Nomura Research Institute

Share the Next Values!

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"Personal Value" of Social Networking Services

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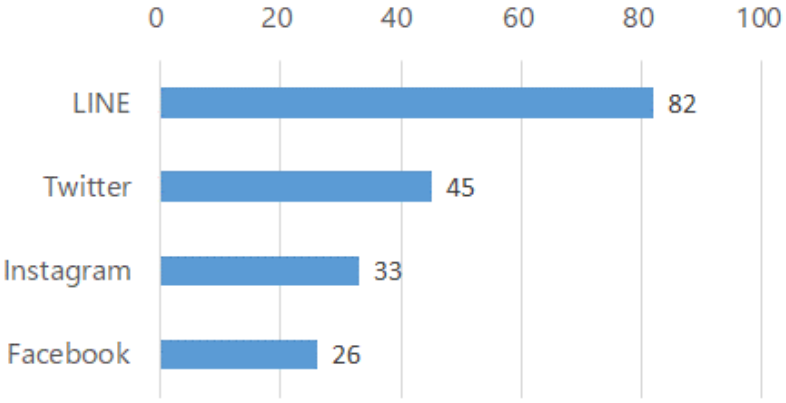
Social Networking Services (SNS) in Japan

People use SNS to connect with family, friends and acquaintances or with people of shared interests. Worldwide, SNS usage peaked at close to 3.5 billion[1] in 2019. LINE is the most popular SNS and messaging services in Japan with 82 million monthly active users[2]. Twitter is the 2nd most popular social network in Japan with 45 million users followed by Instagram and Facebook with 33 million and 26 million users respectively (see Figure 1)[3].

Figure 1: Number of monthly active users on most popular SNS in Japan (millions)



Source: https://ferret-plus.com/13454。
Facebook: https://japan.cnet.com/article/35139021/

The active number of LINE users was estimated to be 82 million in Japan in July 2019, where 86% of active users used the LINE platform daily[4]. This reinforces that LINE serves as the primary messaging app for Japanese people. A survey published by the Ministry of Internal

[1] https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/ (accessed on December 24, 2019)

[2] The actual number of users differ because the data contains users who use the service at least once a month, and who have multiple accounts and uses all of them.

[3] https://ferret-plus.com/13454 (accessed on December 16, 2019)

[4] LINE Business Guide January-June edition of LINE corporation providing marketing solutions

Affairs and Communication shows that the majority of the users actively post on LINE, which is more than twice that of Twitter when relatively compared to other social media platforms as shown in Figure 1[5]. Furthermore, LINE is widely used by men and women aged between 10 and 79 years, which makes it the most popular social media application irrespective of gender and age in Japan.

Twitter had 45 million users in Japan and thought to be mostly used by teenagers and 20s. LINE is mostly used to connect with family and friends whereas Twitter serves as a platform to connect directly with popular personalities and follow their activities with likes and retweets.

Instagram, which is a popular social media platform for sharing pictures and videos had over 33 million active users in Japan[6] in 2019, is owned by another social media giant Facebook - acquired for 81 billion JPY in 2012. Instagram has become very popular as its "**Insta-bae (Japanese meaning of Insta-genic** (photogenic for instagram))" was the number-one buzzword in Japan in 2017. The users become excessively obsessed to get more likes on their posts and click "**Insta-bae"** pictures.

Facebook, a parent company of Instagram is the most popular SNS with over 2.4 billion users worldwide. However, it is the 4th most popular social media network in Japan with 26 million users as of July 2019, which slightly increased from 25 million[7] in 2015, and the number is behind Instagram.

Willingness to pay (WTP) and price

SNS is one of the typical examples of free digital services. It allows users to interact and share information as much as they want to free of cost excluding internet connection. In spite of time being a precious resource, people tend to spend much of their time on social media because they find some value in it. In order to understand the value of social media, it will be useful to explain the concept of Willingness to pay (WTP) used in economics. Willingness to pay (WTP) means the highest price a consumer will pay for a unit

[5] **2018 White Paper on Information and Communications** published by Ministry of Internal Affairs and Communications

[6] https://about.fb.com/ja/news/2019/06/japan_maaupdate-2/ (accessed on December 12, 2019)

[7] https://japan.cnet.com/article/35139021/ (accessed on December 12, 2019)

of product or service, which is applicable for paid products as well as free services. Willingness to pay (WTP) of the same product differs from consumer to consumer due to various factors. If we take an example of bottled water, there are people who do not see the worth of spending a penny for purchasing water when they have enough supply of tap water whereas there are people around the desert area want to purchase it at any cost.

There is a subjective and objective difference between **value** and **price**. Since value is perceived as a subjective figure by each individual whereas price is perceived as an objective figure, both of the figures may not be consistent in most of the cases. Willingness to pay (WTP) is greater than the price if he/she thinks the price label of goods and services is reasonable, while it is the other way around if the price is very expensive. In economics, the difference between willingness to pay (WTP) and the price is called **consumer surplus**. In other words, it simply refers to the subjective level of satisfaction (i.e., measured by monetary term). As discussed in the example of water earlier, if a consumer is ready to pay up to 150 JPY for bottled water sold for 100 JPY, in that case, 50 JPY is considered as the consumer surplus.

Personal values of SNS

Because users spend certain time for SNS, it is most likely that willingness to pay (WTP) for SNS exist even though they are free of cost. Though the amount of money they are willing to pay for it undoubtedly varies from person to person as mentioned in the previous example of water. Similarly, there are people who do not see any value in using SNS (therefore they don't use it), while, others are willing to use it even if they pay for it.

First of all, we have to differentiate the **personal value** of SNS from **social value**, which intend to be the main purpose of the SNS. Social value refers to the benefits of the whole society rather than individuals' benefits. For example, person A sharing his idea on social media, person B finding it useful and gets inspiration. He/she applies it in some other area or field that actually benefits him/her. In economics, it is

called "external economy" because person A's behavior generates benefits for external persons or society, and the value is called **social value** which would not have been possible without SNS.

In fact, the consumer surplus discussed above can be described as a **personal value** that SNS generates to users rather than **social value**. It is reasonable to say that the subjective value for each user for using SNS can be converted into monetary gain. For example, a user may find social networking valuable as it allows them to easily become a member of various communities of communication platform such as LINE. Similarly, another media platform such as Facebook allows its users to easily search for information of anyone (such as a friend) with whom they have not been in contact for almost a decade compared to the enormous amount of effort and time it used to take before social media age[8]. In the sense that Twitter is a more convenient information sharing platform for people who would like to assert and share personal ideology. In a nutshell, all users perceive various values in social networking which is more or less the subjective value.

Willing to pay (WTP) and willing to accept (WTA)

Several studies on willingness to pay (WTP) for SNS have been conducted in the United States. Before proceeding further, it is important to understand the basics of willingness to pay (WTP) and willingness to accept (WTA). As described earlier, willingness to pay (WTP) refers to finding out the highest price a user is prepared to pay for the use of social media (such as a month). Similarly, willingness to accept (WTA) refers to a minimum amount that a person is willing to accept (WTA) to give up the use of social media for a certain period (such as a month).

[8] In 2016, Facebook announced that Facebook users are connected to every other person by an average of three and half other people. The average distance observed is 3.5 intermediaries or **degree of separation**.

Figure 2: Willingness to pay (WTP) and willingness to accept (WTA) for SNS

WTP: Willingness to Pay (for a month)	The maximum amount of money a user would be prepared to pay for using social media
WTA: Willingness to Accept (for a month)	The minimum amount of money a user is willing to accept (WTA) to give up the use of social media

In theory, the amount of willingness to pay (WTP) and willingness to accept (WTA) should be the same. However, it might be psychologically obvious if people are asked the amount that they are willing to pay for the use of a product or service, they tend to answer with the lower amount, and if they are asked about the amount they are willing to accept to give up its use, they tend to answer with the higher amount. One explanation of higher willingness to accept is the **endowment effect** used in psychology and behavioral economics. It refers to a situation where people are more likely to retain an object that they currently possess or are using, leading to a higher willingness to accept (WTA) to give up something they already hold. Thus, the difference between willingness to pay (WTP) and willingness to accept (WTA) has been widely studied which shows that true willingness to pay (WTP) should be somewhere in the middle of two. Willingness to accept (WTA) also has other advantages. During the willingness to pay (WTP) study, respondents may not mention actual numbers because neither the questions are based on actual scenarios (i.e., hypothesis-based) nor do they actually have to pay. On the contrary, during the willingness to accept (WTA) study, respondents are more likely to mention accurate answers because of the design of monetary (or real-money) experiments. For example, a study by Prof. Erik Brynjolfsson at MIT (Massachusetts Institute of Technology) and others used an experimental method and asked Facebook users' about their willingness to accept (WTA) for a month[9]. In this study, researchers actually monitored users who have not logged into

[9] In this study, they randomly picked a number (such as 50 USD) and asked respondents if they choose to "Give up the use of Facebook for a month and get paid 50 USD) instead of directly asking willingness to accept (WTA) in free-answer format. For those who answered No, they chose other value (such as 75 USD) and asked the same question.

Facebook within a month. They asked users to give up the Facebook login for a month and mentioned a condition that if they fail to keep the promise, they will not get the money after a month. Through this experimental method, they expected accurate answers from the respondents. However, in such cases, the samples for the survey might be less because this approach requires more labor and money than a questionnaire survey.

Past studies in the United States

There are various studies on willingness to pay (WTP) for SNS in the United States. In the above-mentioned study of **Prof. Erik Brynjolfsson** and the team, the experimental method was used to estimate Facebook users' willingness to accept (WTA) in the United States. According to the report, the median[10] willingness to accept (WTA) was 38 USD/month in 2017 for giving up the use of Facebook for a month[11].

Another study by **Jay Corrigan** and the team was carried out to estimate Facebook users' willingness to accept (WTA) by experimental auction[12] of deactivating an account for a certain period of time in the US. In this study, they divided 122 Facebook users in the USA into smaller groups and asked them the minimum amount required to deactivate their account for a certain period of time. The lowest bidder in each group is the winner of the auction and will receive money if it has been confirmed that the account has been deactivated for a certain period as promised[13]. The result states that the average willingness to accept (WTA) to discontinue the use was 39 USD weekly and 1,908 USD annually. There were no significant differences in willingness to accept (WTA) among users according to age, gender, or income level. However,

[10] Prof. Erik Brynjolfsson and the research team already used the median value instead of average value. Although the reason of using median value is not clear, it is probably to avoid the impact of excessive outlier.

[11] "Using massive online choice experiments to measure changes in well-being" Erik Brynjolfsson et. al., September 10, 2018

[12] "How much is social media worth? Estimating the value of Facebook by paying users to stop using it" Jay R. Corrigan, et. al., December 19, 2018

[13] Vickrey auction method was used in the study. In the method, the highest bidder wins but the price paid is the second-highest bid.

frequent users of Facebook had a significantly higher willingness to accept (WTA).

In addition to the previous studies, there is another study conducted across the United States by **Cass Sunstein** to estimate both willingness to pay (WTP) and willingness to accept (WTA) for not only Facebook but also other digital services such as Twitter, Instagram, and WhatsApp (messaging app)[14]. Figure 3 shows the partial results of the survey conducted for actual users of each service.

Figure 3: Average willingness to pay (WTP) and willingness to accept (WTA) for Facebook, etc. in the US

(USD/month)

	Willingness to pay (WTP)	Willingness to accept (WTA)
Facebook	17.6	99.0
Twitter	19.9	104.2
WhatsApp	34.9	101.2
Instagram	21.7	102.6

Source: "Willingness to pay to use Facebook, Twitter, YouTube, Instagram, Snapchat, and More: A national survey" Cass R. Sunstein, 2018

The key feature of Sunstein's research is the massive disparity difference between willingness to pay (WTP) and the amount of willingness to accept (WTA) for the same social media. For example, in the case of Facebook, the average monthly willingness to pay (WTP) is 17.6 USD, while the average willingness to accept (WTA) to give up the use of service is 99 USD, a nearly 6 times of willingness to pay (WTP). Sunstein calls this massive disparity the **superendowment effect**. The study reflects a high willingness to accept (WTA) as well as intense responses on willingness to pay (WTP). In other words, many respondents were giving protest answers for willing to pay (WTP) for being asked to pay for something that they had formerly

[14] "Willingness to pay (WTP) to use Facebook, Twitter, YouTube, Instagram, Snapchat and More: A national survey" Cass R. Sunstein, Preliminary draft, June 7, 2018

enjoyed for free (WTP = 0).

NRI study on the willingness to pay (WTP) for major SNS in Japan

NRI, with the cooperation of Prof. Masatsugu Tsuji of Kobe International University and Hisanobu Kakizawa of Osaka University, carried out the study to estimate the willingness to pay (WTP) and willingness to accept (WTA) for major SNS (Facebook, Twitter, LINE, and Instagram) in Japan. It is the first time that this study has been conducted in Japan to the best of our knowledge. This questionnaire study targeted 900 users from each social media platform (total 3600 users). Figure 4 shows representative attribute data of each survey sample. The sample attributes of each SNS user are collected randomly without any special effort. The study reveals that the average age of Facebook users in Japan is 48.6 years with fewer women users (40%). In contrast, the lowest average age of Instagram users is 34.4 years with higher women users (63%). For Twitter and LINE, the proportion of men and women respondents was roughly equal, but the lowest average age of Twitter users (36.6 years) is younger than that of LINE (45.3 years), and the proportion of students was more than double that of LINE (22%).

Figure 4: Attribute data of study results (abstract)

	Women	Students	Average age
Facebook	40%	5%	48.6
Twitter	47%	22%	36.6
LINE	53%	10%	45.3
Instagram	63%	28%	34.4

Source) NRI's **Study on willingness to pay (WTP) of major SNS in Japan** (August 2019)

Respondents were asked about their willingness to pay (WTP) and willingness to accept (WTA) for SNS through an online questionnaire survey. The random value range was mentioned in the survey instead of

allowing respondents to choose any value. They were asked to answer **Yes/No** for the mentioned amount to pay (in case of willingness to pay (WTP)). According to the results, different value range was presented again for the respondents to answer **Yes/No** (such as 500 JPY to 750 JPY).

Personal values of major SNS in Japan

The following are the results of the questionnaire survey. First, it was assumed that response results will follow the log-logistic distribution[15]. The parameters of willingness to pay (WTP) and willingness to accept (WTA) for all four SNS were calculated based on the most likelihood method. The following results were calculated by cutting the responses equal or above 100,000 JPY/Month[16].

Figure 5 shows that the willingness to pay (WTP) for Facebook in Japan is the highest followed by Instagram (1,913 JPY), LINE (1,632 JPY) and Twitter (1,311 JPY). When these numbers are compared with the results of the above-mentioned Sunstein's study, we can find that the results are similar to Japan. If 1 USD = 100 JPY, the average willingness to pay (WTP) of Facebook users in the United States is 1,760 JPY/month, Instagram and Twitter stand at 2,170 JPY and 1,990 JPY respectively. Meanwhile, willingness to pay (WTP) for WhatsApp (*most popular messaging app in the USA) is 3,490 JPY, which is more than double that of LINE in Japan.

Furthermore, the average willingness to accept (WTA) for LINE is at its highest at 17,520 JPY followed by Twitter at 16,485 JPY, Facebook at 15,123 JPY and Instagram at 13,763 JPY. The numbers mentioned above are 40-70% higher compared to the result of Sunstein's study. Hence, the difference between willingness to pay (WTP) and willingness to accept (WTA) is significantly larger in this study than previous studies in

[15] In case of willingness to pay (WTP), the horizontal axis represents presented price and vertical axis represents acceptance ratio, which means the ratio of individuals who perceive value of the service (= payable amount). In case of willingness to accept (WTA), the horizontal axis represents presented price and vertical axis represents **non acceptance ratio**, which means the ratio of individuals who perceive value beyond the presented price (= amount to give up the use).

[16] In the actual study, the value is calculated based on the various highest values. 95% respondents answered for willingness to pay (WTP) and 75% respondents answered for willingness to accept (WTA) when their highest values are assumed 100,000 JPY.

the United States[17].

Figure 5: Average value of willingness to pay (WTP) and willingness to accept (WTA) for major SNS in Japan (JPY/month)

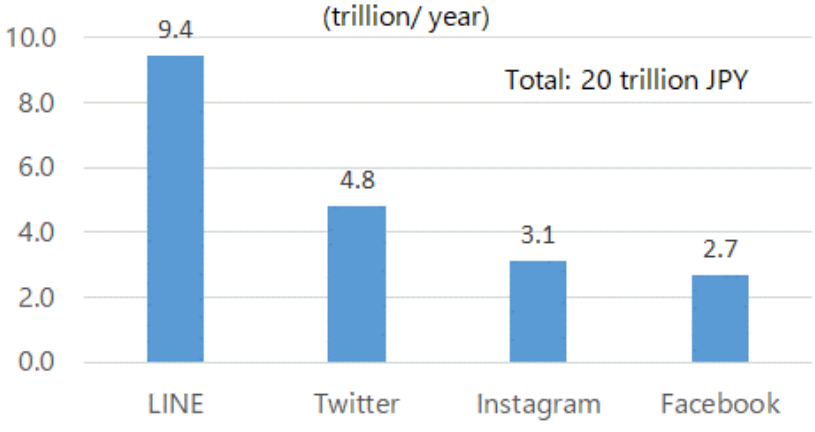
	Willingness to pay (WTP)	Willingness to accept (WTA)
Facebook	2,086	15,123
Twitter	1,311	16,485
LINE	1,632	17,520
Instagram	1,913	13,763

Source: NRI's **Study on willingness to pay (WTP) of major SNS in Japan** (August 2019)

Consumer surplus of 20 Trillion JPY generated by major SNS in Japan

The following is to estimate the total value of consumer surplus generated by SNS in Japan. The average value of users' willingness to pay (WTP) and willingness to accept (WTA) for each SNS was calculated through a questionnaire survey. The average of both the values is calculated and used as the representative value for willingness to pay (WTP) for each SNS. For example, the average of 2,086 JPY and 15,123 JPY for Facebook is 8,604 JPY/month. These values are

Figure 6: Consumer surplus generated by major SNS in Japan



Source: NRI

[17] Hypothetically, willingness to pay (WTP) and willingness to accept (WTA) should be same. Going forward, it is necessary to re-redesign questionnaire survey such as keeping same value for willingness to pay (WTP) and willingness to accept (WTA) or applying auction method for estimating willingness to accept (WTA).

multiplied to the number of active users in Japan as shown in Figure 1. The obtained value is further multiplied to 12 to calculate the total value of consumer surplus per year in Japan.

Figure 6 shows that LINE's consumer surplus per year is 9.4 trillion JPY, which is overwhelmingly higher than any other SNS, resulting from the largest active users in Japan. It was followed by Twitter at 4.8 trillion JPY, Instagram at 3.1 trillion JPY and Facebook at 2.7 trillion JPY, which is the lowest amongst all four SNS[18]. The difference between monthly active users on SNS may have a greater impact on the difference of the consumer surplus of four SNS than the difference of willingness to pay (WTP) per user.

The major SNS in Japan (LINE, Facebook, Twitter, and Instagram) were estimated to generate a consumer surplus of 20 trillion JPY per year in Japan, and this number is equal to 3.8% of Japan's nominal GDP in 2018. This number is not shown in GDP. It is worth to mention that our study only estimates the consumer surplus of major SNS, and there will be more of it from other free digital services in Japan. Therefore it is highly possible that current GDP doesn't capture the real sense of life satisfaction in Japan, posing questions for the validity of it.

[18] The results differ from the results shown in **The NRI Dream Up the Future Forum 2019** held on October 2, 2019 and January 2020 edition of NRI's **Knowledge Creation and Integration**. It is due to the difference of assumed monthly active users of all SNS. Previously, the number of users were taken from the research report of Nielsen Company for the estimation. However, in the current study, the number of users are taken from various sources.