

The Structure-Conduct-Performance Analysis of OTT Media

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Abstract

This paper uses the Structure - Conduct - Performance (SCP) model to analyze the structure, behavior and performance of the OTT media market. First of all, the OTT media market structure is fully described by the classification of competitive enterprises, differentiation of products, market concentration and entry barriers. Then, through reviewing the service modes of the OTT license owners, content providers, telecom operators, Internet companies and other parties, the market behavior, competition and cooperation, were analyzed. Finally, the efficiency of resource allocation and the economies of scale were used to evaluate the market performance. This paper shows that the market structure of OTT media tends to be concentrated and monopolized. The market behaviors of all parties are to seek the efficiency of resource allocation and economy of scale.

JEL classification numbers: K2, L1, M3

Keywords: SCP, OTT, OTT market structure, Internet TV

1 Introduction

OTT video (Over-the-Top video), providing interactive TV and value-added services to users through the Internet, is the killer application of broadband operators. It made a tremendous impact on the traditional cable, terrestrial and satellite TV market. With the bandwidth of the network upgraded from 1M, 4M, 10M to 20M, OTT video rapidly seized and eroded the traditional broadcasting market, gradually causing about 30% subscription loss. In particular, more and more users favor and demand the OTT services because the OTT box intelligently and conveniently realizes multi-screen interactivity (mobile phone push its screen to TV through the OTT box), value-added

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application, home network sharing, smart medical, smart education etc.. As a result, the demands of OTT promote the demands for broadband and vice versa.

At present, OTT provides live TV, video on demand and value added services through the Internet and overcomes the network restrictions and requirements for early IPTV services. Telecom operators use "IPTV+OTT" to immigrate the IPTV to OTT. The traditional cable, terrestrial and satellite TV operators provide "DVB+OTT" box to meet the user's interactive TV and value-added business requirements. In addition, OTT box and smart TV service expand to mobile phone and tablets through multi-screen interactivity. Right now, China has more than 189 million broadband users and 590 million Internet users. In 2013, 26 millions of smart TV sets were sold. Obviously, the potential market for OTT service is huge.

The Structure - Conduct - Performance (SCP) method established by Joe S. Bain and Scherer, the industrial economics authorities of Harvard University, is a powerful tool for the analysis of industrial economy. The Structure refers to the relationships in the market such as the number of competitors, product differentiation, concentration, and entry barriers. The Behavior describes the market behavior of enterprises to influence the market structure, including marketing, product capacity, horizontal integration and improving internal efficiency. The Performance refers to the results of the enterprise behavior in specific market structure, mainly in the efficiency of resource allocation and the benefits of economies of scale.

This paper uses the Structure - Conduct - Performance (SCP) model to analyze the OTT media market structure , behavior, and performance. First of all, from the classification of competitive enterprises, differentiation of products, market concentration and entry barriers, the OTT media market structure were fully described. It tends to be very concentrated and monopolized. Then, through reviewing the service modes of the OTT license owners, content providers, telecom operators, Internet companies and other parties, the market behavior, competition and cooperation, were analyzed. Finally, the efficiency of resource allocation and the economies of scale were used to evaluate the market performance.

2 Investigation of the OTT Market Structure

2013 is the first special year for OTT (Internet TV). OTT license owners, telecom operators and cable operators, video websites with rich content, smart TV and set-top box manufacturers and copycat OTT set-top box providers entered into the market from different angles, and formed the OTT game market with Chinese characteristics. In addition, the deluge of the copycat OTT STB stimulates the rigid demand of OTT services, especially live TV. It has certain effect on the structure of OTT market. The number of competitors, market concentration, differentials of products and services, barriers of market entries are the main elements to the formation of the OTT market.

2.1 Market Competitors

Presently, the main competitors within the OTT market are OTT license owners, content providers, operators, Internet enterprise, smart TV and box manufacturers, as well as copycat set-top box manufacturers.

There are ten license owners so far in domestic OTT market in China, CNTV, the Central People's broadcasting station, China International Radio, Film networks, BestTV, Huashu Media, South Media, Hunan TV, Jiangsu TV and Shandong New Media. The statutory regulation requires that any Internet TV content delivering has to be bundle with the indicated OTT license. For that reason, the license owner should have a chance and be at a more advantage to aggregate content and services from others and form a monopoly. However, the license owners could not carry on these advantages because of lack of the sales channels and successful business models.

The operators include three major telecom operators – China Telecom, China Unicom, China Mobile, and cable operators. The operators have extensive broadband network resources and subscribers. According to 2013 statistics, the fixed-line broadband subscribers of China Telecom reached 98.72 million, China Unicom reached 64.38 million, and China Mobile reached more than 15 million. Obviously, all of the telecom operators have the potential to largely deploy OTT services, and have clearly realized that development of OTT is the best way to seize and develop their broadband users. However, under the impact of OTT, more exploration and practice are needed on how to upgrade and optimize the system and business based on the original design. Especially in the OTT business model, the ability to maintain current existing scale and payment advantages need more attention.

Cable operators have rich video content and subscribers. According to 2013 statistics, there are more than 85 million two-way cable users in China. Therefore, the cable operators have advantages to develop OTT business. However, due to lack of funds, export bandwidth of Internet, and the ability of competition, it is not any easier for them to develop OTT business when the competition from telecom operators is ever looming.

The leading Internet enterprises in OTT business are iQiYi, LeTV, Ali and Millet. They spend huge amounts of money to buy the copyright of film and TV series, to improve Internet TV experience, to attract a large number of subscribers and to have the advantage of capital, expanding speed and marketing. But the problem that they face is how to construct a reasonable business model, turning from loss of revenue to profitability, when faced with intention competitions.

Terminal manufacturers include smart TV and OTT box manufacturer. Smart TV manufacturers, basing on their smart TV and advantages in scalable, brand, marketing and channels, quickly access the OTT market. In the second half of 2013, OTT box manufacturers have set off a price war. In addition, some of them such as Millet, LeTV and Lenovo participate in the competition of smart TV with their advantages in Internet and OTT operations. But the core of Internet TV growth is not just relying on the simple price advantage. No matter whether traditional TV manufacturers or other competitors, they have to consider that the conception of consuming effects the purchase of the OTT. The terminal manufacturers need to get rid of the traditional idea and operation mode, cooperate with others, and seize the chance to diversified development.

The market force of the manufacturers of copycat OTT box should not be ignored. The top 5 of copycat manufacturer in China are HaiMedia with 24% market share, Infic with 17%, HD-TV with 13%, Wobo with 11% and 10moons with 10% according to the statistics. So far, the copycat boxes are main force to be reckoned with in the OTT market, using low cost and marketing advantages to compete and finding policy regulatory loopholes. Although there are no operating costs, no capital pressure for copyright of content and the sales of hardware can make money quickly, but with the aggravation of competition, the profit margin is shrinking. Meanwhile, with the multi-sectoral regulation

of Internet TV and copyright of content, particularly the State Press and Publication Administration of Radio, Film and TV has developed normative requirements for OTT industry which requires all content for Internet broadcast must be audited, the OTT market in 2014 will have to operate in accordance with these specifications. We can foresee, the copycat content link will be banned, and copycat OTT set-top box will encounter a re-shuffle and withdrawing from the market.

2.2 Market Concentration

Market concentration is an important indicator of market structure, in here, we use the CR4 and CR8 to analyze OTT market concentration. CR4 is the sum of the market share of the top 4 companies in the market, and CR8 is the sum of the market share of the top 8 companies in the market. Generally, if the CR4 is more than 50% and CR8 is more than 75%, then the industry is regarded as a highly concentrated industry [4].

According to authority estimates, in the market, there are up to 10 million OTT set-top boxes[5] and 27.57 million IPTV boxes in 2013[5]. In addition, 26 million units of smart TV was sold in 2013. The Telecom operators mainly deployed IPTV boxes. The Internet companies and copycat factories push OTT set-top boxes, where Ali provided 1 million boxes, LeTV about 800 thousands. The companies, BestTV, CNTV, Galaxy and Aiqiyi in total provided several millions of OTT boxes. There were about 5 million copycat boxes sold in the market in 2013. According to the calculation of market share of license owners, operators, Internet companies, and smart TV and boxes manufacturers, the $CR4 = 87.1\% \geq 85\%$, $CR8 = 92.2\% \geq 85\%$. As a result, the OTT market is a highly concentrated oligopoly market, according to Bain industrial concentration criteria [7].

Centralized development mode of Internet capital is why the OTT market formed the oligopoly. OTT is one of the Internet services and should follow the typical Internet business development model, first in considering the investment and market share and then in considering the profit model, resulting in a higher concentration of OTT industry. Chinese Streaming Media Network indicated that “the power of capital promotes rapid growth of the OTT industry in 2013, but also bring big competition and disorder to the market. With entry of huge capitals, small enterprises don’t stand a chance. The big bosses are going to dominate the development of the market, pricing and business model. It is not good for the development of OTT industrial.” Even though, the government strictly controlled the license authorizing, but it lack the effective means to supervise and execute at the policy level. This is why it is easy to form an OTT monopoly. Currently OTT market has been gradually formed the pattern in where handful of companies occupied most of the market share. It highlighted the oligopolistic market characteristics. From the efficiency of allocating resources and scale of the development of the entire industry, OTT becoming a monopoly is the inevitable result.

2.3 The Differentiations of the Products and Services

Product differentiation is one of the main elements of the market structure. Enterprise attracts users by providing differentiated products, gaining consumer preferences, loyalty and a favorable position within the competition. The difference of OTT products and services mainly shows in content, marketing, user experience, and value-added services. Video content has the homogenization and copyright problems. OTT competitors formed their unique products through the differentiation in technology, content, cross-border

cooperation, value-added service, and marketing etc.

CNTV, BestTV, HuaShu Media have license and content, and have the right to provide content and service platform and use it to cooperate with telecom operators and form a profit sharing business model. License owner shall actively cooperate with the upstream and downstream industry chain, build its service platform, embed its client into the set-top box and smart TV, and enter the market using the license and brand advantages. Because live TV is a rigid demand of the market, the TV station who has live channels could obtain the maximum benefit with minimum investment. This cooperation mode is the best way for TV stations to reduce the investment and cost, increase the coverage of the service and application, and enhance the competition power. We can see, in 2014, with the strengthening of policy supervision, many copycat boxes must withdraw from the market.

The telecom operators use OTT as the killer application to promote their broadband market, using the OTT box and service as the free gift if you use their broadband service. Telecom operators bundle with difference license owners and content providers to realize their service differentiation. The telecom operators have the advantage in brand, service, and sales channels to scale the business, grab onto opportunities, and became the big winners in OTT and broadband business. While the cable operators are more committed to the development of DVB+OTT products, they hope to attract and retain more users, scale existing user base and realize the complete value increase through the DVB TV channels, aggregation of VoD, differential products and HD TV advantages. Similarly, the Internet enterprises provide rich application. For example, Ali promotes its cloud OS and uses the technical difference to integrate advertising, education, e-commerce, and music to raise its product value. Through the content differential, LeTV has made the perfect OTT industry value chain and maximized the value of "Video + entertainment". Millet, a hardware vendor, made its products differentials through its "Millet phone, Millet TV, and Millet set-top box " differentiation, and integration of video, pictures, music and other Internet services, e-commerce, Internet applications and games. On the other hand, Millet built its ecological chain through its products and the built-in applications.

The vendors of the copycat OTT box use the methods of low price, distribution channel and free content and service to attract a large number of customers. The illegal content includes large number of live channels and huge VoD titles which they illegally link to the large video website and the aggregators. There is copyright and legal risk for the copycat OTT boxes.

2.4 Barriers to Entry

OTT is an oligopoly market. It not only needs huge investment, but also has high entry barrier in order to be successful. Netflix is a successful model, acting as a virtual operator to provide OTT services through Internet despite the fact that it does not own the network. Firstly, industrial scale is one of the entry barriers. A huge investment is needed for the copyright of massive amount of content and bandwidth. In addition, marketing, business development and operations also require huge investment. The new entrants need a certain amount of capital to fill the "bottomless pit "of the required investment. For example, in 2013, Ali spent hundreds of millions US to deploy millions of boxes. In May of 2013, Baidu acquired PPS, a famous video stream provider, for \$370 million US cash and merged it with iQiyi, its own famous video site. In October of 2013, Suning invested

\$250 million US in PPTV for 44% shares and became the largest shareholder.

Second, policy control is another entry barrier that affects new entrants. Due to licensing and content control, the OTT industry is closely related with policies and regulations, so that there are policy entry barriers, certain limitations and risks. The core competition is in rich content resources if the new companies want to succeed in the OTT market. Cooperation with the license owners and content aggregators is the only way to succeed for the new entrants.

In addition, product differentiation is also another entry barrier. Existing OTT products have respectively formed many differentiation accordance with market demands. Consumer has his/her own psychological identity for each differential products. In accordance to the trends of the market for applications such as games, education, e-commerce and high-value video, new enterprises who want to enter the industry have to have the advantages of technologies and products to support a variety of applications and services, to ensure the safety and legality of the contents and to promise huge capital spending to differentiate product design, platform construction, and marketing in absence of profit model.

3 OTT Market Behavior Analysis

Under the SCP paradigm, “Market Structure” decides organizational behavior. OTT market is an oligopolistic market with high policies and capital entry barrier. In this market structure, companies should choose their own market behaviors.

3.1 License Owners Transit to Service Providers

In the supply chain of network, content (license), platforms, terminals and capital, the OTT industry creates new business model and operational approaches through all parties involve.

First of all, the license owner selects its appropriate business model of cooperation, bases on its core advantage of content, and overcomes the disadvantages of short of network, to achieve the transition to Internet TV operators. For example, BestTV cooperated with telecom operators to provide IPTV content and services based on their network and bandwidth, becoming the first license owner who attempts to charge monthly fees from OTT users. It owns NBA, English Premier League and other exclusive resources, has over 20 million users and shares the revenue of subscription fees and advertising earning with telecom operators. In addition, it also holds the shares of Fengxing network, the one of the biggest video content website with P2P technology, greatly enhanced its content competitive advantages.

Huashu Media creates a cooperation business model around the TV set and STB users, focusing on content integrations, recommendations and cooperation with well-known TV manufacturers such as Ali, Skyworth, Hisense, Haier, TCL, and well-known STB manufacturers LETV, Mele, Jin Ya etc. The number of its OTT integrated terminal is more than 23 million, leaping to the forefront in terms of market share. It provides users with more value-added services by introducing Baidu, Shanda, Ctrip, etc., all well-known Internet enterprises.

CNTV and QQ set up “future Television Limited”, a company responsible for the

operation of OTT. The new company will introduce QQ's TVQQ, interactive games, Micro message, means of payment, e-commerce etc. to enhance its services and competitions.

CNR new media, a subsidiary company of Central People's Broadcasting Station, together with Jiangsu TV Station and iQiYi, co-founded the "Galaxy Internet TV Ltd." Galaxy focuses on mobile OTT business with its content and add-value services. Southern Media and Union Voole co-founded the "Guangdong Southern Interactive Television Cable Technology Ltd." In short, all parties who have the license have in accordance with their own circumstance chosen the right partners to cooperate, reducing their cost of investment and seeking greater success through upgrade of the existed boxes and service platforms. It has also enhanced their terminal coverage, increased their competitiveness in the OTT industry and achieved the transition to be service providers.

3.2 Carriers Following the Traditional Business Model

Telecom operators still keep their traditional business model of "access fee + service free". OTT video will be the motivation to attract users to use higher bandwidth. Telecom operators increase revenue growth by providing more bandwidth and improve the APUR value. They have a clear advantage in the channel, quality of service, business operations, customer service and terminal management, but they have no OTT operating license and cannot provide OTT content independently. China Telecom uses CNTV and BesTV IPTV platform and content, relying on its existing IPTV infrastructure to actively explore the new business forms of "IPTV + OTT's". China Mobile not only uses Huash Media's, Galaxy's and BestTV's platforms and contents, but also sets up its own content and service platform in cooperation with Huasu Media. China Unicom is also extensive cooperating with license owners and content providers, selecting 5 +1 partners to deliver OTT services in the name of "Wo TV". Telecom operators and Internet video operators, through extensive cooperation, mastered a large number of business, video, and games resources, and established the ecological circle for telecom operators. It not only leads to a sustainable profit for telecom operators, but also leads to the healthy development of OTT enterprises.

3.3 Innovative Service Model of Internet Companies

Internet companies are creating a new "hardware + software + services" business model, the cross-border and integration business model, which is expected by the manufacturers. Internet companies continue the content free business model used for PC, relying on advertising revenue as the main source of income. It started the OTT "enclosure" to expand their user base and make profit by means of large-scale advertising and precise delivery of the advertising.

Ali sent out millions of OTT set-top boxes freely and delivers free services to create a profitable market environment by binding Ali cloud OS, APP store, and e-commerce with its fast payment channel and processing links.

Millet uses CNTV license to sell the OTT box directly and provides free of charge services. It provides not only the OTT box, but also the smart TVs and smart phones. It is a typical representative of the "hardware + software + services" business model for manufactures. Millet achieved high performance in the smart TV and OTT STB sales. It uses the multi-screen strategy, develops its own brand advantage, and adheres the

customers by using multi-screen products, services and experience. Through the multi-screen function of Millet box, you can push the content of iPhone and iPad onto the TV screen. In addition, its box has a large number of built-in games and applications to attract users.

LeTV built its own ecosystem through its original "the strongest cloud content platform + rich content + the best terminal + the best service" to construct a complete industrial chain. LeTV provides most of the TV channels and has a dozen of its own PPV channels, film and television drama, entertainment, and sports to meet the needs of various users. It creates a comprehensive sustainable profit model through earning the "hardware fees + content fees+ share application fees + share advertising revenue".

iQiYi cooperates broadly with OTT hardware vendors to form specific "hardware + software + services" business model and shares the future revenue with them. It uses the Internet concepts to reform the OTT market, promising free contents. It acquired PPS to expand its subscribers and market share, and enhanced the competitiveness in game and interactive advertising. It added more than 4000 sales and after-sales service network, lowered the cost and ensured the quality of OTT box through cooperation with TCL, a famous TV manufacturer.

3.4 Copycat OTT Box and Its Pirated Free Service Model

Copycat OTT boxes used pirated free service model. By setting up content aggregating platforms at home and abroad, grabbing resources on the Internet video website, linking the boxes to the platforms and providing free push service, the copycat boxes are largely deployed. The profit business model of copycat OTT boxes is the sale of boxes, the sharing of traffic and the advertising revenues. The floods of the copycat boxes caused significant damage to the film and television industry and a great shock to the OTT market because of the piracy of contents.

4 OTT Market Performance

Market performance is the effect of market operations under specific conditions of the market structure and behaviors. Competition improve the efficiency of resource allocation, the efficiency of scale through product differentiation and specific market behavior under the control of license owner, investment scale, and oligopoly market structure.

4.1 Market Efficiency

As OTT market is growing with the growth of broadband, the market effect is more significant. Statistics show that by the end of 2013 total subscribers of OTT reached 65 million in China, of which more than 29 million were IPTV subscribers, an increase of 7.5 million over that of 2012, a 34% growth. IPTV and OTT drive the development of broadband services, and led to the development of value-added services, increasing China Telecom's total revenue to nearly 4 billion. Most of the significant growth came from karaoke, games and other services. In 2014, China Telecom will mainly develop "IPTV + OTT" boxes, the total subscriber will reach 40 million. From 2013, China Mobile began to test its OTT services in eight provinces, hoping to develop 10 million users in 2014. The OTT will be the killer application to promote broadband users and bandwidth

demand. China Unicom will cooperate with content providers, terminal vendors and share the revenue with them to deploy OTT boxes and services for its 65 million broadband users. Dr. Peng of Telecom & Media Group, with the network coverage already reaching 40.25 million users and 6 million broadband subscribers, bided 1 million OTT boxes in early 2014 and sounded the clarion call to the OTT market.

The OTT market efficiency is significant in 2013. BestTV launched 1 million OTT boxes, integrated 30 million Smart TVs, and made the total number of OTT users to over 50 million (including IPTV). In September 2013, BestTV and Microsoft co-funded Joint Venture Company. The two parties will carry out comprehensive cooperation in the new generation of home gaming, entertainment, terminals, content, services and other areas. The increasing IPTV and OTT subscribers made its revenue growth of 30% to 2.63 billion in 2013. Huashu Media achieved the rapid growth of OTT based on its content as the core competitive advantage. In July 2013, Huashu Media and Ali in Beijing jointly launched the Smart TV eco League, released the Smart TV boxes loaded with Ali cloud OS, expanded the number of OTT coverage with the help of Ali's resources and channels, and formed scale benefit. The stock market hit five consecutive daily limitation; its revenue reached 1.8 billion and profit 250 million, a 43% growth compared to the same period in 2013.

As a representative of the OTT operators playing on the Internet, LeTV makes its "platform + content + end terminal" full ecological system maturing, and showing a significant advantage. Its revenue achieved 2.345 billion RMB and profit hit 247 million RMB.

In addition, the advertising revenue of online video, as a major revenue resource of OTT, exceeded 6.4 billion RMB in 2012 and reached 12.2 billion in 2013. From the report by Enfodesk, in the first quarter of 2012, the advertising revenue of the online video market was 24.3 billion RMB, a 51.9% growth from the previous year. In the second quarter of 2013, it was up to 2.88 billion RMB, a 18.5% growth over the first quarter and a 49.7% growth compared with the same period last year. In the third quarter of 2013, it was 3.25 billion RMB, 13% growth compared to the second quarter and 23.1% growth compared with the same period last year. In the fourth quarter of 2013, it was 3.66 billion RMB, 12.5% growth compared to the third quarter and 37% growth compared with the same period last year. Totally in 2013, the advertising revenue of the online video was 12.2 billion RMB, 90.9% growth compared to 2012. This greatly reflects the rapid growth of the market.

4.2 Efficient Allocation of Resources and Economies of Scale

Competition and cooperation is the most effective way to improve industrial efficiency of asset allocation and economic scale. In September 2013, Huashu Media, a content provider, SZMTC, a TV manufacturer, and Coship, a box maker, jointly created "the first and newly clouded smart TV operation model", integrating the service providers, hardware provider and e-commerce platform to improve the effective allocation of resources. They launched the "prepay service fee to get free clouded smart TV", "buy clouded smart TV to get free service", "Get discount shopping on clouded smart TV" and other innovative business and marketing model to chieve a variety of OTT products and business forms. It is the typical case of industry efficient allocation of resources and economies of scale. At the same time, the parties grabbed the opportunities of cooperation, explored the OTT business mode for the future, and guided their transformation through

master data and methods from a diversified content, fine service and accuracy of operations to personalized service.

Huashu Media has tens of millions of users and the perfect OTT service system while SZMTC has large-scale production capacity and Ali Cloud has experience in the areas of e-commerce platform and services. In addition, Huashu Media has 38 billion RMB market value and SZMTC has 13 billion. The mother company of Ali Cloud is Alibaba who has 140 billion U.S dollars market value.

In addition, licenses owners, content providers, network operators, platform owners, terminals manufacturers and investors are all very fully aware of the importance of the effective allocation of OTT resources and economies of scale. They can all be achieved through joint ventures, cooperation, mergers and acquisitions, equity participation and other forms. In 2013, the major mergers, acquisitions, and joint ventures cases were as follows. In May, Baidu used \$ 370 million US cash to acquire PPS, the famous video stream website with rich video content and P2P technology, and merged it with its iQiYi to improve economic efficiency by expanding the scale of its users and network service capabilities. In August, BestTV invested 307 million RMB to Fengxing Network to expand its user base and network transmission capacity. In September, BestTV and Microsoft funded a \$79 million joint venture company to expand the economic scale of the OTT game operation. In October, Suning, one of the biggest appliance stores in China acquired PPTV with \$ 250 million US dollars, to realize its "electricity supplier + operation" mode and the economic scale efficiency. In April 2014, Huashu received 6.5 billion RMB in investments from Alibaba to realize the giant economies of scale in OTT market. The Licenses owners (CNTV, Huashu Media, BestTV, MangoTV, Galaxy, etc) and service providers (LeTV, iQiYi PPTV) and TV manufacturers (Hisense, TCL, Changhong), integrate the resources of license, operation, content and production through multi cross-border cooperation, making the OTT economies of scale bigger and stronger. Reported by Enfodesk, in 2013, the Smart TV sales reached 26 million sets and formed economies of scale in OTT video and value-added services.

5 Conclusions

Structure - behavior and performance (SPC) model is a simple, clear and effective method to analyze the market structure, behavior and performance of OTT media. Through classification by competitors, studies of the product differentiation, market concentration and entry barriers, we found that the OTT market is highly concentrated and oligopoly in market structure. From analysis of the market performance, the oligarchic monopoly is the inevitable result of the market in the pursuit of efficiency and economy of scale of resources. By studying the market behaviors of the license owners, content providers, operators, Internet companies and manufacturers of smart TV, we found that competition and cooperation are suitable for all parties. Product and service innovation and the differentiation of products and services are the best weapon to maximize the benefits. By studying the performance of the market, we found that the behaviors of the OTT market play a decisive role in improving the efficiency of resource allocation and the efficiency of the economies of scale. The OTT market has economies of scale and rapid development within fierce competitions.

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References

- [1] Section 33, "Statistical Report on Internet Development in China" - China Internet Network Information Center, 2014
- [2] Zhou Xiaojing, Can we catch up 10 million OTT box delivery? Streaming Media Network. 2013.12
- [3] Glan Research, Quarterly analysis report of two-way cable network improvement in China, Ninth 2013.10.
- [4] Rui Mingjie, Industry Economics, 1st Edition Shanghai: Shanghai University of Finance and Economics Press, 2005
- [5] Glan Research, 2013 White Paper of Set-Top-Box of China, 2013.12
- [6] Enfodeck, 2013 White Paper on Smart TV industry, 2014.3
- [7] Bain J. S., Industrial Organization [M], New York Publisher, 1968