

Research on Pinduoduo Business Model in the Context of Social E-commerce: Based on the Framework of Canvas Model

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Abstract: With the rapid development of the world economy and the rapid development of science and technology, the traditional e-commerce model can no longer adapt to the needs of the social market. In this context, social e-commerce has formed a new development model in the socialized market. As a representative of the new social e-commerce model, Pinduoduo has rapidly emerged by virtue of its innovation and R&D power, allowing the potential of e-commerce as a whole to be explored once again. This paper firstly explains the definition of social e-commerce and its development direction, then gives a brief overview of Pinduoduo, using the canvas model proposed by Osterwalder to dissect Pinduoduo 's business model and discover possible problems with Pinduoduo 's business model, with a view to providing inspiration and reference for other social + e-commerce enterprises.

1. Introduction

With the gradual popularity of the Internet and the continuous development of the e-commerce industry, problems such as high costs and unstable customer sources are increasingly highlighted in the traditional e-commerce model, which is not adapted to the development of society. In this situation, innovative business models play a vital role in market development and business success. As a dark horse in today's e-commerce industry, Pinduoduo has rapidly risen to prominence with its "social + e-commerce" business model, listing in the US within 28 months of its establishment and becoming the first Chinese e-commerce platform to be listed on the New York Stock Exchange. Management guru Peter Drucker proposed that "the competition between companies today is not between products, but between business models" [1]. Because of this, business models are one of the most discussed and controversial topics in business and academic circles today. In practice, no two companies have exactly the same business model, and successful business models are like black boxes that are difficult to replicate and parse, which makes the study of business models and how to capture success difficult and confusing. This paper takes the business model of Pinduoduo's e-commerce platform as the object of study, and uses the canvas model as a tool to explore the various components of its business model and the logical relationships between them through progressive analysis, and then draw inspiration and reference from them.

2. Theoretical Basis

2.1. Business Model (Business Model)

As a new research hotspot in the field of management, business model has attracted widespread attention from academics and enterprises, but scholars do not have a uniform definition of what a business model is. But in general, we all agree that a business model is about a way of to create and capture value for a business [1]. Is the ability of companies to skillfully connect various related elements and associates to interact with each other to form an organic "business ecosystem" [2].

2.2. The Connotation of the Business Model Canvas

Osterwalder & Pigneur (2004) propose a method to visualize and analyse commercial models. The method breaks down the components of a business model into nine segments from four perspectives: value proposition, customer segmentation, customer relationships, channel access, key operations, core resources, key collaborations, revenue sources, and cost structure. Business Canvas normalizes the elements of a business model, emphasizes the interactions between the elements and can clearly articulate the operational mechanism of a business model. Analytical methodology is now widely used in analyzing, assessing and designing organizational business models, business innovation activities and other areas. [3]

This paper uses the business canvas analysis method to analyze the business model of social e-commerce enterprises using Jindo as an example, looking for possible problems in the business model of Jindo, in order to get some useful inspiration and reference from it.

2.3. Connotation of Social E-commerce

Social e-commerce, also known as social e-commerce, was first proposed by Yahpp in 2005, and since 2007 scholars have been focusing on this emerging field of research and have come up with different definitions, but in general social e-commerce is a new type of e-commerce that uses social media, online media and other communication channels to interact with interpersonal relationships and business information, through social interaction and user-generated content to assist in the purchase and sale of goods. The new type of e-commerce. [4] Through the description of the definition, we can see that social e-commerce has characteristics such as strong sociality and interactivity, using social networks as a medium of communication between buyers and sellers, and consumers' willingness to purchase is greatly influenced by trust. Zhu Xiaodong and Jie Chen (2016) believe that social e-commerce includes not only extending the social network function in e-commerce, but also extending the social network function in e-commerce, and also using social media to carry out various business activities. [5] Zhu Xingrong (2018) pointed out that social e-commerce refers to the behavior of sharing social interactions, users' original content, etc. based on the interpersonal network with the help of the communication function of social platforms, thus assisting in commodity purchase and transaction. [6] Wang & Zhang (2012) believes that social e-commerce is a business form that integrates online and offline environments with social media as a link. [7] Lai (2010) pointed out that social e-commerce is an activity that combines social media to conduct online purchase and product sales in e-commerce. [8]

3. Case Study

3.1. Introduction to Pinduoduo

Founded in September 2015, Pinduoduo is a gathering of friends, relatives and neighbors to take advantage of lower prices on products. The company quickly rose to prominence with its "social + e-commerce" business model, becoming the first Chinese e-commerce platform to be listed on the New York Stock Exchange 28 months after its inception. The growth of Pinduoduo is far faster than the number of users. Pinduoduo is growing faster than any other e-commerce platform before it in China. Why has Pinduoduo been successful? What are the unique features of its business model?

3.2. Canvas Analysis of Pinduoduo's Business Model

3.2.1. Value Proposition

The value proposition is mainly expressed in providing products and services that create value for a certain group of customers, mainly considering what kind of business ideas and values we want to convey to our customers. Based on these questions, Pinduoduo articulated its brand's value through innovative marketing campaigns and unique marketing techniques.

3.2.1.1. Innovative marketing activities

(1) Assistance for free purchase. The main way to achieve free shipping is by "cutting a deal". This is where users invite other users to help them cut prices by sharing and scanning codes. Pinduoduo has set the level of difficulty for this free shipping process, requiring as many users as possible to participate in the process. This is a great way to increase the number of new users, and also to make it possible for old users to get more benefits through the free shipping campaign.

(2) Ten billion subsidies. The 10 billion subsidy is one of the most core gameplay of Pinduoduo. The interface is divided into multiplayer groups and 50% off. The highlight is the "multiplayer group", where multiple people buying the same item within a certain period of time can enjoy a big group purchase discount. The company also offers quality guarantees such as genuine goods guarantee insurance, fake products, priority after-sales service, and insurance coverage by PICC. This activity has attracted a lot of traffic for Pinduoduo, and has also improved its industry status and business competitiveness.

(3) Duoduo Orchard. Duoduo Orchard belongs to the cultivation category link, mainly to complete tasks, get fertilizer and water drops, water and fertilize the fruit trees, and after the trees reach a certain level, players can receive a free box of fruit. This method of obtaining free fruit has greatly increased application utilization and merchandise sales.

3.2.1.2. Unique marketing approach

(1) Tactical group buying. Pinduoduo picks up the traditional group-buying model and makes innovative improvements. The new group-buying model allows users to get a group-buying discount at the same price, or to buy with a stranger, allowing two unconnected people to both enjoy a discount. On the home page of the Pinduoduo App is the "Pound Small Circle" program, which contains mostly records of products purchased by one's friends or given positive reviews. Even within the APP, "Pinduoduo" creates social ties, forming a "Pinduoduo" that is unique to each user.

(2) Tools to compare prices. When users shop on Pinduoduo, they generally buy individually or by initiating a group order, and the price of products in the initiating group order mode is significantly lower than in the individual purchase mode. This pricing and marketing approach makes consumers

feel that they are profiting from their purchases and enjoy shopping on the platform.

3.2.2. Customer Base

3.2.2.1. Customer segmentation

The customer segmentation module describes the target groups and organisations that a business wants to serve, with the main consideration being who to create value for and who are our important customers. Any company can deliver services to one or more customers, but no service can satisfy the needs of all customers. Pinduoduo, as an e-commerce company, provides production services mainly from two aspects: the target group and the merchants who are enrolled.

(1) Target group. When Pinduoduo was created, it focused on the third and fourth economies. Compared to Tier 1 and Tier 2 cities, Tier 3 and Tier 4 residents have relatively low wage incomes and less income to spend on entertainment, so they have a high demand for low-priced products from Pinduoduo. At the same time, residents of third and fourth tier cities are more likely to use their free time to participate in the activities launched by JDODO, such as helping to win free orders and cutting prices to win cash, which improves traffic and competitiveness and reduces the risk of business development. Compared to other e-commerce platforms that sell goods at higher prices, the prices of Jindo's goods are more suitable for the needs of the general public, laying a stable market base for it.

(2) Merchants. The resident merchants of Pinduoduo are mainly individuals and companies that open stores. Pinduoduo's large number of consumers has attracted merchants in various areas such as beauty, food, home decoration and accessories to the platform, providing a rich and diverse range of goods and services. As of September 3, 2022, Pinduoduo has 5.6 million merchants on board and over 93 million products online. The huge number of merchants and products makes the whole platform more complete for shopping.

3.2.2.2. Customer relationship

Customer relations are driven by multiple drivers for customer acquisition, customer loyalty and increased sales. Pinduoduo's customer relationship module focuses on three areas: automated services, supply relationships, and customer communities.

(1) Automated services. In the context of big data, this is a common way for companies to commercialize their products via big data platforms, and Pinduoduo is no exception. Based on the data in terms of user browsing and searching for products in the background, Pinduoduo understands consumers' preferences and needs, and carries out targeted big data promotion for them. In addition, there is also an automated service for customers in terms of after-sales service. When a customer contacts a merchant, the platform bot automatically sends messages about where the product was sent, when it was sent, and when it is expected to arrive, to meet customer needs in a timely manner and improve service quality.

(2) Supply relationships. The platform and suppliers of Pinduoduo consist mainly in the areas of zero dollar entry, premium brand entry into Pindo, and traders supplying deposits to the platform. Pinduoduo is introducing premium brand shops as well as giving great discounts to the merchants who are on board, thus increasing the supply of goods and services and giving customers a better shopping experience.

(3) Customer community. Social commerce is a new model centered around the "social". Pinduoduo uses various gamification methods to attract customers' social circles, i.e. connecting user A with user B, forming social fission, increasing user stickiness and boosting platform traffic. In addition, many consumers participate in group purchases together, sharing and discussing their respective buying experiences, forming a small online community.

3.2.2.3. Channel channels

Channel access refers to the channels through which a company can connect with its customers and communicate its value proposition to them, and is an important link between the company and its customers. The channels of Pinduoduo are mainly WeChat public number and APP mini program.

(1) WeChat Public Web Site. The pindo was launched in 2015 and crossed directly over the PC into mobile mobile. WeChat (WeChat) was launched in January 2011, and as of the second quarter of 2016, 94% of smartphones in China already have WeChat, with 806 million monthly active users. Pinduoduo did not have its own separate website or app at its inception, but used the huge traffic of WeChat to attract users to participate in it. According to Pinduoduo's official website, within two months of Pinduoduo's launch users broke through 12 million, which shows that WeChat is a very important channel for Pinduoduo.

(2) APP applet. The Pinduoduo applets were developed after Pinduoduo and Pinduoduo were merged to increase grip and enhance the user experience. Users can place orders, pay, evaluate, return and refund goods in the APP, which is more functional and convenient than the WeChat public website. Data from market research firm Sensor Tower shows that since its launch in September 2022, Temu, the cross-border e-commerce platform of Pinduoduo, has reached 10.8 million installs in the US market.

3.2.3. Composition Structure

3.2.3.1. Key business

Key activities are the activities that an organization must carry out to support the functioning of its business model. Key business is determined by other modules such as value proposition, revenue streams, etc. Pinduoduo's key businesses are IT systems and software development and maintenance, collocation, and platform promotion.

(1) Development and maintenance of computer systems and softwares. Pinduoduo's platform is mainly in the form of WeChat public number, WeChat mini-program and standalone APP. Pinduoduo brings together a large number of buyers and sellers through its platform. Goods and services are displayed through the platform, and a series of activities such as payment for goods, customer communication, user sharing and after-sales service are carried out using the platform as a specific carrier.

(2) Shopping. Pinduoduo Pinduogou primarily competes with consumers on the retail market. The price of each product on the Pinduoduo platform is generally 2%-60% lower than the price of individual purchases. In the process of shopping for products, customers can send links to products to their friends on WeChat, or participate directly as a stranger in a group purchase initiated by other buyers, or be the master of the group and wait for other strangers to join, and then enjoy the group purchase price. The platform environment solves the trust problem of foreign group purchase, and realizes a win-win situation for buyers, sellers and the platform with a smooth and easy transaction process.

(3) Platform promotion. In terms of promoting the platform, Pinduoduo has done three main major things: 1) Maintain the price advantage and attract customers with low prices. Starting from the supply chain, we help factories to realise customised production, reduce procurement, production and logistics costs, and ensure the value advantage of platform goods; 2) Use the advantages of social e-commerce to carry out viral marketing. Set up modules on the platform such as limited-time seconds, daily half-price purchase and cut-price free take to attract customers with attractive low prices and interesting shopping process; 3) Adopt traditional ways of marketing and actively use TV programmes, choreographed songs and other ways to place a lot of advertisements and carry out the

marketing through traditional channels.

3.2.3.2. Core resources

The Core Resources module is used to describe the most important factors required for the effective functioning of the business model and the creation of value and competitiveness within the company. Pinduoduo's C2M ("consumer to manufacturer") model reduces costs by reducing intermediate links such as inventory, logistics and distribution, allowing users to purchase low-cost, high-quality goods. The model reduces costs by reducing inventory, logistics, distribution and other intermediate steps, allowing users to purchase low-cost, high-quality goods. Pinduoduo's core resources include physical assets, financial assets, knowledge assets and human resources.

(1) Physical assets. For Pinduoduo, the physical assets are the IT platform systems, including the WeChat platform's public website, WeChat mini-programs and independent APP programs. With these IT systems, it is possible to bring sellers and sellers together to enable transactions. Pinduoduo does not have its own courier system or storage system, in this respect Pinduoduo belongs to the light asset type in e-commerce.

(2) Knowledge assets. Pinduoduo is an electronic commerce company, but it is also an information company. As a result of users' purchasing behaviour, a huge amount of historical data has been deposited, including user information and purchase records. This data is an extremely valuable asset to the company. Based on this data, Pinduoduo can carry out big data analysis, accurately portray user profiles and study customer behaviour.

(3) Human resources. People are a precious asset for any company. According to the official website of Pinduoduo, the average age of its members is 27 years old, and 70% of them graduated from famous universities in China such as Tsinghua, Peking, Fudan, Jiaotong, Zhejiang and other famous overseas universities, including a large number of technical and product elites from various Internet companies. By 2021, the company will have 8,000 employees, with technical engineers accounting for more than 50% of the total.

(4) Financial assets. Internet companies in their startup phase need a lot of financial support. Pinduoduo has had a lot of success in terms of financing, having secured over US\$3 billion in financing before going public.

3.2.3.3. Key collaborations

The number of Pinduoduo users in the retail market is proportionate to the number of traders on board, who feed each other. A large number of buyers attract more merchants to the platform, offering a wider variety of products and services, which in turn attracts more customers to shop on the platform. By the end of 2020, the number of active buyers on Pinduoduo reached 788.4 million, making it the largest e-commerce platform in China in terms of users, up 35% year-on-year from 585.2 million at the end of the previous year. The platform has a strong appeal to merchants and has already seen cooperation from well-known brands involving a number of industries, such as Midea Group, China Post and Nongfu Shanquan, as well as partner platforms.

3.2.4. Financial Situation

3.2.4.1. Cost structure

The Cost Structure Module is used to describe the costs a business has to incur to operate a business model. Costs are incurred to create and deliver value, maintain customer relationships and generate revenue. The cost structure of Pinduoduo is mainly platform, R&D, subsidies, eco-building, advertising, promotion and affiliate promotion.

3.2.4.2. Revenue sources

The revenue stream component is used to describe the cash income, net of costs, the business generates from each customer segment. Revenue streams are the arteries of the business model. Without a stable source of revenue to support it, the business model will not last. The two main sources of revenue are online marketing services to merchants (mainly advertising) and revenue from merchandise sales.

3.2.4.3. Current state of profitability

In May 2022, Pinduoduo 's FORM 20-F annual report filed with the US Securities and Exchange Commission (SEC) showed that Pinduoduo 's total revenue in 2021 was RMB93,949.9 million (approximately US\$14,742.8 million), an increase of 58% compared to RMB59,491.9 million in 2020. In the first quarter of 2022, sales for Pinduoduo amounted to RMB23,793.7 million. In January 2023 Pinduoduo ranked No.11 on the 2022 Hurun China 500 list.

4. Problems in Pinduoduo's Business Model

4.1. Product and Service Issues

The biggest advantage of Pinduoduo in standing out from so many other internet business platforms is that it sells its products at low prices, which attracts most consumers to shop on the platform. However, due to lower prices of goods, many merchants cut corners and lower the cost of goods in order to make a profit, and there are even frequent counterfeiting practices that lead to a decline in product quality. A major reason for this problem is that the platform does not have strict standards for merchants' entry thresholds, and the products are mixed. In terms of after-sales service, Pinduoduo's returns and refunds are less efficient, manual customer service is in short supply, and robots reply to messages frequently, leading to customer boredom. In addition, Pinduoduo's slow delivery speed, untimely updates of logistics information and broken items greatly affect consumers' shopping experience.

4.2. Sales Crowd Limitation Problem

On the Pinduoduo platform, goods are primarily sold in low-priced bundled sales, with the target users being third- and fourth-tier consumers who are primarily looking for low-priced goods. The prices of the goods under its banner are generally low, and there are fewer personalized high-end goods, which makes Pinduoduo limited to the customer groups it faces, resulting in little inflow of high-end consumers and reducing the profitability of the enterprise.

4.3. Problems of Marketing Model

Some of the marketing models promoted by Pinduoduo have a tendency to drive down consumer confidence. For example, the phenomenon of Pinduoduo swiping is more serious, and in pursuit of higher profits, people are found to swipe orders, some false information and reviews have an important impact on consumers' shopping discernment, and Pinduoduo's brainwashing and exaggerated advertisements are promoted in major media. In the long term, this will reduce consumer confidence and create a boycott mentality. In addition price cutting, booster, etc. are also important means of marketing in Pinduoduo, but Pinduoduo has a short development time relative to other platforms, there are certain loopholes in technology, the difficulty of successful price cutting and the way unscrupulous elements use false QR codes to cheat money, while Pinduoduo 's brush-off

phenomenon is particularly serious, and the platform has not taken effective measures, so that most consumers are now increasingly wary, which is not conducive to the long-term development of the platform.

5. Suggestions on Improving Pinduoduo's Business Model

5.1. "Cleaning up the Virus" - Adopting the Word-of-mouth Marketing Model

Pinduoduo's current "viral" marketing model is unsustainable over the long term. It is important to strengthen the management and control of all kinds of advertising and marketing, to reduce the presence of page ads, and to expand the promotion of the app, rather than limiting it to activities such as "chopping a knife" and "bonus benefits", which will only make people reject the app if they get no results from multiple boosts. People will only be repulsed and even recognise it as fraudulent software; it can take the form of reducing activities, increasing the odds, providing guarantees, compensation services, etc., to improve user trust, and after the popularity has increased, it must rely on quality and quality service, through word-of-mouth marketing in order to stand firm in the market.

5.2. Strengthen the Management of Single Brushing Behavior

Strictly speaking, theft is an illegal act that not only deceives consumers, but also violates the rules of the marketplace. Therefore, Pinduoduo should strengthen the construction of network technology, enhance the supervision of network purchases, use the advantages of network big data analysis, explore the combination of tax supervision, quality supervision, network supervision, the whole process of supervision of the platform's backstage information, etc., once found "swipe single speculation" behavior, immediately track the organizers, sellers and "brushers" in this industrial chain of "brush single speculation" should be sanctioned severely according to the law, and the cost of breaking the law should be increased substantially, while the victims should be given compensation, and the state should formulate perfect laws and regulations to regulate market behavior and guide enterprises to correct 5.3. Improve the logistics system.

5.3. Improve the Logistics System

Pinduoduo can set up a fourth party logistics, invest in its own construction, construct an intelligent logistics service system and develop its own logistics system. Secondly, it can cooperate with more put logistics platforms, such as through cooperation with platforms such as Cainiao, to ensure timely updates of logistics information, establish and provide a customer-merchant-logistics communication platform, add customer service, answer customer queries in a timely manner, strengthen the links between procurement, distribution, transportation and information, improve the quality of logistics services, enhance logistics service efficiency and make consumers more satisfied.

6. Conclusion and Prospect

The economic model of "social + e-commerce" is the unavoidable tendency of the combination of the Internet and the market economy. With its innovative marketing approach and precise market positioning, "Pinduoduo" has become a superstar in this industry, becoming a comprehensive e-commerce company second only to Alibaba and Tokyo. This article uses Osterwalder's picture. This paper uses Osterwalder's Canvas Theory to analyse the business model of Pinduoduo, whose core strength lies in its community-based approach, which enables deeper exploration of community value through continuous and deeper interaction with users and innovation in customer relationships.

Innovation in core resources.

Pinduoduo's rapid expansion has been accompanied by product quality issues that have proliferated due to low prices, and it is constantly improving its management system to strengthen quality control and protect the rights of its users. It will still take time to truly overcome this flaw. To analyse and make corresponding suggestions for the problems encountered by Pinduoduo in its development, such as declining product quality, low efficiency of after-sales service, imperfect user orientation and unreasonable marketing model, make strategic adjustments and upgrades, and provide new ideas for the future innovation and development of the whole Internet industry. In the future, with the continuous development of society, it is believed that the business model of social e-commerce will continue to innovate, the industry will slowly become mature, and the users' sense of use and satisfaction will be improved accordingly.

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