

# A study on formulating a transition policy for convergence: based on a layered model

Jae-Hyun Hwang, Sang-Yeob Lee, Myeong-Cheol Park  
School of IT Business, Information and Communications University (ICU)  
{hjh2700, edlsy, mcpark}@icu.ac.kr

## Abstract

Rapid technological changes are expediting the convergence of telecommunications, broadcasting, and Internet services. Specifically, the convergence of various services is motivated by the development of interactive digital technology and the boom of broadband Internet infrastructure. Telecommunications operators and Internet Service Providers (ISPs) are developing convergent services in order to provide high value-added contents, while broadcasting operators are arranging data services with interactive operations. Existing regulatory conditions are based on the type of infrastructure over which telecommunications services are provided. However, the potentiality of cross-products and cross-platforms has blurred the distinction between such previously separated industry sectors as television over broadcast networks or cable and telephony service over wired or wireless networks. Several researchers and industry players have, therefore, called for new ways to regulate. The emerging solution is a layered model analogous to the Open Systems Interconnection (OSI) reference model. As it is highly likely that a radical change of regulatory policy will bring about uncertainty in the telecommunications market and technology, it requires a shifting step.

This paper aims to provide a transition model to obtain a layered model from the existing regulatory regime. The purpose of this study is, first, to review Korean regulation policies that are applied to newly convergent services in telecommunications, broadcasting and the Internet market such as Wireless Broadband Internet (WiBro), IP Television, and Terrestrial/Satellite Digital Multimedia Broadcasting (DMB). We then suggest a transition model as an intermediate regulation policy with respect to the following: the control of market power, free and equal access, the place of universal service and the promotion of new convergent services. The general direction of a regulation policy should be to simplify obligations and minimize control for preventing market distortion and increasing social welfare. It is believed that a layered model can provide this clarity. Nonetheless, it requires a transition model in order to prevent disorder. In this respect, the implications of this study will help the National Regulatory Authority (NRA) and industry players set up a new paradigm of regulation policy.

## I. Introduction

Rapid technological changes are expediting the convergence of telecommunications, broadcasting, and Internet services. More specifically, the convergence of various services is motivated by the development of interactive digital technology and the boom of broadband Internet infrastructure. Telecommunications operators and Internet Service Providers (ISPs) are developing convergent services in order to provide high value-added contents, while broadcasting operators are arranging data services with interactive operation. Moreover, it is expected that these convergent services will be provided on a unified network, the Internet Protocol (IP) layer. In this respect, convergence implies a situation in which formerly separate markets merge into one.

The force of convergence has compelled regulators to design a new regulatory paradigm to effectively and consistently cope with the newly emerging convergent services of the telecommunications and communications market [1], [2]. Existing regulatory conditions are based on the type of infrastructure over which telecommunications services are provided [22]. However, the potentiality of cross-products and cross-platforms has blurred the distinction between previously separated industry sectors such as television over broadcast networks or cable and telephony service over wired or wireless networks. Therefore, several researchers and industry players have called for new ways to regulate.

Many countries have made efforts to set up their own regulatory regimes in anticipation of convergence, highlighting the fact that the existing regulatory structure is

ill-fitted to deal with convergence issues. The emerging solution to this confusion is a layered model analogous to the Open Systems Interconnection (OSI) reference model. In particular, the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD) have tried to provide a horizontal regulatory framework that approximately corresponds to the layered model.

As the European Commission has stated its intent to build a new regulatory framework, regulations for electronic communications services and networks should provide a set of rules that are minimal, aimed at deregulation, technology neutral, based on the definite objective of regulation and sufficiently flexible to deal with fast changing telecommunications markets [3]. As it is highly likely that a radical change of regulatory policy will bring about uncertainty in the telecommunications market and technology, it requires a shifting step.

Therefore, this paper aims to provide a transition model to obtain a layered model from the existing regulatory regime. The purpose of this study is, first, to review Korean regulation policies that are applied to newly convergent services in telecommunications, broadcasting and the Internet market such as Wireless Broadband Internet (WiBro), IP Television (IPTV), and Terrestrial/Satellite Digital Multimedia Broadcasting (T/S-DMB). We then suggest a transition model as an intermediate regulation policy that is bounded for the layered regulation model with respect to the following: the control of market power, free and equal access, the place of universal service and the promotion of new convergent services.