DCAM - DATA CAPABILITY ASSESSMENT MODEL

An Innovative Approach to Data Management

DCAM is structured to define and measure capability – the definition of precisely what is required to develop, implement and sustain data management program.

Based on Collective Industry Experience

- **Collaborative development**: Synthesis of research and analysis among practitioners since formation of EDM Council (case studies, regulatory pressure, collaborative research)

- **Integration of key data management disciplines**
  - Data Management Strategy
  - Program Design
  - Organizational Change
  - Dedicated Funding
  - Data Engineering
  - Technology Architecture
  - Governance
  - Collaboration

- **Driven to be practical**: Aligns with organizational mandate; understandable by non-specialists, based on collaboration, structured for continual improvement

How the model is designed

- Model is made up of 7 components.
- Each component is made up of a series of capabilities.
- Each capability is made up of a series of sub-capabilities.
- Each sub-capability is defined by a series of objectives.
- All supported by artifacts of evidence.
1. Managing Content (Identify, Define, Locate)
   • Unique identification of “things” (products; customers; entities, transactions; etc.)
   • Assignment of precise definition of meaning (unambiguous, shared, agreed)
   • Data discovery via the development of comprehensive inventories (where data resides)

2. Build a sustainable program
   • Identify and develop essential skill-sets, executive support; stakeholders, etc.
   • Ensure that data governance is enforceable (authority)
   • Drive culture change - sanctioned by executive management, based on standards, harmonized across the lifecycle, governed by policy and monitored by audit

3. Ensure Data Quality (Data must be Fit-for-Purpose)
   • Establish formal discipline of best practice for data quality
   • Clear assignment and accountability for quality assurance
   • Minimize manual processes/maximize automation

4. Enable Cross Organizational Collaboration
   • Coordinate with Business: business drives data which drives technology
   • Partner and align with technology (dotted line relationship)
   • Collaborate with Cross-organizational Control Functions
Component 1.0
Defines the vision and the purpose of the data management program – why is data management important

Component 2
Describes the organizational structure and funding model of the data management program

Component 3.0
Data architecture is the design of information content, driven by business architecture (requirements), aligned to real-world objects and entities

Component 4.0
Technology architecture addresses the physical implementation of data management (platforms, DBs, tool), in collaboration with the business and the data management office

Component 5.0
Deliver data that is trusted and fit-for-purpose, where users have confidence that the data is what they need, without reconciliation

Component 6.0
The rules of engagement for data management, focused on the implementation of policies, standards and operational procedures necessary to ensure that stakeholders behave

Component 7.0
A true control environment cannot be achieved until all the data management capabilities are operating collaboratively and in unison across the enterprise
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DATA GOVERNANCE

Component

Capability

Sub-Capability

Objectives

- Get the funding model operational.
- Identify and empower the parties accountable for the budget of the Data Management.
- Policy and standards are in alignment with Data Management Strategy

Sample Artifacts:
- Funding model; Formal approvals from stakeholders and budget owners; Records of spending on DM expenses.

Formally establish review and approval processes to build, access, use and send data
Integrate ethical data review and approval processes into the organizations development and SDLC processes
Align review and approval processes with cross-control functions
Communicate established processes (policy and guidelines) to stakeholders

Sample Artifacts:
- Documented policy and standards (cross-border, privacy, data acquisition, entitlement, access, data retention, quality control process, training, data content, data format)

Program funding governance is established and operational
Program and project reviews and approvals are established
Business process optimization for data management is enforced
Issue Management process is defined and operational

Policy and Standards are Written and Approved
The Data Management Program is Governed
Data Structures are Governed

The Ethical use and outcome of data are governed
Data Access and Use is Governed

Documented policy and standards (cross-border, privacy, data acquisition, entitlement, access, data retention, quality control process, training, data content, data format)
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### 3.3.1 Logical data domains have been identified, documented, inventoried and authorized

Identification of logical data domains must be driven by the business from the perspective of what data is needed to perform the required business functions. A logical data domain is the representation of a category of data that has been designated and named. Logical data domains represent the data, not the databases, which are needed to satisfy the business process requirements.

**Objectives**
- Involve business process subject matter experts in the identification of the logical data domains.
- Identify and prioritize logical data domains.
- Structure logical data domains to contain the data of the domains irrespective of the various organizational structures where the data may be produced organization-wide.

**Advice**
The overall goal is to ensure the proper use of data and to get stakeholders to think about DM in terms of data content concepts and not the physical database repositories. All this needs to be based on an understanding of how the business functions operate in reality. Once the logical data domains are defined, they must be mapped to their physical locations and associated with authorized provisioning points. The first step, however, is to define the domains. Data domains include both internally generated data as well as externally acquired data. It is imperative that these strategic data assets are identified and inventoried to ensure their proper use in all data consumer critical business processes.

**Questions**
- Have data domain owners who are responsible for the quality and availability of the data been identified?
- Has the business domain owner, as well as the DA function, been involved in the designation of the authoritative data domains?
- Have data domain taxonomies and conceptual/ logical models been verified by business subject experts?
- Are all critical business functions represented in the discussion?
- Is the distinction between data domains and databases clear?

**Artifacts**
- Policy indicating what authoritative data domains are and how they are to be used
- Criteria for determination of authoritative data domains
- Inventory of authoritative data domains
- List of stakeholders and evidence of bi-directional communication

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**Table:**

<table>
<thead>
<tr>
<th>Not Initiated</th>
<th>Conceptual</th>
<th>Developmental</th>
<th>Defined</th>
<th>Achieved</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>No logical data domains exist.</td>
<td>No logical data domains exist, but the need is recognized and the development is being discussed.</td>
<td>Logical data domains are being developed.</td>
<td>Logical data domains are being defined and validated by directly involved stakeholders.</td>
<td>Logical data domains are established, recognized and used by stakeholders.</td>
<td>Logical data domains are established as part of business-as-usual practice with a continuous improvement routine.</td>
</tr>
</tbody>
</table>

**Sub-Capability Statement**

**DCAM Description and Objectives**

**Scoring Guidance**

**Advice from an Audit Perspective**

**Essential Questions**

**Required Artifacts as Evidence of Adherence**
## DCAM - Data Capability Assessment Model

### Questions Framed in Requirements to Achieve Capability (“5”) (1)

<table>
<thead>
<tr>
<th>Process</th>
<th>Formality</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Initiated</td>
<td>Capabilities are not Being Performed</td>
<td>Tactical</td>
</tr>
<tr>
<td>In Process (Conceptual)</td>
<td>Capabilities are in their Initial Planning Stages</td>
<td>Issues are under debate</td>
</tr>
<tr>
<td>In Process (Developmental)</td>
<td>Capabilities are Being Developed</td>
<td>Policies, procedures, standards, roles and accountabilities are being established</td>
</tr>
<tr>
<td>In Process (Defined)</td>
<td>Capabilities are Defined and Formalized</td>
<td>Policies and standards exist (roles, responsibilities and accountabilities are being coordinated)</td>
</tr>
<tr>
<td>Achieved</td>
<td>Capabilities are Achieved and Implemented</td>
<td>Policies and standards are implemented (proactive issue management)</td>
</tr>
<tr>
<td>Enhanced</td>
<td>Capabilities are fully integrated into the operating culture of the organization</td>
<td></td>
</tr>
</tbody>
</table>

(1) Questions framed in requirements to achieve capability from the DCAM model.
CROSSING THE CAPABILITY CHASM

The “leap” from developmental capability to defined capability is the most difficult challenge.

1. Developmental Engagement underway
   - Key functional stakeholders identified; workstreams defined; meetings underway; participation growing; activity underway; policies, roles, and operating procedures being established; project/annual funding

2. Key functional stakeholders identified; workstreams defined; meetings underway; participation growing; activity underway; policies, roles, and operating procedures being established; project/annual funding

3. Developmental Engagement underway
   - Business users active; LOB management engaged; requirements verified; responsibilities defined and assigned; policy and standards exist; routines in place; lineage defined and being verified; metadata captured and verified; CDEs identified and inventoried; adherence tracked; multi-year/sustainable funding

4. Defined Performed and verified
   - Business users active; LOB management engaged; requirements verified; responsibilities defined and assigned; policy and standards exist; routines in place; lineage defined and being verified; metadata captured and verified; CDEs identified and inventoried; adherence tracked; multi-year/sustainable funding

5. 6.
DCAM - Data Capability Assessment Model

A data management best practice paradigm …

- Provides a common and measurable framework
- Translates industry expertise into operational standards
- Establishes common language for data management
- Documents capability requirements
- Grounded in evidence, formality and organizational engagement
- Evidence-based artifacts

Enables organizations with trust and confidence that the data they are relying on is accurate, complete, rationalized and actionable

Program Initiation  Assessments  Training and Compliance  Benchmarking & Surveys
GOAL: Translate the Practice of Data Management into Science