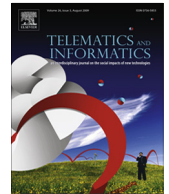




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Why has a Korean telecommunications technology failed: A case study on WiBro



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ABSTRACT

This study identifies and analyzes the causes for WiBro's failure in the Korean telecommunications market within the context of the technological systems framework and the actor network theory. The reverse salients of WiBro were identified according to the activities of the actors from three different domains: technology, government, and business. The findings and implication of this study were obtained through a review of the literature and in-depth interviews with eight key experts. The reverse salients found can be categorized into two types: 'apparent' and 'underlying'. The apparent reverse salients are the lack of investment and inadequate business model of the business actors. The underlying reverse salients are the policies enacted by government actors and are less obvious but heavily influence the creation of the apparent reverse salients and ultimately contribute to the failure of WiBro.

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1. Introduction

WiBro, short for 'Wireless Broadband', is the South Korean version of the mobile WiMAX standard. WiBro was first commercially launched in 2006 with high expectations for success, and the Korean government and major business actors, like Samsung Electronics and Korea Telecom (KT), actively supported and promoted the technology. However, WiBro had disappointing adoption both in the domestic and the international telecommunications market. Even though there was ample evidence indicating WiBro's failure, the Korean government continued promoting WiBro by restricting the use of the 2.3 GHz and 2.5 GHz bands to WiBro only. However, on October 3rd, 2013 the Ministry of Science, ICT, and Future Planning (MSIP) officially announced that mobile carriers would be allowed to select between WiBro and LTE-TDD for newly assigned spectrum (Kwon, 2013). Such a policy decision can indicate that the Korean government admitted the failure of WiBro.

The WiBro case in Korea is worthy of note, as it started with great promise, but turned out to underperform in the market. Thus, it is meaningful to look into the causes for WiBro's failure. This study aims to identify the factors that have driven WiBro into failure in the Korean telecommunications market and examines them within the context of the actor network theory and the technological systems framework.

In this paper, Section 2 provides an overview of WiBro, including the development, background, and state of the current WiBro market. In Sections 3 and 4, the theoretical framework and case study methodology of this study are explained. Section 5 presents the results of the in-depth interviews with the key experts and discusses them within the context of the other materials used in this case study. In Section 6, this study will briefly summarize the results and will explain

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the implications of the findings. Finally, suggestions for future research and the limitations of this study will be discussed at the end.

2. WiBro overview

2.1. WiBro development background

WiBro, short for 'Wireless Broadband', is Korea's homegrown portable Internet services technology for the IEEE 802.16e standard (Nam et al., 2008). It was designed to enable mobile broadband access in Korea, and the Korean government had three motivations to develop such a technology (Kim, 2009; Lim, 2005).

First, Korean telecommunications companies had been paying substantial amounts of money in royalties to licensors, like Qualcomm, for using source technologies for mobile communications (Lim, 2005). For example, Qualcomm holds the patents for the core technologies used in Code Division Multiple Access (CDMA) devices. It was only natural for Korean companies and the government to feel the necessity of developing and owning a source technology.

Second, 3G International Mobile Telecommunication 2000 (IMT-2000) systems seemed inadequate in accommodating data traffic, which kept increasing every year, and thus, the market was in need of additional capacity.

Third, Korean actors were seeking another opportunity to be leaders in the wireless communication market after the success in being the first to implement the commercial launch of CDMA in 1998. Developing a homegrown wireless broadband Internet technology seemed a plausible idea (Kim, 2009).

In 2004, the Ministry of Information and Communication (which was dissolved in 2008) announced the 'IT839' growth strategy, and WiBro was one of the core services to be nurtured under this project (TTA, 2007; Lim, 2005). Major telecommunications business actors, including Samsung Electronics, KT, SKT, and Hanaro Telecom, and the Korean government granted KRW 38.5 billion (USD 34.6 million) to the Electronics and Telecommunications Research Institute (ETRI) to develop a wireless broadband Internet technology, which was later named as WiBro. The research project commenced in January of 2003 and ended in December of 2005, and then launched commercially the following year.

2.2. WiBro market

The outlook for WiBro in the Korean telecommunications market was positive when it first launched in Korea. In 2007, the Ministry of Information and Communication estimated that the number of WiBro subscriber would be 790 thousand by 2006, 4.9 million by 2009, and 9.2 million by 2011 (Yoon et al., 2007). However, according to Fig. 1, the adoption of WiBro in the market was quite disappointing.

Unlike the tardy expansion in the domestic market, WiBro adoption in other countries was quite outstanding for the first couple years. Samsung Electronics was noticeably vigorous in carrying out global business with this technology (Han, 2008).

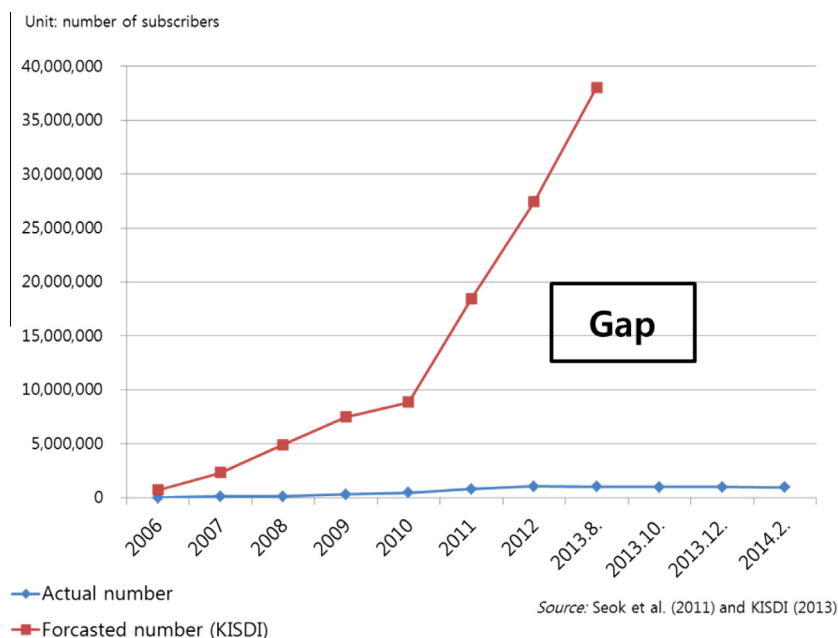


Fig. 1. The gap between the WiBro subscriber estimation and actual subscribers in Korea. (See above-mentioned references for further information.)

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