

2. Literature Review

2.1. Introduction

This chapter reviews literature on the development of OTT services, prior studies on this issue, and theories of technology acceptance. Special attention would be paid to the Extended Unified Theory of Acceptance and Use of Technology. Finally, a conceptual framework of consumer intention to use OTT video services was developed.

2.2. Overview of OTT Video Services Market

Over-the-top (OTT) video services refer to the distribution of premium video content to consumers using Internet Protocol (IP) over a public Internet network (Kim *et al.*, 2017). The OTT services come from online video providers (OVDs), but the transmission paths for video content delivery does not. The OVDs offer video content through public Internet broadband network and bypass multiple-system operators. They do not establish any proprietary network for video content distribution (Saxena, Sharan, & Fahmy, 2008; Sujata *et al.*, 2015). Consumers access online video content over Internet in the forms of streaming and downloading. Smooth streaming and fast-paced downloading are heavily dependent on the development of broadband Internet technology. Hence, the proliferation of faster broadband Internet has encouraged the development of OTT video services (Kim *et al.*, 2017).

The rapid development of Information and Communication Technologies (ICT) has enabled the emergence of OTT video services. The fact that consumers are able to enjoy premium video content in anytime and anywhere is the collective result of

advancement in Internet technology, video streaming technology, mobile device, and other technologies (Moyler & Hooper, 2009). Therefore, technology is the enabler of OTT video services. OVDs such as Netflix and Hulu have capitalised on the opportunity created by those technological innovations (Adhikari *et al.*, 2015; Erman *et al.*, 2011). Consumer's acceptance of OTT video services may depend on their ability of accepting and using technology (Spachos *et al.*, 2015).

The technologies necessary for providing OTT video content were ready about ten years ago, when Netflix began providing online video content. Netflix was a DVD-rental-by-mail firm in California. Randolph and Hastings founded the company in 1997. It began providing OTT video services to the US consumers in 2007 (Chan *et al.*, 2016). Netflix is the pioneer of OTT video services. The founders, Randolph and Hastings, could realise the OTT opportunity because they have practical experience in the IT system development (Kaiser, 2016). They have the needed knowledge mindset for appreciating the potential of OTT solution. Hence, they changed their company's business model from DVD rental to online video provider (Chan *et al.*, 2016). The change in business model has driven Netflix to huge success. It had business in over 190 countries and gained more than 75 million subscribers in 2016. The gross revenue was US\$ 1,672 million in 2015. Its market share in the US streaming video services was 36% in 2014. It was expected Netflix's viewership in its domestic market would surpass major cable television broadcasters such as ABC, Fox and NBC (Chan *et al.*, 2016). Above figures demonstrate that Netflix has made a very great success in OTT video services market.

The rise of Netflix, together with other OVDs, has made massive impact on traditional television segment. Consumers perceive online video content as a substitute for traditional TV content. Cha and Chan-Olmsted (2012) proved that there is

cannibalization effect of online video platforms on television by examining the perceived substitutability between them. OTT video services offer a wide variety of video and TV contents to consumers, who can enjoy the contents on alternative screens such as computer, mobile phone and tablets conveniently. The traditional TV broadcasters have lost their monopoly on TV entertainment. The audience's viewing time of traditional TV programmes has been decreasing (Baccarne *et al.*, 2013). Despite the cannibalization effect of online video platforms on television, the expected large-scale “cord-cutting” behavior has not happened. Although OTT video services have gained more importance in TV entertainment, this new form of entertainment has not replaced traditional TV entertainment. A survey conducted by Banerjee *et al.* (2013) revealed that only 8.04% US households were “non-pay TV”, who had disconnected traditional pay TV. There were 39.13% households were “cord couplers”, who were customers of traditional pay TV and OTT video services. 52.83% remained “cord loyalists”, who had not used the services of OVDs. Therefore, the impact of OTT video services on traditional TV may be the reduced viewing time. More and more consumers will switch to video content offered by OVDs.

2.3. Previous Studies on OTT Video Services

OTT video services have brought radical change to the ecosystem of traditional TV industry (Baccarne *et al.*, 2013). For example, TVB, the leading player of traditional TV industry in Hong Kong, launched its own OTT solution, namely MyTV Super, to defend its market position, as the viewership of its TV programmes has continually declined recently. In Hong Kong, there are four major players providing OTT services. They include MyTV Super, Viu, LeTV and Netflix. LeTV is a China-based OVDs. The competition among traditional TV operators and OTT video services providers is fierce

(Chan *et al.*, 2016). The practitioners in this industry need knowledge about what drive consumers to use OTT video services for effective marketing. However, literature on OTT services is fairly limited (Kim *et al.*, 2017).

Kim *et al.* (2017) summarized three common research themes of OTT video services based on a review of literature: first, the growth of OTT services; second, the impact of OTT video services; third, user motivations for adopting OTT video services. The followings are some examples of study on the growth of OTT video services. Chung (2014) described the OTT video distribution business of Netflix and Hulu through case studies. Kim (2015) analysed the rise of OTT video services and the characteristics of the business. Chan *et al.* (2016) analysed the business model of Netflix and its expansion into Hong Kong market.

There is relatively more literature on the impact of OTT video services on the traditional TV industry. Banerjee, Rappoport, & Alleman (2014) discussed the threat of “cord-cutting” or “OTT bypass” faced by traditional TV operators. Traditional pay TVs in the USA were experiencing some revenue losses and slowdowns because consumers have been increasingly streaming or downloading online video content through OTT video services providers. Baccarne *et al.* (2013) also discussed the impact of OTT video services on consumer viewing behavior. It was expected that more household consumers would switch to OTT video services. But most of them remain “cord couplers”. They reduced viewing time of traditional TV content and increased viewing time of online video content. They did not cut the cord of pay TV. Han (2014) developed a model and analysed how OTT video services affected media industry on three dimensions, technology/industry, public policy, and consumer/culture. The model was known as Technology-Policy-Consumer (TPC) model. Kim *et al.* (2016) analysed the competitive dynamics between OTT video services and traditional pay TV in Korea.

They concluded that competition was not severe and traditional pay TV had competitive superiority over the OTT counterparts, except YouTube, in Korea.

Consumer intention to subscribe to pay OTT video services was considered as the most important factor in sustaining OTT business (Moon & Park, 2015). However, user motivation for adopting OTT video services had been investigated by only a limited number of studies (Lim & Lee, 2013). Online video content is viewed as a substitute of traditional TV content. Cha and Chan-Olmsted (2012) examined the factors that motivate consumers to watch online video content for substituting watching TV programmes. The study identified five factors, timely learning, relaxing entertainment, boredom relief, companionship, and escape. Cha (2013) applied the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) as theoretical foundations and explored the factors influencing the likelihood of using online video platform. Two significant factors were identified: relative advantage and compatibility.

2.4. Theories of Technology Acceptance and Use

With the increasing use of technological innovations in daily life, researchers have called for a theory for explaining and predicting user acceptance of technology. Davis (1989) responded to the call and developed the Technology Acceptance Model (TAM). It is a model especially designed for predicting user acceptance of an Information System (IS) within an organizational context. The basic assumption is that user attitude towards using a specific IS determines the behavioral intention to use it. Two major behavioral beliefs, including perceived usefulness and perceived ease of use, are the antecedents of attitude. According to Davis (1989), the TAM was derived from the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). The TRA posits that an individual's rational action is based on the attitude towards the action and subjective