Journal of Global Economic Insights, 2025, 1(1), 1-15
https://doi.org/10.71204/2nbnfp74

Evaluating Baidu's Big Data Strategy in the Context of Digital Transformation

Jun Cui [1, *]

[1] Solbridge International School of Business, Woosong University, Daejeon 34606, Republic of Korea

*** Correspondence**:

Jun Cui

jcui228@student.solbridge.ac.kr

Received: 1 April 2025/ Accepted: 22 May 2025/ Published online: 29 May 2025

Abstract

This study examines Baidu's corporate strategic management and digital transformation, with a particular emphasis on its application of big data and artificial intelligence (AI) technologies. Under new executive leadership, Baidu has undergone a structural reorganization and adopted a more globalized operational model, particularly in its core areas of search, AI, and data-driven services. While the company has demonstrated notable growth in Southeast Asian markets, it continues to face considerable challenges in Western regions due to cultural discrepancies and regulatory constraints. Moreover, Following his transition to the role of Global CEO, founder Robin Li has prioritized the development of Baidu's international management capabilities and the expansion of its digital infrastructure. Currently, Baidu operates in over 30 countries and 180 cities, with an ambitious plan to grow its global workforce to 100,000 employees. Furthermore, this research adopts a mixed-methods approach, combining quantitative and qualitative analyses. It utilizes statistical tools such as STATA, SPSS, and Excel, alongside graphical modeling techniques, to assess Baidu's transformation process. The findings indicate that Baidu's global strategy increasingly centers on leveraging technology for social good, addressing long-term strategic challenges such as international corporate governance and corporate social responsibility. While the company's digital transformation is progressing steadily, persistent challenges in Western markets underscore the need for more adaptive strategies. Baidu's new mission emphasizes the creation of user-centered technologies aimed at delivering broad societal benefits.

Keywords: Strategic Management; Digital transformation; Bigdata strategies; Digital management platform

1. Introduction

With the development of technology, the strategic transformation of Baidu is also very fast. The parent company Baidu search, AI and Baidu Bigdata software has acquired a number of

game studios in the past few months and has purchased the exclusive distribution rights of a number of games. It is preparing to enter the field of games and online education on a large scale. As currently the highest-valued startup company in China, Baidu has established a mature game department and online education industry in a short period of cloud computing by relying on the strong financial strength and has dug a large number of top talents from competitors. At present, the number of employees of Baidu has exceeded 50,000. Regarding the technological innovation and upgrading of Baidu, Baidu has also used many high big data and AI technology and other core technologies in the industry to upgrade platforms and algorithms to improve R&D efficiency and the quality of R&D products. The "Data platform, AI and big data Engine" department of Baidu corporate will officially release cloud computing IaaS (Infrastructure as a Service) services including computing, storage, and networking from September to October this year. In addition to the built data center in Tianjin and Xian, Baidu is also planning to build large data centers in Shanghai, Shenzhen and other cities or surrounding areas to provide external IaaS services, data cloud management platform, and SaaS Cloud services.

This research contributes to the understanding of Baidu's Big Data Technology Innovation and its digital transformation by exploring key factors influencing organizational change, leadership development, and data-driven strategies. The study presents a series of hypotheses that examine the direct relationships between various elements of Baidu's transformation, providing valuable insights into the interplay between technology, human resources, and organizational processes. The first contribution is the examination of how Big Data technology and data innovation drive business upgrading within Baidu, emphasizing the role of technological advancements in the company's overall transformation. By investigating the direct relationship between HRM system digitization and organizational change, the study highlights the importance of modernizing human resources practices to support digital transformation efforts (Kamil, 2016; Jia & Stan, 2021). Another significant contribution is the exploration of how Big Data technology R&D efficiency and digital analytics influence Baidu’s strategic decision-making processes. The research also delves into the role of leadership development in improving data management, underscoring the importance of cultivating leadership that is adept at guiding data-driven innovations.

The study also emphasizes the value of a diverse organizational culture, showing how Baidu's diversity promotes team collaboration and enhances digital innovation. Moreover, the research explores how the company’s big data strategy contributes to the marketing transformation through data mining, demonstrating the effectiveness of using data-driven insights for strategic decision-making. Finally, the study highlights the importance of talent training and recruitment in ensuring the development of an effective big data and data management workforce. By examining these interrelated factors, this research offers a comprehensive view of how Baidu’s big data and digital transformation efforts are interwoven, providing valuable lessons for other companies seeking to navigate similar technological transformations.

2. Literature Review

With the in-depth development of globalization, the official layout of Baidu 's globalization began in August 2013. In the past few years, Baidu has launched a number of influential products overseas, including Baidu adverting, Baidu search, Baidu Big data and data platform, Baidu cloud, etc. In 2020, CEO Li yan Hong set a "small goal", expressing his hope to achieve globalization within three years, that is, more than half of the users will come from overseas. Baidu has always been outstanding in the globalization of Internet business. Its products cover 100 countries and regions, and 88 languages. Overseas students are also using byte products overseas. Therefore, Baidu has become the first choice for technical overseas students to return to their country for employment and enterprises (Loebbecke & Picot, 2015). Baidu's transformation variables include the product latitudes of different national markets and different industries to support his corporate strategic transformation and upgrading. The globalized market includes markets such as America, Europe, Asia, Australia, and Africa, and the product range covers short Video, content, social, corporate services, and online educational games, and other fields. Baidu's internal digital transformation is also advancing, and for Baidu's 50,000 employees, all daily work activities, including learning, office, organization, and business, can all be completed online, and the experience is seamless. All these actions are based on a unified digital sharing service platform. The platform integrates a large number of productivity tools, such as corporate Baidu search, Baidu Bigdata and AI Technology, Baidu meetings, small programs, and Baidu's self-developed management tools, such as finance, HR, and knowledge management (Gong & Ribiere, 2021). So, no matter who, where, or what you do, you can complete a day's closed-loop work based on such a platform (Wolf, 2017; Ma, 2021). It is precise because of such a platform that during the epidemic, Baidu's business was basically not affected. Such a set of digital platforms of Baidu is also suitable for large enterprises, especially group-type enterprises with complex organizational structures and diversified businesses represented by state-owned enterprises. We combined the organizational and business characteristics of state-owned enterprises, and launched the "Borderless Digital Platform for Cloud Travel" last year, hoping that corporate employees can also have the same online work experience as Baidu employees. Baidu believes that talent is a topic that cannot be bypassed in digital transformation (Herrigel et al., 2013; Saxenian, 2005). When Baidu recruits and cultivates talents, it usually focuses on two categories, one is business personnel who understand technology, and the other is technical personnel who understand business. This is the T-shaped talent (interdisciplinary compound talent) that is often mentioned nowadays. Digital transformation is a complex giant system. Baidu Cloud adopts a "modular" design concept in the construction of digital capabilities. It is hoped that the complexity of the system can be resolved by decomposing the system into relatively simple modules that have independent functions and can run independently. These modules can be products, solutions, components, or tools.

Indeed, Baidu has emerged as one of the fastest-growing and most influential internet technology companies in recent years. In the wake of the 2020 pandemic, industries such as video streaming, live broadcasting, remote work, online education, and digital healthcare experienced rapid expansion, catalyzing related employment growth. Baidu has made substantial investments

across these sectors, reflecting both strategic foresight and a strong demand for talent. In 2020, the company recruited over 12,000 graduates, followed by more than 7,000 additional openings for students during the 2021 spring recruitment cycle (Cui, 2025; Li, 2020; Grimes, 2018). In parallel, Baidu's education-focused subsidiary, Vigorous Education, announced plans to hire 10,000 professionals from the broader labor market within four months, pushing the company's total headcount to approximately 50,000 employees.

CEO Robin Li has refocused the company's strategic vision toward global development, placing greater emphasis on long-term planning and critical issues such as international corporate governance, corporate social responsibility, and the expansion of emerging business lines like education (Colombari et al., 2020; Wan & Cui, 2024). A key component of this shift involves strengthening Baidu's global management team to support international operations, enhance the capacity of domestic teams, and improve overall organizational efficiency. Central to Baidu's globalization strategy is the concept of "technology going global"—delivering consistent product experiences worldwide through unified technical solutions. While Baidu's technologies and recommendation algorithms are designed to be universally applicable, localized operational strategies are implemented to ensure relevance in regional markets. As Li metaphorically explained in 2020, the relationship between Baidu's technical infrastructure and its regional adaptations is akin to a standard cup that can hold a variety of flavored drinks.

Taking Baidu Search, AI, and Big Data as examples, former Head of Global Strategic Cooperation Zhang Xiaolong highlighted in a public forum that the success of these platforms stems from their algorithm-driven content distribution and simple, clear underlying logic. By continuously optimizing content production and enhancing algorithmic refinement, Baidu effectively meets global content consumption needs (Cui et al., 2022; Yu et al., 2020; Wei & Wang, 2020). This universal product logic, reinforced by deep local content and user engagement strategies, serves as a foundation for Baidu's international platform success. Notably, Baidu does not structure its organization by individual business lines. Instead, it comprises three core departments: Technology, User Growth, and Commercialization. These units collectively manage product development, user retention, and revenue generation. Despite operating more than a dozen front-end applications, Baidu employs a centralized "middle-platform" model in which most R&D and data-related work is shared across products. This mechanism ensures that Baidu's technological capabilities are fully leveraged across its entire product ecosystem.

Additionally, Baidu's corporate mission emphasizes flexibility and operational efficiency, encapsulated in its unconventional statement that "there is no mission," thereby fostering an open and dynamic work environment. The company's vision is to establish a global platform for creation and communication, supported by a core set of values including the pursuit of excellence, pragmatism, courage, openness, humility, clarity, and an enduring entrepreneurial spirit. Baidu's corporate culture prioritizes technological innovation and the fulfillment of social responsibilities, particularly in areas such as platform governance, content development, and information services.

Platform governance is viewed as the enterprise's foremost responsibility, followed by a commitment to technological advancement. As a leading technology company, Baidu emphasizes that development is its top priority, talent is its most vital resource, and innovation is the principal

driving force. The company is dedicated to applying artificial intelligence and related technologies to promote societal progress and modernization. Furthermore, Baidu positions content construction and high-quality information services as integral components of its social obligation. Together, Baidu's mission, vision, and culture form the backbone of its organizational development and strategic growth.

In the context of digital transformation, corporate culture becomes particularly critical, especially for large internet companies operating across diverse markets with substantial employee bases. As Baidu's technological ecosystem—including AI and data analytics—continues to permeate traditional industries, many legacy enterprises are compelled to embrace digital transformation to sustain long-term growth. This transformation often hinges on upgrading both technological infrastructure and organizational culture. Against the backdrop of China's economic restructuring—marked by structural, institutional, and cyclical challenges—business education and corporate practices must adapt accordingly. Institutions and enterprises alike are accelerating digital transformation to align with broader socio-economic shifts.

Baidu has developed a portfolio of data-driven product types aligned with various digital transformation needs. These include:

(1) BI Report Products – Tools for generating real-time visual reports to support enterprise-level decision-making.

(2) SaaS Data Products – Industry-wide solutions that aggregate and standardize sector-specific requirements into reusable, scalable formats.

(3) PaaS Data Products – Ecosystem-based platforms designed to serve both B2B and B2C segments through interoperable data solutions.

(4) Business Model-Driven Products – Applications structured around specific commercial models, such as digital lending platforms or online car rental services.

(5) Vertical-Specific Data Products – Solutions tailored to niche sectors, such as Ink Weather or digital business card services.

(6) Other Data Products – Including enterprise data search tools and market insight platforms.

These diverse product lines reflect Baidu's strategic emphasis on leveraging big data and AI to drive digital innovation across both emerging and traditional sectors.

Based on the foregoing analysis, this study puts forward the following two hypotheses for in-depth discussion and empirical evaluation.

Hypothesis 1: Baidu's strategic emphasis on technological innovation and platform governance significantly enhances its capacity for sustainable digital transformation.

This hypothesis is grounded in the theoretical framework of Dynamic Capabilities Theory (Teece, Pisano, & Shuen, 1997), which posits that an organization's ability to integrate, build, and reconfigure internal and external competencies is critical to responding to rapidly changing environments. Baidu's corporate culture, which prioritizes innovation, talent development, and platform governance, reflects a strong alignment with this theory. The company's commitment to

artificial intelligence, cloud computing, and data analytics serves as a core mechanism through which it builds these dynamic capabilities. For example, Baidu's centralized organizational structure—comprising the technology, user growth, and commercialization departments—enables agile knowledge transfer and resource coordination across its diverse business units. Moreover, Baidu's middle-platform (zhongtai) system maximizes the utility of its technological infrastructure across various product lines, further reinforcing its reconfigurability and adaptability. This structural model supports continuous learning and experimentation, allowing the company to meet evolving user demands and respond proactively to external shocks such as the COVID-19 pandemic. As such, Baidu's internal focus on innovation and governance can be theorized to directly contribute to its long-term digital transformation capacity. By systematically nurturing innovation while upholding accountability through platform governance, Baidu strengthens both its operational resilience and strategic flexibility, key components of sustainable transformation in the digital economy.

Hypothesis 2: Baidu's global expansion strategy, when supported by localized content operations and algorithmic standardization, improves its international market performance.

This hypothesis draws upon Institutional Theory (DiMaggio & Powell, 1983), particularly the notion that organizations must navigate and adapt to varied normative, cultural, and regulatory environments to maintain legitimacy and performance in international contexts. Baidu's internationalization strategy exemplifies this dual adaptation model: while it deploys standardized technologies—such as its recommendation algorithms and data engines—it concurrently localizes content and operational strategies to meet specific regional expectations. CEO Robin Li's analogy of the "same cup holding different flavored drinks" aptly illustrates Baidu's hybrid approach. The core technological architecture remains consistent, but its implementation is tailored to cultural and institutional nuances in each target market. This strategy mitigates institutional distance and reduces the risk of misalignment with local user behaviors and regulatory frameworks. Baidu's success in Southeast Asia, where it has established a strong presence, underscores the efficacy of this model. Conversely, its ongoing challenges in Western markets highlight the limitations of insufficient institutional alignment. By applying Institutional Theory, this research can better explain the differential outcomes of Baidu's global strategy and test the hypothesis that localization, when integrated with a stable technological foundation, enhances global market performance. Thus, Baidu's strategic duality—standardized systems with localized deployment—offers a compelling framework for analyzing digital platform globalization in varied institutional environments.

3. Methodology

3.1. Research framework

The digital transformation and bigdata technology innovation of Baidu 's technology and the upgrading of organizational structure are composed of multiple aspects. The digital transformation and organizational structure upgrade of Baidu 's enterprise technology includes Talents Training and recruitment, Technology Innovation, Enterprise's Change the vision, Change

the legacy platform, Change the way of organization and team collaboration (as shown in Figure 1), etc. Therefore, our specific conceptual framework is as follows.

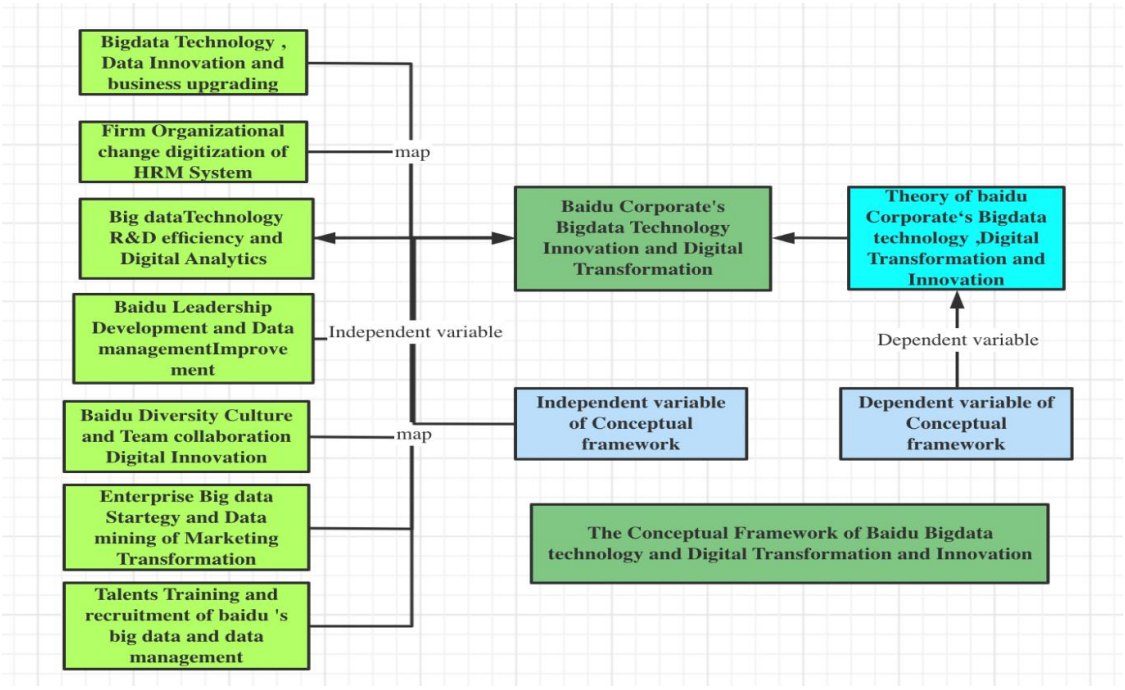

Figure 1. The conceptual framework of Baidu's Bigdata and digital transformation innovation.

The digital transformation and technology innovation of Baidu's Hypotheses testing theory is as follows:

H1a. There is a direct relationship between Bigdata Technology, Data Innovation and business upgrading for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

H1b. There is a direct relationship between Firm Organizational change digitization of HRM System for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

H1c. There is a direct relationship between big data technology R&D efficiency and Digital Analytics for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

H1d. There is a direct relationship between Baidu Leadership Development and Data management improvement for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

H2a. There is a direct relationship between Baidu Diversity Culture and Team collaboration Digital Innovation for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

H2b. There is a direct relationship between Enterprise Big data Strategy and Data mining of Marketing Transformation for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

H2c. There is a direct relationship between Baidu Talents Training and recruitment of Baidu's big data and data management for Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

From the above conceptual framework structure diagram, we can see that the independent variable has 7 factors, the dependent variable, and another factor. These 7 independent variables are finally mapped to one dependent variable, which is Baidu's digital transformation and big data technology Innovation. Thus, the independent variables include seven factors as follows:

(1) Bigdata Technology, Data Innovation and business upgrading

(2) Firm Organizational change digitization of HRM System

(3) Big data technology R&D efficiency and Digital Analytics

(4) Baidu Leadership Development and Data management improvement

(5) Baidu Diversity Culture and Team collaboration Digital Innovation

(6) Enterprise Big data Strategy and Data mining of Marketing Transformation

(7) Talents Training and recruitment of Baidu's big data and data management

Moreover, the dependent variables are Baidu Corporate's Bigdata Technology Innovation and Digital Transformation.

3.2. Research Methodology and data analysis

The Methodology of digital transformation and organizational structure upgrade of Baidu's enterprise technology can use employee questionnaires, collect more than 200 employees' survey feedback, classify and analyze the feedback, and get some operations and suggestions for enterprise transformation. The sea can use it for different departments of the company. Interviews with employees to make recommendations for the company's digital transformation and upgrade. The questionnaire survey contains a series of digital issues related to digital transformation. The first question is what technologies are needed in the department to improve the efficiency of digital transformation. The second question is the current bottlenecks and problems in the various businesses of Baidu's department. The third question is Baidu's satisfaction survey in the digital transformation process of various business lines, as well as some other digital transformation and efficiency issues. Through the analysis of these issues, Baidu has compiled some solutions to the problems in the digital transformation process and then promoted them through the company's platform and implementation. Through the digital questionnaire survey of various business departments of Baidu, you can see the statistical results of some of the following data; From the data analyzed in the chart, it can be seen that most business line departments are quite satisfied with digital transformation.

4. Results

The results of this study provide valuable insights into Baidu's strategic approach to digital transformation and global expansion. Through a combination of quantitative and qualitative analyses, the findings highlight the significant role of technological innovation and platform governance in enhancing Baidu's capacity for sustainable growth. Furthermore, the analysis reveals that Baidu's dual strategy of leveraging standardized technological infrastructure while

localizing content and operations has been key to its international success, particularly in Southeast Asia. However, challenges persist in Western markets, where regulatory and cultural barriers remain substantial. These findings support the hypotheses proposed earlier, underscoring the importance of adaptive strategies in navigating complex global markets. The subsequent section will discuss the implications of these results and the broader impact on Baidu's global strategy.

Table 1. Survey on satisfaction with digital transformation of Baidu's various business lines.

Business Department/ satisfaction score	Baidu Cloud	Baidu search Department	Baidu Service Department	HR Unit	Finance Unit	Operation Unit	Adverting Unit
Excellent	5	4	4	4	5	4	3
Critical	4	5	4	5	5	5	3
Major	5	4	3	3	4	5	4
Minor	4	3	4	3	4	3	5
Trivial	3	3	3	3	5	3	4

Through the above questionnaire survey data summary information, we can see that this paper also used a quantitative analysis method to conduct a satisfaction survey of digital transformation and big data technology applications for different business departments of Baidu. The subject of the survey is different business departments of Baidu, and the survey's satisfaction with digitization and big data technology The data is divided into 5 different levels, namely Excellent, Critical, Major, Minor, Trivial. These five levels correspond to the values of 1, 2, 3, 4, and 5 respectively. We collected 200 questionnaires from different business lines for Baidu corporate as the sample data for this sample data analysis. Assuming our significate level is 0.05, we take these samples Perform multiple regression analysis and ANOVA analysis on satisfaction data to obtain the following data results.

Table 2. One-Way ANOVA of satisfaction score based on different Baidu department

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3.88571429	6	0.64761905	1.00740741	0.44033813	2.4452594
Within Groups	18	28	0.64285714			
Total	21.8857143	34				

Table 2 shows that the p- value of the test is large than 0.05. This gives an chance to no reject the null hypothesis. In other words, there is enough statistical evidence of digital transformation and big data of to conclude that the overall satisfaction scores of different levels of the Baidu department are equal.

Table 3. Summary statistics

Groups	Count	Sum	Average	Variance
Baidu Cloud	5	21	4.2	0.7
Baidu search Department	5	19	3.8	0.7
Baidu Enterprise Service Department	5	18	3.6	0.3
HR Unit	5	18	3.6	0.8
Finance Unit	5	23	4.6	0.3
Operation Unit	5	20	4	1
Adverting Unit	5	19	3.8	0.7

Based on Table 3 of summary statistics, we can clearly see that the satisfaction scores of digital transformation and big data transfer Baidu HR Unit are the highest and digital transformation and big data of Finance Unit department ‘s satisfaction scores are the lowest.

5. Discussion and Findings

Baidu is committed to advancing its AI and Big Data engine in the future, with key areas of focus including retail, cultural tourism, finance, pan-Internet, and the automotive industry. In each of these sectors, Baidu faces competition from other major players such as Alibaba and Huawei, which have not only entered more industries but also established more refined management strategies across these sectors. Within the pan-Internet space, Baidu has developed distinct tracks for audio and big data analysis, video, e-commerce, advertising, gaming, and others.

Baidu's vision is to build a global big data and AI-driven platform for China’s search engine market. The company’s global expansion began in 2008, with its “technology going global” strategy acting as the core approach to its international technology development. In 2014, Baidu established its Artificial Intelligence Laboratory, aimed at addressing long-term and open challenges in big data and AI. The laboratory’s work contributes significantly to Baidu’s future vision, including the development of the Baidu search client software, which leverages massive data collection, in-depth data mining, and user behavior analysis to deliver personalized recommendations, revolutionizing the news reading experience.

Baidu's globalization strategy is underpinned by significant investments aimed at strengthening the global presence of its search engine, AI, and Big Data products. The company has already established a path for monetizing through advertising and is now focusing on replicating the success of its search and Big Data platforms within the e-commerce and live-streaming markets—areas identified as crucial for future growth.

Despite rapid technological advancements, organizational changes at Baidu have been slower, which reflects the fundamental law of digital transformation: companies must not only drive technological change but also adapt their organizational structures to keep pace. For Baidu, transforming digital capabilities from a project-driven initiative to an ongoing digital innovation factory requires three key steps:

(1) **Changing the Vision**: One of the primary challenges of digital transformation is overcoming resistance to change. To foster transformation, a compelling and transformational vision is essential. Employees need to understand the benefits of the change and recognize their role in the transformation process. Without a clear vision, employees may either support the transformation half-heartedly or resist it altogether. A strong, persuasive vision can inspire the company's staff and stakeholders to embrace change, adapting to the new direction and contributing to its realization.

(2) **Upgrading Legacy Platforms**: The technology itself cannot create value unless it is effectively implemented. Baidu's legacy platforms, with their outdated and convoluted IT systems and business processes, represent significant inertia that impedes digital transformation. Overcoming this requires modernizing these systems to create the necessary foundation for innovation and efficiency.

(3) **Changing Organizational Collaboration**: The difficulties faced by General Electric (GE) during its digital transformation into an Internet of Things (IoT) platform were not primarily technical but organizational. While GE had deep expertise in IoT and machine learning, it struggled to adapt its organizational structure and collaborative processes. Similarly, Baidu must foster a culture of collaboration and organizational flexibility to effectively support its digital transformation.

The findings of this study indicate that Baidu's strategic approach to digital transformation, particularly its focus on AI and big data, has significantly contributed to its growth and competitive edge in the global market. The company's early entry into AI and big data technologies, coupled with its strategic investments in industries like retail, cultural tourism, finance, and automotive, has positioned Baidu as a leader in China's digital ecosystem. However, while Baidu has seen success in Southeast Asia, its expansion into Western markets has faced considerable challenges, primarily due to regulatory hurdles and cultural differences.

The study also reveals that Baidu's core strategy of "technology going global" has been integral to its international efforts. By emphasizing a unified technological solution adaptable to different regions, Baidu has been able to maintain a consistent product experience across various markets. The company's commitment to personalized user experiences, driven by its advanced big data

and AI capabilities, has allowed it to remain competitive despite the presence of other major players like Alibaba and Huawei.

Additionally, the findings suggest that Baidu's organizational structure, with a focus on technology, user growth, and commercialization, has contributed to its successful integration of AI and big data within its business model. However, the study also highlights a significant challenge: while Baidu has embraced rapid technological advancement, its organizational and cultural transformation has been slower. This misalignment between technological innovation and organizational adaptation has created barriers to fully realizing the potential of its digital transformation.

Ultimately, the study underscores the importance of aligning organizational change with technological innovation to achieve sustainable digital transformation. Baidu's journey exemplifies the complexities of navigating both technological and organizational shifts in a rapidly evolving global market.

6. Conclusions

As we know that Baidu's digital transformation includes not only social platforms, but also it includes digital platforms and advertising businesses. Compared to advertising, the business model of Baidu e-commerce is heavier. Baidu also has many platforms and accumulations in other fields and platforms for digital transformation. In terms of the supply chain, transaction mechanism, logistics, customer service, etc., it needs to have more in-depth cooperation with local enterprises, and investment has become a major starting point for cooperation. In some county, many products of Baidu, including Baidu Search engine, Baidu Cloud, Baidu AI, Baidu big data platform etc. there are also in progress. It was taken off the shelf long ago. The two geopolitical crises have allowed Baidu to learn lessons from experience, and investment is also a reasonable means to balance the relationship with local political and business interests. Baidu established the AI and big data engine business, which was officially released in June 2010, and initially entered the market with "marketing growth" related technical services. AI and big data Engine are holding its first press conference of this year today to introduce its achievements in "data-driven growth", but will not mention IaaS services for the cloud computinge being. Enter the B-side infrastructure", such as "databases, cloud computing, chips, etc.", "if it can be done, it will be an improvement to Chinese technology companies." In the to-C business, Baidu has once exploded with Baidu bigdata software, Baidu public and private Cloud, Baidu education, Baidu Games, etc. The emergence of a new force in the BAT pattern has taken an independent path. The absence of any one of them has broken the previous stereotype of some people that it is difficult for startups to challenge giants. In the to-B business, they are still novices in the industry. It was still not valued or favored by other giants that entered the cloud computing market earlier. In terms of Baidu every R&D process and efficiency, the introduction of Baidu DevOps Development process management and automated testing, software automated monitoring and other technologies continues to improve product R&D efficiency and software quality. The evaluation mechanism of software and various digital business platforms, various business lines

continue to put forward constructive opinions and opcloud computingization suggestions on systems and platforms, and internal systems and platforms continue to enhance digital capabilities and creativity. During the epidemic period, the boundaries between the digital economy and the real economy of various companies have become increasingly blurred, the digital world is becoming a part of the real world, and the production factors, production methods, and production processes of industries are being reshaped by data. "Digital-first" will be the "must choose road" to build the future economy and reshape the development of the industry. In the process of Baidu's industrial digital upgrade, efficiency, safety, and ecology are the three major keywords. Efficiency is the key to business operations, and the purpose of the Industrial Internet is to reduce costs and increase efficiency. While industrial digitization creates huge value, it also generates massive amounts of data. Ensuring data security is a common proposition for the entire industry. Baidu also believes that ecological co-construction is the only option for industrial development. Baidu insists on being a "digital assistant" and combining the capabilities of its ecological partners to provide customers with the best products and services. Baidu’s reforms conform to the wave of China’s industrial digitization and digital industrialization, especially after the outbreak of the epidemic in 2020, the digital economy has become the driving force for the entire social and economic development, and the digital transformation of industries and enterprises has also More and more critical as well.

Author Contributions:

Conceptualization, J.C.; methodology, J.C.; software, J.C.; validation, J.C.; formal analysis, J.C.; investigation, J.C.; resources, J.C.; data curation, J.C.; writing—original draft preparation, J.C.; writing—review and editing, J.C.; visualization, J.C.; supervision, J.C.; project administration, J.C.; funding acquisition, J.C. All authors have read and agreed to the published version of the manuscript.

Funding:

Not applicable.

Institutional Review Board Statement:

Not applicable.

Informed Consent Statement:

Not applicable.

Data Availability Statement:

The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author(s).

Acknowledgments:

The authors acknowledge for the support and technical comments of all reviewers.

Conflict of Interest:

The authors declare no conflict of interest.

References

Kamil, A. S. (2016). Bytes of evolution: Essays on applying social physics lessons for management effectiveness (Doctoral dissertation, Massachusetts Institute of Technology).

Jia, P., & Stan, C. (2021). Artificial intelligence factory, data risk, and VCs' mediation: The case of ByteDance, an AI-powered startup. Journal of Risk and Financial Management, 14(5), 203.

Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitization and big data analytics: A research agenda. The Journal of Strategic Information Systems, 24(3), 149-157.

Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. Technovation, 102, 102217.

Wolf, G. (2017). New challenges of the digital transformation: The comeback of the vision-mission system. In Out-thinking organizational communications (pp. 113–128). Springer.

Ma, M. (2021). The world telecommunication market and digital transformation of the economy in the Republic of Belarus. University Economic Bulletin, (49), 15-21.

Herrigel, G., Wittke, V., & Voskamp, U. (2013). The process of Chinese manufacturing upgrading: Transitioning from unilateral to recursive mutual learning relations. Global Strategy Journal, 3(1), 109-125.

Saxenian, A. (2005). From brain drain to brain circulation: Transnational communities and regional upgrading in India and China. Studies in Comparative International Development, 40(2), 35-61.

Cui, J. (2025). Digital transformation in the media industry: The moderating role of human-AI interaction technologies. Media, Communication, and Technology, 1(1), 42.

Li, F. (2020). Leading digital transformation: three emerging approaches for managing the transition. International Journal of Operations & Production Management, 40(6), 809-817.

Grimes, S. (2018). Networking China: The digital transformation of the Chinese economy. University of Illinois Press.

Colombari, R., Geuna, A., Helper, S., Martins, R., Paolucci, E., Ricci, R., & Seamans, R. (2020). Digital Transformation of the Italian and US Automotive Supply Chains: Evidence from Survey Data. In 28th International Gerpisa Colloquium (pp. 8-12). Gerpisa.

Wan, Q., & Cui, J. (2024). Dynamic evolutionary game analysis of how fintech in banking mitigates risks in agricultural supply chain finance. arXiv preprint, arXiv:2411.07604.

Cui, J., Yan, C., & Hong, A. N. H. (2022). Tencent's Corporate Strategic Organizational Digital Management and Digital Transformation: A Case Study. Journal of Business and Social Sciences, 2022.

Yu, H., Dai, H., Tian, G., Xie, Y., Wu, B., Zhu, Y., Li, H., & Wu, H. (2020). Big-data-based power battery recycling for new energy vehicles: Information sharing platform and intelligent transportation opcloud computingization. IEEE Access, 8, 99605-99623.

Wei, S., & Wang, L. (2020). Examining the population flow network in China and its implications for epidemic control based on Baidu migration data. Humanities and Social Sciences Communications, 7(1), 1-10.