# ANALYSIS ON THE INFLUENCING FACTORS OF XIAOMI'S BUSINESS MODEL BASED ON ISM

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**Abstract**

With the rapid development of the Internet industry, smart phones have become an indispensable part of people's life. In just a few years, Xiaomi Tech has successfully occupied the Chinese market, which is inseparable from its business model. Based on the existing research, this study divides 9 factors that affect Xiaomi's business model from the two dimensions of "enterprise-market", and studies the comprehensive effect of these factors by using ISM model. The relationship between different levels of factors influencing the business model of Xiaomi Company is clarified, and the main factors influencing the success of the business model of Xiaomi Company are explored, so as to provide suggestions for the development of business models of similar technology enterprises.

**Keywords:** Xiaomi's business model, Influencing factors, ISM

## 1. Introduction

With the rapid development of the Internet industry, smart phones have become an important part of people's daily life. With the improvement of living standards, China has become the world's largest producer and consumer of smart phones. With the increasingly fierce competition of electronic products, mobile phone brands are rapidly replacing their products to meet the ever-changing customer needs and the needs of era. Xiaomi company with its extremely characteristics of its business model, for example: the key to the business combination of "hardware + software + services", brand characteristics of "low price + high performance", sales channels of "has its own sales + partners", business philosophy of "born to fever + differentiation", customer relationship of "co-creation and participatory", etc., into the public view, and was deeply loved by consumers. At the same time, Mi wins the continued growth in the domestic market and a good position.

At present, there is a lot of literatures on Xiaomi's business model analysis. Many scholars have provided valuable insights from different perspectives and using different methods. Xuegao, Zhang, for example, his paper discusses the "hunger marketing" of Xiaomi, which adopts the unique "high configuration and low price" business model, Wei Hui etc. through the analysis of the building of Xiaomi's intelligent hardware chain enterprise of business ecosystem are studied and value to deepen, Bai Yanzhuang uses the angle of enterprise culture, such as Xiaomi's business model for research. These studies have yielded a great deal of consensus on many issues. Of course, there are problems such as single research perspective in the existing studies, especially the lack of understanding on the issue of "what are the main factors influencing the success of Xiaomi's business model".

Under this background, the use of explanation structure model ISM(Interpretation Structural Model), draw lessons from existing research results, analysis the influencing factors of impacting on Xiaomi Company's business model, provide ideas for the development of science and technology enterprise business model and enrich system research of Xiaomi Tech.

## 2. Method

2.1 *Data collection*

Table 1

| Source of evidence | The related documents | Participate in related activities | Survey |
|---|---|---|---|
| **Access** | (1) Search engine (Baidu, Baidu Academic) and academic database for relevant literature (2) Read books published by Xiaomi executives and corporate official website materials, etc (3) Collect news reports and papers published by Xiaomi | (1) Participate in the site of Xiaomi phone launch conference and *rice fan festival*, and experience its after-sales service (2) Follow Xiaomi's microblog and participate in discussion on topics in Xiaomi BBS | (1) Interviews with management, sales and service personnel of Xiaomi (2) When participating in *the rice noodle festival*, I communicated with some rice fans and planners (3) Online questionnaire survey was conducted for users of Xiaomi phones to collect customers' comments on the company |

Multiple sources of evidence for this study

### 2.2 Determination of influencing factors

In order to scientifically set the factors that affect Xiaomi's business model, this study sorts out 9 factors from existing research literatures before conducting formal research. In order to ensure the scientific and reasonable selection factors, the principle of comprehensiveness, controllability and importance should be followed. By sorting out the above data, consulting and combining with relevant expert opinions, and taking Ansoff's "enterprise growth matrix" and enterprise business model canvas as the theoretical basis, this study classifies the influencing factors of

Xiaomi's business model from the two dimensions of "enterprise and market", as shown in Figure 1.
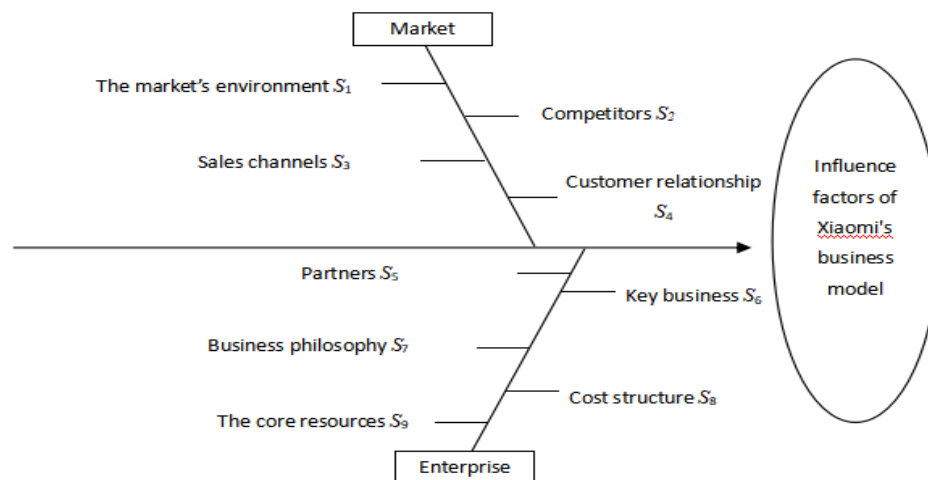


Figure 1. Influence factors of Xiaomi's business model

These factors are denoted as $S_i(i = 1,2..., 9)$, namely $S_1$: The market's environment, $S_2$: Competitors, $S_3$: Sales channels, $S_4$: Customer relations, $S_5$: Partners, $S_6$: Key business, $S_7$: Business philosophy, $S_8$: Cost structure, $S_9$: The core resources.

Due to the large number of these influencing factors, the hierarchical relationship between them is not clear intuitively. Some factors cross each other, some are related to each other, and some show the influencing factors among the factors, forming a very complex hierarchical factor chain, which needs further structural analysis.

*2.3 ISM construction and results of factors influencing Xiaomi's business model*

2.3.1 ISM Theory and Basic Modeling Steps
Explanation structure model method (Interpretative Structural Model, referred to as "ISM") is a structured model technology, is widely used in modern system engineering of a method of analysis of complex systems is the earliest j. n. professor walter field, by the United States in 1973 as a complex social economy system structure problem of a kind of method of development.

Analytical structure model is a kind of model which describes the logical relations among the components of complex system by using matrix representation of graph and simple logic operation. ISM obtains the accessibility matrix through logical operation of the adjacency matrix representing the directed graph, and then decomposes the accessibility matrix, and finally decomposes the complex system into a multi-level hierarchical structure with clear hierarchy.

The basic steps of ISM modeling are as follows: (1) Invite experts to form an expert group; (2) Set key problems of the system; (3) Find out the key factors affecting the research object, and

summarize and extract the relationship between the factors through interviews and other forms; (4) An adjacency matrix A was established according to the extraction of the correlations of key factors; (5) Establish the accessibility matrix R; (6) Establish the level of each element; (7) Create a hierarchy.

2.3.2 Factors influencing Xiaomi's business model ISM construction

ISM is not only beneficial to the understanding of influencing factors, but also analyzes the relationship between influencing factors and the influence degree, find out the factors influence each other, and dependent logic structure, has the scientific, integrity, and the operational advantages, therefore, this paper explain the structure model, business model building millet multi-layer hierarchical structure model of influencing factors, explore the factors affecting the formation of millet business model and the factors influence each other between the inner running mechanism and logic of architecture, provide objective basis for exploring the development of the enterprise business model and practice basis.

*Establish an adjacency matrix*

According to the above research, there are nine factors that influence a company's business model, Denoted by $S_i(I = 1,2..., 9)$, The direct binary relationship between the factors is established by the following methods. The following rules are used to generate the adjacency matrix $A$ (in this study is $a$ $9\times9$ square matrix) of the influencing factors of Xiaomi's business model.

(1) $S_i$ has a direct influence on $S_j$, then $A_{ij}$ is set as 1;

(2) $S_i$ has no direct effect on $S_j$, then $A_{ij}$ is 0.

This gives the following adjacency matrix $A$.

$$A = \begin{array}{c|ccccccccc} & S_1 & S_2 & S_3 & S_4 & S_5 & S_6 & S_7 & S_8 & S_9 \\ \hline S_1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 \\ S_2 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 0 & 0 \\ S_3 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 1 & 0 \\ S_4 & 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 \\ S_5 & 1 & 0 & 1 & 1 & 0 & 1 & 0 & 1 & 1 \\ S_6 & 0 & 0 & 1 & 1 & 1 & 0 & 1 & 1 & 1 \\ S_7 & 0 & 0 & 0 & 1 & 1 & 1 & 0 & 1 & 1 \\ S_8 & 0 & 0 & 1 & 0 & 0 & 1 & 0 & 0 & 1 \\ S_9 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 0 \end{array}$$

Figure 2. Adjacency Matrix $A$ of the influencing factors of Xiaomi's business model

*Obtain the reachable matrix*

After establishing the adjacency matrix *A* which is directly related to the factors, the adjacency matrix *A* is operated on according to the passage law property to obtain the reachable matrix *R*.

If $(A+I) \neq (A+I)^2 \neq ... \neq (A+I)^k = (A+I)^{k+1}$ $(k<n-1)$

Then the reachable matrix *R* is: $R = (A+I)^{k+1}$

The matrix multiplication in the above equation satisfies the Boolean algebraic operation rule, *I* is the identity matrix. The essence of this algorithm is to multiply *A* plus *I* by itself according to the Boolean algebraic algorithm until all products are equal after *A* certain power. The reachable matrix *R* is just this equal product. The reachable matrix *R*, as shown in Fig. 3, is obtained after calculation with *MATLAB* programming.

$$R = \begin{array}{c|ccccccccc} & S_1 & S_2 & S_3 & S_4 & S_5 & S_6 & S_7 & S_8 & S_9 \\ \hline S_1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 \\ S_2 & 0 & 1 & 0 & 0 & 0 & 1 & 1 & 0 & 0 \\ S_3 & 0 & 0 & 1 & 1 & 0 & 1 & 0 & 1 & 0 \\ S_4 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ S_5 & 1 & 0 & 1 & 1 & 1 & 1 & 0 & 1 & 1 \\ S_6 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ S_7 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 \\ S_8 & 0 & 0 & 1 & 0 & 0 & 1 & 0 & 1 & 1 \\ S_9 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{array}$$

Figure 3. Accessibility matrix *R* of influencing factors of Xiaomi's business model

*Hierarchy of factors*

Hierarchical division of variables based on reachable matrix follows the principle of repeatedly seeking top-level variables and makes hierarchical division of variables.

Since the top-level variable has no other variables, the reachable set $R(i) =\varphi$; If reach *A* variable, the variable can reach it, $R(i) \in A(i)$, the characteristics of *A* formula to solve the top-level variables can be obtained: $R(i)$ studying $A(i) = R(i)$ meet the conditions of all factors of *Si* at the top of layered, for the time and so on, the next layer of top-level elements to eliminate the time basis, further to find the new top-level element, get the second element, and so on, get different ladder level.

Table 2. ladder levels of Xiaomi's business model

| Level | Influence factors |
|---|---|
| Level 1 (top floor) | Competitors |
| | Sales channels |
| | Cost structure |
| Level 2 | Business philosophy |
| Level 3 | Partners |
| Level 4 | Key business |
| | The core resources |
| Level 5 (bottom) | The market's environment |
| | Customer relationship |

*Construction of structural model according to hierarchical partition results (as shown in Figure 4)*
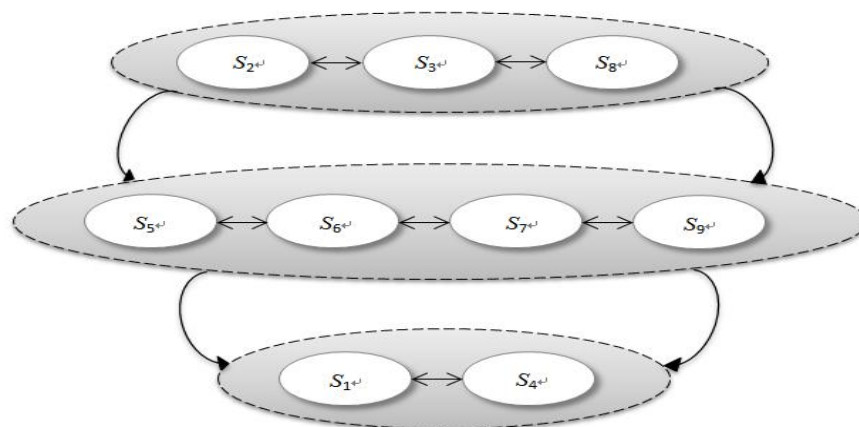


Figure 4. Structural model of influencing factors of Xiaomi's business model

## 3. Results

As can be seen from the ISM structural model in the figure above,

The first layer is the surface factors that affect Xiaomi's business model, mainly including competitors, sales channels and cost structure. Although these factors have less direct impact on the formation of Xiaomi's business model than other factors, they will also have a negative impact on the formation of Xiaomi's business model if not handled properly.

The combination of the second, third and fourth levels is called intermediate factors, which are: partners, key business, business philosophy and core resources respectively. These factors have an impact on the formation of Xiaomi's business model by affecting the first layer of factors, so they belong to indirect factors.

The third factor, namely the lowest factor, is the most fundamental factor affecting the business model of Xiaomi, indicating that the customer relationship and the market environment of Xiaomi have a direct impact on the formation of its business model and have the most direct effect on its success.

These three levels reflect the logical relationship, affecting the formation of millet business model based on this model, distinguish the relationship between various influencing factors, divided into surface factors affecting the formation of millet business model, the factors influencing middle tier of indirect and direct factors such as level, is conducive to grasp the formation mechanism of millet company business model, from the deep factors, or to the same stage of development for millet company enterprise management decision to provide rational thinking and Suggestions.

## 4. Discussion

Here are some suggestions on business model of smart phone enterprises based on ISM.

(1) Establish differentiation strategy and seize specific consumer groups

In the context of a wide variety of mobile phones in China, Xiaomi has always been in the pursuit of surpassing itself, taking the product standard of "low price and high performance" as its pursuit, which not only differentiates its brand from other domestic mobile phone brands, but also makes it popular among young consumer groups. Xiaomi phones meet the wishes of today's young people to enjoy quality services and the best quality of mobile phones while enjoying life, and they have captured the hearts of a large number of consumers with ultra-high cost performance.

For different consumer groups, Xiaomi also launched a series of models with different positioning to adapt to the differences of customers. For the mass market, Xiaomi adopts high quality and low price, which meets the needs of most young customers. For niche markets, Xiaomi mainly cooperates with mobile, Unicom and telecom operators to achieve customized market requirements. As for the diversified market, Xiaomi has diversified its business by selling mobile phone peripheries to meet the needs of different customers.

In the fierce competition in the smartphone market, the mobile phone brand, clear market segmentation, shall be conducted according to different customer group to research and development products, which highlight the characteristics of between the brand and other brands to adapt to the market, according to the differentiation and rich product line, so as to cultivate their own loyal customers, establish a certain customer base, realize the profit maximization.

(2) Effectively interact with users to enhance user experience

From its inception to today, the reason why Xiaomi can take a place in the mobile phone market is that it has the advantages of relationship with customers and superior customer relationship management system. Through close to the market and customers, timely collect customer needs, and can quickly convert customer needs into customized products for customers to meet customer requirements, so as to provide customers with fast and high-quality services.

Xiaomi maintains a user participation level of BBS, BBS on the "enthusiasts" continuously put forward opinions on millet products and even criticism, at the same time, the millet is proficient in technology, products in the company's employees often in different network platforms to communicate with users and feedback to research and development department and the quality of after-sales service is very important to find the users' actual demands. In this process of communication, users will also feel that they have direct channels of communication with Xiaomi, so that these users become Xiaomi's natural duty inspectors, duty builders, duty propagandists. From sales to after-sales service, from employees to corporate executives, Xiaomi has always maintained effective interaction with its users and attached great importance to the construction of Xiaomi's BBS, so that its user groups can put forward various suggestions on products and services. At the same time, Xiaomi also often carry out activities to let users participate, such as millet to collect millet phone default wallpaper activities, users upload pictures may be successful millet phone default wallpaper, such activities can often effectively improve user participation, enhance user awareness of the brand. These marketing modes can virtually help Xiaomi to attract more users on the basis of enhancing the original user loyalty. This point is very worth learning from other mobile phone brands.

(3) Improve the core competitiveness, expand the sales market

At present, Xiaomi's resource advantages mainly focus on its stable customer resources, rich human resources and advanced technical resources. In addition, Xiaomi is good at using big data infrastructure, which enables it to effectively integrate various resources of the company and promote the upgrade of its business model and the improvement of its core competitiveness. At the same time, as one of the few brands with independent intellectual property rights in China, Xiaomi realizes innovation of business model through conscious organizational reform, which makes it stand out in the fierce competition of electronic products.

And under the background of today's consumer upgrades, millet mobile phone has been in the domestic mid-range segment customers has achieved some success, now is the Xiaomi's expand sales market, improve the research and development ability, strengthen its core technology, the best period gradually broaden the sales market to the high-end market and foreign market, the accumulation of fans overseas users, expand their brand awareness and influence, so as to improve its status in the international market for smartphones.

(4) Optimize the brand cost structure and flexibly use marketing channels

The cost model of Xiaomi and the traditional model of mobile agent, without layers of agents, again through the stores will be in the form of product into the hands of customers, but by operators and website direct mail way, to make the customer can more quickly access products, not only avoid the layers of agent for loss of profits, also saved depends on a lot of advertising spending, so that the millet set "low cost, low price, high quality" brand image.

And Xiaomi Company has more characteristic is its flexible novel marketing strategy. Xiaomi's marketing is mainly conducted by itself, including public relations, Weibo marketing, customer service, etc., rather than outsourcing, which effectively ensures zero distance communication with users and stronger execution. At the same time, Xiaomi is the first mobile phone brand to

try "hunger marketing". It uses publicity to arouse customers' desire to buy. Meanwhile, it provides products in limited time and quantity for customers to "snap up", which improves its popularity to a certain extent.

The "hardware + software + services" model of Xiaomi filling the core, makes Xiaomi Company occupy the advantage of cost leadership, expand its ecosystem depend on product and marketing, with cost-effective hardware and intelligent household market, accurately grasp the key factors that affect customer purchasing behavior, with a low cost leading strategy to beat rivals, improve their market share.

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