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Development Model of Content Industry under Digital Convergence Circumstance

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Abstract: Digital convergence influences industry changes, causes enterprises to transform, merge or collaborate with each other, and even develops different types of industry changes and business integration, However, past studies on digital convergence issue mainly focused on policy, protocol, and standards, the formation and management of online communities, hardware facilities or system software implementation, planning and technologies, and digital content business models. Few studies have examined the factors of industry change and enterprise transformation from a complete systematic perspective. This study proposes a three-dimension analysis framework based on the literature review, including infrastructure, content, and society. This study adopts case study method and selects Netflix as research case. This study found that the digital content industry emphasizes infrastructure, specifically over the top (OTT) convergence technology, data flow control technology, and big data analysis technology. The industry also emphasizes producing original content and developing new media business models, in which content production should maintain strategic flexibility. Finally, the industry emphasizes society relationship management, as well as collaboration with local communities around the world. Business model innovation in society aspect has become a competitive advantage in the industry.

Keywords: Digital Convergence, Infrastructure, Content, Society, OTT

1. INTRODUCTION

Digital convergence influences enterprises' business strategy, organizational changes driven by new technologies, different types of industry changes and integration, and even the restructuring and merging of multinational enterprises. Hence, the development and adjustment of the digital convergence industry is currently one of the most important development items to countries around the world (Lykourgiotis *et*

al. 2014). Yet, past studies on digital convergence mainly focused on policy, laws, protocols, and standards (Doong & Ho 2012), the formation and management of society (Zeng & Wu 2012), hardware facility and system software technologies (Lykourgiotis *et al.* 2014), and digital content and business models (Fuenzalida & Ulrika 2012). Few studies have been carried out with a complete systematic perspective. The purpose of this study is to explore the meaning of development strategies for the digital convergence industry, and provide reference and suggestions for establishing and developing industry policies. Based on an analysis report of MarketWatch, the five major technology companies that have attracted the most attention from investors in 2017 is FAANG, that is Facebook, Apple, Amazon, Netflix and the parent company of Google – Alphabet. This study selected Netflix, which is in the digital convergence and content industries, for the case study. Netflix uses OTT streaming technology for its operations, and according to estimates of market survey institutes, the global OTT output value will reach US$68 billion by the end of this year, a 45% growth compared with last year, showing the great market potential of OTT.

2. DIGITAL CONVERGENCE

After reviewing digital convergence related literature, this study divides digital convergence models into three dimensions, specifically infrastructure, content, and society. With regard to infrastructure, wireless mobile technology was developed in response to the issue with coverage by basic infrastructure, and developments all require the guidance of basic infrastructure (Amerini *et al.*, 2010; David & Thompson, 2011; Robert, 2012; Springer Science and Business Media, 2011; Steen, 2009; Zeng & Wu, 2012). In which software development and use should be viewed as a valuable asset that is protected by patents with emphasis on lawful diffusion. Due to efficiency considerations, the release and application of source code must be integrated to obtain benefits of collaboration (Mahr and Lievens, 2011). Due differences in knowledge, property right, and cultural concepts, small and large area should be taken into consideration during integration. Application of the overall network also needs to consider differences in cultural background. Under the influence of cultural concepts and member structure, software program application and governance strategy should also be considered (David & Thompson, 2011; Mahr and Lievens, 2011; Steen, 2009; Zeng & Wu, 2012).

Gupta and Wang (2004) pointed out that integration of the content industry will create a revolutionary industry in the future, and the future content industry may very likely become the final trial ground for enterprises under digital convergence. As technological development becomes more refined, most people can enjoy the convenience brought by technology, but we must return to the changes in daily life that are brought by technology, and this is what it means for digital convergence to eventually focus on people's daily life (Amerini *et al.*, 2010; Fuenzalida & Ulrika, 2012; Ji, 2010; Steen, 2009). The conflicts in the convergence process of mobile digital multimedia network technologies DVB-H and T-DMB were resolved by an organization serving as an arbitration institute. Standardization is the key to successful technology integration. If vertical integration creates a monopoly, it will lead to diffusion of competitive behavior, and changes in the entire value chain or relaxation of control by the system will result in changes in market structure, which may lead to scattered and ineffective results (Fuenzalida & Ulrika, 2012; Gupta and Wang, 2004; Steen, 2009).

In society, Gupta & Wang (2004) mentioned how global network technology affects the behavior of enterprises, and lead to new business strategies and scope, as well as changes in the entire society. Pagallo

& Durante (2009) further mentioned moral and ethical issues involved in society activities, which shows the importance of social order and the urgency of reform. Furthermore, some studies noted changes in the overall social structure driven by digital convergence (Benoit, 2012; Lee & Shin, 2010; Lane & Neal, 1999; Lyndon & Sloggett, 2012; Zeng & Wu, 2012). How communities are formed in digital convergence and how commercial value is created is considered the most important issues in the development of digital convergence today (Lyndon & Sloggett, 2012). In other words, when there are drastic industry changes under digital convergence, it is necessary to link digital convergence to new business models, so that enterprises can better utilize advantages of digital convergence to create competitive advantages (Sillanpaa & Laamanen, 2009).

3. METHOD

This study adopts the case study method (Yin, 2014). The case selected is Netflix in the U.S. Technology convergence is the process that transmits creative content in compliance with laws and policies through carriers and infrastructure, which gather on society and create a series of results, in which digital technology issues include convergence, transmission and communication, broadcasting information and content integration, innovative product market changes, and enterprise reform, adaptation or merging and innovation. This study divides the analysis framework into three dimensions, including infrastructure, content, and society. Infrastructure refers to the software and hardware facilities used for transmission, including medium innovation and information technology application; content is a general term for the digital content industry, and includes manufacturing, development, packaging, and sales processes; society refers to the scope from free portal services to profits from user charges. These three dimensions linked together form the analysis framework for the company's digital convergence. This study mainly collects secondary data from Bloomberg, news reports of Tvoao.com, and other data of the case. Bloomberg was founded in 1982 and was renamed Bloomberg Technology in 2017; it is currently the largest financial information company in the world, providing over 4,000 new reports for 350 newspapers every day; Bloomberg provides authoritative economic commentary and perspectives. Bloomberg presents information of business, politics, economics, and technology around the world through opinions exchanged by experts, scholars, and business decision-makers. Bloomberg currently broadcasts financial and market information to 200 million people around the world on 10 TV websites in 7 languages 24 hours a day. This study collects the titles and contents of a one hour news program from Monday to Friday, focusing on science and technology, current situation of enterprises, and innovative industries. This study records the subject of each program and discussions by experts on the current situation, as well as the background of interviewed experts and the type of company they operate. The research team watched all reports of Bloomberg West on Netflix between July 2015 and June 2017, and then analyzed and discussed each of the 78 reports, after which analysis results were coded and entered in the database. Furthermore, Tvoao.com was launched in August 2008 and is now the most influential vertical portal in the field of broadcasting and video new media. It was praised as the media with most innovative value and the most influential society platform for media in China. The platform has covered Netflix for a long time, and 169 reports on events of Netflix were collected for the period July 2015 to June 2017. As for in-depth interviews with experts, this study interviewed 2 senior executives of the telecom industry, 5 senior executives of small and medium enterprises in the electronics manufacturing industry, and 2 experts on e-commerce, 9 experts in total.

4. RESULTS AND DISCUSSIONS

Data for the case Netflix is analyzed according to infrastructure, content, and society, and the following research results were obtained.

4.1. Infrastructure

1. OTT Convergence Technology

Digital convergence of the telecom industry, broadcast TV, and the Internet have accelerated the arrival of the over the top (OTT) era. The innovative product affecting the video industry is OTT, and the ecosystem of cable TV and wireless video may see viewers that abandon their traditional viewing habits due to the appearance of OTT. Netflix is focused on developing OTT convergence technology, e.g. Internet TV services can be viewed offline and video on demand.

2. Data Flow Control Technology

In response to possible developments of issues under the Internet neutrality policy, Netflix implemented different control measures for the use of bandwidth resources, and also improved technology for the streamlined use of data flow, e.g. bypass to dedicated server, mobile data control function i4, and Internet card automatic down resolution.

3. Big Data Business Analysis Technology

In an era of information explosion, big data application has become necessary for future enterprise development and precision marketing. Many innovative products and services were developed based on big data. Netflix uses its powerful data analysis to support video content development, e.g. using big data analysis to produce the TV series House of Cards and Orange is the New Black.

4.2. Content

1. Original Content

Netflix's profitability has always been limited by the purchase of copyrighted video content, and it thus expanded investments in the production of original content, using big data analysis for the production of content with an emphasis on high definition content. Its original content has already been recognized as a new force in Hollywood, e.g. Beasts of no nation was nominated for the Oscars, HBO Emmy Award nomination, and five Golden Global Award nominations. There are no customers without good film, and Amazon and Apple are also investing in original programs. Netflix does not have a basic customer base in e-commerce like Amazon, neither does it have fans like Apple of its devices, and can only rely on its superior content to attract customers.

2. New Media Business Model

Following advancements and changes in media technology, which have provided conveniences such as offshore viewing and video on demand, OTT profit models developed under these new technologies will change

following developments of 5G and IoT. In the future, economic value created by OTT will not be limited to the use of video media, e.g. education, business management, and advertisement extensions. Netflix already allows users to download video to view offline, and its focus is on upgrade to new media business models.

4.3. Society

1. Managing Society Members

Roughly 70% of the data that was collected for the case emphasized developing and managing society, e.g. reports on Netflix's subscriber growth in the U.S. and Netflix's international subscriber growth. After all, Netflix mainly relies on subscription fees for revenue, so it must increase its number of subscribers to increase revenue.

2. Collaboration with Local Communities Around the World

Increase in number of subscribers is Netflix's main source of revenue. Netflix reached a cooperation agreement with Comcast, the largest cable TV operator in the U.S., but the greatest challenge is going into business with communities around the world. Hence, Netflix expands its society through localized collaboration, e.g. Netflix and South Korea's D'LIVE jointly released a set-top box, jointly produced a Korean drama with South Korea's JTBC, jointly developed the video streaming market with Japan's Softbank, entered the home control system market with Panasonic, and also works with Chunhwa Telecom and Taiwanmobile in the video streaming market.

4.4. Discussion

Summarizing the analysis above, with regard to infrastructure, Netflix is developing OTT convergence technology, data flow control technology, and big data business analysis technology, which has allowed Netflix to gain a temporary lead in technology, but the pace of innovation in convergence technology is also very fast, e.g. Amazon Channels has an innovative service model similar to cable TV viewing habits, allowing customers to stream different programs based on their own preferences, which is equal to integrating cable TV with OTT streaming services, so that customers can stream programs on different devices. It also eliminates the restrictions of contracts required for cable TV. The development of this new model may very quickly replace OTT streaming used by Netflix and Hulu. This is why enterprises must make adjustments and develop innovative technologies at any time during co-opetition to satisfy customers' needs. This study thus made the following finding:

Finding 1: The digital content industry emphasizes infrastructure such as OTT convergence technology, data flow control technology, and big data business analysis technology. Moreover, the industry must make adjustments and develop innovative technologies at any time to satisfy customers' needs.

Next, Netflix is shifting from purchasing copyrighted content to producing original content, and is also actively developing new media business models, but its profit model when crossing over to different industries under technology convergence must also take into consideration cost and comparison with competitors in the industry. When Netflix shifts from simple rental to the streaming industry, and enters the content industry to profit, its original content was recognized by numerous awards, and the number of

international subscribers also grew, which achieved excellent performance in stock prices. Netflix is actively investing in the content production industry to reduce the cost of purchasing copyright from content providers, but the main source of Netflix's revenue is subscription fee, so it must continue to invest considerable resources in the production of quality content products to maintain these customers. This has resulted in rising cost of original content, and the negative cash flow has eaten into the company's profits. For example, its online rental competitor Hulu stressed that it will not invest considerable funds into content production. The profit model of traditional film producers not only includes intellectual property, but also advertisement income, but copyright and advertisements are not part of Netflix's strategy, because production quality will decline if resources are insufficient, and it will increase the risk of losing customers. Hence, Netflix faces a dilemma in its business that is there is no market without content, but good content requires considerable investment. A senior executive in the content industry mentioned: "original content is indeed a decisive factor of profitability in the industry, original content will hold a significant place in future AR (augmented reality) and VR (virtual reality) and live broadcasts, but with consideration to the cost of cross-industry collaboration, merging, or direct development, independent development may not necessarily be the most important option to the restructuring of a company." This perspective brings out other strategy recommendations, such as strategic alliances and merger. This study thus made the following finding:

> Finding 2: The digital content industry emphasizes the production of original content and the development of new media business models, in which content production should maintain strategic flexibility, including self-development, strategic alliances, and mergers.

Third, with regard to society, Netflix has gradually expanded from members in the U.S. to overseas markets though collaborations with local communities around the world. At present, accounts of society can be exclusive or shared; operators cannot specify the exclusivity of accounts due to considerations of diffusion, as many new customers come from free use first. Even though this affects profits, it is a commonly used method for network effects. First expand the scale of the society through free use, and then attract real paying customers with the added value provided by platform applications. This is already the mainstream business model for society. Furthermore, Google's YouTube, Facebook's Watch, Amazon's Echo, and Apple's HomePod are all potential competitors of Netflix. However, development of Netflix's society platform has stopped in the preparation stage of cooperation. Moreover, even though infrastructure, policy and laws of countries are not yet ready, as time passes, imitators may have the ability to change the overall business environment, such as the video streaming and download services of Amazon. Each country has its own ecosystem of channels, and system operators have profited for a long period of time. It would be very hard for a foreign company to change this ecosystem, so Netflix has been challenged in many countries, such as China's Iqiyi (strengthen local content). "Even so, many business models developed under digital convergence are not final, and only by analyzing the current situation when we are in a stage where everything is unclear can we find a feasible and reasonable profit model, this is what current players in the market urgently need to think about" mentioned a senior executive of a telecom carrier. Hence, there is still great development potential for business models in society aspect. This study thus made the following finding:

> Finding 3: The digital content industry emphasizes society relationship management, as well as collaboration with local communities around the world. Business model innovation in society aspect has become a competitive advantage in the industry.

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