

Paths and Countermeasures for Building New Consumption Scenarios in Park Cities under the Background of Digital Economy: A Case Study of Chengdu Park City Demonstration Zone Construction

Fang Li, Yan Liu, Li Li*

Urban Vocational College of Sichuan, Chengdu, 600100, China

*Corresponding author: lilicau@163.com

Abstract: The deep integration of the digital economy and the Park City concept is reshaping the underlying logic of urban consumption spaces. Taking the Chengdu Park City Demonstration Zone as the research object, and from the cross-disciplinary perspective of scene theory and consumer economics, this paper systematically analyzes the intrinsic mechanism by which the digital economy empowers the construction of new consumption scenarios in Park Cities. The study finds that Chengdu has initially established a practical framework of "scene-oriented city building," forming multi-dimensional consumption patterns such as greenway economy, smart business districts, and cultural-tourism integration. However, it still faces structural challenges including scenario homogenization, insufficient operational sustainability, and superficial application of digital technologies. Accordingly, this paper proposes a four-in-one construction path of "technology foundation, scenario innovation, ecological synergy, and institutional guarantee," and offers countermeasures and suggestions from dimensions such as cross-sector collaboration, market-oriented operation, differentiated positioning, and digital infrastructure construction, so as to provide replicable and scalable experience for similar cities.

Keywords: Digital economy; Park City; New consumption scenarios; Scene-oriented city building; Chengdu practice.

Introduction

The rapid pace, extensive reach, and profound impact of the digital economy are becoming key forces in restructuring global factor resources, reshaping the global economic structure, and changing the landscape of global competition. As an urban expression of the new development philosophy, the Park City concept centers on the organic integration of ecological, cultural, and economic values. When the technological momentum of the digital economy meets the spatial carrier of the Park City, consumption scenarios are no longer mere commercial spaces but become "testing grounds" for digital technology validation, new model incubation, and new business format development.

In August 2021, Chengdu took the lead nationwide in issuing the Guidelines for the Construction of Consumption Scenarios in Park Cities (Trial) (hereinafter referred to as the Guidelines), which is the first policy document specifically targeting the construction of consumption scenarios. The Guidelines explicitly propose a two-way logic of using demand to drive supply and using supply to create demand, elevating consumption from the product level to the industrial level. By 2024, Chengdu had built 4,408 kilometers of Tianfu Greenways spanning the entire city, added 38.85 million square meters of green space, and, by leveraging greenway resources, hosted dozens of events such as marathons, cycling races, and music festivals, making the greenway economy a new engine of consumption. However, existing studies mostly focus on a single dimension of either the digital economy or Park Cities, lacking a systematic theoretical framework and empirical analysis for the construction of consumption scenarios at their intersection. How does the digital economy empower the construction of new consumption scenarios in Park Cities? What is its underlying mechanism? What structural dilemmas does it face? And how can a sustainable construction path be established? Addressing these core questions has become both urgent and important.

The concept of "Scene" was first used by the Chicago School to analyze urban social space, and was later developed into "Scene Theory" by scholars such as Terry Clark, which emphasizes that consumption is not merely material exchange but also a constructive process of cultural identity and emotional experience. In the context of the digital economy, the connotation of scene has undergone an essential transformation—it is no longer a static physical space, but a new type of production and lifestyle that is driven by digital technology and characterized by frontier innovation and disruptiveness. Based on Scene Theory, this paper constructs a four-dimensional analytical framework of "technology - scenario - ecology - institution." The technology dimension focuses on the supporting capacity of digital infrastructure for consumption scenarios; the scenario dimension centers on the innovative models of consumption spaces; the ecology dimension examines the coordination mechanisms among multiple stakeholders; and the institution dimension analyzes policy supply and governance architecture. These four dimensions are mutually embedded and evolve progressively, together forming a complete logical chain for the construction of new consumption scenarios in Park Cities.

1. The Practical Landscape of Consumption Scenario Construction in Chengdu's Park Cities

1.1 From "Scene-Oriented City Building" to Top-Level Design of Consumption Guidelines

The starting point of Chengdu's practice is the primacy of concepts. In 2019, Chengdu proposed to build an international consumption center city and to create eight major consumption scenarios that meet the needs of the people for a better life. The Guidelines for the Construction of Consumption Scenarios in Park Cities, issued in 2021, further detailed the development models of the eight scenarios. Taking the "Landmark Business District Trendy Shopping Scenario" as an example, the Guidelines specify its "latest and trendiest" characteristics, propose to focus on developing fashion consumption such as the first-store economy and creative experiences, and incorporate new business formats such as new species experiences, trendy blind boxes, and AI customization. The "Characteristic Block Elegant Gathering Scenario," on the other hand, based on the characteristic of "urban memory," specifies the functions of local cultural experiences and local brand incubation, and incorporates new models such as creative cultural artifacts and IP cross-border cooperation.

The core logic of the Guidelines is "using supply to create demand"—not passively responding to existing consumption needs, but proactively stimulating new demands through scenario innovation. The Guidelines propose four major target orientations for consumption scenario construction: creating an attractive field for a better life, constructing beautiful spaces in Park Cities, building vibrant zones for quality brands, and forging a birthplace for new consumption.

1.2 The Spatial Carrier Integrating Greenway Economy and Park Consumption

The spatial carrier of consumption scenarios in Chengdu's Park Cities presents a pattern of "whole-area parks plus node consumption." The 4,408 kilometers of Tianfu Greenways built since 2017 connect diverse spaces such as forest parks, sports parks, children's parks, and characteristic towns, forming a whole-area park system that seamlessly links local landscapes of mountains and waters, suburban park clusters, and urban greening networks.

At specific nodes, the construction of consumption scenarios presents three typical modes:

First, the sports-event-driven economy type. Events such as international marathons, the International Cycling Enthusiasts Fitness Festival, international hiking competitions, and international orienteering races are embedded into the Tianfu Greenways, deeply integrating sports competitions with consumption experiences. Since 2018, dozens of festivals, including the Strawberry Music Festival and the AYO! Music Festival, have been held, forming a new consumption model of "following the events to travel."

Second, the culture-tourism integration type. The Night Tour of the Jinjiang River integrates elements such as light shows, boat cruises, and intangible cultural heritage displays, elevating sightseeing into an experiential identification with the city's cultural context. Scenarios such as Kuanzhai Alley and Vanwood Flying International Cultural and Creative Park have explored a new consumption format of "park plus cultural creativity." Vanwood Flying, featuring spaces from an art oil painting corridor to a Fandeng Bookstore, has become a new cultural consumption landmark for young people.

Third, the technology-empowered type. Chengdu has begun to promote the construction of 5G smart greenways driven by digitalization, achieving 5G network coverage in key areas of the greenways, and deploying unmanned supermarkets, intelligent sports facilities, and the like in major city parks and greenway nodes. Relying on the Tianfu Mushan Digital New City, Xinjin District has planned and constructed a 6-square-kilometer "TOD+5G" Park City future community, creating the Xinjin Station intelligent industry innovation agglomeration core and the "3E" Park City scene immersion axis. It has already gathered a number of leading digital economy enterprises, including Glodon CIM+ and 51World Digital Twin Research Institute.

1.3 Institutional Innovation from Government-Led to Multi-Governance

The model of "government setting the stage, enterprises proposing questions, and enterprises answering them" explored by Beijing in the construction of new consumption scenarios has also found resonance in Chengdu. In July 2022, the Chengdu New Economy Development Commission held a matchmaking meeting on "providing policies, scenarios, financing, and spaces" for digital economy empowerment of new consumption, and released the List of Opportunities for Digital Economy Empowerment of New Consumption, which contained 81 demand items and 45 supply items, totaling 126 opportunity items, facilitating effective alignment among projects, scenarios, technologies, and demands. The Chengdu New Consumption Industry Ecosystem Alliance took the lead, together with platform enterprises, new consumption enterprises, and new economy enterprises, to jointly issue the Initiative for Joint Participation in the Construction of Urban New Consumption Scenarios, forming a governance pattern of multi-stakeholder collaboration among government, enterprises, and industry associations.

2. The Intrinsic Mechanism of Digital Economy Empowering New Consumption Scenarios

2.1 Technology-Driven: From "Connection" to "Reconstruction"

The empowerment of consumption scenarios by the digital economy is not a simple technological overlay, but rather a systematic restructuring of consumption elements. This is manifested in three aspects:

First, the intelligence of the perception layer. Technologies such as AI operations and maintenance (e.g., security patrols, intelligent irrigation robots) and AR interactive experiences transform parks from passive landscape spaces into perceivable and interactive intelligent agents. Longgang District in Shenzhen has piloted the introduction of AI operations and maintenance, Hongmeng Smart Link "tap-to-enter" access, intelligent navigation, and other technologies in Dayun Park, providing application scenarios for local technology enterprises.

Second, the datafication of the decision-making layer. The core of consumption scenario construction lies in the precise matching of supply and demand. The List of Opportunities for Digital Economy Empowerment of New Consumption released by Chengdu is a typical practice of data-driven supply-demand alignment. Through means such as digital management, digital marketing, and customer acquisition, consumption behaviors become traceable, analyzable, and optimizable.

Third, the immersion of the experience layer. Technologies such as VR/AR, digital twins, and MR are reshaping the boundaries of consumption experiences. The first MR project applying Vision Pro technology in China, "Illusory Xuanwu," introduced by the Nanjing Xuanwu Lake Scenic Area, and the immersive "Steel World" created through CAVE projection at the Meigang Industrial Cultural Tourism Zone, both represent the cutting-edge direction of technology-empowered experience upgrading.

2.2 Demand-Driven: From "Meeting Demand" to "Creating Demand"

Traditional consumption theory takes demand as its starting point, while the uniqueness of consumption scenario construction in Park Cities lies in "using supply to create demand." The Guidelines clearly propose to seize new opportunities presented by the digital, networked, and intelligent development of the consumption chain, and, focusing on consolidating the innovation foundation for consumption scenarios, to build a new consumption landscape.

The practical verification of this logic can be found in the Sunac Water and Snow World—this project transcends the limitations of traditional cultural tourism projects, which often suffer from a

single format and insufficient experiential quality. It has successfully attracted ski enthusiasts from first-tier cities such as Beijing and Shanghai, as well as the national snowboard team for training, thereby creating a new type of consumption demand characterized by "off-season and professionalization."

2.3 Ecological Construction: From "Single-Point Breakthroughs" to "System Integration"

The sustainability of new consumption scenarios depends on the construction of an ecosystem. Chengdu's practice demonstrates that effective ecological construction requires three conditions: first, the positive interaction between leading enterprises and enterprises in the ecosystem, such as the Xinjin Digital Technology Group, which performs three major functions of innovation incubation, venture capital services, and technical support to achieve agile interaction with leading enterprises; second, cross-sector integrated business format combinations, such as industrial clusters of "agriculture + technology," "agriculture + culture and tourism," and "agriculture + food fashion"; third, systematic provision of policy, finance, and space, such as Chengdu's policy packages including the "30 Measures for Healthy Enterprise Development" and the "40 Measures for Stable Growth."

3. Practical Dilemmas of Structural Contradictions

Although Chengdu's Park City consumption scenario construction has achieved remarkable results, in-depth analysis can still identify four structural contradictions:

3.1 Scenario Homogenization and Insufficient Distinctiveness

Most parks currently remain in the form of traditional green spaces, with single functional formats. The survey conducted in Longgang District, Shenzhen, explicitly pointed out that the problems of "a thousand parks with the same face," identical functions, and insufficient appeal are universal across the country. Although Chengdu has benchmark scenarios such as the Night Tour of the Jinjiang River and Kuanzhai Alley, the consumption formats at a large number of greenway nodes are still dominated by catering and retail, lacking differentiated thematic positioning.

3.2 Structural Shortcomings in Operational Sustainability

Park operations are heavily reliant on fiscal subsidies, lacking market-oriented funding channels and having a weak capacity for self-sustaining revenue generation. Survey data from Longgang District indicate that most parks face the dilemma of "high fiscal dependence and an emphasis on construction over operation." Although Chengdu has explored the PPP model and a "revenue back-feeding" mechanism, it has not yet developed a systematic and sustainable operational model.

3.3 Superficial Application of Digital Technologies

Although technologies such as 5G coverage and unmanned supermarkets have been deployed, the application of technology in park scenarios remains relatively superficial. Most applications stay at the "demonstration" stage rather than the "integration" stage—technology serves as an add-on rather than a driving force. Scenarios that truly achieve deep integration, such as AI operations and maintenance, digital twins, and immersive interaction, remain limited in number.

3.4 Institutional Obstacles to Cross-Departmental Coordination

Park planning, construction, and management involve multiple departments, including landscaping, commerce, cultural tourism, and transportation, and the problems of overlapping responsibilities and insufficient coordination are widespread. The proposal from Longgang District suggests establishing a cross-departmental special task force for "park plus scenarios," which is precisely a response to this institutional obstacle. Although Chengdu has the New Economy Development Commission for overall coordination, the approval procedures across multiple stages—such as planning, land use, construction, and commercial development—remain bottlenecks in the implementation of specific projects.

4. Four-in-One Construction Path and Countermeasures

Based on the above analysis, this paper proposes a four-in-one construction path of "technology foundation, scenario innovation, ecological synergy, and institutional guarantee."

4.1 Building the Technological Foundation with a Two-Tier Architecture of "Digital Foundation + Intelligent Applications"

The first tier: digital foundation. The construction of the digital foundation for Park Cities should be accelerated, integrating infrastructure such as CIM (City Information Model), IoT sensing, and 5G communication to achieve digital twins of park spaces. The practice of the "Smart Xinjin" digital foundation and the integration of five networks in Xinjin District demonstrates that the digital foundation is a prerequisite for the intelligentization of consumption scenarios.

Second tier: intelligent applications. Technological products such as AI operations and maintenance, AR interaction, VR immersion, and intelligent navigation should be systematically introduced, but it is necessary to avoid "technology for technology's sake." The application of technology should be oriented toward solving practical pain points—for example, the comprehensive traffic management project in Beijing Chaoyang CBD, which uses high-altitude video surveillance, electronic fences, and other technologies to resolve management challenges such as pedestrian-vehicle interweaving and disorderly parking of electric vehicles, while also creating a smoother visiting experience for consumers.

Technological investment must be controlled in terms of single-phase scale; it is recommended to proceed in batches by chapter, with each batch not exceeding the system limit of 2,000 words, so as to avoid semantic dilution and logical fragmentation caused by algorithmic processing.

4.2 Implementing a Differentiated Scenario Innovation Strategy of "One Park, One IP"

Drawing on the "one park, one IP" development approach of Longgang District, this strategy differentiates the functional positioning of parks based on their respective resource endowments. Specifically:

For cultural parks (such as Kuanzhai Alley and Jinli): efforts should be made to strengthen "local cultural experiences, intangible cultural heritage revitalization workshops, and IP cross-border cooperation," benchmarking against the "Old Book Lane" model of Nanjing Confucius Temple, so as to create the country's first cultural consumption landmark that operates year-round on a 365-day normal-operation basis.

Ecological parks (such as Beihu Ecological Park and Qinglong Lake): should highlight "nature education, outdoor sports, and ecological study tours," and incorporate new business formats such as unmanned delivery and intelligent sports facilities.

Science and technology parks (such as Tianfu Mushan Digital New City): should focus on "digital economy and smart consumption," and aim to build a site for new technology validation and a venue for new product launches.

The four major characteristics set forth in the Guidelines—"high distinctiveness, high innovativeness, high experiential quality, and high diversification"—should serve as the evaluation criteria for scenario innovation.

4.3 Constructing a Tripartite Co-governance Model of "Government - Enterprise - Citizen"

On the government side: The government should play its role of setting the stage and establish a cross-departmental "one-stop" collaborative approval mechanism. Drawing on the "park + scenario" special task force model of Longgang District, the district government should take the lead in coordinating the functional positioning, scenario planning, policy formulation, and project approval of all parks across the district, and scientifically define the scope and red lines for commercialized operations.

On the enterprise side: The PPP model should be explored to introduce professional operation agencies, with cooperation carried out through an integrated approach of "design - renovation - operation." A "revenue back-feeding" mechanism should be established, stipulating that the operating

party shall use a contracted proportion of its operating income for park maintenance and quality improvement, thereby forming a virtuous cycle of "investment – operation – revenue – reinvestment." Chengdu may draw on Beijing's organizational model of "general contracting management + unified bidding with separate signing" to open up scenario opportunities around technical needs in different links, allowing small and medium-sized enterprises to participate fairly.

On the citizen side: The principle of "shared by both residents and visitors" should be upheld, ensuring that consumption scenarios truly serve the daily lives of citizens. The practice of Nanjing Hongshan Forest Zoo, which uses "animal welfare" as an emotional fulcrum and extends consumption chains such as cultural and creative products, education, and camping through interactive designs like adoption and volunteer programs, is worth learning from—the ultimate value of consumption scenarios lies in enhancing citizens' well-being.

4.4 Improve the Institutional Guarantee System of Policy Supply and Talent Support

At the policy level: We should continue to promote the "one scenario, one demonstration" initiative, accelerate the cultivation of consumption scenarios that feature the coexistence of quality and mass appeal, the integration of innovation and heritage, and the compatibility of fast-paced and slow-paced lifestyles. Preferential support should be given to scenario innovation projects in terms of land, taxation, and finance. For example, the supportive policies in Chengdu's "40 Measures for Stable Growth" regarding rent reduction, social security burden relief, and financing loans should be further extended to consumption scenario projects.

At the talent level: We should vigorously cultivate management personnel and industrial talents for the digital economy. Chengdu has already proposed to coordinate local resources including Chengdu-based arts and vocational colleges, link with provincial universities such as Sichuan University and the University of Electronic Science and Technology of China, and connect with high-quality universities nationwide and globally, in order to accelerate the cultivation and recruitment of professionals with digital economy skills. It is suggested that a special talent program for "Park City consumption scenarios" be established, focusing on cultivating interdisciplinary talents who possess both digital technology capabilities and consumption insight abilities.

5. Conclusion and Prospect

Taking the Chengdu Park City Demonstration Zone as a sample, this paper systematically demonstrates the theoretical logic and practical path of digital economy empowering the construction of new consumption scenarios. The research shows:

First, the integration of the digital economy and Park Cities is essentially a two-way empowerment between technological momentum and spatial carriers—technology provides intelligent means for scenarios, while scenarios provide validation space and commercialization paths for technology.

Second, Chengdu's practice of "scene-oriented city building" has developed identifiable model characteristics: top-level design guided by the Guidelines, spatial layout with greenways as the carrier, supply-demand alignment with digitalization as the link, and ecological construction supported by multiple stakeholders.

Third, the current construction still faces four structural contradictions—homogenization, insufficient sustainability, superficial technology application, and poor coordination—which need to be resolved through the four-in-one path of "technology foundation, scenario innovation, ecological synergy, and institutional guarantee."

It should be noted that this paper takes a single city as a case study, and the external validity of its findings needs to be further tested. Future research could be extended to comparative analyses of cities such as Nanjing, Shenzhen, and Beijing, and introduce quantitative indicators to conduct empirical evaluations of the economic performance of consumption scenarios.

The construction of new consumption scenarios in Park Cities is not only an economic issue, but also an expression of urban civilization. When digital technology turns every park into a "city living room" that is legible, experiential, and consumable, the Park City will truly realize the transformation from ecological ideal to lived reality.

Fund Projects

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