

Data Management Maturity Assessment

1 Introduction

Capability Maturity Assessment (CMA) is an approach to process improvement based on the Capability Maturity Model (CMM) that describes how processes evolve from ad hoc to optimal.

Progression happens in a set order:

- **Level 0:** Absence of capability. No formal process for managing data. Very few organisations exist at Level 0.
- **Level 1:** Initial or ad hoc: success depends on the capability of individuals
- **Level 2:** Repeatable: Minimum process discipline is in place
- **Level 3:** Defined: Standards are set and used
- **Level 4:** Managed: Processes are quantified and controlled
- **Level 5:** Optimised: Process improvement goals are quantified

Criteria are described across process features related to execution, level of automation, policies, controls and/or process details.

A Data Management Maturity Assessment (DMMA) evaluates DM overall, within a knowledge area or even a process. Used as a bridge between business and IT.

DMMA provides a common vocabulary and a stage-based roadmap to improvement across knowledge areas.

1.1 Business Drivers

Reasons organisations conduct capability maturity assessments:

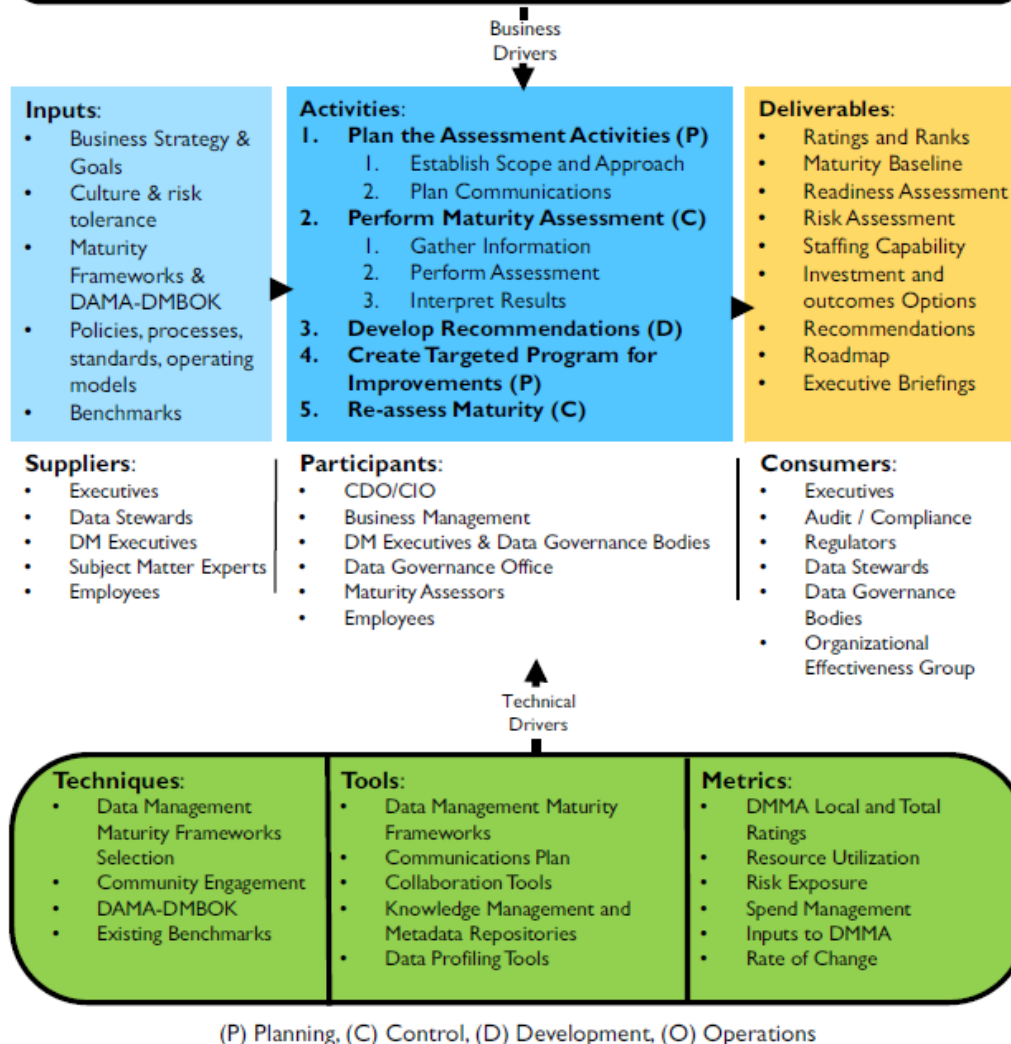
- **Regulation:** Minimum level of maturity required
- **Data Governance:** The data Governance function requires a maturity assessment for planning and compliance
- **Organisational readiness for process improvement:** Begin by assessing current state
- **Organisational change:** e.g., challenge posed by a merger. DMMA provides input
- **New technology:** To understand the likelihood of success in adopting new technology
- **Data management issues:** Baseline current state in order to make better decisions on change

Data Management Maturity Assessment

Definition: A method for ranking practices for handling data within an organization to characterize the current state of data management and its impact on the organization

Goals:

1. To comprehensively discover and evaluate critical data management activities across an organization.
2. To educate stakeholder about concepts, principles, and practices of data management, as well as to identify their roles and responsibilities in a broader context as the creators and managers of data.
3. To establish or enhance a sustainable enterprise-wide data management program in support of operational and strategic goals.



1.2 Goals and Principles

Goals:

1. To comprehensively discover and evaluate critical data management activities across an organization.
2. To educate stakeholder about concepts, principles, and practices of data management, as well as to identify their roles and responsibilities in a broader context as the creators and managers of data.
3. To establish or enhance a sustainable enterprise-wide data management program in support of operational and strategic goals.

Primary goal is to evaluate the current state of maturity to plan for improvement. The organisation is placed on the maturity scale by clarifying specific strengths and weaknesses.

Benefits:

Chapter 15

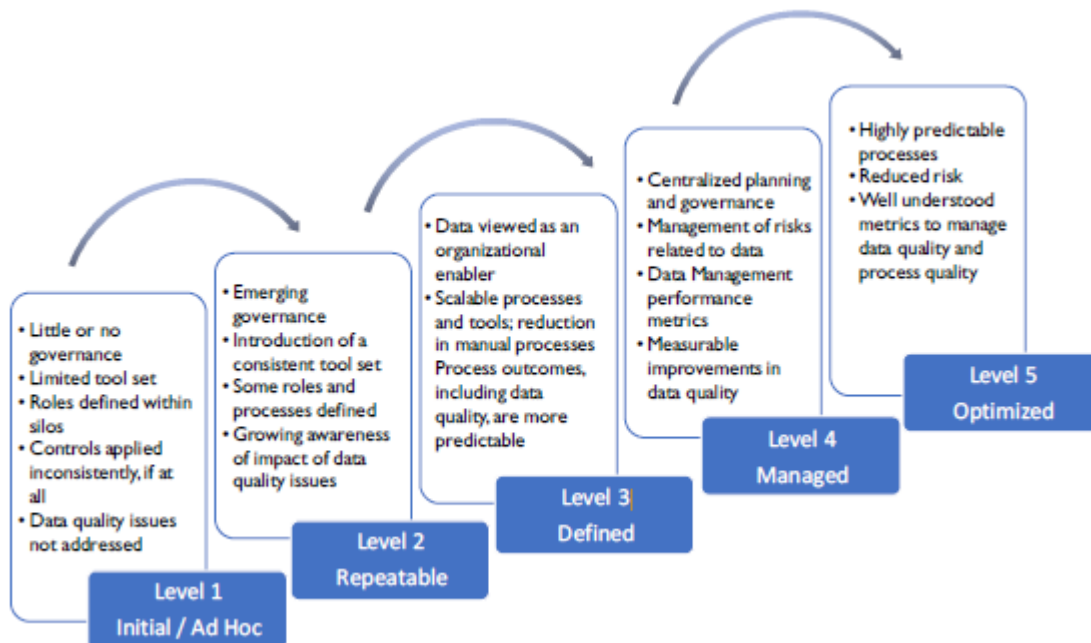
- Educates stakeholders about data management concepts, principles and practices
- Clarify stakeholder roles and responsibilities in relation to organisational data
- Highlight the need to manage data as a critical asset
- Broaden recognition of data management activities across the organisation
- Improve the collaboration necessary for effective data governance

1.3 Essential concepts

1.3.1 Assessment levels and characteristics

CMMs define 5 or 6 levels of maturity:

Level 0: No Capability

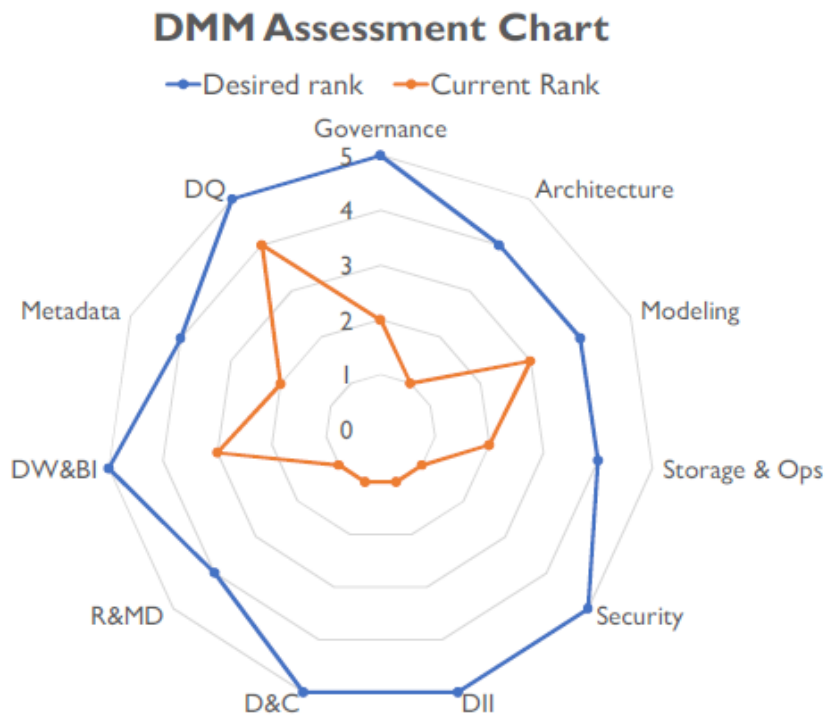


1.3.2 Assessment criteria

Assessment criteria are dependent on the process being evaluated. Will be evaluated along a scale such as 1 -Not started, 2 – in process, 3 – functional, 4 – effective, showing progress and movement to the next level.

When assessing using a model that can be mapped to a DAMA-DMBOK Data Management Knowledge Area, formulate criteria according to the relevant Context Diagram:

- **Activity:** To what degree is the activity in place? Are execution criteria defined? How well defined and executed is the activity? Are best practice outputs produced?
- **Tools:** To what degree is automation and supported by tools? Is tool training provided? Are tools available where needed? Optimally configured? To what extent is long term technology planning in place?
- **Standards:** To what degree is the activity supported by a common set of standards? Are standards enforced and supported by governance and management?
- **People and Resources:** To what degree is the organisation staffed to carry out the activity? What specific skills, training and knowledge are required? How well are roles and responsibilities defined?



1.3.3 Existing DMMA Frameworks

- **CMMI (Capability Maturity Model Institute) Data Management Maturity Model (DMM):**

Provides assessment criteria for the following data management areas:

- Data Management Strategy
- Data Governance
- Data Quality
- Platform and Architecture
- Data Operations
- Supporting Procedures

Identifies sub-processes within the areas and accounts for relation between the areas.

- **EDM Council DCAM:** Enterprise Data Management Council – financial services in USA – Data Management Capability Assessment Model
- **IBM Data Governance Council Maturity Model:** Organised around four key categories:
 - **Outcomes:** Data risk management and compliance, value creation
 - **Enablers:** Organisational structure awareness, policy, stewardship
 - **Core disciplines:** Data Quality Management, information lifecycle management, information security and privacy
 - **Supporting Disciplines:** Data Architecture, classification and Metadata, audit information, logging and reporting.
- **Stanford Data Governance Maturity Model:** Focusses on Data Governance
- **Gartner's Enterprise Information Management Maturity Model**

2 Activities

2.1 Plan Assessment activities

Plan for assessments to be conducted in a short, defined timeframe to expose current strengths and opportunities for improvement.

The goal is to reach a consensus view of current capabilities by interviewing business, data management and Information technology participants, supported by evidence.

2.1.1 Define objectives

Must describe the focus and influence the scope of the assessment. Must be understood by business who help align with the organisation's strategic direction. Assessment objectives help decide which model to adopt and which business areas to prioritise.

2.1.2 Choose a framework

In the context of assumptions about current state, and which will inform the organisation

2.1.3 Define organisational scope

Keep scope manageable and phase into a larger enterprise assessment: Trade-offs between local and enterprise assessments:

- **Localised assessments:** Deeper into details, and is done more quickly. Can be aggregated and weighted to form an enterprise assessment
- **Enterprise Assessments:** Broad. parts of the organisation are sometimes disconnected. Can evaluate different functions based on the same criteria.

2.1.4 Define Interaction approach

Follow recommendations on the selected model. Information gathering should work well within the organisation's culture and minimise participants' time. Includes inspection and evaluation of artefacts and other evidence.

2.1.5 Plan communications

Communications contributes to success. Ensure participants understand the assessment model, as well as how the findings will be used. Describe:

- The purpose of the DMMA
- How it will be conducted
- Their involvement
- Schedule of assessment activities

Include report on findings to all levels.

2.2 Perform Maturity assessment

- **Gather Information:** Formal ratings of assessment criteria.
- **Perform the Assessment:**
 - Review results against a rating method and assign a preliminary rating
 - Document supporting evidence
 - Review with participants to get consensus on a final rating
 - Document finding using model criteria statements
 - Visualisations to illustrate findings

2.3 Interpret results

Identify improvement opportunities aligned with organisational strategy. Recommend actions, the steps towards the target state.

Present the meaning of the ratings to the organisation first. Link current capabilities with the business processes and strategies they support, and the benefits of improving these capabilities.

- **Report assessment results:**
 - Business drivers for assessment
 - Overall results of assessment
 - Ratings by topic with gaps indicated
 - Recommended approach to close gaps
 - Strengths of organisation observed
 - Risks to progress
 - Investment and outcomes options
 - Governance and metrics to measure progress
 - Resource analysis and potential future utilisation
 - Artefacts that can be reused
- **Develop executive briefings**
 - Prepare executive briefings that summarise findings – strengths, gaps and recommendations.

2.4 Create a Targeted Program for Improvements

Recommendations from the DMMA should have a direct impact on data strategy and IT governance, and should be actionable.

Identify Actions and create a Roadmap:

- Sequenced activities for improvements in different DM functions
- Timeline
- Expected improvements in DMMA ratings
- Oversight activities

Should be accompanied by an approach for measuring progress.

2.5 Re-assess Maturity

Reassessments are part of a lifecycle of continuous improvement.

- First assessment establishes a baseline
- Define re-assessment parameters (including organisational scope)
- Repeat DMMA on a published schedule
- Track trends relative to initial baseline
- Develop recommendations based on findings

3 Tools

- **Data Management Maturity Framework:** Primary tool
- **Communication plan:** engagement model for stakeholders, type of information required and schedule
- **Collaboration tools:** Allow findings to be shared

- **Knowledge Management and Metadata Repositories:** Data standards, policies, methods, agendas, minutes of meetings or decisions and business and technical artefacts are managed here.

4 Techniques

4.1 Selecting a DMM Framework

- **Accessibility:** Non-technical terms that convey functional essence of the activity
- **Comprehensiveness:** Framework address a broad scope of data management activities.
- **Extensible and flexible:** Able to enhance model. Model can be used in part or whole:
- **Future progress path built-in:** Logical way forward within each of the DMM functions
- **Industry-agnostic vs. industry-specific:** Depends on the organisation, but best practices should be adhered to.
- **Level of abstraction or detail:** To be related to the organisation and the work it performs
- **Non-prescriptive:** Describes what must be performed, not how
- **Organised by topic:** DM activities placed in context
- **Repeatable:** Consistent over time
- **Supported by a neutral, independent organisation:** Vendor neutral to avoid conflicts of interest
- **Technology neutral:** Based on practices rather than tools
- **Training support included:** Model is supported by comprehensive training.

4.2 DAMA-DMBOK Framework use

DAMA-DMBOK can be used to establish criteria for a DMMA

5 Guidelines for a DMMA

5.1 Readiness Assessment / Risk Assessment

Risk	Mitigation
Lack of organizational buy-in	Socialize the concepts related to the assessment. Establish benefit statements before conducting the assessment. Share articles and success stories. Engage an executive sponsor to champion the effort and review the results.
Lack of DMMA expertise Lack of time or in-house expertise Lack of communication planning or standards	Use third party resources or specialists. Require knowledge transfer and training as part of the engagement.
Lack of 'Data Speak' in the organization; Conversations on data quickly devolve into discussions about systems	Relate the DMMA to specific business problems or scenarios. Address in the communications plan. The DMMA will educate all participants regardless of background and technical experience. Orient participants to key concepts prior to the DMMA.
Incomplete or out-of-date assets for analysis	Flag 'as of' or balance the rating accordingly. For example, give a -1 to everything that is over 1 year out-of-date.
Narrow focus	Reduce the investigation depth to a simple DMMA and go to other areas for a quick assessment to establish ratings for a later comparative baseline. Conduct the first DMMA as a pilot, then apply lessons learned to address a broader scope. Present in-scope focus of proposed assessment in context of DAMA-DMBOK Knowledge Areas. Illustrate what is being left out of scope and discuss the need to include.
Inaccessible staff or systems	Reduce the horizontal scope of the DMMA by focusing only on available Knowledge Areas and staff
Surprises arise such as a regulation changes	Add flexibility into the assessment work stream and focus.

5.2 Organisational and Cultural change

DMMA locates the organisation on a maturity scale and provides a roadmap for improvement, pointing the organisation through change.

6 Maturity Management Governance

DMMA is part of an overall set of data governance activities, each having a lifecycle. DMMA Lifecycle:

- Initial planning and assessment
- Recommendations
- Action plan
- Periodic re-evaluation

6.1 DMMA Process Oversight

Data Governance team

6.2 Metrics

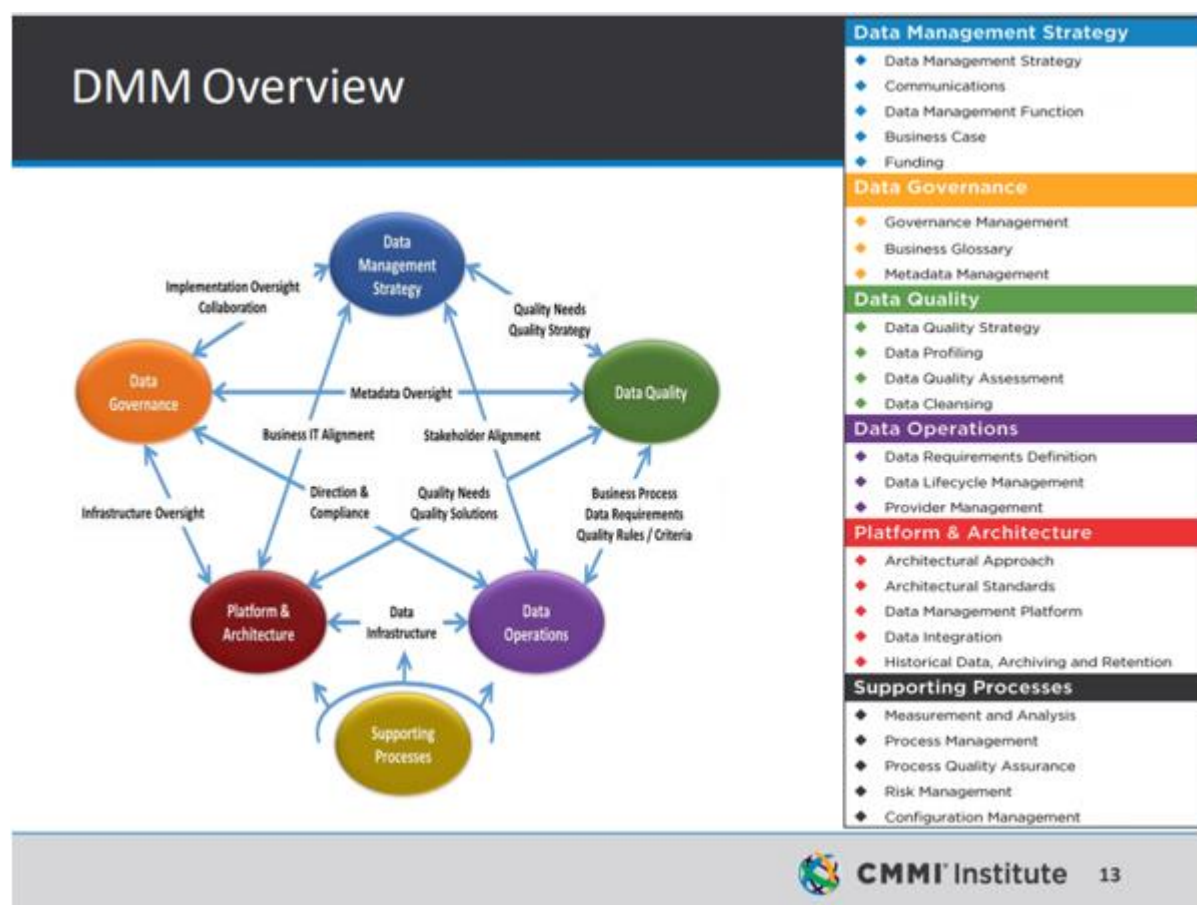
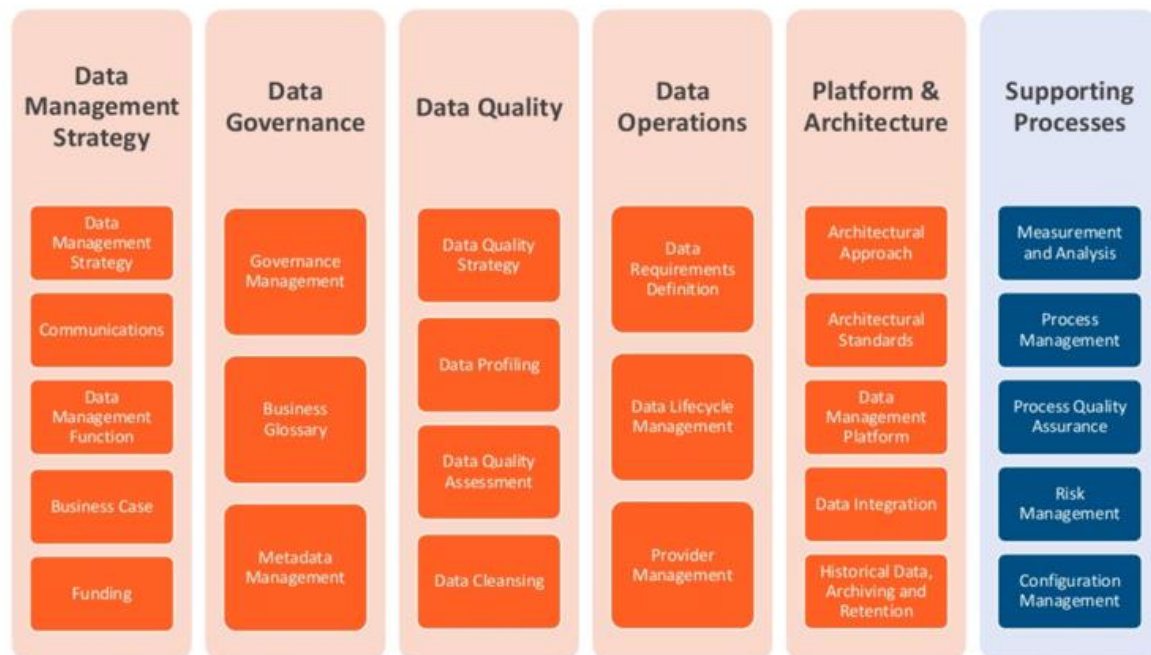
Represent the current state:

- **DMMA Ratings:** Snapshot of the organisations capability level
- **Resource utilisation rates:** cost management in the form of a head count
- **Risk exposure:** or ability to respond to risk
- **Spend management:** How the cost of data management is spread over the organisation.

Overlap with Data Governance metrics

- Data management sustainability
- Achievement of initiative goals and objectives
- Effectiveness of communication
- Effectiveness of education and training
- speed of change adoption
- data management value
- contributions to business objectives
- reductions in risks
- improved efficiency in operations
- **Inputs to the DMMA:** Indicate completeness of coverage
- **Rate of change:** Baseline is established. Periodic reassessment to trend improvement.

The DMMSM has been organized into 5 categories with 20 process areas and 5 supporting processes.



Recognizing Business Data Capability Levels

Disabled	Enabled	Led	Driven
<ul style="list-style-type: none"> • DISTRUST • People Story Telling • Undefined Sources for Decision Making 	<ul style="list-style-type: none"> • AWARENESS • Augmented Story Telling • Curated Data Sources for Decision Making 	<ul style="list-style-type: none"> • INSIGHTS • Data Story Telling • Data Estate Sources for Decision Making 	<ul style="list-style-type: none"> • ACTION • Feedback Story Telling • Data Value Chain Source of Decision Making