

# A Study on the Impact of Digital Transformation of Pharmaceutical Enterprises on Business Performance

## —Taking Shanghai Pharmaceutical as an Example

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**Abstract:** With the advent of the Internet wave, all industries are accelerating to digital development. In the field of medicine, the Fifth Plenary Session of the 19th Central Committee of China proposed the goal of building a “Healthy China” by 2035. Implementing smart healthcare through “digital+health” technology has become the current development goal of medical enterprises in China. This study focuses on Shanghai Pharmaceutical and analyzes the impact of its digital transformation on performance. Research has found that digital transformation has a significant improvement in its performance level, but its impact on debt paying ability may be negative. It is recommended that enterprises continue to promote digital transformation and innovation, pay attention to resource integration, achieve cost reduction and efficiency increase, improve management level, and ensure information security.

**Keywords:** Digital Transformation, Enterprise Performance, Pharmaceutical Enterprises

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## 1. Introduction

Digital transformation is a business development strategy aimed at value innovation and driven by digital technology for business transformation. Whether digital transformation can improve corporate performance has become a key concern for enterprises in the wait-and-see stage of digital transformation. In recent years, China has attached great importance to the development of the pharmaceutical industry, continuously increasing investment in pharmaceutical research and development, and implementing policies to encourage innovative drug research and development. These macro environment and policy support factors have pointed out the direction for the development of pharmaceutical enterprises.

## 2. The impact mechanism of digital transformation on enterprise performance

Digital transformation is a process of using big data, mobile Internet, artificial intelligence and other digital technologies to apply to enterprise production, operation, financing, investment and other activities to maximize value. By improving internal management, reducing enterprise costs from procurement, category management, supplier relationship management, etc., and improving management efficiency, it affects the profitability, debt repayment ability, operational ability, and development ability of the enterprise, promoting the improvement of enterprise performance

## 3. Case Overview

### 3.1 Introduction to Shanghai Pharmaceuticals

Shanghai Pharmaceuticals was established in 1996 and listed in both Hong Kong and Shanghai in 2011. It is a modern enterprise group that integrates production, marketing, scientific research, and service. Its headquarters is located in Shanghai and it is a large state-owned pharmaceutical enterprise. The company’s business scope is mainly focused on pharmaceutical research and sales, and it is in a leading position in the domestic drug research and sales market

### 3.2 Reasons for Shanghai Pharmaceutical’s Digital Transformation

Firstly, driven by national policies. In 2016, the country proposed to comprehensively implement “Internet plus” health care and public benefit services, and develop smart medicine combining short distance medicine and online and offline medicine. In 2020, the Notice on

Deepening the “Five Ones” Service Action of “Internet plus Medical Health” was issued, which promoted the typical practices of epidemic prevention and control in various regions to the whole country, and continued to promote the in-depth development of “Internet plus+medical health” convenient and beneficial services.

Secondly, enhance the competitiveness of enterprises and meet market demand. With the development of the Internet, ordinary online medical care can no longer meet the needs of patients, and more attention is paid to the safety, concealment and experience of online diagnosis and treatment.

Thirdly, reduce operating costs and improve operational efficiency. At the beginning, Shanghai Pharmaceutical almost relied on manual, rough production processes, and non-standard production procedures, but encountered problems such as high labor costs and low production efficiency. Shanghai Pharmaceuticals is increasing investment in smart devices and undergoing digital transformation to improve production efficiency and reduce product costs.

Fourthly, improve the level of corporate governance and enhance management capabilities. In the initial stage of Shanghai Pharmaceutical’s digital transformation, a hierarchical management system was adopted, resulting in slow information exchange between departments and low work efficiency. Enterprises need to undergo digital transformation to improve their governance level in order to adapt to today’s customer-centric market economy.

### 3.3 Shanghai Pharmaceutical Digital Transformation Process

Shanghai Pharmaceuticals began exploring the path of digital transformation in 2014. In 2015, Shanghai Pharmaceutical set up a new prescription drug retail “Internet plus” development platform, Shangyao Cloud Health; In 2016, Shangyao Cloud Health launched the “Yiyao · Electronic Prescription Project”; In 2017 and 2018, we will continue to promote the modern drug circulation system, launch a new innovative Internet plus product of “Yiyao · Cloud Hospital+Yiyao · Cloud Pharmacy”, and actively prepare for Magnum Trust Health. In 2021, Shangyao Cloud Health will establish an integrated national professional pharmacy network, improve Internet optimization and build a 2B digital platform+2C Internet platform with differentiated advantages. In August 2022, Shangyao Cloud Health will build a “Yiyao · Comprehensive Flagship”, combining the flagship store of innovative medicine specialty pharmacy “Yiyao · Pharmacy” and the flagship store of general slow medicine Internet “Yiyao · Cloud Pharmacy”.

## 4. The impact of Shanghai Pharmaceutical’s digital transformation on corporate performance

### 4.1 Profitability Analysis

This study selects two financial indicators, sales net profit margin and return on equity, for analysis

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sales net profit margin(%)	3.61	3.36	3.24	3.19	3.17	3.10	2.80	2.59	2.92	2.91	3.01
Net asset income(%)	8.62	8.87	9.67	9.98	10.39	10.73	10.34	10.12	10.34	10.76	9.11

The net profit margin of Shanghai Pharmaceutical’s sales only increased slightly from 2020 to 2021. Due to the impact of the epidemic, the demand for medical equipment and medicine has increased, causing fluctuations in net profit margin and operating profit margin. After completing the digital transformation in 2021, the net profit margin of sales began to recover in 2022.

Since 2014, Shanghai Pharmaceutical has been undergoing digital transformation, and its return on equity has continued to grow until 2017, indicating that the company’s implementation of Shangyao Cloud Health and optimization of logistics have helped to generate sales revenue. The digital transformation of enterprises has brought about the improvement of efficiency levels. Shanghai Pharmaceutical conducted inventory clearance from 2017 to 2018 due to economic environment and market competition, which compressed profits and resulted in a downward trend in return on net assets.

### 4.2 Analysis of debt repayment ability.

This study selected two financial indicators, quick ratio and asset liability ratio, to analyze the solvency of Shanghai Pharmaceutical.

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Quick ratio(%)	1.31	1.23	1.11	1.03	1.07	1.04	0.99	0.98	0.95	0.97	1.04
Asset liability ratio(%)	45.76	48.50	51.66	54.52	55.48	57.95	63.4	63.96	63.31	63.86	60.63

At the beginning of enterprise digital transformation, the value of the quick ratio was around 1. With the advancement of digital transformation, the quick ratio began to decrease year by year. In 2021 and 2022, after suffering from COVID-19, the enterprise achieved a small increase in two indicators, which shows that the short-term solvency of the enterprise has improved due to the completion of digital transformation. From the perspective of long-term debt repayment ability, in the process of digital transformation, assets and liabilities first increased and then decreased, reaching a peak in 2019, and began to decline from 2019 to 2020. In 2022, the asset liability ratio was 60.63%, but it is still much higher than before digital transformation. Therefore, after the digital transformation, the solvency of Shanghai Pharmaceutical's production period has not been enhanced.

### 4.3 Analysis of operational capabilities.

This study selects two financial indicators, total asset turnover and inventory turnover, for analysis.

年份	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total asset turnover rate(%)	1.38	1.48	1.53	1.52	1.54	1.48	1.44	1.41	1.34	1.38	1.28
Inventory turnover rate(%)	6.49	6.54	6.73	6.58	6.76	6.78	6.46	6.40	6.75	7.32	6.55

At the beginning of Shanghai Pharmaceutical's digital transformation in 2014, the total asset turnover rate increased in the first three years, but showed an overall downward trend from 2017 to 2022. At the stage of roughly completing digital transformation, the development speed of Shanghai Pharmaceutical's asset scale is relatively slow, but the asset turnover rate has not continued to improve, and the utilization rate of funds is not high.

The inventory turnover rate in Shanghai has increased after the digital transformation. Digitalization has optimized the management of inventory and the construction of transportation management platforms and other systems in enterprises. Shangyao Cloud Health Platform has also driven offline retail business, using Internet channels for sales, and accelerated the flow of enterprise inventory. Digitization helps enterprises improve overall inventory flow speed and management efficiency.

### 4.4 Analysis of growth ability.

This study selects two financial indicators, total asset growth rate and operating revenue growth rate, for analysis.

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total asset growth rate(%)	7.14	10.27	14.26	15.59	11.30	14.02	34.49	8.00	8.87	9.55	21.23
Revenue growth(%)	24.00	14.90	18.12	14.2	14.45	8.35	21.58	17.27	2.86	12.46	7.49

The total asset growth rate of Shanghai Pharmaceutical has been continuously increasing since the digital transformation, and in 2018, it increased from the original 7.14% to 34.49%. The growth rate of enterprise clearance management and epidemic reasons slowed down from 2019 to 2020, but the growth rate rapidly increased from 2021 to 2022 after digitalization was completed. The growth rate indicator of operating revenue during the period of 2012-2022 reached its lowest value in 2020 due to the epidemic, and due to the impact of the industry environment, the pharmaceutical industry vigorously reformed, resulting in a decrease in growth rate. But with the help of digital technology, the operating revenue in 2021 is slowly recovering. When the overall operating revenue of the industry was in a downturn, the operating revenue of Shanghai Pharmaceutical could still achieve positive growth, which benefited from the accelerated progress of Internet medicine after the digital transformation, and the enterprise's comprehensive commercial competitiveness continued to strengthen. The digital transformation has brought more development space to Shanghai Pharmaceutical and created more value for the company.

## 5. Conclusion

### 5.1 Continuously promoting digital transformation and innovation to meet market demands

After Shanghai Pharmaceutical began its digital transformation related measures, its corporate performance fluctuated, but overall performance improved. To improve the performance level of the enterprise, Shanghai Pharmaceutical should continue to deepen its digital transformation in its subsequent development. One is to allocate capital reasonably and prevent the problem of insolvency. The second is to establish a mechanism for continuous improvement, regularly evaluate the effectiveness and effectiveness of digital transformation, and continuously innovate and optimize digital solutions to adapt to market changes and technological development needs.

### 5.2 Integrating resource technology and talent cultivation to achieve cost reduction and efficiency improvement

The competition in the pharmaceutical market is constantly intensifying, and profit margins are constantly shrinking. Shanghai Pharmaceuticals needs to invest a large amount of funds in the upcoming digital transformation, recruit digital talents, provide training and management, and design and develop advanced pharmaceutical intelligent manufacturing solutions to achieve cost reduction and efficiency improvement. It also integrates internal and external resources, selects digital technologies and tools that meet the needs of enterprises, and conducts effective technological integration to ensure the smooth progress of digital transformation.

### 5.3 Continuously improving management level and ensuring data and information security

Shanghai Pharmaceutical should promote innovative business models, expand sales scale, control storage costs, strengthen inventory management, and improve the inventory management system. Continuously improving the operation and management of online platforms, accurately grasping marketing data, implementing dynamic management, and reducing unnecessary expenses. In digital applications, there is a massive amount of data information collection and storage, and a secure guarantee mechanism is crucial. Ensure the security of personal privacy information and enterprise patent technology, to ensure that big data in the medical field is in a secure and reliable environment, and better adapt to the development of the new normal of the future economy.

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