

The Logical Mechanism and Practical Landscape of Digital Economy Driving the Upgrade of Sports Consumption Structure

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Abstract: Against the backdrop of the deep convergence of the "Digital China" strategy and the construction of a "Leading Sports Nation," the digital economy, as a novel economic form, is becoming a key engine for promoting the high-quality development of the sports industry due to its high innovation, strong permeability, and broad coverage. The upgrading of the sports consumption structure is the core driving force for the development of the sports industry and an inevitable requirement to meet the people's growing needs for a better life. Abandoning the traditional quantitative empirical paradigm, this paper establishes a multi-dimensional analytical framework based on the production-consumption theory of Marxist political economy, the transaction cost theory of New Institutional Economics, and the two-sided market theory of platform economics. It systematically elucidates the intrinsic logical mechanism by which the digital economy drives the upgrading of sports consumption structure. The study finds that the digital economy operates through four logical mechanisms: technological empowerment breaking spatiotemporal constraints, transaction cost reduction optimizing resource allocation, long-tail demand excavation stimulating consumption potential, and data factor driving industrial value chain ascension. By exerting force on both the supply and demand sides, it promotes the transformation of sports consumption forms from physical to service-oriented, the transition of consumption levels from survival-based to development-and-enjoyment-based, and the upgrade of consumption patterns from single-mode to composite experience-oriented. Furthermore, the paper depicts the practical landscape of scene reconstruction, business format integration, and model innovation in sports consumption empowered by the digital economy through a panoramic scan. However, a review of reality reveals deep-seated dilemmas such as the digital divide restricting inclusiveness, data ethical risks eroding the foundation of trust, the "disconnection" between virtual and real integration, and a shortage of composite talents. Based on this, the paper proposes building a long-term mechanism for the digital economy to empower the upgrading of sports consumption structure by strengthening new digital infrastructure, constructing an agile governance system, deepening the virtual-real integration of the industry, and improving the talent cultivation mechanism, thereby providing theoretical support and practical direction for the modernization of the sports industry.

Keywords: Digital Economy, Sports Consumption, Structural Upgrade, High-Quality Development, Logical Mechanism, Practical Landscape.

1. Introduction

1.1. Macro Background and Era Demands

Currently, the global economy is undergoing a profound transformation centered on information technology. The rapid development of new-generation digital technologies represented by big data, cloud computing, artificial intelligence (AI), blockchain, and the Internet of Things (IoT) is reconstructing the global innovation landscape and reshaping the global economic structure. In China, the digital economy is not merely a new momentum for economic growth but a core component of national strategy. The report of the 20th National Congress of the Communist Party of China explicitly stated the need to "accelerate the development of the digital economy, promote the deep integration of the digital economy and the real economy, and build internationally competitive digital industry clusters." This strategic deployment points the direction for the digital transformation of all sectors.

Meanwhile, as the leader of the "five happiness industries," the sports industry plays a significant role in the new journey of comprehensively building a modern socialist country. The

"14th Five-Year Plan for Sports Development" proposes to "accelerate the construction of a leading sports nation" and explicitly sets the grand goal for the sports industry to become a pillar industry of the national economy by 2035. However, achieving this goal hinges on activating sports consumption, particularly promoting the optimization and upgrading of the sports consumption structure. For a long time, China's sports consumption market has presented structural contradictions characterized by "heavy physical consumption, insufficient service consumption" and "dominance of survival-type consumption, lagging development-and-enjoyment-type consumption." This "inverted triangle" or "spindle-shaped" consumption structure not only restricts the value-added enhancement of the sports industry but also fails to meet the high-level spiritual and cultural needs of the people for health, entertainment, and social interaction in the post-moderately prosperous era.

In this context, the deep integration of the digital economy and the sports industry is not a simple superposition of technologies, but a systemic revolution involving production methods, lifestyles, and governance modes. Exploring how the digital economy resolves the pain points and blockages in the upgrading of sports consumption structure through its

unique technological and economic logic, clarifying the underlying rationale, and examining its practical unfolding and realistic dilemmas, holds significant theoretical significance and practical value for promoting the high-quality development of China's sports industry and building a new development pattern of dual circulation.

1.2. Literature Review and Research Perspective

Existing research on sports consumption mostly focuses on empirical analysis of influencing factors, such as the impact of income levels, leisure time, and venue facilities on sports consumption expenditure. With the rise of the digital economy, academia has begun to pay attention to the empowering effect of digitization on the sports industry. Jiang Xiaojuan (2021) pointed out that digital technology can greatly improve the efficiency of the service industry and change the traditional perception of low efficiency in the service sector, which is of revolutionary significance to the service-core sports industry [1]. Ren Bo (2022) and other scholars analyzed the driving mechanism of the digital economy promoting the high-quality development of the sports industry from the perspective of industrial economics [2].

However, existing studies mostly focus on macro-industrial discussions, while research on the micro-meso interface of "consumption structure upgrading" is relatively weak. Moreover, most use quantitative methods such as econometric regression to verify correlations, lacking in-depth qualitative analysis and logical deduction of intrinsic mechanisms. In addition, there is insufficient critical reflection on the negative effects such as ethical risks and the digital divide that the digital economy may trigger in sports consumption practices.

This paper attempts to bridge these gaps by adopting a qualitative research paradigm combining normative analysis and logical deduction. It introduces the principle of the dialectical relationship between production and consumption in Marxist political economy and the transaction cost theory of New Institutional Economics to construct a comprehensive analytical framework of "Technology-Economy-Society." The paper does not pursue the enumeration of data but is committed to revealing the essential logic behind phenomena through "thick description," striving for breakthroughs in theoretical depth and realistic explanatory power.

2. Theoretical Basis and Logical Mechanism of Digital Economy Driving Sports Consumption Structure Upgrade

The digital economy driving the upgrade of sports consumption structure is not an accidental patchwork of phenomena but follows a profound theoretical logic. We need to return to the origin of economics and analyze from basic dimensions such as productive forces and production relations, supply and demand, and costs and benefits.

2.1. Technology Empowerment Logic: Supply-Side Reform from the Perspective of the "Technology-Economy" Paradigm

According to Perez's "Technology-Economy" paradigm theory, every technological revolution brings about

fundamental changes in production methods, which in turn triggers leaps in consumption structures. As a General Purpose Technology (GPT), digital technology possesses strong positive externalities and increasing returns to scale effects.

2.1.1. Breaking Spatiotemporal Constraints and

Realizing the Tradability of Service Consumption

Traditional sports service consumption (such as event viewing and fitness guidance) typically features "non-storability" and "simultaneity of production and consumption." This means services must be completed face-to-face by producers and consumers at a specific time and place (venue). This spatiotemporal constraint greatly limits the supply scale and radiation radius of service-oriented consumption, resulting in high costs and difficulty in popularization.

Digital technology has completely broken this iron law through digital coding, network transmission, and terminal presentation. An NBA game can be transmitted to the screens of billions of viewers globally via satellite signals and the internet; a top-tier yoga private lesson can be reused infinitely through recording or live streaming. This technological transformation turns originally non-tradable on-site services into tradable, storable digital products [3]. According to the law of diminishing marginal costs, the reproduction cost of digital sports products approaches zero. This leads to an exponential growth in the supply of high-quality sports services and a significant drop in prices, allowing more consumers to enjoy premium sports services, directly promoting the increase of service consumption in the consumption structure.

2.1.2. Precisely Matching Demand and Promoting Customization of Supply Content

The production logic of the industrial age was "mass standardization," which led to homogeneous competition in the sports consumer goods market. In contrast, the production logic of the digital economy era has shifted to "Mass Customization." Relying on big data technology, the supply side can analyze user portraits based on massive amounts of sports data (steps, heart rate, trajectory), browsing preferences, and consumption records to precisely capture every minute pain point of demand.

For example, sports footwear and apparel companies can print exclusive running shoes based on users' foot data; fitness apps can generate "thousand faces for a thousand people" training plans based on users' physical test data. This shift from "selling products" to "selling solutions" greatly improves the adaptability of supply. When supply can precisely dock with or even lead consumers' personalized needs, consumers' willingness to pay for high-quality, personalized products increases, thereby promoting the upgrade of the consumption structure towards quality and development orientation.

2.2. Cost Saving Logic: Reduction of Transaction Costs and Dissolution of Consumption Thresholds

New Institutional Economics holds that transaction costs are key factors determining market scope and depth of division of labor. The sports consumption process involves significant information search costs, bargaining costs, and execution costs. Excessive transaction costs are major obstacles to consumption expansion and structural upgrading.

As a new market organization form, the core function of digital platforms lies in significantly reducing institutional transaction costs.

2.2.1. Minimization of Information Search Costs

In the traditional model, consumers wanting to find a suitable tennis club or a professional ski instructor often have to pay huge time and transportation costs for on-site inspections, facing severe information asymmetry. Digital platforms, by aggregating massive supply information and introducing review systems (e.g., Yelp, Dianping, Redbook notes), have established a digital trust mechanism. Consumers can obtain detailed pricing, faculty, and environmental information with a tap of a finger. The reduction in search costs makes it easier for consumers to discover and try new sports consumption items, thereby enriching the consumption basket.

2.2.2. Facilitation of Rights Definition and Transaction Execution

Sports consumption often involves complex rights confirmation, such as the ownership of membership cards and the authenticity of event tickets. The application of blockchain technology provides low-cost solutions for the confirmation of sports digital assets. Smart contract technology automates the transaction process, avoiding traditional disputes. For example, the "book and refund anytime" mechanism for online venue booking reduces consumers' decision-making risks and sunk costs. When participating in sports consumption becomes simple, transparent, and low-risk, consumer participation naturally increases, driving the expansion of the entire industry's consumption scale and structural optimization.

2.3. Demand Creation Logic: Long-Tail Effect and Stimulation of Consumption Willingness

Anderson's "Long Tail Theory" has been perfectly verified in sports consumption in the digital economy era. Due to limitations in physical shelf space and operating costs, traditional offline markets can only focus on popular sports items with large demand (the head market). Digital platforms, possessing infinite virtual shelves, can aggregate dispersed niche demands at extremely low costs (the long-tail market).

2.3.1. The "Massification" Breakthrough of Niche Projects

Constrained by physical space and per-unit efficiency, traditional sports goods stores and gyms can only provide mass projects like running, basketball, and badminton. Niche projects like extreme sports, frisbee, flag football, and equestrianism, due to scattered audiences, struggle to form economies of scale offline. The digital network breaks regional restrictions, gathering scattered niche enthusiasts from across the country or even the globe into the same virtual community, forming a segmented market with scale effects. This aggregation effect makes the commercialization of niche sports projects possible, greatly enriching the diversity of sports consumption and changing the monotonous "one size fits all" consumption structure of the past.

2.3.2. Fragmented Utilization of Leisure Time

Digital technology has also exploited the "long tail" of the time dimension. Modern life is fast-paced, making it difficult to find large blocks of time for the gym. Sports apps represented by Keep utilize fragmented time to develop micro-courses like "5-minute fat burning" and "office

stretching," permeating sports consumption into every crevice of users' lives. This excavation of fragmented time and long-tail demand transforms sports consumption from a "low-frequency, high-threshold" activity into a "high-frequency, lifestyle" habit, fundamentally changing sports consumption behavior patterns.

2.4. Factor Allocation Logic: Data Factors Driving Value Chain Ascension

In the digital economy era, data has become the fifth major factor of production after land, labor, capital, and technology. The multiplier effect of data factors is reflected in their ability to deeply integrate with other factors and improve total factor productivity.

In the sports industry chain, the flow of data connects R&D, manufacturing, marketing, service, and other links. Through real-time collection and analysis of consumer behavior data, enterprises can achieve Customer-to-Manufacturer (C2M) reverse customization, making production more attuned to market demand and reducing ineffective supply and inventory backlogs. Simultaneously, the integration of data factors shifts the value center of the sports industry chain from manufacturing to services. For instance, sports footwear and apparel companies no longer merely sell products but provide value-added services such as sports monitoring and community interaction by embedding chips and accompanying apps, thereby extending the value chain and promoting the synchronous upgrading of industrial and consumption structures [3].

3. The Practical Landscape of Digital Economy Driving Sports Consumption Structure Upgrade

Logic is gray, but the tree of life is evergreen. Driven by theoretical logic, the digital practice of China's sports industry is unfolding vigorously, presenting a vivid landscape of full-scenario penetration, full-format integration, and full-chain innovation.

3.1. Scene Reconstruction: From "Physical Presence" to "Virtual-Real Symbiosis"

Scenes are the spatiotemporal containers where consumption occurs. The digital economy is reconstructing sports consumption scenes, extending them from single physical spaces to virtual spaces and combined virtual-real spaces.

3.1.1. Intelligent Reshaping of Home Fitness Scenes

With the support of IoT and AI technologies, the home is becoming the second largest sports scene after stadiums. Smart fitness mirrors, smart treadmills, and somatosensory game consoles have turned living rooms into professional "private coaching studios." Taking the "Magic Mirror" as an example, users can not only watch live demonstrations by coaches but also have the AI system inside the mirror capture their skeletal key points in real-time to judge whether movements are standard and provide voice feedback. This interactive home fitness experience solves the pain points of boredom and lack of guidance in traditional home exercise, making "home workouts" a high-quality consumption choice.

3.1.2. Immersive Viewing and Metaverse Experience

5G+8K ultra-high-definition live streaming technology allows viewers to see every drop of sweat on athletes; VR

(Virtual Reality) live streaming places viewers in the center of the court, offering a "God's eye view." During the Qatar World Cup and the Beijing Winter Olympics, platforms like Migu Video launched a "Metaverse Viewing" mode, where users could create their own digital avatars to interact with friends in virtual stands and purchase virtual cheering props. This viewing experience has transcended simple visual appreciation, becoming a comprehensive consumption integrating social interaction, entertainment, and gaming, greatly expanding the value boundary of viewing-type sports consumption [4].

3.2. Format Integration: From "Lone Advance" to "Ecological Synergy"

The digital economy has strong connectivity attributes; it breaks barriers between industries, promoting the deep integration of sports with tourism, medical care, education, and entertainment, spawning a large number of new business formats.

3.2.1. Smart Upgrade of "Sports + Tourism"

Digital technology is reshaping the entire chain of sports tourism before, during, and after the trip. Before the trip, through VR panoramic technology, consumers can "cloud tour" ski resorts or marathon tracks to make consumption decisions in advance. During the trip, smart wearable devices and smart scenic area systems provide services such as navigation, first aid, and sports data recording. For example, the Tour of Qinghai Lake cycling race uses GPS positioning and big data analysis to generate exclusive "cycling reports" and short videos for cycling enthusiasts, recording both sports performance and scenery along the way, realizing a dual upgrade of sports and tourism experiences.

3.2.2. Digital Implementation of "Sports-Medical Integration"

With the implementation of the "Healthy China" strategy, sports consumption is extending from simple physical fitness to deep health management such as chronic disease intervention and sports rehabilitation. Digital technology builds a data bridge for "sports-medical integration." Users' daily exercise data (steps, heart rate, sleep) can be synchronized to family doctors in real-time; "exercise prescriptions" issued by doctors can be pushed to users' smart wristbands for supervised execution via apps. This closed-loop service based on data gives sports consumption higher health added value, promoting the expansion of the consumption structure into the general health field.

3.3. Model Innovation: From "Product Delivery" to "Value Co-creation"

The digital economy changes the relationship between enterprises and consumers, shifting from unidirectional product delivery to bidirectional value co-creation, catalyzing new business models.

3.3.1. Community Economy and Private Domain Traffic Operation

Sports inherently possess social attributes. Digital platforms amplify this attribute. Brands like Lululemon and Nike no longer rely solely on advertising bombardment but operate private domain traffic by building online sports communities. In these communities, brands provide activity organization and professional knowledge sharing, while consumers share workout check-ins and equipment reviews. Consumers are no longer passive buyers but disseminators of

brand culture and producers of content (UGC). This community economy based on trust and a sense of belonging greatly improves user repurchase rates and brand loyalty, driving sales of high-premium products.

3.3.2. Popularization of Subscription and Membership Economy

Inspired by the SaaS model, the sports service sector widely applies the "Hardware + Content + Service" subscription model. Peloton is a typical representative of this model, where the purchase of spinning bike hardware is just the beginning of consumption, and the monthly content subscription fee is the source of sustainable revenue. This model transforms one-time low-frequency consumption into continuous high-frequency consumption, forcing enterprises to constantly update high-quality content to retain users, thereby achieving a vertical extension of the consumption structure [5].

4. Realistic Dilemmas Facing Digital Economy Driven Sports Consumption Structure Upgrade

Despite the broad prospects, we must clearly recognize that the process of the digital economy empowering the upgrade of sports consumption structure is not smooth sailing. It currently faces a series of deep-seated contradictions and challenges.

4.1. Digital Divide Effect: Questions of Inclusiveness and Fairness

The digital divide is the greatest social inequality in the digital age. In the field of sports consumption, this divide manifests as intergenerational differences, regional differences, and class differences.

4.1.1. "Digital Outcast" Risk for the Silver-Haired Group

China is accelerating into an aging society, and the elderly should be the main force of sports health consumption. However, current smart sports venues and smart fitness equipment are often designed with excessive complexity, overly pursuing a cool technological feel while neglecting age-appropriate adaptation. Cumbersome registration processes and complex touch operations act as invisible walls, blocking many elderly people from the digital sports world. This not only suppresses the potential of the silver economy but also violates the principle of equalization of public sports services.

4.1.2. Imbalance of Regional Development

China's digital infrastructure construction presents a pattern of "strong East, weak West; strong urban, weak rural." Residents in first- and second-tier cities along the eastern coast can enjoy the ultimate sports experience brought by 5G and VR, while in the underdeveloped central and western regions and rural areas, network coverage is imperfect, logistics distribution costs are high, and the accessibility of smart sports products is poor [6]. This "digital stratification" exacerbates regional imbalances in sports consumption, restricting the overall upgrade of the consumption structure under a unified national market.

4.2. Data Governance Dilemma: The Game between Privacy Security and Algorithmic Ethics

Data is the blood of the digital economy, but data abuse is eroding consumer trust.

4.2.1. Concerns over Privacy Exposure

Smart wristbands, facial recognition access controls, and sports apps collect users' biometric information, location trajectories, health status, and other highly sensitive data all the time. Driven by commercial interests, some companies excessively request permissions or even illegally trade user data. Once this data is leaked, it poses huge risks to consumers' personal and property safety. This security anxiety severely dampens consumers' willingness to try new digital sports products.

4.2.2. Algorithmic Price Discrimination and Information Cocoons

While platform algorithms improve matching efficiency, they also bring negative effects. Through "big data backstabbing" (algorithmic price discrimination), long-term members often face higher pricing than new users; through precise push notifications, consumers are confined in specific information cocoons, seeing only sports items the system thinks they "like," which conversely limits the expansion of their consumption horizons. These algorithmic ethical issues distort market price mechanisms and hinder the benign optimization of the consumption structure.

4.3. Virtual-Real Integration Predicament: Tech Bubble and Hollowing Out of Real Economy

4.3.1. The "Fracture" of Experience

Current virtual sports technology is not yet mature; issues like wearing comfort, image latency, and dizziness in VR/AR devices have not been fully resolved. Many so-called "Metaverse Sports" projects are merely conceptual hype with rough actual experiences and a lack of real kinematic feedback. The gap between this experience and expectations can easily make consumers feel they are paying an "IQ tax," leading to digital sports consumption being a "flash in the pan" and failing to form sustainable repurchases.

4.3.2. The "Extraction" of Real Economy

Overemphasis on online presence can sometimes lead to neglecting offline physical experiences. The core of sports lies in physical presence and real confrontation. If digital technology merely extracts offline traffic to online without feeding back into offline physical venues, it may lead to the withering of the offline real economy. For example, excessive reliance on online fitness live streaming may lead to the closure of offline gyms, ultimately harming consumers' right to diverse choices.

4.4. Supply-Side Structural Shortfalls: Dual Scarcity of Talent and Content

4.4.1. Scarcity of High-Quality Digital Content

Although platforms are flooded with massive amounts of fitness videos and sports news, professional content that is truly scientific, systematic, and high-quality remains scarce. A large amount of content suffers from homogeneity, fragmentation, and even scientific errors. Specifically, there is a serious shortage of professional exercise prescription content for special groups such as teenagers, pregnant women,

and people with chronic diseases.

4.4.2. Fault Line in Composite Talents

The digital transformation of the sports industry requires composite talents who understand both sports laws and digital technologies. However, under the current education system, students in sports colleges lack digital literacy, while students in engineering colleges lack sports background. The structural shortage of talent leads to sports enterprises' digital transformation often remaining superficial, lacking deep innovation capabilities [7].

5. Mitigation Strategies and Path Selection for Digital Economy Empowering Sports Consumption Structure Upgrade

In response to the above dilemmas, we must adhere to problem orientation and systemic thinking, implementing comprehensive measures from dimensions such as infrastructure, governance systems, industry integration, and talent cultivation to build a long-term mechanism for the digital economy to empower the upgrading of sports consumption structure.

5.1. Consolidating the Digital Base, Bridging the Digital Divide, and Laying the Foundation for Upgrade

5.1.1. Accelerating the Construction of New Sports Infrastructure

The government should include sports digital facilities in the overall plan of "New Infrastructure." Increase the coverage of 5G base stations and big data centers in stadiums and sports parks. Promote the "smart transformation" of public stadiums, building smart venues with functions such as crowd monitoring, environmental sensing, energy consumption management, and intelligent booking to improve the digitalization level of public services. Simultaneously, utilize the "Broadband Countryside" project to promote the sinking of digital sports resources to rural areas, filling the gap in rural sports teachers through cloud courses and remote guidance.

5.1.2. Promoting Age-Appropriate Adaptation of Digital Sports

Encourage enterprises to follow "inclusive design" principles when developing smart sports products. Launch "Senior Mode" or "Care Version" apps, adopting simple operation methods like large fonts and voice interaction. Retain offline manual service windows and establish a "digital feedback" mechanism where community volunteers help the elderly cross the digital threshold. Let digital dividends truly benefit all people, reflecting the inclusiveness of sports consumption upgrading.

5.2. Perfecting Governance System, Reshaping Consumer Trust, and Optimizing Business Environment

5.2.1. Establishing and Improving Data Security Laws and Regulations

Strictly implement the detailed rules of the "Data Security Law" and "Personal Information Protection Law" in the sports field. Clearly define the ownership, usage rights, and usufruct of sports data. Establish a data classification and grading protection system, providing the highest level of protection

for sensitive data such as biometric information. Promote privacy computing technology to achieve "data available but invisible," releasing data value while protecting privacy [8].

5.2.2. Strengthening Algorithmic Supervision and Ethical Review

Regulatory authorities should strengthen audits of sports platform algorithms and crack down on unfair competition behaviors like "big data backstabbing." Require platforms to improve algorithm transparency and grant consumers the right to know and choose (e.g., options to turn off personalized recommendations). Guide industry associations to formulate digital sports ethics conventions, advocating for technology for good and creating a fair, transparent, and honest digital consumption environment.

5.3. Deepening Virtual-Real Integration, Adhering to Content as King, and Improving Supply Quality

5.3.1. Promoting Deep Coupling of Technology and Scenes

Abandon the technological piling of "pseudo-demands" and focus on improving users' real experiences. Increase R&D investment in underlying technologies such as sensors, haptic feedback, and motion capture to solve the pain point of "unreality" in virtual sports. Promote mutual empowerment between online and offline, using online traffic to feed back into offline venues and offline experiences to enhance online stickiness. For example, promote the OMO (Online-Merge-Offline) model of "Online Booking + Offline Fitness + Cloud Data Analysis" to create a seamless consumption loop.

5.3.2. Cultivating High-Quality Digital Sports IPs

Encourage content innovation and support a batch of scientific, interesting, and interactive digital sports premium projects. Support retired athletes and professional coaches in transforming into digital sports content creators. Develop vertical niche content products for different groups (such as children's physical fitness, postpartum rehabilitation, and fall prevention for the elderly). Stimulate the enthusiasm of content creators through copyright protection mechanisms to solve the awkward situation of "having platforms but no content" [9].

5.4. Strengthening Talent Support, Promoting Industry-Education Integration, and Activating Innovation Momentum

5.4.1. Reforming the Talent Cultivation System

Encourage university sports majors to add cross-disciplinary courses such as "Sports Big Data," "Sports AI," and "Digital Media Operation" to cultivate "Sports + Technology" composite talents. Support joint training between engineering colleges and sports colleges to break down disciplinary barriers.

5.4.2. Establishing Industry-University-Research-Application Collaborative Innovation Mechanisms

Encourage sports enterprises to jointly build key laboratories and engineering research centers with universities and research institutes. Conquer key core technologies of smart sports equipment through methods like "revealing the rankings." Establish training bases to let students exercise practical skills in real digital projects. Drive the upgrade of the industrial chain and consumption chain through the upgrade of the talent chain.

6. Conclusion and Outlook

The deep integration of the digital economy and sports consumption is not only an iteration at the technical level but also a revolution in production methods and lifestyles. The research in this paper shows that the digital economy, through its unique technological logic, cost logic, and demand logic, is reshaping the underlying architecture of sports consumption, promoting its evolution towards servitization, quality, and diversification. This is an irreversible historical process.

However, we must also clearly see that the digital economy is not a panacea. In the process of transformation, problems such as technological ethics, social equity, and industrial hollowing out follow like shadows. Solving these problems cannot rely solely on the spontaneous adjustment of the market but requires the organic combination of a "proactive government" and an "effective market."

Looking ahead, with the maturity of frontier technologies such as Web 3.0 and Generative AI (AIGC), sports consumption will enter a more intelligent and immersive "Metaverse" era [10]. In that era, the boundaries of sports consumption will be further broken, and human physical experiences will be deeply integrated with the digital world. Future research should further pay attention to the profound impact of these disruptive technologies on sports behavior, sports ethics, and even the definition of the human body itself, contributing Chinese wisdom to building a new form of sports in the era of digital civilization.

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