



Digital Scenario Innovation Drives Enterprise Digital Transformation

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Abstract. As a value carrier and landing carrier for enterprise digital transformation, digital scenarios have become an important driving force for transformation, but their driving logic has not been clearly defined, which limits the role of digital scenarios. This article combines the basic framework of enterprise digital transformation to clarify the positioning of digital scenario innovation in the transformation process, and gives a general framework for scenario-driven enterprise digital transformation from the perspectives of scenario combination and decomposition, scenario construction and operation, clarifying its value path as two links and four carriers. It also describes the general logic of digital scenario-driven enterprise digital transformation at the enterprise level, industry level, and competition level.

Keywords: digital scenarios; scenario innovation; digital transformation.

1 Introduction

With the deepening of the new technological revolution and industrial transformation, digital scenarios have gradually become the entry point and foothold for the integration of digital technology and the real economy, driving the digital transformation process of various entities. The "14th Five-Year Plan for Digital Economic Development" of the State Council points out that promoting the integration and innovation of digital technology, application scenarios, and business models, and forming a development pattern that promotes the improvement of total factor productivity through technological development and drives technological progress through field applications, highlights the important role of digital scenarios in promoting digital transformation and developing the digital economy^[1].

Digital transformation has been a hot topic in recent years, and scenario innovation-driven digital transformation has become an emerging topic in China in the past five years. Lu Zheng et al. first introduced scenarios in practice and demonstrated through empirical research on 640 manufacturing listed companies that enterprises' attention to and construction of digital scenario innovation can significantly improve their financial performance^[2]. Zhe Zhang et al. analyzed cases from 50 state-owned enterprises and

found that the intrinsic driving forces of digital transformation include scenario innovation, change leadership, and resource integration, and the "point-like innovation" of scenarios is the foundation for business process reengineering and management module digital upgrade^[3]. Feng Men et al. further studied the collaborative mechanism of scenario innovation in the context of the digital economy and found that the subjective initiative of suppliers is the core of the collaborative mechanism of scenario innovation, thus further finding a breakthrough to promote digital transformation through scenario innovation^[4]. Other countries and regions are also actively using scenarios to explore the direction and mode of digital transformation, but have not yet conducted specific research on them as one of the driving forces^[5-7].

However, in this process of driving, the logic of digital scenario-driven enterprise digital transformation is still in a relatively chaotic state. Scenario as a broad concept, may be understood as a low-value concept that can be seen everywhere, or as an omnipotent treasure that can do everything. In practice, it tends to be generalized or analyzed through cases, losing the value of scenario that can be mined and reused.

2 Basic Framework for Enterprise Digital Transformation

2.1 Relationship between the Five Categories of Elements of Enterprise Digital Transformation

To understand the logic of digital scenarios driving the digital transformation of enterprises, it is necessary to first understand how enterprise digital transformation is achieved. There are many frameworks for enterprise digital transformation. Among them, the Reference Model for Value Benefit of Digital Transformation and the Construction Guide for New Capability System of Digital Transformation released by the AIITRE have scientifically explained the basic logic of enterprise digital transformation from the perspectives of value creation process and capability construction process. As shown in Figure 1, it emphasizes the role of various elements in realizing or supporting value, and clarifies the relationship between capability and value^{[8][9]}.

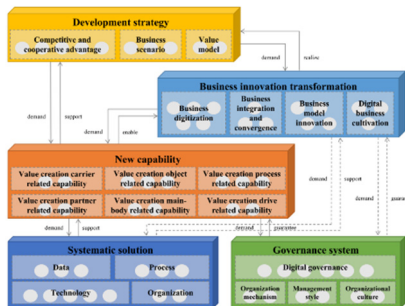


Fig. 1. Enterprise digital transformation elements relationship¹

¹ Picture is adapted by the author from the reference model published by AIITRE

Among them, five categories of elements are all centered on value. Development strategy is the link to propose value proposition, and the characteristics of digitalization are mainly reflected in openness and sharing; business innovation and transformation is the link to obtain value benefits, and the characteristics of digitalization are mainly reflected in integration and innovation; new capabilities, also known as digital capabilities, are the link to value creation and transmission, and the characteristics of digitalization are mainly reflected in flexibility and agility; systematic solutions mainly provide technical support, and the characteristics of digitalization are mainly reflected in data-driven and platform-based; governance system provides management guarantee, and digital thinking and culture penetrate into all aspects of the enterprise. The gray circles in the figure represent the subdivided elements under each sub-domain, which need to be designed in detail according to the characteristics of different industries.

2.2 Actions at 3 Levels of Enterprise Digital Transformation

To achieve the good operation of the above five categories of elements, actions need to be promoted from three levels. As shown in Figure 2, firstly, guided by the indicatorized and phased enterprise digital transformation maturity assessment model, self-examination and improvement of digital maturity level should be carried out. Secondly, the enterprise architecture system should be used to plan the digital transformation of the enterprise, starting from the enterprise strategy to unify the vision of change, analyze and design business architecture, data architecture, application architecture and technical architecture level by level, and further consolidate gaps, combine projects, and implement governance. Finally, digital scenario innovation should be used to achieve more specific transformation design and construction. The three levels of actions are closely related to the five categories of elements.

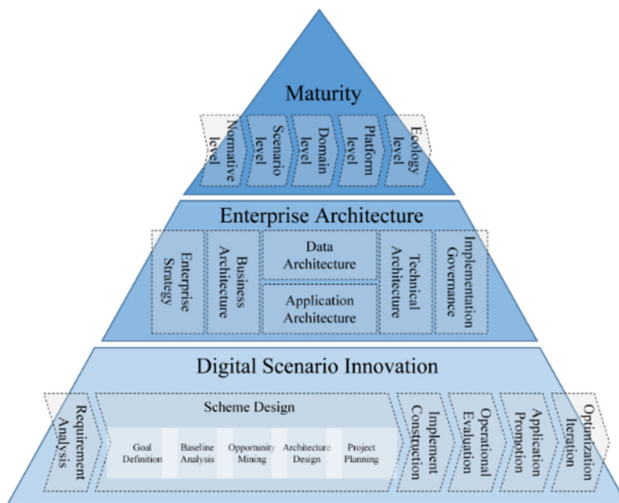


Fig. 2. Enterprise digital transformation action levels

3 A Framework for Scenario-Driven Enterprise Digital Transformation

Based on the basic logical process of enterprise digital transformation, and the important role played by digital scenario innovation in it, the logical framework of scenario-driven enterprise digital transformation can be shown in two diagrams.

3.1 Driving relationship Between Digital Scenarios and Strategy, Business and Capabilities

As shown in Figure 3, a scenario is a combination or decomposition of various business activities. Capabilities are built in the scenario, and the scenario is realized through capabilities. Business innovation and transformation are realized through digital scenarios, and ultimately the development strategy is achieved. There are three points to note about the above diagram:

First, from strategy to business innovation and transformation, it is based on the decomposition of enterprise-level value orientation. Business digitalization, business integration and fusion, business model innovation, and digital business cultivation all come from the strategic goals and direction choices of the enterprise.

Second, the classification of scenarios can be refined in a hierarchical manner, with secondary, tertiary, and even more levels. However, due to the fact that the actual form of scenarios is not entirely clear, there are multiple overlapping and complex forms. When organizing scenarios, it is important to first respect their actual form and then consider how to position and present them.

Third, the relationship between scenarios and capabilities. Capabilities are built in scenarios, and scenarios rely on capabilities to be realized. However, the relationship between them is not one-to-one interaction. Scenarios are divided into large-scale scenarios at the value flow level, small-scale scenarios at the activity level, and intermediate transition scenarios. Capabilities are divided into integrated capabilities that provide value at the enterprise level, unit capabilities that implement specific functions internally, and intermediate-level capabilities. Digital transformation driven by digital scenarios usually builds unit capabilities with small scenarios, forms high-level capabilities with the combination of unit capabilities, and supports the realization of enterprise-level value goals with high-level capabilities.

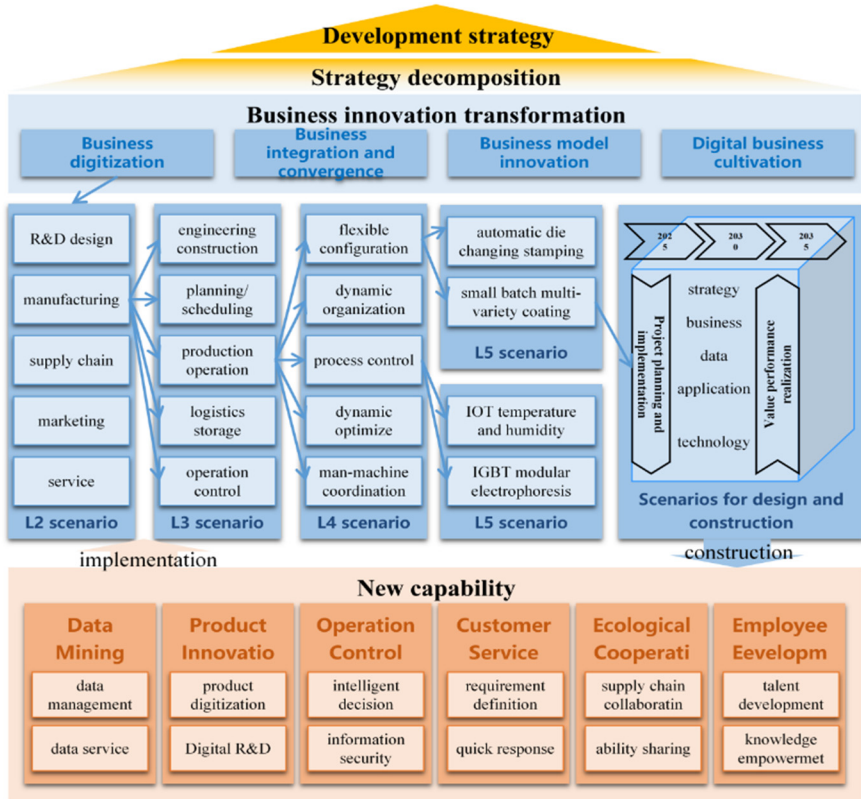


Fig. 3. Driving relationship between digital scenarios and strategy, business and capabilities

3.2 Driving Relationship Between Digital Scenarios and Solutions, Governance and Capacity

As shown in Figure 4, the construction of a digital scenario and its operation require the role and support of multiple elements. Among them, systematic solutions, such as data, technology, processes and organization, act directly in the digital scenario, constituting the most basic and active constituent elements; governance systems, such as digital governance, organizational mechanisms, management styles and organizational cultures, support and influence the functioning of the scenario in a subtle way, and are the deep-level elements behind the scenario. These elements play a role through the scenario and are continuously improved with the planning, doing, checking and action of the scenario, contributing to the construction of digital capabilities.

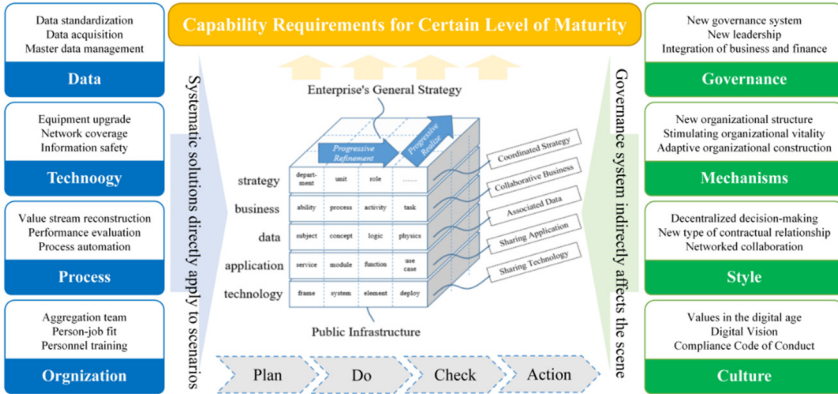


Fig. 4. Driving relationship between digital scenarios and solutions, governance and capacity

4 Scenario-Driven Enterprise Digital Transformation Logic

As shown in Figure 5, digital scenarios are the value carrier, landing carrier, evaluation carrier, and iteration carrier of enterprise digital transformation, supporting the realization of organizational performance, business goals, and corporate strategies from the top down, deepening the optimization and transformation of processes, information, and enterprise IT from the bottom up, facilitating the delivery of product services and customer needs from the front, and driving organizational operations and partner integration capabilities from the back. They are the connecting link between strategic implementation, technology upgrading, customer satisfaction, and operational optimization. Digital scenarios drive enterprise digital transformation mainly through their carrier role in driving the digital transformation process and their link role in driving digital transformation planning and construction.

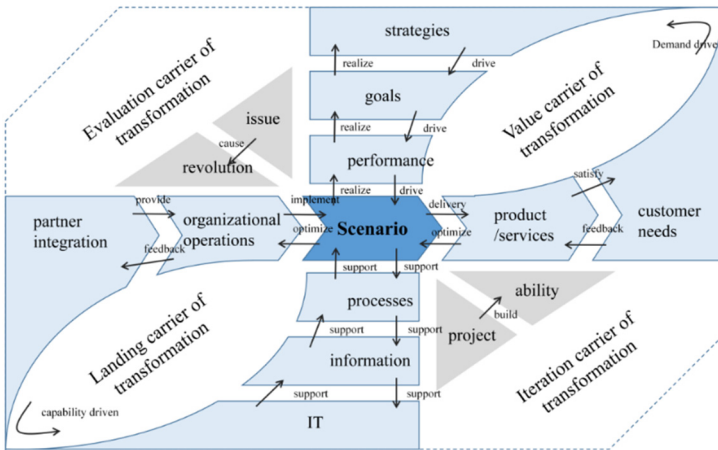


Fig. 5. Scenario-driven enterprise digital transformation logic

4.1 Digital scenarios as the Value Carrier

Digital scenarios are driven by customer needs, breaking down corporate strategies into goals and performance levels. During the process, control and performance mechanisms required for normalized governance are gradually established, the value points of the smallest business units are explored, and value creation is carried out, transforming it into visible, tangible, and experiential digital transformation results, thus promoting the optimization, updating, and iteration of products and services. At the same time, it bridges the gap between business construction and development, opens up the end-to-end full chain, continuously adjusts corporate strategies based on user needs, and forms a value feedback closed loop.

4.2 Digital Scenarios as the Landing Carrier

Enterprises work together with partners to carry out platform-based operations, relying on digital scenarios, focusing on corporate strategic goals, mining business value, applying advanced digital technology for specific spaces and specific objects, forming new job responsibilities, corporate norms and language systems, creating modular applications with specific functions, and achieving agile response to the diverse construction needs of digital scenarios.

4.3 Digital Scenarios as the Evaluation Carrier

Digital scenarios are guided by problems to carry out value innovation, develop an indicator system combining qualitative and quantitative indicators, carry out evaluation and assessment of digital scenario innovation, visually demonstrate the effectiveness of digital transformation, identify current strengths and weaknesses, develop systematic solutions around improvement points, and open up pain points, difficulties, and bottlenecks in the digital transformation of enterprises. Taking the point as a whole, gradually complete the transformation of enterprise digitalization.

4.4 Digital Scenarios as the Iterative Carrier

Digital scenario innovation requires dismantling the enterprise digital transformation system engineering, gradually precipitating, stripping, and building reusable new capabilities from existing and future systems, and making them as fine-grained and atomic as possible, in order to support differentiated digital scenario construction in a highly cohesive and low-coupling form. At the same time, we should continuously tap into the value of scenarios around customer needs and customer touchpoints, and carry out updates and iterations of digital scenarios.

5 Scenario-Driven Logic for Industry and Competitiveness

This article focuses on the driving role of digital scenarios at the enterprise level, but in the process of scenario innovation, enterprises should also understand the key driving role of digital scenarios at the industrial and competitive levels, which helps to identify the direction of scenario innovation.

5.1 Scenarios Generate Transformation Effects at the Industry Level

From an industrial perspective, digital scenarios serve as an important support for promoting industrial digital transformation. During the construction process, they fully integrate cross enterprise and cross industry advantageous resources, operate in a platform based manner, and form multiple combat units around a clear scenario construction goal to achieve rapid response to market demand, thereby creating high-quality digital industrial clusters and enhancing industrial competitiveness. To provide a solid foundation for promoting digital industrialization and industrial digital development. The digital scenario empowers the digital development of industries by enhancing competitiveness, leveraging resource advantages, building and solidifying the foundation of transformation, and feeding back the transformation and upgrading of enterprises, providing the most basic and necessary environmental protection for enterprise digital transformation.

5.2 Scenarios Form Transformation Advantages at the Competitive Level

From the perspective of competition, digital scenarios not only help enterprises gain deep insights into end-to-end user journeys and build differentiated competitive advantages, but also gradually enhance scenario efficiency to achieve the development of core technologies and products, thus forming a value realization model driven by both internal and external forces. Additionally, by continuously expanding the scope of partnership and cooperation, deepening the field of scenario construction, and extending, expanding, and innovating new scenarios, enterprises can promote the improvement of cooperation advantages in the digital era. Compared with the role of digital scenarios in promoting the digital transformation of enterprises and industries, enterprises can obtain the most direct and fastest advantageous returns by focusing on creating demonstration scenarios.

6 Conclusion

This article addresses the theoretical deficiencies, unclear paths, and slow effectiveness of current digital scenario innovation. It innovatively connects scenario innovation with enterprise architecture and digital transformation, achieving the internal unity of digital transformation value benefit system, digital transformation new capability system, and enterprise architecture and scenario innovation. It clarifies the positioning of digital scenarios in enterprise digital transformation, Thus analyzing the overall path of digital

scenario driven enterprise digital transformation, helping enterprises make good use of the important lever of digital scenario. From an overall perspective, scenarios are the combination or decomposition of various business activities, and enterprise development strategies, business innovation and transformation, and new capacity building are all achieved through decomposed scenarios at all levels; from an ontological perspective, the operation of digital scenarios requires both systematic solutions and governance systems. The digital scenario not only drives the digital transformation of enterprises in the form of value carriers, landing carriers, evaluation carriers, and iterative carriers, but also plays a synchronous role in industrial digital transformation and contributes to the improvement of market competitiveness.

This study still has certain limitations. Firstly, scenario innovation has an inherent characteristic of bottom-up, which is also its key advantage. However, it also shows a global disadvantage. This article preliminarily clarifies the positioning and role of scenario innovation and enterprise architecture in digital transformation, but further research is needed on the working methods of their interaction to achieve mutual promotion. Secondly, this study focuses on the theoretical and logical level, and there is relatively little involvement in the practical operational methods of digital scenario driven digital transformation, which needs to be supplemented and improved in subsequent research centers.

Acknowledgements

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