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The Digital Cable TV Pricing Mechanism and the Consumer Preferences: the Survey in Taiwan

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The 30th European Conference of the International Telecommunications Society

Towards a Connected and Automated Society

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“The Digital Cable TV Pricing Mechanism and the
Consumer Preferences: the Survey in Taiwan”

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Abstract

As the cable system accomplishing 100% digitalization in Taiwan, NCC (National Communications Commission) proposes an unbundled pricing mechanism to allow consumers to choose the cable television channels that they actually watch. This study conducted an online survey and 1358 effective questionnaires were completed to know their willing to pay for each channel. The results show that there is a negative slope of demand, lower price for more subscribers, but near three quarters to half of subscribers did not want to pay for the individual channel. The genres of lifestyle, foreign news and movies are the top preferences that consumers pay higher prices. Based on the results of the subscribers' willing to pay, most of the television channels could not survive in the a la carte pricing mechanism.

I. Introduction

Since the 1990s, the monthly cable rate continuously raises in the U.S. The consumers asked that “family tier” or “a la carte” requirements might be a valid public policy responded to a failure of the market to increase consumer welfare by providing adequate choices (Beard, Ford & Koutsky, 2006). However, some researches argued that bundling might likely transfer surplus from consumers to firms but also encourages products to be offered that might not be under a la carte pricing (Crawford & Cullen, 2007). This is a controversy and dilemma of cable television regulation for the past decades.

Because of the regulated price cap and recently new entrants providing competitive fee, the average monthly cable price in Taiwan basically sustains around 550 NTD (\$18.3 USD) for the past 20 years. However, since the fixed rates and channels, consumers often complain the low program quality, limited production budget and repeatedly replaying contents. Therefore, the consumers also want to choose their own cable television channels in the reasonable price.

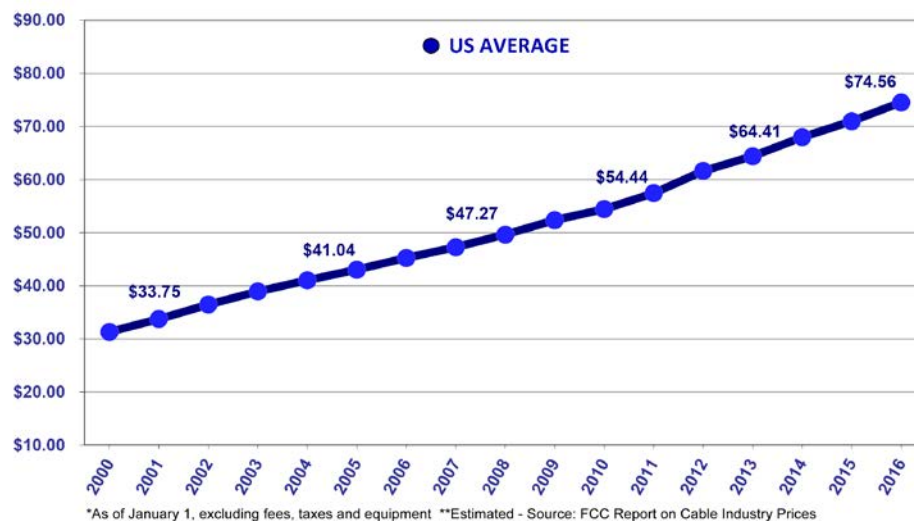
Although NCC is expected to implement a multi-pricing policy in 2020 year in Taiwan, there is no any empirical data to understand consumers’ willingness to pay for each channel and the impacts to the cable industry revenue change. This study collects 1358 online questionnaires and finds that less than half or even only quarter subscribers want to pay for the individual channel. The overall amount budget that consumers are willing to pay for a la carte is lower than the bundle, so the total cable industry revenue severe decreases. In the long run, only few channels can survive in the a la carte pricing mechanism.

II. Literatures Review

1. Bundle problems, more unnecessary channels but higher monthly fees

Since the deregulation of cable price cap in the US, the cable rates for basic and expanded basic continuously raise, even excluding the inflation and increasing costs of channels. In 2001 year, the average rate is \$33.75, but it jumps to \$74.56 in 2016. The price doubles and still continues now (Figure 1).

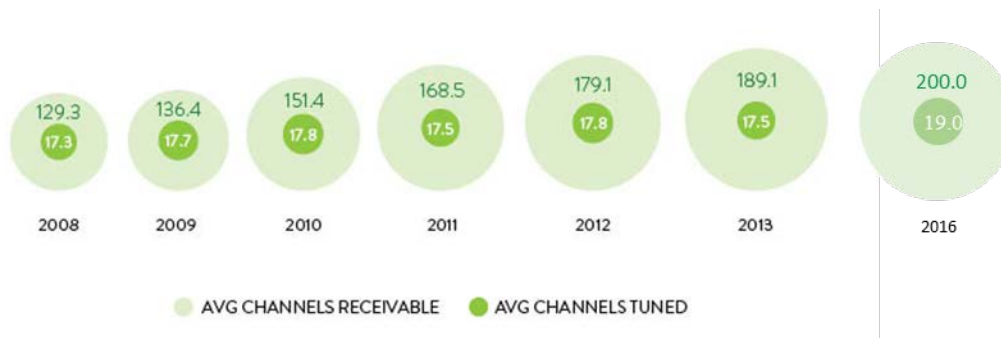
Figure1. The total cable rates for basic and expanded basic in US



Source: <https://home.heartofiowa.net/products-services/digital-tv/tvonmyside/>

Although the cable corporations explain that it is because the increasing number and quality of channels. However, consumers respond that they do not need so many channels that they seldom to watch. The average U.S. home receives 200 TV channels in 2016 which significantly jumps since 2008, when the average home received 129 channels (figure 2). Despite this increase, consumers have consistently tuned in to an average of just 19 channels for at least 10 minutes per week (Adgate, 2017; Nielsen, 2014. 5.6).

Figure 2. Channels receivable and tuned per TV household



Source: Nielsen (2014.5.6)

A study in 2013 from PwC says that 44 percent of consumers would like a total a la carte system and that 73 percent of consumers would prefer a la carte or at least more customization of packages than is currently offered. Only 14 percent are satisfied with the status quo. However, even customers who want such changes aren't willing to pay much for them. Sixteen percent, for example, say they won't pay more than 99 cents a month for a channel they want, while 24 percent will pay \$1.99 and 22 percent will pay \$2.99. At \$8 a month per channel, the highest option offered in the PwC survey, only 5 percent say they'd pay up (Bond, 2013.9.25).

2. A la carte for consumers to choose, pay less and promote competition

One of the main arguments in favor of an a la carte system is that it allows consumers to receive and pay for only programming they truly want. The Parents Television Council and other consumer protection groups feel that there is “something fundamentally wrong with requiring consumers to pay for a product they don't want, and may even find offensive contents”.

Consumers believe that the economic appeal of an a la carte model is as follows: Cable would be cheaper if consumers paid per channel. Instead of paying a hundred dollars for a hundred channels, they could possibly pay a prorated amount of five dollars a month for five channels. Following this logic, consumers believe that their cable bill would be drastically reduced if cable companies charge only for the channels consumers want (Rennhoff & Serfes, 2008). The consumer groups' perspective is grounded on the idea of a marketplace influenced by consumer preferences, which they believe would lead to greater competition, consumer sovereignty, and consumer freedom (Buckley, 2008).

The proliferation of "expanded basic" tiers may be the result of a market defect caused by the operation of the upstream video programming and advertising markets. In short, the content, size, and price of expanded basic tiers is not solely the result of MVPDs providing to consumers programming that consumers demand. On the other hand, the attractiveness of a la carte pricing lies in the fact that it would permit an MVPD to recover fixed costs, but in a way in which consumers select (and pay for) the channels most valuable to them. Indeed, the pricing strategy would permit the MVPD to engage in efficiency-enhancing price discrimination in a more targeted way than one-size-fits-all "expanded basic" bundles (Beard, Ford & Koutsky, 2006).

Besides, an a la carte system could reduce the content providers' monopoly power since each channel would have to compete individually rather than as part of a bundle. Under the current scenario, each cable bundle effectively competes with other bundles. But by allowing channels to compete individually, less successful channels will most likely phase out. No longer will more popular channels like ESPN carry

along with them less popular channels—every channel will stand independently.
(Brewster, 2014)

Content providers will face more difficulty sustaining these less popular channels and will either enhance the quality of the programming or eliminate the channel all together. By eliminating less popular channels that are not profitable, content providers could invest their time and money into creating more popular shows, thereby spending more effort on programming consumers will watch and enjoy at higher rates. (Brewster, 2014)

3. Favor bundle and be pessimistic about a la carte

Opponents argue that a la carte system would be a consumer disaster-resulting in higher prices and decreased programming diversity. Consumers who choose as few as a dozen channels would end up with higher bills than they currently pay for hundreds of channels under the current system. In addition, consumer choice would decline as diversity of programming would decrease due to the disappearance of smaller cable channels because of a lack of subscribers. As many smaller cable networks only exist because of the support that more popular networks provide through bundling (Buckley, 2008).

Hazlett (2006) explains the economics of multi-channel video distribution, showing that network cost conditions dictate reliance on bundling. Consumers do, in

fact, purchase programs they find valuable, with operators effectively throwing in additional content for free. Restricting the basic tier from 60 channels, to just those 20 channels a given subscriber prefers, is actually more expensive than providing the large tier to all. Therefore, an à la carte requirement would improve consumer satisfaction is scarce. Government intervention would introduce new inefficiencies to the market, thereby increasing consumer costs.

Using a policy simulation in which we explicitly model the strategic interaction between cable providers and programming networks, Rennhoff, & Serfes (2008) find that consumer welfare goes up unambiguously under a la carte pricing. The expected monthly expenditure per household falls by approximately 15 to 20 percent and consumer welfare increases considerably. On the other hand, even ignoring the (technological) fixed costs associated with compliance with an a la carte regulation, we find that cable operator profits will fall. Finally, as we might expect, some programming networks benefit from a la carte pricing, while others are harmed, including the lower advertising levels (Chen, Rennhoff, & Serfes, 2016).

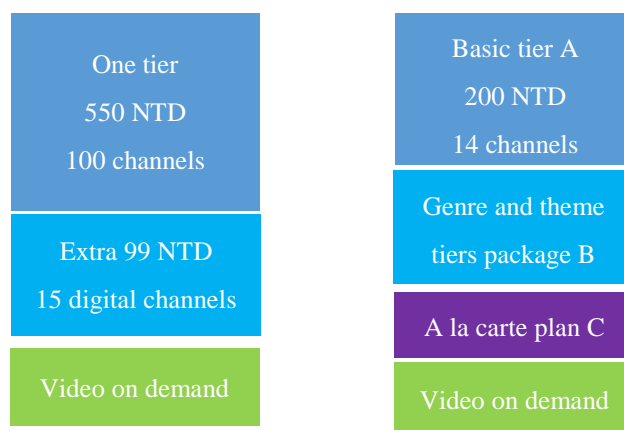
4. The cable TV market in Taiwan

In the first quarter of 2019 year, there are 8.75 million households and 5.04 million cable TV subscribers in Taiwan. The penetration is about 57.6% and there are 51 franchise areas in Taiwan. The average number of subscribers is around 81,000 and the biggest system has 283,000 subscribers among the franchise areas (NCC, 2019).

Originally most of the cable TV system are monopoly (2/3) or duopoly (1/3) in their franchise areas. Several years ago, new entrants began to provide digital cable TV services in the metropolis. Currently all cable TV systems are digital and can provide near 300 TV channels, video on demand and 100-300 MHz broadband network service. Originally the monthly fee of the one tier package is around 500 to 550 NTD to watch one hundred channels. However, as the server competition from the new entrants, some subscribers can get the price even below 200 NTD/month.

In the analog cable system, the limited number of channels is around 100 and charges for 500 to 550 NTD (Figure 3). As digitization, extra 10 to 15 digital channels are packaged to sell for 99 NTD and consumers also can buy video on demand services. Then, NCC proposes a multi-pricing plan to implement in 2020. There is a basic tier A of 14 broadcasting and public affair channels for 200 NTD which is required for every subscribers to share the cable network costs. The rest channels are packaged in different prices, genres and number of channels. Consumers can also buy individual channels dependent on their necessities, and the video on demand service is still available.

Figure 3. The multi-pricing plan proposed by NCC to implement in 2020



III. Research Questions

Crawford & Cullen (2007) conduct a numerical analysis of bundling's impact on a monopolist's pricing and product choices and assess the implications for consumer welfare in cable television markets. Existing theory is ambiguous: for a given set of products, bundling likely transfers surplus from consumers to firms but also encourages products to be offered that might not be under a la carte pricing.

They find that if all networks continued to be offered, the average household's surplus is predicted to increase by \$6.80 (65.6%) under a la carte sales (despite a total bundle price that almost doubles) and reduced network profits would have to be such that 41 of 50 offered cable networks have to exit the market. Simulation of a "Theme Tier" scenario provides intermediate benefits. The incremental marginal costs to cable systems of a la carte sales and its impact in the advertising market and on competition are important factors in determining consumer benefits (Crawford & Cullen, 2007).

Besides, Rennhoff & Serfes (2009) also develop a model that the nature of the equilibrium depends on the strength of consumer preference for content variety. When such a preference is: (i) low, the firms do not bundle, (ii) medium, each firm offers the bundle and the two products separately, and (iii) high, each firm offers only the bundle. Therefore, this study would like to understand consumers' preferences of each channel, to figure out the better pricing mechanism of cable television in Taiwan. Several research questions will be asked:

1. What are the consumers' preferences and the willingness to pay for each cable TV channel in Taiwan? How many channels and what kind of channels will the consumers buy?
2. What is the gap between the price of each channel cost and the average consumers' willingness to pay? What is the combination of different package of tier A+B+C that consumer prefer?
3. Based on the survey of different consumers' willing to pay, how many cable television channels can be benefited and survived in the a la carte pricing mechanism?

IV. Methodology

Since there are so many cable TV channels to ask about consumers' willing to pay, it is more realistic to apply the online survey method to increase the response rate. The online survey was conducted between 3rd and 9th April 2019. The questionnaires, via the SurveyCake website, were posted in the major online forums in Taiwan.

Because currently most of the users respond the questionnaires through the mobile devices, it is more convenient to apply the number bar, instead of directly filling in the number. However, to avoid the bias of pricing range of the number bar, this study designs two questionnaire formats of willing to pay for each channel. The maximum price of each channel is 100 NT dollars (NTD: New Taiwan Dollar) for group A, and the maximum price of each channel is 20 NT dollars for group B.

Table1, The basic data for the two group survey, dependent on pricing range

	Group A (100 NTD)	Group B (20 NTD)
Visit SurveyCake website	1120	1208
Respondents	664	704
Response rate	59.2%	58.2%
Effective respondents	661	697
Mobile devices	81.0%	75.2%

The total respondents are 1358, 951 (70%) for female and 407 for men (30%). Most of them are young users, 20-24 (32.4%), 25-29 (24.7%), 30-34 (20.0%) and 35-39 (14.9%). The major respondents are students (28.2%), then working in service industry (12.5%), public service (11.7%), IT (8.8%) and manufacture industry (7.5%). Because the questionnaires were posted in certain online forums, compared to the population data in Taiwan, the online survey results could not be inferred to the whole population. However, the data here which never be collected in Taiwan still provide important information to discuss.

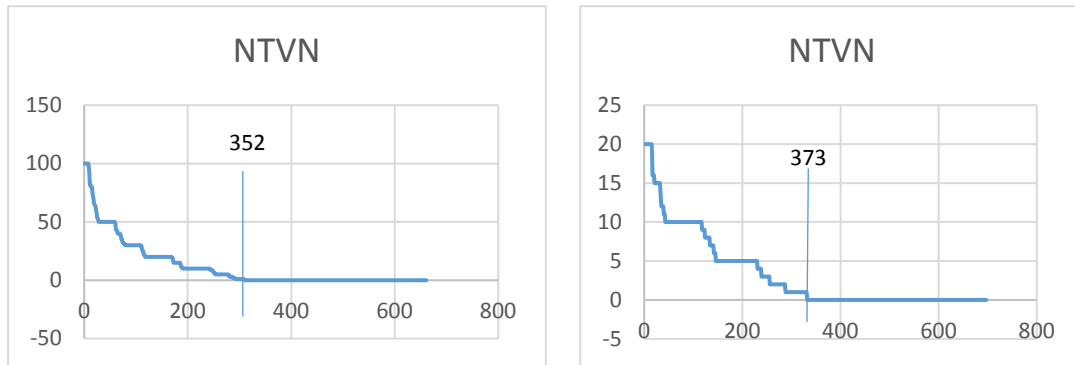
V. Results and Discussion

1. The continuous demand curves and the anchor effect for willing to pay

Figure 4 is the example of NTVN news channel willing to pay in group A and group B. As the study sorts the willing to pay from the maximum to the minimum, it shows a continuous negative slop demand. With the price down, more subscribers are willing to pay for the channel. The average price of NTVN news channel for group A is 11.7 NTD and 3.25 NTD for group B, and the ratio between the average prices is 3.6. Although respondents are willing to pay for various prices, however, in

the case of NTVN news channel, there are still 352 respondents for group A and 373 ones for group B (both 53% of the group A and B, over half of them), who do not want to pay for the channel.

Figure 4. The NTVN news channel's willing to pay in group A and B



The maximum willing to pay for group A is assigned as 100 NTD, and the maximum willing to pay for group B is assigned as 20 NTD. This study calculated the average price for each channel in groups A and B. There are significant difference of the average price between the two groups. The ratio of the average price in group A and group B (A/B) for every 61 channel is between 5.24 and 2.14, and the average ratio is 3.29. Therefore, the range of the maximum price did play the “anchor effect” for subscribers.

The average percentage of subscribers refusing to pay for the channel is 55% for group A and 53% for group B, which means that over half respondents did not want to pay for each channel. Also, the co-relationship of each channel refusing to pay between group A and group B is significant around 0.91. Therefore, the demand curves in both groups are pretty similar.

2. Genres of cable TV channel, ratings, costs and willing to pay

Table 2 is the average ratings, costs and willing to pay, or pay nothing for group A and B, according to the genres of cable TV channels. Foreign news, like CNN and NHK, has the lowest average rating and cost, however, the subscribers are willing to pay higher prices than the domestic news channels. The Lifestyle channels, such as National Geography and Discovery, are the genre that subscribers are willing to pay for the highest average price, 22.48 NTD for group A and 7.18 NTD for group B. Also, the percentage of subscribers did not pay for is the lowest (30% for group A and 27% for group B). However, the average ratings is very low to 0.04. Subscribers consider those channels are worthy and important but they seldom watch in everyday life.

Table 2. The average cost, price and rating in different cable TV genre (NTD)

Genre	Rating	Cost	A group price	A group pay zero	B group price	B group pay zero
Domestic News	0.57	3.57	8.22	63%	2.08	66%
Foreign News	0.01	0.80	11.43	57%	3.53	55%
Lifestyle	0.04	4.22	22.48	30%	7.18	27%
Kids & Family	0.31	2.54	12.72	51%	4.04	48%
Entertainment	0.36	3.28	9.87	59%	3.28	56%
Drama	0.37	3.25	10.37	58%	3.18	56%
Movies	0.21	3.65	17.94	38%	5.61	36%
Sports	0.21	4.46	10.46	57%	4.09	51%
Total 61 channels		189.27	746.28		236.28	

In addition, the movie channel is the other genre that subscribers are willing to pay higher prices, 17.94 NTD for group A and 5.61 NTD for group B. It is more expensive to see a movie in a theater, and therefore consumers have greater

preferences to pay. It is also interesting that the domestic news channel genre is the lowest prices that subscribers are willing to pay, because it is full of gossip and political ideology. However, the average rating of the domestic news is the highest, far higher than the foreign news and lifestyle genres. People do not think the news contents worthy but they still like to watch every day.

In table 2, originally the cable systems pay the channels for total 189.27 NTD. Since the maximum range of questionnaires are different in group A and B, the total 61 channels' average prices are 746.28 NTD in group A and 236.28 NTD in group B. The price in group A is even higher than the current bundle 550 NTD. Based on the information discussed above, whether some individual can survive in the a la carte pricing mechanism?

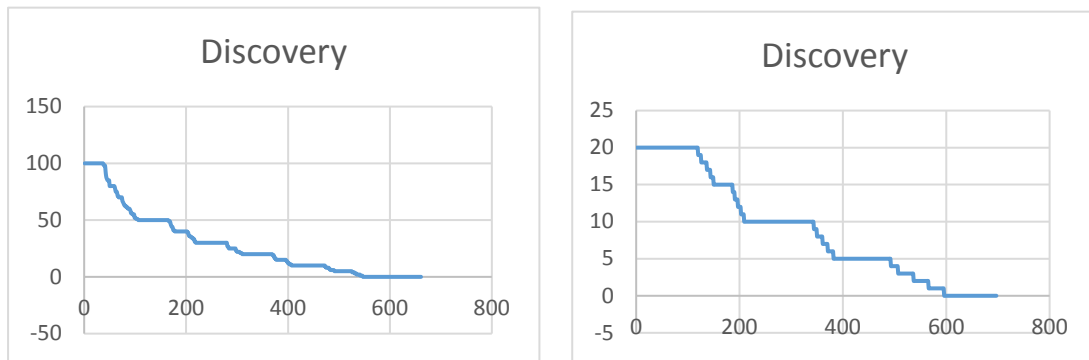
3. Is the a la carte strategy possible to success?

From Table 3, originally the cable TV revenue is the cost multiple all cable subscribers 5 million, plus the advertising revenue. In scenario 1, such as Discovery channel, over 85% of the subscribers are willing to pay, and the average willing to pay is also higher than the cost (figure 5). Therefore, if Discovery is unbundled and sell individually, it is likely to survive in group A. However, it is still hard to balance in group B, since the price higher, the less subscribers willing to pay. The total revenue is smaller than the bundle.

Table 3. The comparison revenue between original bundle and a la carte

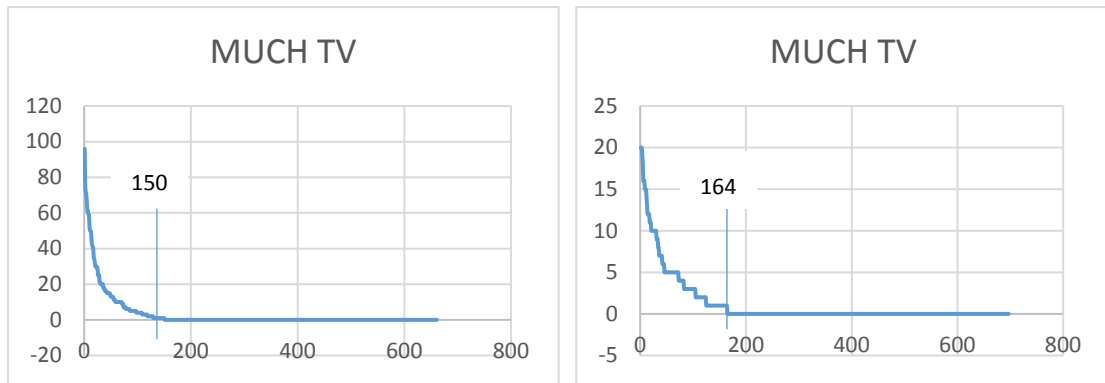
Scenario	Condition	Original revenue	A la carte revenue
Scenario 1	willing to pay % larger and higher price	Ex. Discovery $5 * 5M + AD$	$30 * 1.25M + AD/4$ (group A) $10 * 2.5M + AD/2$ (group B)
Scenario 2	Willing to pay % smaller and lower price	Ex. Much TV $3.7 * 5M + AD$	$3 * 5/6M + AD/6$ (group A) $1 * 5/4M + AD/4$ (group B)

Figure 5. The Discovery channel's willing to pay in group A and B



On the other hand, in scenario 2, such as Much TV entertainment channel, not only the average price (3.31 NTD for group A and 1.19 NTD for group B) is smaller than the cost (4.14 NTD), but also just 23 % (150/661) and 24% (164/697) for group A and B subscribers are willing to pay for (figure 6). Therefore, if the Much TV charges the average price 3.31 NTD and 1.19 NTD, there is only 16.5% (109/661) in group A and 17.9% (125/697) in group B willing to pay, which is not enough to compensate for the loss of unbundle. In addition, since the advertising can only target part of subscribers, the total revenue is far smaller than the original bundle. So, the Much TV channel could not survive in the a la carte market.

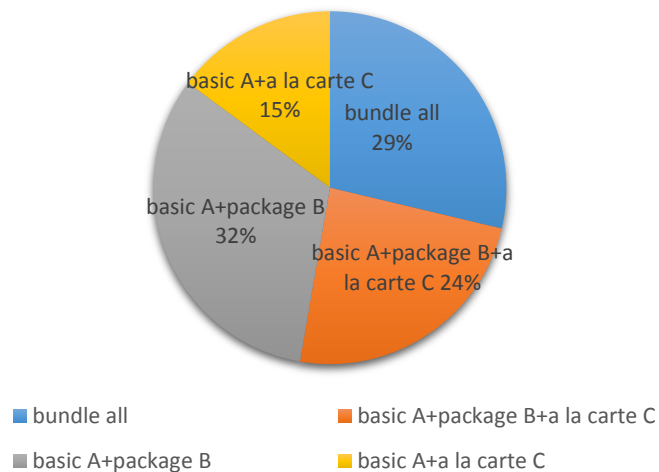
Figure 6. The MUCH TV Entertainment channel's willing to pay in group A and B



4. Consumer prefer to the cable pricing mechanism

NCC proposes the cable TV systems to offer the basic tier A, 3-5 channel for each package B and a la carte service C for consumers to make combination. As the survey shows (Figure 7), only 29% respondents are still used to the current price mechanism, to pay a fixed monthly fee and watch all one hundred channels, even though they usually only watch 10-20 channels. However, 24% respondents are willing to try their own A+B+C package, 32% for A+B, and 15% for A+C. It shows that subscribers would like to decide what TV channels by themselves and pay for what they like.

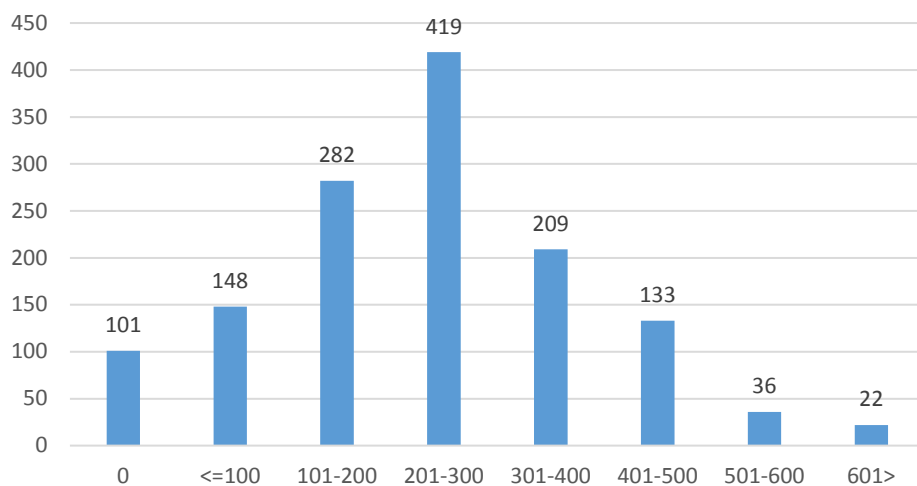
Figure 7. The percentage of basic A, package B and a la carte C combination



As the study asks how consumers will select package B, most consumers prefer that they can decide the channels by themselves (67%), higher than the same theme tier (17%) or conglomerate tier (2%). Most of them will buy 1 to 5 package B with pricing range from 20 NTD to even 100 NTD, and the median price is about 40-60 NTD range. Except for the basic A, most consumers (87%) are still willing to buy package B, and 40% will pay over 100 NTD.

However, as the study asks how much they are willing to pay for the different combination of basic A, packages B and a la carte C, it shows that nearly all subscribers (95.7%) are only willing to pay below 500 NTD, which is the current price for the bundle (figure 8). The free combination by subscribers did not increase their consumption of various channels.

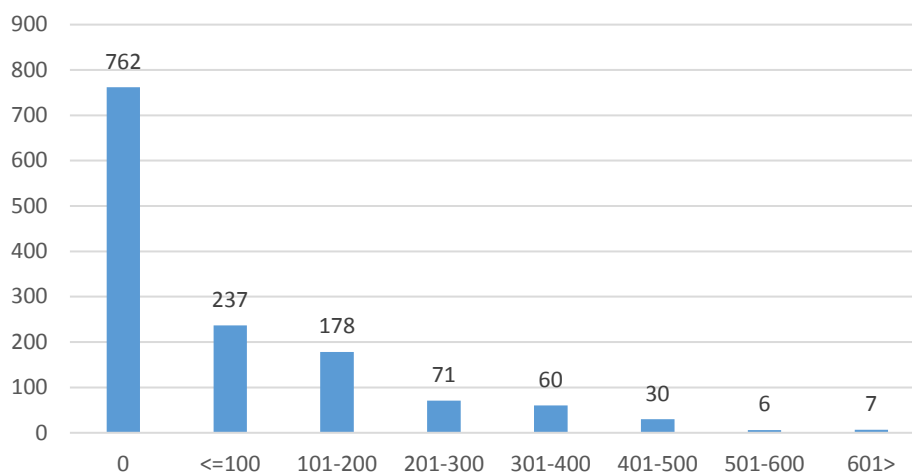
Figure 8. How much will consumers be willing to pay for combination?



On the other hand, although there are 56% respondents are not willing to pay for the OTT service, nearly 44% of them are willing to pay for the online services. Some

of them have paid hundred dollars NTD to watch OTT now. In addition, 65% of respondents consider that OTT can partially replace the cable system, or even 29% can accept that cable systems are totally replaced. This is similar predicted by Brewster (2014) that the growing popularity of new media platforms such as Netflix, Hulu, and HBO Go will almost certainly necessitate more consumer.

Figure 9. Number of consumers are willing to pay for the OTT?



From the survey results, the OTT can provide even flexible video streaming services and near half of the consumers already are willing to pay for. Therefore, even the cable systems offer various combination of package A+B+C, subscribers will not be willing to pay the higher total price than the bundle 550 NTD. They may save some budget in OTT service, instead of spending all in the cable system. So, the overall cable industry revenue is expected to decline more in the a la carte pricing mechanism.

VI. Summary

Although many studies discuss the pro and con of bundle and a la carte pricing in Taiwan, few actually investigate the consumers' preferences of different television channels. This study collects and analyzes the distribution of consumers' willingness to pay for each channel. It finds that the genres of lifestyle, foreign news and movies are the consumers' top preferences. At least half or even three quarters subscribers are not willing to pay for most of the channels. Although still some of them will pay for high price for the individual channels, however, the number of subscribers is not enough and the total revenue is still lower in a la carte than in bundle pricing mechanism .

For the channels that consumers are willing to pay for higher prices, they may consider also offer a la carte with reasonable price to attract new subscription. However, for the experiment of different maximum range of group A and B, whether consumers actually will pay for the higher price is not for a certainty. On the other hand, for those that consumers are not willing to pay for, the channels should prefer to stay in the bundle pricing. Otherwise, under the pure a la carte mechanism, they may be forced to exit the market. Based on survey of the consumers' preferences, even the combination of package A+B+C may still not be the top choice as the competition from OTT services. The content providers and cable systems should rethink other flexible strategies to attract consumers' attention and preferences, in order to survive in the age of digital online streaming industry.

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