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Customer Acceptance of IPTV After Service Failure

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Customer Acceptance of IPTV After Service Failure

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Abstract

As a case study of the 2017 contract breach crisis involving Chunghwa Telecom (CHT) and its IPTV service, MOD, this study inspects the synergistic influences among perceived service quality, acceptance of technology, trust, satisfaction, and consumers' post-crisis repurchase intentions. With 546 participants randomly surveyed online, our findings demonstrate that among all the factors, only satisfaction and acceptance have significantly positive bearing on post-crisis repurchase intentions. Second, albeit extraneous to the repurchase intentions, perceived service quality has strong direct association with consumers' acceptance of MOD. Third, the contract breach crisis deteriorated rapidly due to administrative rather than technical disappointments. Overall, to quickly augment the repurchase intentions, CHT is advised to lift users' acceptance through sophisticating perceived customization and usefulness. To sustain repurchase intentions, meliorating service quality is the next step. Finally, to overcome the contract breach crisis, CHT needs both consistent and just compensation policies.

Keywords: IPTV, MOD, service quality, TAM, trust

Introduction

IPTV (Internet Protocol Television) has become a major force in the audience market, in addition to traditional TV and OTT (over-the-top). Weniger (2010) predicts that the permeation of IPTV worldwide would speed up and approach 70 million home subscriptions by 2014. The permeation in reality has been growing even faster and wider. According to Statista (2016), IPTV subscriptions worldwide exceeded 75 million by 2012 and hit 109 million by 2014.

IPTV's potential and competitiveness are nevertheless still in doubt. Shin (2009) notes that the IPTV market would soon reach saturation, struggle to expand, and have to co-exist with cable TV and OTT, instead of replacing them, due to its technical limitations. First, broadcasting in HD is an inevitable trend, and yet it challenges IPTV's bandwidth to synchronously stream programs. Moreover, telecom companies and cable operators can provide unique convenient features as well, but stable operations can be compromised if the collaboration between IPTV carriers and services providers is unsteady. Most importantly of all, switching costs discourage passive consumers who make up the majority in the market, and its expansion cannot just depend on early adopters who are at most the minority. As the segment of early adopters is fully covered, IPTV market growth will likely slow down enormously.

Consumer acceptance of IPTV therefore makes a worthy field of research to capture its market dynamics. To understand the driving forces for consumers to adopt IPTV more in-depth, our paper employs the model of technology acceptance together with service quality evaluations. The former characterizes the amount of delight that consumers derive from new technology, whereas the latter delineates the degree of IPTV's fundamental features meeting consumers' needs.

Our research is further situated into a peculiar context of Chunghwa Telecom's MOD operations after its contract breach crises. This particular setting was selected, because it accords fairly with Shin's prediction (2009) of IPTV's industrial predicaments including a nearly saturated market with limping growth, a rocky and intense cooperation between the carrier and the content providers, and upset subscribers being demotivated by unexpected user cost.

As the latest research (Kim, Kim, Hwang, Kim, & Kim, 2017; Li, 2017) also suggests that IPTV has turned out to be not as well accepted as had been forecasted in

the market and that it is going to be left behind with cable TV by OTT since audiences exhibit much higher willingness to pay for using OTT platforms (not merely in Taiwan but in South Korea as well), our study combines the technology acceptance model (TAM), service quality evaluations, and service crisis management analyses in order to attest to these observations and to further investigate how consumers' post-crisis acceptance and service quality ratings of MOD (IPTV[1]) in specific dimensions (e.g. perceived usefulness, enjoyment, customisation, and content quality) vary in relation to their repurchase intentions.

Overview of CHT and its service breakdowns

Chunghwa Telecom (CHT) applied to Taiwan's Government Information Office for a license to run an IPTV in 2003. In the next year the application was granted by the government on the condition that CHT must conform to the regulation that media operations must be independent of political parties and the military. Its IPTV was officially named "Chunghwa Telecom Multimedia on Demand" (CHT MOD) in 2004. Because CHT, a former state-owned enterprise, began to promote and popularize MOD at full steam, it inflamed controversy over its potential monopoly in the telecom

[1] IPTV was first sophisticatedly used by a British company, Video Networks, for commercial and industrial purposes in the UK in 1999. IPTV is an Internet-protocol-based format to distribute video and audio through computer networks, also commonly called "streaming" or "Internet TV." This format needs an almost entirely different infrastructure from that required by traditional satellite and cable TV; it operates with high-speed Internet access together with set-top boxes. IPTV possesses two fundamental features. First, it is real time; it can broadcast live what is happening via the Internet at much lower costs. Second, it functions as a storage medium where TV production can be played and replayed at anytime. This time shifting feature has gone farther and evolved into the "video on demand" (VOD) format - an interface that enables viewers to play audio and video content they select in real time, even without needing to record it at certain broadcast times or have it stored in advance.

What makes IPTV ideal? The foremost factor certainly goes to the maturity of broadband infrastructure; without proper technological feasibility, IPTV would have tremendous trouble becoming popular (Aggarwal, Gopalakrishnan, Jana, Ramakrishnan, & Vaishampayan, 2013). On top of that, Shin (2013) indicates the following properties contribute to IPTV: timeliness (the capability of delivering information to users instantly on request); customized features such as access to limited content and skipping commercials; an interactive interface (technologies that facilitate processing orders with human-like interaction and providing recommendations based on users' preferences); the availability of value-added services in addition to basic VOD; connectivity and compatibility (the ability to extend original services by connecting to other potential hardware and software); and economic preponderances such as inexpensive equipment, lower maintenance expenses, more affordable monthly fees, and cheaper bundles of additional services.

Shin (2013) and Aggarwal et al. (2013) add one particular property that was hardly considered when it comes to encouragement for a competitive IPTV environment: marketability. IPTV's popularization highly rests on Internet infrastructure quality. Permeating and expanding customer segments have to rely on content individualization and variety. Stronger marketability consolidates IPTV's audience niches and competitiveness against other promising streaming media such as OTT.

industry. Nevertheless, in 2006 the National Communications Committee (NCC) still sanctioned CHT MOD's operations and re-stressed the regulation that the MOD operations should be independent of political parties and the military.

Due to government regulation, from the legal aspect MOD was repositioned as an open platform for content providers to load their services in 2007, making it no longer a cable TV system. This repositioning of CHT MOD's legal status signified that MOD operations would no longer abide by cable TV and radio regulations, but instead adhere to telecom regulations. As a result, MOD cannot load content for free from over-the-air service providers such as local television broadcasters FTV, CTV, TTV, and CTS. Instead, service providers had to begin individually negotiating with MOD over royalties to be paid for their content.

CHT MOD started airing programs in HD in 2008 and broadcasted 2008 Beijing Olympic baseball matches. However, its popularization continues to appear quite weak. In 2012, CHT announced that it diminished its user number goal from an initial 1.5 million down to 1.3 million; the goal was later achieved in 2016. In 2016, MOD expanded its business compass and rolled out cloud gaming services, "gaming on demand," included in its monthly plans for users to purchase, aiming at providing a broader selection of entertainment services to family in addition to video streaming.

CHT MOD ignited a major legal issue of massively breaching contracts with its users in 2017. CHT and its service providers failed to reach an agreement on the price and size of the content bundle by the end of June that year, and therefore CHT on the next day, July 1, abruptly cut the number of channels that was guaranteed by the luxury plan to which customers subscribed from over 100 to 59, without adequately informing or discussing with users about this in advance. CHT only declared under a low profile via its website an ambiguous proposition stating it would compensate for any losses by lowering payments and offering more choices of movies, yet the lukewarm compensation proposition simply appeared to fan the rage of its user base.

Consumer complaints flooded into social media over several aspects of CHT's mishandling of this matter. For example, the telecom's customer service center was entirely out of reach. When users demanded to instantly terminate their contracts before their expiration dates, CHT attempted to charge them "penalty fees," despite the fact that CHT itself first breached the contracts. CHT offered to lower the monthly price as compensation, but without consulting users as to whether they would accept

or refuse the offer. CHT also failed to form a standardized procedure to handle customer complaints. Some complained to local CHT branches and succeeded in reinstating the removed channels, whereas others could not get the same deal for unknown reasons.

CHT soon explained that MOD abided by the telecom regulations and stuck with the principle of staying independent of political parties and the military, and consequently MOD remained an open platform that merely endeavoured to achieve an optimal deal with service providers via negotiations over price, but would not directly decide the price. CHT also officially standardized its compensation policy that users' requests for instant termination of contracts were to be accepted without fees charged.

The whole mess compelled the industry's competent authority, the NCC, to declare its position on the issue, on behalf of the government, that it acknowledged MOD's legal status as an open platform and thus could not intervene in any price negotiations between CHT and content providers for the free market's sake, unless anything unlawful occurred during the commercial liaison. Nonetheless, NCC did voice the opinion that CHT could not charge penalty fees on customers who demanded immediate termination of contracts or who wanted to re-subscribe to another plan, since the cause of such demands was CHT initially undermining their customer rights. In spite of all this, the disputes between customers and CHT are still on-going owing to the discriminative compensation.

According to the MOD Saleskit (Chang, 2015), among its subscribers, the male-female ratio is 55:45. The largest age groups are 21-30 (26%), 31-40 (21%), and 41-50 (19%). Around 70% of them are employed, made up of employees in private sectors (50.2%), public servants (8%), SOHO (5.3%), and business owners (6%). The most common family sizes in order are four (36%), five (26%), three (18%), two (7%), and six (7%). The most favorite program types on weekdays are sports (over 80%), TV (over 80%), dramas (67%), and movies (55%), whereas on weekends movies are the most popular choice. Moreover, subscribers with children in particular prefer cartoons. Roughly 50% of subscribers have monthly family incomes between NT$50,000-99,999, while more than 20% of subscribers refuse to reveal such information. The average watching time per day is 2.7 hours; 48% spend 2 hours a day, and 31% spend 3 hours a day.

Literature Review

IPTV Service Quality

The commercial value of IPTV resides in not only the TV programs and channels it offers, but also its very wide selection of live entertainment events and latest movies available on request. In competing with other streaming media with high mobility like OTT, the key for IPTV to stand out depends on how up-to-date its content is, and whether it can provide even more flexibility and convenience (Jang & Noh, 2011). As a result, what in the long run determines customers' loyalty and intention to repurchase is its service quality as well as the experiences/emotions they derive from it.

The logic is scrutable that positive experiences and emotions are most likely to arise when service quality both satiates customers' expectations and provides more than its rivals do (Cisco White Paper, 2007). Taking IPTV for example, while most people have already experienced cable TV and conventional TV programs, in order to attract and convert them, IPTV has to provide more appealing content and, more vitally, features that its rivals cannot offer. According to Ha and Stoel (2009), in terms of current IPTV interface, there are three ways to approach an evaluation of the characteristics of IPTV service quality: IPTV design (assure the highest quality provided to subscribers), security robustness (ensure the availability and credibility of IPTV service to subscribers), and customer service (examine subscribers' experience quality with the IPTV service).

There are many divergent views on how IPTV's service quality should be assessed as well as whose opinions matter more. Service quality assessments have been conducted mostly from either experts' or users' perspectives. In other words, the outcomes are biased towards one or the other. According to Shin, Lee, Kim, and Do Chung (2017), experts pay more attention to whether quality elements co-operate in harmony, while users evaluate their own experiences with content and customer service quality.

Lin and Hsieh (2011) assay users' acceptance of self-service technology and deconstruct its design into three aspects to consider. Arguing that users weigh technological design by its layout, modernity, and interface functionality, in terms of layout they point out that users in particular look at the aesthetics and whether the layout presents harmonious and tasteful visual elements and themes adding artistic

vigour to monotonous machinery. In addition, whether the technology utilized is up-to-date is also a crucial facet to evaluate the design's utility. Finally, for Internet-mediated devices such as smartphones, tablets, and IPTV that require human-machine-interaction-based manipulation via a screen with instructions, the helpfulness of the interface plays a consequential part in optimizing users' experiences with design quality. Lin and Hsieh further stress that perceived security is a critical trait to inspect when it comes to understanding the acceptance of technologies. For a technology that combines multiple Internet services and facilitates frequent online transactions, Considine and Cormican (2016) advocate that security is an essential concern when judging service quality.

Perceived content and system quality (Shin, 2009) also comes into play for IPTV service quality. The former measures the diversity of information that IPTV can afford to provide; the latter examines how stably and fast the IPTV operation system delivers its services. In other words, perceived system quality emphasizes the confluent performance of the Internet and the affiliated hardware/infrastructure. According to previous empirical studies (Weniger, 2010; Shin, 2009), among these quality features, perceived content and system quality are the most predictive of use intentions, whereas perceived security is a relatively mild predictor and design is just occasionally significant. These findings reveal that in the long run it is the performances of content and system quality that likely make the most decisive contributions to the value of IPTV services. Based on the review of the service quality papers above, our first question is presented as follows.

RQ1: Does perceived service quality affect post-crisis repurchase intentions?

The Technology Acceptance Model

With an eye to assessing the quality of individual service dimensions, a few academic measurements have been devised to weigh customer-to-technology interactions (Considine & Cormican, 2016). Two frequently utilized measurements are the technology acceptance model (TAM) and the technology readiness index (TRI); the former aims to inspect possible stimuli and discouragements of technology acceptance, while the latter purports to expound the degrees of preparedness for accommodating to and employing new technology (Delone & McLean, 2003). Albeit

there are minute discrepancies in their goals, they both look at customers' subjective evaluations, "perceived ease of use" and "perceived usefulness," as criteria to judge people's chance of being accustomed to and embracing new technology into their lives (Cao, Zhang, & Seydel, 2005).

The original TRI and TAM scales used to be harshly criticized. The theorization of how customers' intentions of embracing new technology reacted to exterior environments was largely centered on perceived ease of use and perceived usefulness alone. They postulated that perceived ease of use and perceived usefulness positively impacted customers' repurchase intentions through attitudes as mediators. This fundamental postulation perhaps applied to the majority of scientific areas except the media, because it overlooked that customers not only cared about ease of use and usefulness, but also expected desired sentimental experiences such as joy and relaxedness through media usage (Jang & Noh, 2011). This particular quality of media being omitted by the postulation enormously undercuts TRI's applicability.

Ameliorating the TRI model by taking "perceived enjoyment" into account, Guangying and Dominique (2009) and Shin (2009) apply an improved model to analyze streaming media adoption, and their results argue that emotional pleasure is, in practice, not less crucial than the other drivers in retaining regular subscribers as well as luring lost subscribers back to repurchase. Additionally, emotional pleasure plays an increasingly critical role in IPTV's future development; IPTV services are becoming more interactive and connectable to exterior media, thus enriching subscribers' amusement experiences and satiating their versatile emotional needs (i.e. occasional urges to feel horror, happiness, and melancholy).

Two more facets have been proposed (Considine & Cormican, 2016; Venkatesh, 2000) for better appraising the quality of human-technology interactivity. Customization has been included to see whether consumers perceive IPTV and its operator as amply sensitive to, concerned about, and willing to personalize their needs and potential interests. This factor reflects that IPTV's additional value resides in the interactivity quality, aside from fundamental content and system services, to explore uncultivated consumer needs. Last but not least, to verify consumers' acceptance of a technology, Venkatesh (2000) argues it undeniable necessary to prove that their motives to accept are utterly genuine. In other words, they are done out of "voluntariness." At times, certain technological adoption stems from a monopoly

guaranteed by governmental policies or coercion within an organization. However, such forced adoption might not entail true infiltration and integration of the technology into personal preferences. Therefore, with an eye to accurately measuring its genuine influence in consumers' everyday lives, voluntariness is an indispensable factor for researchers to make sure consumers' embrace of an emerging technology is not against their will, but rather out of awareness of its merits. Grounded on the TAM theories discussed above, we present our second question and first hypothesis.

RQ2: Does perceived service quality impact consumers' acceptance of MOD technology?

H1: Consumers' acceptance of technology is directly related to post-crisis repurchase intentions.

Repurchase intentions, satisfaction, and trust of consumers

The foundation for long-term commercial development relies not simply on a surge in the number of customers, but also their repurchases. Therefore, in discussing what is conductive to industrial growth, exploring what makes one-time customers regular ones is probably more important than merely focusing on how to boost customer numbers.

Studies of planned behaviors contend that on the premise of a person's will not being forced or violated by any means, attitudes can predict the chance of repeating specific behaviors (Ajzen, 1991; Brown, Massey, Montoya-Weiss, & Burkkman, 2002). Consequently, to calculate customers' chance of repatronization, it is essential to first assay what forms attitudes that motivate and reinforce intentions to repurchase. As the TRI model does not place much emphasis on attitudinal factors, Shin (2009) suggests to discuss attitudes from a micro-perspective; that is, by shedding light on attitudinal constituents favorable to the formation of repurchase intentions.

Attitudes giving rise to repurchasing intentions are mainly made up of satisfaction and trust (De Cannière, De Pelsmacker, & Geuens, 2009; Fullerton & Taylor, 2002). Service quality research means to confirm the gap between expectations and the operational performance in practice, which is measured by dis/satisfaction; that is, "expectations reflect anticipated performance," and consequently service quality is an antecedent, while "satisfaction is a post-decision

customer experience" (Caruana, 2002, pp. 815-816). Giese and Cote (2000) state that satisfaction is made up of three elements: it is a summary response that oscillates in intensity; it is in response to a specific focus (e.g. products, services, and purchase decisions); and the response takes place simply at a particular moment and lasts within a limited period of time.

Satisfaction with services and products is frequently construed as a significant determinant of one-time buyers turned into initial regular buyers, yet to increase faithful regular customers, trust associated with loyalty is the decisive encouragement for elevating customers' commitment toward "entailing higher rates of repurchase intentions" (Jang & Noh, 2011, p. 585). Several studies point out that trust is antecedent to the establishment of loyalty, which functions as a sufficient and necessary condition for more durable and lucrative repatronizing behaviors to occur (Dick & Basu, 1994; Thorsten & Rost, 2003). Trust is in particular important in e-commercial environments; it is the foundation of all online behavioral intentions, because when it comes to online transactions, users' trust is susceptive to the integrity, benevolence, and reliability of e-commercial environments (Kim, Kim, & Shin, 2009). According to Liao and Cheung (2001), trust in online activities is respectably subject to perceived security pertaining to safe monetary transfers, primacy of personal information, and worry over unjustifiable additional costs. Hence, quite a few articles of empirical research have managed to examine the association between perceived security and trust so as to verify if service quality has accomplished its obligation to construct a sound context for consumers to harness their Internet services (Pavlou, 2003; Corbitt et al., 2003). Established on the relationships between attitudinal factors and repurchase intentions reviewed above, the remaining hypotheses of our research are as follows.

H2: Trust has a positive direct effect on post-crisis repurchase intentions.

H3: Satisfaction has a positive direct effect on post-crisis repurchase intentions.

Crises and Mishandling

In understanding why CHT stranded itself in the disputes with its customers despite the compensation made, we need to examine what brought about the crises here and how CHT missed out on the timing to minimize the detrimental impacts that

followed.

Heller and Darling (2011, p. 5) define crises as consequences of "inappropriate or inadequate planning, or the absence of any kind of scenario planning." Crises could come in a vast variety of forms; therefore, they can also be called "service failure" (dysfunctions of a product to perform its stated services) or "issue" to represent the process of vicious outcomes entailed by unexpected breakdowns of normal activities, but as Heller and Darling argue, what should receive attention here is systematic causes and the common purpose they are to fulfill - "to disrupt the normal course of activities in an organization."

According to Heller and Darling's model of crisis phases, there are usually four phases where crises should be handled with corresponding strategies. The earliest phase is the pre-crisis stage where there have been precursors of imminent problems surfacing. However, decision makers often overlook minute precursors at this early stage mostly due to cursory attitudes or lack of experiences in recognizing them. Crises in the preliminary stage are most of time much easier to manage, yet still too nascent to paralyze businesses and the organization. This stage is critical and extremely fugacious. When decision makers neglect red flags and fail to tackle emerging problems and break the cycle at this stage, crises rapidly go from rudimentary to acute.

As crises burst forth, they enter the acute stage where situations deteriorate at an avalanche-like speed and their intensity soars. This is also a stage where decision makers are most likely to mishandle problems. It is the avalanche-like speed of deterioration that intimidates decision makers and prompts them to react without discreet strategies in mind. Mistakes frequently made by decision makers at this stage are miscalculations of intensity and exterior attention paid to them and the way they are managing the crises, a lack of transparency and consistency in principles and policies executed, and poor skills in immediately and accurately finding out vulnerable stakeholders and swiftly allaying the impacts caused to them by the crises.

The cycle eventually will slip into the chronic stage, where crises might have either gradually declined (due to pertinent handling in the previous phase or a natural plunge of intensity) or have already caused far-reaching damage to an organization and its reputation that are going to take long-term effort to recover. The most imperative tasks at this stage for skillful decision makers to do are to help their

organizations with the process of self-analysis, self-doubt, and self-healing, and at the same time to make observations and to take experiences under consideration for future scenario planning. The establishment of crisis handling scenarios is key to orienting towards the final resolution stage where unpredictability is effectively mitigated; as a result, when another preliminary stage of a crisis takes shape, the most expedient route from the pre-crisis phase to the resolution phase can be quickly navigated.

The direction to proceed from one stage to another in the crisis cycle model defines and distinguishes proper management and mismanagement. Adequate handling helps bypass the acute and chronic phases and moves straight from the preliminary stage to the resolution, which largely banks on a decision maker's acumen to "correctly recognize" auguries of a rudimentary crisis. On the other hand, crisis mishandling is defined as "unawareness of which situations call for immediate attention and which do not: what can be considered a pre-crisis activity, event, or issue" (Taleb, 2007; Heller & Darling, 2011).

Experts in political behaviors take other paths to the definitions of crisis management and mishandling. Drazen and Easterly (2001) recommend three perspectives to differentiate sound crisis handling and mishandling. First, suitable crisis handling does not misconstrue the meaning of a crisis. Crises are alarms; only when situations grow quite baneful do people realize entrenched problems underfoot. Therefore, proper crisis handling might involve reforms to deal with problems exposed by a crisis and arrange feasible changes to prevent radical deterioration (Harberger, 1993; Akerlof, 1991). Second, crises are often triggered by the accumulation of unpredictable uncertainty. Hence, appropriate crisis handling is supposed to lessen and transparentize uncertainty once ignored by means of institutionalized mechanisms. Third, a crisis aggravates, because some people in it can access resources while some people cannot, or their chance of equal access to aid is controlled or curtailed by "interest groups." Thus, proper crisis handling should reshuffle interest groups and set up consistent principles when it comes to allocating resources and help (Nelson, 1994; Olson, 1982).

Orphanides (2014) analyzes the mishandling of global financial crises, and he points out that the distinction between pertinent crisis handling and mishandling is competence to implement corresponding solutions by distinguishing "causes" and

"symptoms" (i.e. superficial traits of core causes that ignite a crisis), and as a result "providing solutions for particular symptoms while the underlying causes of the crisis remain unresolved" instead worsens crisis situations (p. 249). The research concludes that crisis mishandling is characterized in two ways. It conspicuously escalates overall costs (e.g. labor, time, and financial expenses) to settle the more noxious consequences itself has contributed to; on the other hand, mishandling is epitomized by incompetence to correct recurrent blunders.

Crisis mishandling overall has two classic features: it either prolongs the life of a crisis (i.e. duration) or pushes it forward from mild to acute (i.e. intensity). Moreover, measures taken to cope with a crisis usually are concerned with frequent mistakes such as indifference to initially recurring petty problems, insensitivity to the core causes of a crisis, unequal policies, and inconsistent principles. Built on the literature discussed above, we offer our remaining question.

RQ3: What leads to consumers seeing a crisis as being mishandled?

Methods

The survey is constituted by a total of 87 questions that circulated on the Internet to reach participants. Questions for dependent and independent variables were answered on a 5-point Likert scale by participants. Collected data were inputted to SPSS 21 to conduct regression analyses. Items utilized by this survey were adapted from existing research of e-commerce, IPTV, new technology acceptance, and public relations.

Measurements

Repurchase intentions: this item was drawn from the e-commerce study of Kim et al. (2009), looking into participants' willingness to keep using or re-subscribing to CHT MOD after the contract breach crisis in July 2017, and contains three factors.

Design: three items were adopted from Considine and Cormican's research of technology acceptance (2016), focusing on whether MOD's design aesthetically and functionally met users' expectations.

Perceived security: also drawn from Considine and Cormican's research (2016), three items concerned whether users felt it safe to make online transactions, browse

websites, and order video and audio content via MOD.

Perceived content quality: adapted from Weniger's IPTV study (2010), three items asked participants to evaluate MOD's content quality in the aspects of information diversity, value, and suitability.

Perceived system quality: taking Weniger's IPTV study (2010) into account, three items aimed to comprehend users' perceptions of MOD's operational quality such as Internet speed and stability.

Customization: revised from Considine and Cormican's study of public acceptance of new technology (2016), three items inspected MOD's services of personalization for individuals' specific needs and interests.

Perceived enjoyment: borrowed from Weniger's IPTV study (2010), three items had users reflect on the amount of delight they derived from MOD's services and content in everyday life.

Perceived ease of use: four items adapted from Weniger's IPTV study (2010) investigated MOD's degree of user friendliness, including hardware and software manipulation.

Perceived voluntariness of use: inspired by Venkatesh's technology popularization study (2000), three items were to attest whether users' adoption of MOD was fully voluntary without governmental and societal compulsion.

Perceived usefulness: borrowed from Weniger's IPTV study (2010), three items examined users' perceptions of how much the use of MOD improved their overall life quality and convenience of accessing information.

Trust: revised from the e-commerce research of Kim et al. (2009), six items assessed users' confidence in MOD's technical performance of certain tasks (e.g. online transactions, trouble shooting, website browsing, and care for customers' rights).

Satisfaction: adapted from Caruana's service quality research (2000), three items facilitated participants' rating of MOD's overall performance by their experience with MOD as well as other IPTV services.

Crisis management: drawn from Coombs and Holladay's public relation research (2008), this question offered seven choices (including "other") to participants to answer, in their eyes, which measure (e.g. lukewarm apology, inane compensation, unequal treatment, and inconsistent policies) taken by CHT to tackle the contract

breach crisis inflamed the crisis the most.

Results

The survey was disseminated on the Internet through popular Taiwanese forums to reach potential participants from September 25 to October 30 2017; a total of 2,091 participants took part in our survey; after deducting those who logged out in the middle and who stated they had never used MOD, in the end 546 valid feedbacks remained. Among the 546 participants, 66.67% (n=364) are female and 33.15% (n=181) are male. The average age is around 29 (mode=27, sd=7.7); 65.75% (n=359) are college graduates; 24% (n=133) are with a postgraduate degree; 8.06% (n=44) have high school diplomas. 83.52% (n=456) are single, whereas 14.65% (n=80) are married, and 1.10% (n=6) are in a partnership (while remaining unmarried in law); 56.23% (n=307) work full time; 23.81% (n=130) are students; and 4.03% (n=22) work part time. The largest majority (21.79%, n=119) have a personal monthly income in the range of NT$30,000-39,999; the second largest (18.68%, n=102) in the range of under NT$20000; and the third largest (16.30%, n=89) in the range of NT$20,000-29,999; 24.54% (n=134) live in Taipei City, 20.88% (n=114) in New Taipei City, 12.64% (n=69) in Kaohsiung City, and 9.34% (n=51) in Taichung City, as Table 1 illustrates.

Table 1. Sample demographics

Variable		Frequency	Percentage %
Sex	male	181	0.33
	female	364	0.67
	other	1	0.0
Education	primary and unlettered	1	0.0
	junior high school	5	0.01
	senior high school	44	0.08
	university	359	0.66
	graduate school & above	133	0.24
	other	4	0.01
Marital status	single	465	0.85
	married	80	0.15
	other	1	0.0
Employment	unemployed	188	0.34
	student	170	0.31
	housewife	658	1.21
	military service	7	0.01
	part-time	22	0.04
	full-time	307	0.56
	other	5	0.01
Monthly income (NT$)	no income	80	0.15
	under 20000	102	0.19
	20000 - 29999	89	0.16
	30000 - 39999	119	0.22
	40000 - 49999	63	0.12
	50000 - 59999	39	0.07
	60000 - 69999	16	0.03
	70000 and above	38	0.07
Age	19 and under	27	0.05
	20 - 29	299	0.55
	30 - 39	174	0.32
	40 - 49	36	0.07

	50 and above	10	0.02
Residence	New Taipei City	114	0.21
	Taipei City	134	0.25
	Taichung City	51	0.09
	Tainan City	30	0.05
	Kaohsiung City	69	0.13
	Taoyuan City	49	0.09
	other	99	0.18

We conducted EFA on the items to extract factors and also scrutinized their validity. Only Q16 ("I decided to use MOD, because the government was pushing it") was eliminated due to an insufficient factor loading value, after being reversed. The the factors were then verified by the reliability test, and all of them achieve satisfactory Cronbach's α values. Overall, information pertaining to EFA and the reliability test results of the total 12 factors are shown in Table 2 as follows.

Table 2 EFA and reliability test outcomes

Constructs	Scale items	EFA (1)	(2)	(3)	(4)	(5)	(6)	Cronbach's α
Design	1	.848						.801
	2	.846						
	3	.845						
Perceived ~~s~~Security	4		.783					.774
	5		.856					
	6		.863					
Perceived content quality	7			.837				.825
	8			.885				
	9			.862				
Perceived system quality	10				.879			.740
	11				.749			
	12				.824			
Customization	13					.711		.713
	14					.843		
	15					.833		
Perceived voluntariness	17						.876	.698
	18						.876	

Table 2 EFA and reliability test outcomes (cont'd.)

Constructs	Scale items	EFA (7)	(8)	(9)	(10)	(11)	(12)	Cronbach's α
Perceived enjoyment	19	.912						.904
	20	.937						
	21	.898						
Perceived ease of use	22		.892					.885
	23		.812					
	24		.901					

	25	.850					
	26		.920				
Perceived usefulness	27		.894				.885
	28		.836				
	29			.724			
	30			.790			
	31			.835			
Trust	32			.864			.893
	33			.807			
	34			.821			
	35				.928		
Satisfaction	36				.940		.902
	37				.885		
	39					.945	
Repurchase intentions	40					.963	.949
	41					.950	

In order to attest to our research structure and questions, we used the second-order model (Jang & Noh, 2011) verified with Amos (CMIN/DE=4.731, GFI=.823, AGFI=.787, CFI=.878, RMSEA=.083, SRMR=.072) to affirm five factors (perceived enjoyment, perceived usefulness, perceived ease of use, customization, and perceived voluntariness) conceiving a potential factor (acceptance); and four factors (perceived content quality, perceived system quality, design, and perceived security) conceiving another (perceived service quality), as indicated in Figure 1.

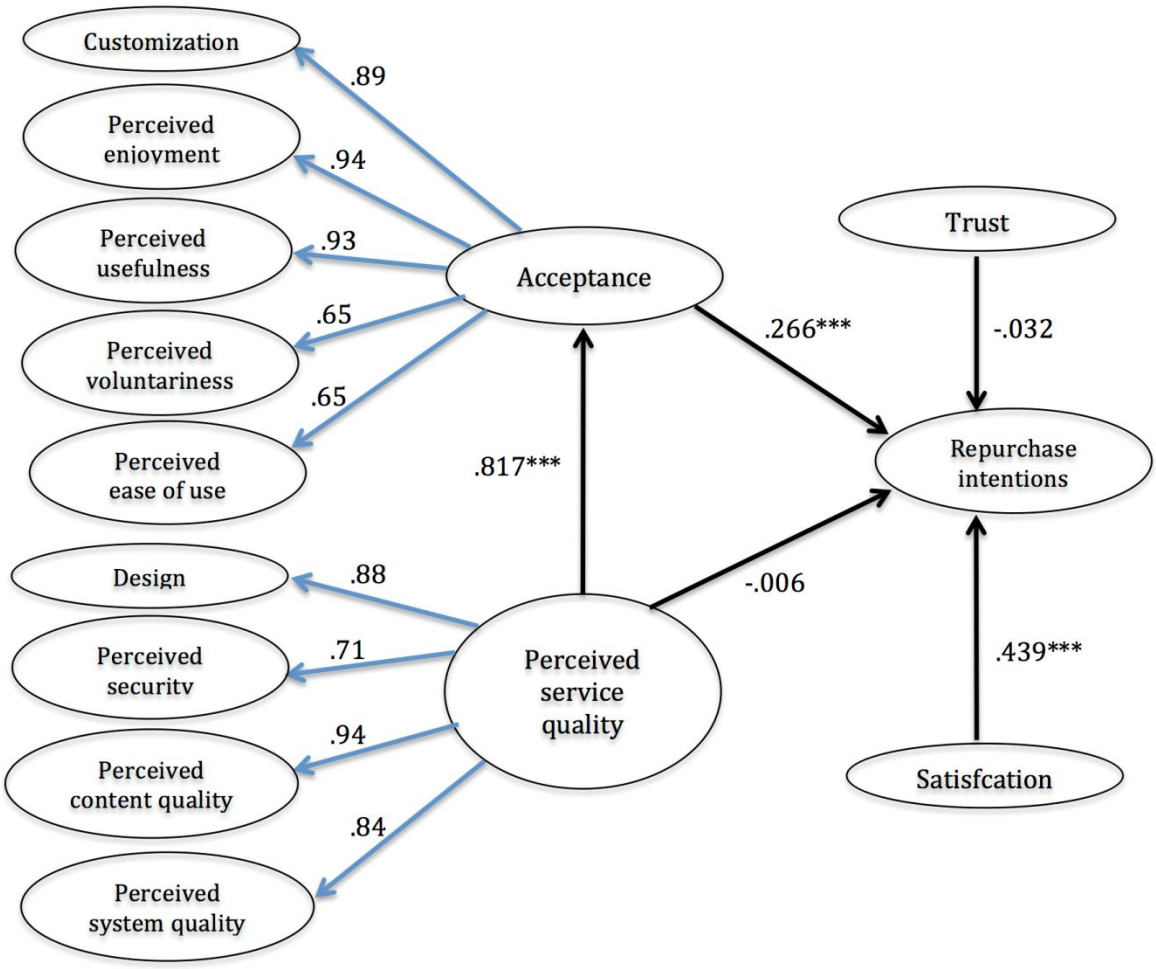

Figure 1. Outcomes of the research model

As exhibited in Figure 1, H1, positing consumers' acceptance of MOD is positively related to their post-crisis repurchase intentions, is supported (β=.266***). Moreover, H3, supposing satisfaction is directly associated with post-crisis repurchase intentions, is corroborated (β=.439***) as well. Nonetheless, H2, assuming trust is positively related to post-crisis repurchase intentions, is obviously refuted on account of its statistical insignificance.

The outcomes illustrate the insignificant association between perceived service quality and post-crisis repurchase intentions, and thus the answer to our RQ1 is clearly negative; on the other hand, we find that perceived service quality directly relates to the acceptance of MOD (β=.817***). For RQ3, the results note that the most improperly handled issues are "only brief explanations provided for the contract violation, with no substantial plans or actions" (mean=4.07, sd=0.80), "the compensation policies treated MOD users unequally" (mean=3.99, sd=0.81),

"insufficient sympathy in the first place" (mean=3.97, sd=0.85), "inconsistent changes to the compensation policies" (mean=3.91, sd=0.81), "official apologies lacking in sincerity" (mean=3.88, sd=0.87), and "the compensation is unproportionate to losses caused by the contract violation" (mean=3.85, sd=0.84).

Discussions

Our research by and large concurs with previous studies (Jang & Noh, 2011; Weniger, 2010; Shin, 2009). As our findings show in the model, the key to consumers' repurchase intentions is their acceptance and satisfaction; even though perceived service quality has no bearings on their repurchase intentions, it plays a critical role in escalating their acceptance and indirectly affects their willingness to repatronize.

For CHT to consolidate its consumers' repurchase intentions, it is imperative to differentiate what perceived service quality and acceptance respectively mean in practice. The former centers on the hardware/software performance and features that MOD can afford to provide, while the latter is about how closely the performance and features meet consumers' needs and how much they translate into positive user experience. As a result, to quickly aggrandize repurchase intentions, we recommend that CHT first look at improving consumers' satisfaction and acceptance of MOD, especially the weakest dimensions such as perceived customization and usefulness, whereas its strongest performance is referred to as ease of use by our participants (Table 3). Nevertheless, for repurchase intentions to endure, CHT should actively maintain and ameliorate its service quality, strategizing from a long-term perspective.

Table 3. A comparison of consumer acceptance between MOD & cable TV

	Customizsation	Usefulness	Enjoyment	Voluntariness	Ease of use
MOD					
Mean	3.02	3.25	3.36	3.63	3.85
Sd	0.71	0.76	0.80	0.87	0.72
Cable TV					
Mean	2.47	3.10	3.16	3.42	3.96
Sd	.96	.94	.96	1.08	.87

MOD's subscriptions surged fast in the beginning and then plateaued; on the other hand, cable TV's subscriptions plunged, but the decrease has been allayed. The

competition between them has now entered a state of equilibrium (Li, 2017), which is captured by our results as well. Consumers' post-service-crisis repurchase intentions are buttressed by satisfaction and acceptance (Figure 1). Comparing consumers' acceptance of cable TV and MOD (Table 3), their performance in each dimension is quite close, other than customization where MOD shows relatively salient predominance. In ease of use, cable TV excels MOD by a wide margin. Neither of them possesses absolute superiority to the other. This equilibrium is reflected also by consumers' minor difference in satisfaction (Table 4); MOD acquires somewhat higher ratings than cable TV. However, consumers rate OTT as distinctly more satisfactory (mean=4.20). In line with the conclusions of Hsu et al. (2015) and Li (2017), the equilibrium between MOD and cable TV is likely to be attributed to OTT's overwhelming competitiveness, which has supressed MOD's recent subscription growth and indirectly assuaged the pressure to cable TV caused by MOD. Nonetheless, the specific ways in which OTT outperforms MOD and cable TV in the market require further overall and more thorough investigations.

Table 4. A comparison of consumer satisfaction with MOD, cable TV, and OTT

	MOD	Cable TV	OTT
Mean	3.30	2.93	4.20
Sd	0.92	1.01	0.73

While previous studies point out that repurchase intentions require trust, our findings interestingly show no signs of it. Despite this conspicuous incongruence, others' argument that consumer trust is the foundation for repatronage is not denied by our results. We deduce the incongruence mainly stems from the contextual difference in research. Previous studies elaborate on the dynamics between trust and repurchase intentions in generic situations, whereas we look into the same topic yet in the specific context of the MOD contract breach crisis where CHT's consumer trust has already been drastically undermined. Therefore, trust was very unlikely given enough impartial thought, as the participants evaluated their intentions to repatronize.

When it comes to handling the MOD crisis, it is quite obvious that subscribers scarcely mention the technical difficulties or their losses resulting from the uninformed removal of channels. On the contrary, they complain primarily about administrative issues such as the discriminative treatment (i.e. some got a better deal

while some got a poorer one, albeit victimized by the same crisis to the same degree) and the capricious compensation policies lacking consistent principles. According to Heller and Darling's model of crisis deterioration (2011), CHT failed to stanch the contract breach controversy particularly at (the beginning of) the acute stage characterized exactly by fragmented policies and incongruous responses. As a consequence, CHT should learn that the reasons for the controversy to become even more serious are in fact much more managerial than technical, as could have been its solutions.

This paper provides certain theoretical and practical implications. A large percentage of existing research examines the individual impacts of service quality/TAM/attitudinal factor (e.g. trust, satisfaction, or consumer confidence) on purchase intentions. By contrast, our research places them into the big picture and discusses their synergistic influences at once, which is even closer to how the industrial environments of IPTV operate in reality. Moreover, situated in the crisis context, this study yields counterintuitive findings advising that the key to assuaging the crisis would have been accordant administrative planning rather than technical enhancements.

Another critical industrial implication provided by this paper is that the decisive rivalry to MOD is more from OTT than cable TV, while previous studies have focused primarily on competition between cable TV and OTT. Our evidence indicating that audiences have obviously more favor towards OTT bolsters CHT's new strategy announced in July and November 2017 to collaborate with OTT platforms such as FOX+ and KKTV on content improvements and possible co-production. Our paper unveils the latest segmentation of Taiwan's media market where cable TV is being further marginalized, because MOD is seeking tighter strategic cooperation with OTT platforms, instead of more intense contention, in order to co-exist and maximize their own audiences. Based on our findings, future research could pay more attention to the relationship between OTT and MOD, the trend of the market, and less to cable TV.

There are limitations to the present research, and perhaps the most noticeable one is that looking into systematic service breakdowns like the case of MOD discussed herein by means of a survey is simplistic, albeit the causes of the crisis were conveniently extracted in our survey with the aid of both appropriate theories and former studies in order for participants to contemplate which impacted them the most.

Systematic service breakdowns involve several parties and intricate commercial interaction, and they are beyond the delineation of dozens of items in a survey, which can afford to characterize a big picture rather than offer an in-depth understanding of the situation. Approaching a structural crisis of operation by the given items is decontextualization. Therefore, it is recommended that future research of similar subjects employ methods such as interviews and focus groups that can afford to yield holistic observations and productive insights. Moreover, our survey perhaps did not effectively attract long-term subscribers of MOD who would better reflect how the contract breach impacted their trust and repurchase intentions, whereas relatively recent subscribers might not perceive the service breakdowns as strongly as they did. As a result, we suggest future studies of similar topics contrast new and regular subscribers in light of the negative experience effects on loyalty, gratification, and trust. Last but not least, while we sought to make our survey as thorough as possible by taking a wide range of variables into account, there might be overlaps between variables. For instance, the satisfaction items investigated consumers' overall experience with MOD, whereas the TAM items looked into their ratings of MOD's performance in individual dimensions such as perceived usefulness, enjoyment, and customisation. However, some participants could have trouble distinguishing between dimensions, because, in their eyes, the former already encompassed the latter. Hence, they might present inaccurate feedbacks. Given this technical difficulty, we advise future research to anticipate participants' perspectives and adjust the survey designs accordingly.

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