

Improve the Innovation Performance of J pharmaceutical Through the Adjustment of Innovation Strategy Driven by Digital Economy

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Abstract: This thesis reviews and fully understands the current situation of J pharmaceutical according to an empirical research, which has been carried out by corresponding investigation and research on the design of questionnaires for Jingfeng Pharmaceutical's investment in innovation resources, the construction of innovation capabilities, digital transformation, innovation environment adaptation and facing, and innovation performance improvement. After research, it is found that there is a lot of space for improvement in the adaptation and facing of the innovation environment of J pharmaceutical, and the construction of innovation ability is also a short board. The digital transformation needs to be broken through urgently. Enhance J pharmaceutical innovation ability, comprehensively build J pharmaceutical innovation ability of culturally, technically, and managerially; Accelerate digital transformation, and then continue to increase the input of key resources, especially the training and introduction of talents, and key facilities. In order to adapt to and face the rapidly changing market environment under the digital economy, J pharmaceutical can improve the corporate performance.

Keywords: Digital economy; Innovation resources; Innovation capabilities; Innovation environment; Innovation performance; Innovation strategies

Publication date: February, 2020

Publication online: 29 February, 2020

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1 Introduction

In 2019, J pharmaceutical's sales revenue declined seriously. J pharmaceutical recently issued a performance forecast with a loss of 650 million to 850 million yuan. The main reason is that there is no core product force due to the strategic error in the early stage of innovation. The existing main products are greatly impacted by the adjustment of national industrial policies. Therefore, it is of great practical significance to make an empirical study on J pharmaceutical's innovation strategy.

2 Empirical research

Through the design of the questionnaire on how to improve the performance of J pharmaceutical, the paper puts forward some questions in the aspects of innovation resources, innovation ability, digital economy, innovation environment, innovation performance and so on, and makes a survey on 91 managers of J pharmaceutical. After the survey, SPSS is used for data analysis.

Further use regression analysis to study the survey data: Regression analysis is used to study the influence relationship of X (quantitative or categorical) on Y (Quantitative), whether there is an influence relationship, and the direction and degree of influence (Table 1).

Table 1. Linear regression of various elements of innovation strategy

Results of linear regression analysis (n=91)									
	Non standardized coefficient		Standardization coefficient	<i>t</i>	<i>P</i>	VIF	<i>R</i> ²	<i>Adjust R</i> ²	<i>F</i>
	<i>B</i>	Standard error	<i>Beta</i>						
Constant	-0.302	0.325	-	-0.927	0.356	-			
Innovative resources	-0.008	0.095	-0.007	-0.079	0.937	3.074			
Innovation ability	0.443	0.105	0.370	4.213	0.000**	3.097	0.672	0.662	<i>F</i> (4,132)=67.470, <i>P</i> =0.000
Innovation environment	0.226	0.103	0.212	2.195	0.030*	3.732			
Digital economy	0.331	0.080	0.329	4.142	0.000**	2.538			

DF: Innovation performance
D-W value: 1.958
P*<0.05 *P*<0.01

It can be seen from the above table that innovation resources, innovation environment, innovation ability and digital economy are taken as independent variables, while innovation performance is taken as dependent variable for linear regression analysis. From the above table, it can be seen that the R-square value of the model is 0.672, which means that innovation resources, innovation environment, innovation ability and digital economy can explain 67.2% of the change reasons of innovation performance. In the F-test of the model, it is found that the model passes the F-test (*F* = 67.470, *P* = 0.000 < 0.05), which means that at least one of the innovation resources, innovation environment, innovation ability and digital economy will have an impact on innovation performance. The model formula is as follows:

$$\text{Innovation performance} = -0.302 - 0.008 * \text{innovation resources} + 0.443 * \text{innovation environment} + 0.226 * \text{innovation ability} + 0.331 * \text{Digital Economy}$$

In addition, according to the multi collinearity test of the model, it is found that all the Vif values in the model are less than 5, which means there is no collinearity problem; and the D-W value is near the number 2, which means that there is no autocorrelation in the model, there is no correlation between the sample data, and the model is better. The final analysis shows that:

The regression coefficient of innovation resources is -0.008 (*t* = -0.079, *P* = 0.937 > 0.05), which means that innovation resources will not have an impact on innovation performance.

The regression coefficient of innovation environment

is 0.443 (*t* = 4.213, *P* = 0.000 < 0.01), which means that innovation environment will have a significant positive impact on innovation performance.

The regression coefficient of innovation ability is 0.226 (*t* = 2.195, *P* = 0.030 < 0.05), which means that innovation ability will have a significant positive impact on innovation performance.

The regression coefficient of digital economy is 0.331 (*t* = 4.142, *P* = 0.000 < 0.01), which means that digital economy will have a significant positive impact on innovation performance.

It can be concluded that innovation environment, innovation ability and digital economy will have a significant positive impact on innovation performance. However, innovation resources will not affect innovation performance.

3 Prev. Research Findings

From the analysis data and previous literature:

First, J pharmaceutical is the first to adapt to the current innovation environment. The market environment has a huge impact on Chinese pharmaceutical enterprises. Just as Changxiao Liu (2018)^[1], academician of Chinese Academy of engineering, mentioned that China's pharmaceutical innovation and innovation faces three environmental challenges. The first is the regulatory environment. The state has introduced many new policies, including accelerating the review and approval system, encouraging innovation, and encouraging Global Multi Center synchronous clinical trials. These reforms bring not only opportunities but also challenges. Foreign

innovative drugs can also enjoy favorable policies, which objectively intensifies competition. Secondly, the industry environment is still not optimistic, it needs to invest resources, talents, the basis of new scientific discoveries, and the lack of good experience in proprietary drugs. At present, the good clinical trial centers in China are still insufficient, the integrity of scientific evaluation needs to be tested, and the quality of clinical trials needs to be improved. In addition, the long process of project initiation also leads to the limited time of real research and development. Thirdly, in terms of market environment, the state has issued a new medical insurance catalog, which opens the door for innovative drugs to enter the hospital. However, bidding is a very big challenge. The current centralized procurement is also an unavoidable life and death problem for China's pharmaceutical industry.

The market environment is one of the dimensions that influence the innovation of Chinese pharmaceutical enterprises. The market environment exists outside the organizational boundary of an enterprise, which can directly or indirectly affect the decision-making, operation and performance of an enterprise. Among them, the stable external environment promotes progressive innovation, and the unstable external environment promotes leap forward innovation. In the process of innovation, enterprises will constantly exchange resource knowledge and information with the external environment, have a lot of exchanges, have a lot of functions and form a lot of relationships, while the market environment is closely related to the area where the enterprise is located, such as demand driven by the opportunities brought by market demand and the expected benefits of innovation activities, competition driven by the market pressure caused by fierce competition, and government To promote policy support and guidance from government departments, science and technology development is driven by the application of science and technology achievements of the industry and its enterprises, among which the core elements affecting enterprise performance are competition orientation, user orientation and coordination of enterprise functions (Guoyong Gan, 2011)^[2]. Among these important driving factors, when the market demand changes greatly and forms a certain scale, it can have a direct impact on the sales revenue of products, and provide new market development opportunities and innovative development ideas for enterprises. Innovation activities will be

organized and implemented based on this guidance, which will stimulate enterprise innovation. Market competition pressure can speed up the implementation of innovation activities and bring temporary market opportunities to enterprises. When competitors also successively launch their own innovative products, more intense competition pressure will become the driving force to promote enterprise innovation. Technology promotion is induced by technology and product invention, which is a linear promotion of enterprise innovation.

Second, J pharmaceutical is more important to speed up the digital transformation of enterprises. The digital economy is very important for the innovation strategy and enterprise performance of Chinese pharmaceutical enterprises. No matter the current industry requirements such as audit tracking, big data of pharmaceutical research and development, market data of medicine, sales market and many other aspects, pharmaceutical enterprises are required to speed up the digital economy Construction. Now the enterprises that master the digital technology and data of medicine, such as Alibaba, Jingdong and even Shunfeng, have participated in the cross-border competition in the medicine industry. For the pharmaceutical enterprises, they should rapidly promote the industry digitalization, digital industrialization and digital governance of the medicine industry.

The white paper on the development and employment of China's digital economy (2019)^[3] points out that the digital economy reduces the cost of the real economy, improves efficiency, promotes accurate matching between supply and demand, reduces the cost of existing economic activities, and stimulates the new industry and new mode to promote the economic evolution to a stage with higher form, more accurate division of labor and more reasonable structure and wider space. The lower the transaction cost and the lower the production efficiency, the more obvious the effect of digital transformation on the cost reduction and efficiency increase of enterprises. This report will evaluate the potential space of digital transformation from two aspects of cost reduction and efficiency improvement. Among them, cost reduction will mainly consider the role of digital transformation in reducing transaction cost, management cost and financial cost. Efficiency improvement will mainly consider the role of digital transformation in resource allocation efficiency, capital use efficiency and labor production efficiency.

In the early stage, Liu Zhaojie (2018)^[4] studied the performance of digital economy and enterprises, and found that: the positive integration degree of digital economy basic industry and manufacturing industry has a significant negative effect on the performance of manufacturing industry, which is contrary to the expectation; the reverse integration degree has a significant promoting effect on the performance of manufacturing industry.

Third, the construction of innovation ability is also the main problem faced by J pharmaceutical. Innovation ability construction is a short board for Chinese pharmaceutical enterprises to speed up their construction and improve rapidly. It is also a short board for J pharmaceutical enterprises to improve. Chinese pharmaceutical enterprises have been in the downstream of the value chain in innovative drugs, especially in biological drugs. Following the pace of European and American multinational enterprises, they are original Even biological similar drugs are very few; in the field of generic drugs, many generic drugs are of poor quality and high cost, which cannot meet the demand of the people. Furthermore, many pharmaceutical enterprises from India will soon join the competition of Chinese generic drugs. Therefore, for Chinese pharmaceutical companies, the crisis is imminent, how to choose need to think deeply.

The ability of cultural innovation is the ability of an enterprise to improve its own culture in line with its strategic goal of innovation. The technological innovation ability of an enterprise refers to the ability of an enterprise to produce new products, new processes and introduce new technologies and new inventions introduced or developed into the market through commercial operation, so as to meet the needs of consumers and improve the economic benefits and competitiveness of the enterprise. The ability of management innovation is mainly based on the perspective of management process to provide relevant support for enterprise innovation activities. (Wang, 2015)^[5].

Fourth, although the research data shows that J pharmaceutical's continuous investment in innovation resources does not significantly improve the innovation performance of enterprises, it may be because the cycle of transforming innovation resources into innovation performance is too long, the industry average level is more than 10 years, and J pharmaceutical has started to invest in innovation resources for no more than 5 years,

so it is necessary to continue to increase the investment in innovation resources. Innovation resources are the direct input of enterprise performance. Although they are affected by the regulation of market environment, the restriction of innovation ability and the integration of digital economy, the continuous investment of innovation resources is still something that Chinese pharmaceutical enterprises cannot ignore.

Shiyu (2018)^[6] incorporated the situation of innovation personnel and innovation funds into the model, and inspected the innovation efficiency of innovation personnel and innovation funds from two aspects of innovation quantity and innovation quality. The results show that the average number of innovation of innovation personnel and the average number of innovation of innovation funds have significantly improved. However, as enterprises gain more shares after listing compared with private enterprises, after listing, the ownership is scattered, effective supervision is reduced, and the possibility of mistakenly ascribing innovation failure to managers' dereliction of duty is increased, which makes managers tend to carry out innovation with small risk and low benefit, leading to the decline of innovation quality; another important reason for enterprises to be listed is to obtain sufficient funds and further business Change. Commercialization is a capital intensive strategy. Once commercialization is chosen, managers have no extra capital and energy to invest in innovation. Unlisted companies do not have too much capital to allow them to commercialize, so they will focus on innovation. Compared with the unlisted enterprises that have no choice, the innovation quality of listed enterprises will decline.

4 Conclusion

In general, J pharmaceutical should improve its own innovation ability and build its own innovation ability in culture, technology and management in an all-round way: establish the innovation culture of the enterprise in culture, incline the value distribution culture of the enterprise to the innovative personnel, build J pharmaceutical cultural innovation ability and improve innovation performance; catch up with the cutting-edge industry technology in technology, such as biotechnology To increase the innovation and innovation of Biopharmaceutics, while taking into account the innovation of traditional business, to build J 's technological innovation ability; to establish a relatively reasonable and stable structure and scale in

management, with distinct levels of experience, ability and vision, and a team of talents with fighting spirit and high-quality internal and external partners. Personal development will certainly lead to better development of the company. Therefore, the improvement of employees' ability is always regarded as an important goal of team building. The diversity of innovation personnel / culture matches the internationalization of the company's strategy, more international talents are introduced, and an atmosphere that can encourage and promote the cooperation of employees and promote the development of the organization is created, so that employees can grow and develop together with the company in a diversified and inclusive corporate culture. At the same time, the partnership system is introduced, and the business partner is the development of J pharmaceutical in order to adapt to the era of knowledge economy. The exhibition requires an internal institutional arrangement designed to stimulate the creativity of knowledge capital. Its purpose is to create a group of core backbone teams with Entrepreneurship and recognition of J pharmaceutical's mission, vision and core values. Build a community of common destiny, common cause and interest of J pharmaceutical industry, and guide employees to establish cultural identity, corporate loyalty, entrepreneurial passion and work enthusiasm accordingly, so as to achieve the growth of company performance and personal income and strengthen the construction of J management innovation ability.

Accelerate the digital transformation. At present, data has become the core strategic resources of J pharmaceutical. Digitalization refers to the application of various digital technologies by enterprises to carry out production process simulation, business activity monitoring, business panoramic display, quantitative decision analysis, business model innovation and other activities, so as to promote management transformation and business upgrading and achieve efficiency and efficiency improvement. The digital transformation of J pharmaceutical requires the efficient use of data resources and the synchronous and coordinated development of relevant technology, business innovation and management mechanism. Promoting digital transformation will bring new economic development space for J pharmaceutical and upstream and downstream ecology, promote the transformation and upgrading of J pharmaceutical, and support the high-quality development of J pharmaceutical and get out of the dilemma.

In addition, J pharmaceutical should continue to increase the investment in key resources, keep a high proportion of innovation investment, and increase the cultivation and introduction of talents, especially the key figures with industry influence and high-end talents who master key technologies, and share the revenue as business partners; the investment in key facilities, such as the implementation of key equipment involved in some industry-leading technologies, In order to ensure the realization of innovation, J pharmaceutical should speed up the construction; in terms of adapting to the market environment of harmonious innovation, the pharmaceutical industry is an industry greatly affected by national policies, and also a key development area in the 13th five year plan for healthy China. The reform of the medical and health system has entered into the deep water area and further deepened. The implementation of the first batch of procurement with volume, the implementation of the structural adjustment of medical insurance, the gradual promotion of hierarchical diagnosis and treatment, the new version of the basic drug catalog, the clinical pathway, and the publication of the auxiliary drug catalog will have a greater impact on the development of the pharmaceutical industry. In the face of the above changes in the market environment, the company pays close attention to the policy changes, strengthens the interpretation and analysis of the policy, actively adapts to the relevant policies of the national pharmaceutical reform, and maintains the sustainable development momentum of the enterprise. Only by doing the above measures can J pharmaceutical adapt to and face the rapidly changing market environment under the digital economy, and improve J pharmaceutical enterprise performance.

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