

Convergence Innovation: A Case Study of Digital Cable TV in Taiwan

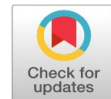
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Abstract: The purpose of this study is to explore the impact of the digital TV industry's innovative business model on customer demand and product service. The research method is based on the case study method in qualitative research. Based on the current state of the industry and market demand, this study uses a three-tier business model to conduct exploratory research from five perspectives: 1) Innovation, 2) Value, 3) Resource, 4) Market, and 5) Profit. The research results show that: 1. In order to pursue sustainable survival, enterprises should adapt to market changes, constantly adjust their operational direction and innovative business models; 2. Through product innovation, service innovation and technological innovation, enterprises can effectively pass on the value proposition to customers and create the profit of the enterprise. In addition, in the research findings, the "innovative value" that this study failed to mention is worthy of continuous research to increase the contribution of research.

Keywords: Digital convergence, Convergence innovation, Innovation potential, Innovative business model, Three-tier business model

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INTRODUCTION

Research motivation

TV digitalization has become a global trend. With the rapid development of digital technology, the industrial structure has developed in a diversified and rich horizontal direction, and digital convergence has become an unstoppable trend. Operators can provide a variety of services such as voice, data, video and other multimedia services through a digital convergence platform. Through the transmission platform, consumers choose a variety of services that they like. The world's advanced countries, including the United States, Japan, the United Kingdom, Germany, France, etc., have gradually developed transmission standards for broadband networks and broadcast convergence, and accelerated the completion of infrastructure. Under the driving factors of "digitalization policy" and "market demand", the Taiwan government has accelerated the upgrading of industrial content, broadband networks and terminal equipment technologies. Therefore, consumers can fully enjoy the digital life of smart home and smart services, and digital convergence has become a foreseeable future.

Research purposes

In Taiwan, the digitalization of cable TV is an important driving policy of the government. The focus is on driving the digital conversion of the broadcasting industry, thereby providing an appropriate competitive environment, creating multiple films and encouraging innovation. Due to the diversified development of digital media, the shift in consumer viewing habits will become a major concern for the growth of digital cable TV operations. This study examines the overall market development from the development of digital TV applications in the advanced countries and the user service market; and discusses the innovative business models and development strategies of Taiwanese players in the digital cable TV service market in terms of global development trends. The main research purposes are as follows:

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1. How should companies adapt to market changes in pursuit of sustainable growth? How to innovate the business model? This study uses a three-tiered innovative business model to analyze the current situation of case companies and explore the impact of digital convergence and digital applications on digital cable TV operations.
2. How can companies effectively deliver value propositions to customers? How to create profit? Through product innovation, service innovation and technological innovation, we will re-consider the service blueprint of the innovative business model, enabling the company to continue to operate.

LITERATURE REVIEW

Digital convergence

Definition of digital convergence

The digital convergence is interpreted literally and contains two concepts: “digital” and “convergence”. In 1983, Pool coined the term “Convergence,” and he found that digital electronics showed convergence in the diversion process of communication technology. The technological revolution and computer processing capabilities drive digital convergence, which has had a significant impact on market structure and business models through the development of convergence processes and communication protocol standards (Bernik, Azis, Kartini, & Harsanto, 2015; Mueller, 1999). Broadband networks, mobile networks, telecommunications networks, cable TV, wireless TV or Internet companies are merging digital content such as voice, data, images, audio and video, etc., driven by digital technology. Digital convergence can be transmitted and shared using the same content and applications over different networks or different terminal devices (Li, 2017). Therefore, network providers, telecom operators, and cable operators can operate network, telecommunications, and cable TV-related services across borders.

Impact of digital convergence

Under the trend of digital convergence, computer technology and communication technology are integrated. The TV industry, which had only one-way and rare channels, is experiencing the most significant developments since the advent of television inventions. With the development of digital technology, digital convergence has become an unstoppable trend, and the continuous increase of communication channels has dramatically changed the formation and ecology of traditional mass media. According to the OECD report, the impact of digital convergence includes: 1) changes in market structure, 2) changes in competition levels, 3) impact on current regulatory systems, and 4) emergence of new products and services (Yao, Kuo, & Liao, 2015).

Status of digital TV service development

Emerging service model of digital convergence platform

A well-established digital convergence platform should have sound digital media content, high-speed broadband internet access, user demand for emerging digital services, and media cross-terminal development (Hsieh, 2012). The digital convergence platform makes the structural change of the industrial value chain de-intermediation, breaking the linear structure of the past “content → channel → cable system → consumer” and gradually transforming into the matrix structure of “content* platform*consumer” (Lin, 2017), as shown in Figure 1.

The world’s leading digital convergence operators, through their own research and development or development of cross-terminal services, allow consumers to watch and enjoy a variety of audio and video content. For example, in the US, cable operator Comcast launched Xfinity service, telecom operator Verizon launched FiOS TV service, Apple launched Apple TV, Netflix provided on-demand video service, and search engine Google launched Google TV. In Japan, in 2007, Sharp and other six major brands established the acTVila connected TV portal.

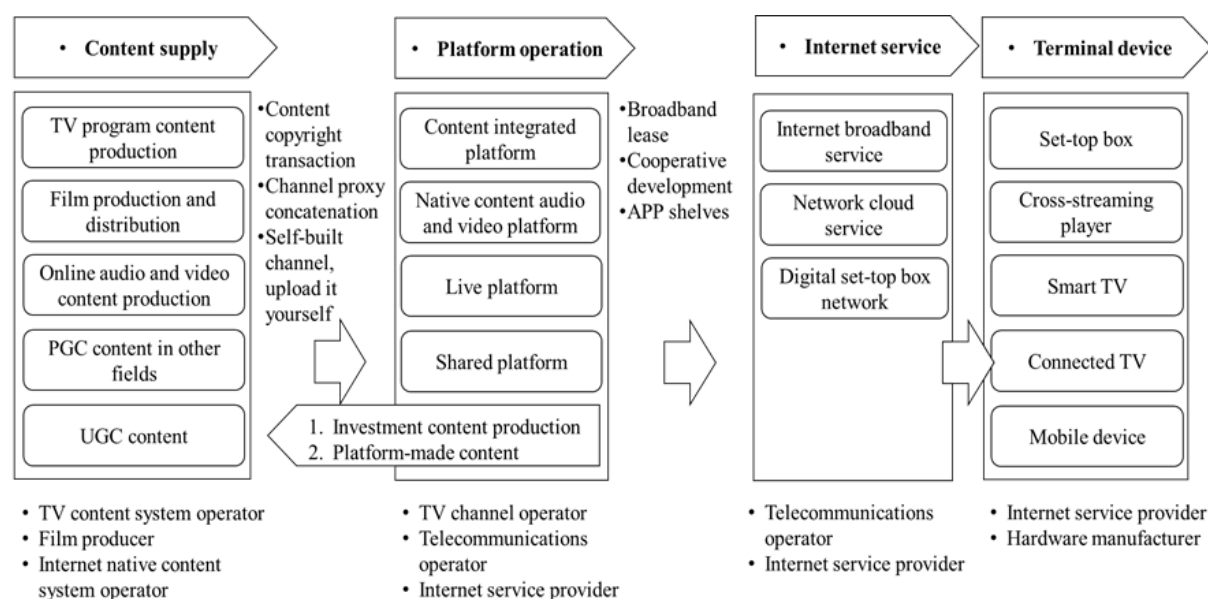


Figure 1. Emerging service model and matrix industry chain of digital convergence platform. Source: Lin (2017)

Status of development of Taiwan's digital cable TV service industry

After the digital transformation of cable TV, it can be transformed into a smart home platform. Consumers can enjoy high-quality audio and video quality and program content, and the industry can also create diversified value-added applications and rich digital convergence services (Republic of China National Communications Commission, 2018).

In 2001, the Taiwanese cable TV industry began to develop in the form of a Multiple System Operator (MSO). In the past ten years, the development of Taiwan's digital cable TV, in addition to government policies and planning, should establish a unique business model and innovative business strategy in order to benefit the development of the domestic TV industry as a whole. With the trend of digital convergence, operators have plans to upgrade digital technologies, actively plan different types of business models, and also make the industrial structure to a stable development model (Kao, 2010). In 2010, the Taiwan government approved the "Digital Confluence Development Plan" to accelerate the digitalization of television; in 2016, the "Cable Broadcasting and Television Law" was amended to prove the government's expectation and attention to the development of the cable TV industry.

According to this study, the number of digital cable subscribers in Taiwan was 5.04 million in 2018, with a penetration rate of 58%. The following uncertainties still exist in Taiwan's digital cable TV industry:

1. Faced with the trend of digital convergence and fierce competition in the market, the industry will face unprecedented competition
2. the shift in consumer viewing habits will affect the growth of digital cable TV operations (Shi, 2013)

Innovative business model

Innovation potential

Innovative capabilities have always played a key role in corporate growth and competitiveness. In addition to product and process innovation, a new innovation models can also ignite more innovation potential (Gassmann, Frankenberger, & Csik, 2014), as shown in Figure 2. Innovation refers to the introduction of a new "production factor" and "new combination" of production conditions into the production system; there are five different forms of innovation: 1) developing new products, 2) introducing new technologies, 3) opening up new markets, and 4) exploring New sources of raw materials, 5) Achieving new organizational forms and management models (Schumpeter, 2008); the value created by companies using existing resources can be considered innovation (Drucker, 1985; Varsani, 2018). Decision makers learn about the existence of innovation, form innovative thinking and perceptions, and make innovative decisions (Jingnan, Yunus, & Yeop., 2018; Rogers, 2003).

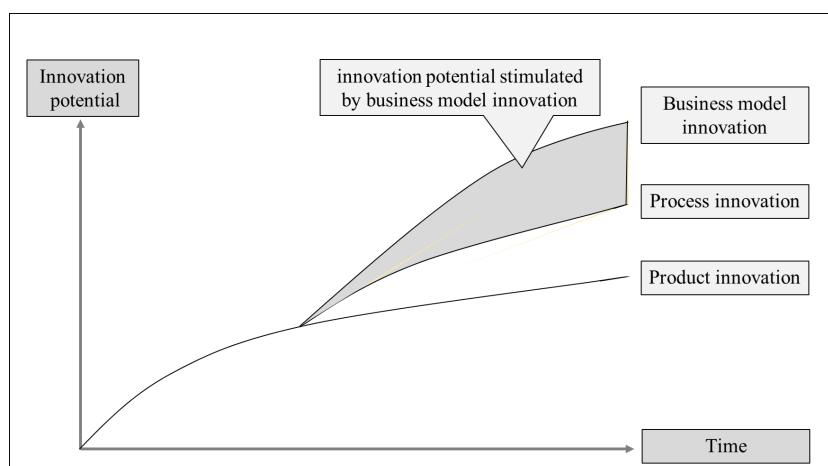


Figure 2. New innovation models can ignite more innovation potential. Source: Gassmann et al. (2014)

Innovative combination of business models and hierarchical theory

Innovative business models transform business models through one or more dimensions to create new value for customers and businesses (Sawhney, Wolcott, & Arroniz, 2007). In 2003, Apple introduced the iPod music player and iTunes, which led to a revolutionary development of portable entertainment, creating a new market, and the company was reborn (Johnson, Kagermann, & Christensen, 2016). Companies use more resources to actively pursue profit, thereby enhancing existing business models or forming a new business model (Huang, 2013). Business model is a way of describing how an organization creates value, delivers value to customers, and profits from it; it can be broken down into four dimensions: customer, product, infrastructure, and financial viability. For whom? What is offered? How to provide? What is the cost? What is the income? Further reintegration of the nine elements of the business model architecture: value proposition, key resources, key activities, key partners, customer segmentation, access, customer relationships, revenue sources, and cost structure (Osterwalder & Pigneur, 2010). The business model canvas architecture is shown in Figure 3.

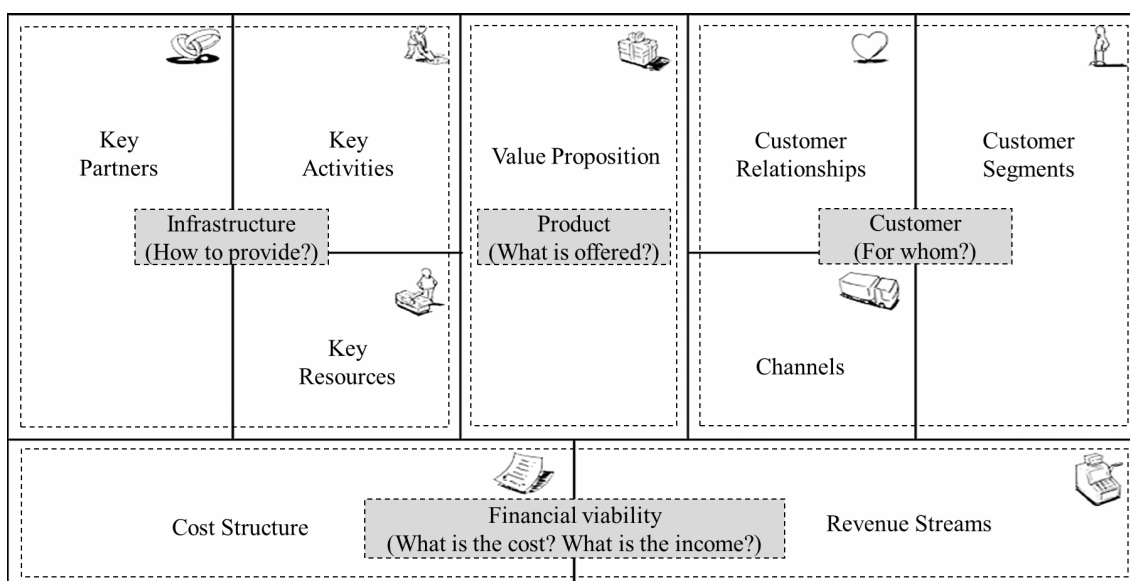


Figure 3. The business model canvas. Source: Osterwalder and Pigneur (2010)

Huang (2013) proposed the theory of the two-tier business model in order to master the elements of all business models, including the first conceptual model used to describe business ideas. And the second layer is used to find the financial model of the financial problem, as shown in Figure 4. More than 90% of the innovation models are reorganized from the existing innovation concepts of other companies,

and these successful combinations of innovative models can serve as a blueprint for innovative business models (Gassmann et al., 2014).

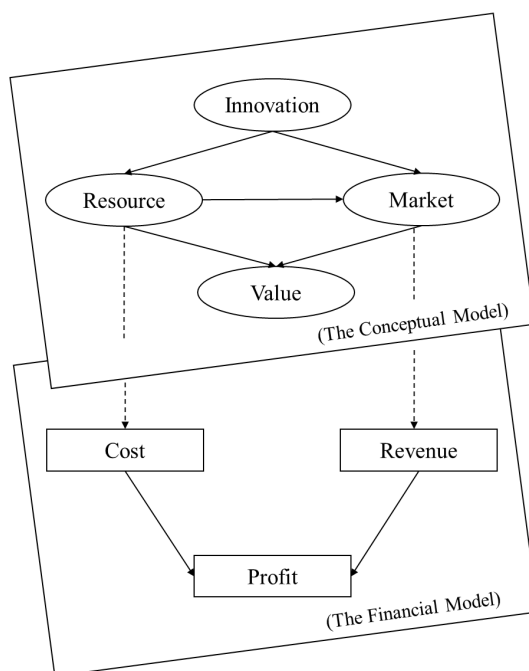


Figure 4. The two-tier business model. Source: Huarng (2013)

RESEARCH METHODS

Research design

This study is based on the scholarly discourse in the literature review and gradually develops into a specific research structure. Case Study in the Qualitative Research Method is used to study problems, research hypotheses, data collection, analysis units, logical thinking and interpretation of data, and research report writing. The research design process is shown in Figure 5.

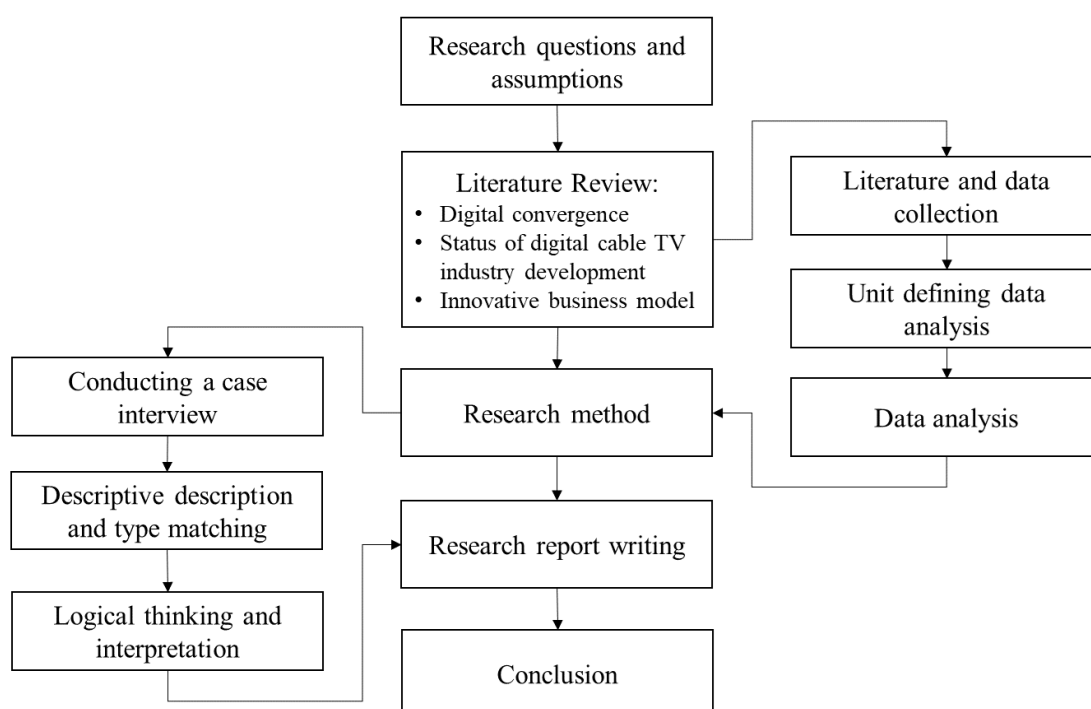


Figure 5. Research design

Research architecture

For a long time, scholars have discussed business models or construction theories in a flat or two-layered mode of thinking. This study uses the “three-tier business model” as the theoretical framework, as explained below:

First, the four dimensions and nine elements of the Business Model Canvas are used as the base model (Osterwalder & Pigneur, 2010).

Second, the two-tier business model is used as a framework and structural concept (Huarng, 2013).

Third, we will remove “innovation” from the two-tier business model and discuss the innovation potential stimulated by product innovation and process innovation with the “innovation potential model” (Gassmann et al., 2014). As shown in Figure 6.

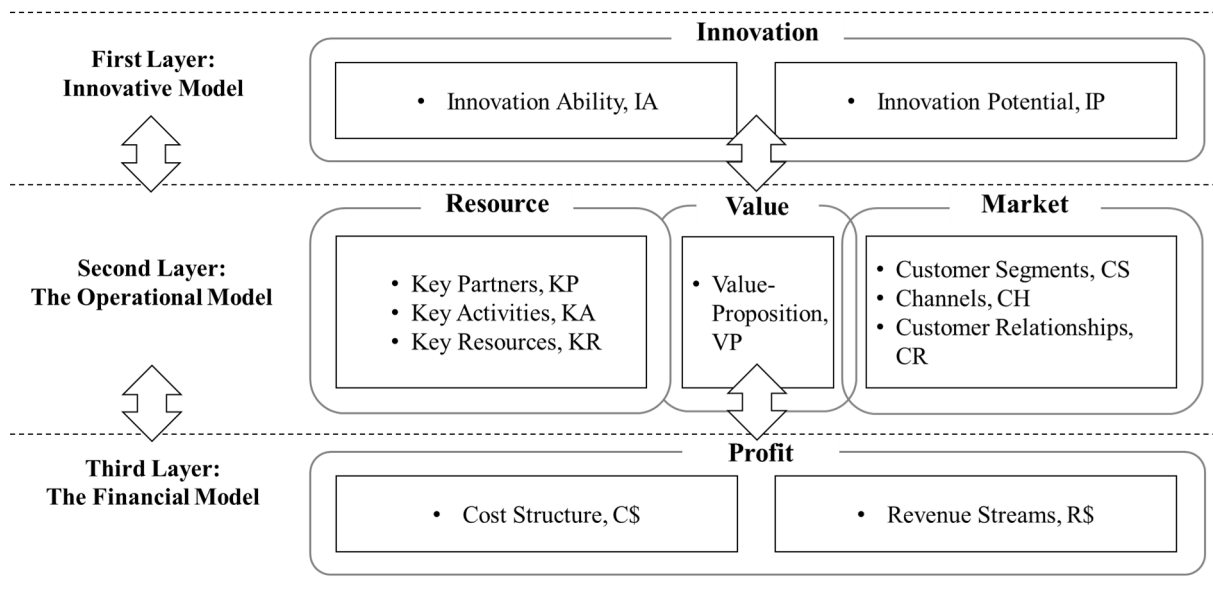


Figure 6. Three-tier innovative business model and its core path map

Research object

The research object is Taiwan’s largest digital TV operator, K Company.

1. K’s strategic positioning: 1) to become Taiwan’s largest digital TV operator through mergers and acquisitions, 2) to provide diversified digital TV services, and 3) to enhance the value of digital media.
2. The main product services include: 1) digital cable TV, 2) broadband network, and 3) TV media.
3. Core competencies: 1) 750 MHz two-way broadband HFC network, 2) 12 cable TV systems, 3) economies of scale of 1.2 million viewers, 4) ability to produce domestic high-quality channel programs, program distribution, Professional management team.

RESULTS AND DISCUSSION

This study from the evolution of cable TV, through case interviews, observe the development of the user and service market. At the same time, in-depth discussion of the strategic direction, competitive advantage and innovative business model of the case product service. From the research process, it was found that the case company strengthened the creativity, accumulation and application of knowledge by diversified macro-thinking, and then strengthened the innovation potential of the company. Transforming knowledge innovation into products or services, creating profits and value for the company to maintain its sustainable competitive advantage. The following is a summary of the analysis results in accordance with the theoretical framework of the “three-tier business model” proposed by the institute.

Innovation

Through interviews and analysis of the current situation of digital TV service market and consumer demand, case companies have demonstrated the innovative ability to adjust products and services in pursuit of sustainable survival, thereby enhancing the innovation potential of business models. However, with the help of the digital wave, the innovative business model in the digital cable TV service market must ultimately determine whether the value proposition is passed on to customers. If the effects of innovative products and services cannot be passed on to customers, they will become ineffective innovations.

Value

As the new economy moves, the product life cycle is getting shorter and shorter. The industrial type and capital structure are changing rapidly. In addition to the competition between price and market share, it also has competition for quality, innovation and speed. Case companies use diversified macro-thinking to enhance the creativity, accumulation and application of knowledge, thereby strengthening the ability of enterprises to innovate, transforming knowledge innovation into products or services, and creating profits and value for enterprises to maintain their sustainable competitive advantage. The value proposition of the case company is as follows:

1. Provide diverse, rich digital content.
2. Continuous innovation to improve product and service quality.
3. Respond to public welfare activities and focus on employee growth.

Resource

Key activities

The product services provided by the case company are mainly digital cable TV viewing, broadband Internet access and its value-added services. However, personnel performance management, channel sales management, customer problem solving, education and training, industry seminars and advertising are all important key activities. Due to fierce market competition, it has also developed a number of value-added services to enhance customer satisfaction.

Key partners

The key partners of the case company, upstream of the supply chain are content suppliers, fixed-line telecom operators, equipment R&D manufacturers, and the stable quality they provide is related to the reputation of product service. In addition, the good impression left by the installed outsourcer entering the customer's home, the media advertising and the publicity activities of the public relations company, will affect the service level. These key partners are very important interfaces in the internal operating mechanism to deliver value propositions.

Key resources

After years of operation, the case company continues to accumulate customer loyalty. The trust of customers in the kind service provided by these outstanding senior employees is quite high, which is the intangible and valuable construction resources of the company. In addition, stable quality computer rooms, fiber-optic network construction, home-made news programs, public channels, TV monthly magazines, and engineering service fleets are all important resources for case companies.

Market

Customer segmentation

Case companies use customer-based types and consumer habits to differentiate customers and provide a full range of services. Provide dedicated service for collection houses, providing customized and network value-added services for store or corporate company customers.

Customer relationship

The case company maintains the customer satisfaction survey by consulting the company through

the relationship between the company and the customer through the network. The main customer relationship maintenance methods can be roughly divided into the following types: 1) engineering staff, 2) customer service staff, 3) Business staff, 4) Counter staff, 5) Internet services.

Channels

The marketing channels of case companies are mainly through direct sales, distribution, self-call, desk and internet. The key to the main success lies in the use of multiple channels to enhance customer service quality and transfer value propositions to enhance brand value.

Profit

Cost structure

There is also a slight difference in the cost structure of the branch company of the case company. Due to the large operating area and the large number of customers, the case company enjoys the benefits of economies of scale, so it enjoys bargaining and cost advantages in the procurement of channel content and network traffic. Due to the savings in upstream procurement costs, the case company has more funds invested in digital construction, improving network quality and giving back to customers.

Revenue streams

Case companies' revenue sources include monthly revenues: 1) channel and program revenue, 2) network transmission revenue, 3) broadband Internet access, and 4) value-added service revenue. One-time income: 1) advertising revenue, 2) installation and maintenance income, 3) equipment sales revenue, and 4) other operating income. Among them, the channel and program revenues were the highest, followed by broadband Internet access and value-added services.

CONCLUSION AND RECOMMENDATIONS

The market environment is ever-changing, and the business model is crucial to the strategic direction of the company, its operation and profitability. The three-tier business model demonstrates the three-dimensional form of business operations, and through value transfer, can more deeply structure the profit model of the enterprise. The results of this study summarize the following two points:

1. In order to pursue sustainable survival, enterprises should adapt to market changes, constantly adjust their business direction, and strive to stimulate innovation potential and innovative business models.
2. Enterprises can effectively transfer value propositions to customers through product innovation, service innovation and technological innovation, thereby creating corporate value and profit.

The "innovative value" that this study cannot mention is worthy of continuous research to increase the contribution of subsequent research.

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