



Exploration of the Development Trend of Dual Line Exhibition Integration in Coastal Open Cities

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Abstract. Select Tianjin, Qingdao, and Dalian as representatives of the circum-bohai sea economic zone, and combine the current development status of the exhibition industry in the three regions to study the exhibition venues, innovation support policies, and exhibition industry operations in the dual line exhibition integration development. Conduct comparative analysis and propose the development trends of integration, digitization, and greening, in order to provide reference and reference for the dual line exhibition integration development of coastal open cities.

Keywords: Dual line exhibition, Integration, Coastal open city, Trend exploration

1 INTRODUCTION

The exhibition industry is an important bridge connecting the world and an important engine for urban economic development, known as the “window to touch the world” and the “accelerator of industrial development”. The 14th Five Year Plan for the Development of Digital Economy proposes to enhance the level of digital and inclusive social services, accelerate the digital supply and networked services of public service resources in exhibition and other fields, and promote the sharing and reuse of high-quality resources. Currently, with the rapid development of technology and information, the integrated exhibition model of online and offline has become a new commercial form^[1]. It is imperative to inject the advantages and technologies of the Internet into physical exhibitions, achieve complementary advantages between online and offline, and develop the “dual line exhibition” model of the exhibition industry’s economic form^[2].

2 THE SIGNIFICANCE OF THE INTEGRATED DEVELOPMENT OF DUAL LINE EXHIBITION IN COASTAL OPEN CITIES

2.1 Promote the integration of domestic and foreign trade, and create a new urban exhibition economy

During the 14th Five Year Plan period, China entered a new stage of comprehensive construction of a socialist modernized country, and the opportunities and challenges faced by foreign trade development have undergone new changes. In 2021, the Ministry of Commerce issued the "14th Five Year Plan for High Quality Development of Foreign Trade", emphasizing the need to enhance awareness of opportunities and risks, accurately identify changes, scientifically respond, actively seek changes, seize opportunities, respond to challenges, and promote new steps in the high-quality development of foreign trade. By leveraging the international procurement, investment promotion, cultural exchange, and open cooperation functions of exhibition platforms, we can promote healthy and sustainable economic and trade development. Coastal open cities are windows for opening up to the outside world. It is necessary to actively promote the integration and development of the exhibition industry in coastal open cities with other key industries, fully leverage the role of the exhibition economy as a "booster", release urban industrial effects, stimulate consumption, and enhance urban influence.

2.2 Injecting vitality into the traditional exhibition industry and empowering the digital transformation of exhibitions

The exhibition industry is a social activity that integrates economy, politics, technology, and commerce (Huang Yumei, 2011). Under specific themes, the exhibition industry can achieve information exchange between supply and demand through various communication methods (Xue Haoming, 2021). With the rapid development of the Internet era and the emergence of new forms of communication, introducing advanced technology, promoting the integration of the exhibition industry and various media technologies, breaking the boundaries of time and space, applying high-tech to exhibition scenes, and achieving a new experience of exhibitions has become an inevitable trend. The report of the 20th National Congress of the Communist Party of China pointed out the need to accelerate the construction of a strong online country and a digital China. In March 2023, the Central Committee of the Communist Party of China and the State Council issued the "Overall Layout Plan for Digital China Construction", proposing a strategic path of consolidating the foundation, empowering the overall situation, strengthening capabilities, and optimizing the environment. In this development context, the exhibition industry needs to accelerate its digital transformation.

2.3 Enhance the service capabilities of exhibition enterprises and highlight the value of the new exhibition industry

The exhibition industry can achieve integration with other industries through marketing, technology, experience, and creativity, which is reflected in: firstly, marketing integration with general industries, such as various trade shows. The second is the creative integration with cultural industries such as literature and art, such as various cultural exhibitions. The third is the integration of experiences with tourism and leisure sports industries, which in turn leads to the emergence of exhibition tourism, exhibition leisure, and so on. The fourth is to integrate technology with the communication, film and television, publishing, and advertising industries to achieve the display and experience of virtual exhibitions (Li Yongjun, 2022). In the development model of the digital economy, the digital upgrading of the exhibition industry is crucial. The integration of dual line exhibition development can effectively link event driven and data-driven, breaking the constraints of time and space, allowing customers to have more immersive experiences, and reducing the cost of exhibition events, exploring the new value of the exhibition industry.

3 THE CURRENT SITUATION AND COMPARATIVE ANALYSIS OF THE INTEGRATED DEVELOPMENT OF DUAL LINE EXHIBITIONS IN TIANJIN, QINGDAO, AND DALIAN

3.1 Comparison of exhibition venues in three cities

The condition setting of exhibition venues is an important foundation for ensuring the smooth operation of exhibition activities, and the number and scale of venues affect the market-oriented operation of exhibition activities^[3]. By comparing the exhibition venues in Tianjin, Qingdao, and Dalian in table 1, it was found that Qingdao has a relative advantage in the number and scale of exhibition venues, with 5 in use exhibition venues, and all 5 venues have indoor exhibitions of over 10000 square meters. Research has found that Qingdao World Expo City is divided into two parts: an international exhibition center and an international conference center, equipped with a business supporting center. Therefore, Qingdao has the largest scale of venues with an area of over 100000 square meters. Although Tianjin has the fewest number of venues in use, the National Convention and Exhibition Center (Phase II) is under construction with a building area of 580000 square meters and an indoor exhibition area of 200000 square meters. Combined with major exhibition venues such as the National Convention and Exhibition Center (Phase I), the total scale can reach 496000 square meters, which is also very advantageous. In contrast, the number of exhibition venues in Dalian is still acceptable, but the overall scale does not have an advantage.

Table 1. List of Exhibition Venues in Tianjin, Qingdao and Dalian

index		Tianjin	Qingdao	Dalian
Number of exhibition venues	In use	2	5	4
	Under construction	1	—	—
	total	3	5	4
Number of indoor exhibition halls with an area of over 10000 square meters		2	5	2
Scale of exhibition venues	Over 100000 square meters	29.60	47.00	—
	Scale of exhibition venues under construction	20	—	—
	total	49.60	47.00	—

Data source: Analysis of the Development Status of China’s Exhibition Industry in 2022 by the China Exhibition Economy Research Association

In addition, intelligence is an important foundation for the development of dual line exhibitions. From the perspective of actual operation of exhibition venues, the level of intelligence is concentrated in three aspects: building, facility, and data management^[4]. A survey on the intelligence of exhibition venues in Tianjin, Qingdao, and Dalian in table 2 found that the Tianjin National Convention and Exhibition Center has a high level of intelligence. The exhibition halls widely use new generation information technologies, such as the Internet of Things, 5G, big data, etc., to create a unified digital platform and online services, achieving intelligent services and experiences such as exhibition data analysis, online navigation, and AR precise navigation^{[5][6]}. The exhibition halls in Qingdao have intelligent functions in building and facility management, while the exhibition halls in Dalian mainly focus on building management. The data management of the two venues is more reflected in the specific operations of the exhibition event organizers, such as collecting customer data through scanning mini programs when entering the venue.

Table 2. List of Intelligence Status of Main Exhibition Venues in Tianjin, Qingdao and Dalian

cities	Building Management			Facility management		data management	
	network	Security	Application status monitoring	Perceived access	IoT applications	Data collection and storage	Data processing and application
Tianjin	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Qingdao	Yes	Yes	Yes	Yes	Yes	No	No
Dalian	Yes	Yes	Yes	No	No	No	No

3.2 Innovation support policies for dual line exhibitions in three cities

In July 2023, the National Development and Reform Commission issued a notice on measures to restore and expand consumption, emphasizing the encouragement of various regions to increase policy support for exhibitions. Innovation support policies are

an important means for the integrated development of dual line exhibitions. According to literature review, Tianjin, Qingdao, and Dalian have all introduced relevant policies for the development of dual line exhibitions.

Tianjin mentioned the model of “Internet plus Exhibition” in 2017. During the period of 2021-2022, documents such as the “Several Measures for Accelerating the Development of New Forms and Models of Foreign Trade in Tianjin” and the “Three Year Action Plan for Promoting the Development of the Exhibition Industry in Tianjin (2022-2024)” were introduced, emphasizing the need to promote the integration of online and offline exhibitions, encouraging exhibition enterprises to cooperate with digital professional technical service providers, and building new business models and scene application levels such as digital exhibition halls and sales online booths, Support the continuous promotion of facility and equipment renovation and smart venue construction in exhibition venues, and enhance the technical service functions of venues.

Qingdao proposed the concept of dual line integration and diversified development in the exhibition industry in 2016, especially proposing rewards and subsidies to encourage international certification and digital exhibitions. During the period of 2021-2022, documents such as the “14th Five Year Plan for the Development of Qingdao's Exhibition Industry”, “10 Policies to Promote the Development of Qingdao's Exhibition Industry”, and the “14th Five Year Plan for the Development of Qingdao's West Coast New Area's Exhibition Industry” were formulated, emphasizing the promotion of five major “tough” actions: digital exhibition, green exhibition, intelligent exhibition halls, exhibition attraction, and transportation support, and promoting the digital, intelligent, and green upgrading of Qingdao's exhibition industry.

In contrast, the introduction of Dalian's dual line exhibition policy was relatively late. Dalian formulated and issued the “14th Five Year Plan” for the development of the exhibition industry, proposing to promote digital technology and achieve intelligent development of the exhibition industry in 2022.

3.3 The operational status of the exhibition industry in three cities

Statistics have found that before the epidemic in 2019, the number and scale of exhibitions in the three regions were significantly higher than those from 2020 to 2022. During the period of 2020 to 2022, the number and scale of exhibitions significantly decreased. Qingdao has the highest number of exhibitions and exhibition area among the three cities. The overall number of exhibitions in Dalian has been higher than that in Tianjin in recent years, but the exhibition area is lower than that in Tianjin, indicating that the scale of individual exhibitions is not large (See Fig. 1 and Fig. 2).

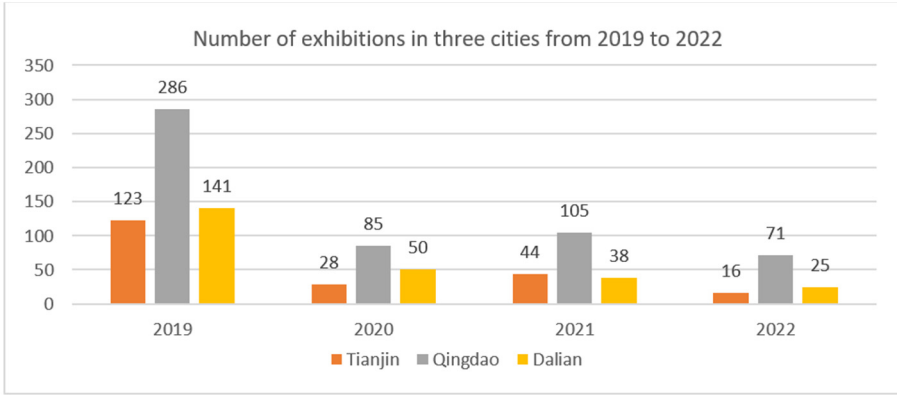


Fig. 1. Comparison of the number of exhibitions in Tianjin, Qingdao and Dalian from 2019 to 2022.

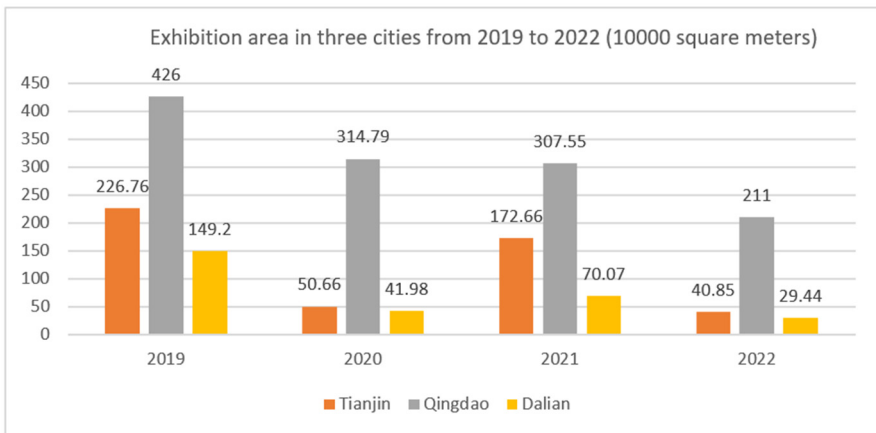


Fig. 2. Comparison of Exhibition Area in Tianjin, Qingdao and Dalian from 2019 to 2022.

From the perspective of exhibition operation mode, all three regions have adopted a combination of “online+offline” in specific projects. For example, in the 2020 Tianjin Qiaohui, Tianjin moved its series of activities such as the opening ceremony, during the meeting, and exhibitions online, relying on advanced technologies such as artificial intelligence, big data, and the Internet of Things to create a new cloud exhibition platform that integrates functions such as digital exhibition halls, cloud forums, business exchanges, supply and procurement docking, online transactions, and data analysis, helping to enhance the brand awareness and influence of the Tianjin Qiaohui. The 2022 Yellow River Basin Cross border E-commerce Expo held in the West Coast New Area of Qingdao adopts a combination of dual line exhibitions. The online platform has for the first time achieved the combination of real-time VR exhibition and new generation remote exhibition technology in China, achieving VR real scene exhibition, with a total of more than 267000 online audience clicks. In August 2023, the China Digital Fair

held in Dalian with the theme of “Digital Innovation and Integrated Development” saw technologies such as digital government, smart healthcare, robotics, metaverse technology, autonomous driving, smart agriculture, and digital RMB at the exhibition site. The event was held in response to the new trends in global digital economy development and the new requirements of sustainable development. The successful holding of the exhibition strengthened the platform construction in the digital field, It has also accelerated the top-level design of planning to promote the development of digital trade^[7].

4 THE TREND OF DUAL LINE EXHIBITION INTEGRATION DEVELOPMENT IN COASTAL OPEN CITIES

4.1 Integration has become a new model for the development of the exhibition industry

4.1.1 The integration of offline and online exhibitions

One of the development trends of the future exhibition industry is the integrated development model of dual line exhibitions. Online exhibition is a digital exhibition intelligent service platform built on the basis of the Internet, combining new information technology methods such as 5G technology, big data, cloud computing, Internet of Things, online live streaming, AR/VR technology, 3D virtual reality technology, etc., and deeply integrating with offline exhibitions. In recent years, online exhibitions have achieved rapid development. On the other hand, offline exhibitions can meet the demands of professional audiences and exhibitors based on physical space, and engage in communication, exchange, and discussion activities. This is a human perception that the Internet cannot replace. At the end of 2022, with changes in epidemic policies, offline exhibitions have entered a period of recovery^[8]. In April 2023, as one of the official four major exhibitions, the Canton Fair adopted a synchronous and parallel approach of offline and online exhibitions, which also laid a solid foundation for the integrated development of domestic dual line exhibitions. By combining online traffic gathering, target targeting, offline public relations docking, and business negotiations, we have truly embarked on a new model of dual line exhibition integration development^[9].

4.1.2 The integration of the exhibition industry with other industries

The exhibition industry is the result of industrial development and can fully reflect the comprehensive ecology and development trends of different links in the industrial chain. Therefore, by collaborating with well-known enterprises and industry associations to hold professional product exhibitions, industrial integration can be achieved. It is also possible to focus on local industrial development advantages, cooperate with government departments, promote industrial agglomeration, and enhance the city’s industrial awareness and reputation. As one of the important coastal cities in the Bohai Economic Circle, Dalian regards the marine economy as an important engine to drive urban economic growth. From 2021 to 2022, it has created multiple online ship salons

and connected the upstream and downstream industrial chains. While driving industrial development, it also enriches people's tourism and leisure experiences. In addition, organizing exhibition activities with specific creative cultures can promote the common development of the cultural industry and exhibition industry. In the development model of dual line exhibitions, the check-in, data flow, and signing negotiations of online exhibition activities have broken the limitations of time and space, making it easier to prolong the display and communication cycle, enhance the service value of exhibition activities, achieve cross-border integration, and extend the industrial chain.

4.2 Digitization has become a new format for the development of the exhibition industry

4.2.1 The integration of online and offline is a manifestation of digitization

The development of the future exhibition industry is a mutual learning, promotion and collaboration between online and offline exhibitions. With the help of various information technologies such as artificial intelligence, big data, cloud computing, blockchain, and multimedia technology, traditional "exhibition" activities can be integrated into a platform^[10]. Through intelligent drainage, invitation, display, and service management, efficiency can be improved. A new form of digital exhibition industry can be cultivated and created on the Internet. Two platforms, online and offline, will be built to link enterprises, customers, online, and offline, connect the flow of relationships and information, leverage the advantages of online and offline, better serve industrial customer groups, complement the bottlenecks of online and offline, achieve dual line driving, mixed exhibitions, and achieve results^{[11][12]}. Overlay. Therefore, from the perspective of behavioral performance, the dual line integration of the exhibition industry is the offline experience of online consumption, matching online and offline contact. From a technical perspective, offline behavior is digitized online, online services are tangible offline, and online and offline traffic and experience are completely intertwined^{[13][14]}.

4.2.2 The Internet of Things Promotes the Accelerated Development of Digital Exhibition

At present, the construction of digital economy, digital society, and digital government is accelerating, and digital technology is fully integrated into production and life, forming an increasingly complex ecosystem around the flow, circulation, and interaction of data. Proficient in using digital technology to link offline and online activities remains the mainstream of the exhibition industry's development. The digital ecosystem can influence the user's mindset and also influence the future form of technology. Therefore, the "Internet of Things" not only changes the lives of ordinary people, but also affects the development of various industries, including the exhibition industry. With the continuous iteration of Internet of Things technology, artificial intelligence technology, big data technology, and cloud computing technology, the intelligent infrastructure of conferences is constantly improving. The upgrading of smart venues and

the application of big data and cloud computing technology in exhibition activities reflect the full chain tracking and big data analysis both online and offline, which can help conference organizers and organizers achieve user behavior analysis, optimize user experience, and provide targeted marketing and content^[15].

4.3 Greenization has become a new focus for the development of the exhibition industry

4.3.1 Implementation of green and low-carbon exhibition concepts

The Opinions of the Central Committee of the Communist Party of China and the State Council on Fully Implementing the New Development Concept and Doing a Good Job in Carbon Peaking and Carbon Neutrality pointed out that promoting comprehensive green transformation of economic and social development, strengthening the guidance of green and low-carbon development plans, optimizing the regional layout of green and low-carbon development, and accelerating the formation of green production and lifestyle. The Notice of the State Council on Issuing the Action Plan for Carbon Peak before 2030 emphasizes that the dual carbon goals of serving carbon peak and carbon neutrality should be taken as the guiding principle for organizing exhibitions, and promoting green exhibitions should be given top priority. Therefore, in the organization of venue facilities and exhibition activities, venue design, and conference services, it is necessary to achieve greenization, support green technology innovation, promote the normalization of green venues, and promote the safe and efficient use of green services in the conference field. As an external window for economic and trade development, coastal open cities should actively promote the construction and upgrading of smart venues, and advocate the implementation of green, energy-saving, and environmental protection as the leading concepts.

4.3.2 Ecological exhibition promotes sustainable development

The green development of the exhibition industry reflects the characteristics of ecological exhibitions, but the content of ecological exhibitions is richer than that of green exhibitions. Ecological exhibition requires the exhibition industry to follow both economic development laws and environmental development laws in the development process, in order to better achieve the unity of economic benefits, social benefits, and ecological benefits. Therefore, “ecological exhibition” is the main form or foothold of “sustainable development of the exhibition industry” and “high-quality development of the exhibition industry”. From a practical perspective, the organizers of exhibition activities should closely focus on “carbon peak” and “carbon neutrality”, and gradually extend the theme and content of “green, low-carbon, and sustainable” to new energy vehicles, intelligent manufacturing, environmental protection and other fields. They should actively cultivate conference projects with themes such as green, low-carbon, circular economy, and sustainable development.

5 CONCLUSION

With the rapid development of the Chinese economy and the increasing improvement of digital technology, the exhibition industry has entered a critical period of transformation and upgrading. As a pioneer of China's reform and opening up, the exhibition industry in coastal open cities needs to respond to new challenges and build competitive advantages. Therefore, the exhibition industry in coastal open cities needs to strengthen the integration and development with related industries, achieve a dual line model of online and offline, promote digital transformation through the Internet of Things, promote sustainable development through green and low-carbon measures, and assist in the high-quality development of China's digital, green, standardized, and internationalized exhibition industry.

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