A Comparative Study of Digital Innovation Paths in the Coffee Industry: Starbucks and Luckin Coffee in the Era of Digital Economy

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Abstract. The coffee industry is going through changes and innovations driven by the digital economy, which is reshaping how companies compete. This paper focuses on two major brands, Starbucks and Luckin Coffee, as case studies to compare two different approaches: the "digital transformation" of an established global brand, and the "digital native" model adopted by a fast-growing challenger. The study analyzes Luckin's data-native strategy, which relies on precision marketing, smart supply chain management, and asset-light operations to enable quick innovation. In comparison, Starbucks builds on its well-known "Third Place" concept, combining digital platforms with offline experiences to extend its brand and deepen customer engagement. Although digital innovation improves operational efficiency and capabilities, it also brings challenges such as rising costs, data privacy concerns, and the risk of increased market monopoly. These issues may widen the digital divide and create higher barriers for small and medium-sized enterprises. To tackle these problems, companies should plan their digital economic strategies based on their own resources and abilities. This allows them to make the most of digital benefits while managing risks. Looking ahead, the industry should explore new technologies like AIGC and digital twins. Especially when expanding overseas, it is important to adapt digital strategies to local markets to ensure they fit in and succeed.

Keywords: Digital Economy, Innovation Path, Digital Transformation, Luckin Coffee, Starbucks.

1. Introduction

This paper focuses on the digital economic innovation in the coffee industry, using the different development paths of Starbucks and Luckin as case studies. Starbucks, with decades of corporate culture and store experience, faces the challenge of integrating digital capabilities while maintaining its established strengths — like "adding new branches to an old tree." In contrast, Luckin, as a digital native, needs to build on its existing technological advantages and achieve sustained growth through continuous product innovation. Starbucks has a rich cultural foundation and in-store experience and is actively pursuing digital transformation. On the other hand, Luckin, as a "digital native," relied from the very beginning on its app, social platforms, and other online channels to quickly capture the market and establish brand trust. Conversely, how can an emerging brand like Luckin continue to innovate more products under digital conditions to ensure sustainable development? To explore this theme in depth, the article sets four core research dimensions: first, identifying the specific digital economy innovation strategies adopted by Starbucks and Luckin; second, comparing their strategic differences and analyzing their respective advantages across various dimensions; third, examining the potential drawbacks and risks of both types of strategies; and fourth, exploring the most effective and sustainable innovation methods within the context of the digital economy.

In terms of research methodology, this paper will combine case analysis and data comparison. By reviewing annual reports, official website information, and relevant academic literature from Starbucks and Luckin, it will systematically outline the digital innovation paths of these two major brands.

The structure of the paper follows a "theory – case studies – comparison – conclusion" logic. It begins by (sorting out/ outlining) relevant theoretical concepts of the digital economy and innovation to establish a foundational understanding. Next, it separately analyzes Luckin Coffee's digital

innovation path and Starbucks' digital transformation strategy. Subsequently, it provides a multi-dimensional comparison of the innovation models of the two companies. Finally, it summarizes the research conclusions and indicates the optimal future development direction for the coffee industry in the digital economy era [1].

2. Theoretical Basis of the Digital Economy and Innovation

Before applying the concept of the digital economy to the coffee industry, we must first understand its precise definition. Simply put, the digital economy is an economic form based on digital technologies. It relies not only on traditional factors of production but emphasizes the role of data, connectivity, and intelligence. Examples include platformization – both Luckin and Starbucks use apps to create user gateways; network effects (where the value of the platform increases with more users); big data-driven decisions (extracting insights from consumer behavior); and low marginal costs (digital services can be replicated quickly at low expansion cost). It is these characteristics that provide new ground for corporate innovation [2].

In this context, innovation takes on multi-dimensional characteristics. According to classic classifications, innovation can be categorized into product innovation (e.g., developing new coffee flavors), service innovation (e.g., offering quick pick-up or delivery), process innovation (e.g., optimizing the ordering and production process), and business model innovation (a typical example being Luckin's restructuring of coffee consumption through online-offline integration). In a digital environment, these types of innovation are often intertwined, collectively driving corporate evolution.

Digital technology serves as the core mechanism driving these innovations. For instance, using data mining, companies can achieve more accurate user profiling and marketing strategies; artificial intelligence can be used to optimize the supply chain, predict sales, automate replenishment, and even manage inventory; while technologies like blockchain can be used for food traceability, enhancing quality trust [3].

These technologies and tools have made innovation no longer rely solely on conjecture and speculation, but rather based on various data from mobile phones, enabling more efficient decision-making. Schumpeter's "innovation theory" emphasizes "creative destruction" - just like Luckin's digital model disrupted the traditional coffee market. According to the resource-based view, enterprises should make good use of their unique resources to build competitive advantages, such as the ecological application systems established by Luckin and Starbucks. Meanwhile, the ambidextrous innovation theory suggests that enterprises need to strike a balance between developing existing advantages and exploring new opportunities, which is also a common challenge faced by Starbucks and Luckin at present [4, 5].

In conclusion, in the digital economy era, innovation is not only based on the technical level, but also involves systematic changes in strategic planning, resource allocation, and organizational capabilities. Next, we will use the above theoretical perspectives to specifically analyze the different development paths taken by Luckin and Starbucks.

3. Digital Background and Trends in the Coffee Industry

The global coffee market is constantly expanding, and China has become a crucial driving force in the coffee industry. Consumers are shifting from a focus on "functionality" to "experience", which makes digital innovation the core of industry competition.

Leading brands are spearheading digital adoption. Starbucks has built a membership ecosystem through its app, using consumption data to push personalized offers, with members contributing over 70% of revenue. Luckin Coffee broke into the market with full-chain digitalization, from online ordering and smart supply chains to unmanned coffee machines, achieving precise cost control and efficient fulfillment. Emerging brands like Saturn bird and Manner have gained traction through social media, using short videos to showcase their brand stories, while also focusing heavily on e-

commerce platforms, where their online sales share is significantly higher than that of traditional brands.

Consumer behavior has also completed a digital shift. Mobile payments cover over 90% of offline consumption scenarios, delivery platforms have shortened coffee delivery times to within 30 minutes, and the "check-in" culture on short video platforms has turned coffee from a simple beverage into a social symbol, accelerating the industry's digital penetration [6].

4. Innovative Practices Driven by Digital Technology in the Coffee Industry

Against the backdrop of the digital economy, the coffee industry is undergoing a profound transformation driven by technology. Represented by Starbucks and Luckin Coffee, companies are exploring innovation in products and services through different paths.

Product and service innovation is a key area for both. Luckin collects data on order time, taste preferences, and location through its app to generate a personalized "Drink of the Day" recommendation and offer tailored promotions for each customer. This approach has increased the recommendation conversion rate by nearly 30%. Additionally, Luckin introduced coffee subscription plans to cultivate frequent consumption habits and uses IoT-enabled smart coffee machines to monitor extraction parameters in real-time, creating a closed-loop management system connecting "people-machines-beans" to ensure consistent product quality. Starbucks, through its digital platform, extends the offline experience seamlessly. Customers can pre-order via Mobile Order & Pay and use RFID-enabled pickup lockers for quick, contactless collection, making the process faster and more convenient. Furthermore, Starbucks has turned its "Stars" rewards points into a form of social currency, boosting traffic and online sharing, turning physical stores into popular check-in spots, and enhancing brand effect and popularity.

In the supply chain, digital innovation has also proven highly effective. Luckin focused on supply chain digitalization from the start, assigning unique hash identifiers to each batch of coffee beans to provide consumers with fully transparent information from harvesting, processing, to grading. Starbucks leverages its long-standing experience to build a global supply chain collaboration platform, achieving end-to-end visibility from coffee bean cultivation to roasting and distribution. For example, in 2019, Tmall Consumer Electronics collaborated with the Alibaba ecosystem to upgrade its end-to-end supply chain solutions. This was achieved through big data foundations, intelligent algorithm guidance, deep merchant collaboration mechanisms, and traffic regulation strategies. Tmall Supermarket: Curated integration, localized products, enhanced variety and timeliness; inventory sharing, multi-channel transactions, offline fulfillment; LBS services, precise local product coverage, and targeted delivery by timeliness category [7].

Alibaba Group's business scope extends far beyond cross-border e-commerce and cloud technology. Earlier, the Group launched its Business Operating System to reconstruct retail business models. This includes leveraging digital technologies to provide innovative and efficient solutions for factories and manufacturers—covering the entire process from product R&D to market launch—thus creating new supply models.

Take new product design as an example: Alibaba Cloud provides the technological infrastructure for product launches, complementing the multi-tiered processes of the Tmall New Product Innovation Center. This includes analyzing industry trends, consumer insights, and trending preferences to deliver digital, innovative, and efficient solutions for brand merchants. These solutions then integrate with online and offline sales channels like Taobao, Tmall, Alipay, and Cainiao Network, as well as payment platforms and logistics systems, enabling a “one-stop + full industrial chain” digital technology support ecosystem. Click the video above to explore Alibaba Group's blueprint for supply chain innovation [8].

5. The Impact of Innovation Models on Corporate Competitiveness

In the highly competitive coffee industry, innovative models have become crucial for enhancing a company's competitiveness. By leveraging digital technologies, coffee enterprises can significantly improve customer stickiness and brand loyalty. For instance, through membership systems and personalized marketing strategies, companies can better understand customer preferences and offer tailored services, thus strengthening the emotional connection with consumers. Innovation enables enterprises to achieve multi-dimensional empowerment in their operations: Through big data and machine learning, enterprises can conduct precise marketing (for instance, Starbucks' member revenue contribution exceeds 70%); by leveraging innovative models, they can optimize operational processes (such as coffee chain stores using AI to predict customer flow and adjust staffing); at the same time, innovation also drives product differentiation and rapid iteration, all of which enhance the efficiency and competitiveness of the enterprises. By collecting and analyzing user feedback in real - time, companies can quickly adjust product features and flavors to meet changing consumer demands. This allows them to stay ahead in the market by offering unique and trendy products.

Moreover, building an expandable business ecosystem through cooperation with external platforms, like the partnerships between coffee brands and payment platforms or food delivery services, can expand market reach and enhance brand visibility. This ecosystem - building approach creates new business opportunities and revenue streams, further strengthening a company's competitive position.

6. Case Analysis: Luckin Coffee's Path to Digital Innovation

Luckin Coffee has demonstrated a remarkable digital innovation journey since its inception. In the initial stage, it established a full - chain digitalization model centered around its App - based ordering system. By offering substantial subsidies and implementing a viral growth strategy, Luckin rapidly attracted a large number of new customers. This aggressive marketing approach, combined with its digital infrastructure, enabled it to achieve explosive growth in a short period.

During the iterative phase, Luckin focused on refined operations. It implemented user segmentation and a personalized marketing strategy, "thousands of people, thousands of faces," based on in - depth data analysis. This approach significantly improved customer engagement and loyalty. Additionally, Luckin adopted an AI - based store - location system and a smart supply chain, optimizing its operational efficiency. The AI - based store - location system helped identify the most profitable store locations, while the smart supply chain ensured efficient inventory management and cost control [9].

In the transformation period, Luckin continued to drive self - sustainability through technology. The launch of its unmanned coffee machines, "LuckinGo," not only expanded its sales channels but also met the growing demand for convenient coffee consumption. At the same time, Luckin actively engaged in brand collaborations and private - domain traffic expansion, further enhancing its brand influence.

In terms of performance, Luckin has achieved a balance between cost control and revenue growth through its technological advantages. The digital innovation has helped it rebuild market trust, with its market share and brand value continuously increasing. Through continuous digital innovation, Luckin has not only transformed the traditional coffee business model but also set a benchmark for digital transformation in the coffee industry [10-12].

7. Challenges and Future Outlook

Although digital technology has provided significant momentum for innovation in the coffee industry, many challenges remain for its future development. Technological stagnation and high investment costs make it difficult for many small brands within the industry to pursue comprehensive digital innovation. The digital privacy of each user is also a critical issue that brands must address.

Furthermore, over-reliance on third-party platforms can weaken brand autonomy, and the existence of a digital divide places small and medium-sized enterprises with limited resources at a greater disadvantage in the competition.

Looking ahead, the digitalization process in the coffee industry will focus more on intelligent and immersive experiences. AIGC technology will be widely used for personalized content generation and brand communication, enabling more precise marketing interactions and further enhancing the realism and fun of consumer decision-making. In international expansion, effectively combining global digital strategies with local market demands will be key for brands to achieve cross-regional growth.

8. Conclusion

By comparing the digital innovation paths of Starbucks and Luckin Coffee, this study demonstrates that digital technology has comprehensively permeated product design, service processes, supply chain management, and business model restructuring in the coffee industry. This has not only improved operational efficiency and customer experience but also significantly enhanced the market competitiveness and brand influence of enterprises. Luckin Coffee rapidly rose with its "digital native" strategy, while Starbucks consolidated its premium position through gradual digital transformation; both have jointly driven the optimization and upgrading of the industry's value chain.

Facing increasingly fierce market competition and a continuously evolving technological environment, traditional coffee enterprises urgently need to abandon a wait-and-see attitude and actively integrate into the wave of digitalization. Only by proactively planning technological applications, focusing on user value, and building agile, innovative organizational capabilities can they continuously reap the benefits of innovation and achieve sustainable growth in the digital economy era. The future coffee industry will be a new ecosystem characterized by the deep integration of technology and humanity, efficiency and experience.

References

[1] Zheng, Y. Y., &Pan, H. F. (2024). AStudyon the Marketing Strategy of Luckin Coffee under the "Internet+New Retail" Model. Shenyang Normal University.ArticleID1673 – 5889 (2024) 16 – 0040 - 04.

[2] Xin, J. Y. (2024, November27). Research on New Retail Models of Coffee Brands Based on Empirical Analysis. School of Management, University of Shanghai for Science and Technology.

[3] Li, C., Wang, T. T., Liu, Y., &Chen, J. B. (2025, January). Analysis of Organizational Resilience Building from the Perspective of Digital Technology Affordance: An Exploratory Single Case Study Based on Luckin Coffee. School of Management, Beijing Union University.

[4] Qi, Z. W., &Wang, Y. B. (2025, April17). Business Model Canvas Analysis of Luckin Coffee Driven by Artificial Intelligence. School of Business, Shandong Jianzhu University.

[5] Jiao, H. (2023). The View of Digital Platform Ecosystem: A New Perspective of Management Theory in the Digital Economy Era.ArticleID1006 - 480X (2023) 07 - 0122 - 20.

[6] Mo, C. (2022, March20). ACase Study of Starbucks' New Retail Model. School of Business Administration, Hunan University.

[7] Li, Q. (2025, September). Research on the Impact of Enterprise Management and Financial Performance in the New Retail Era: ACase Study of Luckin Coffee. Sichuan Aerospace Vocational and Technical College.

[8] Huang, J. C. (2024, May31). Research on the Optimization of Experiential Marketing Strategy of Starbucks in the Chinese Market. Master of Business Administration, Hainan University.

[9] Wu, Z. Q., Li, H. P., &He, X. L. (2024, September7). Research on the Distribution Characteristics and Influencing Factors of New Retail Stores Based on MGWR: ACase Study of Starbucks and Luckin Coffee.

[10] Luckin Coffee. (2024). 2024 Annual Report. Retrieved from https://investor.luckincoffee.com/.

[11] McKinsey & Company. (2023). AI and the future of work in China. Retrieved from https://www.mckinsey.com/.

[12] Starbucks Corporation. (2024). 2024 Annual Report. Retrieved from https://investor.starbucks.com/.