

Specificity and Commitment: UX approach to Netflix[☆]

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ABSTRACT

The strategy that using data collection from Netflix uses for its services is different from traditional human interaction and the communication, and it is represented by the systematic algorithm that rooted from intelligent information system based on the human interaction and communication. These characteristics allowed the study to reflect the influence of 'Asset specificity' which affects the continuous consumption of the media services of Netflix users through economic psychological analysis based on transactional cost economics. The result from the survey on actual Netflix users, three types of specificity (Space specificity, time specificity, relational specificity) reduced perceived searching cost whereas perceived instrumentality has increased, eventually reinforces the commitment to the service. This implies that the service characteristics of Netflix, trying to communicate with the individuals based on intelligent information system are distinct from the existing platform services and it gives the significance of work very effective for user's continuous consumption of the media services.

☞ keyword : Specificity, Netflix, Commitment, Transaction Cost Economics(TCE), User Experience(UX)

1. Introduction

This research discusses the user experience (here in after 'UX') of Netflix, a popular Over-the-Top (OTT) content platform in recent broadcasting and telecommunication market. Since its inception as a DVD rental service, Netflix has expanded its domain to online streaming platform, and has provided data-based content recommendations to its users [1]; it started producing contents of its own since 2001 and its influence is still growing. As televised blockbusters such as <The House of Cards> and <The Game of Thrones> were distributed, public and professional interests on the content competitiveness of Netflix has widely increased.

Then, what are the values that users seek through consumption of new content platform named Netflix? Previous studies focused on the benefits of customization [2]. It is well known that Netflix accurately measures users'

media usage environment (e.g. space of service, time of use, etc.) based on the video usage and the situation in which content is consumed by comprehensively collecting user data. It has also shown the ability to display content tailored to individual users through its recommendation feature.

Some studies have described Netflix's features and benefits in relation to its success [2][3]. These studies assert that it is Netflix's ability to collect massive data of user preference to recommend optimal contents, yet their arguments lack proper research on the dimension of user experience [3]. Most of their discussions are overly weighted on the technical and engineering aspects of Netflix's recommendation system [4]. However, this approach is weak in investigating user motivation and sustainability of consumer's perspective.

This research employs a Transaction Cost Economics (here in after 'TCE') perspective to debate Netflix experience of consumers [5]. TCE was initially suggested to acknowledge the uncertainty that individuals in a transaction must encounter [6]. 'Asset specificity', a highlighted concept within the theory, states that there exists an increasing risk during a transaction process due to specificity such as time, space, and relation [7]. This research argues that traditional TCE may be applied differently in a simultaneous consumption of contents and platforms. As information environment becomes complex and

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consumers seek limited contents, specificity is more of an antecedent of customization than an uncertainty [8].

If the specificity is strengthened in the information sharing environment between human users, uncertainty may arise because the knowledge transfer was implemented improperly [8][9]. However the specificity during the communication between machine and human user provides individualized and personal oriented data which can enhance convenience in knowledge transfer [9][10]. Especially, a recommendation of content or service through detailed collection of user's preferences to provide comfortable content selection and consumption to users is in demand [10][11].

In an environment where information is exchanged among people, various institutions that follow problems, such as opportunistic behaviour, exchange of misinformation, and moral hazards must be considered. However, the communication environment between the platform and the user, mediated by the machine component can reduce these problems because results based on behaviour are guaranteed.

Therefore, this study attempts to investigate the contradictory factor, in relation to the traditional TCE theory, and suggests that the function of specified information environment can lead to UX that is tailored to the individual customer; this research also reveals that specificity of time, place, and relation is a process which decreases perceived searching cost & increases perceived instrumentality to sustain user commitment [10].

This paper is presented in the following order and detail. First, a study of previous literature is provided in order to pinpoint their limitations and the need of TCE on this topic. Next, the research model and hypothesis will be provided to logically analyse Netflix UX, and survey analysis of Netflix users is performed. Finally, interpretation and conclusions is made out of the analysis result to provide theoretical and practical implications.

2. Literature Reviews

2.1 Related Studies

Many studies on Netflix are focused solely on the mechanism of Netflix's recommendation system [1][3]. The

studies analysed the massive amount of data, algorithm, and system capable of identifying the preferences of the users. Netflix decomposes the scenes of movies and dramas into smaller modules, and selects themes that match the emotion of users [4]; optimal products are provided for the users to consume [3]. For example, contents are placed into categories such as 'Special Interests' and 'Comedy' so that users can conveniently choose products that match their taste and preference without having to search for them. Many technologies are reflected on this system from collaborative filtering to network analysis [7]. Components pivotal in the field of data science are reflected to promote an active use of platform. However, previous studies merely analysed the strengths of these technological components and estimate their potential. Thus, a detailed analysis and theoretical overview of the values that users receive are provided in this research.

Especially, recent studies on Netflix have focused on the possibility of an innovative business model in conjunction with an analysis of recommendation based algorithm [13][14]. Netflix users are not only watching their favourite contents through OTT platform, but are also looking for unique and varied storytelling that matches their individual interests. However, discussion regarding this topic is somewhat superficial, as there is limited empirical analysis of UX and the interviews and case study analyses of Netflix users, are lacking compared to the discussion of quantitative generalizations.

2.2 TCE and Asset Specificity

TCE is an economic analysis that relates to uncertainty, discussing various risks of a transaction when two different traders possess asymmetrical information and are bound to a contract [5]. Therefore, the issues highlighted in TCE are signing of contract, maintenance and management of contract. This means that the cost of ownership and as a result, players in the market are actively pursuing the benefits of acquiring necessary resources, whether they will procure and manage their own businesses in order to reduce uncertainty or to trade and manage them through the market will be [11][12]. Indeed the players will try to reduce transaction costs as much as possible and continue to worry

about finding cost-effective governance in uncertainty.

The core of TCE is “specificity of asset”, which is the detail of a transaction [8][9]. For instance, if a trader A is bound to a contract with B and transfers his/her asset K, A is the only party with a detailed understanding of asset K. Thus, B is uncertain whether asset K is truly worth the sought value [10][12]. Opportunistic behaviour is another risk between the traders. In addition to transaction cost theory, many economic theories insist that covenants of punishment and compensation must exist for any contracts [12]. Because humans are inclined to avoid uncertainty or shirk it away from themselves, TCE argues that a security measures must be established [13][14][15]. This research examines space, time, and relation components, which are a subset of asset specificity that TCE mentions [16]. Firstly, “space specificity” exists when value is produced from a geological conditions or particular area [17]. If a product’s usage is bound by time and space, it would be a strongly space-specific asset [18]. Secondly, “time specificity” is a property of an asset in which its value depends on the time of consumption.

Particularly, the specificity that this study aims to focus on is the research on the relation, rather than the space and time that directly affects the perceptions of OTT platform users. However, in the field of media research, the term “contextual information,” which consists of the “relationship,” the basis of communication studies, in addition to the location and time, is referred to as a key element in the influence of UX [13][14]. So this study assumes relation specificity to consider use environment of Netflix. For example, Netflix recommends different contents based on the time of the day – strongly time specificity [4]. While traditional TCE considers these specificities as a source of uncertainty, recent user opinions on information overload highlights specificity over general applicability of an asset. Some representative services include those that recommend a solution optimized for a specific course and circumstance.

3. Research Hypotheses

TCE argued that users have a habit of preparing for

problems by acquiring various forms of knowledge and monitoring the competition in order to reduce to cost of information collection. Therefore, in order to reduce the cost of information retrieval, users pay attention to their competition who has been penalized for the provision of misinformation, whilst attempting to build the optimal system of information acquisition [19]. In the absence of such emergencies, a large number of transaction costs must be paid to acquire specialized information, with cases of incorrect information leading to irrational decisions occurring at a high rate [20].

TCE researchers argued that information that is traded and circulated is specified. In many cases, information is often edited in accordance with the context of the information and the intention of the information producers, and if this information is transferred to an outside party, it is highly likely that the context of the information in question will not be transferred correctly [11][12]. However, in the case of Netflix, the platform which functions as a mechanical system, acts as an intermediary that provides personalized information based on its collection of users’ various demographic information and consumption patterns [21]. The relationship between the platform and the user has a clear contractual relationship with regards to the terms of service, but is still different from a traditional human contract in the sense that the input and output are clearly defined by a human-to-technology relationship.

Prior to Netflix, many users gathered information such as actors, producers, directors, etc. to consume content such as dramas and entertainment videos that identified with their preferences, but Netflix systematically collects information on individual users, such as emotional state, location information, and the preference (taste) of content consumption, and bundles personalized content via recommendations to individual users [15][16]. In other words, Netflix recommends content that has been personalized toward individual users via various processing methods such as relationship between users, time spent on downloading or streaming content, space specificity, time specificity, and relation specificity. In this instance, unlike the method that was discussed in the context of conventional TCE, it has been reported that there have been more instances where users felt convenience or enjoyment rather

than concern or anxiety from the possibility of misinformation. The reasons behind these reports are due to the fact that content is tailored accurately to the user's usual habits of content consumption. Therefore, the specialization of Netflix's service platform and big data based collection technology can reduce the cost of information collection on service customers, and as a result the following hypothesis can be proposed.

Hypothesis 1. Space specificity of Netflix service give positive influence on reducing information search cost.

Hypothesis 2. Time specificity of Netflix service give positive influence on reducing information search cost.

Hypothesis 3. Relation specificity of Netflix service give positive influence on reducing information search cost.

'Perceived instrumentality' refers to a state in which users feel that the system is convenient and useful due to the functionality or the added benefits of a system [8]. In fact, all entertainment products or contents must be proven instrumental in order to be properly valued by customers. One of the most significant elements of perceived instrumentality is economic utility; in terms of cost, users have a tendency to value products much higher than the price they paid based on product quality [22]. In addition, enjoyment and continuous entertainment also serve as the primary components of perceived instrumentality [13][14]. In general, users are primarily interested in the attributes of Netflix that provide fulfillment to their daily life patterns and other pleasures, and are willing to enjoy entertainment and aesthetic value via continuous consumption of media [14][15]. On the other hand, Netflix reduces the time and effort required by users to search for desired content, gives simultaneous comparisons among various content items whilst guiding and tempting users into making the most optimal choice for their entertainment [16]. In this regard, the Netflix platform is more effective than any other content service platform or system. Therefore, the detailed characteristics of specificity provided by the Netflix service platform will further enhance the perceived usefulness of service users.

Hypothesis 4. Space specificity of Netflix service increase positively perceived instrumentality.

Hypothesis 5. Time specificity of Netflix service increase positively perceived instrumentality.

Hypothesis 6. Relation specificity of Netflix service increase positively perceived instrumentality.

Reducing the effort to investigate the value of a product positively influences improvement of perceived instrumentality through content utilization [3]. According to previous literatures, the cost of acquiring and maintaining of product is considered as a risk. Thus, it may function as a resistant factor. One of the most important considerations when purchasing a product is the comparison among possible choices. Netflix offers efficacy to consumers by reducing the time of spent to identify the properties of individual products. Commitment is an important factor that encourages the consumers to use a service or product repeatedly and mentioned frequently with continued interest [22]. Paying attention to any device or service means not just using the device, but also keeping it in the habit and continuously managing and collecting it. Therefore, commitment can be considered as proactive emotional attachment to higher level of content than the 'technology acceptance' or 'ease of use' that are frequently mentioned in the field of media user's studies. When a consumer commits to a single service or product, he or she continues their spending for subscription and maintenance. Previous studies on IS discusses that factors such as ease of information acquisition, reduction of perceived search cost, and comfort assist a continuance of service.

Hypothesis 7. Cost reducing in Information search has a positive impact on the commitment of consumers on Netflix.

Hypothesis 8. Perceived Instrumentality increases positively the commitment of consumers on Netflix.

(Table 1) Operational Definition of Variables and Questionnaires

Construct [References]	Definition / Measures
Space Specificity [5][6]	The nature of the content that is recommended for Netflix user's context space specificity <ul style="list-style-type: none"> • Netflix recommends content based on where I watch TV • Netflix recommends content based on where the video is being watching while in transit • Netflix recommends content that is most often being consumed in the area of residence • Netflix recommends content that is most often being consumed in the nation where I reside
Time Specificity [20][21]	The nature of the content that is recommended for the Netflix user's temporal context time specificity <ul style="list-style-type: none"> • Netflix recommends content based on the times during the day when I want to watch videos • Netflix recommends content based on the times during the day when I watch videos • Netflix recommends content based on the times during the day when I use my mobile device • Netflix recommends content based on my mood and emotions
Relational Specificity [9][11][12]	The nature of the content that is recommended based the user's other content consumption and platform relationships <ul style="list-style-type: none"> • Netflix recommends content based on other content genres I consume online • Netflix recommends content based on similar to other drama and entertainment themes I have watched on Netflix • Netflix recommends content similar to the content I share with other users • Netflix recommends content based on my interests in daily life
Perceived Decrease of Searching Cost [19][24][26]	Features that increase the convenience of Netflix users and reduce the burden of searching for content <ul style="list-style-type: none"> • I was able to easily find content I was interested in • I was able to easily find content I did not know about • I was able to find content I wanted to watch but was not able to find • I was able to easily find content that other people recommended to me
Perceived Instrumentality [7][8]	The nature of Netflix that assists in daily life <ul style="list-style-type: none"> • Netflix was helped me in my daily life • Netflix was easy to use • I enjoyed using Netflix • It was easy to learn the functions of Netflix
Commitment [7][8][30]	The willingness to use Netflix in the future <ul style="list-style-type: none"> • I will continue to watch Netflix videos in the future • I am willing to continue paying for Netflix service fees • I will continue to browse videos on Netflix • I will continue to hold interest in content recommended by Netflix • I will recommend Netflix to other people

4. Research Method

4.1 Measurement Questionnaires

In order to empirically examine the validity of the newly developed theoretical model, a survey was performed on actual Netflix users. Details on this process are shown in Table 1. To correctly measure the 6 constructs that form the theoretical model of this research, survey questions of all concepts were modified to better reflect the characteristics of Netflix by employing the measurement items in which their validity and reliance were examined in previous TCE studies. As it shown Table 1, all 25 measurements were designed with reflective measures, and were modified and applied to best represent the status quo of Netflix.

4.2 Data collection

This research performed an online survey to collect data from mobile users of Netflix in Korea. Participants were rewarded with gifticons (mobile emoticons) priced about 5000Won (Korean currency) in the mobile market. The participants were questioned regarding their use and total usage time of Netflix; the result was screened and sampled. A total of 140 participants responded, yet exclusion of incomplete responses resulted in 133 data sets (68 male, 65 female). The survey included two parts. The first part used a mixture of open and closed questions and a population statistics survey to acquire the results of greater quality. Detailed information of population statistics of the respondents are shown in Table 2. The second part of the

survey was composed of constituting concepts of the hypothetical theory model.

(Table 2) Characteristics of Respondent

N=133		Frequency(%)
Gender	Male	68(51.1%)
	Female	65(48.9%)
Age	20s	65(48.9%)
	30s	32(24.1%)
	40s	31(23.3%)
	50s	5(3.7%)
Education	High School or less	10(7.5%)
	Undergraduate	92(69.2%)
	Above Master	31(23.3%)
Occupation	Student	35(26.3%)
	Administrative	60(45.1%)
	Professionals	14(10.6%)
	Researchers	6(4.5%)
	Entrepreneur	1(0.8%)
	Housekeeper	7(5.2%)
Unemployed	4(3.0%)	

5. Analysis and Results

This research performed a statistical analysis to empirically validate the hypothesis and validity of the theoretical model. IBM SPSS 21 and Smart PLS 3.0 were used to analyse the measurement model and structural model.

5.1 Validity of Measurement Model

Prior to analyzing the research model, convergent validity, discriminant validity, and reliability were checked via the use of PLS to examine the reliability and validity of the used tools. Convergent validity can be evaluated by the factor loading and its t-value of each measurement items of the measurement model [22]. As shown in Table 3, each item's factor loading marked above 0.70, and their t-values were found to be statistically significant ($t\text{-value} > 1.96$). Some of the items show factor loading value between 0.6 and 0.7, yet previous studies argued that a factor loading value above 0.6 is assumed usable [23][24][25]. Thus, convergent validity of all items was supported in this research. Reliance is evaluated based on composite reliability (greater than 0.7) and average variance extracted index (greater than 0.5) [26], and the

proposed result complies with the standards.

(Table 3) Convergent Validity and Reliability

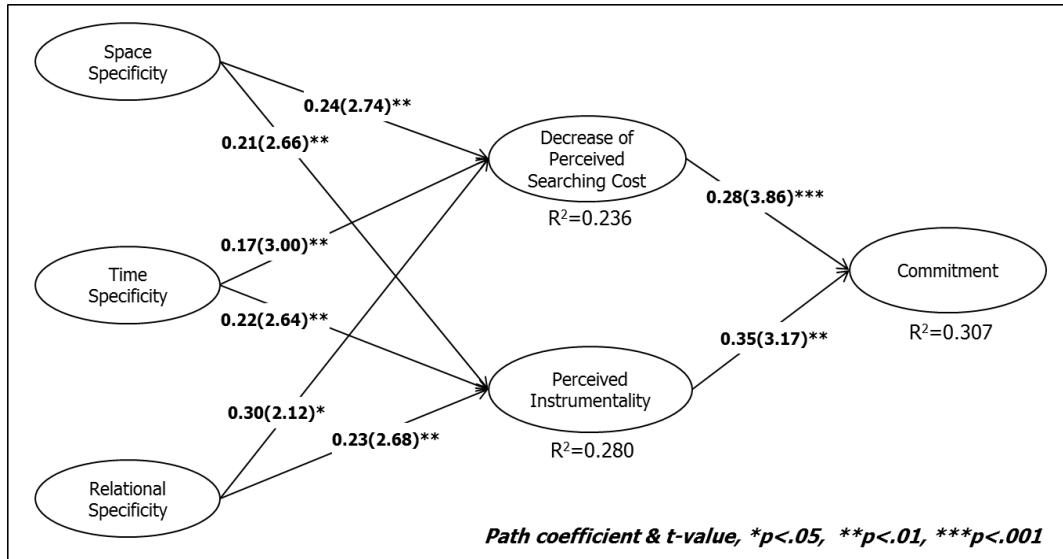
Construct	Item	s.loading	t-value	AVE	CR
Space Specificity (SS)	TE1	0.69	8.11	0.66	0.85
	TE2	0.84	15.94		
	TE3	0.66	7.25		
	TE4	0.72	10.74		
Time Specificity (TS)	CF1	0.72	8.70	0.79	0.94
	CF2	0.89	33.46		
	CF3	0.91	45.83		
	CF4	0.87	25.19		
Relational Specificity (RS)	PR1	0.75	9.54	0.62	0.83
	PR2	0.78	12.45		
	PR3	0.63	5.70		
	PR4	0.72	8.70		
Perceived Decrease of Searching Cost (DS)	IN1	0.87	30.42	0.76	0.93
	IN2	0.88	35.94		
	IN3	0.83	23.99		
	IN4	0.89	47.34		
Perceived Instrumentality (PI)	CI1	0.69	11.81	0.68	0.86
	CI2	0.80	18.16		
	CI3	0.72	13.62		
	CI4	0.82	24.73		
Commitment (CO)	COM1	0.77	16.10	0.65	0.90
	COM2	0.82	21.69		
	COM3	0.82	19.55		
	COM4	0.85	25.49		
	COM5	0.77	15.83		

Discriminant validity is secured when the square root of AVE on a specific concept marks above the correlation value relative to other concepts. Values suggested in Table 4 shows the square root of AVE, meeting Fornell & Larcker's standards [29]. Likewise, the value of cross loading showed little correlation with other concepts and thus confirmed the measurement tools' discriminant [28].

(Table 4) Correlations and Discriminant Validity

Variables	Mean(SD)	1	2	3	4	5	6
1.SS	2.94(1.03)	0.73					
2.TS	3.79(0.67)	0.22	0.89				
3.RS	2.64(1.01)	0.48	0.25	0.72			
4.DS	3.22(0.72)	0.37	0.32	0.38	0.87		
5.PI	3.52(0.83)	0.41	0.29	0.45	0.52	0.76	
6.CO	3.31(0.78)	0.43	0.33	0.51	0.46	0.50	0.81

Note. Bold number shows the square roots of AVE for that construct.



(Figure 1) Results of Hypothesis Testing

5.2 Structural Model Analysis

Validation of structural model through PLS is determined by the explanatory power (R^2), the size of path coefficient, and statistical significance of the dependent variable's leading variable. Figure 1 shows the result of structural model through PLS estimation. For Decrease of perceived searching cost, 24% of R^2 was shown with regards to Space specificity, Time specificity, Relational specificity. For perceived instrumentality, 28% of R^2 was shown by Commitment, a dependent variable, showed 31% R^2 . Validating power above 10% is a relationship with significant influence [31].

The path coefficient between each individual factor was examined to validate the proposed hypothesis, as shown in Figure 1. Space specificity showed an influence of 0.24 ($p < 0.01$) on decrease of perceived searching cost and 0.21 ($p < 0.01$) on perceived instrumentality, time specificity showed an influence of 0.17 ($p < 0.01$) on decrease of perceived searching cost, and 0.22 ($p < 0.01$) on perceived instrumentality, and also relational specificity showed an influence of 0.230 ($p < 0.05$) on decrease of perceived searching cost, and 0.23 ($p < 0.01$) on perceived instrumentality. The influence of decrease of perceived searching cost and perceived

instrumentality on commitment were 0.28 ($p < 0.001$) and 0.35 ($p < 0.01$) respectively. So all hypotheses were supported, and the result of empirical analysis has showed a positive relationship.

6. Conclusion and Discussion

This research was initiated from an interest on the phenomenon of Netflix being emphasized as an alternative service; a clarification on what influence user experience from the properties and service of Netflix exert on commitment, reduction of perceived search cost, and perceived instrumentality was sought [1][2]. The fact that specificity, as discussed in TCE, maximizes provided value through customized offers rather than an uncertainty factor was the motivation behind this research. Especially, in this study the concept of specificity and the basic element of TCE were applied to the relationship between platform (analytic machine) and user (human).

TCE studies were to treat specificity with opportunistic behaviour or misinformation of peer users, as a negative function of service attachment and continuation [10]. However, this study showed empirical result that specificity

arises from Netflix that defined as customer base data platform producing reliable user information and recommendation system based on big data can reduce the transaction costs and improve user's continued use and loyalty. In other words, personal-oriented content consumption system of Netflix maximizes customer satisfaction by reducing user's distress and allowing them to be exposed to contents that suit his/her current emotional and timely preference.

Theoretical implications of the study can be found in an effort of applying the specificity which mostly used in macro organization researches into micro context to reveal its complex characteristics. Moreover, the study empirically identified that the operational instruments of the specificity are not necessarily negative unlike the well-known fact.

The study demonstrated space, time, and relation specificity all have a significant relevance on perceived instrumentality and reduction of perceived search cost. This tells that the service characteristics of Netflix, that is, the communication between machine and human (individual user) represented by intelligent information technology, are not negative compared to the effects of existing human interaction and the communication. Indeed the application of user-oriented communication from the intelligent information system rather facilitates the users continuous of use and the loyalty. Therefore, the result of the study indicates platform operators need to consider the system for machine-human communication to design user-oriented services.

However, the study has certain limitations which are relatively small number of respondents from one nationality, and lack in objective measures by focusing on user experience. Thus the future studies may refine and develop these limitations.

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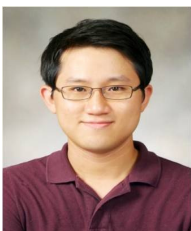
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