Telecommunications Policy 36 (2012) 579–593

Contents lists available at SciVerse ScienceDirect

Telecommunications Policy

URL: www.elsevier.com/locate/telpol

Socio-technical analysis of Korea's broadband convergence network: Big plans, big projects, big prospects?

Dong-Hee Shin [a,*], Jaemin Jung [b,1]

[a] Department of Interaction Science, Sungkyunkwan University, 90327 International Hall, 53 Myeongnyun-dong 3-ga, Jongno-gu, Seoul 110-745, South Korea
[b] KAIST, Graduate School of Information and Media Management, Seoul, South Korea

ARTICLE INFO

Available online 10 April 2012

Keywords:
Broadband
South Korea
Broadband convergence network
Socio-technical systems theory

ABSTRACT

The goal of this study is to investigate the policy objectives of the broadband convergence network (BcN) and the realization of objectives. The Korean government launched the BcN project with the objective of converting Korea into an information society with ubiquitous broadband convergence for the advancement of growth and productivity. Based on content analysis of the policy documents and the literature related to BcN, this paper draws on the socio-technical framework for interpreting the data. Findings in this study suggest that, despite excellent technological innovation and proactive drive, uncertainty still remains with respect to how the BcN has evolved and its impact on the new telecom ecology to date.

© 2012 Elsevier Ltd. All rights reserved.

1. Introduction

It is needless to emphasize the importance of broadband to functioning smart information society. Developing a broadband society has become a high priority for governments around the world (Papacharissi & Zaks, 2006). Among a series of broadband initiatives in Korea, the broadband convergence network (BcN) is one of the milestone projects that Korea has been actively developing over the last several years. The BcN is the most notable attempt by the government to create an enhanced digital environment to keep apace of new ICT convergence trends. The BcN is envisioned as a conduit for broadband content and applications. It is fully supported by the Korean government because of the magnitude and scope of its potential impact. Extensive financial investments (over $70 billion U.S. dollars) have been committed to the BcN, and substantial regulatory support has been provided to the industries involved in the BcN. The BcN is regarded by the general public as the realization of a ubiquitous smart society (Joo, 2005; MIC, 2008). However, the BcN has been criticized as an insufficient telecom infrastructure in terms of its ontologically bounded accountability (Kim, Choi, & Kim, 2007; Shin & Kweon, 2011). Ontologically bounded accountability characterizes the BcN as a public good, or public utility, such as public health, education and public safety. The benefits of public health and education are not limited to the individuals directly involved in these services. The notion of ontologically bounded accountability also applies to water, electricity, gas and telephone services. These are vital services for the households comprising any society, but with the exception of the reduction in infectious disease afforded by safe water and sewers, only the individual households directly capture most of their benefits.

* Corresponding author. Tel.: +02 740 1864; fax: +02 740 1856.
E-mail addresses: dshin@skku.edu (D.-H. Shin), nettong@business.kaist.ac.kr (J. Jung).
[1] Tel.: +82 2 958 3519.

0308-5961/$ - see front matter © 2012 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.telpol.2012.03.003

In this regard, a study by Shin (2007) argues that the BcN in Korea was designed primarily to serve the demands of the major corporate suppliers and industries at the expense of the public interest. Critics have also suggested that the primary driving force for developing the broadband was the arrangement, or outlay, of technological equipment to improve technical capabilities (Joo, 2005). Despite exorbitant financial investments and high hopes for the broadband, fundamental developmental concerns have persisted, resulting in a bleak outlook for the next generation of broadband networks. As a study by Shin and Kweon (2011) shows, discussions about a Korean broadband over the past decade have predominantly focused on the technical aspects of design. Although ICT is a key aspect of the national agenda, with the past decade understanding broadband mainly as a crucial component to enabling technological infrastructure (Kim et al., 2007), most broadband efforts have focused on the development of broadband technologies and resources (Menon, 2011). Relatively few efforts have focused on the immense social repercussions of the organizational, political and cultural decisions inherent in developing broadband (Joo, 2005). Along with the social, cultural and behavioral impacts of how broadband is developed and managed, as well as how it evolves, such choices will be critical to the eventual success of a broadband society (Joo, 2010).

This study argues that because broadband is part of a broader technological ecosystem, its design and development should be focused on the ways in which successful broadband will change the social and cultural milieu. A technological ecosystem, which is a set of technologies, standards, conventions, best practices and social communities, can be defined as an adaptive, open socio-technical system with properties of sustainability, public good and scalability. With this ecosystem idea in place, the analysis addresses issues related to the development and introduction of broadband in Korea, as well as social and regulatory issues. Korean broadband development has often been evaluated on the basis of economic efficiency and physical growth, which excludes important fundamental and social considerations. The findings in this study provide an alternative paradigm based on the STS model for improved future broadband planning and evaluation.

2. Literature review

2.1. Theoretical framework: Socio-technical systems theory

This research develops and expands upon a theoretical framework based on STS theory. Sawyer, Allen, and Lee (2003) argued that an STS perspective is a solid framework for investigating the complex interrelationships of technical and social processes, given that the framework should include technological and social details of large-scale ICT projects. From this perspective, Borgman (2000) conceptualized information infrastructure as a socio-technical system. That is, a national information infrastructure is a concept focused on forging a network that provides society-wide access to information. Sawyer et al. (2003) investigated broadband and mobile infrastructures from a socio-technical perspective. This approach to broadband is consistent with the concept of a broadband ecosystem introduced by Kelly and Raja (2010), in which broadband is a socially constructed artifact that is part of a cultural ecosystem.

In a broadband context, STS addresses the social aspects of people and society, as well as the technical aspects of systems and technology. As a theoretical lens for broadband, STS theory enables the investigation of the technical subsystem (comprised of infrastructure, equipment, application and service), the social subsystem (market, customers and industry), and the environment (regulation, policy and society) that are all critical components of a developing broadband society.

2.2. Conventional economic model vs. socio-technical system approach

In terms of conventional economic model, ICTs are often considered as tools or simple appliances, even when they take the form of complex arrangements of diverse equipment and rules (Sawyer et al., 2003). The economic model assumes that ICTs are objective and rational, and thus, capable of being evaluated through the use of objective tools and techniques.

As opposed to the conventional economic model, Borgman (2000) proposes the adoption of the socio-technical approach, in which technology projects outcomes are the result of a more complex interaction between technical and societal factors. It is widely acknowledged that ICTs and the social and contextual settings in which they are embedded in a relationship of reciprocal shaping. The economic model is simplistic and limited for adequately understanding the character of social change involving ICTs. In the view of STS, ICT-related innovation should be seen as an on-going social process that unfolds in the context of complex, negotiated relationships. A socially rich view seems to better conceptualize the role of broadband in the current environment. The socio-technical model takes into consideration important factors such as the social and organizational context of the technologies and the people who use them. Table 1 describes some of the key characteristics of the two contrasting models.

2.3. Existing research on broadband infrastructure in Korea

Because broadband is considered a socio-technical artifact, numerous studies (Fransman, 2006; Frieden, 2005; Ramirez, 2007) have researched the socio-economic impacts of broadband on society. A study by Lee, Kim, Chung, and Kim (2007) specifically focused on the recent broadband convergence network in Korea, and investigated the impact of broadband on socio-economic well-being in Korea. Other studies have presented the relationship between policy and the broadband

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات