

Analyzing Technical Characteristics of Internet-Based Convergent Media and Regulation Determinant

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Abstract

The purpose of this study is to suggest a regulation determinant applicable for Internet-based convergent media. The adaptation of Internet in the media industry has dismissed the role of scarcity and pervasiveness which used to justify regulating media. A basic question is how technical feature of convergent media affects diversity, one of the essential goals of media regulation. The Structuration theory suggests that media technology doesn't change the level of diversity directly, but it changes participant's actions, consequently affecting the level of diversity in a society. Broadcaster as a gatekeeper has a strong incentive to have more power in screening and provisioning information in the process of delivering information to users whereas information owner and user also do so for their sakes. Diversity is promoted when information flows from its origins to final uses without constraints. Considering that the degrees of broadcaster's control of information flow are varied depending on architecture of convergent media and it affects the level of diversity it, the study concludes that the level of control over information flow by broadcaster can serve as a regulation determinant of upcoming convergent media. The study is the first to extend structuration theory to the media regulation study and is expected to make a practical contribution as it proposes a unified concept as a guiding rule for convergent media regulation.

Keywords: *Convergent Media, Regulation Determinant, Diversity, Structuration Theory, Control over Information Flow*

1. Introduction

A variety of convergent media services including Smart TV and mobile broadcasting have emerged in the market recently. Regarding a free flow of media contents into the market with few regulatory barriers, two distinctive opinions have formed on media regulation. One advocates application of the traditional media rules as the services also deliver the traditional media contents. The other supports adopting a new set of regulations as the service users select the contents, instead of passively receiving them as was the case before. There is a growing demand to modify the media regulations as the scarcity of the frequency and pervasiveness of the media—which used to a basis for media regulation—gives way to a wider variety of media and a new environment, namely, selective consumption of information by users. Meanwhile, the architecture of broadcasting service is shifting toward a more decentralized structure [1, 2]. As interactivity enables service users to actively participate in media selection [3], controlling power in the industry is shifting to service users [4]. These changes in the media industry give a reason to alleviate media regulation, but yet anyone

didn't offer common criteria on how to specifically regulate convergent media. Given this circumstance, this study proposes a guiding principle on media regulation that can apply to a wide variety of convergent media. To this end, the study examines the relationship among technology, conduct and regulation in the media industry. And then it suggests regulation determinant by deriving an integrated concept encompassing various industrial and behavioral elements.

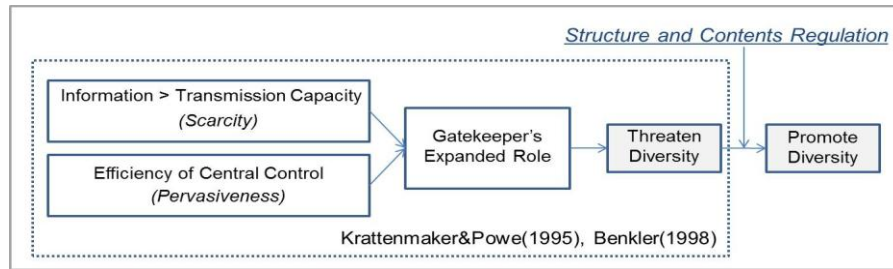
2. Theoretical Background

To design a rule for regulation of Internet based convergent media, it is necessary to understand the technological characteristics of media, conducts of service providers, and how they affect the goal of media regulation. To do so, the study adopts "Structuration Theory" that explains a dynamic relationship among the social structure, human and technology. As an agent, human reproduces conditions that induce certain actions, and change the social structure [5]. Giddens(1984) named the relationship between structure and human action "Duality of Structure" [6]. If a person acts in a non-conventional way and if the repeated actions become institutionalized as a broad pattern, the structure can develop into a new norm. Poole & De Sanctis(1990) presented "Adaptive Structuration Theory" and identifies the role of technology as an important factor in a social structure. He argued that an organization adopt information technology and alters its uses and applications over time [7]. It explains a relationship among IT, organizational structure and human behavior. Orlikowski (1992) proposed "Technology Structuration", a new frame on the relationship between technology and an organization, which argues that human action, technology and an institutional system interact to structuralize technologies [5]. In this process, humans or an organization, as an agent, designs information technology to meet their organizational purposes. But technology facilitates computer-based tasks and communication, and at the same time constrains humans' actions. By extending this concept, the study aims to explain the relation among media technology, participants' act, and regulation as a part of institutional system.

3. Media Regulation

3.1. Diversity

Public interest is a basic goal of media regulation in most countries. According to the Broadcasting Act of Korea, media regulation aims to "protect rights of the viewers, promote democratic formation of public opinion, enhance national culture, and contribute to public welfare and development of the broadcasting industry". Similarly, the Telecommunication Business Act provides that the media regulation should "enhance public welfare through wholesome development of electronic and communication industry and user convenience", emphasizing public welfare. In 1934, the U.S. Federal Communications Act defined that members in the broadcasting industry should advocate "public interest, convenience and needs". EU also stated that the goal of media regulation is to protect public interest—cultural diversity, access to information, media pluralism, attention to the socially marginalized class, protection of consumers—and people's use of media. Public interest can be enhanced when a society maintains high level of diversity. Media policy contains social, political and economic elements [8]. The political aspect seeks outlets for various opinions; the social elements involve pluralism and diversity of a society; and the economic aspect addresses fair competition among industry members to make profits. In convergence environment, universal access to media services is added as a part of public interest [9]. Yet the notion of ensuring



Source: C.H. Lee [10]

Figure 1. Gatekeeping and Diversity

universal or extended access to media is not away from diversity or pluralism as it is one of ways of promoting it.

3.2. Gatekeeping

There has been an asymmetry between fewer broadcasters and many listeners in the traditional media industry [2]. This results from limited frequency and higher efficiency of central operation of broadcasting service. This circumstance inevitably called for the role of gatekeeper. However the advent of gatekeeper or broadcaster tends to degrade diversity because gatekeeper is likely to take advantage of their power in selecting contents from diverse sources and provisioning selected information to final users [1, 2]. Therefore, government interferes with gatekeeper to some extent to force them to booster diversity [10].

3.3. Convergence

The convergence of media and Internet produces a wide range of changes in technical features of media. Architectural characteristics of interactive media have capacity for an unlimited number of information sources, and decentralize access without the need for gatekeepers [1]. These characteristics weaken the need for government's invention in the industry to promote diversity. Benkler(1998) stated that communication technology and social environment determine a pattern of information flow, and the media regulation in the converging environment should be designed in a way that new technology can engage as many people as possible in production and use of information. Many factors such as rivalry and excludability, interactivity or interoperability, whether a service is paid or free, whether a service is primary or secondary, a number of contents in service, the way content flow is controlled and received, a number of speakers and listeners, variety of services, users' ability to make a choice are perceived to affect the regulation design of emerging convergent media.

4. Technology Structuration in Media

4.1. Modeling

Technology Structuring explains how a particular group or organization uses communication technologies, and in turn, how such uses reshape their tasks, communication patterns or temporal working practices [11]. The use of technology in the field of IT is extended to the media industry to illustrate how people use media and how they are

constrained by it. Media technology encompasses component and architecture; they are designed by people, but have a power to affect people's act. Rather than directly affecting

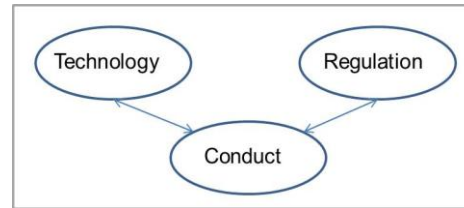


Figure 2. Media Technology-conduct-regulation

regulation, media technology influences people's act first, which then affects the goal of media regulation, which is diversity (Figure2).

4.2. Technology and Conduct

The innovative changes in technologies such as emergence of multi-channel broadcasting or convergent media change users and broadcasters' pattern in collecting and provisioning information [12]. New technology sometime takes long time to change people's behavior. This is because the traditional system resists changes and an institutional lock-in of an organization tries to fit a new technology into an old pattern [2]. Meanwhile human's acts lead the advent or alternation of technologies. The repeated use of technologies for long time to produce, deliver, and use information induce changes in technology or development of new technology. Technology is basically developed to serve the interests of individuals or organizations who want to benefit from the market incentives [13].

4.3. Regulation and Conduct

Regulation is one of institutional constraints and affects human's behavioral patterns as an individual or an organization tries to adjust to it [2]. This is also the case in the media industry. Content regulation decides which contents are allowed to provide or not and thus affects industry players and user's conducts in association with producing, storing, delivering and providing contents. A same technology can be used in different way according to regulation. The U.S. constitution bans regulating Internet contents, while Internet service provider in Germany is obligated to oversee contents even provided by third parties. Broadcaster's act also affects regulation. The government periodically evaluates broadcasting market to see whether the regulatory goals are met. If not, the existing regulation is subject to change so that the goal is properly achieved by controlling broadcasters' conducts.

5. Regulation Determinants

5.1. Structure vs. Conduct

In its simplest form, the industrial organizational model posits that the market performance is determined by firm's conduct within the market, and that the conduct is determined by structure variables. According to the model, many policy makers attempt to change market structure to improve firm's conduct and ultimately market performance [14]. However, a new perception began to develop that firm's conducts plays more crucial role than structure in media performance [15]. The technical changes in the media industry reduce the role of

regulation constraints and suggest the increasing role of firm's strategic behaviors [14, 16]. The media market become increasingly competitive as a variety of internet-based media such as IPTV, Smart TV, and mobile broadcastings come to the market. As this lowers the barrier between information suppliers and users, the control of structural variables produces less

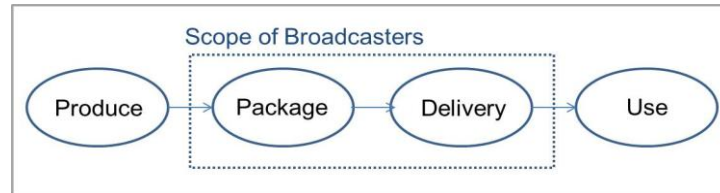


Figure 3. Information Flow in the Media Market

impact on the media diversity. For this reason, firm's conducts are more relevant to diversity in the market.

5.2. Conduct in Media

In the media industry, conducts are the acts associated with producing, packaging and provisioning contents as shown in Figure3. Contents suppliers, broadcasters and users (audiences) are collectively actors in this industry. They use existing technologies or adopt new ones for their sakes. Content users desire to access to divergent contents and content suppliers want to deliver their contents to many users. However, broadcaster keeps the gate between content suppliers and users and has strong incentive to screen contents for its commercial or political purposes, eventually scarifying diversity. In this process, they are constrained by both regulatory restrictions and technological characteristics of media. Sometimes, broadcaster and content supplier or user faces conflict of interest. Regulation supports diversity in a society and sets out rules for players to follow.

5.3. Control of Information Flow by Broadcaster

Many studies argue that ideas should be freely circulated and shared to maximize diversity in a society [17]. In other words, a society can have a greater political and cultural diversity when a variety of information is accessible to end users without restriction. This implies that the degree of broadcaster's control over content flow from source to use determines the level of diversity. Some of the biggest changes made by the adaptation of Internet in the media industry are the way of information flow being controlled and consequent change of media regulation [1, 2, 4]. Despite the decreased role of broadcaster in controlling information flow, the degrees of broadcaster's information flow control are varied depending on it's the technical characteristics of Internet-based media and broadcaster's strategic intention. Therefore, the analysis leads to the conclusion that an extent of information flow control or a level of involvement in information flow by broadcaster can serve as regulation determinant for Internet-based convergent media. Broadcaster's level of control over information flow has an inverse relationship with that of content suppliers and users. When broadcaster is in stronger position to control information, information producers and users are left with limited choices; when information flow is less controlled by gatekeeper as in Internet, content providers and users can more actively engage in information supply and selection. In short, different level of control over information flow by broadcaster justifies different level of regulation in converging environment.

5.4. Information Control Stage

In a communication system, information passes three stages: information input into the system, information delivery, and information reception. A person who owns or produces information supplies information to a central system, then system processes and transmits it, and audience receives it at end. Some argue that barriers have been sufficiently removed at the stage of supplying information to media due to media convergence and the advent of diverse media. However, there is still a bottleneck in this stage when considering influential power of individual media. Certainly a number of channels to deliver information significantly rose, but many contents still have limited access to highly penetrating media. Diversity may be compromised if content flow is restricted either in the stage of content's access to media or users' selection of content and media [1]. As broadcaster can manipulate final users' choices from the point when it selects contents from sources it is reasonable to think that its control over content suppliers also affects user's diverse use of content. Because content is not manipulated in delivery stage, the study suggests that content flow control happens when individual information is provided to broadcaster (gatekeeper), and when user selects information. This means that diversity is determined both in the times of when broadcaster selects and delivers contents (Figure4).

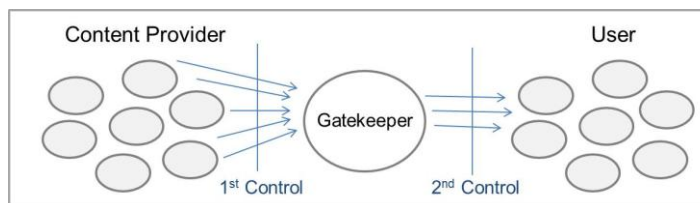


Figure 4. Information Control Stage

6. Conclusion and Implications

The convergence of media and Internet produces innovative chance in technical characteristics of media and accordingly calls for new regulation. Internet inherently distributes information control by virtue of OSI (Open System Interconnection). The OSI architecture layers network, separates the role of each layer, and ensures seamless communication between layers. Therefore information can travel any layer as long as layer adapts standard protocol, which enables information control to escape from a central point. Structuration theory was adapted to explain that the advent of new technology doesn't directly change the level of diversity, a primary goal of media regulation, but it changes behaviors of industry members, consequently affecting diversity. Regulation determinant for convergent media can be induced by studying changes in industry member's conduct, which are driven by new technical characteristics of convergent media and affect the level of diversity. Broadcaster wants to exercise its gatekeeping role in selecting and provisioning service in the market, whereas a user wants to have more choice in selecting contents. Likewise individual content provider wants to deliver its content to as many user as possible. Diversity is can be only ensured when information flows from sources to end-users without constraints. This implies that the level of diversity depends on how extensively broadcasters involve in controlling over information flow as a gatekeeper. Noting this, the study suggests an extent of information flow control by broadcaster or gatekeeper as regulation determinant of convergent media.

Many previous studies suggested a range of factors that government should consider when designing the regulation of convergent media. However, none proposed the clear relation between technology and regulation in the media industry failing to present comprehensive media determinant. The study makes practical contribution as it proposes a concept of information control as a guiding principle to regulate diverse convergent media. It is expected to provide practical grounds for future studies on media regulation. It also make academic contribution by extending structuration theory to the media industry for the first time, establishing a systematic relationship between technology and people's conducts, and conducts and regulation. However, the study has several limitations as well. It focus on diversity as the goal of media regulation, therefore more studies should be undertaken to examine the relationship between information control and media regulation from a viewpoint of economic efficiency. In addition, it will be useful to develop index that can effectively measure the level of broadcaster's information control.

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