

Research on Cost Control and Service Quality of Cultural and Creative Products: From the Perspective of Lean Supply Chain Theory

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Abstract. Against the backdrop of the rapid development of the cultural and creative industry, the contradictory relationship between cost control and service quality has become increasingly prominent due to the characteristics of non-standardized production, making traditional large-scale methods difficult to meet its needs. From the perspective of lean supply chain theory, this study explores how the cultural and creative industry can achieve a dynamic balance between cost and quality through lean supply chain management. Taking film and television content creation as a typical case, this study constructs its supply chain model, compares and analyzes its differences from traditional manufacturing industries, and reveals that the root cause of the contradictions faced by current cultural and creative enterprises lies in the structural conflict between "non-standard creative production" and "industrialized logic". By introducing lean management concepts, this study proposes a lean supply chain cost management model adapted to the cultural and creative industry. The research shows that cultural and creative enterprises can implement supply-side structural adjustments through lean supply chain management to achieve collaborative development of cost control and quality optimization, providing a practical and systematic solution to address the industry's cost control challenges, promote sustainable industry development, and enhance enterprise competitiveness.

Keywords: cultural and creative industry, lean supply chain, cost control

1. Introduction

In recent years, China's cultural and creative industry has witnessed rapid growth driven by national policies and strategies. From the goals of "promoting the digitalization, integration, and branding of cultural industries" explicitly stated in the 14th Five-Year Plan for Cultural Industry Development to the continuous emphasis on cultural soft power under the "Cultural Power" strategy, policy makers have consistently highlighted innovation-driven transformation and upgrading of the cultural industry. Meanwhile, China's cultural consumption market is undergoing structural changes: shifting from a focus on quantitative satisfaction to qualitative improvement, with significant growth in service-oriented and personalized demands, a clear dominance of high-quality supply and consumer-driven trends, strong momentum in emerging business forms under innovation-driven development,

the normalization of online consumption, and technology-driven transformations toward diverse, intelligent, and experiential consumption models [1, 2].

Against this backdrop, cultural and creative enterprises face dual challenges: on the one hand, they need to rapidly respond to diversified and dynamic market demands, strengthening product innovation and user experience; on the other hand, constrained by non-standardized production models, the contradiction between cost control and service quality has become increasingly acute. Due to their unique cultural attributes and non-standardized production characteristics, cultural and creative products are difficult to achieve cost reduction and efficiency improvement through traditional economies of scale. Enhancing product quality often comes with increased costs, while excessive cost control may undermine user experience—a contradiction that has become a core issue restricting the sustainable development of cultural and creative enterprises. How to resolve this contradiction, achieve high-quality development of the cultural and creative industry, and conform to the industrial trend of "precise supply" in the digital economy era has become an urgent research topic.

This study attempts to introduce the lean supply chain theory—centered on optimizing value streams and reducing waste and having achieved remarkable results in manufacturing and other fields—as a framework to focus on the particularities of the cultural and creative industry and explore innovative paths for the dynamic balance between costs and quality of cultural and creative products. Taking the unique case of film and television content creation as an example, the study reveals the universal structural conflict between "non-standard creative production" and "industrial efficiency" in the cultural and creative industry. It also analyzes and summarizes the causes of the contradiction between costs and service quality of cultural and creative products, identifies value-added and wasteful links in the supply chain, and proposes adaptive solutions. This research not only fills the gap in the application of lean management theory in the cultural and creative field but also provides practical references for enterprises to optimize resource allocation and enhance core competitiveness, helping to achieve the sustainable development of cultural and creative enterprises. Thus, it holds significant theoretical value and practical significance.

2. Definition and current status analysis of the cultural and creative industry

2.1. Definition and scope of the cultural and creative industry and its products

According to the Classification of Cultural and Related Industries cultural and related industries encompass "production activities that provide cultural products and related products for the public," divided into nine categories: news and information services, content creation and production, creative design services, cultural dissemination channels, cultural investment and operation, cultural entertainment and leisure services, cultural auxiliary production and intermediary services, cultural equipment production, and cultural consumption terminal production [3]. The first six categories belong to the core cultural fields, while the latter three are classified as related cultural fields. The cultural and creative industry is primarily categorized under the core cultural fields, particularly the two categories of content creation and production and creative design services, while also being closely linked to fields such as cultural dissemination and cultural equipment. Cultural and creative products exist in both physical and digital forms, embodying the dual characteristics of cultural attributes and commercial value.

Meanwhile, academic circles offer multi-dimensional interpretations of the definition of the cultural and creative industry and its products: Zhu Ziqiang proposes that the essence of cultural and creative products is a type of "symbolic product," whose value originates from the symbolic

expression of ideas, experiences, and images, and which must achieve meaning transmission through consumers' interpretation and interaction [4]. Zang Xiuqing defines cultural and creative products as "cultural carriers that take culture or art as their main content, satisfy human spiritual needs, and reflect social ideology," while emphasizing that the cultural and creative industry must realize commercial value through industrialized collaboration [5].

Combining the above perspectives, this paper defines the cultural and creative industry, and its products as follows: The cultural and creative industry is a collection of production activities with cultural creativity as the core production factor. Through creative transformation, technological empowerment, and industrial chain collaboration, it covers core and related fields such as content creation, dissemination channels, and derivative services, integrating cultural value and commercial attributes.

2.2. Development status of the cultural and creative industry

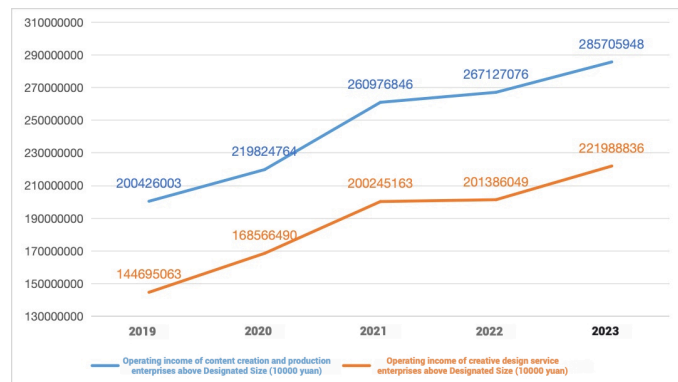


Figure 1: 2019–2023 line chart of operating income of two types of cultural industries above Designated Size in China (by industry) [6].

As shown in figure 1, from 2019 to 2023, the operating revenues of above - scale enterprises in content creation and production and those in creative design services both showed a stable growth trend.

Overall, the current development trend of China's cultural industry is favorable, with its industrial scale further expanding. In 2024, the operating revenue of above - scale cultural enterprises nationwide reached 14.15 trillion yuan, a year - on - year increase of 6.0%. Cultural new business forms represented by digital content and immersive experiences developed vigorously. Their annual operating revenue reached 5.91 trillion yuan, with a year - on - year growth of 9.8%, and their proportion increased to 41.8%. The growth rate was 3.8 percentage points higher than the industry average, demonstrating strong innovation and development vitality. In the sub - fields in 2024, the core segments such as content creation and production and creative design services performed outstandingly. Their operating revenues reached 3.13 trillion yuan and 2.41 trillion yuan respectively, with year - on - year growth rates of 6.9% and 6.8% respectively. The steady development of these fields has provided important support for the transformation and upgrading of the cultural industry, further reflecting the key role of the cultural and creative industry in economic structure optimization and cultural innovation - driven development and demonstrating its potential and vitality as a new economic growth point.[7]

3. Analysis of the structural conflicts in the contradiction between costs and services in the cultural and creative industry

3.1. Analysis of the typicality of film and television content creation and its reflection of industry-wide commonalities

As a quintessential representative of the cultural and creative industry, film and television content creation encapsulates the universal characteristics of cultural and creative products through its production logic and industry pain points. On one hand, the entire process of film and television production, from script development to post-production, is characterized by non-standardized creativity, intensive resource investment, and dynamic market demands—attributes fundamentally shared with creative models in sectors such as gaming, publishing, and digital art. For instance, the reliance of film and television projects on cross-disciplinary collaboration highlights the organizational features of the flexible supply chain in the cultural and creative industry; the high proportion of creative development and market trial-and-error costs, typical in film and television, is also prevalent in other cultural products. On the other hand, the industrialization exploration and emerging technology applications in the film and television industry offer pioneering experiences for resolving the contradiction between "non-standardized production" and "scale efficiency." These experiences, when abstracted and refined, can be adapted to other cultural and creative fields. Therefore, using film and television content creation as an entry point not only enables an in-depth analysis of common issues within the cultural and creative industry but also provides a methodological reference for designing cross-disciplinary solutions.

3.2. Construction and comparative analysis of the supply chain model for film and television content creation

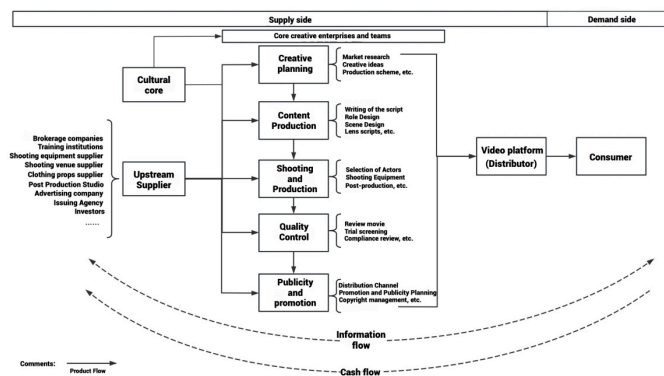


Figure 2: Supply chain model of film and television content creation

Figure 2 shows the supply chain model of film and television content creation, which mainly differs from traditional manufacturing in the following aspects.

3.2.1. Differences in production characteristics

Traditional manufacturing takes physical products as the core and focuses on the standardization of production processes, with relatively fixed production cycles. In contrast, film and television content creation is based on creative products, emphasizing content differentiation and customization. Due

to the strong uncertainty of the creative process and its vulnerability to external environmental influences, its production cycle is highly volatile.

3.2.2. Differences in inventory management

The manufacturing industry needs to invest substantial resources in physical inventory management, including warehousing facilities and human resources. Inventory backlogs or stockouts will directly affect operating costs. Although the film and television industry does not have physical inventory problems, it faces the risk of content backlogs, such as completed works that cannot be released due to unsmooth distribution channels. In addition, content products need to be continuously updated to cope with changes in audience preferences, which places higher requirements on content reserves and scheduling management.

3.2.3. Differences in cooperation models

Each link in the manufacturing supply chain has a clear division of labor, and the cooperation relationship is relatively stable. In the film and television industry, however, the functional boundaries of each participant are relatively blurred, and the cooperation mode is more flexible. This project-based characteristic is manifested as follows: video platforms play dual roles in content production and distribution; project teams are often temporarily formed and disbanded upon project completion.

3.2.4. Differences in information and capital flow

The information flow in manufacturing is linear, transmitted sequentially from raw materials to production to sales, and capital turnover is closely related to product production and sales cycles. Film and television production is characterized by concentrated upfront investment and complex cost structures, with capital recovery channels including various forms such as content payments, membership subscriptions, advertising revenue, and derivative development.

3.2.5. Differences in cost and quality control

In manufacturing, cost control mainly relies on large-scale production, supply chain optimization, and standardized processes, and quality control is usually achieved through quantifiable inspection standards, with high stability and predictability. The cost structure of film and television content creation is more complex, with a high proportion of upfront production costs, and budget overruns may occur due to the uncertainty of creativity. Quality evaluation criteria are also more subjective, influenced by multiple dimensions such as market preferences, audience word-of-mouth, and artistic value, making them difficult to fully quantify. Therefore, quality control relies more on the experience-based judgment and dynamic adjustments of professional teams. In addition, while the manufacturing industry can repair quality issues through rework or recalls, once a film or television work is completed, the cost of modification is extremely high, and it may even fail to recover costs due to poor market feedback.

3.3. Analysis of structural contradictions in the cultural and creative industry

The characteristics of film and television content creation largely reflect the common features of the entire cultural and creative industry and its products. These commonalities stem from the shared

intangible attributes of cultural and creative products—whether in film and television dramas, musical works, or literary creations, their core value is embedded in the non-material form of creative content. This very characteristic gives rise to production laws in the cultural and creative industry that are fundamentally different from those of traditional manufacturing.

Meanwhile, many cultural and creative enterprises currently fall into a cognitive misunderstanding during production: when a certain content form or theme achieves market success, they rush to replicate it through simple imitation and standardized reproduction to achieve lower costs and rapid output. This attempt to rigidly apply the assembly-line model of traditional manufacturing to the cultural and creative industry often compromises product quality, affecting consumer experience and significantly reducing operating revenue. The root cause lies in the fact that the core value of cultural and creative products lies precisely in their uniqueness and innovation, which inherently conflicts with the industrial production logic that emphasizes consistency and standardization.

When film and television companies mechanically replicate the formulas of hit dramas, game developers follow popular gameplay trends, and publishers swarm to launch homogeneous themes, they not only struggle to replicate the commercial success of previous works but also accelerate audience aesthetic fatigue, ultimately leading to market saturation and value dilution. This "fast-food" production model stifles the development of original capabilities, trapping enterprises in a vicious cycle of innovation stagnation. The market window for cultural and creative products continues to shrink, and they face severe timeliness challenges—even high-quality content may experience a rapid decline in commercial value if the optimal launch timing is missed. It is worth noting that evaluation systems in various market segments, such as film ratings, game reviews, and literary critiques, are highly subjective. This not only increases decision-making difficulty but also amplifies the industry's investment risks.

In summary, the root cause of current production contradictions in the cultural and creative industry lies in the conflict between "creativity-driven non-standardized production" and "industrialized, large-scale, and risk-controllable commercial logic," forcing enterprises to grapple with uncontrollable production costs and product quality issues.

3.4. Introduction of lean supply chain concepts

Facing such industry pain points, introducing lean supply chain management concepts may offer new solutions for cultural and creative enterprises.

3.4.1. Lean supply chain cost management model for cultural and creative products

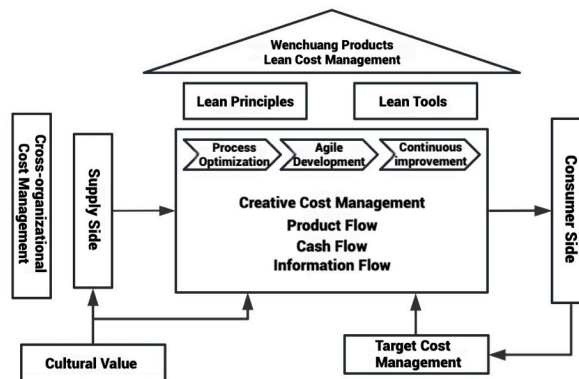


Figure 3: Lean Supply Chain Cost Management Model for Cultural and Creative Products.

The lean cost management framework for cultural and creative products shown in Figure 3 is based on "lean principles," implementing dynamic control of the entire process from the supply side to the consumer side through "lean tools." This system injects cultural value at the supply end, integrates supply chain stakeholders into a flexible network via "cross-organizational cost management," and reversely injects consumer-side data into cost planning and strategic adjustments through "target cost management." Operational efficiency and market responsiveness are enhanced via lean methods such as process optimization, agile development, and continuous improvement, with products ultimately delivered to consumers and real-time feedback obtained. Among these, "creative cost management" serves as the core hub, coordinating product flow, capital flow, and information flow into a closed-loop control system.

3.4.2. Lean principles and tools

Drawing on the five lean principles proposed by Womack and Jones [8]—customer-defined value, value stream identification, value flow, demand pull, and perfection—this study adapts them to the characteristics of the cultural and creative industry.

"Customer-defined value" requires taking user needs as the starting point and accurately identifying core value points through data analysis, such as screening IP themes with high resonance via user profiling. "Value stream identification" involves distinguishing value-added and non-value-added activities in the supply chain, where value-added activities must be oriented by consumer demand while avoiding "creative waste" and "ineffective creativity." "Value flow" emphasizes controlling the flow of information, capital, and products in the supply chain, grasping the core value of cultural and creative products, and organically integrating cultural essence with commercial attributes for efficient downstream delivery. "Demand pull" reduces risks through a mechanism of "small-batch trial production—rapid feedback—dynamic adjustment," such as using A/B testing to validate market response before scaling resource investment. "Perfection" integrates quantitative indicators with subjective evaluations to construct a multi-dimensional quality assessment system and promote continuous content optimization.

3.4.3. Lean supply chain cost management methods for cultural and creative products

In terms of cost management methods, cultural and creative enterprises must balance creative uniqueness and cost controllability. Creative cost management, the core of lean management for cultural and creative products, focuses on the precise allocation of upfront resource investment. It involves screening high-potential projects through a "creativity funnel" and reducing trial-and-error costs by using AI to generate script drafts or design prototypes. Cross-organizational cost management relies on a flexible collaboration network, establishing dynamic contracts with independent studios and technology suppliers to deploy resources on demand and share technical costs through shared IP libraries and cloud rendering platforms. Target cost management sets cost ceilings reversely based on expected market returns, such as limiting budget according to the potential audience size of an IP and real-timely feeding back consumer-side information—for example, developing audience-demand-oriented plot progression models. Additionally, revenue from derivatives can subsidize content production, forming a virtuous cycle between costs and returns.[9]

3.4.4. Full lifecycle management of cost and quality control for cultural and creative products

The realization of cost and quality control must run through the full lifecycle of products, with its core lying in balancing differentiation and efficiency goals through strategic resource allocation. According to Porter's competitive advantage theory [10], an enterprise's sustained competitiveness stems from the choice of cost leadership or differentiation strategy. The particularity of the cultural and creative industry lies in the natural differentiation attributes of its products yet cost control can still be achieved through lean management.

"Process optimization" reduces unnecessary time consumption by standardizing reusable basic processes (e.g., copyright review, compliance inspection) and can introduce blockchain technology to transparently manage copyright transactions, avoiding hidden costs caused by legal disputes. "Agile development" adopts the minimum viable product (MVP) model to quickly validate the market—for example, launching short drama pilots or game demos—while forming cross-functional teams to shorten decision-making chains. "Continuous improvement" relies on user feedback loops and data-driven iteration, such as continuously adjusting content directions through real-time data (e.g., social media comments, playback completion rates), regularly reviewing project deviations to update risk assessment models, and introducing AI to predict market windows to address timeliness challenges.

4. Conclusions

From the perspective of lean supply chain theory, this study systematically explores the core contradictions between cost control and service quality in the cultural and creative industry and their solutions. The research shows that there is a structural conflict between the non-standardized production characteristics of the cultural and creative industry and traditional industrial logic. By constructing a lean supply chain model adapted to the industry's characteristics, this study proposes that the cultural and creative industry can reconstruct value streams guided by user needs, accurately screen high-potential projects, share costs through cross-organizational flexible collaboration networks, and reduce risks via a "small-batch trial production—rapid feedback" mechanism, thereby achieving collaborative development of cost control and quality optimization. By integrating cultural value with commercial efficiency, the study promotes the transformation of cultural and

creative enterprises from experience-driven to data-driven operations, resolving the industry dilemma where quality improvement inevitably increases costs. It provides a systematic solution for industrial transformation and upgrading, helping the cultural and creative industry shift toward precise supply and sustainable development.

While the study uses film and television content as a typical case, the supply chain structures and cost characteristics of other sub-sectors in the cultural and creative industry differ significantly, requiring further verification of the model's generalizability. Second, the insufficient focus on the intangible attributes of cultural products may weaken the multidimensional analytical depth of cultural economics. Finally, the lack of long-term tracking of supply chain lean transformation makes it difficult to comprehensively evaluate its dynamic sustainability. Future research could integrate cognitive science and sociological theories to deeply explore the influence mechanism of user aesthetic preferences on supply chain decision-making. Additionally, constructing differentiated frameworks for emerging formats such as digital art and the metaverse, and quantifying the comprehensive benefits of lean transformation through large-sample empirical tracking, would promote the cultural and creative industry's upgrading from experience-driven to data-theory dual-driven operations. This would contribute more universal theoretical tools and practical experience for the high-quality development of the global cultural and creative economy.

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