Study on the functional mechanism of enterprise internationalization strategy adjustment in the digital era

Zhifeng Shen1*, Peng Wang1, Guize Xu1 and Hongbing Jiang1

1Management Engineering School, Zhengzhou University, Zhengzhou, Henan, 450001, China
*Corresponding author’s e-mail: shenzhifeng@zzu.edu.cn

Abstract: This article is based on the following research background, ① the transformation necessity of the internationalization strategy philosophy under the trade war; ② the importance of enterprises entering the international market in all countries; ③ postmodern consumption and production practices paying more and more attention to the project sharing; ④ the innovation mode advocating cooperation and openness in resource sharing; ⑤ the urgency of study on new concepts such as the digital institutional environment and project sharing and the transformation of international strategy philosophy; ⑥ the interaction complexity of all these concepts. First, this paper proposes and defines the concepts of digital institutional environment and project sharing, then it studies the innovation mode suitable for digital system environment and the internationalization strategy philosophy, and it studies the logical relationship among digital institution environment, project sharing, enterprise innovation mode and enterprise internationalization strategy adjustment. Second, this paper constructs a conceptual model that how the digital institutional environment influence the internationalization strategy, and it studies the similarities and differences in the context of project sharing and enterprise innovation mode. Finally, combined with the enterprise innovation model, this paper puts forward the construction methods, construction procedures and value realization methods for various sharing platforms. It proposes suggestions for enterprise internationalization strategy actions, and in particular it gives a scientific judgment on the current development trend of internationalization strategy.

1. Introduction

Digital technologies such as cloud computing, mobile internet, big data, artificial intelligence, and blockchain have hastened various network sharing platforms. These technologies have rapidly spread in the fields of consumption, circulation, production, and government macroeconomic regulation, and they have generated new economic models such as digital economy and sharing economy. The digital technologies are rapidly subverting the profit model of traditional enterprises, profoundly changing the market structure where companies are the core of traditional organizations, and directly challenging the resource allocation of the market economy. However, the study on digital institution environment is obviously behind the digital practice because of this “first test and post strategy” model. The basic concepts of digital rule, digital criterion, digital trust, digital divide, e-commerce transaction rule, and electronic enterprise charters are cluttered, fuzzy, and missing. The atmosphere of the digital institution environment formation has many differences among different countries, industries and companies. Furthermore, the development and awareness of the digital institution environment is
hysteretic in many countries and companies. All these lead to inferiority in international cooperation in the background of the information era and the innovation environment[1].

The digital institution environment is a new social legal, moral, political, economic and cultural system when trading, production, commerce, employment and entertainment activities are gradually transitioning to digital. It has important theoretical values and practical significance to study on the concept definition, dimension feature, measurement and mutual matching relation of the digital institution environment and the differences among the digital institutional environment, the classical institution theories, the modern institution theories constructed by institution economists such as Commons, North, Williamson and Scott[2]. However, at present, there are no scholars who have conducted quantitative empirical studies on the digital institution environment. The systematic academic study on the digital institution environment is still in its infancy. Some scholars have pointed out that the advantages of the digital environment are reflected in new activities (new project management method) and new products (innovation mode)[3]. Therefore, it is very important to find a carrier for the implementation of the digital institution environment and its innovation mode. Nevertheless, no scholars have conducted in-depth academic research on project sharing management. Project sharing is obviously different from existing project management modes such as project integration management, crowdsourcing and PPP, because it is a sprouting new project management mode that matches the new sharing economic theory, information technology, and digital institutional environment. Analyzing the deep theoretical roots and practical foundation of project sharing management, exploring the main features and connotations of project sharing management, defining the concept of project sharing management, revealing the value and realization approach of project sharing management and investigating the main issues in the practices of project sharing management, these problems are the urgent study tasks for project sharing management to service digital environment and bear innovation mode. In addition, the construction of the digital institution environment helps to reverse the philosophy of overemphasizing on competition in enterprise internationalization strategy, and it helps to provide methods for the implementation of new sharing, opening, innovative, coordinated and green international cooperation trends, and it helps enterprises realize the advantage of late development and lead international cooperation.

2. Theoretical Foundation
This section mainly reviews related concepts such as the digital institution environment, the project sharing, and innovation model that involve the concept of enterprise internationalization strategy adjustment.

2.1. Digital Institution Environment
The characteristics of opening, sharing, and innovation of digital technology have profound and extensive impact on our society. The main contribution of this economy is to overcome market deficiencies without resorting to traditional forms of regulation. Instead, traditional regulations often become strong obstacles for innovations, market access, and the talent of entrepreneurs. These challenge the existing theory and practice of organizational governance, but the phenomenon of public pastoral land tragedy often occurs in the data society, which requires the matching of the appropriate economic institution environment with information technology products or services [4]. As a social game rule, institution not only restricts individual behavior, but also affects its expectations [5]. The digital economy and the sharing economy are also hot topics discussed by the legal scholars and practitioners in the near future, especially the issue of the supervision of digital platforms, in which joint supervision and self-regulation are very important[1].

2.2. Project Sharing
At present, the project management theory is incompatible with the changing institution environment and development concepts. Modern projects are faced with higher uncertainty and complexity and have new requirements for competition and cooperation. Some scholars believe that modern projects
tend to reductionism, often resulting in local optima rather than global optima [6]. That is, all parties involved in the project employ the means of contract design, risk aversion, financing planning, or traditional low-cost bids and high-price claims etc., which makes some links optimal, some organizations optimal, or some regions optimal. Due to excessive reliance on the market economy, emphasizing competition and ignoring the importance of sharing and cooperation, the relationship between resource, production, and consumption becomes loose. The disparity between the rich and the poor, the retreat of international trade, and the idleness of resources and even projects are extremely incompatible with the laws and regulations of various countries and the concept of green development, harmonious development, and sustainable development pursued by ordinary people. The new sharing economy believes that future businesses or projects are also shared [7][8]. Information technology, sharing ideas, and institution environment create a number of platforms to form a new market, in which the produces, the methods of consuming, buying and selling services and products, cooperation philosophy, and competition philosophy are all different from those of the past, resulting in the digitization of production and consumption and the emergence of digital institution (Emergence of Digital Institutions), which will soon spread in the field of project management.

2.3. Innovation Mode
Innovation is increasingly seen as the most important source of corporate organizational performance [9]. Regardless of their size, industry, and time of establishment, when companies face difficulties, Many companies first think of innovating or reshaping their own innovation mode, but innovation has multiple definitions [10]. In addition, companies only focus on the work they are good at. These studies emphasize that innovation stems from competition, scarcity of resources, legal or regulatory breakthroughs or violations, and consumer or market demand [11]. This traditional resource-based view can damage and hinder the digital society and share social innovation practices. Therefore, companies should find new ways of innovation. Digital social innovation can incorporate philosophy outside of the organization, new knowledge and resources into its own products to accelerate corporate innovation and expand the market’s external use of innovative products. The biggest feature is that the existence of non-profit and non-competitive factors driven by innovation is driven by organizations or individuals who are not invited by the leading organization. In a data society, with open access to data and Web 2.0, Web 3.0, the functions of large companies are replaced by an innovative ecosystem. This innovative system may have multiple modes of innovation. Under them, it consists of thousands of projects. Other organizations or individuals (prosumers, productive consumers) can link to these projects quickly and easily through information sharing platforms. Most of these innovations are implemented through projects[10].

2.4. Enterprise Internationalization Strategy Adjustment.
Mechanisms such as trust, information feedback, and online incentives formed by the digital society and the sharing society lead to a greatly reduced possibility of self-possessing resources or obtaining absolute resource advantages to achieve success, because the dispersion of resources is very easy and the cost is extremely low. And it will also have a great impact on the international strategic Alliance. Eric Goldman, professor of Santa Clara University School of Law even considers this phenomenon as “the second invisible hand”. Some scholars believe that the combination of digital institution environment and resource sharing triggered by information technology will inevitably lead to strategic changes in global companies. Institution environment as the most basic external factor has been paid more and more attention to in the study of economic growth [12][13], but few literatures have paid attention to the influence of institution environment reform on corporate strategic adjustment, especially the adjustment of the company’s internationalization strategy.

Companies can judge the timing, direction, and scale of strategic adjustments based on factors such as their environment and the resources they possess. However, when faced with complex changes in environmental conditions, some companies are able to adjust their strategies in time to adapt to changes, while others lack flexibility in this regard. Strategy adjustment is the change in form, nature,
and state of the matching pattern of organization and environment over time. Some scholars have even pointed out that at most times in the last century, companies without a clear competitive strategy can sometimes perform well, and the environment, which is uncertain or unclear, sometimes even is rewarded[14]. Therefore, it is necessary for companies to observe, inspect, measure, and make use of such changes in a suitable range, and to find a system that is measurable and can explain the vast majority of changes in the digital environment that affect the internationalization of companies.

3. Enterprise Internationalization Strategy Adjustment Mode

This part mainly analyzes the logical inference of the enterprise internationalization strategy adjustment. And then analyzes the mechanism and path of the key structure affecting the enterprise internationalization strategy. Finally, it constructs the conceptual model for the enterprise internationalization strategy adjustment.

3.1. Theoretical Analysis

From the intuitive judgments, inferences and observations of some scholars, the digital institution environment have an impact on enterprise to reduce transaction costs, improve the efficiency of resource utilization, promote cross-border sales and R&D and change the concept of enterprise internationalization strategy today because of its incentive regulations, innovative regulations, differential regulations, cross-border trading platforms, enterprise digital departments as well as the trust and awareness. However, there will be a lot of preliminary work if this empirical research is carried out. Similarly, according to academic judgments and project sharing practices, especially in the foreign construction market, the digital institutional environment have an impact on the project sharing philosophy, project sharing principle, project sharing content and project sharing implementation of the overseas project. The project has a close relationship with the enterprise strategy. Previous studies have found that enterprises first formulate strategies, then select projects according to the strategy, and then carry out project management or portfolio management for each project. Project management is the carrier and tool to implement enterprise strategy. However, project sharing is different from the previous project management mode, and project sharing management has the characteristics of distributed management, which can be consistent with the original strategy of the enterprise, may be divorced from the original strategy of the enterprise, and even cause strategic adjustment of the enterprise. Therefore, in terms of time relationship, the project sharing management model can occur earlier than the enterprise’s new strategy (strategic adjustment) in project selection.

3.2. The Influence of Digital Institution Environment on Enterprise Innovation Mode

The digital institution environment is more conducive to openness and sharing in theory, which is very beneficial to organizations of different types and sizes to carry out innovation activities. From the intuitive judgments, inferences and observations of some scholars, incentive regulations, innovative regulations, differential regulations, cross-border trading platforms, enterprise digital departments as well as the trust and awareness in the digital institution environment have an impact on enterprise to reduce transaction costs, improve the efficiency of resource utilization, promote cross-border sales and R&D. It will be conducive to the innovative mode with this attribute, or form new innovation models.

3.3. Analysis of the Relationship Between Innovation Mode and Enterprise Internationalization Strategy Adjustment

The success of innovation and enterprise internationalization strategy is very important. In the digital institution environment, the speed of information circulation is very fast, and the sharing of resources is convenient, and the energy revolution with the transportation infrastructure are greatly improved. In the past, enterprises based on comparative advantage, resource advantage and institutional advantage will be hard to achieve their internationalization strategy goal if they can not turn it into innovation advantage. Through case analysis and regression analysis, it is very important to verify the open innovation, social innovation, user-participating innovation and the combination of these innovative
modes, or the relationship between the other innovative ways of digital institution environment and the enterprise internationalization strategy adjustment.

3.4. Analysis of the Relationship between Project Sharing and Enterprise Innovation Mode

At present, a lot of innovation in the enterprise is carried out in the form of projects, and they are managed by using the concept of project management. The project sharing is different from the traditional project management in resource allocation, cooperation concept, power and responsibility relationship, profit distribution and risk sharing, and the project sharing is based on the digital institution environment. From the current literature review, project sharing and its dimensions may have a positive impact on enterprise innovation mode. In the same way, several enterprise innovation mode proposed suitable for the digital institutional environment are highly compatible with project sharing philosophy. Their development status and theoretical attributes may have a positive impact on project sharing and its various dimensions.

3.5. Conceptual Mode

It is known from the above research content that there are two paths for the digital institution environment to influence enterprise internationalization strategy adjustment: digital institution environment—enterprise innovation mode—enterprise internationalization strategy adjustment; digital institution environment—project sharing—enterprise internationalization strategy adjustment. However, in addition to the interaction effect between project sharing and enterprise innovation mode, the relationship between project sharing and innovation mode is mainly related to the information sharing platform, especially cross-border sharing platforms. The conceptual relationship formed by these concepts is shown in the Figure 1 below.

![Conceptual model](image)

**Figure 1. Conceptual model**

4. Summary and Discussion

The main research significance of this article is as follows.

1. It definitely proposes and defines the concept of digital institution environment, then it analyses and expounds its influencing factors and composition in depth. We design the measurement scale for digital institution environment, and we introduced digital economic and digital institution environmental theory to enterprise internationalization strategy field, which have expanded the
application space of digital economy and digital institutional environment, enriched the research content of enterprise internationalization strategy management, and provided a new perspective for scholars to conduct related strategy management research.

2. It definitely proposes and defines the concept of project sharing, then it studies the causes, compositions and values of project sharing. We designed the measurement scale for project sharing, and we introduced sharing economic theory to the project management field, which expanded the application space of sharing economy, enriched the system of project management research, and provided a new perspective for scholars to conduct project management research.

3. It studies the functional mechanism about how the digital institution environment and institution distance influence enterprise internationalization strategy in the dual context of project sharing and enterprise innovation mode. And we have compared the heterogeneity of different influence paths, revealed the feasibility and direction of the enterprise internationalization strategy adjustment. Moreover, it verifies that the elements of digital environment, information, project sharing, openness and innovation have a decisive effect on enterprise entering the international market and enhancing the performance in the international market. The conclusions and viewpoints are significantly innovative.

4. Based on the research results, this paper combines the evolution logic and development trend of internationalization strategy of infrastructure enterprises in China, in addition, this paper analyses the implementation methods, procedures and value realization modes of Chinese construction related enterprises which have built, led and participated in the construction of global project resources, information and innovation platform.

References
[1] Finck, M. (2018) Digital Co-Regulation: Designing a Supranational Legal Framework for the Platform Economy. European Law Review, 43: 47-68.
[2] Kawashima, K. (2017) Service outsourcing and labour mobility in a digital age: transnational linkages between Japan and Dalian, China. Global Networks, 17(4): 483-499.
[3] Turcan, V, Gribincea, A & Birca, I. (2014) Digital economy-a premise for economic development in the 20th century. Economie si Sociologie: Revista Teoretico-Stiintifica, 2: 109-115.
[4] Gupta, A, Jukic, B, Parameswaran, M, Stahl, D. O., & Whinston, A. B. (1997) Streamlining the digital economy: how to avert a tragedy of the commons. IEEE Internet Computing, 1(6): 38-46.
[5] Barley, S. R, & Tolbert, P. S. (1997) Institutionalization and structuration: Studying the links between action and institution. Organization studies, 18(1): 93-117.
[6] Pollack, J. (2007) The changing paradigms of project management. International journal of project management, 25(3): 266-274.
[7] Rachel, B & Rogers, R. (2010) What’s mine is yours: The rise of collaborative consumption.
[8] Gansky, L. (2010) The mesh: Why the future of business is sharing. Penguin.
[9] Glor, E. D & Rivera, M. (2016) Assessing the Relationship between Innovation and Survival in Organizations: An Empirical Review, Research Synthesis, and Analytical Case Study. The Innovation Journal, 21(2): 1.
[10] Oumlil, R, & Juiz, C. (2016) An Up-to-date Survey in barriers to open innovation. Journal of technology management & innovation, 11(3): 137-152.
[11] Damanpour, F, & Schneider, M. (2008) Characteristics of innovation and innovation adoption in public organizations: Assessing the role of managers. Journal of public administration research and theory, 19(3): 495-522.
[12] Acemoglu, D & Johnson, S. (2005) Unbundling institutions. Journal of political Economy, 113(5): 949-995.
[13] Hare, P. G. (2001) Institutional change and economic performance in the transition economies. Economic Survey of Europe, 77-92.
[14] Eisenberg, E. M, Johnson, Z & Pieterson, W. (2015) Leveraging social networks for strategic success. International Journal of Business Communication, 52(1): 143-154.