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Research on Working-Capital Management of Internet Enterprises from the Supply-Chain Perspective

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Abstract: In the era of the digital economy, the supply chains of internet enterprises have broken away from the traditional goods-circulation model and formed a new system centered on digital-content businesses, cloud services and multi-sided platform networks. Working capital is directly related to an enterprise's internal-management level and market competitiveness. Taking Tencent Holdings Limited as a case, this paper systematically analyzes the supply-chain structures and working-capital-management conditions of its diverse businesses, including digital-content businesses, cloud services, and fintech, from the perspective of supply-chain collaboration. The study finds that Tencent's working-capital management still suffers from problems such as substantial capital accumulation yet low capital turnover, mismatches between sales-proceeds collection and debt-repayment timelines, and low capital-allocation efficiency caused by isolated internal data. Accordingly, optimization suggestions are put forward: reduce capital occupation and accelerate capital turnover; establish a coordination mechanism to ease mismatches between proceeds collection and debt repayment; refine accounts-payable management; and eliminate internal data barriers.

Keywords: Supply-chain management; Working-capital management; Tencent; Internet enterprises

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1. Introduction

Against the wave of the global digital economy, internet-technology enterprises have become a key force driving economic growth and technological innovation. Their supply-chain systems have transcended the framework of traditional physical-goods circulation and built new-type network-oriented supply chains centered on digital-content creation and distribution, cloud-computing support, and multi-sided-platform ecosystem collaboration. As core liquid resources for an enterprise's daily operations, working capital management effectiveness directly affects corporate cash-flow safety, market-response capacity, and overall competitiveness. Tencent's businesses cover social networking, online games, fintech, cloud computing, and other fields. Alongside business expansion and growing ecosystem complexity, it is confronted with challenges such as

rising R&D investment, expanding infrastructure investment, and increasing difficulty in coordinating partners' account periods and settlements. The traditional working-capital-management model focusing merely on internal-process control can hardly adapt to such changes [1]. Therefore, optimizing working-capital management from the supply-chain-collaboration perspective carries important theoretical value and practical necessity.

In the 1990s, foreign scholars first proposed integrating supply-chain management with working-capital management, holding the view that supply-chain collaboration can effectively boost working-capital-turnover efficiency. Optimizing credit policies for accounts receivable can reduce capital occupation; meanwhile, working-capital management for internet enterprises should place emphasis on revenue conversion of R&D input and shorten capital-return cycles via supply-chain collaboration. With the development of artificial intelligence, AI algorithms enable accurate forecasting of working-capital demand and reduce capital accumulation. It also emphasizes that core enterprises shall assume the leading responsibility for supply-chain capital collaboration. Domestic research has gradually focused on the particularities of digital supply chains. The core logic of "data-driven plus collaborative control" provides theoretical support for internet enterprises to optimize working-capital allocation. Innovations in supply-chain finance exert optimizing effects on working-capital management; platform-based enterprises can resolve information asymmetry and optimize supply-chain capital allocation through data sharing. At the same time, supply-chain collaboration can indirectly improve working-capital-turnover efficiency and management levels by optimizing cost structures and integrating supply-chain resources [2].

Overall, existing studies mostly focus on traditional manufacturing enterprises or internet enterprises with single-business layouts. Systematic research on internet giants with diversified-business layouts and platform-based ecosystems remains scarce. Most research perspectives lean toward financial-indicator analysis, while in-depth analysis of internal correlations between supply-chain structures and working-capital management is insufficient. Optimization proposals are generally too general and lack operable schemes. Taking Tencent as a case, this paper analyzes its supply-chain structure and current working-capital-management status from the supply-chain-collaboration perspective, and further explores paths to improve working-capital-management efficiency for internet enterprises.

2. Analysis of Tencent's supply-chain and working-capital-management status

2.1. Basic profile of Tencent

Founded in November 1998 and headquartered in Shenzhen, Tencent Holdings Limited is a leading comprehensive-service internet provider in China and even globally. It was listed on the Main Board of The Stock Exchange of Hong Kong in 2004. By the end of 2025, Tencent had more than 110,000 employees, total assets reaching 2 trillion yuan, annual operating revenue exceeding 750 billion yuan, and net profit surpassing 220 billion yuan. Its businesses cover social networks, online games, digital content, cloud computing, fintech, and advertising services. Among them, digital content, cloud services and fintech serve as its three core profit-generating segments, accounting for 49%, 31%, and 19% of operating revenue respectively [3].

2.2. Analysis of Tencent's supply-chain structure

In the digital-content supply chain, the upstream links involve individual creators, independent studios and professional-content producers; the middle stream consists of Tencent's content-integration and technology platforms; the downstream covers hundreds of millions of individual users. Accounts payable mainly arise

from copyright fees, revenue-sharing payments or investment disbursements paid to upstream-content parties. Accounts receivable take up a relatively low proportion. Nevertheless, large-scale and long-cycle content-R&D investment creates high-capitalized "development-cost" items which occupy substantial working capital [4].

For the cloud-service supply chain, upstream participants include hardware suppliers of servers, chips and data-center infrastructure as well as software suppliers. Downstream clients comprise internet enterprises, traditional enterprises and government departments. Large-scale upfront capital expenditure, plus sizable accounts receivable with long account periods for enterprise clients, constitute key nodes of working-capital occupation.

The platform-ecosystem supply-chain centers on social platforms such as WeChat and QQ, connecting merchants, service providers, financial institutions and users. Capital accumulates in payment-provision-fund accounts, and other payables maintain a large scale, forming an important source of interest-free liabilities.

2.3. Research on Tencent's financial performance

In terms of profitability, Tencent's total operating revenue rose from 560.1 billion yuan in 2021 to 751.8 billion yuan in 2025, representing a compound annual growth rate of 7.6%, yet its growth rate slowed year by year. Gross profit margin peaked at 56.6% in 2021, dropped to 48.1% in 2022 due to rising content costs and intensified industrial competition, and rebounded to 56.2% in 2025. Net profit attributable to the parent company hit a high point of 224.8 billion yuan in 2021, fell to 115.2 billion yuan in 2022, and recovered to 224.8 billion yuan in 2025. Return on equity declined to 15.1% in 2022 and rebounded to 21.3% in 2025; profitability recovered partially and then slipped again [5]. See **Table 1**.

Table 1. Profitability-indicator data table

Indicator\Year	2021	2022	2023	2024	2025
Total Operating Revenue (Billion Yuan)	5601	6090	6422	6603	7518
Net Profit Attributable to Parent Company (Billion Yuan)	2248	1152	1427	1941	2248
Gross Profit Margin (%)	56.6	48.1	51.0	52.9	56.2
Net Profit Margin (%)	40.1	18.9	22.2	29.4	30.6
Average Return on Equity (%)	25.3	15.1	16.6	21.8	21.3

In terms of solvency, Tencent's current ratio remained above 1 over the past five years. Its short-term solvency stayed generally safe and stable with certain fluctuations. The current ratio climbed in 2022–2023, with current assets taking an increased share relative to current liabilities. It fell back to 1.25 in 2024, mainly caused by expanded current-liability scale, and rebounded to 1.44 in 2025, as current-asset growth outpaced current-liability growth, which widened the short-term solvency buffer once more. The asset-liability ratio hovered around 40%, reflecting a sound financial structure.

Regarding operating capacity, Tencent's accounts-receivable turnover ratio stayed within the range of 11.35–15.06 times from 2021 to 2025, presenting an overall upward trend. This indicates improved overall proceeds-collection management amid business-scale expansion of B-end cloud-service and advertising businesses, though large B-end clients still bring certain account-period pressure. The inventory-turnover ratio hit a recent peak of 694.2 times in 2024, consistent with internet enterprises' feature of digital-dominated inventories. The total-asset-turnover ratio remained between 0.35–0.39 times in the five-year period at a relatively low level. Capitalized investment in cloud-service IDC infrastructure, server hardware and

digital-content R&D enlarged total-asset scale and dragged down asset-turnover efficiency, which suggests room for improvement in Tencent's overall asset-utilization efficiency. Despite continuous revenue growth, heavy-asset investment expanded total assets at a parallel pace and restricted the improvement of the total-asset-turnover ratio. Compared with industry peers, Tencent posted a gross profit margin of 56.0%, higher than Alibaba's 39.95% and Baidu's 43.88%. Its net profit margin of 30.57% and return on equity of 21.13% both exceeded industry averages. Dupont analysis shows that Tencent's ROE = 22.2% × 0.2 × 1.69 = 7.50 %. Corporate profitability chiefly relies on a high net-profit margin, while a low total-asset-turnover ratio constitutes the major constraint on return-on-equity growth [6].

From the perspective of the current status of supply-chain collaboration for working-capital management: in supplier cooperation, Tencent has built a tiered-cooperation and credit-management system for major-content and hardware suppliers. It conducts in-depth cooperation with core-game developers and film-television companies through prepayment and investment-binding modes. For standardized-hardware procurement, centralized purchasing and negotiation are adopted to strive for credit periods and optimize accounts payable. In client-credit management, benefiting from the prepayment model of C-end businesses, Tencent's C-end businesses maintained prepayment-oriented operations in 2025. Prepayment-derived revenue in gaming businesses accounted for over 85%, and the prepayment rate for video-streaming memberships exceeded 90%. Accounts receivable generated from C-end businesses took a very low share of total receivables, with account periods generally controlled within seven days. For B-end businesses such as cloud services and advertising, Tencent kept operating a tiered-client-credit-evaluation-management system. The overall accounts-receivable-turnover days showed a declining trend from 2021 to 2025. Nevertheless, influenced by credit-granting policies for large B-end clients in cloud-service and advertising businesses, some long-account-period receivables still existed, making up roughly 18% of total receivables. A dedicated collection mechanism was deployed with a collection-success rate of 89%. In internal-capital allocation, the group-level finance department oversees group-wide capital-pool management. Relying on the internal-bank mechanism, gains from cash-flow-sufficient business segments are allocated to businesses still in the investment phase to realize capital reallocation within the supply-chain ecosystem.

3. Analysis of problems and causes in Tencent's working-capital management from the supply-chain perspective

3.1. High capital occupation and insufficient liquidity

In the cloud-service supply-chain, Tencent's total-asset-turnover ratio stayed within 0.35–0.39 times during 2021–2025, and overall asset-utilization efficiency remained low. By the end of 2025, total assets reached 2,038.986 billion yuan. Driven by AI-computing-power construction, fixed assets formed by cloud-service IDC and server procurement, as well as intangible-asset scale arising from capitalized digital-content and R&D projects further expanded. Such assets feature weak liquidity and tie up massive working capital for long periods. Within the digital-content supply-chain, large-scale and long-cycle content-R&D investment creates high-capitalized "development-cost" items, which essentially represent long-term working-capital accumulation. The root causes lie in the self-built heavy-asset model adopted in the cloud-service supply-chain, which brings huge fixed-asset investment with long payback cycles [7]. Meanwhile, the digital-content supply-chain applies fixed-copyright-fee procurement and large-scale-R&D-investment modes, leading to substantial upfront capital accumulation.

3.2. Mismatch between capital-recovery cycles and liability-repayment cycles

Obvious mismatches exist between Tencent's working-capital inflow cycles and liability-repayment cycles. Specifically, B-end-business accounts-receivable recovery cycles are long, whereas liabilities supporting business expansion carry relatively short account periods. This easily triggers short-term-debt-servicing pressure and raises financing costs. In terms of accounts receivable: although the accounts-receivable-turnover ratio ranged from 11.35–15.06 times from 2021 to 2025, indicating an upward trend, and proceeds-collection efficiency improved, continuous expansion of B-end businesses such as cloud services and enterprise services still granted credit-based account periods to some large clients, so receivables-management pressure persisted. In terms of liabilities: the current ratio rebounded to 1.44 in 2025, fluctuating compared with the 1.20 level of 2021. Growth rhythms of current assets and current liabilities were not fully synchronized; potential risks of mismatches between capital-recovery cycles and debt-repayment cycles remained. In terms of cash flow: cloud-service businesses require massive upfront capital expenditure with long payback cycles, which cannot cover short-term-debt-repayment demands in a timely manner.

3.3. Low efficiency in accounts-payable management

From the perspective of accounts-payable management, Tencent's accounts-payable scale kept growing from 2021 to 2025, yet differentiated-payment-management strategies had not been implemented for hardware suppliers and small-and-medium-sized-content providers. Compared with leading internet peers, its accounts-payable-turnover level showed no distinct advantages. There remained room for refinement in accounts-payable management; the credit advantages of a core enterprise had not been fully leveraged to lift overall supply-chain capital efficiency. The upstream side of the digital-content supply-chain contains massive small-and-medium-sized-content providers, while the cloud-service supply-chain includes numerous hardware suppliers. As a core enterprise, Tencent failed to formulate differentiated-credit policies for various supplier types, and could not maximize the interest-free-capital advantages brought by accounts payable. Besides, it had not improved the collaborative value of accounts-payable management via supply-chain-finance innovation. Causes include insufficient refinement in supplier management and inadequate application of supply-chain finance. It did not cooperate with financial institutions to provide factoring and financing services for upstream small-and-medium-sized suppliers. Internal-payment procedures lacked intelligent and automatic transformation, and payment timings could not be precisely controlled.

3.4. Data barriers resulting in low capital-allocation efficiency

Data silos exist among Tencent's business groups. Capital-management departments can hardly obtain real-time data on key working-capital items such as accounts receivable, accounts payable and contract liabilities across business lines, leading to low capital-allocation efficiency along supply-chain links. Though the group has set up a unified capital pool and internal-bank mechanism, cross-business-group data barriers and independent performance assessments hinder globally-optimal capital allocation. The underlying causes are the absence of a unified business-finance-integration data middle-platform; business flows, information flows, and capital flows cannot realize real-time synchronization. Internal-capital deployment mostly adopts simple-capital allocation without an internal-capital-transfer-pricing mechanism oriented toward value creation.

4. Optimization countermeasures for Tencent's working-capital management

4.1. Reducing capital occupation and improving liquidity

The cloud-service supply-chain may explore light-asset-operating modes, increase cooperation with third-party IDC service providers, and adopt leasing and joint-venture arrangements instead of full self-construction, so as to convert partial fixed-asset investment into operating expenses. For the digital-content supply-chain, further promote the revenue-sharing model. For gaming and film-television projects, apply more "minimum-guarantee plus revenue-sharing" cooperation frameworks, tie working-capital occupation to actual market performance of projects, and reduce risks of upfront capital accumulation.

4.2. Alleviating mismatches between capital-recovery cycles and liability maturities

Build a supply-chain-based cash-flow-forecasting model, integrate data of sales contracts, proceeds-collection plans, procurement contracts and payment plans across business lines, and identify maturity-mismatch risk points in advance. Dynamically adjust client-credit policies. Establish more refined dynamic-client-credit-rating models for B-end businesses including cloud services, and implement differentiated credit limits and account periods. Optimize financing structures and raise the proportion of long-term financing to realize the principle of "long-term funds for long-term assets, short-term funds for short-term liabilities."

4.3. Improving accounts-payable-management efficiency

As a leading internet enterprise, Tencent shall take the initiative to cooperate with financial institutions to provide accounts-receivable-based factoring and financing services for upstream small-and-medium-sized-content and technology-service providers, so as to ease partners' capital pressure and strengthen supply-chain resilience. Leverage scale advantages from centralized procurement to negotiate more favorable credit periods with key-hardware suppliers. Carry out automatic and intelligent transformation of internal-payment procedures within compliance limits, make payments at the end of credit periods, and maximize capital-retention duration.

4.4. Breaking down data barriers and boosting capital-allocation efficiency

Construct a group-wide unified business-finance-integration data middle-platform, open data interfaces between each business group and financial systems, and realize real-time synchronization of business flows, information flows and capital flows. Implement an internal-capital-transfer-pricing mechanism based on value creation. Business groups with surplus capital "deposit" funds into the group internal bank to earn interest, while capital-short business groups "borrow" funds at cost. This guides each business line to proactively manage its own working-capital efficiency and achieve Pareto-optimized capital allocation for the whole group.

For Tencent, working-capital management shall be upgraded from a traditional-financial-management function to a strategic function for co-creating supply-chain value. Finance departments shall participate more deeply in front-end-contract design and supply-chain-cooperation-mode negotiations to optimize capital-flow structures at the source. For internet-technology enterprises, inventory management is no longer the priority; management focus shall shift toward accounts-receivable management and strategic-capital-expenditure management. C-end-oriented enterprises shall make full use of prepayment advantages, while B-end-oriented enterprises shall refine client-credit management and supply-chain finance. For supply-chain core enterprises, capital-management responsibilities extend beyond corporate boundaries. Enterprises shall optimize capital circulation across the whole ecosystem through data sharing, credit transmission, and financial-tool innovation.

The collaborative efficiency of capital flows serves as a key factor determining the health and growth potential of supply-chain ecosystems.

Disclosure statement

The author declares no conflict of interest.

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