

*Introduction
and
Foreword*



Data Management
Capability Assessment Model

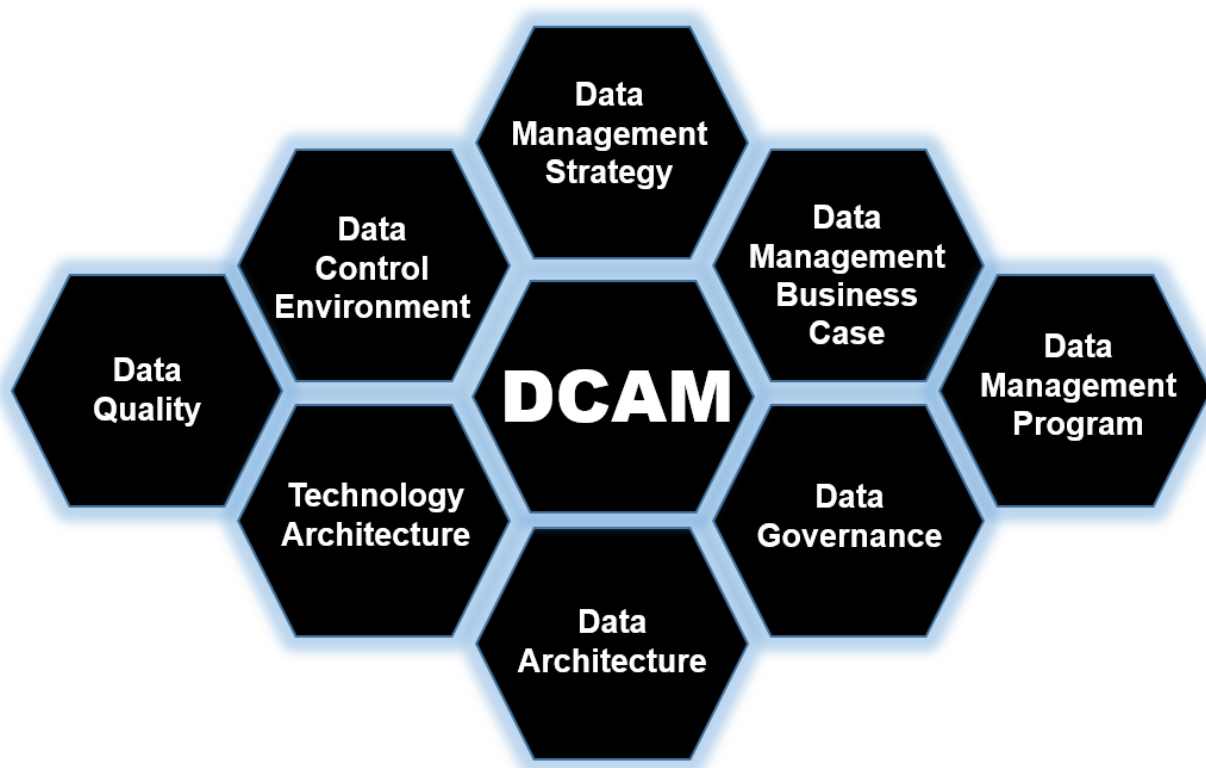
**DCAM
Assessor's
Guide**

Version 1.2.2



Developed by





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INTRODUCTION

The Data Management Capability Model (DCAM™) was created by the Enterprise Data Management Council based on the practical experiences and hard-won lessons of many of the world's leading organizations. It is a synthesis of best practices associated with the management of data content across the horizon of interconnected processes. The Data Management Capability Model defines the scope of capabilities required to establish, enable and sustain a mature data management discipline. It addresses the strategies, organizational structures, technology and operational best practices needed to successfully drive data management. It addresses the tenets of data management based on an understanding of business value combined with the reality of operational implementation.

To manage data in today's organizational environment starts by recognizing that proper data management is about managing data as "meaning". This is a relatively new concept for many organizations. It is not easy to articulate and not very well understood. Data exists everywhere within an organization and must be managed consistently within a well-defined control framework. The DCAM™ helps identify this framework by defining the capabilities required to make data management a critical part of a firm's everyday operational fabric.

The challenges of properly managing data are significant. There are many legacy repositories and a plethora of functions to unravel. There are social and political barriers to overcome. There are real IT challenges and execution gaps to address. Data ownership and accountability are hard to implement. Funding is often project based. And many firms simply don't have the strong executive support that is needed to ensure that the organization stays the course in the face of short term measurement criteria, operational disruption and conflicting stakeholder challenges to properly address the realities of the data management challenge.

We understand this reality because we've been there, and we have the scars across our back to prove it. Data is foundational. It is the lifeblood of the organization. The "bad data" tax is a significant expenditure for many firms. Unraveling silos and harmonizing data is the prerequisite for eliminating redundancy, reducing reconciliation and automating business processes. Managing data is essential if we are to gain insight from analytics, feed our models with confidence, enhance our service to clients and capitalize on new (but often fleeting) business opportunities. DCAM™ provides the guidance needed to assess current state, and provide the objectives of target state, for your data program.

The DCAM™ is organized into eight core components.

1. The **Data Management Strategy** discusses the elements of a sound data strategy, why it is important and how the organization needs to be organized to implement.
2. The **Data Management Business Case and Funding Model** addresses the creation of the business case, its accompanying funding model and the importance of engaging senior executives and key stakeholders for approval.
3. The **Data Management Program** discusses what's organizationally needed to stand up a sustainable Data Management Program.
4. **Data Governance** defines the operating model and the importance of policies, procedures and standards as the mechanism for alignment among (and compliance by) stakeholders.

5. **Data Architecture** focuses on the core concepts of “data meaning” – how data is defined, described and related.
6. **Technology Architecture** focuses on the relationship of data with the physical IT infrastructure needed for operational deployment.
7. **Data Quality** refers to the concept of fit-for-purpose data and the processes associated with the establishment of both data control and data supply chain management.
8. **Data Control Environment** defines the data lifecycle process and how data content management is integrated into the overall organizational ecosystem.

Each component is preceded with a definition of what it is, why it is important and how it relates to the overall data management process. These are written for business and operational executives to demystify the data management process. The components are structured into 37 capabilities and 115 sub-capabilities. These capabilities and sub-capabilities are the essence of the DCAM™. They define the goals of data management at a practical level and establish the operational requirements that are needed for sustainable data management. And finally, each sub-capability has an associated set of measurement criteria to be used in the evaluation of your data management journey.

Welcome to the world of data management. The EDM Council is indebted to the dozens of members who have contributed to the development of the Data Management Capability Model. We are always searching for ways to enhance and improve the model. We encourage your feedback. We are interested in your rants, raves and alternative points of view. For more information on the DCAM™ and on the EDM Council, please contact us at info@edmcouncil.org

Michael Atkin
Managing Director
EDM Council
atkin@edmcouncil.org

John Bottega
Senior Advisor
EDM Council
jbottega@edmcouncil.org

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FOREWORD

The concept of data as a foundational component of business operations has arrived. It is now understood as one of the core factors of input into the full spectrum of business and organizational processes. The common theme for firms that are effective in their use of data to reduce operational costs, automate manual processes, consolidate redundant systems, minimize reconciliation and enhance business opportunities is the implementation and management of a data control environment. The reason why firms implement a control environment is to ensure trust and confidence among consumers that the data they are relying on for business processing and decision-making is precisely what they expect it to be – without the need for manual reconciliation or without reliance on data transformation processes.

The core components associated with the implementation of a control environment are needed to ensure that all data elements/attributes are precisely defined, aligned to meaning, described as metadata and managed across the full data lifecycle. The key to establishing a control environment however, is the achievement of “unambiguous shared meaning” across the enterprise as well as the governance of the processes related to ensuring definitional precision. Data must be consistently defined because it represents a real thing (i.e. a product, client, account, counterparty, transaction, legal entity, location, process, etc.). All other processes are built upon this foundation.

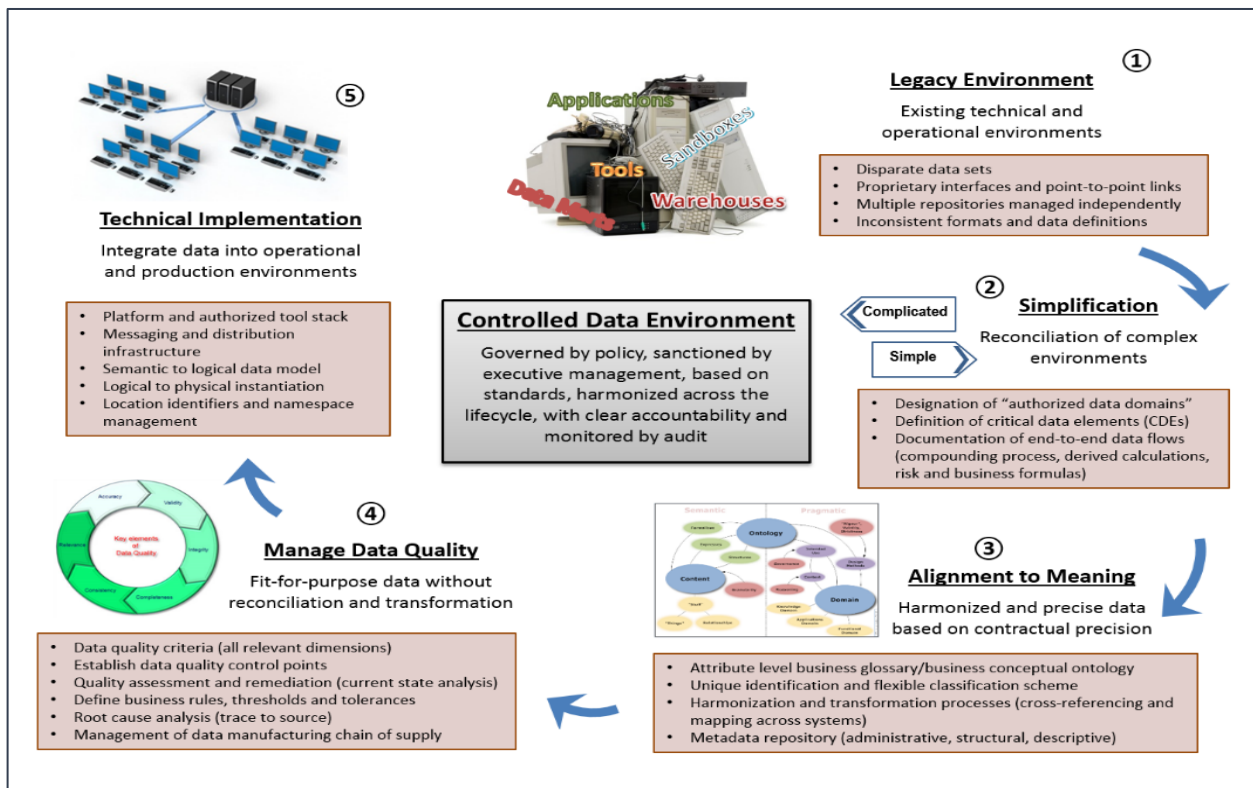
In a fragmented data environment (the opposite of a control environment) applications development can result in ad hoc naming conventions which exacerbate the problem of common terms that have different meanings, common meanings that use different terms and vague definitions that don’t capture critical nuances. For many firms this challenge can be debilitating because there are thousands of data attributes, delivered by hundreds of internal and external sources, all stored in dozens of unconnected databases. This fragmentation results in a continual challenge of mapping, cross-referencing and manual reconciliation. To achieve a control environment, every data attribute must be understood at its “atomic level” (as a fact) that is aligned to business meaning without duplication or ambiguity. Managing data as meaning is the key to alignment of data repositories, harmonization of business glossaries and ensuring that applications dictionaries are comparable.

Achieving alignment on business meaning (including the process of how terms are created and maintained) can be a daunting task. It is not uncommon to experience resistance from business users and IT - particularly when there are multiple existing systems linked to critical business applications. The best strategy for reconciliation in a fragmented environment is to harmonize on the legal, contractual or business meaning rather trying to get every system to adopt the same naming convention. Nomenclature represents the structure of data and unraveling data structures/data models are expensive and not necessary. It is better to focus on precisely defining business concepts, documenting transformation processes and capturing real-world data relationships. Once established, existing systems, glossaries, dictionaries, repositories, etc. can be cross-referenced to common meaning.

Managing data as meaning is the cornerstone of effective data management. It needs to be managed along with other “metadata” to ensure consistency and comparability across the enterprise. The other components of metadata can be organized into three core categories: descriptive metadata (i.e. information that identifies where data is located); structural metadata (i.e. information about the physical data layer and how the data is structured) and administrative metadata (i.e. information about when the data was created, its purpose and access rights). Data meaning, and metadata management are best understood as the core of your content infrastructure and the baseline for process automation, applications integration and alignment across linked processes.

The implementation and management of a control environment is governed by standards, policies and procedures. These are the essential mechanisms for establishing a sustainable data management program and for ensuring compliance with a control environment in the face of organizational complexity. Managing meaning is the key to effective data management. Meaning is achieved through the adoption of semantic standards. Standards are governed by policy. Policy is established by executive management, supported by data owners and enforced by Corporate Audit. Get the data infrastructure established and governed – it represents the foundation for operational efficiency and must not be compromised.

The following illustration summarized the challenges that a data management professional faces today in their quest to create a control environment.



Summarized into one illustration, achieving a control environment first requires an understanding of the existing legacy data environments (inventory of data; point-to-point links; inconsistent definitions; etc.). Once understood, this disparate environment must be simplified, organized and categorized into defined data domains, with clearly identified data elements and documented data flows. These elements must be aligned to unambiguous shared meaning across the organization through the implementation of controls, policy and governance. Once established, data can now be measured and tracked to ensure quality and consistency with minimal reconciliation. And finally, close alignment to technology throughout this exercise is required to ensure the principles and best practices that have been established are enabled across all the organization’s IT infrastructures.

It is this journey that must be taken to bring about a control environment needed to ensure the highest quality of data is delivered to critical functions throughout your organization.

Control Environment Capability Objectives

1. The concept of a control environment is understood by relevant stakeholders and adopted by the organization (standards-based, harmonized across lifecycle, unique identifiers, aligned to meaning). The organization recognizes the need for a control environment to meet business, operational and regulatory objectives.
2. The components associated with a control environment have been defined, verified by stakeholders (i.e. inventoried and confirmed), aligned with technical capability and approved by executive management. Policies, procedures and standards exist for all relevant areas including data quality, data access/distribution, authorized use/entitlement control, data privacy and data security.
3. The framework for implementing a control environment, including reconciliation of disparate systems, have been fully resourced.
4. The standards that are needed to implement the control environment are defined and verified by stakeholders (for relevant products, accounts, clients, business partners, legal entities, counterparties, vendors, etc.). Business processes are identified, documented and aligned with data requirements.
5. Data attributes for relevant business processes are known, segmented according to criticality and understood in the context of how data is compounded/how derived data elements are calculated. Existing systems, processes, repositories and consuming applications across the full data lifecycle are mapped to the control environment standards and aligned with systems of record. Rules and conversion procedures for transformation and cross-referencing are documented. Shared data attributes are identified and mapped to processes and sub-processes.
6. Standard identifiers, metadata and taxonomies are established and integrated across the enterprise for all functions and processes. The process for new standards adoption is documented and implemented.
7. Data in all repositories are aligned to “common meaning” as an ontology. The ontology is modeled and verified by SMEs. There is a common method for defining, achieving agreement, updating and promulgating the concept of “single term, single definition” based on how business processes work in the real world. All changes to the corporate ontology are synchronized and aligned to the systems of record.
8. Procedures are in place to manage changes and exceptions to the control environment.
9. A centralized/aligned metadata repository is implemented and maintained. The metadata repository is managed from descriptive, structural and administrative dimensions.
10. All new product development initiatives, data integration activities and data consolidation efforts use the control environment standards.
11. The control environment is governed across the enterprise with clear accountability. The governance process consists of a combination of IT infrastructure, program management offices,

data administrators and data owners.

12. Compliance with the control environment is monitored, measured and audited. Results of the compliance audit is shared with executive management.
13. Communications mechanisms are in place to ensure that the goals, policies and procedures of the control environment are implemented; that business and IT can communicate with each other; that issues can be escalated as appropriate; that priorities are established; that policies and standards are implemented and that employees are in compliance with the control processes.
14. There is close cooperation between the Board of Directors, executive management, lines of business, information technology and operations on the implementation and management of the control environment. Stakeholders receive training in the policies that exist and the procedures that need to be followed to achieve organizational compliance.
15. Executive management sets expectations and gives authority to implement the control environment. Expectations are translated into incentives and operational constraints. Lines of business are managing within established boundaries. Performance is linked to implementation of the control environment