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Big Data as a Strategic Asset: Competitive Advantage, Business Model Transformation, and Managerial Intelligence in Chinese Enterprises

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Abstract

The strategic significance of big data has become a defining feature of contemporary management discourse, yet the conditions under which big data capabilities translate into sustained competitive advantage remain incompletely understood — particularly in emerging-market contexts where institutional dynamics, platform ecosystem dominance, and regulatory complexity co-determine competitive behavior at the firm level. This paper addresses that gap through a structured thematic review of peer-reviewed literature encompassing 38 studies across five analytically distinct thematic domains: big data as a strategic resource, big data and business model transformation, big data in organizational decision-making and managerial intelligence, implementation barriers and organizational challenges, and data governance at the policy-strategy interface. The Chinese enterprise context serves as the primary analytical frame, treated not as a generic emerging-market setting but as an institutionally distinctive environment shaped by state-directed digital infrastructure, platform conglomerate dominance, and a rapidly evolving data regulatory architecture. The synthesis produces three core findings. First, big data capability generates competitive value only through organizational mediators — dynamic capabilities, learning, governance, and culture — not through technology investment alone, establishing a consistent and strategically consequential gap between infrastructure capacity and realized competitive returns. Second, competitive advantage in China's data economy operates through three distinct pathways — capability reconfiguration, business model transformation, and decision intelligence — each requiring different organizational conditions and carrying different strategic risks. Third, China's institutional environment, including its data sovereignty regulation and state industrial policy, is an active co-determinant of enterprise-level competitive behavior rather than a background condition. The paper contributes an integrated strategic framework for understanding big data as a management phenomenon, advances a substantively grounded account of the Chinese enterprise context, and generates practitioner-relevant recommendations for enterprise strategists, policymakers, and management educators navigating the competitive imperatives of the data economy.

Keywords: *big data analytics capabilities; competitive advantage; business model innovation; organizational decision-making; data governance; digital transformation strategy; Chinese enterprise context*

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1. Introduction

The competitive logic of the contemporary enterprise has undergone a fundamental reorientation. Across industries and geographies, the capacity to generate, process, and strategically deploy data has emerged as a defining determinant of organizational performance, competitive positioning, and long-term viability. This shift is not merely technological. It represents a structural change in how competitive advantage is constructed, how business models are designed, and how managerial decisions are made under conditions of speed, complexity, and uncertainty. At the center of this transformation

is big data — a phenomenon characterized by the unprecedented volume, velocity, variety, and veracity of information now available to organizations willing and able to harness it.

Yet the strategic significance of big data remains incompletely understood in the management literature. A substantial body of scholarship has addressed the technical architecture of big data systems, the mechanics of data analytics platforms, and the operational applications of data-driven processes. Far less attention has been directed toward the strategic and managerial dimensions of the phenomenon: how big data functions as a strategic asset rather than merely an operational tool, how it reshapes competitive dynamics at the firm and industry level, and how organizations build the capabilities necessary to translate raw data into sustainable competitive advantage. The literature is further fragmented across disciplinary silos — with information systems scholars, operations researchers, and strategic management theorists addressing adjacent problems without sufficient theoretical integration.

This fragmentation becomes especially consequential when the analytical lens is trained on China. As the world's most populous digital economy, China presents a context for studying big data strategy that is both empirically significant and theoretically distinctive. The Chinese state has positioned big data as a national strategic priority, embedding it within successive industrial planning frameworks including the Made in China 2025 initiative, the New Generation Artificial Intelligence Development Plan, and the 14th Five-Year Plan's explicit emphasis on the digital economy (Liu, 2021; Yang, 2023). This policy architecture has produced a distinctive competitive landscape in which state-directed infrastructure investment, platform ecosystem dominance by a small number of technology conglomerates, and a rapidly evolving data regulatory regime co-evolve in ways that have no precise parallel in North American or European contexts (Liu, 2021; Zhang, 2025). Chinese enterprises navigate a strategic environment shaped not only by market competition but by institutional design, data sovereignty norms, and government-industry relationships that directly influence how big data capabilities are built, deployed, and governed (Shtub & Gal, 2022; Zhenbin, 2023).

Existing scholarship on big data in China tends to concentrate in one of two directions. The first is empirically oriented but narrowly scoped — examining specific applications of big data in particular sectors such as healthcare, manufacturing, or e-commerce, without integrating findings into a broader strategic management framework. The second is conceptually broader but geographically generic — drawing on global or Western evidence to advance theoretical propositions that are then applied to China without adequate attention to its institutional and competitive specificity. The result is a literature that is rich in empirical particulars and theoretical generalities but thin in integrated strategic analysis of how Chinese enterprises build and leverage big data capabilities in their actual operating environments.

This paper responds to that gap. It offers a structured thematic analysis of the relationship between big data capabilities and competitive advantage in Chinese enterprises, examining how big data reshapes business model logic, transforms organizational decision-making, creates implementation challenges that are simultaneously technical and managerial in character, and intersects with data governance and policy frameworks in ways that have direct strategic implications. The paper draws on an international body of management, strategy, and organizational studies literature, interpreted through the lens of China's distinctive institutional and competitive context, to advance an integrated account of big data as a strategic management phenomenon rather than a technology adoption problem.

The analysis is organized around five thematic pillars. The first concerns big data as a strategic resource — how capability-building frameworks, particularly the Resource-Based View and dynamic capabilities theory, illuminate the conditions under which big data generates durable competitive advantage. The second addresses business model transformation — how data-intensive logic disrupts established value creation and value capture mechanisms and enables the emergence of new organizational forms. The third examines organizational decision-making and managerial intelligence — how big data analytics reshapes the cognitive architecture of management, improves decision quality under uncertainty, and generates new demands on organizational learning. The fourth investigates implementation barriers — the organizational, technical, and institutional frictions that prevent many enterprises from translating big data investment into strategic outcomes. The fifth addresses data governance, regulatory frameworks, and the policy-strategy interface, with particular attention to how China's regulatory environment shapes strategic behavior at the firm level.

This paper pursues the following objectives. First, to examine the theoretical and empirical foundations of big data as a source of competitive advantage, with attention to what distinguishes sustained advantage from temporary performance improvement. Second, to analyze how big data capabilities drive business model transformation, identifying the mechanisms through which data-centric strategies alter value chain structure and market positioning. Third, to assess the role of big data in organizational decision-making, including its effects on managerial cognition, decision speed, and organizational intelligence. Fourth, to identify and categorize the strategic and organizational barriers to effective big data implementation, with attention to the Chinese enterprise context. Fifth, to examine the data governance and policy

dimensions of big data strategy in China and their implications for enterprise-level competitive behavior. Sixth, to synthesize these thematic analyses into an integrated strategic framework with practical relevance for managers and policymakers.

The paper contributes to the strategic management literature in three ways. It provides an integrative analytical synthesis that bridges capability theory, organizational learning, and competitive strategy in the specific context of big data. It advances a substantively grounded account of the Chinese enterprise context that treats its institutional characteristics as analytically constitutive of the strategic dynamics under examination. And it generates practitioner-relevant frameworks for understanding how big data investment can be translated into strategic outcomes, addressing a recognized gap between the theoretical literature on data capabilities and the applied management challenges facing enterprise decision-makers in rapidly digitalizing economies.

2. Review of Related Literature

2.1 Big Data as a Strategic Resource: Capability Building and Competitive Advantage

The question of whether big data analytics capabilities (BDAC) generate competitive advantage for firms has attracted substantial scholarly attention, producing a literature that is both theoretically rich and empirically contested. The dominant theoretical lens applied to this question is the Resource-Based View (RBV), which holds that sustained competitive advantage derives from resources and capabilities that are valuable, rare, inimitable, and non-substitutable. The application of RBV to big data, however, has produced findings that complicate rather than confirm straightforward resource-advantage logic.

A central and recurring finding is that the relationship between BDAC and competitive performance is not direct but mediated by intermediate organizational capabilities. Mikalef et al. (2020), in a widely cited study of Norwegian firms, demonstrated that BDAC exerts no direct effect on competitive performance; rather, the effect is fully mediated by dynamic capabilities, which in turn strengthen marketing and technological capabilities. This finding is significant because it implies that BDAC is a necessary but insufficient condition for competitive advantage — firms must possess the organizational capability to translate analytics insights into strategic and operational action. Garmaki et al. (2023) similarly found that the contribution of BDA to firm performance is mediated by organizational learning, arguing that BDAC is incomplete without the organizational ability to absorb, integrate, and apply data-derived knowledge continuously.

These mediation findings are consistent with and reinforced by the work of Dahiya et al. (2021), who advanced a framework distinguishing between BDA solutions based on vendor applications using public data — which generate no firm-specific knowledge and therefore no competitive advantage — and solutions based on custom applications using proprietary data, which produce the knowledge specificity required for sustained advantage. This distinction is strategically consequential: it suggests that the mere acquisition or deployment of big data tools does not constitute a strategic resource, and that durable advantage depends on the depth and proprietary character of the data and analytical architecture a firm builds over time.

In the Chinese enterprise context specifically, Shan et al. (2018) examined BDA adoption through the combined lens of resource-based theory and dynamic capability theory, finding that all three dimensions of firm resources — technological, human, and organizational — influence competitive advantage only indirectly, through their effects on dynamic capabilities. Strategy flexibility was identified as a distinct pathway to advantage not captured by RBV alone. This finding is particularly relevant to the Chinese context, where rapid market shifts, regulatory changes, and platform ecosystem disruptions require firms to reconfigure capabilities dynamically rather than rely on static resource positions.

Zhang et al. (2022), drawing on Chinese manufacturing firms, found that big data capability shapes competitive advantage primarily through an exploitative innovation strategy rather than an explorative one, and that ambidextrous innovation — pursuing both simultaneously — only partially mediates the relationship. This suggests that Chinese firms deploying big data capabilities tend to favor deepening and refining existing competitive positions over radical innovation, a strategic preference that may reflect both the institutional environment and the competitive dynamics of China's domestic markets.

Methodologically, the literature in this theme is heavily weighted toward quantitative, survey-based designs employing structural equation modeling — particularly PLS-SEM — applied predominantly to manufacturing firms in developed or emerging markets (Huynh et al., 2023). This creates important limitations: findings from Norwegian IT

managers (Mikalef et al., 2020), Italian SMEs (Ferraris et al., 2019), and Chinese manufacturers (Zhang et al., 2022) are not straightforwardly comparable, and sector-specific dynamics are often undertheorized. The preponderance of manufacturing-sector samples means that service-sector, platform-based, and knowledge-intensive industries are underrepresented, creating a gap in understanding how BDAC translates into competitive advantage in precisely those sectors where big data is most extensively deployed in the Chinese context.

Notwithstanding these limitations, the literature converges on a theoretically consistent position: big data functions as a strategic resource when it is combined with organizational learning capabilities, proprietary analytical architectures, and dynamic managerial capacities to reconfigure strategy in response to environmental change (Mazzei & Noble, 2019). RBV provides the foundational logic, but dynamic capability theory is required to explain the mechanism through which data-intensive resources become competitively significant (Yasmin et al., 2020).

2.2 Big Data and Business Model Transformation

If big data capabilities constitute a strategic resource, the organizational form through which their value is realized is the business model. A growing and analytically substantive literature has examined how big data capabilities drive business model innovation (BMI), producing a picture of transformation that is neither linear nor universal but contingent on entrepreneurial orientation, environmental conditions, firm size, and industry structure (Ciampi et al., 2021).

Ciampi et al. (2021), in a study of 253 UK firms using both PLS-SEM and fuzzy-set qualitative comparative analysis, found that BDAC exerts both direct and indirect positive effects on BMI. Crucially, the indirect effect is mediated by entrepreneurial orientation — a higher-order dynamic capability that shapes a firm's strategic intent and risk tolerance with respect to innovation. This finding establishes that the translation of data capability into business model change is not automatic; it requires an organizational disposition toward experimentation and reconfiguration. Firms with strong analytical capabilities but low entrepreneurial orientation may improve operational efficiency without fundamentally altering their value creation and capture logic.

Acciarini et al. (2023), in a systematic review of 311 Scopus-indexed articles, mapped the landscape of big data applications across business model dimensions, identifying that the dominant uses — customer analytics, operational optimization, and supply chain management — concentrate value creation in existing model components rather than producing genuinely new business model architectures. This finding raises an important strategic question: under what conditions does big data investment drive disruptive business model innovation rather than incremental improvement?

In this regard, Sestino et al. (2020), in a systematic review of studies examining the joint role of IoT and big data in business digitalization, found that these technologies function primarily as reengineering forces for existing processes rather than as engines of new model creation — but that the combination of IoT and big data, by enabling real-time data capture and continuous feedback loops, opens structural pathways to platform-based models that were not previously viable for non-technology incumbents. Bresciani et al. (2021) similarly positioned digital transformation, including big data adoption, as a springboard for simultaneous product, process, and business model innovation, arguing that the three dimensions are interdependent and that firms treating data primarily as an operational efficiency tool forgo the higher-order value available through model-level transformation.

Comparable SME strategy work in the Philippine retail context shows that value innovation can be pursued through service redesign, digital touchpoints, and sustainability features when these are embedded in business model reconfiguration rather than treated as isolated promotional tools (Teodosio et al., 2025).

The evidence on firm size is noteworthy and strategically significant. Bouwman et al. (2019), in a study of 321 European SMEs, found that digital transformation produces performance benefits only when firms invest meaningfully in business model experimentation and strategy implementation — not merely in technology adoption. Ciacci et al. (2023) found that the effect of BDAC on BMI is amplified under conditions of environmental hostility — competitive pressure, market turbulence, and regulatory instability motivate firms to convert data capabilities into genuine model innovation rather than marginal optimization.

A related Philippine legacy-retail case likewise indicates that omnichannel transition becomes strategically meaningful only when firms convert inherited strengths, such as brand salience, trust, and physical footprint, into dynamic capabilities suited to platform-based competition (Atento & Atento, 2026).

For the Chinese context, these dynamics are particularly salient. The platform ecosystems anchored by Alibaba, Tencent, JD.com, and Pinduoduo have not simply adopted big data as a tool — they have constructed data architectures

as the foundational logic of their business models, making data accumulation, user behavioral analytics, and predictive personalization the core sources of value creation (Gao, 2025). Xu et al. (2024), examining Chinese manufacturing firms, found that digital transformation improves innovation performance through a chain-mediation mechanism involving big data capability and organizational agility — suggesting that the route from data investment to model-level innovation in the Chinese manufacturing sector runs through the development of organizational flexibility rather than analytical sophistication alone.

Methodologically, this theme draws on a mix of systematic reviews, survey-based quantitative studies, and case analyses. The Chinese manufacturing evidence (Xu et al., 2024) and the European SME evidence (Bouwman et al., 2019; Ciacci et al., 2023) together suggest that firm-level and contextual conditions are significant moderators of the BDAC-BMI relationship — a finding the existing literature has not yet theorized fully.

2.3 Big Data in Organizational Decision-Making and Managerial Intelligence

The translation of big data into organizational value depends ultimately on its integration into decision-making processes. A substantial body of literature has examined how big data analytics reshapes decision quality, decision efficiency, and organizational intelligence, producing findings that are broadly positive but more nuanced and conditional than the popular management discourse on data-driven decision-making suggests.

Ghasemaghaei et al. (2018), in a foundational empirical study of 151 IT managers and data analysts, operationalized data analytics competency as a multidimensional construct encompassing data quality, bigness of data, analytical skills, domain knowledge, and tool sophistication. Their findings demonstrated a large and significant positive relationship between data analytics competency and firm decision-making performance — across both decision quality and decision efficiency. Notably, the dimension of data bigness alone did not improve decision efficiency, implying that the scale of data available to a firm is strategically inert without the accompanying human and organizational capabilities to deploy it purposively.

Li et al. (2021), in a study of 240 Chinese agricultural firms, found that big data analytics usage positively affected decision-making quality through the mediating role of data analytics capabilities — consistent with the capability-building logic established in Theme 2.1. This Chinese-context study demonstrates that the decision-enhancing effects of big data are not limited to high-technology or manufacturing environments but extend to more traditional economic sectors undergoing digital transformation.

Awan et al. (2021) examined the relationship between BDAC and decision-making quality in Czech manufacturing firms, finding that BDA capability and business intelligence together positively influence decision quality, with data-driven insights serving as an enabling mechanism. Their study extends the analysis to a circular economy context, demonstrating that decision improvements enabled by big data produce measurable environmental performance outcomes — a finding relevant to firms operating under sustainability mandates, which in China increasingly include state-directed environmental targets.

Importantly, the literature is not uniformly optimistic about the decision-enhancing effects of big data. Ghasemaghaei and Calic (2022) introduced a theoretically important corrective, demonstrating that big data availability is a double-edged sword that can indirectly both increase and decrease decision-making quality. While big data affords improved analytics use and better-informed judgments, it simultaneously generates work stress and cognitive overload, which diminish decision quality — and this negative effect is moderated by employee autonomy and skill levels. This finding has direct managerial implications: organizations that invest in data infrastructure without investing equivalently in workforce development, managerial capability, and organizational design for analytics may find that the complexity introduced by big data actively degrades the quality of the decisions it was intended to improve.

The organizational conditions enabling data-driven decision-making are themselves a subject of emerging inquiry. Bilkstyte-Skane and Akstinaitė (2023), in a study drawing on 1,091 respondents across ten EU countries, identified the organizational changes required for successful data-driven decision-making adoption: culture and mindset transformation, digitalization of processes, development of new competencies, organizational restructuring, and regulatory alignment. The primacy of cultural and mindset factors over technical factors in this study is consistent with a broader theme in the literature: organizational culture is a more binding constraint on data-driven decision-making than technical infrastructure, particularly in organizations with established hierarchies and managerial traditions resistant to algorithmic or evidence-based challenge.

Comparable work on integrated analytics in healthcare similarly positions decision quality as the mediating mechanism through which data integration and analytics capability are converted into dual organizational outcomes, reinforcing the view that analytics value depends on socio-technical alignment rather than technical sophistication alone (Atento et al., 2025).

This cultural dimension has particular relevance in the Chinese enterprise context. Shamim et al. (2020), studying Chinese firms engaged in big data activities, found that both contractual and relational governance mechanisms shape BDA capability and, through it, decision-making performance — a finding that underscores the importance of formal and informal organizational arrangements in enabling data-driven intelligence. Niu et al. (2021) further argued that robust organizational business intelligence frameworks are needed not only to process data but to translate processed information into actionable organizational knowledge — a capability-building task that is as much managerial as it is technical.

Adjacent evidence from accounting practice adds a useful caution: AI-enabled decision support becomes strategically viable only when outputs are traceable, verification burdens are manageable, and accountable human judgment remains embedded in high-stakes decisions (Bendal et al., 2026).

2.4 Implementation Barriers: Organizational, Technical, and Institutional Challenges

A persistent and strategically consequential gap in the big data literature is the distance between the documented potential of BDAC and its realized organizational outcomes. The evidence consistently shows that many firms, particularly those outside the technology-intensive sector and large enterprise tier, struggle to convert big data investments into the strategic and operational benefits the literature promises (Garmaki et al., 2023; Mikalef et al., 2020). This gap is explained by a layered set of barriers that are simultaneously technical, organizational, financial, and institutional.

Raut et al. (2020), in a study of Indian manufacturing supply chains using Interpretive Structural Modeling and DEMATEL analysis, identified twelve significant barriers to BDA implementation and established their hierarchical interdependencies. The four most significant barriers — lack of top management support, lack of financial support, lack of skills, and lack of defined techniques or procedures — are predominantly organizational rather than technical in character. This finding is consistent with the broader pattern in the literature: technical infrastructure deficits are real but addressable, while organizational and leadership barriers are more deeply embedded and resistant to resolution through technology investment alone.

Lutfi et al. (2022), applying a technology-organization-environment (TOE) framework to Jordanian SMEs, found that relative advantage, complexity, security, top management support, organizational readiness, and government support all significantly influence big data adoption — while competitive pressure and compatibility with existing systems did not emerge as significant. The prominence of security concerns and organizational readiness as adoption determinants in this emerging-market study suggests that the institutional and regulatory environment co-determines implementation success in ways not adequately captured by technology-centric adoption models.

The differential experience of SMEs versus large enterprises represents one of the most consistent and practically important findings in this literature. De Vecchio et al. (2018) mapped the distinct challenges facing SMEs and large corporations in leveraging big data for open innovation, finding that SMEs are constrained by financial limitations, technical expertise deficits, and difficulties in establishing data partnerships. Kgakatsi et al. (2024), in a systematic review of 93 studies on big data and SME performance, found that large firms are significantly more likely to adopt big data, implement enterprise-wide strategies, and derive competitive benefits. Cahyono et al. (2025) further confirmed that SME-specific implementation challenges include organizational culture misalignment and resistance to process transformation.

Justy et al. (2023), studying European SMEs, identified a nuanced tension: while data analytics tools are increasingly affordable and accessible, the organizational absorptive capacity to use them strategically is not uniformly distributed. The gap between data availability and strategic utilization is not primarily a technology problem but a capability problem — one that requires sustained investment in analytical talent, managerial education, and organizational process redesign. Aldossari et al. (2023), in a systematic review identifying thirteen key BDA adoption factors, found that top management support, training, relative advantage, IT infrastructure, security, and government IT policies consistently rank as the highest-influence determinants.

Parallel evidence from SME accounting-software adoption in the Philippines suggests a similar technology-organization-environment pattern, where usability and workflow fit may be strong while cost-value clarity and data security confidence remain practical constraints on deeper technology use (Carandang et al., 2026).

In the Chinese context, these barriers operate within a distinctive institutional environment that both moderates and amplifies standard implementation challenges. The concentration of advanced data infrastructure and talent in major urban centers creates geographic asymmetries in implementation capacity that mirror but exceed the SME-large firm divide observed globally. At the same time, Chinese state policy has explicitly addressed some of these barriers through the Big Data Comprehensive Pilot Zone program, which has been shown to stimulate enterprise digital innovation — though the benefits are concentrated in economically advanced eastern regions and technology-intensive industries (Luo et al., 2025).

Adoption evidence from AI-enabled education also points to the same institutional boundary conditions: users may recognize value in analytics and personalization while still identifying access, cost, privacy, and algorithmic bias as system-level constraints (Rao et al., 2025).

2.5 Data Governance, Regulation, and the Policy-Strategy Interface in Emerging Markets

Big data strategy does not operate in an institutional vacuum, and in no context is this more evident than China, where the regulatory and policy environment is an active co-determinant of strategic behavior at the firm level. The literature on data governance, regulation, and the policy-strategy interface reveals a complex and rapidly evolving terrain in which enterprise-level competitive decisions are shaped by state industrial policy, data sovereignty concerns, regulatory compliance demands, and broader geopolitical dynamics.

Shamim et al. (2020), in a study of Chinese firms engaged in big data-related activities, found that both contractual governance — formal contracts governing data use and access — and relational governance — trust-based norms and relationships — positively influence BDA capability and, through it, decision-making performance. A data-driven organizational culture was found to moderate the BDA capability-performance relationship positively, suggesting that governance mechanisms and cultural conditions interact in shaping whether big data investment produces strategic returns.

Fast et al. (2021) developed an overarching framework for examining the relationship between regulation, big data, and competitive advantage in digital markets. They identified six firm-level factors that enable data-driven market power — scale, scope, exclusivity, learning effects, data quality, and network effects — and characterized three regulatory approaches to governing that power: empowering consumers, mandating data openness, and limiting data scale. Their framework is directly relevant to the Chinese regulatory context, where the state has pursued elements of all three approaches through the Personal Information Protection Law (PIPL), the Data Security Law, and the Cybersecurity Law.

Liu (2021) situated China's data governance approach within a broader framework of data politics, arguing that data differs from traditional strategic assets in being non-rival and partially excludable, generating externality, commitment, and valuation problems that drive states toward data sovereignty policies. China's data localization requirements and cross-border data flow restrictions, Liu argues, create a deep-versus-broad dilemma for Chinese technology firms: deep ties with the state facilitate domestic market access but complicate international expansion.

A parallel regulated-industry case from Philippine retail pharmacy similarly suggests that trust, compliance capability, and digital adaptation can operate together as strategic resources when incumbents confront policy reform and technology-driven disruption (Atento & Atento, 2025).

Wang (2022), in an analysis of data governance practices in China's fintech sector, characterized the operational logic of Chinese firm-level data governance as oriented around three tasks: standardization, configuration, and monetization of big data. Wang found that the imperative of business innovation drives firms to expand data collection from an ever-wider range of sources, creating governance complexity that has in turn prompted the state to intensify regulatory oversight — capturing a central feedback loop in China's data economy.

Komolafe et al. (2024), in a systematic review of business analytics adoption in emerging markets, found that business analytics significantly enhances strategic decision-making, operational efficiency, and innovation in these contexts, but that data privacy, security, and digital skills gaps represent persistent barriers. Xie et al. (2021), examining Chinese listed companies, found that both international and related business diversification improve firms' innovation performance, with effects amplified in environments with higher big data development.

The policy-strategy interface is particularly visible in China's Big Data Comprehensive Pilot Zone program, which has been shown to significantly promote enterprise digital innovation, with benefits concentrated in eastern regions, non-resource cities, and technology-intensive industries (Luo et al., 2025). Hu et al. (2024), analyzing panel data from 280 Chinese cities, confirmed that the BDCPZ policy significantly promotes digital economy development, with technological innovation and human capital serving as the primary transmission mechanisms — establishing that China's approach to

big data strategy is a result of deliberate state-enterprise co-production of digital capability rather than a purely market-driven phenomenon.

2.6 Synthesis of Literature

The five thematic bodies of literature reviewed converge around three overarching propositions. First, big data functions as a strategic asset only under specific organizational conditions. Across all themes, competitive and decision-making benefits are contingent on complementary organizational capabilities — dynamic capabilities, organizational learning, entrepreneurial orientation, knowledge management, data governance architecture, and data-driven culture. Big data capability must be understood as an organizationally embedded phenomenon, not a standalone technological asset.

Second, the translation of big data capability into competitive advantage operates through multiple and distinct strategic pathways — capability reconfiguration, business model transformation, and decision intelligence — each with different requirements, risks, and timelines. The existing literature has examined these pathways largely in isolation, without a framework that integrates them into a coherent strategic logic.

Third, the realization of big data's strategic potential is shaped in fundamental ways by institutional, regulatory, and policy contexts, which are particularly pronounced in China. State-directed digital infrastructure, platform ecosystem dominance, and a rapidly evolving regulatory architecture interact with firm-level strategy in ways that require explicitly institutional analytical frameworks. Market-centric and capability-centric models derived from Western evidence are insufficient to account for these dynamics.

2.7 Gaps in the Literature

Six substantive gaps motivate this paper's contribution. First, the absence of an integrated strategic framework linking the capability, model, and decision pathways. Second, inadequate theorization of the Chinese enterprise context as analytically distinctive rather than as a generic emerging-market setting. Third, underexplored tension between competitive advantage logic and the double-edged effects of big data on decision-making quality. Fourth, the SME-large enterprise asymmetry in the Chinese context has not been analyzed through the lens of China's distinctive enterprise landscape. Fifth, the policy-strategy feedback loop in China's data economy — through which firm-level behavior shapes regulatory design and vice versa — has not been examined as a strategic management problem. Sixth, practitioner-relevant strategic guidance for non-platform traditional incumbents attempting to leverage big data capabilities remains underdeveloped.

2.8 Contribution of the Present Paper

Against this backdrop, the paper makes three analytically distinct contributions. The first is integrative: it synthesizes the capability, business model, and decision intelligence pathways into a coherent analytical framework, mapping the organizational conditions enabling each and identifying their interactions. The second is contextual: it advances a substantively grounded account of the Chinese enterprise context as analytically constitutive of the strategic dynamics under examination, engaging directly with platform ecosystem dynamics, state-directed infrastructure, regulatory architecture, and the heterogeneous capabilities of China's enterprise population. The third is critical and practitioner-oriented: it engages explicitly with the double-edged character of big data's effects, incorporating corrective evidence into a more realistic and strategically honest account of what BDAC can and cannot be expected to deliver under the organizational conditions that actually prevail in Chinese enterprises.

3. Methodology

3.1 Research Design

This paper adopts a structured thematic review design as its primary methodological approach. Structured thematic reviews are recognized as a rigorous and analytically productive form of non-empirical scholarship in strategic management and related disciplines, particularly when the objective is to synthesize a body of literature that is theoretically fragmented, geographically dispersed, or methodologically heterogeneous in ways that prevent straightforward meta-analytic integration (Kraus et al., 2022; Paul et al., 2021). The choice of this design is appropriate to the paper's purpose: to develop an integrated analytical framework for understanding how big data capabilities shape competitive advantage, business model transformation, and organizational decision-making in the Chinese enterprise context — a purpose that requires thematic synthesis and strategic interpretation rather than the aggregation of effect sizes across empirically comparable studies.

3.2 Source Orientation

The literature base was constructed through a dual-sourced retrieval process. The primary retrieval channel was the Consensus academic search platform, which draws on a corpus of over 200 million peer-reviewed papers indexed across Semantic Scholar, PubMed, Scopus, and ArXiv. Searches were conducted using theoretically informed queries aligned with each of the five thematic pillars. All searches were restricted to peer-reviewed publications and focused on the period from 2018 to 2025, reflecting the rapid pace of development in both the empirical landscape of big data adoption and the theoretical literature on BDAC and competitive strategy. Papers published before 2018 were incorporated selectively where they represent foundational theoretical contributions that remain analytically indispensable. A secondary retrieval channel drew on the reference lists of the source material provided for this study, used to identify studies directly relevant to the Chinese enterprise context and to the thematic areas of business model transformation and societal implications of big data.

3.3 Inclusion Logic

Papers were assessed for inclusion according to four criteria applied in sequence. The first was disciplinary alignment: papers were included only if their analytical focus fell within strategic management, competitive strategy, management innovation, organizational behavior, or information systems as applied to management. The second was contextual relevance: papers were prioritized if they addressed emerging markets, China, or Asian business contexts, or if they examined firm-level strategic behavior in environments characterized by platform ecosystem competition, regulatory complexity, or institutional heterogeneity. The third was methodological credibility: papers were assessed for rigor in study design, clarity of sampling, and transparency in reporting limitations. The fourth was citation impact, used as a secondary filter for identifying foundational contributions rather than as a primary quality indicator.

3.4 Thematic Grouping Logic

The five themes were developed through an iterative process combining deductive and inductive logic. The deductive element drew on the paper's central research problem and identified the theoretical domains that any analytically complete treatment must address: capability theory and competitive strategy, business model theory, organizational decision-making, implementation dynamics, and institutional and regulatory context. The inductive element emerged from an initial survey of the retrieved literature. The thematic sequence was designed to move from foundational to applied, and from capability logic to contextual constraint — ensuring that the analytical synthesis draws on a coherent and logically ordered body of evidence.

3.5 Evaluative and Analytical Criteria

The analytical treatment of each thematic area was guided by five evaluative questions applied consistently. First, what does the evidence establish about the central relationship under examination, and how robust is that evidence across methodological approaches and contexts? Second, where does the evidence diverge, and what do those divergences reveal about the conditions under which the relationship holds or fails? Third, what methodological biases or limitations characterize the body of evidence, and how do they affect conclusions? Fourth, how does evidence from the Chinese enterprise context align with, diverge from, or complicate evidence drawn from other markets? Fifth, what are the strategic and managerial implications of the evidence for enterprise decision-makers and policymakers in data-intensive competitive environments?

3.6 Geographic and Sectoral Scope

The paper maintains a primary analytical focus on China as an enterprise context, while drawing on evidence from other emerging markets — particularly India, Malaysia, Jordan, and Sub-Saharan Africa — where evidence illuminates dynamics relevant to the Chinese context by structural or institutional analogy. Evidence from developed-economy contexts is incorporated where it provides foundational theoretical insights not available from emerging-market studies. The paper does not present these geographies as equivalent: the Chinese context is treated as analytically primary, and evidence from other contexts is explicitly framed in terms of its transferability and limitations.

3.7 Limitations of the Approach

Three limitations are relevant to the interpretation of this paper's findings. First, the design does not permit causal inference. The analytical synthesis identifies patterns, mechanisms, and strategic implications grounded in the reviewed

evidence, but it cannot establish causal relationships with the precision available through experimental designs. Second, the literature base is subject to publication bias: studies documenting positive relationships between BDAC and competitive outcomes are more likely to have been published than null or negative findings. This paper has sought to counteract this bias by giving explicit analytical attention to null findings and implementation failures. Third, the Chinese enterprise evidence base remains concentrated in large listed companies and manufacturing enterprises. The strategic experience of Chinese SMEs, private service-sector firms, and enterprises operating outside China's eastern digital corridor is underrepresented, and this limitation shapes the paper's recommendations regarding future research and policy design.

4. Analytical Synthesis

4.1 Big Data Capabilities and the Reconfiguration of Competitive Advantage: An Integrated Assessment

The literature reviewed across Themes 2.1 through 2.5 supports a consistent but theoretically important qualification of the dominant managerial narrative surrounding big data and competitive advantage. The popular framing — that data is the new oil, that firms possessing more data win, and that big data investment translates reliably into strategic superiority — is not supported by the weight of the evidence. What the evidence does support is a more conditional and organizationally grounded proposition: big data capabilities create the preconditions for competitive advantage, but the realization of that advantage depends on the presence, depth, and coherence of complementary organizational, managerial, and institutional conditions that are unevenly distributed across firms, sectors, and geographies.

The most theoretically significant finding across the capability literature is the absence of a direct effect between BDAC and competitive performance when organizational mediators are accounted for. Mikalef et al. (2020) established this for dynamic and operational capabilities; Garmaki et al. (2023) established it for organizational learning; Ferraris et al. (2019) established it for knowledge management orientation. Taken together, these studies produce a consistent picture: BDAC is a lower-order input capability that must be translated into higher-order organizational capabilities before competitive value is generated. Investment in data infrastructure and analytics tools without commensurate investment in organizational capability development is not simply suboptimal — it is strategically inert.

Dahiya et al. (2021) introduced a further distinction that sharpens this analysis: only BDA solutions built on custom applications and proprietary data generate the firm-specific knowledge that produces sustained competitive advantage. Generic, vendor-based analytics applied to publicly available data do not satisfy the RBV criteria for sustained advantage because they are, by definition, available to all competitors. This implies a strategic threshold below which big data investment produces no durable competitive differentiation, and above which the returns to proprietary data and custom analytical capability become self-reinforcing.

The Chinese evidence from Shan et al. (2018) and Zhang et al. (2022) adds an important contextual dimension. Both studies find that dynamic capabilities, particularly strategic flexibility, mediate the relationship between data resources and competitive outcomes in the Chinese market — amplified by China's distinctively high-velocity competitive environment. In a market where platform ecosystem dynamics, regulatory changes, and competitive entry patterns shift rapidly, the ability to reconfigure strategic orientation in response to data-derived insights is itself a competitive capability, not a consequence of competitive position.

4.2 Business Model Transformation Pathways in Data-Intensive Markets

The analytical synthesis of the business model transformation literature reveals three distinct pathways through which big data capabilities reshape competitive positioning, each with different organizational requirements and strategic risks.

The first is the optimization pathway, through which big data capabilities are applied to improve the efficiency and effectiveness of existing business model components — supply chain management, customer relationship management, pricing, and operational process control — without altering the fundamental logic of value creation or capture. As Acciarini et al. (2023) found, the dominant uses of big data concentrate value in existing model components. The optimization pathway is the most common, most immediately tractable, and least strategically differentiated: because these improvements are replicable by competitors with similar analytical toolsets, they do not generate sustained competitive advantage.

The second is the augmentation pathway, through which BDAC enables the extension of existing business models into new customer segments, geographies, or product categories by reducing the information asymmetries that previously constrained market entry or customer targeting. Ciampi et al. (2021) demonstrated that BDAC has a direct positive effect

on business model innovation amplified by entrepreneurial orientation. The augmentation pathway requires entrepreneurial capacity as a complement to analytical capability, and in its absence, even high levels of BDAC produce incremental rather than transformative competitive positioning.

The third is the platform pathway, through which data capabilities enable the construction of multi-sided market architectures deriving value from network effects, data accumulation at scale, and the monetization of ecosystem participation. The evolution of Alibaba, Tencent, JD.com, and Pinduoduo illustrates how the platform pathway generates competitive dynamics qualitatively different from those produced by the optimization or augmentation pathways (Gao, 2025). For the vast majority of Chinese enterprises that cannot become platform firms, the strategic question becomes what combination of optimization and augmentation pathways can sustain viable competitive positioning. The evidence from Xu et al. (2024) and Ciacci et al. (2023) collectively suggests that the answer depends critically on organizational agility — and that the competitive pressure exerted by China's platform economy may itself be a catalyst for business model transformation.

4.3 Data-Driven Decision Intelligence as a Strategic Capability

The decision intelligence dimension of big data strategy represents the most organizationally intimate and managerially complex pathway through which BDAC creates value. The evidence from Ghasemaghaei et al. (2018) establishes that data analytics competency — encompassing data quality, analytical skills, domain knowledge, and tool sophistication, but notably not data volume alone — is the operative construct for improving both decision quality and decision efficiency. The firm that possesses large quantities of data is not necessarily the firm that makes better decisions; the firm that makes better decisions combines relevant data with the human and organizational capabilities to interpret and act on it effectively.

Ghasemaghaei and Calic (2022) introduced an analytically critical corrective: big data is a double-edged sword that can simultaneously improve and degrade decision quality, with the negative effect operating through work stress and cognitive overload among managers who face increased information complexity without adequate organizational support. Firms that implement big data analytics systems without redesigning decision processes, managing information load, and developing managerial skills to navigate analytical complexity may find that their investment increases decision-making noise rather than signal.

Li et al. (2021), working with Chinese agricultural firms, demonstrated that the decision-enhancing effect of big data is not automatic but requires a developed organizational capability to be productive — confirming that decision intelligence benefits are attainable in sectors well outside technology-intensive environments. Shamim et al. (2020) established that both contractual and relational governance mechanisms positively influence BDA capability and decision-making performance in Chinese firms, suggesting that formalization of data governance is a prerequisite for reliable decision intelligence rather than a compliance overhead.

4.4 The Implementation Gap: Barriers, Asymmetries, and Strategic Workarounds in the Chinese Context

The three pathways analyzed above are achievable in principle for a wide range of Chinese enterprises. The evidence on implementation barriers establishes, however, that the gap between strategic potential and realized outcomes is substantial, systematically distributed, and partially predictable from firm-level and contextual characteristics (Shamim et al., 2018).

The most consistent finding across the implementation literature is the primacy of organizational and leadership barriers relative to technical ones. Raut et al. (2020) identified lack of top management support as the highest-driving-power barrier, a finding replicated by Lutfi et al. (2022), Aldossari et al. (2023), and Kgakatsi et al. (2024). The binding constraint on big data implementation in most organizations is not the availability or affordability of technology but the organizational commitment and governance capability required to deploy technology strategically.

The SME-large enterprise asymmetry is perhaps the most strategically consequential structural finding in the implementation literature. De Vecchio et al. (2018), Kgakatsi et al. (2024), and Cahyono et al. (2025) collectively establish that large firms are better positioned to implement big data strategies along every dimension. In China, this asymmetry is compounded by geographic concentration of infrastructure and talent, the competitive advantage of large state-owned enterprises and platform conglomerates in attracting data science expertise, and the regulatory compliance burden imposed by China's data governance legislation (Ji, 2023). Platform ecosystem participation — through Alibaba's merchant analytics tools, JD.com's supply chain data services, or Tencent's commercial intelligence products — provides Chinese

SMEs with a strategic workaround, converting platform dependency from a purely competitive threat into a partial capability enabler (Li et al., 2017; Zeng & Glaister, 2017).

4.5 Governance, Regulatory Pressure, and Strategic Adaptation in China's Data Economy

China's data governance regime — encompassing the Personal Information Protection Law, the Data Security Law, the Cybersecurity Law, and the Big Data Comprehensive Pilot Zone program — creates a regulatory architecture that simultaneously constrains certain competitive behaviors, enables others, and generates compliance demands that reshape the strategic calculus of data-intensive enterprises (Creemers, 2022; Su & Zhang, 2025).

Liu (2021), Wang (2022), and Fast et al. (2021) collectively establish that China's data sovereignty orientation produces competitive dynamics that differ structurally from those operating in more liberal data governance regimes. Chinese firms in international markets face the deep-versus-broad dilemma identified by Liu (2021): the institutional support and data advantages of operating within China's protected digital ecosystem come at the cost of international data flows that would enable global competitive expansion.

The BDCPZ evidence from Luo et al. (2025) and Hu et al. (2024) establishes that state industrial policy, where effectively implemented, can accelerate enterprise digital innovation — but with pronounced regional and sectoral heterogeneity. Location within China's digital policy geography is itself a strategic variable: firms in BDCPZ cities have access to policy-enabled innovation environments that firms in less developed regions do not. An analysis of China's fintech sector identifies a policy-strategy feedback dynamic with broader applicability: firms that build sophisticated data governance capabilities as a response to regulatory pressure subsequently use those capabilities as competitive differentiators, converting compliance investment into strategic advantage (Wang, 2022).

Taken together, the five analytical dimensions converge on a core strategic proposition: competitive advantage from big data in the Chinese enterprise context is not primarily a function of data volume, technology investment, or analytical sophistication, but of the organizational, governance, and institutional architecture that determines whether and how data capabilities are built, translated into strategic action, and sustained under competitive and regulatory pressure.

5. Discussion of Findings

5.1 Theoretical Implications for Strategic Management and Competitive Strategy

The analytical synthesis produces findings that carry meaningful implications for strategic management theory. Three theoretical contributions warrant explicit discussion.

The first concerns the adequacy of the Resource-Based View as the foundational theoretical lens for big data strategy research. RBV provides a productive starting point — the VRIN framework helps explain why proprietary data assets and custom analytical architectures generate more durable advantage than generic platforms and shared data — but its emphasis on resource possession is insufficient to account for the process dynamics through which data capabilities become competitively significant. The evidence consistently demonstrates that BDAC generates competitive value only through mediated pathways involving dynamic capabilities, organizational learning, entrepreneurial orientation, and governance architecture. This pattern calls for a more process-oriented theoretical framework that treats big data strategy as an organizational capability development problem — one in which the sequence, coherence, and governance of capability-building investments are as strategically determinative as the investments themselves.

The second theoretical implication concerns the double-edged character of big data's effects on organizational decision-making. The strategic management literature has been broadly optimistic about the decision-enhancing effects of data analytics, treating data-driven decision-making as an unambiguous improvement over intuition-based management. The evidence reviewed here demands a more conditional theoretical position: the decision quality effects of big data are positive under conditions of adequate analytical skill, sufficient employee autonomy, and supportive organizational governance, and negative under conditions of cognitive overload, skill deficits, and governance misalignment. Incorporating this conditionality into theoretical frameworks requires moving beyond whether big data improves decisions — to which the aggregate answer is yes, conditionally — toward the more strategically precise question of under what organizational conditions those improvements are reliably producible.

The third theoretical implication concerns the role of institutional context in shaping competitive dynamics in data-intensive markets. The Chinese evidence demonstrates that state industrial policy, data sovereignty regulation, and

platform ecosystem architecture are not merely contextual background conditions but active co-determinants of the strategic options available to firms. This finding calls for a more explicit integration of institutional theory into strategic management frameworks for big data — an integration that goes beyond acknowledging contextual differences toward a theoretically principled account of how institutional structures shape the value, rarity, and imitability of data-related resources.

5.2 Implications for Chinese Enterprise Strategy and Emerging-Market Contexts

At the level of enterprise strategy, the findings carry implications specific to the Chinese context but partially generalizable to other emerging markets where platform ecosystems, state industrial policy, and regulatory complexity intersect.

For large Chinese enterprises — including state-owned enterprises, major private conglomerates, and platform firms — the primary strategic challenge is not capability building per se but governance coherence: ensuring that organizational, data governance, and decision architecture investments keep pace with technical infrastructure investments that tend to receive disproportionate managerial attention and capital allocation. The evidence from Shamim et al. (2020) and Wang (2022) suggests that Chinese firms that treat data governance as a strategic capability — not a compliance overhead — are better positioned to convert BDAC into reliable competitive advantage.

For Chinese SMEs, the findings support a more targeted and sequenced approach to big data strategy than the broad digital transformation prescriptions that dominate policy discourse. Given documented barriers of financial constraint, talent scarcity, and organizational capacity limitation (Zhang, 2024) — and the geographic concentration of digital infrastructure in China's eastern cities — the optimization pathway is the most immediately accessible route to extracting value from big data capabilities. Platform ecosystem participation offers a partial but important workaround, allowing SMEs to access decision intelligence capabilities that approximate what large enterprises achieve through proprietary BDAC development. The strategic risk of dependency on platform infrastructure is real but manageable, and for most Chinese SMEs less costly than forgoing data-driven competitive capability entirely.

For traditional enterprises undergoing digital transformation under competitive pressure from platform architectures, the finding from Ciacci et al. (2023) that environmental hostility amplifies the BDAC-BMI relationship offers a conditional source of strategic optimism: the competitive pressure exerted by platform disruption may itself generate the organizational urgency required to move from optimization-level to augmentation-level business model innovation.

5.3 Practitioner Implications

Three practitioner-relevant implications emerge from the analytical synthesis with sufficient consistency across the evidence to warrant direct guidance.

First, organizational capability investment must precede or accompany, not follow, data infrastructure investment. The recurrent finding that BDAC produces competitive value only through organizational mediators implies that firms building data infrastructure in advance of organizational readiness are likely to experience an implementation gap that is costly to close retrospectively. The strategically prudent sequence is to assess organizational readiness — leadership commitment, analytical talent, governance architecture, decision-process design — before scaling data infrastructure.

Second, data governance must be treated as a source of strategic advantage rather than a compliance cost. In China's regulatory environment specifically, firms that invest in data governance as a strategic capability — building consent management, data quality assurance, audit systems, and cross-functional data stewardship — acquire organizational capabilities that generate competitive returns beyond compliance, including more reliable BDAC, stronger data partnerships, and greater organizational trust with customers and regulators.

Third, the double-edged character of big data's decision-making effects demands deliberate organizational design. Managers who introduce big data analytics into decision processes without redesigning those processes — managing information load, clarifying the role of data-derived recommendations relative to managerial judgment, building analytical literacy, and ensuring adequate autonomy — risk generating precisely the cognitive overload and decision-quality degradation that the evidence identifies as big data's negative pathway (Ghasemaghaei & Turel, 2022; Merendino et al., 2018).

6. Conclusions and Recommendations

6.1 Summary of Core Findings

This paper set out to examine how big data capabilities translate into competitive advantage in the Chinese enterprise context, analyzing the strategic, organizational, and institutional conditions that enable or constrain that translation across three analytically distinct pathways: capability reconfiguration, business model transformation, and decision intelligence. Drawing on a structured thematic review of peer-reviewed literature encompassing 38 studies across five thematic domains, the paper has produced a set of findings that are both theoretically coherent and practically consequential.

The central finding is that big data does not function as a self-executing strategic asset. Its competitive value is conditional — mediated by dynamic capabilities, organizational learning, governance architecture, and managerial culture — and its decision-enhancing effects are bounded by the organizational conditions under which analytical outputs enter and shape managerial judgment. Firms that treat BDAC as a technology investment rather than an organizational capability development challenge are unlikely to close the gap between the strategic potential of big data and its realized competitive returns.

The second core finding concerns the strategic architecture of competitive advantage in China's data economy. Competitive advantage from big data in the Chinese context is not primarily determined by data volume or analytical sophistication but by the proprietary character of data assets, the organizational coherence of capability-building investments, the quality of data governance, and the firm's positioning relative to China's platform ecosystem and state industrial policy geography.

The third finding concerns the institutional co-production of competitive dynamics. China's regulatory architecture shapes the strategic options available to firms, the returns to particular capability investments, and the governance demands that enterprise strategy must satisfy. Firms that treat regulatory compliance as a strategic capability development opportunity rather than a constraint are better positioned to build governance architecture that generates durable competitive advantage.

6.2 Recommendations for Management Practice

For enterprise leaders in Chinese firms and comparable emerging-market contexts, the paper advances four strategically grounded recommendations. First, sequence capability investment deliberately: organizational readiness should be assessed and developed before or alongside data infrastructure scaling, not after it. Second, differentiate strategic pathways by firm type and competitive position: large enterprises should pursue decision intelligence and augmentation pathways through deliberate organizational investment, while SMEs should pursue optimization first, using platform ecosystem analytics as a capability access mechanism. Third, invest in data governance as a strategic asset: building genuine governance capability generates organizational capabilities with competitive value beyond compliance. Fourth, design decision processes explicitly for data-driven intelligence: parallel investment in decision-process redesign — specifying the role of algorithmic recommendation relative to managerial judgment and building analytical literacy — is as strategically important as the analytics capability itself.

6.3 Recommendations for Policy and Institutional Design

For Chinese policymakers and policymakers in comparable emerging-market economies, the paper advances three evidence-grounded recommendations. First, extend the geographic reach and sectoral scope of digital innovation policy support: the concentration of BDCPZ benefits in eastern regions and technology-intensive industries reproduces structural inequalities in big data capability. Extending support to second and third-tier cities and traditional sectors would broaden the competitive base of China's data economy. Second, design regulatory frameworks that reward governance capability, not merely compliance: tiered frameworks that offer operational advantages to firms demonstrating high-quality data governance would align private strategic incentives with public data governance objectives more effectively. Third, invest in organizational capability development as a public good: publicly supported programs for analytical workforce development, management education in data strategy, and SME-targeted organizational readiness assessment would generate returns to the broader digital economy that exceed those available from infrastructure investment alone.

6.4 Forward-Looking Statement

The era of big data is not approaching — it has arrived, and its competitive consequences are already reshaping the strategic landscape of Chinese industry and of emerging-market economies more broadly. The central strategic question is no longer whether big data matters but whether organizations possess the capability, governance, and institutional

alignment to make it matter in ways that are competitively durable and organizationally sustainable. The evidence reviewed and synthesized in this paper suggests that the organizations — and the economies — best positioned to answer that question affirmatively will be those that treat big data not as a technology to be deployed but as an organizational challenge to be governed, a strategic capability to be built deliberately, and an institutional relationship to be navigated with analytical precision and managerial discipline.

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