GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

ICS 35.240.70

L 67

GB/T 36073-2018

Data management capability maturity assessment mode

数据管理能力成熟度评估模型

Issued on: March 15, 2018 **Implemented on: October 01, 2018**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine;

Standardization Administration of the People's Republic of China.

Table of Contents

Data management capability maturity assessment mode

1 Scope

This Standard provides data management capability maturity assessment mode as well as the corresponding maturity level. It defines 8 capability areas: data strategy, data governance, data architecture, data application, data security, data quality, data standards and data life cycle.

This Standard is applicable to the assessment on data management capability maturity by organizations and institutions.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 35295, *Information technology - Big data - Term*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 35295 as well as the followings apply.

3.1 data management capability

the ability of an organizations and institution to manage and apply data

3.2 data management capability maturity assessment model

a model used to assess the maturity of an organization's data management capability

3.3 capability area

a collection of data management related activities, processes and a collection of related data capability sub-domains

3.12 master data

core business entity data that needs to be shared across systems and departments in an organization

3.13 reference data

the data to classify and standardize other data

3.14 data lifecycle

a set of processes that transform raw data into knowledge that can be used for action

[GB/T 35295-2017, definition 2.1.2]

3.15 data element

a data unit whose definition, identification, representation and allowable value are specified by a set of attributes

[GB/T 18391.1-2009, definition 3.3.8]

4 Abbreviations

The following abbreviations apply to this Standard.

DCMM: Data management Capability Maturity assessment Model

ETL: Extraction-Transformation-Loading

KPI: Key Performance Indicator

SOR: System of Record

TCO: Total Cost of Ownership

5 Summary

5.1 Capability area and capability item

DCMM contains 8 data management capability areas. Each capability area includes several capability items in the data management domain, 29 in total. See Table 1 for capability areas and capability items.

c) Each business system manages its own data. There are inconsistencies in data between various business systems. The organization does not realize the importance of data management or data quality;

d) Data management is only carried out according to the cycle of project implementation. It is unable to calculate the cost of data maintenance and management.

5.2.2 Managed level

The organization has realized that data is an asset. According to the requirements of the management strategy, it has developed the management process and designated relevant personnel for preliminary management. The specific features are as follows:

a) Be aware of the importance of data. Develop some data management specifications. Set up relevant positions;

b) Realize that data quality and data silos are an important management issue. But there is currently no solution to the problem;

c) The organization has carried out preliminary data integration work, tried to integrate data from various business systems and designed relevant data models and management positions;

d) Start the documentation of some important data. Design relevant management measures for the safety and risk of important data.

5.2.3 Stable level

Data has been regarded as an important asset to achieve organizational performance goals. It has developed a series of standardized management processes at the organizational level to promote the standardization of data management. The specific features are as follows:

a) Realize the value of data. It has established data management rules and systems within the organization;

b) Data management and application can be combined with the organization's business strategy, business management requirements and external supervision requirements;

c) It has established relevant data management organization and management process, which can promote all departments in the organization to carry out work according to the process;

d) The organization can obtain data support in the daily decision-making and business development process. It has significantly improved work

6 Data strategy

6.1 Data strategy planning

6.1.1 Overview

Data strategy planning is the result of consensus among all stakeholders. It determines the motivation for data management and application from the macro and micro levels. It comprehensively reflects the needs of data providers and consumers.

6.1.2 Process description

The process is described as follows:

a) Identify stakeholders. Identify the needs of stakeholders;

b) Data strategy needs assessment: Organize to assess the status quo of business and information. Understand the needs of business and informatization for data;

c) Data strategy formulation, including but not limited to:

1) Vision statement, which contains data management principles, goals and objectives;

2) Planning scope, which includes important business areas, data scope and data management priorities;

3) Selected data management model and construction method;

4) Main gaps in current data management;

5) Management officials and responsibilities, as well as a list of stakeholders;

6) Preparation of management methods for data management plans;

7) Continuous optimization of roadmap.

d) Data strategy release: formally release the approved data strategy through documents, websites, emails and so on;

e) Data strategy revision: Regularly revise the data strategy according to the requirements of business strategy, information development and so on.

6.1.3 Process goals

6) Regularly revise the published data strategy.

d) Level 4: quantitative management level

1) Perform quantitative analysis and timely optimization of the management process of the organization's data strategy;

2) Be able to quantitatively analyze the implementation of the data strategy roadmap. Continuously optimize data strategy.

e) Level 5: optimization level

1) Data strategy can effectively enhance the competitiveness of enterprises;

2) Share the best practices in the industry and become industry benchmarks.

6.2 Data strategy implementation

6.2.1 Overview

It is a process that organizes and completes data strategy planning and gradually realizes the data functional framework. Assess the current status of the organization's data management and data application during implementation. Determine the gap between vision and goals. Develop periodic data mission goals based on the data function framework. Determine the implementation steps.

6.2.2 Process description

The process is described as follows:

a) Assessment criteria: Establish assessment standards for the implementation of data strategy planning. Standardize the assessment process and methods;

b) Current situation assessment: Analyze the implementation of the organization's current data strategy. Assess the progress of various tasks;

c) Gap assessment: Compare the results of the status quo assessment with the organization's data strategy plan. Analyze the differences;

d) Implementation path: Stakeholders prioritize data function tasks based on the organization’s common goals and actual business value;

e) Guarantee plan: According to the implementation path, formulate the budget required to carry out various activities;

2) Perform comprehensive assessment of the actual situation within the organization. Determine the gap between various data functions and vision, goals;

3) Develop a work report template of data strategy promotion. Release it regularly, so as to enable stakeholders to understand the implementation of the data strategy and existing problems;

4) Based on the organizational business strategy, use business value-driven methods to assess the priority of data management and data application. Develop an implementation plan. Provide guarantees in terms of resources, funds and so on;

5) Track and assess the implementation of various data tasks. Adjust and update the implementation plan based on work progress.

d) Level 4: quantitative management level

1) Quantitative analysis can be used to analyze the progress of the data strategy;

2) Accumulate a large amount of data to improve the accuracy of data task schedule planning;

3) The arrangement of data management tasks can meet the needs of business development in time. It has established a standardized prioritization method.

e) Level 5: optimization level

Share the best practices in the industry and become industry benchmarks.

6.3 Data strategy assessment

6.3.1 Overview

Corresponding business cases and investment models shall be established in the process of data strategy assessment. Track the progress throughout the implementation of the data strategy. At the same time, keep records for audit and assessment.

6.3.2 Process description

The process is described as follows:

a) Establish a task benefit assessment model. Establish a benefit assessment model for tasks related to data strategy in terms of time, cost, benefit and so on;

b) Level 2: managed level

1) Within a single department or data functional area, it has established a business case and task benefit evaluation model based on business needs;

2) Within a single department or data functional area, establish a standard decision process for business cases. It has clarified the responsibilities of stakeholders;

3) Within a single department or data functional area, stakeholders participate in the formulation of investment models for data management and data application projects;

4) Within a single department or data functional area, the related data tasks are assessed according to the task benefit assessment model.

c) Level 3: stable level

1) Within the organization scope, establish relevant business cases for data management and application according to standard workflows and methods;

2) Within the organization scope, it has developed a data task benefit evaluation model and related management methods;

3) Within the organization scope, the formulation of business cases can obtain the support and participation of senior managers and business departments;

4) Within the organization scope, guide the implementation priority arrangement of data function projects through cost-benefit criteria;

5) Within the organization scope, assess and manage data strategy implementation tasks through the task benefit evaluation model. Include them in the scope of the audit.

d) Level 4: quantitative management level

1) Build a dedicated data management and data application TCO method. Measure and assess the changes in data management implementation entry points and basic implementation. Adjust the funding budget;

2) Use statistical methods or other quantitative methods to analyze the cost evaluation criteria of data management;

3) Use statistical methods or other quantitative methods to analyze the effectiveness and accuracy of fund budgets to meet organizational

a) Establish a complete organizational structure and corresponding workflow mechanism;

b) Data management clarifies the jurisdiction management and set up enough full-time and part-time positions. Continue to promote team building;

c) Establish a performance evaluation system that supports data management and data application strategies.

7.1.4 Capability level standards

The capability level standards are as follows:

a) Level 1: initial level

1) Reflect the positions, roles and responsibilities of data management and data application in specific projects;

2) Solve data problems based on personal ability. A professional organization has not been established.

b) Level 2: managed level

1) It has developed data-related training plans, but they are not formed as a system;

2) In a single data functional area or business unit, set up data governance part-time or full-time positions. Job responsibilities are clear;

3) The importance of data governance is recognized by management officials;

4) Clarify the management responsibilities of data governance positions in new projects.

c) Level 3: stable level

1) Management officials are responsible for decision-making related to data governance and participate in data management related work;

2) The data governance and jurisdiction department clarified within the organization scope is responsible for organizing and coordinating various data functions;

3) The job responsibilities of data governance personnel are clear, which can be reflected in the job description;

4) It has established evaluation standards for data management. It has

divided into three levels: policies, methods, and rules. The framework stipulates the specific areas of data management and data application, the goals in each data functional area, the action principles to be followed, the clear tasks to be completed, the work methods to be implemented, the general steps and specific measures;

b) Organize the content of the data system. Data management policies, data management methods, and data management rules together constitute an organizational data system. The basic content is as follows:

1) The data policy describes the purpose of data management and data application. Clarify its organization and scope;

2) Data management methods are related rules and procedures for the development of activities in various fields of data management and data application;

3) Data management rules are related documents formulated to ensure the implementation of various data methods;

c) Data system release: The internal organization publishes the approved data system through documents, emails and so on;

d) Data system promotion: Regularly carry out training and publicity work related to the data system;

e) Data system implementation: Combining with the settings of the data governance organization, promote the implementation of the data system.

7.2.3 Process goals

The process goals are as follows:

a) Establish a data system. Release it after extensive consultation within the organization;

b) Establish a systematic management process to carry out system inspection, update, release and promotion.

7.2.4 Capability level standards

The capability level standards are as follows:

a) Level 1: initial level

1) Establish data-related specifications or rules for each project;

2) The realization and implementation of the data management system are determined by the project personnel themselves.

the data system management process.

e) Level 5: optimization level

Share the best practices in the industry and become industry benchmarks.

7.3 Data governance communication

7.3.1 Overview

Data governance communication aims to ensure that all stakeholders in the organization can keep abreast of relevant policies, standards, processes, roles, responsibilities, and plans; carry out data management and application related training; master the knowledge and skills related to data management. Data governance communication aims to establish and improve cross-departmental and internal data management capabilities, raise awareness of data assets and build a data culture.

7.3.2 Process description

The process is described as follows:

a) Communication path: Identify stakeholders for data management and application. Analyze the needs of all parties. Understand the key points of communication;

b) Communication plan: Establish a regular or irregular communication plan. Reach consensus among stakeholders;

c) Communication execution: Arrange and implement specific communication activities in accordance with the communication plan. At the same time, record the communication;

d) Problem negotiation mechanism: Introduce senior managers and other methods to solve the differences;

e) Establish communication channels. Clarify the main channels of communication within the organization, such as emails, documents, websites, self-media, seminars;

f) Develop a training promotion plan. According to the needs of the organization's personnel and business development, develop relevant training and publicity plans;

g) Training: according to the requirements of the training plan, regularly carry out relevant training.

7.3.3 Process goals

3) Clarify the internal communication and publicity methods of the organization. Regularly publish the development situation inside and outside the organization;

4) Regularly carry out data-related training. Improve the capabilities of personnel;

5) Communicate the relevant policies, methods and norms of data management within the organization. Cover most data management and data application related departments. Update based on the feedbacks;

6) Clarify the content composition of the comprehensive report on data work. Regularly release the organization's comprehensive report on data work.

d) Level 4: quantitative management level

1) Establish a communication mechanism with external organizations. Expand the scope of communication;

2) Collect and sort out relevant cases of internal and external data management in the industry, including the best practices, experience summaries. Publish them regularly;

3) Organize personnel to understand the business value of data management and application. All employees agree that data is an important asset of the organization.

e) Level 5: optimization level

1) Through data governance communication, establish a good corporate data culture. Facilitate the internal and external application of data;

2) Share the best practices in the industry and become industry benchmarks.

8 Data architecture

8.1 Data model

8.1.1 Overview

The data model is to use a structured language to comprehensively analyze the collected data requirements used in the organization's business operations, management and decision-making. Reorganize requirements according to model design specifications.

a) Establish and maintain organization-level data models and system application-level data models;

b) Establish a set of development specifications for the organization to follow the data model design;

c) Use organization-level data models to guide the construction of application systems.

8.1.4 Capability level standards

The capability level standards are as follows:

a) Level 1: initial level

1) At the application system level, the specifications for data model development and management have been compiled;

2) Guide application system data structure design according to relevant specifications.

b) Level 2: managed level

1) Based on organizational management requirements, it has formulated a data model management specification;

2) Sort out the data status of some application systems in the organization. Understand current problems;

3) According to the data status quo, based on the needs of the organization's business development, an organization-level data model is established;

4) The construction of the application system refers to the organization-level data model.

c) Level 3: stable level

1) Comprehensively sort out the data status of the application system in the organization. Understand current problems and propose solutions;

2) Analyze the existing data model reference architecture in the industry; Learn related methods and experiences;

3) Compile organization-level data model development specifications. Guide the development and management of organization-level data models;

4) Understand organizational strategy and business development

8.2.2 Process description

The process is described as follows:

a) Sort out data status. Sort out the data in the application system. Understand the role of data. Identify existing data problems;

b) Identify the data type. Sort and manage the data in the organization according to its characteristics. General types include but are not limited to master data, reference data, transaction data, statistical analysis data, document data, metadata;

c) Sort out data distribution relationship. According to the definition of the organization-level data model, based on the results of business process combing, define the distribution relationship between data and process, data and organization, data and system in the organization;

d) Sort out the authoritative source of data. For each type of data, clarify the relatively reasonable unique information collection and storage system;

e) Application of data distribution relationship: According to the combing of data distribution relationship, standardize the work related to organizational data, including defining data work priorities and optimizing data integration;

f) Maintenance and management of data distribution relationship: According to the business process and system construction in the organization, regularly maintain and update the data distribution relationship in the organization. Keep timeliness.

8.2.3 Process goals

The process goals are as follows:

a) Establish a classification management mechanism for the organization's data assets. Determine the authoritative data source of the data;

b) Sort out the relationship between data and business processes, organizations, and systems;

c) Standardize the construction of data-related work.

8.2.4 Capability level standards

The capability level standards are as follows:

a) Level 1: initial level

Manage part of the data distribution relationship in the project, such as the

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------