PriMera Scientific Engineering
Volume 4 Issue 3 March 2024
ISSN: 2834-2550

PriMera Scientific Publications

Dialectical Relationship Analysis of Data Governance Elements in the Financial Format—Based on the "Voyage Chart" Architecture

Type: Review Article
Received: January 31, 2024
Published: February 22, 2024

Citation:
Shiming Shen., et al. "Dialectical Relationship Analysis of Data Governance Elements in the Financial Format—Based on the "Voyage Chart" Architecture". PriMera Scientific Engineering 4.3 (2024): 40-48.

Shiming Shen[1]* and Jing Lu[2]

[1]Shanghai University of Finance and Economics, No. 777 Guoding Road, Yangpu District, Shanghai, 200433, P.R. China

[2]University of Alberta, 116 St and 85 Ave, Edmonton, AB, T6G 2R3, Canada

***Corresponding Author:** Shiming Shen, Shanghai University of Finance and Economics, No. 777 Guoding Road, Yangpu District, Shanghai, 200433, P.R. China.

Abstract

Although the economic value of data has received widespread attention, most financial enterprises still have differences in cognition of digital transformation compared with the banking industry, which has always focused on the accumulation of digital capabilities, especially in the understanding and practice of data management systems. Aiming at the topic of how to promote data management capacity building based on the existing digital foundation of enterprises, the author draws a "data governance voyage chart" based on the relevant theory of DMBOK 2.0 and the research of the financial leasing industry, aiming to analyze the dynamic balance theory between the elements of data governance by discussing the dialectical relationship between the five elements of "wind", "tower", "ship", "sail" and "sea", and share relevant thoughts on deepening data governance in the financial industry.

Keywords: Data governance; Financial leasing; Digital transformation

Data governance element "voyage chart": based on the financial leasing industry

According to the DAMA 's theory, data governance refers to the "process of management and optimization around the data life cycle"[1], and in the book DMBOK 2.0 compiled and published by the association, the dependence between people, processes and technologies is revealed through the hexagonal diagram of environmental factors, which is significant in revealing the guiding significance of goals and principles for data governance activities, and also provides a theoretical framework for how to describe the chapters of the data management.

Figure 1: Hexagonal diagram of environmental factors (Source: DAMA-DMBOK 2.0).

When practicing enterprise data governance, although the seventeen chapters in the book have provided a large number of tools and processes to guide practitioners to practice data governance, it seems that it is still very difficult to establish an effective data governance system from 0 to 1 in the face of complex internal and external environments of enterprises. Given the differences between industries and enterprises, it is often difficult for data governance practitioners to quickly locate data governance goals and meet expectations within a specific time frame, which is one of the reasons why while most enterprises are shouting about digital transformation and valuing the value of data, only a few have achieved success in data management.

In the past, as far as the author's financial leasing industry is concerned, the requirements for digital capacity building of traditional businesses were not high, and the necessary conditions for most business development were the due diligence results of business personnel and the reports formed after comprehensive analysis of industries and enterprises, coupled with the relatively small pressure of financial supervision in the past, the foundation of digital construction was relatively weak compared with the banking and insurance industries in the absence of driving force, and generally failed to precipitate data assets well.

In recent years, there are two main factors that have accelerated the digital capacity building of the financial leasing industry, the first is the macro background of digital transformation. In 2015, China's State Council issued "Made in China 2025", which first provided directional guidance for promoting the transformation of the manufacturing industry to digitalization and intelligence, and then issued the "New Generation Artificial Intelligence Development Plan", "New Generation Information Technology Development Strategy", "Notice on Accelerating the Digital Transformation of State-owned Enterprises" and other documents, gradually leading relevant enterprises to accelerate digital capacity building [2]. Secondly, the regulatory compliance pressure brought about by the financial leasing industry after the regulatory functions were clearly assigned to the Financial Services Bureau has also prompted enterprises to generate endogenous momentum. After 2018, the regulatory functions of financial leasing companies were clearly assigned to the CBIRC (now known as the State Financial Regulatory Administration), and then "the Interim Measures for the Supervision and Administration of Financial Leasing Companies "promulgated in 2020 clearly stated that the CBIRC was responsible for the overall formulation of management rules, which put forward clearer regulatory requirements for financial leasing companies, in which data was used as an important carrier of financial super-vision [3], which upgraded digital capacity building from "multiple choice questions" to "mandatory questions".

Driven by digital transformation and regulatory pressure, financial leasing companies have accelerated the construction of digital capabilities, resulting in a large amount of data and information (which cannot be called assets at this time), so how to establish good data management capabilities has become the next major issue facing most financial leasing companies. After visiting and understand-

ing the financial leasing industry, the author believes that the main problems faced by enterprises in the financial industry are mainly the conflict between the identification of long-term goals and the unclear short-term path, coupled with the current concepts of "data middle platform", "data elements", "data transactions" and "data compliance" that have been repeatedly mentioned and interpreted by all parties, but have added trouble to the unknown governance road that enterprises have not yet set foot on.

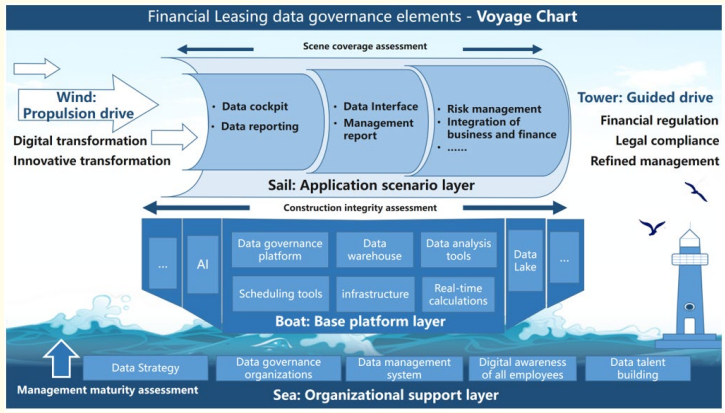

Figure 2: Data governance elements - voyage chart.

Based on the observation and thinking of the above situation, in order to clearly describe the dialectical relationship between the elements of data governance, after referring to the "DAMA-DMBOK 2.0", "the strategy in data of Huawei" [4], "Data Governance: Strategies, Methods, Tools an Practice" [5] and other literature materials, the author combined with the actual situation summarized after the investigation and visit of various financial leasing companies to draw the "Financial Leasing data governance elements - voyage chart", which displays the elements that constitute data governance in a graphical way, from "wind", "tower", "ship", "sail" and "sea" From the perspective of the five elements, it briefly describes how to establish enterprise-level data governance capabilities from 0 to 1, and analyzes the possible problems in the data governance process in order to deepen the topic.

Analyze the dialectical development relationship between elements

Based on the understanding and induction of DMBOK 2.0, this paper will refines the data governance elements into four items, namely driving force, application scenario, support platform and organizational guarantee, of which the driving force is divided into two categories: guidance and promotion, a total of five elements. In order to better understand the relationship between the five elements of data governance, the following will be based on the deconstruction of this voyage chart to understand the dialectical development relationship between the analysis elements.

Driving force elements: "wind" and "tower"

The driving force is the starting point of data governance, first, without the driving force can not even talk about digitalization, in the financial format of the driving force can be simply summarized into two categories: propulsion driving force and guidance driving force, here the author compares it to the two necessary conditions for ship navigation: power and goal. As mentioned in the previous chapter, the financial leasing industry is currently facing the dual challenges of business transformation and regulatory compliance. Turning challenges into opportunities requires digital approaches and effective data management capabilities.

"Wind" refers to the power, that is, why enterprises want to actively manage data, in view of the special format of financial leasing, its upstream connection to the capital end, downstream connection to the asset end. In the context of digital economy and intelligent

manufacturing, the upstream and downstream ecology of financial leasing enterprises are vigorously developing digital capabilities [6], and the end will be used as a medium with data to establish a connection, which is one of the main driving forces of financial leasing transformation: through the establishment of a good data management system to carry the data resources generated upstream and downstream. Using data assets to identify new business opportunities, or using data to provide competitive services upstream and downstream to enhance its position in the value chain, is collectively referred to as the driving force for improving data management capabilities.

And "tower" refers to the goal, direction, that is, data management capabilities should develop in what direction, in practice the author roughly summarizes the guidance driving force of the financial format into regulatory requirements, compliance requirements, management requirements three directions, the difference between the guiding driving force and the driving force is that the guiding type does not transfer the will within the organization, but according to the expectations of the upper management body after decomposition in the form of policies, norms, requirements and other forms of concrete embodiment, For example, the guiding driving force in the current financial leasing industry is reflected in the specific requirements for data put forward by the submission supervision [7], the relevant regulations on data security, and the corporate responsibility of listed companies in ESG governance, which jointly guide the development direction of data governance in the financial leasing industry, so they are collectively referred to as the guiding driving force.

Application scenario elements: "sail"

After clarifying the two drivers mentioned above, the next action for companies is to decompose: implement the goal or motivation into specific scenarios that need to be applied to data, so the sail is likened to a scene symbol that carries the "driving force". When enterprises practice the data governance capability system, they should first decompose the driving force goals into application scenarios according to the principle of importance, and the clarification of the scenarios will help evaluate the success of the data governance system. In addition, with the strengthening of current financial supervision, compliance management [8] and risk control [9] have gradually become one of the important scenarios for data application. It should be noted that the "sail" is dynamically changing, and when the core application scenarios are satisfied, with the gradual enrichment of data resources, enterprises will put forward more demands based on application scenarios, and for this reason, how to match the elements discussed in this article for dynamic development is particularly important.

Basic platform elements: "ship"

The basic platform mainly refers to the technical means and implementation results to support the realization of application scenarios, although the main focus of suppliers in the current data industry is concentrated here, but perhaps it is more important to think clearly about "wind" and "sail" before carrying out "construction. In today's information explosion, "data middle platform", "lake warehouse integration", "big data" and other terms have long been strange, the author believes that the entire industry objectively has the problem of excessive consumption, most enterprises have not yet formed basic capabilities but in the concept has been first transported by various stakeholders a wave of too advanced concepts, resulting in the capacity building cycle and expectations of the matching of too irrational expectations, if not pay attention to the correction of the goal is prone to the phenomenon of bad money driving out good money, and then lead to the implementation of the project repeatedly, A vicious circle that consumes the costs of enterprises for a long time.

Under the premise that the current technical capabilities can better guarantee the application scenarios, it is necessary to properly plan the medium-term future based on the needs of the application scenarios, and properly plan the mid-term future after the guarantee goals are clear, so as to ensure that the "hull" and "sail" dimensions match as much as possible, and avoid the situation that the sail is too large and the sampan is too small. However, it is undeniable that the "hull" (platform realization) must be initially designed with future scalability in mind, and while achieving the initial goals, it is possible to gradually expand the real-time computing, AI, big data computing and other future innovation capabilities of the "hull" in a modular componentized manner.

Organizational support elements: "sea"

"Ocean" is the environment that carries sailboats, in terms of conventional logic of navigation, the depth of the ocean should match the weight of the entire sailing ship to be loaded, if the 10,000-ton ship is sailing in a small river then there is a risk of running aground, similarly, a little ship is difficult to sail too far in the sea. In this article, "ocean" refers to the organizational culture guarantee of enterprises, which also corresponds to the chapters of data management organization, change management, and data culture in DMBOK 2.0. As the continuous voyage advances, the level of organizational security should be deepened simultaneously, and managers should lay out the establishment of employees data strategy and organizational culture in advance [10]. In particular, it should be noted that the construction of this element is a long-term and slow process, and it is not appropriate to forcibly promote the establishment of data for employees culture within the organization without clear goals and appropriate landing platform to support it, because it is often difficult for enterprises to realize the importance of this element at this time, and it is easy to float on the surface and difficult to promote deeply.

The root cause of most enterprise data management failures: element imbalance

Chairman Wang of DAMA China and many other experts have written and shared their own experience about the common reasons for enterprise data governance failure [11], mainly including lack of goals, unclear rights and responsibilities, insufficient high-level attention, lack of experts and systems [12], isolated management and tool-only theory.

Perhaps because the term data governance is too broad, or perhaps the failure cases of enterprises are often digested and internal, although most governance practitioners are deeply aware of the difficulty of data governance work, the author does not find too many case literature on the Internet that analyzes the causes of enterprise data governance failures. In the limited data, most of the failures of data governance will be attributed to the complexity of inter-departmental coordination or the lack of attention from the top management, but what we need to further analyze is the reason behind the "why", why the top management does not realize the importance of data governance? Is it the cost of input that does not agree? Or is there disagreement with the effectiveness of data governance? If the problem lies in the "hull" (technical platform investment) is too large, you should consider analyzing whether the development between "sails" (application scenarios) or "sea" (organizational support) matches, and if enterprises are unable to form a good data culture, they should think about whether the goal of the enterprise to initiate data governance before carrying out cultural guidance is clear, and whether employees can realize the importance of data governance (whether there is a clear "wind" and "tower" to guide the organization to clarify the goal).

Figure 3: Yin Yang Five Elements Balance Chart.

In ancient Chinese philosophical and medical literature, yin and yang and the five elements are used to explain the relationship between the balance of elements in the universe, and in the Tibetan medical system, diseases are also believed to be caused by the imbalance between the four basic elements and three original sins of the human body. In the same way, data governance is also treating the disease of enterprises, and every practitioner is a doctor, and it is solving the problem of "data" being unable to effectively digest the delicious food of "data" in the enterprise through data governance. In the link of how to analyze and solve problems, practitioners should establish a basic thinking framework, which is also the meaning behind the author's construction of voyage chart. Although each company's data governance fail has its own special reasons, when viewed as a whole, you can try to refer to the concept of mutual promotion and checks and balances in the voyage chart for analysis and interpretation.

The key to data governance capabilities: wait for the wind

How to effectively initiate data governance? Some scholars believe that data governance should be laid out in advance, but according to practical visits, it is found that the failure rate of large-scale data governance without clear goals is very high. The driving force in the voyage chart is definitely the first element, if there is no wind and lighthouse, there is no need to build a ship, and building a ship must have a clear motivation and purpose to start.

According to the author's observation and reference to the relevant literature on data management maturity [13, 14], it is found that most of the data management capabilities of enterprises go through three stages, namely data discretization, data centralization, and data systematization (data intelligence may be developed in the future).

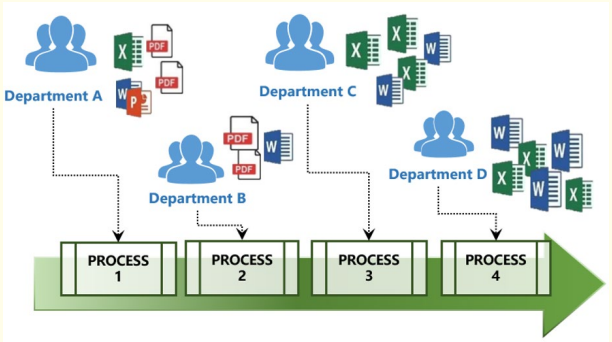

Figure 4: Illustration of data discretization.

The characteristics of data discretization are based on computer office and preliminary informatization, the use and exchange of data is more dependent on office software and mail at this time, even if the system is only used for processes, and the role of information syste is closer to "notification" at this stage, the enterprise data in an unstructured form scattered in the computer of each department, managed by each department, data essentially can not form assets.

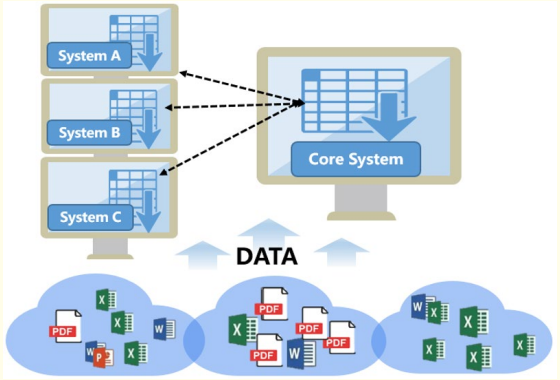

Figure 5: Illustration of data centralization.

Data centralization reflected in the enterprise data gradually from discrete storage to the core of the main system concentration, the proportion of offline data has a relatively obvious reduction, information system to a combination of processes and functions to provide services, at this stage of the demand for data application began to emerge, but this stage of data is still regarded as an accessory of the system, lack of clear data management functions, most enterprises are in this stage, and because the influencing factors of this stage are too complex. A large amount of historical data will be generated at this stage, and most of the prototypes of data management concepts will germinate here. Since the quality of development within this stage largely determines the time of an enterprise transfer to the next management stage.

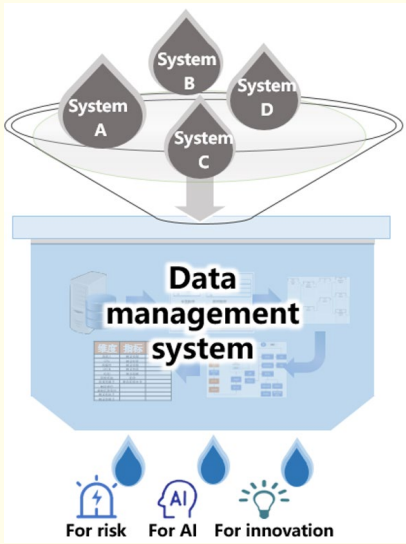

Figure 6: Illustration of data systematization.

The characteristics of data systematization is to manage data management as a special work in a more independent way, data is no longer as an accessory to a system, but by a full-time team or individual to observe, optimize and start to build related data capabilities, this stage is the development direction of most enterprises, at this time should begin to cultivate the data awareness of employees in the enterprise, and the organization should establish a corresponding organization to make decisions on matters involving data.

Although this article starts from the financial leasing industry, enterprises in various industries should clearly position the current stage before starting, look for the direction and goals that meet the characteristics of their own enterprises and recognized by the top management, and the clear goals will help promote the organization to start thinking about how to establish a data strategy and establish a data culture, and there are application scenarios that are gradually decomposed to achieve the goals, and then carry out a series of work such as digital construction to support the scenes. In the absence of driving force, even if the three elements of "ship", "sail" and "sea" are already available, this ship that can never leave port and will continue to waste the cost and energy of the enterprise.

Based on the concept of balanced elements in the framework of long-distance charts, the construction rhythm of targeted deployment and construction can be carried out when carrying out the construction of data management capabilities, and identifying the impact of governance factors in advance will also help improve the success probability of project implementation. For now, enterprise management and data governance practitioners should seriously consider the data management goals faced by the enterprise, avoid the situation of one wrong step and another, and recommend finding and reaching a consensus on the goal before carrying out the construction of the data management system.

Conclusion: Thoughts and suggestions

In a word, the five elements of data governance have a dialectical development relationship, and the elements should not be viewed independently, but interdependent and promoted. Data governance is the cornerstone of digital transformation success and a major challenge for transformation, in the process of practicing data governance, enterprises should not only focus on the latest digital developments, but more importantly, consider how to properly plan to achieve the goals. At the same time, data practitioners also need to change their concepts, the cultivation of organizational structure and digital thinking is certainly part of the corporate culture change, but its process is slow and arduous, and it is necessary to consider the balance and cooperation of multiple factors, rather than simply attributing the reasons for the difficulty to one-sided reasons or individual factors.

As a member of the DAMA China, the author hopes to achieve the following goals through the sharing of data governance elements-voyage charts: Firstly, based on their own experience and learning of DMBOK 2.0, put forward personal understanding, and continue to improve personal cognition of the data management system. Secondly, with the help of drawing the framework diagram, the dependence between various elements is used to stimulate the discussion and thinking of data governance stakeholders with the relationship between common sense, and further improve the development of data governance capabilities of Chinese enterprises. Thirdly, through the analysis of various elements in the chart, the critical path is found, which provides ideas for subsequent enterprises to practice data governance capacity building. Finally, through knowledge sharing, the Data Management Association is rewarded, and only when everyone has a deep understanding of the characteristics and relationships of data governance elements can they practice a realistic data management system in the enterprise and build a good structure and balance between the elements to maintain its development. I hope that practitioners can jointly contribute to digital transformation and wish the motherland better and better!

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