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Competitive relationships between traditional and contemporary telecommunication services in Taiwan

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ABSTRACT

This study sets out to examine the competitive relationships that exist within the telecommunications market using the niche theory on the personal gratifications and system gratifications dimensions. The findings from the analysis of 363 survey responses indicate that traditional and contemporary telecommunication services offer different specializations to satisfy their consumers. Overall, mobile telecommunication services partially replace wired services, on personal gratifications dimensions in particular. The system gratifications dimensions of the wired telecommunication services facilitate the existence of wired services. New telecommunication services (3G and VoIP) partially replace old telecommunication services (home landline and 2G) in providing greater satisfaction in entertainment. The results also demonstrate that VoIP does not impose competitive displacement effects on home landline, 2G, and 3G services. Limitation and suggestions are discussed.

1. Introduction

With the rapid diffusion of new telecommunication technologies, there are now a variety of choices of telecommunication services available. According to International Telecommunication Union (ITU), there will be approximately 5.3 billion mobile cellular subscribers on a global scale. The second generation (2G) digital cellular systems are now widely used worldwide. (ITU, 2010). The development of third generation (3G) mobile telecommunication systems technology enables users to transmit data at higher speeds (Sharma, 2006). 3G services are predicted to become the mainstream telecommunication services of the future. It is estimated that there will be 940 million subscriptions to 3G services by the end of 2010 (ITU, 2010). 3G provides location-based services and advanced video applications, such as mobile video-conferencing, video-phone or mail, and various multimedia entertainment services (mobile television, video player and digital audio and/or video delivery) with seamless global roaming (Sharma, 2006). It is clearly of considerable interest and importance to investigate whether 3G services are likely to completely replace traditional telecommunication services (the current home landline services) as well as 2G services; this is of particular importance now that 3G services are being faced with increasing competition from 'voice-over Internet protocol' (VoIP) services, such as Skype, Vonage, Lingo. It should be noted that VoIP services have existed on the Internet since the early 1990s. However, the technology involved and the market penetration has become much more mature over recent years. According to a survey by Forrest, although only 5% of such households in the US and 2% of European users have currently switched from home landline telephones to VoIP, both the price and the features available through VoIP are slowly beginning to attract more home landline telephone customers (Cohen, 2007). For example, VoIP attracts 21 million subscribers and the majority (48%) is residential in the

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United States (Lasar, 2010). In Taiwan, the new telecommunication services (3G and VoIP) attract users. 3G penetration rate is about 59% in 2009 (National Communication Commission, 2009). And, the VoIP are at their initial stage. Approximately 17% of broadband users subscribe to VoIP (Wu, 2009). How the new services different from traditional telecommunication services (home landline and 2G) in fulfilling users' gratifications is important to telecommunication providers to improve the services and formulate competition strategies to satisfy consumers' needs and wants.

The importance of advanced telecommunication services has received considerable attention in a wide variety of prior studies. The majority of the prior studies within the literature tend to focus on the acceptance factors (Campbell, 2007; Mattila, 2005; Qi, Li, Li, & Shu, 2009) for, or customer satisfaction (Cha & Chan-Olmsted, 2007; Kim, Park, & Jeong, 2004; Leung & Wei, 2000) of, telecommunications services. Most of the studies do not emphasize on competition within the telecommunication service market as a whole. Thus, the extant literature lacks any comparative examination of traditional and contemporary telecommunication services from a competitive market perspective. Furthermore, the prior studies provide no explanation as to why people adopt new telecommunication services (3G and VoIP) and discontinue (or continue) their use of old telecommunication services. The competitiveness of the telecommunications market raises some interesting questions, such as: (i) can one type of telecommunications service satisfy the entire needs of all customers? (ii) do VoIP services pose a serious threat to the survival of traditional telecommunication (home landline telephone) services, as well as 2G and 3G services? (iii) is the emergence of VoIP likely to make home landline telephone systems obsolete? and (iv) do the traditional (home landline and 2G) and contemporary telecommunication (3G and VoIP) services complement each other, or is latter type of system likely to replace the former? The theory of the niche may assess these interesting issues because it predicts the existence, co-existence, and extirpation of media by investigating the competition between new and old media (Dimmick, Kline, & Stafford, 2000). In the context of the niche, gratifications can be used to index the nature of competitive relationships among entities such as media entities.

This study focuses on learning whether the new types of telecommunication technologies and services provide better levels of gratification than older technologies provide. The study uses a framework constructed around gratification and niche theory. Through the use of empirical data, this study aims to provide a better understanding of the competitive attributes of advanced telecommunication services. The findings may ultimately further the forecast of the adoption and use of new telecommunication services as compared to the more traditional types of services.

2. Literature review

2.1. Telecommunications competition and product differentiation

Telecommunications markets are in either oligopolistic or monopolistic competition depending on number of sellers, nature of product, and barriers to entry (Picard, 1989). In the former, few sellers compete with differentiation in product characteristics and advertising; in the latter, sellers compete with only price (Lacy & Vermeer, 1995). Product differentiation is one of crucial strategies for firms to offer similar products to appeal to the tastes and requirements of different consumers in a competitive market (Picard, 1989). It occurs when a firm's "products are clearly preferred by at least some buyers over rival products at a given price" because of "differences in physical attributes, ancillary service, geographic location, information, and/or subjective image" (Scherer & Ross, 1990, p. 17). Successful differentiation creates brand loyalty and establishes an entry barrier for new entrants (Porter, 1985).

2.2. Niche theory

'Niche theory' originates from ecology. In ecology, species compete for the same scarce resources. The concept of the niche is the focus of the theory of ecological competition (Whittaker & Levin, 1975). A niche is defined as 'the *n*-dimensional space which describes the characteristics of the resources a species needs for survival (Milne & Mason, 1989). As a result, these species evolve their competitive strategies to minimize competition for the resources (Ollerton, Stott, Allnutt, Shove, Taylor, & Lamborn, 2007). Niche theory predicts the existence, co-existence, and extirpation of species (Chase & Leibold, 2003; Hubbell, 2001; Ollerton et al., 2007; Silvertown, 2004).

Researchers use niche theory to investigate the competition between new and old media (Dimmick et al., 2000). The niche of a species is determined by its position in the resource dimension within the market (Dimmick, 1997). There are essentially three types of resources within the competitive telecommunications market which attract competition: consumer satisfaction, consumer time, and revenue (e.g., operation, advertising, subscription revenues) (Dimmick, Chen, & Li, 2004). As many telecommunications companies (especially the new ones) do not reveal revenue information to the public, such data are difficult to obtain and their accuracy is questionable, competitive relationships can be forecasted in terms of consumer satisfaction (for example, Dimmick et al., 2004). Telecommunications market players may compete against each other for these same resources to gain different positions within the market (Dimmick, 1997; Dimmick et al., 2000). In a monopoly market, such as mobile telecommunications in Taiwan (Chen, 2000), firms differentiate their products to attract customers (Porter, 1985) to gain various competitive advantages. The approach of niche theory provides assessment to examine the monopolistic competitive relationships that exist between traditional and contemporary media, their differentiation strategies, as well as the influence that the new types of media can have upon traditional media (Dimmick et al., 2004). The theory facilitates the prediction of whether new types of telecommunications