



Exploring the High Quality and Green Development Path of Dalian Convention and Exhibition Industry

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Abstract. Dalian is one of the important cities in the Northeast region for developing foreign trade and economic cooperation. This article focuses on the “14th Five Year Plan” and the 2035 Vision Goal Outline, using the 3W analysis method to analyze the connotation and significance of green development in the exhibition industry. Through literature analysis, interview research, and other methods, it is found that the green development of Dalian’s exhibition industry is affected by the degree of industrialization, supporting systems, and related policies and regulations are not detailed enough, and the awareness of green exhibition is weak. Furthermore, an optimization path for high-quality and green development of the exhibition industry is proposed to create an innovative green exhibition model for the city.

Keywords: Dalian, Exhibition Industry, Green Development, Low Carbon Development, Path Analysis

1 Introduction

The exhibition industry belongs to the leading modern service industry and is an important link in economic and trade development and industrial linkage^[1]. Currently, China is in the era of green transformation. Under the new development pattern, green, low-carbon, and sustainable development have become the focus of the exhibition industry. Dalian is the central engine of the Northeast economy. The formation of a distinctive green development path in the exhibition industry is of great strategic significance for high-level opening-up and high-quality economic development.

2 The Connotation and Significance of Green Development in the Exhibition Industry

2.1 The Connotation of Green Development in the Exhibition Industry

In February 2021, the State Council first proposed the concept of “green development of the exhibition industry”. The subsequent “Green Exhibition Operation Guidelines”

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(GB/T 42496-2023) emphasized the refinement and implementation of green operation measures, work norms, and technical indicators in various stages of the exhibition.

2.2 The Significance of Green Development in the Exhibition Industry

2.2.1 Realizing Circular Economy and Maximizing Resource Benefits

The theory of circular economy emphasizes minimizing the use of resources and the generation of waste, and achieving sustainable utilization of resources through recycling and regeneration. The development of the exhibition industry should also highlight the characteristics of resource conservation and recycling, such as the construction and improvement of exhibition venues, the planning, operation, and evaluation standards of exhibition activities, etc.

2.2.2 Implementing the Concept of Low-Carbon Environmental Protection and Sustainable Development

Around the “dual carbon” development goal, we should do a good job in the ecological construction of modern exhibition venues. Exhibition activities should focus on showcasing green and low-carbon technologies, products, and achievements, combining hot topics such as low-carbon and environmental protection, developing relevant cultural and creative products, creating new carriers for promoting green exhibition concepts, and moving towards carbon neutrality and sustainable development^[2].

2.2.3 Promoting Technological Innovation and Green Services in the Exhibition Industry

As a product of digital intelligent technology, digital exhibitions have followed the trend of the times. Through the integration of digital information, various new technologies such as big data and virtual imaging are applied to the exhibition industry, breaking the limitations of time and space. Immersive experiences can be generated both online and offline. By relying on digital platform technology, we can not only break free from the temporal and spatial limitations of traditional exhibition models, but also highlight the new vitality of exhibitions.

3 The Problems in the Green Development of Dalian’s Exhibition Industry

3.1 Low Level of Industrialization and Incomplete Supporting System

In 2022, the GDP, proportion of the tertiary industry, and investment rate in high-tech industries in Dalian were relatively low. The lack of significant advantages in the secondary industry represented by manufacturing, indicates that the development of Dalian’s exhibition industry lacks a green exhibition industry system with complete functions and supporting facilities, as shown in Table 1.

Table 1. Comparison of Economic Indicators of Exhibition Cities in the Bohai Rim in 2022

Indicators	Beijing	Tianjin	Shenyang	Dalian	Jinan	Qingdao
GDP-Growth (%)	0.7	1.0	3.5	4.0	3.1	3.9
The 1st industry-Growth (%)	-1.6	2.9	2.1	3.2	3.1	2.2
The 2nd industry-Growth (%)	-11.4	-0.5	3.7	4.5	3.2	2.8
The 3rd industry-Growth (%)	3.4	1.7	3.5	3.7	3.0	4.5
Value added of industrial enterprises above designated size-Growth (%)	-16.7	-0.1	3.1	5.1	1.6	3.8
Fixed assets investment-Growth (%)	3.6	-9.9	6.1	6.5	3.8	4.5
Investment in high-tech industries-Growth (%)	35.3	10.0	45.7	24.0	11.1	36.2
The proportion of 3 industries (%)	83.8	61.3	58.2	49.3	61.7	62.0

Data source: Statistical Bulletin on National Economic and Social Development in 2022 by Cities

In terms of urban supporting facilities, there are 4 exhibition venues in use in Dalian in 2022, but the number of indoor exhibition halls with an area of over 10000 square meters is relatively low, and there is a lack of venues with an area of over 100000 square meters, as shown in Table 2. Although the venues in Dalian have building management such as network, security, and usage status monitoring, they are insufficient in facility management such as perception access and IoT applications, as well as data management such as data collection and storage and data processing applications^[3], resulting in high environmental protection costs, as shown in Table 3.

Table 2. List of the number and scale of exhibition venues in the cities of the Bohai Rim

Indicators	Beijing	Tianjin	Shenyang	Dalian	Jinan	Qingdao
Number of exhibition venues	In use exhibition venues	14	2	3	4	5
	Under construction and under construction exhibition venues	—	1	—	—	1
	Total	14	3	3	4	6
Number of exhibition halls with indoor exhibition area>10000 square meters	11	2	2	2	3	5
Scale of exhibition venues(10000 square meters)	Over 100000 square meters of venues	48.96	29.60	14.16	—	20.30
	Scale of exhibition venues under construction	—	20	—	—	51
	Total	48.96	49.60	14.16	—	71.30

Data source: Analysis of the Development Status of China's Exhibition Industry in 2022

Table 3. List of Intelligent Venues in Some Exhibition Cities in the Bohai Rim

Indicators		Beijing	Tianjin	Shenyang	Dalian	Jinan	Qingdao
Building	Network	Yes	Yes	Yes	Yes	Yes	Yes
	Security	Yes	Yes	Yes	Yes	Yes	Yes
Management	Application status monitoring	Yes	Yes	Yes	Yes	Yes	Yes
Facility management	Perceived access	Yes	Yes	Yes	No	Yes	Yes
	IoT applications	Yes	Yes	Yes	No	Yes	Yes
data management	Data collection and storage	Yes	No	No	No	No	No
	Data processing and application	Yes	No	No	No	No	No

3.2 Lack of Policies and Regulations, Insufficient Promotion Efforts

The green development of the exhibition industry requires strong support from effective policies and regulations, while also continuously refining preferential policies and support measures. Tianjin's policies emphasized the importance of digital technology for the emerging business models and scene application level of exhibitions. The policies of Qingdao and Jinan both mention the need to promote the development of green exhibitions and provide corresponding subsidies. The policy in Beijing clearly proposes to create green and energy-saving exhibitions, as well as professional exhibition brand activities oriented towards the development of the digital economy. In contrast, Dalian's policies lack further clarification on specific measures and special funds for the development of green exhibitions. The development of green exhibitions cannot be separated from new environmentally friendly materials. If there are no mandatory measures and reward and punishment measures, new environmentally friendly materials cannot be widely used.

3.3 Weak Awareness and Low Enthusiasm of Enterprises

The high-quality and green development of the exhibition industry is not only the use of environmentally friendly materials, but also the integration of efficiency and environmental protection. Through on-site research on Dalian exhibition projects, it was found that some organizers or exhibitors often overlook social and environmental benefits in pursuit of economic benefits. In order to save costs, some exhibitors or exhibition organizers will reduce decoration costs and choose low-priced and low-quality materials. Some exhibition projects, due to their pursuit of event scenes, have rented conference rooms or exhibition halls that do not match the scale of the event due to face saving, resulting in waste of spatial resources. This is related to the lack of environmental awareness among the public towards green exhibitions, and more importantly, the lack of the concept of green exhibitions by exhibition organizers or practitioners

themselves, which can lead to the neglect of the concept of green development and low-carbon environmental protection in the development process of Dalian's exhibition industry.

4 Optimization Path for Green Development of Dalian Exhibition Industry

4.1 Enhance the Level of Industrialization and Improve the Supporting System

Dalian's policy emphasizes the need to achieve professional development of the exhibition industry and promote structural upgrading. Realize the intelligent development of the exhibition industry, strengthen the application of digital technology in exhibitions, and improve the efficiency and quality of exhibition transactions. Promote the transformation and upgrading of intelligent facilities in venues, and maximize the functionality of exhibition venues. This will provide favorable support for Dalian's exhibition industry to further extend its industrial chain. In specific practice, it is possible to emulate first tier cities and create smart green building venues. The development of smart exhibition halls cannot be separated from various digital technologies such as the Internet of Things, big data, and BIM. Dalian's exhibition venues should be comprehensively upgraded and renovated to create green and high-level new exhibition halls^[4].

4.2 Refine Policies and Measures, Increase Promotion Efforts

Based on the successful experience of top exhibitions in recent years, it can be found that increasing policy guidance and support, actively promoting new green building models. In recent years, relevant national policies have pointed out the direction for the green development of the exhibition industry. The green development of Dalian's exhibition industry needs to be guided by relevant national policies, and more detailed requirements should be made from basic design and construction, exhibition service functions, exhibition data governance, smart exhibition ecology, and other aspects to promote its transformation towards green and environmentally friendly exhibitions.

4.3 Enhance Awareness of Technological and Environmental Protection, and Develop "Green Content"

If policies are hard tools, then enhancing the green and environmental awareness of exhibition development is the soft essence. This requires government departments to strengthen the continuous output of green, low-carbon, and environmentally friendly exhibition concepts, promote and publicize them from the official level, and also require relevant industry associations and exhibition enterprises to strengthen the application of technology and environmental protection from the public level in specific exhibition practice activities. Most exhibition events prepare souvenirs such as handbags, etc. for exhibitors and attendees to showcase and promote their brands during the event.

These small gifts should be made of environmentally friendly materials as much as possible, and even incorporate technological elements. This can provide participants and audiences with a technologically advanced experience, deepen their impression of the exhibition^[5], and highlight the high-quality and green development characteristics of the exhibition. In addition, throughout the entire process of organizing and operating exhibitions, green and environmentally friendly materials and processes should be adopted to reduce activity costs, minimize resource waste, and actively build new green exhibition models.

5 Conclusion

Dalian needs to enhance the level of urban industrial development, improve the supporting system, promote the deep integration of the exhibition industry and related industries, further refine and improve the development policies and measures of the exhibition industry, and promote the gathering of technology flow, capital flow, information flow, and talent flow in Dalian. At the same time, adhering to the development concept of digital technology and green environmental protection, we cultivate and strengthen new driving forces for the urban exhibition industry.

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