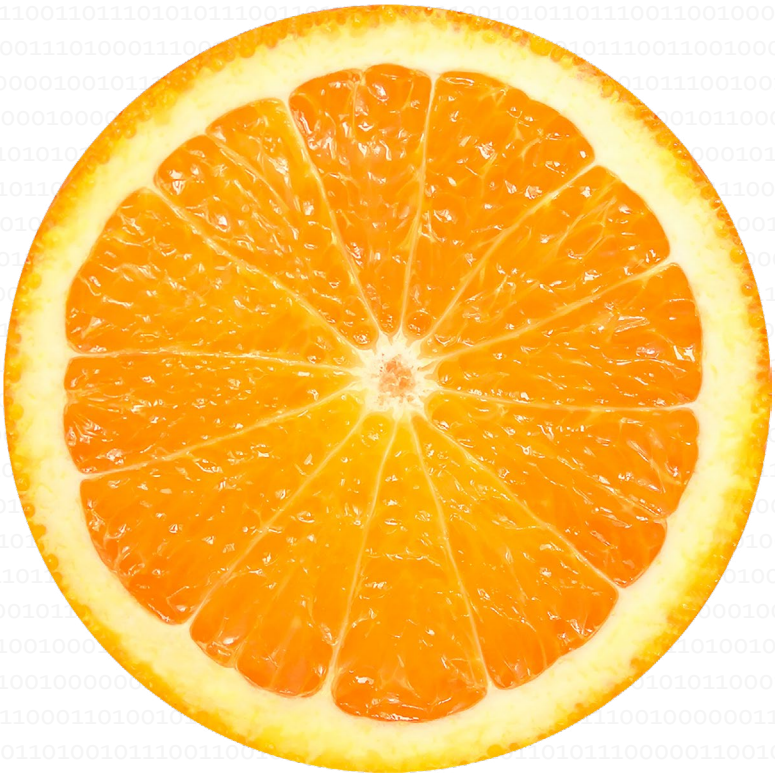
THE "ORANGE" MODEL OF DATA MANAGEMENT



IRINA STEENBEEK

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INTRODUCTION

Almost every data management professional, at some point in their career, has come across the following crucial questions:

1. Which industry reference model should I use for the implementation of data management functions?
2. What are the key data management capabilities that are feasible and applicable to my company?
3. How do I measure the maturity of the data management functions and compare that with those of my peers in the industry?
4. What are the critical, logical steps in the implementation of data management?

On the way to finding answers to these questions, many professionals face several challenges.

Challenge 1: There are several well-known and adopted industry reference guides and they have fundamental conceptual differences.

The primary data management/governance reference industry guides are DAMA-DMBOK by the DAMA International[1] and DCAM by the EDM Council[2]. The third industry guide, TOGAF by The Open Group[3], focuses on Enterprise Architecture, but it also covers some data-management-related areas. The fundamental conceptual differences are:

- the perspective on data management;
  DAMA-DMBOK stands for broad perspective and takes a look at data management from the enterprise viewpoint regarding the lifecycle of data circulating within a company.
  DCAM chooses the narrow perspective and scopes data management from the viewpoint of the tasks to be performed by data management professionals.
- the role of the IT function;
  DAMA-DMBOK considers data management as a part of IT, while DCAM separates data management from IT by recognizing this function as a part of a collaborative ecosystem.
- the building blocks of data management metamodels;
  DCAM describes data management as a set of business capabilities, while DAMA-DMBOK defines data management as a business function and describes it using a set of Knowledge reas.
  Unfortunately, neither of the guides provide a clear definition of a 'business function' or a 'capability'.
- the scope of data management functions;
  The list of data management capabilities and functions are similar only to some extent.

Challenge 2: There are differences in data management terminology, definitions, and the content of data management business capabilities/functions described in the primary industry guides.

The list of the business functions and capabilities differ between different guides. Furthermore, the capabilities/functions that are identical by name often have different meanings and deliverables.[4]

Challenge 3: The primary industry guides offer knowledge on data-management-related subjects but don't provide a comprehensive method regarding the practical implementation of a data man-

agement framework.

The development of the practical approach to implementing data management remains a challenge for each company. The industry reference guides mentioned above offer information about "best practices", but not the practical approach. Such a challenge always means that each company needs to spend resources and time "'reinventing the wheel."

Challenge 4: There are several data management/governance maturity models available, but these models and obtained results can be hardly compared.

The most well-known data management/governance maturity models are: DAMA-DMBOK,[5] DCAM,[6] CMMI CERT-RMM (Data Management Maturity Model) by CMMI,[7] IBM Data Governance Council Maturity model,[8] Stanford Data Governance Maturity Model,[9] Gartner's Enterprise Information Management Maturity Model.[10] There are a few examples of the differences among these models:[11]

- the number and name of the maturity levels
- the number of maturity levels varies between 5 and 6 points
- name, amount, and type of subject domains. For example, DAMA-DMBOK operates via the data management functions described by the Knowledge Area. DCAM applies a business capability concept. CMMI and Stanford models take a process as a basis.
- content of domains.One of the most prominent examples is the difference between the data governance subject domain in DAMA-DMBOK and DCAM viewpoints.

Challenge 5: The metamodels of a maturity model and a data management model should be aligned, but it is not a case with the major models.

Only DAMA-DMBOK and DCAM are consistent in respect to the identity of their metamodels used for data management setup and the maturity assessment. The rest of the data management/governance (maturity) models use metamodels that can hardly be compared with each other and with the models of the primary industry reference guides.[12]

To achieve trustful results while measuring maturity, the metamodels of data management models and the data management maturity models should be compatible.

Challenge 6: The situation with maturity models hardly allows for one of the key goals of the maturity assessment to be reached: creating benchmarks for comparison between different companies.

In the situation when companies battle on their own with the development and implementation of a data management framework, they might want to compare their achievements with peers in the industry. The situation with multiple and not compatible maturity models makes the task impossible.

The "Orange" model described throughout the document strives to mitigate the challenges mentioned above and focuses on the needs of medium-sized companies.

OVERVIEW OF THE MODEL

THE "ORANGE" MODEL IS A COLLECTION OF TECHNIQUES AND TEMPLATES FOR THE PRACTICAL ESTABLISHMENT OF THE DATA MANAGEMENT THROUGH THE DESIGN AND IMPLEMENTATION OF THE DATA AND INFORMATION VALUE CHAIN, ENABLED BY A SET OF DATA MANAGEMENT CAPABILITIES.

This model got its name because of the famous fruit: the orange. Few people know that an orange is actually a hybrid between a pomelo and a mandarin.[13] This analogy inspired the name of the model, as it perfectly symbolized the attempt to cross the "pomelos" of data management metamodels with the "mandarins" of data management maturity metamodels.

Each company can adapt the "Orange" data management (maturity) metamodel to the company-specific structure, culture, and resources. The tool is designed for data management professionals and consultants.

The "Orange" model is based on several core principles.

KEY PRINCIPLES OF THE "ORANGE" MODEL

PRINCIPLE 1: ***Data management is a business capability.***

The key purposes and outcomes of the capability are:

- to be in control of data and information resources
- to create and utilize value of data and information resources.

PRINCIPLE 2: ***Data management delivers its key value proposition through the data and information value chain enabled by the set of business capabilities.***

The key value proposition of data management is enabling the process of the transformation of data into meaningful information. The data management function delivers this value proposition by building an effective data and information value chain supported by a set of data management capabilities.

The "Orange" model uses the following definition of the data and information value chain:

Data and information value chain is the set of actions supported by the collection of data management capabilities that enable the transformation of raw data into meaningful information in order to deliver the value propositions to the corresponding stakeholder groups.

PRINCIPLE 3: ***The set up of the data management capability within the company follows the logic of the development of the data and information value chain and business capabilities that enable the chain.***

To implement an effective data management function, the data and information value chain and the required set of data management capabilities should be developed. Implementation of data management function follows the logic of documentation of the data and information value chain.

PRINCIPLE 4: ***Data management is an independent business function.***

To deliver the data management business capability, a company should establish (a) corresponding business function(s). These business functions should be aligned with the company organizational structure.

A lot of different data stakeholders are involved in the functioning of the data and information value chain. The key role of data management is the coordination of data-related activities among various business stakeholders. Therefore, data management from the organizational perspective should be established as an independent function.

PRINCIPLE 5: ***The "Orange" model is applicable for mid-sized companies and is industry agnostic.***

The model covers the most essential needs and requirements in the data management of mid-sized companies. Data management functions have a similar structure and use identical tools independent of the industry.

The “Orange” (meta)model of data management provides a collection of techniques and templates for the practical set up of data management through the design and implementation of the data and information value chain, enabled by a set of data management capabilities.

This book is a toolkit for advanced data management professionals and consultants thatare involved in the data management function implementation.

This book works together with *The Data Management Toolkit*. The “Orange” model assists in specifying the feasible scope of data management capabilities, that fits company’s business goals and resources. *The Data Management Toolkit* is a practical implementation guide of the chosen data management capabilities.

ABOUT THE AUTHOR

Dr. Irina Steenbeek is a data management practitioner with more than 10 years of experience. The key areas of her professional expertise are the implementation of data management frameworks in mid-sized companies and data lineage. Additionally, Irina has practical experience in software implementation such as ERP and DWH/BI, management consultation, financial and business controls, and data science.Through the years, she has worked for global institutions as well as large- and medium-sized organizations in different sectors, including but not limited to financial institutions, professional services, and IT companies.

In 2016, she founded Data Crossroads - a training and coaching services enterprise in the area of data management. Data Crossroads focuses on assisting companies in improving their decision-making and company performance by getting control over their data and information resources.

Irina is a strong believer that the success of data management initiatives is based on the combination of a pragmatic approach, clear and transparent methodology, and time. She has shared her approach and implementation experience by publishing The Data Management Toolkit and The Data Management Cookbook. She is also the author of various white-papers and articles on the topic of data management.

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