Journal of Business Research 65 (2012) 1600–1605

Contents lists available at SciVerse ScienceDirect

Journal of Business Research

Expressive versus instrumental functions on technology attractiveness in the UK and Korea

Jong-Ho Lee [a,1], Tony C. Garrett [a,*], Donald R. Self [b], Carolyn S. ("Casey") Findley Musgrove [c]

[a] Korea University Business School, Anam-Dong, Seongbuk-Gu, Seoul 136–701, South Korea
[b] Auburn University Montgomery, Department of Marketing, P.O. Box 244023, Montgomery AL 36124–4023, USA
[c] Indiana University Southeast, School of Business, 4201 Grant Line Road, New Albany, IN 47150, USA

ARTICLE INFO

Article history:
Received 1 June 2010
Received in revised form 1 October 2010
Accepted 1 February 2011
Available online 22 March 2011

Keywords:
Technology attractiveness
Expressive function
Instrumental function
3G technology
Cross-cultural research

ABSTRACT

Industries continually launch new generations of technology to attract consumers. However, the elements of new technology that attract consumers vary across countries. A good understanding of consumer needs is thus vital for the success of new technological products. To better understand what functions of a high-technology product are attractive, this study explores the attitudes toward instrumental and expressive functions of third generation (3G) mobile devices in the United Kingdom (UK) and Korea. Hypotheses are developed from literature and interviews with front line staff, and are tested using questionnaires. Performance value-added services, call quality, and tariffs, which are all instrumental functions, are found to be the major factors attracting consumers in the UK, whereas performance and excitement value-added services, sense of superiority, and tariffs, which are a mixture of instrumental and expressive functions, are most important in Korea. The findings from these two countries provide insights into consumer behavior.

1. Introduction

High-technology industries worldwide are continually launching new technology to meet ever-changing demand; nowhere is this truer than in the mobile telecommunications industry (Khatibi et al., 2002; Ziamou and Veryzer, 2005). The introduction of new technology is inevitable in such a competitive environment, yet certain key questions remain unanswered, such as the features of the technology that appeal most to consumers and how these differ across national markets. Understanding consumer needs is regarded as one of the most important determinants of the success of new product development (Henrad and Szymanski, 2001). In some cases, understanding the consumer has become more important than the technology itself in navigating the dynamics of high-technology markets (Steinbock, 2003). With greater emphasis on consumer needs, the psychological, or expressive performance of high-technology products may be more important than their technical, or instrumental, performance (Swan and Combs, 1976). The speed of technological innovation makes the consumer decision-making process ever more complex (Pae and Lehmann, 2003), making the careful assessment of market and consumer needs at the early stages of new product development critical to product success (Cooper, 1998; Cooper and Kleinschmidt, 1987; Graeff, 1997; Kärkkäinen and Elfvengren, 2002; Pinto and Slevin, 1989; Rothwell, 1992).

The context of this study is the 3G mobile communications market. With the launch of 3G in all major markets and the recent advent of 4G, consumers have been brought to a new technological plain, with an attendant increase in the complexity of buying decisions and influences. Although the rate of 3G subscriptions is accelerating, the penetration of 3G technology differs across national markets, with significant differences in subscription levels in, for example, the United Kingdom (UK) and South Korea (Korea) (International Telecommunication Union, 2010; Morgan Stanley Research, 2009). While acknowledging consumers as one of the most important drivers in the mobile communications market (Steinbock, 2003), mobile network providers recognize the importance of addressing consumer needs for the effective adoption of new technology. Telecom firms create board-level positions to put this idea at the heart of their strategies (Chandiramani, 2003).

Previous research establishes a precedent of using 3G as a surrogate for other high-technology consumer products in the literature (e.g. Huh, 2003; Kim and Ko, 2008). Accordingly, several researchers have examined the adoption of 3G and other types of information and communication technology (ICT) at length (e.g., Bruner and Kumar, 2005; Kim et al., 2004; Teng et al., 2009). Other studies have explored technology acceptance models (e.g., Bruner and Kumar, 2005; Jung et al., 2009; Teng et al., 2009) and macro factors, such as culture and socio-economic characteristics (e.g., Lee and Cho, 2007; Trkman et al., 2008). However, a lack of understanding still exists of the specific functional requirements of different markets in relation to 3G and ICT. In an analysis of the state of mobile phone marketing, Varnali and Toker (2010) report

* Corresponding author. Tel.: +82 2 3290 2833.
E-mail addresses: jongholee@korea.ac.kr (J.-H. Lee), tgarrett@korea.ac.kr (T.C. Garrett), dself@mail.aum.edu (D.R. Self), cfindley@cba.ua.edu (C.S.("C.") Findley Musgrove).
[1] Tel.: +82 2 3290 2821.

0148-2963/$ – see front matter © 2011 Elsevier Inc. All rights reserved.
doi:10.1016/j.jbusres.2011.02.045

inconsistent results and highlight the need for an examination of the relative importance of the various determinants of technology adoption across national markets.

This study is the first to identify consumer attitudes toward 3G functions in the UK and Korea. The three objectives are to measure consumer needs in terms of the distinctive functional features of 3G technology, explore how attitudes toward these 3G functions differ across the two national markets, and offer suggestions to managers on how to better satisfy consumer needs with their high-tech offerings according to these national differences. The chief contribution of this study to the literature is its identification of the effects of expressive and instrumental functions, a product's two key performance sub-processes (Swan and Combs, 1976), on the attractiveness of a new high-tech product in different national settings.

2. Theory and hypothesis development

Previous research emphasizes the understanding of consumer needs as the key to product success (e.g., Cooper, 1998; Cooper and Kleinschmidt, 1987; Graeff, 1997; Henrad and Szymanski, 2001; Kärkkäinen and Elfvengren, 2002; Oppenheimer, 2005; Rothwell, 1992). Crucially, service providers and new product developers must identify the needs of their target segments and cater to them. Failure to understand and respond to the needs of potential users can be hazardous for innovation. Understanding the needs of consumers in different markets thus plays an important role in the launch of new products.

The importance of technology innovation is largely unquestioned. This study, however, establishes that consumer needs and technological innovation are equally important considerations in new product development. An innovation that fails to meet market demand has no value. Olsson and Karlsson (2003) argue that the key success factor for companies is the development and delivery of services and products that satisfy consumer needs and create consumer value. They further note that companies need to be more proactive in understanding consumer needs in the increasingly differentiated and interactive markets in which they operate. This need is particularly heightened in very turbulent markets, such as high technology, in which consumer needs are very dynamic (Chong and Chen, 2010; Mohr et al., 2005) and in uncertain environments (Eng and Quaia, 2009).

Matching the potential gap between new technology and market needs is a challenge. Great technological uncertainty, market uncertainty, and competitive volatility (Chong and Chen, 2010; Eng and Quaia, 2009; Mohr et al., 2005; Moriarty and Kosnik, 1989) are the main characteristics of high-tech industries. The uncertainty and high cost of developing new technology products generate great interest in how advanced technology can be designed to attract consumers. Deciding how to bridge the gap between consumers' expectations and perceptions in the high-tech industries is a controversial issue. If the development of technology advances beyond consumers' expectations, then the market may no longer be orientated toward their needs and expectations (Mohr et al., 2005).

Consumer hesitation presents a challenge to 3G network diffusion in some markets, despite its technological benefits. Consumers cannot be persuaded to shift from their present network to a new product with simply a conglomeration of single benefits that the new technology may bring (Gerstheimer and Lupp, 2004). Indeed, Lieven and Gino (2004) find that many potential consumers do not adopt new products because they are overwhelmed by an offer that is too big and contains too many applications that do not appeal to them.

Nevertheless, such hesitation may not be evident in all markets. Several studies examine national differences in the diffusion of new products (e.g., Tellis et al., 2003) and consumer adoption of new technology (e.g., Erumban and de Jong, 2006; Singh et al., 2006). Tellis et al. (2003) argue, for example, that products vary as to the extent of their diffusion based on the innovativeness and culture of a country, among other factors. Studies of ICT and broadband similarly find that diffusion can be attributed to national culture (Erumban and de Jong, 2006) and other socioeconomic factors such as per capita GDP and the price of the technology (Lee and Cho, 2007; Trkman et al., 2008). Increased researcher and practitioner examination of national environments give rise to the realization that different national markets may have different requirements based on the distinct characteristics of the resident populations. Thus, marketers should analyze all elements of a marketing program to understand whether they will meet consumer needs.

Because culture is a key influence on consumer behavior, greater understanding of how culture drives consumer product choice is important. East Asian and Western consumers differ in terms of the attributes and benefits they seek in products and situations (e.g., Bolton et al., 2010; Choi et al., 2003, 2007; Nisbett et al., 2001). Researchers commonly use the individualism versus collectivism dimension to articulate the differences between the East Asian (collectivist) and Western cultures (individualistic) (e.g., Hofstede, 1991). Members of individualistic cultures tend to define themselves in terms of the individual and an individual's uniqueness, whereas collectivist cultures tend to define themselves in terms of social connectedness, such as with the family and other members of a person's professional or social peer groups (Brewer and Chen, 2007; Heine and Hamamura, 2007; Markus and Kitayama, 1991; Nisbett et al., 2001). Sensitivity to relationships is much more important in collectivist cultures than in individualist cultures, leading researchers to imply that face, or the status earned in a social context, is an important consideration in the consumption of products (Choi et al., 2003; Nisbett et al., 2001). The risk of not meeting social expectations motivates members of collectivist societies to consume goods and services that match their social status (Lee and Green, 1991). This study asserts that the expressive functions of products are equally, if not more, important to collectivist consumers in defining social membership.

Researchers also find that East Asian consumers tend to look at products more holistically than linearly oriented Western consumers (Choi et al., 2003, 2007; Nisbett et al., 2001). The implication is that East Asian consumers may look at the functions of products equally to determine the attractiveness of the product.

The natural progression of such research is to examine which factors are most important in attracting consumers and how different consumer markets respond to high-technology functions. Although some general research focuses on product attractiveness in the high-tech markets, very few studies examine consumer attitudes toward specific high-tech functions across different markets. This study attempts to cast light on this issue through an exploration of the UK and Korean 3G markets.

As discussed earlier, previous research reports national variation in the diffusion and adoption of new technology (e.g., Erumban and de Jong, 2006; Tellis et al., 2003), with collectivist East Asian consumers having different technology requirements from individualistic Western consumers (e.g., Choi et al., 2007; Cho and Cheon, 2003; Nisbett et al., 2001). This finding leads to the following proposition:

P1. The contribution of different functions to the attractiveness of 3G varies between collectivist East Asian consumers and individualistic Western consumers.

2.1. Hypotheses

Swan and Combs (1976) suggest that the performance of a product can be divided into two sub-processes: its instrumental, or technical performance, and its expressive, or psychological performance. They note that satisfactory instrumental product performance is a prerequisite for consumer satisfaction. However, Grönroos (1998) stresses that poor expressive product performance can also frustrate consumers,