

# Data Central Asset Operation Mechanism and Data Governance Methodology Based on Data Central

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## Abstract

In today's fast-changing digital technology, more and more enterprises are using digital transformation to improve productivity, optimize supply chains, and gain insight into market opportunities, greatly expanding the scope of strategic options for enterprises. The essence of digital transformation is to shift the business model from business-driven to data-driven, and to make data visible, usable, and operational through governance, thus fostering strong perception, wise decision making, and fast execution capabilities. The application of data center in mines can promote intelligent technology development, application model innovation, and market competitiveness in coal mines. As a mechanism to "let enterprises put data to use," the data center constantly transforms fragmented, siloed data into data assets and serves the business, expanding the scope of strategic options for enterprises.

## Keywords

Dara Central,Dara Asset, Mine Data Governance.

## 1. Introduction

In today's world of steep data growth, more and more companies are leveraging digital transformation to improve productivity, optimize supply chains, and gain insights into market opportunities, which can greatly expand the scope of strategic options for enterprises. But the essence of digital transformation for enterprises lies in shifting the business model from business-driven to data-driven, making data visible, usable, and actionable through governance to foster strong perception, informed decision-making, and rapid execution. And the same is true for mines, where a data hub can integrate the use of data from mines.

As a mechanism to "enable enterprises to put data to use", the data middle office continues to transform fragmented and siloed data into data assets and serve the business, expanding the scope of strategic choices for enterprises. As enterprises begin to open up independent application systems and interconnect data across systems, a unified data standard is needed, otherwise it will not be used for overall enterprise data analysis. And data analytics is a key step in achieving data governance.

Data governance is a very broad category all business, technical and management activities to improve data quality belong to data governance. The purpose of data governance is to control data through effective means of data resource control in order to improve data quality and thus the ability to realize data.

The ultimate goal of data governance is to enhance the value of data. Data governance is very necessary and is the foundation for enterprises to realize their digital strategy, which is a management system including organization, system, process, and tools. Then it is very important to realize the method of data governance.

## 2. Relevant research

We analyzed the data governance construction of the mobile provincial capitals in each province, and we divided the data capability into 5 levels if we look at the data governance construction in the provinces in terms of data capability maturity. The first is the initial level: the management of data requirements is mainly reflected at the project level, and there is no unified management process, which is mainly passive management. The second is the managed level: the organization is aware of data as an asset, and has developed a management process based on the requirements of the management strategy, and has designated relevant personnel for initial management. The third is the robust level: data has been treated as an important asset for achieving organizational performance goals, and a series of standardized management processes have been developed at the organizational level to facilitate the standardization of data management[1]. The fourth is the quantitative management level: data is considered an important resource for gaining competitive advantage, and the efficiency of data management can be quantitatively analyzed and monitored. The fifth is optimization level: data is considered to be the basis of organizational survival, and the related management processes can be optimized in real time and best practices can be shared in the industry. At present, basically all provinces have reached the controlled level, part of them have entered the robust level, and only Shanxi Mobile and Zhejiang Mobile have reached the quantitative management level. From this we can see that the construction capacity is concentrated in the controlled level, focusing on data asset management, data quality management and other basic management capabilities. And data security has recently been of high concern.

We need to integrate data assets and build an asset catalog before data governance, and build a good foundation for data service usage by integrating and inventorying data assets and building an electronic data asset catalog.

After the enterprise data center is built, how to make the data assets in the data center more and more used, more and more live, more and more stable, which requires the data center operation mechanism. The most important thing in data center operation is data asset operation, the purpose of data asset operation is to make data readable, easy to understand, good to use and valuable, the ultimate goal is to continuously explore and improve the value of data assets through an orderly positive cycle.

We can build a middle office operation mechanism platform, also called data map in general enterprises, to build a directory of enterprise data assets to help data development, data analysts, data product operations to quickly discover data and accurately understand the meaning of these data, the data map generally contains data dictionaries, data pedigree, data volume indicators, the number of tag calls, table access hotness, table partition information, etc.. Operation mechanism platform has the following four data asset operation purposes: 1. Readable: data information can not just be stored in the database, through data tables, data fields and other forms of display, only personnel with a certain database base can operate by reading, and business personnel often do not have this ability, may directly lose interest in reading the data fields, seriously restricting the use of data by business personnel Interest, so we need a platform that can display asset maps, business people can understand and access asset information by directly operating the interface. 2. Easy to understand: In addition to being readable, asset information also needs to be easy to understand[2]. Therefore, the data assets need to be labeled, and the label is organized by business people. 3. Good use: After the data assets are understood by the business side, they face the problem of how to use these assets. The traditional way of using data assets is that business people tell data developers what data fields they need, and the developers write data service interfaces to connect to business systems or data application systems for business people to view, query and use. Then if there is a data asset platform, business people can directly understand the data asset information,

they can directly configure the use, solving the problem of difficult to accurately describe the needs of business people, while the data service configuration generation process is simple and fast, greatly reducing the time to communicate with data developers, while viewing the corresponding data asset business through the data asset platform greatly reduces the cost of trial and error in the use of data. 4. Valuable: The ultimate goal of data asset operation is to make data more and more valuable, so data asset operation should always be carried out around data value. In the process of using data assets, we should record the call information, effect information, feedback information and all information that can reflect the value of data. For example, the historical total number of calls, average daily total number of calls, year-over-year comparison, and business volume of calls for a certain tag to indirectly assess the importance of the tag.

Before data analysis[3] we need to establish data standards, data standards determine the quality of our data without standardization there is no information technology, then there is no way to talk about data quality. Through the unified definition of data standards, the data attribution department and the responsible subject are clearly defined, which provides a basic guarantee for the data quality and data security of the enterprise. By defining unified standards, data mapping relationships and data quality rules for data entities, data relationships and data processing stages, it makes data quality verification based on evidence and law, and provides support for the improvement and optimization of enterprise data quality.

### 3. Data governance and critical preparation

#### 3.1. Data Asset Operation Mechanism

The data center is not a simple product, but a mechanism to make the data continuously used, we can make the data center[4] in the enterprise continue to play a greater value through the data operation mechanism. The objectives of data operation mechanism are 1. Data quality and security are the basis for sustainable operation of the data center 2. Efficiency and cost reduction are the keys to build the influence of the data center. Data center operation work can be started from the following four levels: unified strategy, build organization, build atmosphere, practice innovation. 1. unified strategy: at the enterprise strategy level, the management should firmly resolve to do data center, so that employees, especially the management and executive level, understand the importance of doing data center, otherwise the implementation of the center is far away. 2. build organization: in the organizational structure, it is necessary to support The corresponding organization and specific people are responsible for it. The Data Committee is mainly responsible for formulating the strategic direction of data construction and authorizing each department to execute the implementation. The virtual architecture group is mainly responsible for proposing solutions, and is generally composed of core members of data teams from various business departments, who are familiar with data modeling theory and have rich development experience. The expert review team is recommended by each team, mainly to review and optimize the solution, that is, to see if the proposed solution can be achieved, and if so, to generate the corresponding specification of indicators or dimensional specifications. The implementation team is mainly the front-line developers, mainly in accordance with the specification of the implementation of the construction. 3. Create the atmosphere: to create the atmosphere is to focus on the use of data atmosphere in the work after each personnel in place, for example: the company's internal data screen, look very powerful, you can present the data to the company's full perspective and public analysis, so that implicitly, each employee's heart slowly formed the importance of data. 4. Practice Innovation: When data awareness is awakened, we need to combine with the business sector to do innovative practices of combining data with business, that is, to make the data in the middle platform can empower business, which business can be empowered? We

need to explore and innovate the practice out, so that each business department will compete to use the data, forming a competitive situation within the enterprise.

### 3.2. Building data standards

Data standards are to standardize the unified understanding of the business when building the system[5], and enhance the consistency of the definition and use of data by business departments and technical departments. In the planning of data standards in accordance with the enterprise enterprise level provincial big data platform data governance specification needs, the construction of data standards system, and planning and development of data standardization implementation route and program, and gradually unified standardized data management of the enterprise level provincial big data platform data. Implementation based on data standard planning, through the data standard support module, to achieve the implementation of data standards on the ground, and really play the data standard management effect. Establish data governance organizational structure, develop data standard management methods and implementation process requirements, and finally build through data standard management tools.

We build electronic standards system, there are 7 standards in the system: 1) basic general standards: the system terminology in general and general standards, including standardization guidelines, basic terms, graphic symbols and other classification standards; 2) data coding standards: including data coding rules, professional data codes and business data codes and other classification standards; 3) data meta standards: including the basic unit standard system of data definition; for example, word (4) metadata standards: the basic standards for data definition, defining data classification and data model through metadata; (5) indicator dimension standards: the definition and description of business indicators and dimensional data information; (6) data exchange and sharing standards: the classification system includes technical system requirements, data interface specifications, security technology requirements and sharing platform technology requirements; (7) data governance standards: the standard definition of data governance system's standard definition, including data quality standards, data standard management standards, data up and down standards, data cleaning standards, data security standards, etc.; the standard system we set up is derived from national standards, local standards, industry standards, and departmental standards.

### 3.3. Bloodline influence analysis

Data analysis is the main means to reach governance; it can provide data lineage automation collection capability, support data lineage impact automation collection through database operation logs, database execution scripts, ETL tools, automatically identify sub-table logic, enhance the automation of metadata lineage impact relationship collection, reduce the difficulty of data governance; support data processing lineage impact relationship, task dependency relationship, The collection of task model dependencies; providing visual analysis capabilities to facilitate problem analysis and fault location for operation and maintenance personnel.

## 4. Conclusion

In the traditional architecture, the common practice of applying the analyzed data to the business is to synchronize the results to the business system through the data synchronization capability, which is processed by the business system itself, which will bring about data management problems and the whole data blood link is fragmented. The data middle office can provide data services well, and the business system only needs to get data from the data services. Data assets are operated, data standards are built, and then data governance is carried out. Data is the core resource that drives intelligent technology development, application model

innovation and market competitiveness in coal mines, and the key bottleneck in the development of data governance to an advanced stage. We can make data governance more convenient for our enterprises through the data center.

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