



# Research on the Growth of Medical Device Firms Driven by the Normalization of COVID-19 Epidemic Take INTCO MEDICAL CO., LTD for Example

Junhui Xue<sup>(✉)</sup>

International Economy and Trade (Graduated), Nanjing University Jinling College, Nanjing, China

j0nahxue0316@gmail.com

**Abstract.** This paper aims to examine the changes the COVID-19 epidemic has brought about for the medical device sector and to show how it has helped medical device companies grow. In order to generate more thorough recommendations for the implementation of strategies for medical device companies in response to these significant changes, the paper first analyses the factors influencing the current macro environment in which the company is operating using the PESTLE model. It then uses a business model canvas and SWOT analysis. The analysis' findings indicate that, as the new crown epidemic becomes more common, there is significant room for improvement in both market demand and product distribution for the primary business of medical device businesses. This paper makes the case that, in order to better adapt to the changes brought about by the normalisation of the COVID-19 epidemic on the medical device industry as a whole, medical device companies may decide to transform or change their distribution model based on the findings of the analysis.

**Keywords:** The COVID-19 epidemic normalization · medical devices · INTCO MEDICAL CO. · LTD

## 1 Introduction

A significant sector of the national economy that incorporates R&D, production, distribution, and services into a multi-project enterprise is the medical device sector of the pharmaceutical business. In most medical device firms, there is an inherent connection between old and modern industries: there is both fundamental production and processing and a serious pursuit of technology. Medical devices are very important strategic industries with good prospects for the development of medical device related enterprises, as well as fierce competition. This is due to the corresponding medical device market volume, variable technical requirements, uncertain inputs, high output and return profits, and high risks.

There has been an outbreak of COVID-19 in 2019, and there is now no indication that it will end. The COVID-19 epidemic has had a direct influence on the business of medical equipment businesses, which are intimately related to the medical industry. At the same time, previously existing changes in the external environment are still progressing. Examples include the growing worldwide issue of ageing and the population's increasing awareness of their health as a result of rising economic status. These alterations have been connected to or plotted against regular manufacturing and activity in the medical device sector. Medical device businesses should start from their own circumstances, react to the scenario, and make logical judgments in the face of the complex environment the epidemic has created in order to assure survival and future development.

## **2 Literature Review**

### **2.1 Related Background About COVID-19**

Szczygielski Jan Jakub and Charteris Ailie (2021) noted that the pharmaceutical industry, as an industry associated with the COVID-19 epidemic, has a higher volatility and higher uncertainty in the operations of existing pharmaceutical-related companies, and medical device companies are no exception; [1] meanwhile, Mazur, Dang and Vega (2020), in their analysis of the impact of COVID-19 transmission on various sectors, found that the medical device sector had higher returns during this period, and even had a single monthly return of over 20% during 2020 [2]. This is an anomaly compared to other sectors, as production and distribution in all sectors were constrained by the epidemic and overall returns were not as good as in a normal year. However, it also shows that the medical device industry in the context of the COVID-19 epidemic has demonstrated the high risk and high return nature of the pharmaceutical industry. In his analysis of the development opportunities for the pharmaceutical industry in the context of the COVID-19 epidemic, Yi Chubin (2020) suggests that the COVID-19 epidemic is a sudden public health event, but its impact is unprecedented in scope and is likely to exist as a regular event in the future, which will bring changes to pharmaceutical companies and create new opportunities [3].

### **2.2 Previous Research on Medical Device**

Medical devices are mainly divided into high-end medical equipment products and low- and mid-range medical consumables products. In a market analysis of the medical device industry based on the SCP (structure-behaviour-performance) model by Guo, Nanyun and Yang (2022), there is a more detailed analysis of this phenomenon: common medical devices are mainly low-end products, as these products generally do not have technical barriers, are easy to imitate and occupy a major share of the medical market [4]. Since only hospitals and other industries related to medicine are the customers for high-end products like respirators and medical ultrasound instruments, the market for these products has high requirements for market concentration, product structure, and innovation capability. As a result, based on the principle of market economy, price wars are the last thing that any business should encounter. Therefore, most medical device companies will choose to focus on a single business, make product differentiation, improve industry concentration and reduce production costs.

### 3 Method

INTCO MEDICAL CO., LTD, a producer of complete medical care products, was founded in 2009. The company’s primary business is the creation, manufacture, and distribution of medical gloves, mostly PVC and nitrile gloves, but it also sells wheelchairs, electrode pads, hot and cold packs, and other products used in rehabilitation. Currently, INTCO Medical is China’s top producer of disposable medical gloves. 97.22% of INTCO Medical’s product revenue came from personal protection items, while 1.55% came from rehabilitative care items.

Figure 1 illustrates how INTCO Medical’s revenue and net profit have increased rapidly since the COVID-19 epidemic’s onset. INTCO Medical’s revenue increased to 138.4 billion in 2020, over seven times what it was in 2019, while its total profit increased to 7.01 billion, or a 3,200% rise in net profit. And even though the company’s net profit growth rate has slowed in 2021, all performance metrics are still increasing by more than 50%. In addition, Fig. 1 also demonstrates that INTCO Medical’s net profit after deduction is nearly identical to its actual net profit in 2020 and 2021, demonstrating that its primary business, the production and sale of medical consumables, is the source of almost all of the growth in its overall operating results during these two years, which have seen a doubling in performance.

#### 3.1 Trend Analysis: PESTLE Model

The PESTLE model is a tool for trend analysis of external macro-level influences. In this study, the COVID-19 pandemic and other external factors’ effects on the strategic environment of INTCO Medical’s business are analyzed using the PESTLE model [5].

#### P Stands for Political Determinants

The particular tariffs imposed on medical devices between various countries make up the majority of the political variables affecting the medical device business. One of the specific commodities produced by INTCO Medical is medical equipment. When these

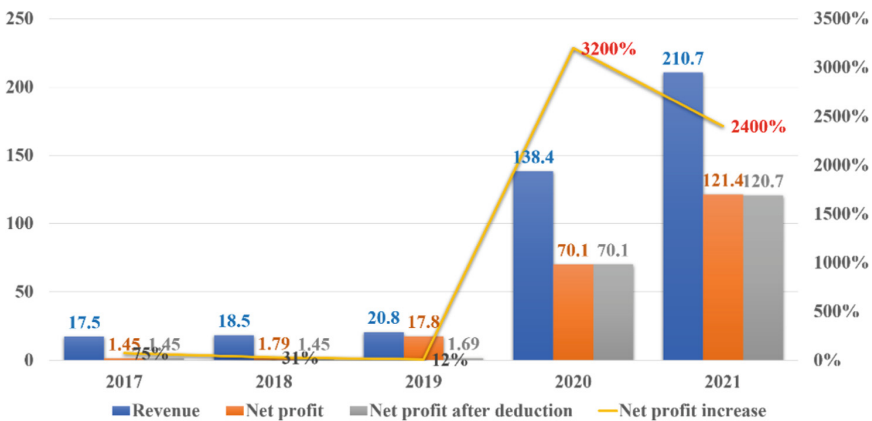


Fig. 1. Performance of INTCO MEDICAL 2017–2021 [Self-drawn]

products enter other nations, they are subject to various tariffs, which may have a detrimental effect on their export and international sales. Moreover, there is the conference. A centralized medical device procurement policy has also been established in China since 2018, ensuring that all medical gadgets needed by hospitals are uniformly purchased by government planning. Although this legislation represents a significant shift for the Chinese medical device sector as a whole, INTCO Medical 's revenue has not been significantly impacted [6].

### **E Stands for Economic Variables**

INTCO Medical's major market is still China, and as its international business will only make up 23.7% of its total sales by 2021, the COVID-19 outbreak has caused some swings in the RMB currency rate, but overall it has not been more seriously impacted [7].

### **S Stands for Social Variables**

The most significant change in society is the population's heightened subconscious knowledge of medical protection. And this modification will actually result in a new market share for medical device products, for which INTCO Medical is providing additional room for expansion. The change in social factors ensures that the pressure on the demand side of INTCO Medical is significantly reduced and that the increased capacity during the outbreak can still be effectively released.

### **T Stands for Technological Aspects**

All of the production facilities currently in use were constructed after 2010 and all of INTCO Medical's production lines and sophisticated DCS systems are its own creations. With 500 quality check points and a standard length of over 1.5 km, INTCO Medical's automated production line maintains a yield rate of over 99%. This demonstrates that INTCO Medical has a technological advantage that is unmatched in the business. This can effectively help INTCO Medical to increase the scale of production, control production costs and maintain an edge in the industry competition.

### **L Denotes Legal Considerations**

China amended the Regulations on Supervision and Administration of Medical Devices in 2021, placing an emphasis on tightening these regulations while also raising the minimum requirements for both required national standards and mandatory industry standards. All of INTCO Medical's production facilities are compliant. The implementation of this modified legislation will actually improve INTCO Medical's market competition. INTCO Medical's production facilities are relatively new and fully compliant and do not need to worry about the impact of the change in legal factors. However, this change will have a positive effect on competition in the market for INTCO Medical as it will affect competitors in the industry who are not technologically up to date.

### **E Stands for Environmental Variables**

The Medical Device Regulation's revisions have made clear that the emission standards for waste generated during the manufacture of medical devices have also been raised. This will result in higher expenses for INTCO Medical.

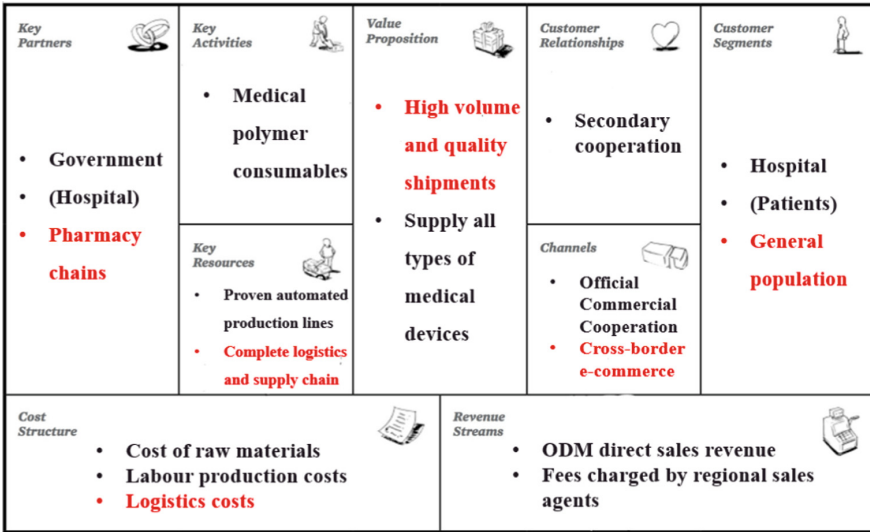


Fig. 2. INTCO Medical’s Business Model Canvas [Self-drawn]

### 3.2 Strategies Analysis: Business Model Canvas

A tool for analytical modelling that is used within a firm inside is the business model canvas. It facilitates the standardisation of a business model’s components and the highlighting of their relationships. In this essay, the Business Model Canvas is used to analyse and design INTCO Medical’s internal scenario in the context of COVID-19 epidemic’s normalisation [6] (Fig. 2).

#### Customer Segment

In the past, hospitals were primarily INTCO Medical’s target market, however some patient populations also had some demand for medical disposables. Retail pharmacies, one of the sales venues, are currently dealing with a significantly larger demand for these protective gears as a result of the impact of the new epidemic. Their clientele has grown significantly.

#### Value Proposition

The high quality and quantity of items that INTCO Medical is able to produce are indicative of their commercial value because they are a specialist in solely producing medical disposables. Additionally, they are able to provide all varieties of medical devices to their clients, which appeals to big clients who mostly work with their primary business.

#### Channels

INTCO Medical has now established a cross-border e-commerce business in order to attract more foreign customers in the regions affected by the COVID-19 epidemic, which

has helped them to absorb their production capacity. This is in addition to the previous channels of working directly with government officials and hospitals.

### **Revenue Streams**

INTCO Medical makes money in two different ways: first, as an OME or ODM manufacturer, by producing labelled goods and selling them to client companies in need without using buyout techniques to obtain partnership fees; second, by producing and selling their own branded products and hiring agents in different regions to authorise the products for sale, thereby making money from sales. The COVID-19 epidemic has greatly boosted the need for medical devices, which has led to an increase in income for INTCO Medical under both strategies [5].

### **Key Resources**

The nation's top automated manufacturing line and the full factory logistics supply chain make up INTCO Medical's fundamental resources.

### **Key Partners**

In addition to the hospital community that the government is representing, INTCO Medical's partners have access to a network of important locations. Quantity of money, a completely new standard of success.

### **Cost Structure**

INTCO Medical's partners include pharmacy chains in addition to the government-represented hospital community. The cost structure of INTCO Medical is composed mostly of three components. Raw material consumption costs are the first; labour costs associated with running the company are the second; and logistical costs are the third. Raw material prices increased somewhat during the COVID-19 epidemic's early outbreak phase, but they have now returned to normal levels. In contrast, logistical costs have skyrocketed, driving up the price of INTCO Medical's products.

## **4 Conclusion**

### **4.1 Summary of SWOT Analysis**

#### **Strengths and Opportunities**

Due to increased market demand brought on by the COVID-19 epidemic, the mid- and low-end medical device companies represented by INTCO Medical fared better than high-end medical device companies during the COVID-19 outbreak [8]. Due in large part to the growth of their e-commerce operations during the epidemic, medical device companies experienced a renewal of their sales channels and customer base. These help the medical device sector expand even after the COVID-19 outbreak returns to normal.

#### **Weaknesses and Threats**

The COVID-19 outbreak has created a demand that is naturally more erratic. It is a significant difficulty for medical device businesses with a single major business to continue

to expand their income in the face of decreased demand when the COVID-19 outbreak became the norm. It is particularly difficult for businesses that saw strong growth during the epidemic to absorb the current overproduction. The demand created by the epidemic will lead to the creation of new businesses, which will increase competition within the sector [9].

## 4.2 Strategy Implementation Recommendations

Against the backdrop of the normalisation of the epidemic, INTCO Medical will be able to maintain its current level of revenue and position in the industry in a short period of time, but will need to face the two major challenges of a single unstable business and declining market demand. Therefore, INTCO Medical may consider developing new businesses related to its main business technology as a complement to its business structure, which has the advantage of being able to develop new businesses at a lower R&D cost. At the same time, in order to absorb the excess production capacity, INTCO Medical can make use of its technological advantages to develop overseas markets and increase overseas revenue, while maintaining a solid domestic market share.

Smaller medical device businesses could do better to choose transformation when the COVID-19 epidemic becomes normalised. They may decide to alter their operations to better meet consumer demand and pursue higher exogenous growth in order to boost sales and rapidly expand their scale; in this case, the proportion of investment going toward R&D will also need to be increased [10]. The companies involved will benefit from the release of this demand in the medium to long term if they choose to transform into high-value consumables or high-end medical devices, as these two areas will experience increased market demand as a result of the ageing of the world population; alternatively, they may decide to concentrate on R&D innovation in the current area of product updates and iterations and pursue endogenous growth in the case of ensuring revenue, which will also ensure long-term earnings potential.

Additionally, businesses that are already of a particular size might concentrate more on the international medical device market. There are still nations and areas in the world where the new crown plague is at a more advanced level, and their economies are strong enough to absorb the surplus capacity that businesses have developed as a result of normalisation. It is also possible to expand cross-border e-commerce collaboration in order to attract more international business and grow international industries in order to increase earnings.

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