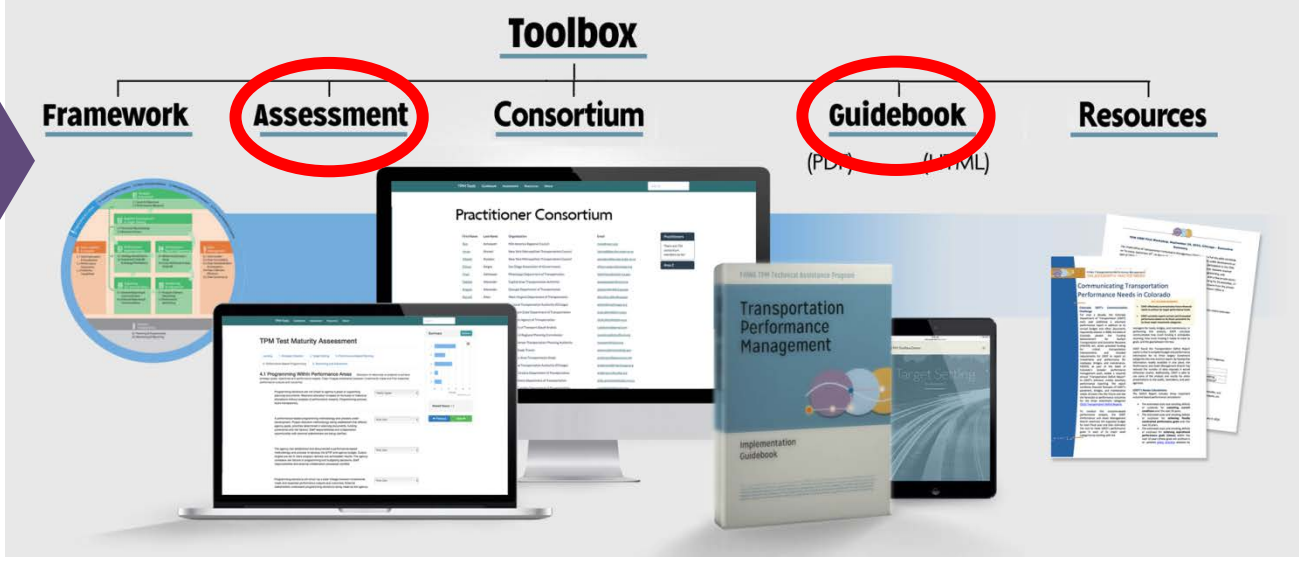
Tools for Implementation: CMM, Self-Assessment, Guidebook

August 24 & 25, 2016
Jefferson City, MO

TPM Toolbox

CAPABILITY MATURITY MODEL



Peer Exchange
(May 9-10, 2016)

Workshops
(Missouri – Pilot, Aug 24-25)

Spur adoption and advancement of TPM

CMM: Capability Maturity Model

- Purpose
  - Assess current state of your agency
  - Identify logical set of improvements
  - Show benefit of moving to higher maturity/capability levels
- TPM CMM
  - Assesses maturity on 1-5 scale
  - Serves as basis of Assessment Tool
  - Interfaces with guidebook content

CMM Refresher

Each Component and subcomponent has common elements:

Component C. Data Management

Definition: A set of coordinated activities for maximizing the value of data to an organization. It includes data collection, creation, processing, storage, backup, organization, documentation, protection, integration, dissemination, archiving and disposal. Well-managed data are essential for a robust TPM practice.

C.1. Data Quality

Definition: Processes and organizational functions to ensure data are accurate, complete, timely, consistent with requirements and business rules, and relevant for a given use.

Level	Description	ACTIONS to move to next level:
INITIAL (Level 1)	Performance data quality issues that are identified are addressed on an ad-hoc basis rather than through a systematic process. Metrics for data quality have not been established and quality expectations have not been discussed.	Initiate an effort to develop data quality standards based on anticipated uses for each performance data set.
DEVELOPING (Level 2)	Data quality metrics and minimum acceptable standards are being defined for performance data sets - considering accuracy, completeness, consistency, and timeliness. Data quality assurance and validation methods are being developed.	Define and document data quality standards and protocols for data quality assurance and certification.
DEFINED (Level 3)	Data quality metrics and standards have been defined and documented for performance data sets. Baseline data quality has been measured and a plan for data quality improvement is in place. Business rules for assessing data validity have been defined. Standard protocols for data quality assurance and certification or acceptance have been established.	Share information about the quality of performance data sets with data users. Implement data quality assurance and certification processes.
FUNCTIONING (Level 4)	Users of performance data have an understanding of their level of accuracy, completeness, consistency and timeliness. Standard data quality assurance processes are routinely followed. New data collected are reviewed against historical data to identify unexpected changes warranting investigation. Data collection personnel are trained and certified based on demonstrated understanding of standard practices.	Automate data quality assessment and cleansing processes, and modify data entry applications (where practical) to validate data at the point of input. Regularly assess data quality processes to identify improvements.
SUSTAINED (Level 5)	Data quality assurance processes are regularly improved based on experience and user feedback. Data validation and cleansing tools are used to identify and address missing or invalid values. Business rules for data validity are built in to data entry and collection applications.	

Definition

5 maturity level descriptions

Actions to move to the next level (for levels 1-4)

CMM and Self-Assessment

Component C. Data Management

Definition: A set of coordinated activities for maximizing the value of data to an organization. It includes data collection, creation, processing, storage, backup, organization, documentation, protection, integration, dissemination, archiving and disposal. Well-managed data are essential for a robust TPM practice.

Level	Description	ACTIONS to move to next level:
INITIAL (Level 1)	The agency has not established metrics for performance data quality; issues are identified and addressed on an ad-hoc basis rather than through a systematic process. Agency data sets cannot be integrated due to lack of standardization in location referencing or other link or coded fields. Ownership and accountability for data sets is unclear and business units do not coordinate on data collection, use or reporting.	Initiate an effort to develop data quality standards based on anticipated uses for each performance data set. Initiate an effort to improve agency performance reporting and query capabilities. Initiate an effort to define data standards required to support t Identify opportunities for reduc within the agency, and for lever data sources. Identify business owners for ea from data users on improveme management.
DEVELOPING (Level 2)	The agency is developing data quality metrics, quality assurance, and validation methods. Efforts are underway to identify key integration points across data sets and define standards that will enable integration, data sharing, and cross-silo analysis. Access to data in visual form is limited and snapshot in time views are available but not repeatable. Staff data leads have been assigned, but responsibilities are unclear.	Define and document data qual protocols for data quality assur Meet with different users of pe understand and document data useful to them. Identify and implement tools a improved data access as neede Get agreement on common da and aggregation units. Identify single source systems f data element. Develop and document process to produce snapshot and trend performance management. Develop internal and external d Identify system changes neede Define roles for data governanc Develop a systematic process f forward on data improvements
DEFINED (Level 3)	The agency has data quality metrics and standards for performance data sets, and has assembled a plan for making needed improvements. Opportunities for	Share information about the qu sets with data users. Implement data quality assura

	collaboration with agency partners to set performance targets, define goals and objectives, program projects, or implement joint monitoring.	strategy development and implementation; and identify opportunities for joint performance monitoring and reporting.	plan for collaboration on setting performance targets, developing strategies, and project programming.	programming and has collaboratively monitored and reported performance for at least one cycle.	desired outcomes, building on potential synergies and avoiding conflicts.
C. Data Management	The agency has not established metrics for performance data quality; issues are identified and addressed on an ad-hoc basis rather than through a systematic process.	The agency is developing data quality metrics, quality assurance, and validation methods.	The agency has data quality metrics and standards for performance data sets, and has assembled a plan for making needed improvements.	The agency routinely follows standard data quality practices and data is integrated, accessible, convenient, and can be analyzed in a variety of ways with little additional development effort.	The agency regularly reviews opportunities to improve data integration and consistency.
D. Data Usability and Analysis Capabilities	Limited tabular performance reports may exist, but the agency does not have ad-hoc query or drill down/roll up capabilities.	The agency is developing exploration and visualization capabilities.	Tools and technologies for providing data views needed by various users are in place, and requirements have been documented.	Reports and tools meet the needs of different users, enabling employees to easily visualize and determine explanatory factors.	The agency routinely improves exploration and visualization and refines supplemental data based on user feedback.

Summary

TPM

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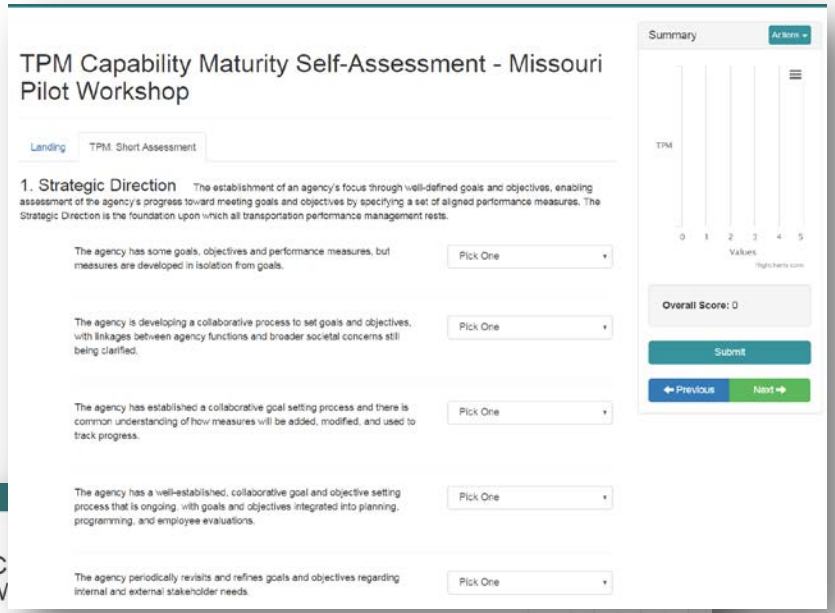
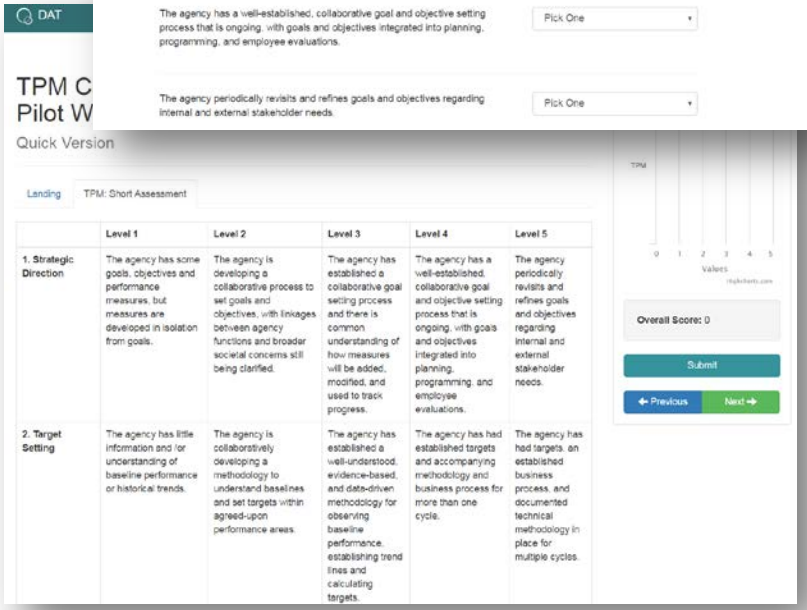
Overall

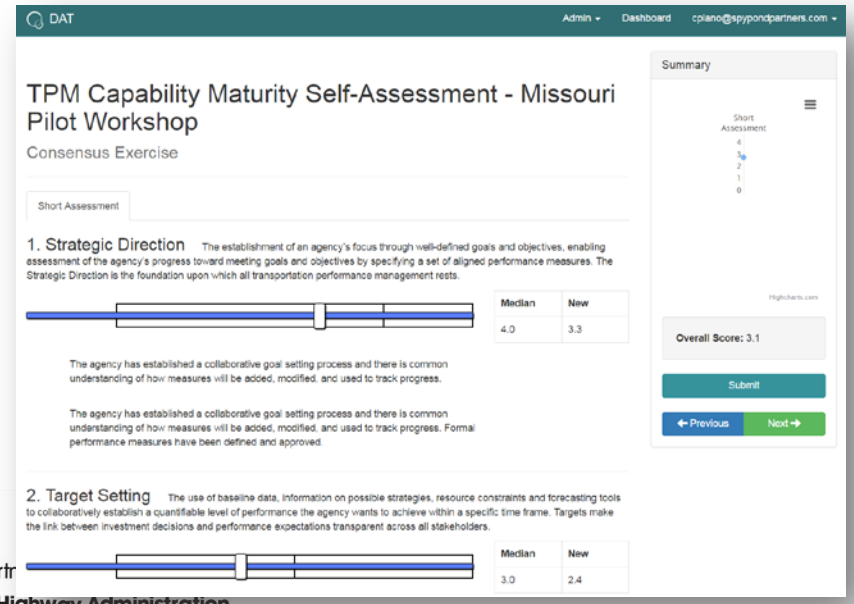
Prev

TPM Capability Maturity Self-Assessment

- Tool Versions
  - Snapshot
  - Detailed
  - Consensus







TPM Capability Maturity Self-Assessment

- Results
  - Maturity level
  - Actions to move to next level (from CMM)
  - Link to excerpts from the guidebook related to Actions

CMM and Self-Assessment

C. Data Management

Based on your assessed maturity level for the Data Management component, here are actions to advance your TPM practice:

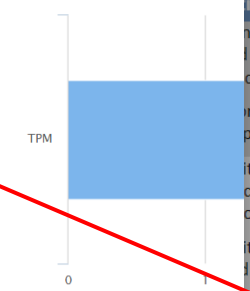
- Define and document data quality standards and protocols for data quality assurance and certification.
- Meet with different users of performance data to understand and document data views that would be useful to them.
- Identify and implement tools and technologies for improved data access as needed.
- Get agreement on common data definitions, standards, and aggregation units.
- Identify single source systems for each key performance data element.
- Develop and document processes for combining data sets to produce snapshot and trend views required for performance management.
- Develop internal and external data sharing agreements. Identify system changes needed to facilitate data sharing.
- Define roles for data governance and stewardship.
- Develop a systematic process for evaluating and moving forward on data improvements and changes.

Data Management

Based on your assessed maturity level for the Data Management component, here are links to advance your TPM practice:

- http://sites.spypondpartners.com/results/index2_9.html

Summary



Overall Score: 2.7

Previous

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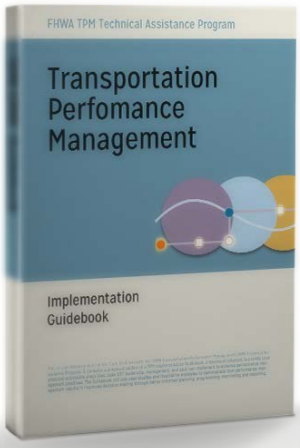
SUSTAINED (Level 5)	Data quality assurance processes are regularly improved based on experience and user feedback. Data validation and cleansing tools are used to identify and address missing or invalid values. Business rules for data validity are built in to data entry and collection applications.	

Guidebook: How to Improve

- Focuses on “how” rather than “what”
- Self-contained and modular: excerpts provided based on assessment results (maturity level)
- Implementation steps aligned with CMM “Actions to move to the next level”



CMM and Guidebook Steps

CMM

Level	ACTIONS to move to next level
INITIAL (Level 1)	Initiate an effort to improve agency performance reporting and query capabilities.
DEVELOPING (Level 2)	Meet with different users of performance data to understand and document data views that would be useful to them. Identify and implement tools and technologies for improved data exploration and visualization as needed.
DEFINED (Level 3)	Implement and configure reports, charts, views and query capabilities to meet identified needs. Conduct user training.
FUNCTIONING (Level 4)	Meet with data users to obtain feedback and ideas for further improvement. Keep in touch with peer agencies to identify new approaches to data presentation.
SUSTAINED (Level 5)	

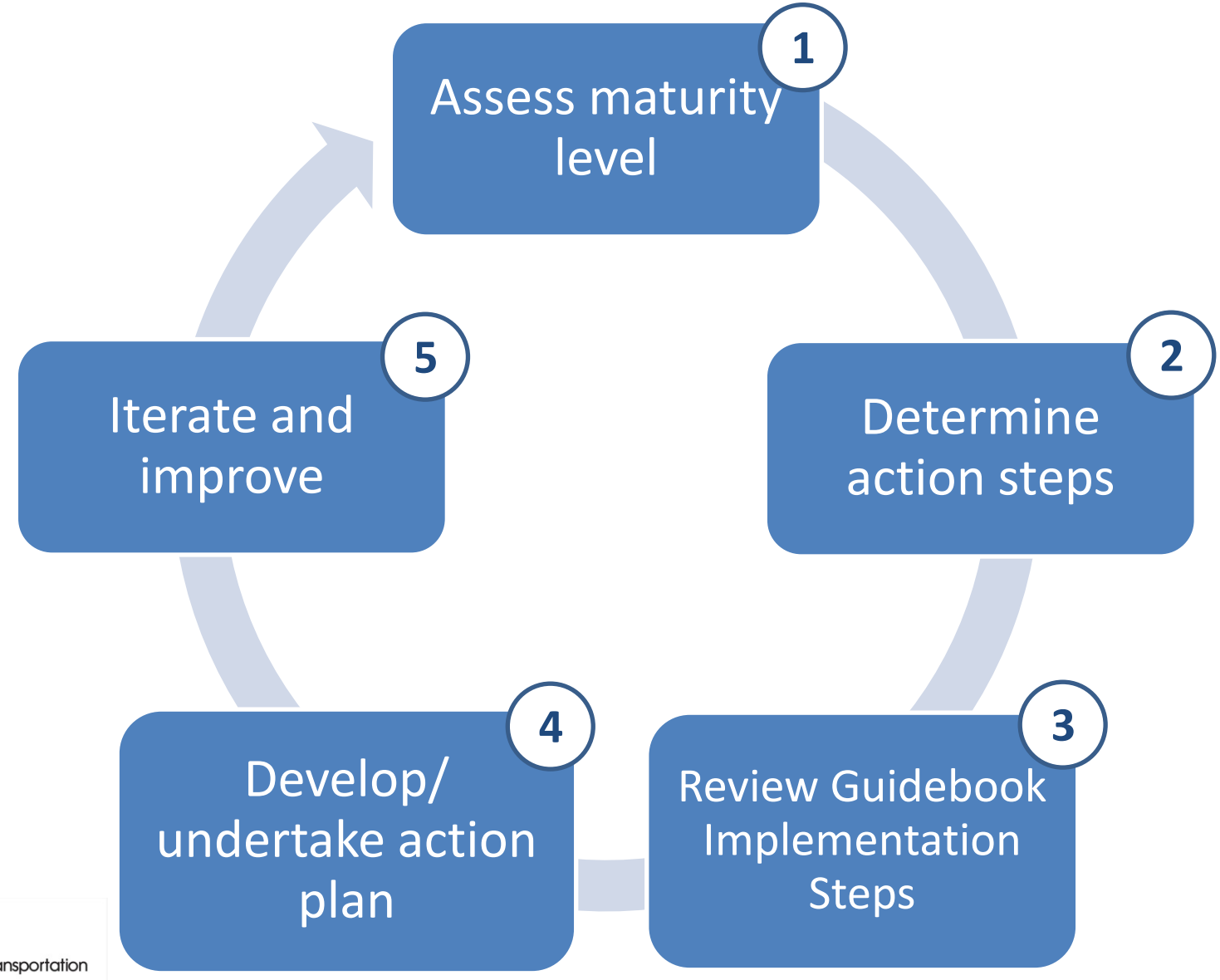
Guidebook Steps

D.1 Data Exploration and Visualization

1. Understand requirements
2. Assess data usability
3. Design and develop data views

Component D:
Data Usability & Analysis

Implementation Process



Action Planning During Workshop

- Excerpts are not yet included with Self-Assessment results
- Action planning during the workshop
  - Use agency Self-Assessment results