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Service Quality Dimensions in Pay TV Industry: A Preliminary Study

Norazryana Mat Dawi[1]*, Ahmad Jusoh[2], Khalil Md Nor[3], Muhammad Imran Qureshi[4]

[1]Faculty of Management, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia, [2]Faculty of Management, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia, [3]Faculty of Management, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia, [4]Faculty of Management, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia.
*Email: norazryana2@live.utm.my

ABSTRACT

Pay TV industry has been experiencing a considerably high growth rate in terms of revenues and subscribers technological advancement in pay TV services industry inflicts the demands for higher service quality for competitiveness and business success. The increasing demand in pay TV service offerings has led operators to become competitive. However, limited literature on the instruments to measure service quality in the context of pay TV services is available. A thorough review of literature in service quality exposed negligible efforts to develop instrument to measure service quality in pay TV setting. Thus, through an extensive review of past literature, the present study develops an instrument to explore service quality dimensions in pay TV setting. The current study identified seven service quality dimensions in pay TV setting. These dimensions are tangibles, reliability, content quality, customer service, price, convenience and interactivity. Furthermore, reliability of these dimensions was tested through the pilot survey from 34 respondents. Results revels the value of Cronbach's alpha of all dimensions were higher than 0.60, this indicates that all service quality dimensions in the context of pay TV were reliable.

Keywords: Service Quality, Pay TV Service, Service Quality Dimensions
JEL Classifications: C44, L15, M30.

1. INTRODUCTION

Recently, Media and broadcasting became one of the growing industries in world's economy. The global digital pay TV revenues expected to grow from roughly $150 billion in 2010 to $215 billion by 2014 (John, 2010). It was forecasted that there will be more than 1 billion digital TV households worldwide, according to the latest report by Digital TV Research (2014). In addition, it is also reported that pay TV penetration increased by 57.1% to 886 million households across 138 countries by the end of 2014 compared to 715 million in 2010. The growing numbers of pay TV penetration rate reflect the increasing market share among pay TV service providers. Given these dynamics, it has become more important for pay TV service providers to determine customer values and demands. For this reason, pay TV service provider needs to focus on service quality for competitive advantage and expansion of their market share. However, the available knowledge on measuring service quality in pay TV is inadequate. Thus, research on service quality measurement becomes more significant. Given the fact that the market is in the growing state, determination of what constitute the service quality dimensions in the context of pay TV and how to measure it is very critical (Dehghan et al., 2012). Therefore, this paper aims to determine the service quality dimensions that proved to be important in pay TV industry.

There are numerous studies that identified the key service quality dimensions in other industries; for example telecommunications (Kuo et al., 2009; Shareef and Dwivedi, 2014), transportations (Park et al., 2006; Chen, 2008; Grujičić et al., 2014), healthcare (Dehghan et al., 2012; Padma et al., 2009; John et al., 2011), however there is a dearth of literature on service quality attributes in pay TV industry. The current study outcome will assist pay TV

service providers in realizing key aspects that they need to focus in order to meet customer demands. This paper is organized as follows; in the next section, we discuss service quality concepts and measurements that have been used in previous research, section 3 details service quality concepts in pay TV industry, section 4 describes the proposed service quality dimensions and section 5 describes research methodology. Finally, conclusions and further study are presented in section 6.

2. SERVICE QUALITY CONCEPTS

Service quality is one of the most important and widely researched topics in service industry (Adat and Noel, 2014). It has been considered as a success factor in competitive market of service organizations (Parasuraman et al., 1988). According to Ladhari (2009), service quality is difficult to define and measure even though it has been widely debated for the last two decades. There are different definitions of service quality in the literature. Service quality has been coined as a measure of how well the service delivered matches customer's expectations (Gronroos, 1984). In other words, it is the difference or discrepancy between customer expectation and perception about the service offered by firms (Parasuraman et al., 1985; Chou et al., 2011; Zeithaml, 1990). Besides that, Park et al. (2004) defined service quality as consumer's overall impression of the relative inferiority/superiority of the organization and its services. This is similar with the conceptualization of service quality by Bitner and Hubbert (1994) which is the customer's impression of overall experience with service provider whether they have offered excellent or insufficient service. Thus, service quality can only be interpreted by the customer once he or she experienced the service (Lehtinen and Lehtinen, 1991). Overall, service quality can be referred as how well the conformance of service performance has met customers' expectations. Customer is satisfied when perceived service matches or exceeds expectations while dissatisfaction occurs when expectations are greater than service performance.

Service quality is given importance to service sector mainly because it is said to be one of the major contributors of customer satisfaction. There is abundance of research that has been done in the past decades which has demonstrated on the relationship between service quality and customer satisfaction. In light of that, various theories and frameworks have been represented, most prominent among them is work by Parasuraman et al. (1988). The SERVQUAL is one of the most widely used measures of service quality (Ladhari, 2009; Chavan, 2014) Even though the five dimensions of SERVQUAL has been widely accepted and extensively used, but still marketing scholars believed that service quality is not context free, thus need to adapt measurements of service quality with respect to each type of service sector (Danjuma and Rasli, 2012). According to Chen et al. (2013), SERVQUAL is more suitable in high-contact services or retailing settings where interpersonal interactions are important and less appropriate where technical quality is strongly emphasized. Furthermore, because of service characteristics: i.e., intangibility, heterogeneity and inseparability, there should be no same measurement that is applicable in all service settings, unlike manufacturing setting where technical quality can be measured objectively. Therefore, the classification of service quality dimensions is a central issue in marketing literature.

Looking back at the early stage of service quality conceptualization, the researchers suggested that service quality is measured by a number of underlying dimensions. However, there is no confirmation and agreement to the constitution of content and the number of dimensions. For instance, Gronroos (1984) used two dimensions, technical and functional to measure service quality while Rust and Oliver (1994) introduced three component model which consists of service product, service delivery and service environment. The developer of SERVQUAL have used ten dimensions on earlier study (Parasuraman et al., 1985) and end up with five dimensions on the later study (Parasuraman et al., 1988) namely tangibles, reliability, responsiveness, assurance and empathy. Others like Dabholkar et al. (1996) have introduced multilevel model of service quality measurement that consists of 28 items under 5 dimensions called retail service quality scale.

A different criteria and valuations of service quality dimensions is needed as far as different customer groups are concerned (Lehtinen and Lehtinen, 1991). It is essential to do customization by adding or dropping proper dimensions and finely alter the constructs considered to make up the dimensions (Carman, 1990). In addition, scholars such as (Parasuraman et al., 1991; Johnson and Fornell, 1991; Oliver, 1997; Jan et al., 2012) stressed out that the SERVQUAL scale need to be adjusted for application to a different industry conditions. A study by Gerhard et al. (1997) has proved that the five items of SERVQUAL has to be altered to suit the different characteristics of service settings. In addition, they suggested that the items can be grouped into two categories of intrinsic and extrinsic whereby the intrinsic dimensions are similar to interactive quality by Lehtinen and Lehtinen (1991) and extrinsic dimensions resemble the physical attributes of Lam et al. (2004). Based on the suggestion to customize the service quality dimensions, in studies on service quality in airline industry, Chou et al. (2011) has added another dimension which is flight pattern in addition to the five SERVQUAL dimensions; whereas (Park et al., 2004) has modified the 22 items under the five dimensions in measuring service quality. Besides that, four new dimensions were added to SERVQUAL scale by (John et al., 2011) in order to capture the special characteristic of free public dental care services. In securities business, Xu et al. (2007) has added one new item, accurate market information to operationalize service quality dimensions while Ladhari et al. (2008) have used 29 items scale developed by Stevens et al. (1995) to replace the 22 items of SERVQUAL instrument to measure perceived service quality in restaurant setting.

3. PAST RESEARCH ON SERVICE QUALITY IN PAY TV INDUSTRY

Despite the robust theoretical literature in service quality, to the best of our knowledge, there is lack of empirical studies on

determining the critical determinants of service quality in pay TV setting. Review of past research identified only 13 papers which explicitly investigating service quality aspects of pay TV as depicted in Table 1.

Table 1: Research related to pay TV service quality

Study	Focus of the study	Service quality dimensions included	Setting	Country	Main results
Chen et al. (2013)	Measured relationship between service quality and overall satisfaction	TV viewing quality (CSQ), reception stability quality (FSQ), fees payment policy (Pricing), customer service (SSQ)	Cable TV	Taiwan	CSQ and SSQ predict overall satisfaction
Jan et al. (2012)	Measured perceived service quality discrepancy between service provider and customer	Systems quality, service quality, information quality, video quality, adaptive channel quality	IPTV	Taiwan	There is service quality discrepancy between customer and service provider expectations
Jang and Noh (2011)	Using extended TAM to look on IPTV user behavior	Design, security, customer service	IPTV	Korea	The three service quality dimensions are important IPTV service measures and positive user's attitude, trust, and satisfaction had a positive effect on repurchase intention
Chen and Kuo (2009)	Using QFD to measure customer requirements on cable TV service attributes	TV programs quality, fees, reception quality and customer service	Cable TV	Taiwan	To improve cable TV quality, industry need to decrease the numbers of users per node, get certificates of program quality, offering multiple choices for fee payment, upgrade the cable technology, and use high quality cable line
Shin (2009a)	Determine key factors affecting customer adoption of IPTV	Content quality, quality of service, price	IPTV	Korea	Perceived content and system quality were influential in predicting the intention to use IPTV and price as a main driver for switching TV services
Shin (2009b)	Using modified TAM to predict customer adoption of IPTV	Content quality, system quality, information quality	IPTV	Korea	Confirms that content, system and information quality affect customer decision to intention to use IPTV
Yoo et al. (2009)	To find the factors affecting customer switching in IPTV	High resolution of contents and its diversity, stable transmission, reliable brand	IPTV	Korea	Attractiveness and service quality of IPTV significantly affecting the switching intention of subscribers while high resolution of contents and its diversity, stable transmission, and reliable brand are positive factors to retain the subscribers
Erman and Matthews (2008)	To provide a theoretical basis for a mature video quality measurement model	Video Service (report on IPTV quality published by MRG in February 2007): quality of experience, video quality of service, video quality Technical dimensions: Picture quality, audio quality, synchronization	IPTV	Not mentioned	Developed video quality measurement model with respect to network performance indicators, network configuration, digital video attributes, and video content
Crawford and Shum (2007)	Looking on the effects of deregulation monopoly of cable TV provider	Number of channels, price	Cable TV	United States	Deregulation has driven cable TV providers to be less sensitive to service quality

(Contd)....

Table 1: ***(Continued)***

Study	Focus of the study	Service quality dimensions included	Setting	Country	Main results
Shin (2007)	Using TAM as the base to look on the factors affecting customer's adoption of IPTV	Intrinsic factors: Timely/ on-demand, special functionality, individualized content Extrinsic factors: Interactivity, Value-added service, compatibility Economic factors: Equipment cost, monthly fee, additional service charge	IPTV	Korea	Quality of contents and interactive services found to be important
Jacobs (1995)	To explore the determinants of cable television subscriber satisfaction	Price, programs, hardware service quality, customer service, communication	Cable TV	Not mentioned	There is variation in the pattern of independent variables that emerged as significant across the groups of respondents
Rubinovitz (1993)	The effects of cable TV deregulation on price and quality	Number of channels, Price	Cable TV	United States	Deregulation has increased price but does not effect on demand elasticity
Mayo and Otsuka (1991)	The effects of cable TV deregulation on price and quality	Number of channels	Cable TV	Not mentioned	The price of cable TV services was influenced by cost and demand as well as deregulation

QFD: Quality function deployment, TAM: Technology acceptance model, MRG: Multimedia research group, IPTV: Internet protocol television

4. PROPOSED SERVICE QUALITY DIMENSIONS

Pay TV service is categorized in a continuous purchasing setting where there are long-term contractual relationship between customer and service provider (Ranaweera and Prabhu, 2003). Other examples of such setting include internet provider, fixed-line telephone service and utilities provider such as water and electricity. In this kind of sector, due to the increasing technological advances, automation is high and customer – staff interaction is low. The most likely customer-staff interaction happened is during service interruption, through customer service channel. In other words, pay TV service can be classified as quasi-manufacturing service which is defined as company that has no face-to-face contact with the customer during service delivery (Chase and Tansik, 1983).

Based on the review of past researches and the suggestions to develop customized service quality dimensions, the current research adapted SERVQUAL dimensions by Parasuraman et al. (1988) as well as the dimensions found in previous research as shown in Table 1. SERVQUAL has been widely accepted as one of the most reliable instrument in measuring service quality (Xu et al., 2007). Through the extensive review of research papers in service quality of pay TV, we scrutinized all the service quality attributes and listed a total of 6 dimensions namely reliability, content quality, customer service, convenience, price and interactivity which are fundamental in nature based on SERVQUAL dimensions and can be used for conceptualizing service quality of pay TV setting. To cater another important dimension found based on review of service quality in mobile telecommunications, we added tangibles dimension to the measurement of service quality in pay TV setting. We organized those 7 service quality dimensions in Table 2.

Since research in service quality in pay TV industry is relatively very limited and similar nature of telecommunication industry, research of service quality in mobile telecommunications provides useful insights into identifying some important dimensions of service quality in pay TV industry. Mobile telecommunication industry was selected because of the characteristics that can reflect pay TV industry such as long-term contractual relationship between customer and service provider, less customer – employee interactions during service delivery and the involvement of information system (IS) during the service consumption. This method had also being used by Shin (2009a) in determining items to measure service quality in internet protocol television (IPTV) based on his research in mobile internet service. Next, we will discuss each of the service quality dimensions.

4.1. Tangibles

In the process of purchasing goods, customers evaluate the quality by looking at its external characteristics such as style, color and package. In contrast, there are fewer tangible cues when purchasing services. Although in the past studies related to pay TV service setting did not include tangibles as service quality dimension, studies in mobile telecommunication industry have included tangibles as one of service quality dimensions (Samen et al., 2013; Wen and Hilmi, 2011; Seth et al., 2008; Qureshi et al., 2015). Therefore, it is believed that pay TV customers' judgment on service quality have to include tangibility.

According to Parasuraman et al. (1985), tangible evidence in most cases of service offerings are service provider's physical facilities, equipment and personnel. Tangibles is defined as "physical facilities, equipment and appearance of personnel" (Parasuraman et al., 1988, p. 23). Tangibility in the setting of pay TV service could refer to the attractiveness of physical facilities, equipment, personnel and communication materials provided by the service

Table 2: The proposed service quality dimensions based on past literature

Dimension	Tangibles	Reliability	Content quality	Customer service	Convenience	Price	Interactivity
Pay TV literature							
Chen et al., 2013		Reception stability quality	TV viewing quality (CSQ)	Customer service (SSQ)		Fees payment policy (Pricing)	
Jan et al., 2012			Video quality, adaptive channel quality	Services quality	Information quality		Systems quality
Jang and Noh, 2011		Security	Design	Customer service			
Chen and Kuo, 2009		Reception quality	TV programs quality	Customer service		Fees	
Shin, 2009a		Quality of service	Content quality			Price	
Shin, 2009b		System quality	Content quality				
Yoo et al., 2009		Trust service provider, Good resolution	Diverse content		Easy to use, convenient		
Erman and Matthews, 2008		Video quality of service, video quality, picture quality, audio quality, synchronization	Quality of experience				
Crawford and Shum, 2007			Number of channels			Price	
Shin, 2007		Compatibility			Timely/ on-demand, special functionality, individualized content	Equipment cost, monthly fee, additional service charge	Interactivity, value-added service
Jacobs, 1995		Hardware service quality	Programs	Customer service, communication		Price	
Rubinovitz, 1993			Number of channels			Price	
Mayo and Otsuka, 1991			Number of channels				
Mobile telecommunications literature							
Samen et al., 2013	Tangibles	Reliability		Responsiveness, assurance, empathy			
Hossain and Suchy, 2013		Communication		Customer service	Convenience	Price	Value added service
Srikanjanarak et al., 2009		Core service		Customer care service			Value added service
Seth et al., 2008	Tangibles	Reliability		Responsiveness, assurance, empathy	Convenience		
Lim et al., 2006		Network quality		Customer service	Billing system	Price	
Lee, 2005							Interactivity

provider to support the service delivery. This includes cleanliness and appearance of company's physical facilities and employees, the design of universal remote control, decoder, satellite dish, pamphlets and the monthly magazine.

4.2. Reliability

Delivering pay TV services to customers to some extend can be categorized in the context of delivering IS because it combines software and hardware that support data-intensive applications. One of the factors that customer reluctant to use IS related services is because the risk of frequent delays in response, frequent disconnection, lack of access and poor security (Ladhari, 2007). Therefore, reliability of system is one important factor for customer in adopting IS related service and later in measuring its service quality. To add, studies in mobile telecommunication industry by Seth et al. (2008) and Samen et al. (2013) have found that reliability play an important role in influencing the overall service quality perceived by customers. Jan et al. (2012) measured perceived service quality discrepancy between IPTV service provider and customer found that reliability is an important element that needs to be emphasized under service quality dimensions.

The developers of SERVQUAL, (Zeithaml et al., 2002) in their later work to define service quality in online setting have included technical reliability such as the function of the web site to reflect reliability dimension. Thus, in the setting of pay TV service quality which engaged less face-to-face interactions but more to the fulfillment of promised service, need to include technical quality in defining its reliability. Erman and Matthews (2008) stressed out that technical quality outcomes such as video and audio quality are important characteristics to measure a good system quality. Besides that, Chen and Kuo (2009) used the term "reception quality," referring to white noise, screen quality and reception in bad weather of cable TV to measure technical quality.

According to (Parasuraman et al., 1988, p. 23), reliability is "ability to perform service dependably and accurately." Reliability in the setting of pay TV could refer to the ability of pay TV service provider to deliver and perform service accurately where customer perceived it useful. In other words, reliability is related to the ability of supporting systems and devices used in order to deliver a reliable service.

4.3. Content Quality

Cheong and Park (2005) measured the acceptance of IS, specifically in mobile internet context, found that content quality is a significant predictor for customer to adopt a technology. Therefore, it is important for service providers to provide a good quality of content in order to attract customers' attention to the technology they are offering. In pay TV setting, Yang and Jun (2002) who studied customers' acceptance of IPTV, found a significant relationship between perceived content quality and perceived enjoyable. Moreover, the study shows that the more useful the content provided the more positive customers' attitude toward the IPTV. In addition, a study by Chen and Kuo (2009) using quality function deployment to maintain product quality and design in cable TV context has used program content as a construct to measure program quality.

DeLone and McLean (1992) stressed out that system quality which refer to content quality as well as information quality will affect in system usage and customer satisfaction, while Shin (2009a) and Shin (2009b) found that content and system quality were influential factors for customers to adopt IPTV. Therefore, customers assessing pay TV service quality is based on their perception of how the service provider provide useful channel offerings, transmitted through a good technological supports that give them enjoyment and benefits through the consumptions.

Content quality refers to the ability of pay TV service provider to provide a good channel offerings, that give information, enjoyment and benefits to customers (Shin, 2009a). Adapting measurement by Jan et al. (2012), in this study content quality refers to three items which are diversity of channels, flexibility of programs offered and adaptive channel quality provided by supplier. Diversity refers to the offerings of a wide number of channels that viewers can choose from. Flexibility refers to the offering of up to date and distinct programs that are not offered by competitors. Meanwhile, adaptive channel is refers to the extra channel produced by pay TV service provider itself that is different from channels offered by content service providers.

4.4. Customer Service

Customer service is one of the critical elements in measuring service quality in IS related service setting. There are considerable number of researchers that have attempted to measure this variable in pay TV and mobile telecommunications industry (e.g; Hossain and Suchy, 2013; Srikanjanarak et al., 2009; Lim et al., 2006; Chen and Kuo, 2009; Chen et al., 2013). Jang and Noh (2011) have made a move to extend previous literature in the acceptance of IPTV which mostly focused on content and system quality (Yang and Fang, 2004; Yang and Jun, 2002; Shin 2007) by adding customer service factor. They claimed that service provider can ensure customer's expectation is being met through customer service. Besides, Chen and Kuo (2009) and Jacobs (1995) have included customer service as one of the core attributes that affects cable TV quality. They used secondary attributes to define customer service which are receptionist service, professional skill of receptionist, engineering technique, convenience in payment and repair speed.

Adapting works by Parasuraman et al. (1985) and Parasuraman et al. (1988) which emphasis the role of employees in affecting customers' judgment of service quality through two dimensions which are responsiveness and assurance, this study attempt to combined the two dimensions as customer service. Responsiveness is defined as "willingness to help customers and provide prompt service" while assurance is "knowledge and courtesy of employees and their ability to inspire trust and confidence" (Parasuraman et al., 1988, p. 23). The reason lies behind this is because in the process delivery of pay TV services, customer is less engaged with company personnel. Therefore, the way to create assurance in product delivery is through the product itself and customer service personnel. Since customers are less engaged with the company personnel, one-to-one individual characteristics such as communications (adjusting service delivery methods for different customers), credibility (trustworthiness) and understanding customers (recognizing regular customer) cannot be implemented. In addition to that, the developer of SERVQUAL in one of their later work, (Parasuraman et al., 1994) suggested that they may be overlapped between responsiveness, assurance and empathy. Most of the times where customer needs to have contact with the employees are during service enquiries and defections. During this situation, normally customers will do it through customer service management. Therefore, it is believed to be more appropriate to use the term "customer service" in order to measure the willingness of pay TV service provider's representative to help customers solve service problems and to inspire trust and confidence in using the service.

4.5. Convenience

Study of factors affecting IPTV adoption by Shin (2007) found two major factors which are intrinsic and extrinsic. Intrinsic factors refer to individualized service and content whereas extrinsic factors refer to desire to connect with other people and services. Furthermore, he added that the reason customer chooses new media and technology is to enjoy specialized/personalized service and content. Through the intrinsic factor such as value-added services, customer can consume the service conveniently.

In mobile telecommunication industry, convenience is one of the important factors of customer satisfaction that leads to loyalty (Hossain and Suchy, 2013). Other studies in the same industry such as Wen and Hilmi (2011) and Kim et al. (2004) have also included convenience in the measurement of service quality. Seth et al. (2008) through an intensive exploratory investigation among cellular mobile customers have added convenience as a new dimension with other five SERVQUAL dimensions. Kassim and Abdullah (2010) in their cross cultural study of service quality among online customers in Qatar and Malaysia used four components to indicate personalization which are personal attention, preferences, understanding the specific needs of customers and information regarding the products modification.

Convenience is conceptually defined as service's flexibility and comfortability to suit the needs of customers (Seth et al., 2008). Convenience in the setting of pay TV could be operationalized as the degree to which pay TV service operator provides flexible and comfortable facilities to suit customers' needs (Seth et al., 2008). It includes items such as simple procedure, multiple choices of packages and payment methods as well as video on demand (VOD) features that enable customer to watch TV programs conveniently.

4.6. Price

Zeithaml (1988) stated that customers refer to price when judging product/service quality. The statement is stronger when other information is not available, such as in the case of measuring quality of services due to its characteristics of intangibility, inseparability and heterogeneity (Parasuraman et al., 1985). In their book, Zeithaml and Bitner (1996) stressed out that price will affect customer satisfaction, portraying that price is an important factor for customer in their decision making process. However, Dabholkar et al. (1996) claimed that price is distinct from service quality and should not be included in the measurement of service quality. Nonetheless, there are quite number of studies that had included price as service quality dimension. For instance, Barsky and Labagh (1992) used price to measure service quality in hotel industry. Studies in the acceptance of IS related service have also included price as a factor for customers to adopt IS. For instance, Cheong and Park (2005) have found out that price significantly affects customer's willingness to use mobile internet.

In the context of pay TV studies, it is empirically supported that price plays an important role. Shin (2009b) studied customer acceptance of IPTV and found that price is the main driver for customers to switch TV services. His earlier study has included economic factors such as equipment cost, monthly fees and additional service charge as factors to adopt IPTV (Shin, 2007). Jacobs (1995) stressed out that price is the most important determinants of service quality in cable TV while Chen and Kuo (2009) through five forums that held to determine service quality dimensions found out that fees is one of the service quality dimensions in cable TV setting. Meanwhile, studies in other IS environment also show that price plays an important role in service quality measurement. For instance, pricing structure in mobile telecommunications industry is one of the critical factors that need to be emphasized by service operator (Hossain and Suchy, 2013; Wen and Hilmi, 2011; Lim et al., 2006; Lee et al., 2001).

The continuous development and competition with other source of entertainment and information such as internet has led pay TV service provider to increase their offerings' quality. Mittal and Lassar (1996) mentioned that the increasing of quality in cable TV has led to higher costs of cable system which later being adjusted through higher price. This does mean that in order to provide better service quality and more channels, price needs to be increased which later will affect customers' judgment on service quality. Therefore, it is believed that price is an important dimension operationalized as the economic degree to which pay TV customer sacrifice to get the service.

Price is often defined as something that is given and sacrificed in order to get a product (Zeithaml, 1988). In contrast, Chen et al. (1994) in their study to measure relationship between perceived price and perceived service quality defined perceived price as customer's evaluation of service's average price compared to competitors. Thus, price in the setting of pay TV could refer to the customer's judgment about pay TV service's price compare to its competitor. Adapting measurement by Chen and Kuo (2009), in this study price refers to five items which are installation fee, monthly fee, re-installation fee, price for pay program and price for promotion package.

4.7. Interactivity

The rapid development in technology has changed the way people choose their way of life. Nowadays, people prefer to have the latest media and technologies that can be personalized and involved in interactive activities with the technologies (Shin, 2007). Lee (2005) examined the impact of interactivity on customer trust and intention to use mobile commerce has found that the addition of interactivity components such as ubiquitous connectivity and contextual offer to mobile commerce had improved the model fit. The concept of interactivity has long been used in electronic commerce research (e.g; Bezjian-Avery et al., 1998; Hoffman and Novak, 1996; Liang and Wei, 2004).

Owing to the need of "always-on" society Lee and Lin (2005) with support of modern technological appliances, there is a need for research to examine the role of interactivity in measuring service quality in IS related service. The current study will adopt this dimension in the measurement of service quality in pay TV setting. Parallel to the development of technologies in delivering information, interactivity is believed to be one of the important items for customer in consuming pay TV. There are numerous numbers of research that used interactivity in defining IS service quality. Jan et al. (2012) have included interactivity as one of the items to measure content quality of IPTV while Shin (2007) had included interactivity as extrinsic factors that influence customer to adopt IPTV. Al-Shamaileh and Sutcliffe (2012) examined the effect of interactivity in customers' judgment of web site and found a significant positive relationship.

Steuer (1992) defined interactivity as the degree to which the technology could support or enable interaction that resembles human conversation in real time. Interactivity is the act of capability of computer system to enable exchange communication between sender and receiver in a real or delayed time which

Table 3: List of measurement items

Dimension	Item	Relevance of literature
Tangibles	Design of equipment	Samen et al., 2013
	Physical facilities	Seth et al., 2008; Samen et al., 2013
	Employee appearance	Seth et al., 2008; Samen et al., 2013
	Design of communication materials	Seth et al., 2008; Samen et al., 2013
Reliability	System error	Kuo et al., 2009
	Transmission	Chen and Kuo, 2009
	Ability to perform timely	Seth et al., 2008; Samen et al., 2013
	Ability to perform service accurately	Seth et al., 2008; Samen et al., 2013
	Ability to keep promise	Seth et al., 2008; Samen et al., 2013
	Video quality	Erman and Matthews, 2008
	Audio quality	Erman and Matthews, 2008
Content quality	Number of channels	Mayo and Otsuka, 1991; Crawford and Shum 2007; Chen and Kuo, 2009
	Arrangement of channels	Chen and Kuo, 2009
	Providing latest TV programs	Jan et al., 2012
	Quality of TV programs that are not offered by competitor	Jan et al., 2012
	Quality of religion-based channel	Jan et al., 2012
	Quality of tutor channel	Jan et al., 2012
	Quality of news channels	Jan et al., 2012
	Quality of sports channels	Jan et al., 2012
Customer service	Variety of customer support systems	Srikanjanarak et al., 2009; Kim et al., 2004
	Ease of access to customer service	Kim et al., 2004; Jan et al., 2012; Hossain and Suchy; 2013
	Knowledge of customer service personnel	Jan et al., 2012; Chen and Kuo, 2009
	Ability of technical support	Jan et al., 2012
	Complaints speed	Kim et al., 2004; Chen and Kuo, 2009; Hossain and Suchy, 2013; Srikanjanarak et al., 2009
	Politeness of customer service personnel	Lim et al., 2006; Srikanjanarak et al., 2009
Convenience	Simplicity of subscription formalities	Seth et al., 2008
	Choices of packages	Kuo et al., 2009
	Ease of package moderation	Kim et al., 2004; Kuo et al., 2009
	Ease of payment methods	Seth et al., 2008; Chen and Kuo, 2009; Hossain and Suchy, 2013
	Ease of service consumption	Jan et al., 2012
Price	Installation fee	Chen and Kuo, 2009
	Monthly fee	Chen and Kuo, 2009
	Re-installation fee	Chen and Kuo, 2009
	Price for pay program	Chen and Kuo, 2009
	Price for promotion package	Chen and Kuo, 2009
Interactivity	Ability to control over pay TV content	Lee, 2005
	Ability to control over display and format	Lee, 2005
	Ability to get real time information	Lee, 2005
	Ability to respond quickly	Lee, 2005
	Ability to respond relevantly	Lee, 2005
	Ability of the remote control	Lee, 2005
	Ability to create sense of uniqueness	Lee, 2005
	Ability to interact to other pay TV customers	Lee, 2005

give communicators control over the pace and content of the communication (Rice, 1984). In pay TV setting, it could be defined as the ability of pay TV service provider to provide additional functions that enables customer to experience extra service other than traditional television consumption. These functions allow users to interact with television such as live voting system and VOD.

5. METHODOLOGY

5.1. Measures

The instrument generated in measuring the dimensions of service quality towards pay TV services consists of seven factors and 43 items. All of these factors and items have been modified to make them relevant and effective in pay TV context. Table 3 shows the items that have been developed. The instrument is then ready for pilot testing, which aims to provide feedback and respondents' opinion to help improve the effectiveness of the questionnaire which will be used in the data collection of the actual study.

Five-point Likert scale are used to measure the instrument, in which number 1 represents "strongly disagree" and number 5 represents "strongly agree." The first part of the survey focuses on the collection of demographic information from the respondents while the second part measure service quality perception towards pay TV services.

Table 4: Reliability test results

Construct	Cronbach's alpha
Tangible	0.690
Reliability	0.772
Content quality	0.808
Customer service	0.720
Convenience	0.692
Price	0.876
Interactivity	0.885

5.2. Sample

According to Pamela (1999), the number of respondents for pilot study may vary depending upon time constraints and resources as well as whether or not a similar study has been conducted with a similar population. In addition, she mentioned that the rules of thumb is a sample of 25-75 for a large scale study. The sample was randomly selected from pay TV customers that came to pay TV customer service office in two consecutive days. A total of 34 respondents participated in this survey.

From the pilot study, some minor changes had been done and it is hoped that the questionnaire has become clearer and can be easily understood by the respondents so that it will be able to produce a valid and reliable data.

5.3. Reliability Analysis

Reliability test using Cronbach's alpha was used to check the internal consistency of the of the questionnaire. According to Nunally and Bernstein (1978), a Cronbach's alpha of 0.7 or more is an acceptable reliability coefficient. The results of the reliability analysis as shown in Table 4 found that 5 constructs are above 0.7 while tangible and convenience slightly below 0.7. However, owing the small sample size, these two constructs are acceptable for reliability. Thus, it could be concluded that the questionnaire was suitable and usable for this study.

6. CONCLUSION AND FURTHER STUDY

There is no doubt that service quality is a powerful tool in determining the level of effectiveness of businesses. Thus, each organization is striving to enhance its service offerings in order to catch customer's attention that will lead to satisfaction. It is proven that perceived service quality directly affects the level of customer satisfaction (Srivastava and Sharma, 2013; Ocloo and Tsetse, 2013; Liu et al., 2011). Even though there are different conceptualization and operationalization of service quality in the service marketing literature, but the scope of service quality is not limited to these available measures. It is essential to include proper dimensions that resemble the selected industry in order to measure the service quality. The current study attempts to develop a scale to measure the service quality in pay TV industry. This study adapted service quality dimensions from SERVQUAL model by Parasuraman et al. (1988) in addition to literature that measured service quality in pay TV and mobile telecommunication service settings.

Based on the review of past literature, this paper resulted in the development of service quality instruments for pay TV service industry. Seven dimensions were identified namely; tangibles, reliability, content quality, customer service, convenience, price and interactivity. However this result is just based on pilot study thus cannot be generalized. A comprehensive study should be carried out to get a more stable and reliable dimension for pay TV service quality. The study for real target population is compulsory. It is believed that the comprehensive study will able to theoretically contribute to the existing literature in service quality.

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