Niche theory within video platform competition: traditional vs modern

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Niche theory within video platform competition: traditional vs modern

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Abstract. Rapid proliferation of the usage of internet-based modern television (IPTV and OTT) in Indonesia as well as limited and similar resources threatens the existence of old/traditional video platforms (satellite television and cable television). Adapted from ecological studies, niche theory is used to measure the level of dynamic competition among media. Through three concepts of measurement of niche theory, niche breadth, nice overlap, and competitive superiority, the competition relationship between these four video platforms can be analyzed. The questionnaire was spread out online and offline to 502 respondents of each platform. Focus group discussions were conducted in two groups with 6 respondents each group. The results of this study were also analyzed based on the media life cycle. The conclusions of this study are: 1) OTT is a generalist platform, IPTV and cable television tend to be generalist, and satellite television is classified as a specialist; 2) The highest competition occurs between cable television and IPTV; 3) OTT is the most competitive platform whereas satellite television is the least competitive; 4) Satellite television is in defensive resistance life cycle, cable television in defensive resistance and adaptation cycles, IPTV in growth cycle, and OTT in maturation cycle.

1. Introduction

Service providers including video platform providers need to pay attention to customer feedback to better provide service [1][2][3] and must rely more on customers' experiences in service processes [4]. The providers have to organize around the customer in order to be a successful firm. They are forced to change their activities from a provider's point of view towards a customer's point of view [5]. Customer delight has to be created during the process of service delivery in order to really outperform competitors and win the hearts of customers [6][7][8][9]. While a good quality of service has been considered a competitive advantage, many researchers have now pointed out that a quality service aiming to satisfy expectations can no longer win the hearts of customers. How to provide high quality experiences for customers is more critical now. A memorable service experience could improve customer satisfaction, loyalty and reputation of service providers leading to greater profit. Service innovations have contributed to the growth in the number of service firms and to the scale on their operations, which in turn has increased their economic impact [1].

Penetration of internet users in Indonesia in 2016 increased to 51.8% or reaches 132.7 million people. Users often use the internet as entertainment (96.8%). Of the various types of entertainment that can be accessed by the internet, entertainment content that is most frequently visited by users is watching online movies with a percentage of 41% or about 54.4 million people [6]. Nevertheless, television is still at the top of the peak as the main medium. The result of the Nielsen Consumer Media View survey of more than 17,000 people over the age of 10 in 11 major cities in Indonesia shows that

television is still ranked first (96%), followed by outdoor media (53%), and internet (44%)[7]. IPTV (Internet Protocol Television) is an interactive (two-way) television, subscribers can rewind or pause the broadcast, where data is transmitted over an IP network [8]. While, OTT (Over The Top) according to U. S. Federal Communication Commission, is defined as an online video distributor that sends video content to customers via the internet [9].

Nielsen Cross-Platform 2017 survey found that watching via traditional television (cable television and satellite television) is still the top choice (77%) in Indonesia. Satellite television transmits television signals from satellites which will then be received by a television antenna. While, cable television delivers its programming through radio waves transmitted into coaxial cables. On the other hand, the modern platform for accessing video through the internet also has a high penetration, streaming sites such as YouTube, Vimeo, and so on (51%), online television portals (44%), and subscription internet television such as Netflix, Iflix , HOOQ, VIU, and so on (28%). If user's penetration of those modern platform are combined, they can threaten traditional platforms. Nielsen Cross-Platform is an annual study of digital content in the Asia Pacific region using an online survey methodology [10]. Based on research conducted by Ericsson ConsumerLab on future technology trends conducted in 2011 to 2014 in nine countries (Brazil, China, Germany, South Korea, Spain, Sweden, Taiwan, United Kingdom, United States), it was found that from year to year the use of television has decreased. Based on the research, President of Ericsson Indonesia, Thomas Jul, predicts that the same will happen to other countries including Indonesia [11].

Theory of the niche is originated from an ecological study of competing living populations and it is adapted to explain competition in the mass media with the same consumer resources as in a video platform between traditional platforms and modern platforms that live together. Analysis of niche theory is done by applying the three measurement concepts namely niche breath, niche overlap, and competitive superiority. Li's study [12] also adapted from Dimmick's niche theory by using gratification obtained and gratification opportunities to test the competitive relationship between three television media -OTT, IPTV, and digital cable. Among the three media, OTT is the most competitive medium [12]. Therefore, in this study, niche theory will be applied to test dynamic competition relationships among video platforms - satellite television, cable television, IPTV, and OTT in Indonesia.

2. Literature review

2.1. Niche theory

Three important concepts in understanding niche theory are the niche breath, niche overlap, and competitive superiority. Niche breadth shows the amount of resources consumed by a population of media or the dependence relation of media population with the resources. Niche breadth measures the level of ability of a medium to give gratification. Based on the niche breadth, media can be categorized as generalists and specialists. Niche overlap is an index that measures similarity or deference between two media regarding on their resource utilization. High overlap shows strong competition among two media. Competitive superiority is used to find out which platforms are among a pair of platforms that have the capability of better resource utilization, meaning that it provides a wider gratification to the user [13]. Major resource dimensions that are the object of competition – gratification utilities obtained and gratification opportunities, media content, consumer spending, time spent by consumers on the media, and advertising expenditures [14].

2.2. Media life cycle

Media life cycle stages are divided into: (1) birth; (2) penetration; (3) growth; (4) maturation; (5) defensive resistance; (6) adaptation, convergence, or obsolescence [15]. Birth, often refers to a previous medium developed as a continuous innovation from the previous one [16]. Penetration, new medium enter the market, develop new usage and attract users. Growth, inventors, developers, and users learn to utilize, apply, and extend the capabilities of the medium. In this phase, the market share penetration of a medium has increased by 16 to 50 percent. Maturation, the new medium has found its place in a dynamic communication environment. Medium has grown, it is using and applying its capability maximally. The penetration of market share obtained ranges from 50 to 90 percent.

Defensive resistance, competition between old media and new media pushes old media to seek new directions in order to retain their old users. Older media users will experience a decrease from 90 percent to 50 percent.

The last stage is divided into three possibilities: adaptation, convergence, or obsolescence. If the old medium is able to adapt to the new situation by developing different functions that retain its users or find new users, the medium goes into the adaptation stage. If the old medium cannot survive on its own but survive by joining or cooperating with the new medium, the medium goes into the convergence stage. If the traditional medium fails to adapt to change, the medium goes into the obsolescence stage, decreases and then disappears.

3. Research methods

3.1. Research design

This study used gratification dimension of the niche resource dimension. The dimension of gratification is described by a factor or so-called macro dimension. In this research, there are six factors that are broken down into micro dimension which can be seen in Table 1.

Table 1. Identification of gratification factors.

Gratification Factor (Macrodimensions)	Microdimensions	Sources
Ease of Use	Program information is easy to understand	[12]
	Pleasing format programs	
	Easy to operate	
Financial Benefit	Affordable price	[17]
	Discounts for multiple purchases (packages)	
	Reasonable price	
Easy Interactivity	Minimal advertisement disturbance	[12]
	View programs not found in other platform	
	Easily find the desired program	
Convenience	Portable (can be watched anytime, anywhere)	[9]
	The program runs smoothly	
	Easy to save favorite programs	
Content	The program is more update than on other media	[12]
	Wide variety of programs	
System Quality	The picture quality is good	
	The signal quality is good	
	Have copyrights	

3.2. Data Collection

Non-probability sampling technique (purposive sampling) is applied for questionnaire with certain specific criterion. The criteria are traditional or modern television users or viewers aged between 18 and 58 years old. The required sample size ranges from 340 to 680 respondents. Focus group discussions were conducted in two groups. Both questionnaire distribution and focus group discussions were done in February 2018 and March 2018.

3.3. Methods and testing

3.3.1. Validity and reliability test

The questionnaire was tested its accuracy in measuring what it wanted to measure and its consistency as a reliable measuring tool using SPSS 16 software. The test results showed that the questionnaire was valid and reliable.

3.3.2. Niche breadth

Niche breadth of each video platform on each macro dimension is calculated by using the formula in equation (1) [13].

$$B= \frac{\sum_{n=1}^{N} \frac{\left[\sum_{k=1}^{K} GO_n\right]\text{-Kl}}{K(u\text{-}1)}}{N} \quad (1)$$

where, u and l denote upper and lower bounds of a scale. GO indicates gratification obtained rating on scale. N is the number of respondents using a medium, n is the first respondent. K denotes the number of scales on a dimension, k is the first gratification scale. The maximum value of the niche breadth is 1 and the minimum is 0.

3.3.3. Niche overlap

Niche overlap each pair of video platforms on each macrodimension is calculated by using the formula in equation (2) [13].

$$O_{i,j}= \frac{\sum_{n=1}^{N} \sqrt{\sum_{k=1}^{K} \frac{\left(GO_i\text{- }GO_j\right)^2}{K}}}{N} \quad (2)$$

where, i and j denote media i and media j. GO is gratification obtained rating on a scale for media i and media j. N is the number of respondents using both i and j, n is the first respondent. K denotes the number of scales on a dimension, k is the first gratification scale.

3.3.4. Competitive superiority

Competitive superiority between media pairs or video platforms in a macrodimension is measured using the equations (3) and (4)[13].

$$S_{i>j}= \frac{\sum_{n=1}^{N} \sum_{k=1}^{K} (m=_{i>j})}{N} \quad (3)$$

$$S_{j>i}= \frac{\sum_{n=1}^{N} \sum_{k=1}^{K} (m=_{j>i})}{N} \quad (4)$$

where, i and j indicate media i and j. $m_{i>j}$ means the value of a respondent's rating for those scale items on which i is rated greater than j (the sum of the actual values); $m_{j>i}$ means the value of a respondent's rating for those scale items on which j is rated greater than i (the sum of the actual values). N is the number of respondents using both i and j, n is the first respondent. K denotes the number of scales on a dimension, k is the first gratification scale. There are 2 things that should happen if platform i is superior compared to platform j, the value of $S_{i>\ j}$ should be higher than $S_{j>\ i}$ and the average gratification obtained rating of the two platforms differ significantly on the t-test.

3.3.5. Verbatim transcripts, coding, categorization, and filtering focus group discussion data

Discussions conducted in focus group discussions are transcribed into verbatim. The coding is done by marking the part of the discussion that is considered to be an important topic. Categorization is done by sorting topics that have been coded into major themes. There are eight major themes in this study. The seven major themes consist of 4 platform types (satellite television, cable television, IPTV, and OTT) and 4 other themes, video platform purchases, video platform consumptions, media comparisons, and content.

The first four themes are grouped in accordance with the advantages of each platform and the reasons participants tend to choose the platform. The video platform puchases discusses how participants can enjoy the video, viewed from subscribers' subscribing behaviour on video media. Then, the consumption of the video platform outlines the reason participants watch television or video,

its relation to social aspects, as well as the time and place of the watch participants. Meanwhile, the comparison of media related to other entertainment media outside the video media, such as books, magazines, comics, radio, and so forth. How participant preferences in choosing entertainment media and more time spent. This section also compares satellite television, cable television, IPTV, and OTT. From grouping into 8 major themes, it was found that there were at least 3 themes that were not primary in relation to interpreting the media life cycle of each platform. The three not primary themes are video platform purchases, video platform consumptions, and content.

4. Result and discussion

4.1. Profile of respondents

The questionnaire was distributed to 582 people, there were 502 respondents matching the criteria (405 online and 97 offline). For ages, 16.53% of respondents were under 18 years old, 73.90% were between 18-38 years old, 8.77% were between 39-58 years old, and 0.80% were older than 58 years. The percentage of men from 502 respondents was 45.82%. Focus group discussions were conducted in two groups. The first group consisted of 6 participants, 4 aged 21 and 2 aged 22, all women. The second group consisted of 6 participants, where 1 was 20 years old, 3 were 21 years old, 1 was 28 years old, and 1 was 29 years old, of which 3 were male.

4.2. Niche breadth

Niche breadth of each platform is shown in Table 2. OTT has the ability to provide the highest gratification among other platforms on all macrodimension. This shows that OTT has a dependency relationship with various resources. Meanwhile, the relationship of satellite television depends only on a few resources. Satellite television gratuities are the lowest on any macrodimension except in financial benefit. IPTV provides the lowest gratification on that macrodimension.

Table 2. Niche breadth on each video platform

Platform	Ease of Use	Financial Benefit	Easy Interactivity	Convenience	Content	System Quality
Televisi Satelit	0.635	0.698	0.485	0.451	0.485	0.583
Televisi Kabel	0.741	0.629	0.683	0.584	0.693	0.721
IPTV	0.702	0.623	0.694	0.666	0.705	0.71
OTT	0.758	0.723	0.745	0.81	0.831	0.733

Niche breadth moves from 0 to 1. If divided into 4 categories, specialists, tend to be specialists, tend to generalists, and generalists, then the range of each interval is 0.25. Niche breadth categorization can be seen in Table 3.

4.3. Niche overlap

Niche overlap of each pair of video platforms can be seen in Table 4. The niche overlap moves from 0 to 4 where, the nearer to the zero the higher overlap between two platforms, the stronger the competition or substitution relationship the two platforms have. Cable television and IPTV have the most intense competition relationships among other platform pairs in the six macro dimensions. The most likely explanations are 1) The operation of the television is similar from the remote as well as the appearance and arrangement of the television channel, 2) Both require a subscription fee with similar price range, 3) The ease of finding the desired program is not much different, although the advertising interference on IPTV is less, 4) Both of them are less portable than OTTs, 5) Both have national television channels and foreign television channels, and 6) Providers of both platforms are almost certainly have copyrights of their program and provide good image quality, although how to transmit data is different, cable television via coaxial cable and IPTV over IP network.

While, the weakest overlap indicated by the large niche overlap value occurs in satellite television pairings and OTT, except for the financial benefit macrodimension. The most likely causes are 1) The arrangement of the OTT program is much more modern than the satellite television; 2) The satellite

television contains a national television channel that has a lot of advertising disruption compared to the foreign television channel (cable television and IPTV), moreover with OTT, there are paid/subcription OTT which is free from advertisement; 3) OTT is portable and easy to save favorite programs; satellite television is not; 4) There are types of programs that only exist in OTT, OTT even includes programs that exist in other platforms; variations of satellite television programs are very narrow; and 5) Sometimes it is difficult to find the position of satellite television antenna where all channels have good picture quality. Meanwhile, OTT system quality is better overall, many OTT have HD resolution picture quality even 4K resolution. In the financial benefit macrodimension, the weakest overlap occurs in satellite television and IPTV (0.999), followed by satellite television and cable television (0.986). Satellite television does not require a subscription fee, whereas IPTV and cable television have similar and relatively high subscription fees, while the OTT has two services, paid OTT services and free OTT services.

4.4. Competitve superiority

Calculated competitive superiority and t-test results of each pair of video platforms can be seen in Table 5. Satellite television is inferior in all macrodimensions with each of other platforms. Satellite television is only superior in financial benefit macrodimension to cable television and IPTV. It means satellitetelevision provides a greater gratification to consumers related to finance compared to cable television and IPTV.

The ability of IPTV and cable television to provide gratification is no different from financial benefit, easy interactivity, content, and system quality macrodimensions. Cable television is superior to IPTV in the macrodimension of ease of use; IPTV is superior to cable television in the convenience macrodimension. The ability of OTT and cable television to provide gratification is no different in the macrodimensions of ease of use and system quality. However, OTT is able to provide greater gratification on the macrodimensions of financial benefits, easy interactivity, convenience, and content. OTT is also superior to IPTV in all macro dimensions.

4.5. Media life cycle

Satellite television is on a defensive resistance lifecycle. Sooner or later, old media will be threatened by new media. New media (cable television, IPTV, and OTT) offer facilities that satellite television does not have, for example international television programs and better video resolution. Speed of old media response is economical: the greater the investment in infrastructure, the higher the reluctance of the old media to change or adapt – “network lock-in” [18], as published by Lehman-Wilzig and Cohen-Avigdor [15]. Infrastructure investment is carried out in the form of satellite television service launches such as Telkom 2 in November 2005, Indostar 11 in May 2009 and Telkom 3S in February 2017. Therefore, satellite television is still reluctant to change from the current video delivery system.

Table 3. Niche breadth on each video platform

Platform	Ease of Use	Financial	Interactivity	Convenience	Content	System Quality	Notes
Satellite Television	Tend to be Generalist	Tend to be Generalist	Tend to be Specialist	Tend to be Specialist	Tend to be Specialist	Tend to be Generalist	Many ads, limited program variations, limited image quality, cheap, easy to use
Cable Television	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Subscription required, wide program variations, smooth program
IPTV	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Tend to be Generalist	Subscription required, broad program variations, minimal ads, free enough to select videos
OTT	Generalist	Tend to be Generalist	Tend to be Specialist	Generalist	Generalist	Tend to be Generalist	Subscriptions based on preferences, exclusive content, a wide variety of programs, portable, free to choose videos

Table 4. Niche breadth on each video platform

Macrodimension	Satellite TV-Cable TV	Satellite TV-IPTV	Satellite TV-OTT	Cable TV-IPTV	Cable TV-OTT	IPTV-OTT
Ease of Use	0.83	0.892	0.99	0.557	0.67	0.654
Financial Benefit	0.986	0.999	0.808	0.457	0.89	0.768
Easy Interactivity	1.101	1.172	1.412	0.546	0.852	0.737
Convenience	0.867	1.246	1.76	0.737	1.315	0.919
Content	1.017	1.081	1.546	0.464	0.779	0.687
System Quality	0.799	0.821	1.065	0.343	0.613	0.525

Table 5. Niche breadth on each video platform

		Satellite TV-Cable TV		Satellite TV-IPTV		Satellite TV-OTT		Cable TV-IPTV		Cable TV-OTT		IPTV-OTT	
		S	t-Value	S	t-Value	S	t-Value	S	t-Value	S	t-Value	S	t-Value
Ease of Use	$S_{i>j}$	1.434	-9.815*	2.321	-5.966*	1.622	-10.837*	2.996	3.730*	2.169	-1.572	1.41	-5.066*
	$S_{j>i}$	5.131		4.45		5.797		1.528		3.297		3.751	
Financial Benefit	$S_{i>j}$	5.151	6.073*	5.291	6.691*	2.651	-2.215*	1.894	0.558	1.578	-8.532*	0.98	-9.203*
	$S_{j>i}$	2.317		2.375		3.263		1.504		5.018		4.725	
Easy Interactivity	$S_{i>j}$	0.735	-16.352*	0.845	-17.545*	0.811	-22.419*	1.966	-0.978	1.841	-5.743*	4.002	-4.837*
	$S_{j>i}$	6.47		6.791		8.199		2.185		4.426		4.725	
Convenience	$S_{i>j}$	0.741	-10.226*	0.932	-17.178*	0.552	-29.837*	1.223	-7.037*	0.972	-20.263*	0.769	-13.564*
	$S_{j>i}$	4.639		6.488		9.327		3.464		7.4		5.837	
Content	$S_{i>j}$	0.291	-16.412*	0.388	-17.536*	0.277	-27.911*	1.155	-1.068	0.446	-12.284*	0.339	-11.333*
	$S_{j>i}$	4.604		4.791		6.809		1.4		4.141		3.833	
System Quality	$S_{i>j}$	0.518	-12.246*	0.863	-11.414*	1.375	-13.239*	1.54	1.022	2.084	-1.071	1.472	-2.104*
	$S_{j>i}$	5.221		5.09		6.058		1.096		2.643		2.57	

Cable television is ongoing two cycles at once, defensive resistance and the sixth stage, adaptation. The declination of cable television can be seen in the performance of the two largest cable television providers in Indonesia, First Media and MNC Sky Vision, each experienced a loss of 279.05 billion rupiahs and 293.80 billion rupiahs in the first half of 2015 [19]. The decline was caused by the threat of IPTV and OTT. Supported by FGD participants' statement that IPTV is better because the ads can be accelerated, OTT is more up to date and cheaper than cable television. The adaptation made by cable television is they begin to migrate to IPTV technology, based on news articles from industri.bisnis.com [20]. This method does not guarantee the survival of the old media, but allows the survival of media organizations when the old media (cable television) disappears.

The birth of IPTV in 2011 with a similar display to cable television gives IPTV an advantage because users do not need to take long to get to know and understand the use of IPTV. IPTV can offer facilities that did not exist in cable television, it can rewind and pause the broadcast, also watch the programs that have passed. IPTV is in the third phase, growth, IPTV has not entered the stage of maturation because until now IPTV has not passed more than half of the video media market.

OTT is a video services provider through the internet. The Nielsen Cross-Platform 2017 survey in Indonesia shows the penetration users of streaming site such as YouTube, Vimeo (51%), online television portals (44%), subscription platforms such as Netflix, Iflix, HOOQ (28%). It is not known to the number of users who use more than one OTT platform such as one user using YouTube and Netflix in the same time. However, it can be ascertained that overall OTT penetration is more than 50%. This clearly indicates that OTT is already in the fourth stage, maturation. Corporate Secretary Division General Manager of PT Indosat Mega Media, Syachrial Syarif, suggests that from the research he knows only 40% of consumers who want to subscribe to internet television, the rest are not. Paid television is solely the home internet addition [21]. Internet-television package is one of the reasons users subscribe to paid television. This is supported by FGD participants' statement, "Cable TV is usually bundling with home internet. So, it feels more profitable." and on one of the reasons participants chose IPTV," the price is already one package with my home internet."

5. Conclusion and Suggestion

The conclusions of this research are: 1) Based on the obtained niche breadth, satellite television is a specialist platform, cable television and IPTV are classified as tend to be generalist, and OTT is a generalist platform; 2) Based on the niche overlap acquired, the strongest competition occurs between cable television and IPTV compared to other platform pairs; 3) Among the four video platforms, OTT is the most competitive platform and satellite television is the least competitive in all macrodimension. Cable television is superior to IPTV in ease of use macro dimension, whereas IPTV is more competitive in convenience macrodimension; the other macro dimensions show no difference in providing gratification to users between cable television and IPTV; 4) Satellite television is in a defensive resistance cycle (fifth cycle), while cable television is in two cycles at once - defensive resistance and adaptation (sixth cycle). IPTV is in the growth cycle (third cycle), whereas OTT is already in the maturation cycle (fourth cycle).

Suggestions for each platform in order to survive or extend the period of its success include: 1) Satellite television focuses its target consumers on areas with minimal communications services in Indonesia (countryside or remote area), 2) Cable television switches technology using IP networks and privileges by products (internet and OTT) to attract and retain users, 3) IPTV providers extend fiber networks to a wider range of users than before, collaborate with local authorities in its realization, and 4) Each OTT markets itself massively and continuously through internet networks such as social media and pop-up ad, in order to last longer in the maturation cycle.

Suggestions for future research based on the limitations of this study are to distinguish the OTT platform into paid OTT and free OTT services.

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