

# Research on the Growth Pattern of Start-Up Internet Enterprises

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**Abstract:** With the development of society, Internet technology is increasingly applied to all aspects of society, and consumers are increasingly using the network. Under this circumstance, the traditional model enterprises have been difficult to meet the increasingly fierce market competition demand, and Internet companies have emerged. This paper first expounds the definition, characteristics and classification of the pioneering Internet enterprises. Through the analysis of the influencing factors and value evaluation of the growth stage of the initial Internet enterprises, this paper analyzes the status quo of the value development of the Internet enterprises in the initial stage and builds the growth model of the Internet enterprises. Models, and take active and creative measures to deal with the complexities of the initial stage, in order to finally achieve the success of entrepreneurship.

## 1. Introduction

Since the beginning of the Internet economy in the United States in the 1990s, its related industries have rapidly promoted the growth of the US economy in various aspects such as software applications, e-commerce and infrastructure[1]. With the new economy generated by the popularity of the Internet, especially the mobile Internet, the law of social development since the industrial economy has been almost completely changed[2]. Unlike start-up companies, start-up Internet companies rely mainly on existing Internet technologies and do not involve specific product production. Therefore, such enterprises are light-asset enterprises[3]. The characteristics of Internet companies are to change the way the original industry operates through Internet technology. In the initial stage of entrepreneurship, Internet companies spend more money and have less profitability[4]. The results obtained by traditional valuation methods often have large errors in market value. Therefore, it is imperative to build a suitable model for the growth model of Internet companies[5]. The analysis of the characteristics of the light asset model Internet start-up period hopes to help the reasonable valuation of the Internet business growth model and promote the long-term stable development of the capital market.

## 2. Start-Up Internet Enterprise Overview

### 2.1 Definition and Classification of Start-Up Internet Companies

For the definition of the pioneering Internet industry, the opinions of scholars at home and abroad are not the same[6]. Currently, the definition of the Internet Research Center of the University of Texas is generally recognized. Internet companies refer to “enterprise that obtains all or part of the income directly from the Internet or Internet-related products and services.” Start-up Internet companies refer to Internet companies that have a short creation time and relatively few funds and resources[7]. Internet companies are generally divided into four categories, namely, Internet infrastructure manufacturing or supply companies, Internet software and service companies, Internet media and content service companies, and online business enterprises[8]. Among them, companies involved in Internet infrastructure and software applications are sometimes classified as traditional industries because they are similar to traditional industry models.

## 2.2 Main Features of Start-Up Internet Companies

### 2.2.1 The Competition in the Initial Stage is Extremely Fierce

Internet companies are generally divided into four stages of growth: the initial stage (also known as the introduction period), the growth period, the maturity period, and the recession period. Compared with the traditional industries, the competition of Internet companies in the introduction period is relatively fierce, and the input income ratio is higher. Often there is a continuous loss during the lead-in period, and the loss will continue to deteriorate, but once the company that stands out in the lead-in period, the growth rate of income and profit will be faster than in the traditional industry in the growth and maturity stages.

### 2.2.2 Income is Extremely Unstable

The investment of start-up Internet enterprises generally consists of R&D, marketing and post-service. The average cost will decrease with the expansion of the scale of the enterprise. The marginal cost of the product will decrease rapidly with the rapid increase of the scale of the enterprise. The income of Internet enterprises is at the initial stage of the enterprise. The growth is generally slow or even zero, and the profit will decrease as the scale of the enterprise expands. After the development is stable, the marginal reward of the product will rise rapidly with the rapid expansion of the scale of the enterprise; for the products of the start-up Internet enterprise, it generally has an average of the previous period. The cost is high, the average income is low, and there is a continuous loss. The average cost is low in the later period, the average income is high, and the profit is continuous.

### 2.2.3 Large Volatility

The Matthew effect of the pioneering Internet economy is stronger than that of traditional enterprises, which leads to greater volatility in its business[9]. The strong will expand rapidly after occupying the advantage and seize the market. The weak will soon be eliminated by the strong, often resulting in only one on the market[10]. Or two industry leaders, forming a highly monopolistic pattern.

### 2.2.4 Major Intangible Assets

A start-up Internet enterprise is a typical light asset enterprise. Its vitality and core competitiveness often lie in its intangible assets. This is one of the reasons why start-up Internet companies are more difficult to evaluate in value evaluation. Their intangible assets are often reflected in the management team, product competitiveness, research and development technology, channel sales capabilities, business models and so on (see in Table 1).

Table 1 Main Features Of Start-Up Internet Companies

Main features of start-up Internet companies	The competition in the initial stage is extremely fierce	Extremely unstable income	High volatility	Intangible assets are significant
	Higher investment income ratio	Marketing and post-service packages	Large business volatility	Management team, product competitiveness
	Continued loss during the introduction period	The marginal cost of the product will rise rapidly and fall rapidly	After the occupation advantage, it will expand rapidly and eliminate the weak	Research and development technology
	Income and profit grow faster	High average income, continuous profit.	Form a highly monopolistic pattern	Channel sales ability, business model

### **3. Evaluation and Analysis of the Growth Model of Start-Up Internet Enterprises**

#### **3.1 The Challenges Facing Internet Start-Ups**

##### **3.1.1 Talent Bottleneck**

Compared with mature large enterprises, Internet start-ups face natural difficulties in attracting talents. Except for a few luxury entrepreneurial teams, most start-ups are unable to attract top talent. In the use of talents, we can only use the method of cultivating and learning while growing. In recent years, the industry bubble has also caused the industry's people to be impetuous, frequent staff turnover, wages and salaries, and companies are overwhelmed. For start-ups, talents and stability must not compete with industry giants, and they can only attract and retain talent through career prospects, share options, and friendships. Recruiting and retaining people is not only the responsibility of the enterprise HR, but also the important work content of the CEO of the start-up company. Corporate CEO's should have good talent affinity, be able to persuade and attract like-minded people to join the company; should design stock option incentives and exit systems, clarify responsibilities and rights, reduce running-in risks, and improve efficiency. In addition, start-ups need to pay attention to the echelon training of talents, and lay the foundation for talents in advance for the subsequent development of the company.

##### **3.1.2 Funding Bottleneck**

With the advent of capital winter, start-up financing has become more difficult. Venture capital is heavily concentrated on several head star projects, and other small start-ups are less likely to get financing. In the case of tighter risk funds, obtaining the same funds requires more equity to be sold, which poses challenges for further financing planning and management team control of the company's equity. In the big environment of capital winter, open source and throttling are the only way for enterprises to cope. Reduce all unnecessary expenses and use limited funds on the cutting edge; In the business model, you need to pay more attention to profit and cash flow, and the survival of the company is the primary goal. Secondly, start-ups need to pay attention to the financing rhythm. They must not go to the financing when they are short of money. They can't be too entangled in the valuation, get the money quickly, and prepare the winter grain.

##### **3.1.3 Product Technology Bottleneck**

Internet products have penetrated into every aspect of life. In every field, there are a large number of homogenized products competing for the same batch of users. How to stand out from the homogenization of products, operational capabilities are essential. The operational aspects of pulling, retaining, and increasing activity are becoming more and more critical, even beyond the product itself. Open source technology is becoming more and more mature, and a large number of high-end technologies are developed by the giants and open source. This aspect lowers the threshold for technology use, and on the other hand, it makes it increasingly difficult for start-ups to create unique proprietary technologies. With limited capital and talent, it is no longer realistic for start-ups to have unique technical barriers. In this environment, start-ups can turn their attention to the specific application scenarios of technology, find their own entry points and cultivate their own competitiveness in the landing of technology. On the other hand, many current technical capabilities have been exported by large companies as basic services, such as cloud computing, big data computing capabilities, and recommended system computing capabilities. Start-ups can stand on the shoulders of giants and focus on the development of their own business without wasting resources on the development of basic functional technologies.

#### **3.2 The Special Status of Start-Up Internet Companies**

A little different from the traditional business growth cycle, Internet companies have a unique growth model, which can generally be divided into three stages. In the first phase, Internet companies invested heavily, but the income was very low, resulting in significant losses. In the second phase, as the number of users increased, the network effect began to play a role. Enterprise

The income of the industry began to show a relatively high growth rate, the cost increase showed a slowdown, and the proportion of losses was gradually reduced. In the third stage, the company began to gradually reach the break-even point, and the income growth rate continued to accelerate and stayed for a long time, and the average cost continued to decrease. Earnings showed an explosive trend, and some companies even achieved huge profits. Looking at the development path of mature Internet companies in China (see in Figure 1), we also found that in the early days of the establishment of Internet companies in China, most of them concentrated on the development of the domestic market, using the demographic dividend of the domestic market and the domestic leading technological capabilities to rapidly expand. After reaching a certain scale and strength, we will begin to enter the international arena, such as Ali-baba and Ten-cent Technology. The characteristics of Internet companies determine whether companies should choose to become an Internet platform or a specialized vertical market company. The entrepreneurs choose the target market based on the initial resources, capabilities and internal and external environmental factors. The choice is related to whether the company can enter the market smoothly in the initial stage, and it will have a profound impact on the future development of the company.

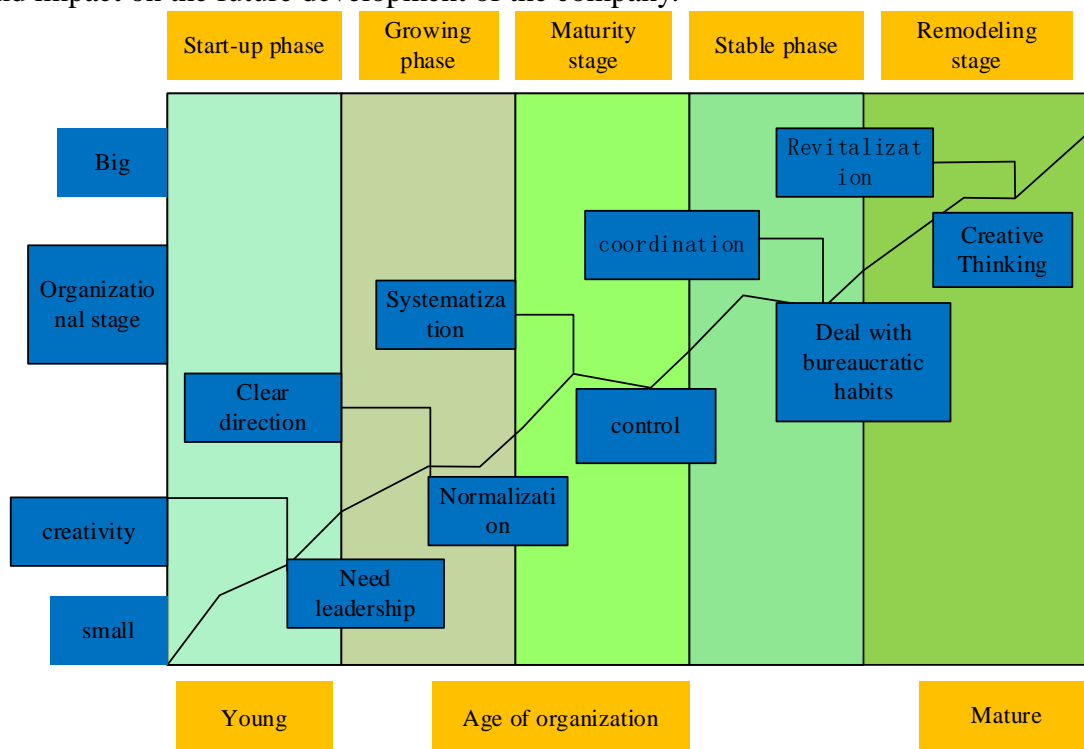


Fig.1 Start-Up Internet Business Growth Path Map

#### 4. Construction of a Growth Model for Start-Up Internet Companies

After the Internet companies choose the corresponding strategies according to the internal and external environment in the initial stage of the venture, the internal changes may occur as the market changes, which brings about the transformation and growth process of the enterprise strategy. The factors affecting the growth model and strategic change of start-up Internet companies are mainly the initial resources of the enterprise, the technology strategy, the external environmental factors facing the enterprise and the personal factors of the entrepreneur. The initial conditions of start-ups, especially the resources owned by the company at the time of its creation, include the important foundations for the sustainable development of the company, including start-up capital and technology, and market capacity (see in Figure 2). If the company does not have core technology at the beginning of its business, it can also become a learning enterprise through a large number of imitative and learning in the later stage, and gradually establish its own technological advantages by purchasing leading technology or technological strategic cooperation.

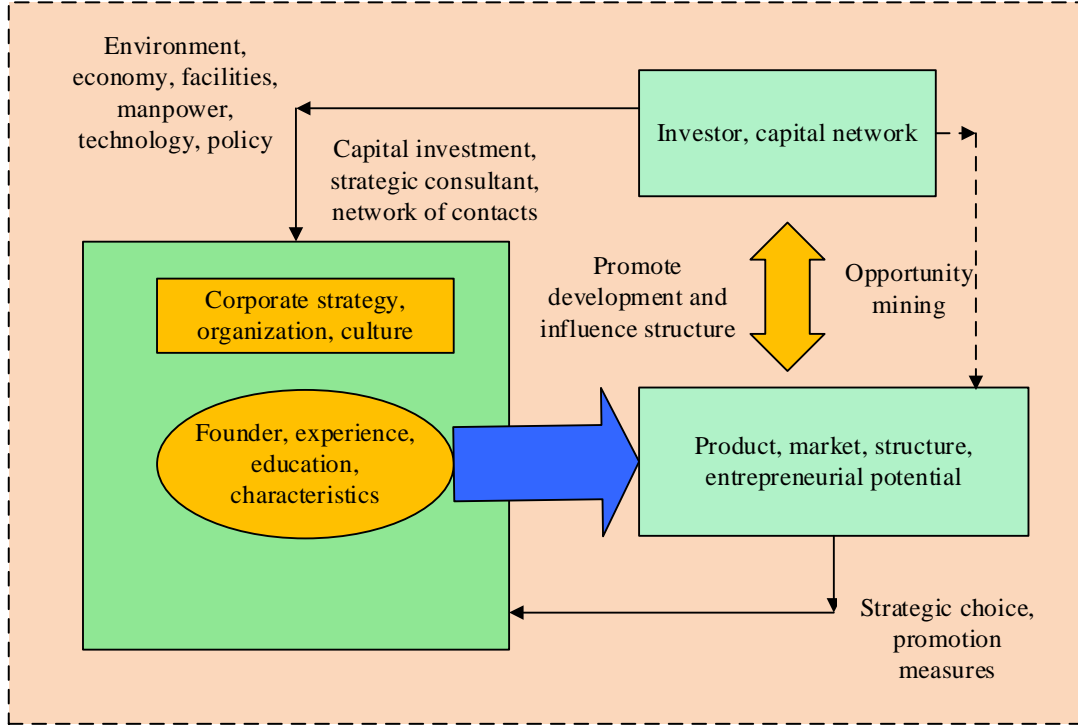


Fig.2 Factors Affecting the Growth Model of Internet Companies

#### 4.1 Start-Up Internet Growth Model Model Construction

##### 4.1.1 Establish a Set of Growth Model Indicators

Growth mode impact factor set  $u$  is a collection of indicators at each level, namely:

$$u = [u_1, u_2, \dots, u_n] \quad (1)$$

##### 4.1.2 Conduct Qualitative and Quantitative Indicator Analysis, When $K=1$ ,

$$r_{ij} = \begin{cases} 1 & u_{if} \geq v_k \\ 0 & \\ \frac{(u_{if} - v_{k+1})}{(v_k - v_{k+1})} v_{k+1} & \langle u_{if} \rangle v_k \end{cases} \quad (2)$$

When  $1 \leq k \leq n$ ,

$$r_{if} = \begin{cases} \frac{(u_{if} - v_{k+1})}{(v_k - v_{k+1})} v_{k+1} & u_{if} \leq v_k \\ \frac{(v_{k-1} - u_{if})}{(v_{k+1} - v_k)} v_k & \langle u_{if} \rangle v_{k-1} \\ 0 & \end{cases} \quad (3)$$

When  $k = n$ ,

$$r_{if} = \begin{cases} 0 & \\ \frac{(v_{k-1} - u_{if})}{(v_{k-1} - v_k)} v_k & \langle u_{if} \rangle v_{k-1} \\ 1 & u_{if} \leq v_k \end{cases} \quad (4)$$

#### 4.2 Start-Up Internet Enterprise Growth Model Application Strategy

(1) Expand financing channels, improve corporate profitability, and establish a good reputation image. Financing ability has the greatest impact on the growth of platform-based Internet companies. Platform-based Internet companies need a large amount of funds for user subsidies and enterprise competition. Enterprises can improve their financing ability by optimizing financing

channels and improving profitability, and ensure that enterprises grow up. There is sufficient financial support.

(2) It is necessary to improve the preferential policies. Strictly implement various tax policies to reduce the burden on Internet companies. Secondly, establish and develop a public service and communication platform for Internet enterprises, transparently and publicly release information, depending on the scale and growth rate of enterprises, increase funding subsidies for Internet companies, and vigorously support innovation and development of enterprises. Finally, strengthen the introduction and training of talents, encourage the introduction of high-end talents, and increase the training of local talents, and reward those who have made important contributions. Nowadays, major universities have set up innovative and entrepreneurial courses, which also fosters new forces for the development of the “Internet +” economy.

(3) Innovations in business models include new products, services, and information flow architectures. By analyzing the roles of participants and their role to consider a development plan for a business organization, we can explore from a strategic level, a marketing level, and so on. The Internet industry should consider cross-border integration with traditional industries. Internet companies enter the traditional industry and profit from the rapid expansion of the market with low-cost or free-to-price strategies by addressing the shortcomings of traditional industries. Or the traditional industry relies on Internet tools to provide customers with Internet-based products and a new service network model. “Internet +” penetrates into the traditional industry and reshuffles the internal organizational structure and business. Flexible manufacturing, network manufacturing, green manufacturing, and intelligent manufacturing have become the Internet of change in the future. In the new media era, Internet companies must pay more attention to brand shaping and publicity. Promote branding with new media technologies. Integrate various experiences to allow consumers to experience products and build close relationships. Innovate the business philosophy in line with the company's own development, and enhance the brand image and value of the company.

## 5. Conclusions

In summary, with the development of the market economy, especially in recent years, the state strongly advocates Internet entrepreneurship. The success of a start-up Internet company depends on many factors, including its technological advancement, business model, industry development, team composition and other factors that will have a profound impact on start-up companies. According to the factors that influence the growth mode of the start up Internet companies in the growth process, the paper analyzes the growth model of the start-up Internet enterprise by constructing the growth model of the start-up Internet enterprise. China's Internet entrepreneurial environment is in the best period of history. Internet start-ups face enormous opportunities and challenges. If entrepreneurs can actively seize historical opportunities, break through corporate growth models and promote bottlenecks, entrepreneurial success will no longer be a dream.

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