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Performance Evaluation and Strategic Recommendations for JD Group Based on the Balanced Scorecard

Jiang Wenjie

School of Economic &Management, Guangxi Normal University, Guilin, China
Jiangwenjie3016@163.com

Abstract: *Establishing an evaluation indicator system to comprehensively assess a company's capabilities is an important means of maintaining balanced development. Most existing research primarily focuses on evaluating traditional brick-and-mortar companies, with limited research on evaluation standards for the e-commerce industry. Many studies tend to consider only financial indicators, leaving a gap in the development of a comprehensive evaluation indicator system for the e-commerce industry. This article utilizes the principles of the Balanced Scorecard (BSC) to conduct research on evaluation standards for e-commerce enterprises, with the aim of establishing an evaluation standards system for e-commerce companies that takes into account both financial and non-financial perspectives. JD Group is a leading e-commerce enterprise in China, and this article uses JD Group as a case study to introduce e-commerce evaluation standards indicators and conduct an analysis. The analysis reveals that JD Group's financial performance is relatively weak, with profitability struggling to keep up with revenue growth. However, in terms of non-financial indicators, JD Group performs exceptionally well. The article evaluates JD Group's performance and provides improvement recommendations.*

Keywords: *E-commerce Enterprise; Performance Evaluation; BSC Balanced Scorecard*

1. Introduction

1.1. Research Background

E-commerce, based on internet technology and electronic devices, is a business activity conducted in an open network environment, allowing buyers and sellers to engage in various trade activities across geographical locations. It enables consumers to shop online, conduct transactions, make electronic payments, and access related comprehensive services through the internet. With the rapid development of the internet, combined with the challenges posed by the pandemic in the new era, changing circumstances have prompted new thinking and breakthroughs. Enterprises will also need to break away from traditional operating methods to adapt to a new production and more efficient business model. Consequently, new and rational evaluation criteria and systems for e-commerce enterprises are required to align with the evolving environment and ensure more stable development. On October 9, 2021, the National Development and Reform Commission, the Ministry of Commerce, and the Cyberspace Administration of China jointly issued the "14th Five-Year Plan for the Development of E-commerce," outlining the direction and objectives for the development of e-commerce in China during the 14th Five-Year Plan period. During this period, China has entered a new phase of development, and the high-quality development of e-commerce faces profound and complex changes in both domestic and international environments. China has shifted towards high-quality development, with accelerated construction of new infrastructure and an increasing independent capacity in information technology, providing strong support for the innovative development of e-commerce. However, e-commerce development still faces numerous challenges, including issues like imbalanced and insufficient development. Inconsistencies in e-commerce development persist between regions, urban and rural areas, and different sectors. Enterprises lack strong core competitiveness, and their technological innovation capabilities are not yet in line with the requirements of high-quality development.

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1.2. Literature Review

Research on corporate performance evaluation originated in the United States, with Eder (1982) suggesting that evaluation indicators could monitor a company's operations and management mechanisms in real-time, observing the company's development status. [1]Parmenter (2015) proposed that employees' work efficiency and the company's operational level are essential indicators for evaluating a company's value [2] In the early stages, corporate evaluation systems primarily focused on financial indicators, as they were initially designed to improve profitability. This led to an oversight of the importance of non-financial indicators. With technological advancements, increased productivity, and the development of evaluation indicator systems, Robert Kaplan and David Norton introduced the Balanced Scorecard (BSC). The BSC includes both financial and non-financial indicators, shifting corporate focus from short-term profits to long-term goals.

Corporate performance evaluation research originated overseas and began later in China. Due to differing national circumstances, foreign evaluation systems were initially unsuitable for domestic companies. However, through the dedicated efforts of many Chinese experts and scholars, suitable evaluation indicator systems for Chinese enterprises emerged. Ren Zefeng (2007) incorporated employee loyalty and a company's innovation capabilities into the evaluation indicator system, using these indicators to assess a company's operations and management status. [3] Chen Yanfei (2014) proposed the inclusion of market environmental indicators in the corporate evaluation indicator system.[4] With the advancement of internet technology and the widespread adoption of mobile devices, the e-commerce industry faced new opportunities. Song Lihong (2016) evaluated e-commerce companies across the dimensions of capabilities, performance, and resources. [5] In today's competitive environment, enterprises must not only consider short-term profits but also long-term development and the enhancement of their core competitiveness. In modern corporate evaluation systems, BSC (Balanced Scorecard) indicators can simultaneously address both financial and non-financial indicators, leading to an increased focus on research and expansion by scholars. Wang Bangjiang (2016) included social responsibility in the evaluation indicator system, emphasizing that modern e-commerce companies should bear social responsibilities, such as addressing employment, poverty alleviation, and rural development. [6] Zhang Xiaochuan (2008) conducted research on corporate evaluation from a non-financial indicator perspective, explaining the impact of non-financial indicators on corporate performance. [7]

Research on corporate performance evaluation for traditional brick-and-mortar companies has yielded significant results, and related performance evaluation systems have become quite mature. However, there are still limitations in the evaluation of e-commerce companies. These limitations manifest in two aspects: firstly, there is limited research on the evaluation systems for e-commerce companies, and the development of evaluation indicator systems specific to the e-commerce industry is still in its infancy. Secondly, most research on e-commerce company evaluation standards has primarily focused on either financial or non-financial aspects, failing to comprehensively assess the performance and value of e-commerce companies.

In recent years, due to the development of the "Internet+" trend, an increasing number of traditional brick-and-mortar companies are transitioning into e-commerce. While e-commerce models can bring significant profits to companies, they also impose more stringent requirements. The Internet economy offers opportunities but also introduces intense competition and greater uncertainties. Companies lacking the ability to cope with such uncertain risks can collapse overnight. Using JD Group as an example, the paper focuses on evaluating JD Group's performance using e-commerce company evaluation standards. It identifies certain issues with JD Group's profitability and offers improvement suggestions. In the highly competitive e-commerce industry of today, identifying and resolving existing problems to maintain stable company development has become an urgent matter.

2. Establishment of Evaluation Standards and Indicator System for E-commerce Enterprises

Enterprise evaluation standards are important metrics for assessing corporate performance. Liang Ruixian (2022) analyzed the current marketing situation of e-commerce enterprises in China.[8] Jiang Yi (2020) used the Balanced Scorecard (BSC) framework to assess corporate performance from five dimensions, including the addition of a business model dimension.[9] Zhu Pengcheng (2019) employed the Economic Value Added (EVA) indicator to establish evaluation criteria for e-commerce companies from a financial perspective and analyzed the value of internet enterprises.[10]In the context of the "14th Five-Year Plan," a focus on high-quality development has been established as a central theme for social development. The emphasis is on deepening supply-side reforms. In today's highly competitive e-commerce landscape, efficiency in development is crucial across all industries. Traditional "high-energy consumption" and "extensive" growth need to transform into "intensive" growth. In the rapidly evolving e-commerce industry, evaluation standards for enterprises should adapt to the new circumstances. The COVID-19 pandemic has brought about significant changes in the business models of many companies, accelerating the transformation of offline industries into online ones. Consequently, e-commerce enterprise evaluation standards must also accommodate these new developments.

The concept of high-quality development was introduced relatively recently, and various industries are making changes to transition towards high-quality transformation. In line with high-quality development, evaluation criteria are being established. Li Xiaozhong (2022) evaluates traditional brick-and-mortar companies in terms of industrial foundations, innovation capabilities, digital capabilities, industrial structure, openness to the outside, green development, quality competitiveness, and social benefits.[11] In the e-commerce industry, previous evaluation indicators were overly singular, focusing excessively on a company's current financial indicators, while neglecting its long-term potential and possibilities. As the market environment continues to change, and the e-commerce business landscape evolves rapidly, the previous evaluation methods are no longer aligned with the current requirements. Therefore, some scholars are modifying existing performance evaluation methods or integrating various methods to create comprehensive performance evaluation models, providing a holistic assessment of companies.

In this article, when designing evaluation standards for e-commerce enterprises, the Balanced Scorecard (BSC) framework is used to consider not only financial indicators but also assess from customer, internal operational efficiency, and growth perspectives, thereby uncovering a company's core competitiveness. The application of the Balanced Scorecard principles allows e-commerce enterprises to focus on both financial and non-financial indicators. Moreover, using the Balanced Scorecard indicators can guide companies in making more reasonable decisions when planning long-term goals, emphasizing non-financial indicators to enhance a company's core competitiveness. The selected indicators are divided into financial and non-financial categories. Financial indicators encompass profit levels, operational performance, development, and debt repayment, reflected by seven tertiary indicators. Non-financial indicators include customer retention, internal business processes, growth and learning, and are represented by six tertiary indicators .As shown in Table 1.

Table 1: Evaluation Indicators for E-commerce Enterprises

Level 1 Indicators	Level 2 Indicators	Level 3 Indicators
Financial Indicators	Profitability Level	Sales Gross Profit Margin Sales Net Profit Margin Total Asset Net Profit Margin Return on Equity (ROE)
	Operational Efficiency Level	Asset Turnover Ratio
	Development Level	Asset Growth Rate
	Debt Repayment Level	Asset-to-Liability Ratio
Non-Financial Indicators	Customer Retention Level	Brand Value Customer Satisfaction Market Share
	Internal Business Processes Level	Inventory Turnover Rate Platform Response Rate
	Growth and Learning Level	Research and Development (R&D) Expense Ratio

3. Performance Evaluation of JD Group

3.1. Company Overview

JD Group was founded on June 18, 1998, and officially started its journey in Beijing's Zhongguancun. In its early days, JD primarily acted as an agent for optical and magnetic products and quickly became one of the most influential agents in the optical and magnetic product field by 2001. Over time, the company expanded its business into various other sectors, including multimedia and digital products. After enduring 25 years of challenges and growth, JD Group gradually became the second-largest comprehensive e-commerce company in China. In 2004, JD officially entered the

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e-commerce industry and continuously enriched its product categories while gradually expanding its business scope. With the rapid development of internet technology and the widespread adoption of mobile smart devices, JD experienced swift growth over just a few years. In May 2014, JD Group was officially listed on the Nasdaq Stock Market in the United States, becoming the first comprehensive e-commerce platform from China to successfully go public in the United States. It gained favor from numerous investors and, following substantial fundraising, entered a fast track of development. In June 2020, JD Group conducted a secondary listing on the Hong Kong Stock Exchange, raising HKD 34.5 billion to invest in key technological innovations based on the supply chain, while simultaneously enhancing user experience and operational efficiency. JD's primary business sectors include fast-moving consumer goods, clothing, 3C (computers, communication, and consumer electronics), home appliances, and furniture, among others. The company consists of four main subsidiaries: JD Retail, JD Logistics, JD Technology, and JD Health.

3.2. Analysis of Financial Indicators for the Company

In terms of financial indicators, profitability level reflects the fundamental operational condition and survival status of a company, forming the cornerstone of a company's business. Operational efficiency can, to a certain extent, reflect the scale of a company's operations. For e-commerce enterprises, factors such as customer traffic, transaction frequency, and the efficiency of capital circulation can reflect the company's operational level. The growth of a company's assets can reflect its development level. In the course of business operations, it is inevitable that companies will incur debts. A stable asset-to-liability ratio is an important indicator of a company's stable operation.

3.2.1. Analysis of Profitability Indicators

Profitability is the ultimate goal of all company activities, and it has always been a focal point in financial analysis. Profitability is defined as the ability of a company to generate income over a period of time under normal operation. It helps to reflect whether there are issues in the daily operational management of a company and can be used to evaluate the company's business performance. Return on Total Assets (ROTA) can be used to reflect the maximum profit margin that a company can achieve by using its assets, thereby demonstrating the company's operational performance and management level. It is the most fundamental indicator of a company's capability. From an indicator analysis perspective, JD has shown consistent revenue growth over the past five years, as shown in Table 2.However, the sales net profit margin, return on equity (ROE), and return on total assets (ROTA) have displayed significant fluctuations. While revenue has been increasing, profit has not seen a similar rise. Several factors contribute to this trend. First, JD has made significant investments in research and development (R&D). In 2017-2018, JD implemented the "Boundaryless Retail" strategy and expanded into offline retail. They collaborated with offline supermarkets and stores while utilizing big data and AI technology to create smart offline stores, actively pioneering new retail models to meet more consumer demands and enhance consumer experiences. JD has also been actively developing new businesses and logistics. However, the new businesses and logistics operations have consistently incurred losses, and revenue relies primarily on retail operations. Additionally, in recent years, the growth of e-commerce users has started to approach a saturation point, and the growth rate of e-commerce has begun to decline, with the market nearing saturation. The rise of platforms like Pinduoduo and live commerce has made major e-commerce companies start to focus on investing in lower-tier markets. In summary, when compared to other leading e-commerce companies, JD has a broader range of business operations and relatively significant investments in innovation. However, its profitability lags behind other e-commerce industry leaders. From a long-term perspective, if high investments in innovation and industry can lead to high-quality value conversion in the future, it will undoubtedly enrich JD's industry and services while enhancing its profitability.

Table 2: Profitability Indicators

	2022	2021	2020	2019	2018	2017
Gross Profit Margin	14.06%	13.56%	14.63%	14.63%	14.28%	14.02%
Net Profit Margin	0.93%	-0.47%	6.62%	2.06%	-0.61%	0.00%
Return on Equity (ROE)	4.92%	-1.80%	36.68%	15.46%	-3.90%	-0.35%
Return on Total Assets (ROTA)	1.90%	-0.77%	14.49%	5.20%	-1.27%	-0.09%
Revenue Growth	9.95%	27.59%	29.28%	24.86%	27.51%	40.28%

Data Source: JD Group Annual Report

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3.2.2. Analysis of Operational Efficiency Indicators

Total Asset Turnover = Net Main Business Income / Average Total Assets * 100%. This metric can be used to reflect a company's operational efficiency, with a higher value indicating a higher utilization of the company's assets.As shown in Table 3, it can be observed that JD has stronger operational efficiency compared to other leading e-commerce companies of the same type. This indicates that JD has a strong sales capability, and its investment efficiency and management quality are also ahead of similar companies.

Table 3: Operational Efficiency Level

	2022	2021	2020	2019	2018	2017
Accounts Receivable Turnover (Times)	64.43	100.1	112.13	66.69	33.64	22.3
Inventory Turnover (Times)	13.63	14.15	12.76	11.32	10.78	10.26
Total Asset Turnover (Times)	1.92	2.07	2.19	2.46	2.35	2.1

Data Source: JD Group Annual Report

3.2.3. Analysis of Development Level

The development level represents a company's potential and its future growth capability and expansion space. The e-commerce industry is currently in a high-growth phase with intense competition among industry giants. Sustained high-speed development is essential for a company to maintain a competitive advantage in this environment. The asset growth rate reflects a company's expansion in scale and capital accumulation. As shown in Table 4,JD Group experienced significant expansion in 2020, while the rest of the time it maintained a normal level of development, indicating a healthy development level for the company. The e-commerce industry in China is still on a growth trajectory, and there is ample room for continued development in the future.

Table 4: JD Development Level Indicators

	2022	2021	2020	2019	2018
Total Asset Growth Rate	19.89%	17.57%	62.61%	24.13%	13.63%

Data Source: JD Group Annual Report

3.2.4. Debt Level Analysis

The Debt-to-Asset Ratio = Total Liabilities / Total Assets * 100% is used to reflect a company's long-term debt-paying ability and the degree of debt protection for creditors. Overall, JD's debt-to-asset ratio is at a moderately high level, and it has shown a decreasing trend over the past five years. The company has a relatively low growth rate of debt compared to its asset growth rate. This indicates that JD Group has a good debt-paying ability. A higher debt-to-asset ratio suggests that the company's investment strategy is high-risk, high-reward, which can provide more development opportunities for the company.

3.3. Analysis of Non-Financial Indicators

Regarding non-financial indicators, the level of customer maintenance reflects a stable customer flow, which is crucial for e-commerce companies that rely on online platforms. These companies need to pay close attention to their reputation. Internal business processes reflect the efficiency of a company's internal operations, while growth and learning can indicate a company's investment in its future.

3.3.1. Customer Maintenance

In the dimension of customer maintenance, this article uses three indicators to evaluate: brand value, customer satisfaction, and market share.As shown in Table 5.For customer satisfaction, this article uses the China Customer Satisfaction Index (C-CSI) to summarize JD Group's customer satisfaction index over the past five years.For brand value, this article uses the Kantar BrandZ list of the most valuable brands in China to summarize JD Group's ranking from 2020 to 2022. This analysis shows that JD Group has a high brand value as a leading e-commerce company.

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Table 5: Customer Retention Level

	2022	2021	2020	2019	2018
Satisfaction Index	90.9	80.5	78.9	74.9	72
Ranking	1	1	2	1	1
BrandValue Ranking	8	7	7		

Data Source: JD Group Annual Report

Market ShareBased on data published by Netease Technology, we summarized the market share of companies in the e-commerce industry. Analyzing the data, it can be observed that JD Group's market share has shown an overall decreasing trend in recent years. It increased by over 10% from 2018 to 2019 but continued to decline in the following two years.The primary reason for this trend is that JD Group primarily targets the middle to high-end market. However, in the context of economic slowdown, consumers have become more price-sensitive. Moreover, the competition in the middle to high-end market has led to saturation. With the widespread adoption of mobile smart devices and the rise of platforms like Pinduoduo, e-commerce companies are increasingly focusing on the lower-tier markets.Companies like Taobao and Pinduoduo had earlier established a presence in the lower-tier market, and this has contributed to the decline in JD's market share. Additionally, the emergence of live-streaming e-commerce and the participation of short video platforms like Douyin and Kuaishou in e-commerce have intensified competition in the e-commerce industry, diverting some of the traditional e-commerce market share. This has led to increased competition within the industry.

3.3.2. internal business processes

As shown in Table 6.In the dimension of internal business processes, this article selects two indicators to measure: inventory turnover rate and platform response rate.For platform response rate, this article relies on the Black Cat Complaints Platform's "2022 618 Consumer Complaint Data Report" and "2022 Double Eleven Consumer Data Complaint Report." These reports reflect the performance of e-commerce companies during two significant business events. During both of these events, JD has consistently achieved a 100% response rate and completion rate of around 30%, which is significantly better than other e-commerce companies.

Table 6: Internal Business Processes Level

	2022	2021	2020	2019	2018	2017
Inventory turnover rate (times)	13.63	14.15	12.76	11.32	10.78	10.26

3.3.3. Growth and learning

The research and development (R&D) expense ratio, as an indicator for measuring the dimension of growth and learning, is essential for a company's growth and prosperity. It reflects the company's investment in research and innovation. In this article, the ratio of R&D expenses to revenue is used to measure how much importance a company places on innovation. JD's annual R&D investment significantly exceeds that of other similar companies, indicating that JD prioritizes research and innovation.

4. Conclusion and Recommendations

Based on the above analysis, we can conclude that JD's financial aspects exhibit stable solvency and operational capabilities, but its profitability is relatively weak, resulting in a situation of increasing revenue without a corresponding increase in profits. The main reasons for this situation include JD's wide-ranging business scope with a relatively single profit model, the long-term investments in new businesses and logistics infrastructure that take time to yield returns, and the heavy reliance on retail sales for revenue. Additionally, the impact of the COVID-19 pandemic led to rapid growth in the e-commerce industry, giving rise to new e-commerce marketing methods such as live streaming, which increased competition in the market. Moreover, amid China's economic slowdown and other macroeconomic factors, consumers have become more price-sensitive, prompting various e-commerce companies to engage in price competition and expand their market share through strategies like "billion-yuan subsidies."

On the non-financial front, JD has demonstrated excellence in brand value and customer satisfaction, consistently ranking among the top in the e-commerce industry. However, JD's market share has been declining year by year. While JD has maintained an image as a platform with higher prices but excellent post-sale service, the current economic context has shifted towards a focus on

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"there are no bad products, only bad prices." This indicates a growing price sensitivity among consumers and the potential for a price war in the e-commerce industry.

This paper, based on the Balanced Scorecard framework, offers several recommendations for JD's business operations:

(1) JD should address the issue of low R&D investment conversion rate. The company should set investment objectives, clarify the purpose of these R&D investments, and estimate the conversion rate to ensure that R&D expenses contribute to stable operations. Although JD allocates a high proportion of its expenses to research and development, its profitability is relatively weak. Therefore, the company should ensure that reasonable R&D investment leads to profit growth. By using e-commerce business evaluation indicators, JD can assess the overall development level of the industry, understand its position in the competitive landscape, and identify strengths and weaknesses. This will enable JD to implement targeted strategies that guide the long-term and stable development of the company.

(2) JD should focus on differentiation. The development and prosperity of e-commerce depend on the rapid exchange of information in today's networked era. With an abundance of homogenized content on the internet, the rise of AI software like ChatGPT, Bing, and Wenyi Yixing is leading to increasing content homogenization. Homogeneous competition results in resource squabbling and vicious price competition, preventing anyone from achieving optimal results with current resources. This phenomenon extends to the competition among businesses, where live streaming e-commerce and "billion-yuan subsidies" are leading to highly homogeneous marketing practices. To thrive, e-commerce companies should enhance their service quality in areas such as product quality, customer service, and logistics speed to establish their unique characteristics. Only through innovation-driven and innovation-led strategies can e-commerce companies find their own footing in the competitive landscape. At a macro level, governments can introduce relevant policies and create a sound legal framework to guide e-commerce companies toward fair and diversified competition, fostering an environment where diverse business models can thrive in the long run.

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