THE POLITICAL ECONOMY OF CONVERGENCE

THE JANUS FACES OF KOREAN CONVERGENCE

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Abstract

Drawing upon qualitative data from stakeholders in convergence in Korea, this study traces the process of convergence in terms of politics, regulation, and policy, and examines how the stakeholders' interests are aligned and coordinated in the process of convergence in Korea. Using actor network theory, the study relates the socio-technological construction of Korea's strategy for convergence reform. Key research questions are: (1) What strategy has Korea adopted, (2) What social and political factors have influenced strategy formulation, and (3) How different interests have stabilised ideologies in which actors formulate their strategies based on their interests. Despite the dynamics of interactions, the actor-network around convergence has not been effectively stabilised yet, as the politics of convergence is complex and marked by paradoxical features.

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Introduction

Convergence is a key agenda in contemporary discourses about the media. While convergence affects many industries, the most noticeable convergence is between telecommunications and broadcasting. Accelerating convergence between these two industries is changing the traditional market structure. Such transformations in the media environment affect not only media structures, content production procedures, and format, but also the way content is distributed and consumed.

In terms of convergence, Korea is one of the most dynamic countries where the world's first DMB (Digital Multimedia Broadcasting) and wireless broadband were introduced. Driven by a convergence of interests among consumer demand, operator ambitions, cutting-edge network and device capabilities and government policy, the Korean communications market will be led by a new convergence infrastructure based on the integration of wire and wireless markets and the integration of telecommunications and broadcasting. Recent convergence technologies continue to collapse the traditional barriers between sectors that have been disparate up till now, like telecom and broadcasting as well as fixed-line and wireless.

Unlike the pace of advanced technological development, however, regulation and policy-making for convergence are slow and still to have a long way to go. It has been said that policy always lags behind technology (that is, functional convergence normally occurs prior to formal convergence), and the situation in Korea clearly bears this out. Technologies are changing at lightning speed in Korea, but government policies seem unable to keep up with the pace of change. Government authorities appear to be having a difficult time forming a unified regulatory authority and creating an integrated policy centred on digital convergence. Although actors involved are agreed on the need for a unified authority and a coherent policy, divergent views prevail on the approaches and methods required to forge consensus.

Currently, there are four actors in the convergence development: the Ministry of Information and Communication (MIC), the Korea Broadcasting Commission (KBC), the Ministry of Culture and Tourism (MCT), and the Ministry of Commerce, Industry, and Energy (MCIE). This multi-jurisdictional overlap has called for a pressing need for a change by both industries and regulators. While these four agencies are claiming their fair share in the envisioned regulatory body, the jurisdiction disputes between the MIC and the KBC have had the most negative impact on the process of convergence. As the collapse of telecom-broadcasting boundaries accelerates, a grey area of digital convergence between the two fields, which does not fit into existing regulatory frameworks, is precipitating stiff turf wars between the MIC and the KBC. Claiming that the digital convergence should properly fall within their jurisdictions, these two agencies are embroiled in conflict with each other over the establishment of a new body to govern the convergence industry. The all-out jurisdictional wrangling victimizes domestic industries as squanders public resources.

This study deploys actor network theory (ANT) as a theoretical lens to examine the socio-technical means through which agreements are reached during standards making and adoption. It examines how strategies and actions of actors are mediated and coordinated through standards as they pursue their own strategies in the process of transitioning to a new era. While ANT is a good tool for describing the

processes of technical and social mechanisms that go into the negotiations preceding agreements (Sarker et al. 2006), not many studies in ANT literature on strategies address the actual process and consequences of creation of strategies in a systematic way. Many studies in ANT explore technical implementation in organisational settings, but ANT has not been extensively used in exploring socio-technological change in such a large-scale, macro-level, and global setting. This study attempts to fill this gap by focusing on how actors formulate diverse standardisation strategies to pursue their own interests, and on how they relate to other actors to make that possible. It examines these ongoing translations in the context of Korean convergence facing shift-to-convergence era. This paper investigates the process involved in the development of a coherent and forward-looking convergence policy for Korea and postulates possible consequences. It sheds light on the overall Korean government's policy mechanism and suggests a better model for future policy for the convergence era. Two research questions guide this study:

RQ1: How do strategies of *translation* play out in the development of policies to regulate convergence and adoption, as well as in the transformation of relevant industries and services?

RQ2: How do actors build relationships with other industry actors and, with artefacts to shape the development of convergence policies? What roles do the actors play in the emergence of convergence?

The RQs seek to explain why the national strategy of convergence has been posited as important, and how to interpret the nature of convergence in the context of the Korean telecom and broadcasting sector. How actors interpret the nature of convergence is crucial for understanding the meaning of convergence because of its multifarious nature. The process of convergence leads us to see the envisaging of a point towards which actors are involved with what motivations, which actors are excluded why and with what outcomes, and how they are pressured to act certain ways. Therefore, this study focuses on the focal actors crafting a common understanding of convergence principles around the actor-network. From this view, convergence must be seen as a political practice in which a particular type of convergence is promoted (Wigger 2005). Policing convergence is not a neutral regulatory field in which governments perceive problems and solutions in similar ways and elucidate the best institutional and regulatory solution. Just like previous studies in innovation and strategy formulation (Gao 2005), the innovations of convergence policy and the involvement of authorities in Korea have been driven by complex socio-technical-political processes by the actors involved.

Theoretical Framework: Actor-Network Theory

ANT adopts a socio-technical perspective into the design and analysis of technological systems viewing the world as networks of technical and social actors. *Actor-network* refers to heterogeneous network of aligned interests, including people, organisations, and standards. Latour (1987) argues that the actor network-based view of the spread of innovation applies to anything from goods and artefacts to claims and ideas.

The conceptual strategy of the ANT approach focuses on linkages, connections, or relations between actors, and performances or other analytical entities. It does not seek to focus on a technical artefact's intrinsic essence. Rather, actors and net-

works of actors have an ontology that is contingent, extrinsic, and is constituted dynamically in the interactions of relations.

The core of ANT analysis is to examine the process of *translation* (Callon 1986), where actors align the interests of others with their own. Translation follows three phases. During the first phase, *problematisation*, a focal actor frames the problem and defines the identities and interests of other actors that are consistent with its own interests. The focal actor renders itself indispensable by defining a process under its control that must occur for all actors to achieve their interests. Callon (1986) calls this process an *obligatory passage point* (OPP). The OPP is typically in the direct path of the focal actor in the pursuit of its interests. Other actors may have to overcome some obstacles to pass through the OPP (Callon 1986). During the second phase, the focal actor executes these strategies to convince other actors to accept its definition of their interests (*interessement*). The final phase of translation, *enrolment*, is the moment when another actor accepts the interests defined by the focal actor. *Enrolment* also includes the definition of the roles of each actor in the newly created actor-network. *Inscription* occurs with enrolment when actors in a network embed scripts for future action and behaviour in the network. *Mobilisation* is about stabilising the actor-network by making durable relations (Mähring 2004)

Convergence as a Socio-political Process

In this section, convergence is described with the framework of actor-network components. The relationship within each component is explained from a socio-technical ensemble perspective.

Actors in Convergence

The actors in the development of convergence can be broadly categorised into four regulatory actors and each corresponding industry: the MIC, the KBC, the MCT, the MCIE, and each associated industries – telecommunications, broadcasting, cultural industries, and equipment manufacturers. Among them, the MIC and the KBC can be seen as focal actors, and a set of policies of convergence can be the OPP, the point through which other actors should pass to pursue their interests. Convergence as a national strategy is established by a consensus from all parties involved (in particular with the leadership of central government), but the goal (convergence) is viewed from different points of view by these actors. The actor-network becomes complicated to the extent that each focal actor attempts to establish their own OPP replacing the OPPs defined by others. Telecom and broadcasting industry respectively are aligned with their regulators, supporting each OPP set by their regulators. This relation of business-government collusion was an underlying theme, influencing overall the actor-network of convergence.

The KBC, a statutory independent body of the government, is in charge of overall broadcasting policies except technology and facilities (regulating programming management and advertising, recommending broadcasting licensees, deliberating broadcasting contents, and administering broadcasting development funds). Under the new Broadcasting Act, effective since March 13, 2000, the KBC is in charge of broadcasting policies (terrestrial, cable, and satellite). The Broadcasting Laws of 1997 and 2000 gave the KBC the authority to regulate the Internet services of broadcasters, but not other companies' Internet services.

MIC governs telecom markets with the Framework Act on Telecommunications, which was first introduced in 1983. The Act has undergone numerous subsequent amendments via ministerial and presidential decrees, and the most recent version is Law No. 7210, which was passed in 2004. While the MIC is in charge of telecomm policy, it is also in charge of allocating broadcasting channels and managing the broadcasting spectrum, which overlaps with the KBC's jurisdiction. Convergence requires a re-evaluation of the fundamental basis of regulation across broadcasting and telecommunications. There is a fundamental difference in the objectives of broadcasting versus telecommunications regulation.

In face of strong criticism that the two agencies have drawn back on the development of lucrative convergence services, they started negotiations to set up a new framework to govern the services in the grey area in the mid-1990s. However, talks have been futile over the past 10 years as they have yet to strike a tangible agreement on the new regulatory format to meet the challenges of convergence. The two agencies have repeatedly clashed over the regulation of convergence services, much as involved industries do (Shin 2006). The regulation of such convergence services is something of a grey area, and the government is currently consulting all parties on a new regulatory framework for the emerging development of converged services. While they were wasting time in the pork-barrel case of jurisdiction, the convergence services has failed to take up.

Obligatory Passage Point

The OPP broadly refers to a situation that has to occur in order for all the actors to satisfy the interests that have been attributed to them by the focal actor. The focal actor defines the OPP through which the other actors must pass, and by which the focal actor becomes indispensable (Callon 1986). Traditionally, the dual OPPs have been taken for granted in Korea and these dual OPP lead to a twofold move by each focal actor and its associated industry. There are different regulatory defaults for one medium (for example, broadcasting as a public resource, or telecom as an economic resource) that might not be available as easily on a converged medium.

The government (administration), one of the focal actors, is pushing for convergence between communications and broadcasting in Korea, but is facing stiff opposition due to competition between the two industries of broadcasting and telecommunications and the feud among regulatory bodies. Along with industries, both the MIC and the KBC became powerful agencies under the strong government' protection, as is exemplified by business-politics collusions and Korean's unique Chaebol structure (associations of many firms clustered around a parent company). The key authoritative powers of the MIC and the KBC come from service "licensing," which has been the greatest barrier to market entry in industries. The ultimate regulatory power granted by the government elevates the two actors' positions by setting up a high entry barrier with a walled garden approach. The complicated licensing procedures have reinforced the monopolistic position of Korea's three major terrestrial broadcasters, which are already in the walled garden: KBS, MBC, and SBS. Although these broadcasters are institutionally independent, the government is in a position to exert extremely strong influences over them, mostly by exercising authority over personnel management (recruitment and appointment). While the government's regulatory powers are now stronger than ever, the pow-

ers of legislative and judiciary bodies have been weak or minimal in the areas of broadcasting and telecommunications.

The KBC was established in 1998 as an effort to root out the legacy of state-controlled broadcasting. However, because of this short-term abrupt innovation and the resulting patchwork in the process of restructuring, redundant and overlapping functions among government agencies was a significant problem, which became the seeds of trouble in ushering in convergence.

The problems in the restructuring in 1998 led to dual OPPs in convergence. The dichotomous OPPs run by the MIC and the KBC separately regulate telecom and broadcasting, with some overlapping areas. The initial OPP (having a unified regulatory authority) set by central government made the two focal actors to create their own OPPs, because the initial OPP was a zero-sum game: It was designed to create a winner and a loser in the process of convergence. Those who lose their benefits strongly oppose the change and thus the transitional period is full of conflict in Korea.

The KBC, as a focal actor of broadcasting and also a mediator between OPP and broadcasters, not only regulates the industry and the public/commercial broadcasters, but also supports certain activities related to the broadcasting system. The KBC is composed of different board members elected by the President and the Congress. This commission has every right to support and regulate the broadcasting system, e.g., Korea Broadcasting System Board members are appointed by the KBC, as well as the board members of the Korean Broadcasting Foundation, which owns MBC. The KBC gives financial support for the independent producers that cover production costs on the open channel, a public-access slot in KBS. KBS spends money on their programs, but this slot is financed by the KBC through a huge allotment of money, called the Korean Broadcasting Development Fund, which spends about 100 million dollars every year. This money comes from a certain percentage of the revenues from commercial broadcasters. Satellite channel providers are granted licenses that privilege them to use the public facilities, pubic frequencies and public access.

The MIC, as a focal actor of telecommunications and also a mediator between OPP and telcos, is responsible for regulating the telecommunications market and industry and for implementing telecommunications standards for Korea. The MIC is funding most of the R&D in Korea through the Electronic Technology Research Institute. In addition, the MIC has authority over broadcasting frequency allocation (Article 9 and Article 10 of the Frequency Law), broadcasting standards (Article 37 of the Frequency Law), and broadcasting facilities and technologies (Article 27 of the Broadcasting Law). To make matters worse, in addition to the current situation, which shows signs of two forms of legal hegemony because of competition between the MIC and the KBC, the politics of convergence are even more complex and marked by a range of paradoxical features.

Conflicting Problematisation

A focal actor identifies potential strategies during a *problematisation* stage (Callon 1986). Preliminary decisions concerning what strategy will be adopted, as well as how it should be enforced, are made at this stage. *Translations* refer to a variety of ways by which actors seek to persuade others and enrol them into an irreversible

alignment with an existing or prospective social network. Through *translations*, actors attempt to create a forum, a central partnership of network, which all the actors agree is worth building (Callon 1986).

As expected, interviews with the officials of the MIC and the KBC reveal that their interpretations of convergence are not unambiguous and unidirectional, rendering the convergence laws and practice multidimensional phenomena. Thus, activities employed under the catchword *convergence* leave wide scopes in disseminating a particular *problematisation* of convergence laws and practices in Korea. Each vision on how the governance of convergence should be organised is ingrained in a particular industry-structure and serves particular socio-economic goals. Postulating the appropriate scope and content of convergence control is by its very nature a politically contested issue.

The regulatory role of the MIC has been strengthened in the interest of preserving fair competition in the telecommunications sector (Shin 2007). The MIC's concerted effort to deregulate and upgrade the telecom market has benefited the country's Internet and wireless market immensely. The MIC wants to problematise this competition momentum in the convergence area by promoting cut-throat competition.

As a part of "Strategies for Convergence IT Korea," the MIC is pursuing an "IT839 strategy" roadmap to lead Korea into the convergence era. This involves introducing eight new technology services investing in three major network infrastructures (such as their Broadband convergence Network [BcN]), and kick-starting nine new engines of growth. Through IT839, the MIC attempts to revitalise the existing telecommunications market. Beefing up the current IT system infrastructure to bring new investors into the market will be the key link to growth in IT industry. In particular, the BcN is notable as it is problematised by the MIC as a keyword against the KBC. The BcN was perceived as the major vehicle to advance the convergence process. The BcN is also called a "neutral" network, a national high-speed backbone, a platform to converge wired and wireless communications and broadcasting, and voice and data. Thus, the network is a window of opportunity for the MIC as well as the telecom industry. Officials at MIC said, "The driving force of technology convergence can be seen in competition, where the need for new, convergence-based solutions is arising in parallel to the evolution of enabling technologies." They believed a neutral network like the BcN would induce a market pull towards convergence, in parallel to the technology push.

In opposition to the MIC, the KBC problematises democratic media as the creators of a public sphere, arguing that any broadcasting services, regardless of transmission methods, should be regarded as broadcasting, and should thus fall under its purviews and rules. This argument is based on a classical understanding of public broadcasting service, the notion that broadcasting is a public utility. According to the Article 19 in the Broadcasting Act, public broadcasters are editorially independent, publicly accountable and adequately funded. The Act is based on international standards on freedom of expression, under which public broadcasters must be protected against political or commercial interference, and be obligated to serve the public interest by providing balanced and impartial coverage. Under this public-sanctioned view, the KBC holds that independence and public interest in broadcasting are fundamental values, even in convergence

media: Convergence media are supposed to serve the public interest, convenience, and necessity, and commercial activities should be controlled and regulated in the interests of democracy and freedom from the excess of intrusion, manipulation, and wasteful expenditure. The KBC, which will be reconfigured drastically if and when the convergence law goes into effect, is posing a sticking point. The KBC contended that a unified regulatory body would pose a threat to the independence of broadcasting networks.

Mobilisation: Making Industry Allies to Support Each Own Problematisation

In the *mobilisation* stage, the focal actors find allies and build alliances to enhance their own *problematisations*. The KBC and the MIC find their allies in the broadcasting and telecommunications sector respectively. The KBC and the MIC mobilise each corresponding industry to take their sides to enhance their arguments. Both sectors voluntarily participate in the convergence brawl because the interests of both telecom and broadcasting sector are aligned with those of regulators and because the outcome of convergence will significantly affect their respective businesses.

In order to join the responsibilities for the management and authorisation of broadcasting that are currently handled separately by the MIC and the KBC, a program should be considered to establish an appropriate regulatory framework for integrating broadcasting and telecommunications services. A consensus has been reached that the government needs to wrap up long-time turf wars and to streamline regulations for the convergence era.

This consensus, however, has embedded a significant dilemma in its realisation: A long history of conflict between the MIC and the KBC presaged the convergence battle. While both realised the need for a unified body and integrated regulation, they failed to agree on how to forge a new system, since the discussions highlight their conflicting interests on who will have jurisdiction over the lucrative convergence services. The MIC and the KBC have each put up a rearguard action to keep convergence services within its jurisdiction. In particular, the two have crossed swords over the convergence of telecom and broadcasting, and it has been observed that their turf wars are a bigger problem than technology and product development. Under the conventional regulatory definitions and frameworks, it is difficult to decide which agency should govern convergence services.

For example, the MIC and the KBC contest over which one should regulate IPTV services. Telecom service providers are ready to launch IPTV services, but have to wait for the regulatory issues to be resolved before proceeding. The problem occurs on the definition of broadcasting. Under the current law, "broadcasting" refers to a specific sender "transmitting" scheduled information to the public at large, while "telecommunication" means that information is transmitted and received in both directions by electronic means. It is difficult to categorise convergence services under these current categories. On IPTV, the positions of the MIC and the KBC largely differ on four points: (1) what the characteristics of services are, (2) what rules apply, (3) how to divide the market when telecom giants such as KT enter, and (4) what the service's area of business should be.

In early 2006, the government set up a task force with the aim of establishing a coordination committee to complete a new regulatory framework for the grey area. In the meantime, the MIC proposed two bills as a way of enhancing their

problematisation: one is at the content layer – the Broadband Audio-Visual Service Law – and the other is at the network layer – the Broadband Convergence Network Act. The MIC hoped to enact this new law, the Broadband Audio-Visual Service, because the MIC saw IPTV service as a convergence service combining real-time broadcasting and value-added telecom services. As with Korea's broadband success, the structural separation of infrastructure ownership and service provision allowed new points of entry into the broadband service market via the cable network (Wu 2004). The law is designed to lower barriers for those who want to enter the IPTV or a similar service market, but it maintains the existing regulatory framework for real-time broadcasting in regards to composition, content, and advertising.

The broadcasting sector is strongly against the Act, which abolishes area limits and eases entry for broadcasting convergence services such as IPTV. The KBC regarded the IPTV service as a kind of multimedia service ranging from TV to audio/data broadcasting. It shared the opinion of cable operators, who view IPTV as an extension of cable TV. On the other hand, the MIC hoped to launch the service by slightly revising the existing broadcasting law, but has yet to present its final draft.

In fact, the *problematisation* and subsequent *mobilisation* of each focal actor faced problems from the beginning. The real problem from the beginning of the discussion of convergence has been that the regulatory structure in Korea is widely dispersed, comprising many regulators within the state bureaucracy and several mediatory regulators, each of which has different areas of jurisdiction (Kwak 1999). The discussions on forging a new regulatory system were primarily related to their conflicting interests on who would have jurisdiction over convergence services, instead of on how to create a unified body and how to forge new regulation. While the MIC is focusing on tangible digital convergence technologies, the KBC is focusing on intangible convergence principles. The MIC tends to see convergence from a substantive standpoint, where different jurisdictions adopt similar regulatory devices in terms of scope and content and therefore converge under a unified agency, whereas the KBC tends to see it from a procedural viewpoint, which implies the adoption of similar regulatory principles and practices in the regulation of convergence. In the beginning, different stances toward convergence also contributed to the problem. The MIC's approach to convergence is more or less a pro-market-oriented industrial policy, whereas the KBC's approach is a public interest-oriented policy (Table 1).

What has made matters worse is the complicated web of regulation: The licensing of the broadcasting operator follows a dual path in that the operator should be recommended by the director of the Broadcasting Board, but the license must be granted by the minister of the MIC. This web of complicated regulation renders the *mobilisation* ineffective, because providers themselves keep aligning with and also parting with almost every issue depending on their particular interests.

Table 1: Differing Philosophies in Regulating Telecom and Broadcasting

MIC (telecom)	**KBC (broadcasting)**
Universal access	Universal availability
Control over interface	Impact on public/society/public interest
Strong competition and less regulation	Less competition and high regulation
Control over network	Control over content

Interessement: Vertical vs. Horizontal Regulation Model

During the *interessement* phase, the focal actors strive to convince other actors to accept their *problematisation* by enacting their strategy. Interestingly, the *interessement* of convergence is similar to the discussion of vertical and horizontal model. The vertical, top-down model involves media-specific regulation, whereas the horizontal regulation model separates content from conduit and subjects the horizontal layer to regulation only when market distortions occur, or when they threaten to occur due to market power exercised by one or more stakeholders (Frieden 2003). By and large, the MIC argued for the horizontal model, while the KBC favoured the vertical model.

The MIC argued that convergence technology business is tilting horizontally. In the horizontal model, smaller competitors are sustaining themselves on discrete pieces of the business. Some companies offer the core technology, some specialise in design, some offer services, and some produce content. The MIC claims IPTV needs to be seen in a horizontal model, and thus IPTV should be under its control because IPTV originated from telecom networks. In the opposing camp is the KBC, which counters that it should be the supervisor, arguing that the IPTV applications should be offered as one integrated service. The KBC initially argued that convergence fell under the category of broadcasting. However, as the KBC's responsibility is to regulate Webcasting content, it was stymied over how to handle broadcasters' Internet content. Facing fierce resistance from public and civil associations, the KBC later changed its view, introducing the concept of "special category broadcasting service" into the Broadcasting Act, which enabled regulation of a convergence service provider such as a broadcasting company.

In mid-2006, the government set up a coordination committee with the task of creating a new regulatory framework for convergence services. One suggestion put forward by the MIC was to change the rules of the game. Instead of dividing services into broadcasting and telecom, the nation should classify them into "networks" and "content": creating a horizontal regulatory system based on the reclassification of the existing telecommunication and broadcasting businesses into transmission and content businesses, under which IPTV service providers would be classified as transmission operators and subject to an advance registration system. This proposal by the MIC is similar to the horizontal model that delineates the horizontal characteristics of Internet Protocol communication. In interview, a MIC official said, "A demarcation line should bisect network and content with the MIC governing the network while the KBC regulates content. The idea represents a revamp from vertical regulations to horizontal regulations."

Arguing that current regulations are no longer appropriate for convergence services, the MIC has proposed a regulatory system that classifies technologies based on their common layered characteristics, instead of regulating each communication technology with a disparate set of rules. Horizontal policy advocates argue that this modular approach to regulation promotes competition by forcing all telecommunication services to adhere to a uniform set of characteristic-based rules, thereby enhancing the competitive characteristics of an open marketplace. This horizontal model, which treats hardware and software in parallel, faces severe opposition from major broadcasters because horizontal structure places the major broadcast carriers in severe competition with entering broadcast carriers, as well

as with telecommunication service providers. Along with the KBC, the national and cable broadcasters stand together in firm opposition to the horizontal policy, in the name of broadcasting facilities as public resources, given the magnitude of its impact on the public, claiming broadcasting facilities are public resources.

Enrolment: The Government's Inscription

In the *enrolment* phase, actors pursue their own strategies and reach an agreement on the scope and content of the convergence plan. In the process the different interests of a range of actors have been translated into the agreement. *Inscription* refers to the way technical artefacts embody patterns of use.

In this stage, the government administration started to enforce strategies, as the discussion was not progressing at all. In fact, there was concern that the preparation and the discussions were counter-productive, deepening gaps among the actors. After several failed negotiations, the government established an independent committee, the Telecommunication and Broadcasting Convergence Promotion Committee in late 2006. Comprising 20 members from government and private sectors, the Committee worked on legislation to create a unified regulatory body by the end of 2007.

In early 2007, despite opposition from broadcasting sector, the government endorsed a resolution establishing an agency – Convergence Committee – to regulate both the broadcasting and telecom fields. Telecom companies welcomed the long-awaited progress. They hope the new committee will accelerate the introduction of convergence services. On the other hand, some civic groups and unionised journalists opposed the plan, fearing that it could threaten the cherished value of independence of broadcasting.

With the establishment of the Convergence Committee, convergence media are defined as convergence technologies itself, not telecom and not broadcasting. This is the government's inscription that forces the definition, embodying future pattern of use.

Political Economy in the Development of DMB: Interests and Ideology of the Stakeholders

In order to better illustrate the dynamics among actors, this study uses the DMB development as an example for such political economy of tangled interests and contrasting ideology among the actors. This additional analysis includes the interactions of industry actors, thus it gives further insights how the interactions among regulatory actors influenced and were influenced by each other. Mahring et al (2004) argue that the ANT theory could be deepened with the addition of the political economy viewpoint. The political economy-inspired analysis of DMB focuses on the complex relations of the stakeholders of DMB, which include contents, services, standards, distribution networks, equipments, and infrastructure.

DMB is a mobile TV service that allows cell phone and personal digital assistant users to watch terrestrial digital television on their portable communications devices. Driven by a convergence of interests between consumer demand, operator ambitions, leading-edge network and device capabilities and government policy, the DMB market in Korea has emerged in late 2005 for the first time in the world as a global test-bed. The MIC and KBC had a difference of opinion about their

jurisdictions with respect to DMB, with the MIC positioning DMB as an extension of telecommunications services. Not only is the situation uncertain, but the introduction of newer services is being hindered.

In the analysis using the political economy framework, two relations are analyzed: (1) broadcasters vs. telcos and (2) MIC vs. KBC. The political economy analysis shows that the potential and challenges of DMB are largely misunderstood – and not just by the regulators, but by many within the communications industry as well. The analysis also shows that content providers hold the keys to the success of the whole value chain in providing DMB service. Telecom carriers are trying to have access to content in order to maximise the potential of DMB.

On the industrial supply side, DMB has three products and service groups – content, transport, and processing. Several stakeholders are grouped in this category. First, telecom carriers are aggressively pursuing full-fledged DMB services as a new cash cow. Telcos see TV as a potential extra application for the local networks, which they intend to build and unbundle. Second, satellite TV service operators are fiercely opposed to DMB, whose survival will be threatened when full-blown DMB services start up. The third set of stakeholders is the terrestrial broadcasters who will offer the over-the-air content to the DMB carriers. Broadcasters in general did not favour the convergence services as they would lose their exclusive control over the management of TV programming.

The three national broadcasters are opposing telecom carriers providing DMB. In regards to content, the fundamental question in the DMB has been the retransmission of over-the-air content via DMB. Three national broadcasters are opposed to sharing their content with the DMB providers. The national broadcasters intend to maximise their power, leveraging the content retransmission issue. Their argument opposing use of their content in DMB is that broadcasting content cannot be commercialised in the name of public interest. Yet, the more compelling motivation can be that they do not want to lose their hegemony in the market where they had been protected under public broadcasting rule systems (Shin 2006).

The broadcasters argue that broadcasting content should not be commercialised in the name of public interest. Telecom carriers counter-argue that subscription-based content is the only way to operate DMB in a sustainable business model. These discrepant views imply a significant disjunction in the socio-technical perspective. KBC has been unable to issue a business license needed for the DMB in the face of strong protest from some of its member broadcasters. The protesters' argument is that retransmission would tarnish the public interest of broadcasting and threaten broadcasting as public resources. The nation's main broadcasters refuse to air their programs through the DMB services.

Telecom industries have been seeking a way to retransmit over-the-air broadcasting content to DMB. Mobile telecom industries have been suffering from stagnant revenue in the saturated wireless market. Mobile providers are now turning their strategic attention to the new cash cow of DMB. The thorny issue around content retransmission reveals the implication of a layered approach in DMB (Shin 2006). The broadcasters still have a vertical model of communication-- that is, that broadcasting infrastructure offers broadcasting content, whereas telecom infrastructure is provisioned to provide telecom content, and Internet infrastructure offers Internet content.

Since the introduction of DMB, the MIC and the KBC have each been attempting to take the initiative on DMB, which has created a challenging political environment. Amongst such confusion, the current classification of satellite DMB service has not been decided yet. S-DMB is so far regarded as neither telecommunications nor broadcasting. Under the scheme, S-DMB service requires both of the amendments of current laws and establishment of new and more laws to appropriate laws, because it has had difficulty regarding the number of channels that can fit on the whole telecom spectrum due to frequency limitations. The current Broadcasting Law has provisioned maximum share limitations in S-DMB and has limited participation in terrestrial DMB service in order to protect the telecommunication operators from the broadcasting industry. Along with such regulatory provisions, the current regulatory structure in Korea seems to limit the wide possibility of convergence. The underlying question is about ontological and semantic distinction: Does DMB belong to the telecommunication industry or is it a functional extension of broadcasting? The current practice of the KBC is to define DMB as an extension of traditional broadcasting, based on the emerging medium's functionality. This places it within the framework of traditional broadcasting and, according to this framework, the KBC requires DMB carriers to observe key broadcasting principles and public interest such as universal service. This KBC expectation imposes a double burden on the telecom carriers who provide DMB service because they must obtain a broadcasting license from KBC and must acquire content from their potential competitors before they can offer DMB service. Along with the KBC, the incumbent broadcasters stand in firm opposition to retransmit their content over DMB in the name of broadcasting facilities as public resources and given the magnitude of its impact on the public. It appears that the broadcasters are concerned that their exclusive control over the broadcasting system would be significantly loosened. The current battle between the broadcasting and the telecommunications sector will no doubt continue, and this battle promises to significantly undermine the development of convergence services.

Table 2: DMB Layers

Layers	Players
Layer 5 (Mobile-specific content development)	Program & content providers (Broadcasters: KBS, MBC, SBS & YTN)
Layer 4 (Service providers)	ASP, game providers
Layer 3 (Platform operation, content acquisition & commissioning, accessibility expansion of content to customers)	TU Media Corp.
Layer 2 (Mobile phone, PDA, PMP, in-value device, other equipment such as Gap Fillers)	Device Manufactures (Samsung Electronics and LG Electronics)
Layer 1 (Transmission network, satellite operation, infrastructure & technology)	SK Telecom

The political economy of DMB shows different aspects of DMB and their dynamic interactions – technology, service, market, regulation, and users. The overall

development of DMB shows that its technologies are relatively well developed, whereas other aspects of markets, users, and regulations are not. It also clearly exemplifies that convergence is not only a technical question but also an economic, social, and political issue. From a technological perspective, convergence makes it more and more important not to rigidly separate different media as almost all media content is now produced, edited, distributed and stored digitally. On the economic level, convergence in Korea shows the increasingly horizontal concentration of media ownership, with the merging of different media sectors as part of the same huge media conglomerates and markets. From the market and users' point of view, it seems that the demand from market and users are not strong enough to pull the new emerging technology of DMB. This developmental process leaves much to consider in terms of the political economy perspective. The market and user side especially have been neglected in the development of DMB. The main reason for DMB development by telecom companies has been the new revenue source for the telecom companies. Thus, the needs of the prospective market and users tend to be predicted in a too positive way. Instead of a solid framework, a provisional case by case approach is used as the regulation on DMB has not been established yet. Regulation does not reflect the turbulent change of technology and industry interactions. This might cause a waste of resources and over-regulation of the technology.

Divergent views among players operating at different layers also deter the development of DMB. On the one hand, there are those who see the technical changes producing of necessity a social transformation of revolutionary proportions. On the other hand, there are those who emphasise the gradual nature of the changes, and the extent to which the realisation of the potential of technological innovation depends upon social and economic decisions. While there are a range of different views, one view has elicited consensus from different players: content will be the key factor in the success of DMB. The discrepant views in the content sharing imply the significant disjunction in the socio-technical perspective. DMB performs in Janus-faced ways that are ironic, intricate and paradoxical, and it is argued that these traits are essential to understand the phenomenology of convergence in Korea.

Conclusions

This study makes a contribution to ANT literature. As Gao (2005) indicates, ANT has been used mainly in analyzing the process of technology/system implementation and design in organisations. The current study shows that ANT can be broadly used and extended to investigate the formulation of policy, regulatory regimes, and strategy. In addition, the findings of this study show the benefit of ANT by incorporating contextual analysis. Many ANT studies tend to depoliticise actor-network issues by positing a taken-for-granted problem-solving political process. The contextual analysis used in this study is valuable as it highlights the interests of actors and their power to influence an inscription, for example, the willingness of interest translation and the capability to resist a translation. Especially noteworthy contribution is that the critical observation of the interplay of players and how these could determine the success or failure of such a significant technological development. What is significant some of the findings on what is leading to Korean government's failure to cope with the changes could also be relevant for

many other countries which are also on the throes of a technology revolution. The observation on the changing role of the government *vis ŕ vis* media is also noteworthy and could unravel many interesting topics for future researchers. Also the web of complexities around policy on IT and media, which is carefully scrutinized in the paper, can be the future topics.

As the digital media technologies are continually evolving, there is no such thing as a perfect state of convergence. While convergence is a reality that needs urgent regulatory attention, it is important to recognise that there is no single ideal response to convergence. Thus, whether it is desirable or possible to have a national strategy concerning convergence is debatable. The objective of this research is to highlight the process and consequences of the convergence strategies held by different focal actors. The focus is to examine the *problematisation* that the focal actors in convergence developed to *enrol* the other actors, how focal actors promoted their knowledge claims, and how these claims were received by the marketplace. It tracks the overall convergence process by arguing that convergence is a political practice carried out in parallel by the two focal forces of telecom and broadcasting. This study shows how networks of aligned interests are created through the enrolment of players and the translation of their interests, so that they are willing to participate in particular ways of thinking and acting that maintain the network.

The investigation of the dynamics of convergence with the actor-network framework reveals that, while industry and market convergence have evolved smoothly, regulatory convergence has been rocky. Convergence challenges existing institutional arrangements. The concept of dual focal actors possessing an OPP that allows each to translate the interests of other actors (Callon 1986) is an ineffective process due to fierce resistance. By setting convergence policy with their own indigenous OPP, the MIC and the KBC became powerful focal actors, and every actor had to go through it, but the *translation* process of these two actors has not been successful. The *translation* could have been effected through mutual *interessement* and democratic social pact. However, these actors are now challenged by their self-centred convergence policy, and criticism is growing that each is trying to become an influential regulatory agency at the expense of the public interest. The *problematisations* of the both actors were prompted by the concern over decreasing or even losing their powers in the convergence era. Such concerns bring powerful actors onto their sides, the telecom industry versus broadcasters, both of which act as *de-facto* focal-actors. Historically protected and privileged, the growing powers of the two sectors are now seriously challenged by the emerging convergence issues. The politics of convergence reveal that neither the MIC nor the KBC has proposed feasible convergence regulation.

Despite the successes achieved thus far through the government-led strategy, this paternalism will not be tolerated for much longer by players at the forefront of convergence. The Korean history of telecom/broadcasting is full of examples of government that tried and failed to successfully lead a country's economic growth. Korea's economy is outgrowing this old mentality of the government dictating to the market. Government paternalism has been questioned and resisted by actors who want to extend their privileges beyond the pre-convergence era by translating their walled garden monopoly into newly forged terms of politics – disguised names of competition and public interest.

In closing, this study concludes that both focal actors in this case lacked a socio-technical understanding of the policy formulation process: the focal actors' bureaucracy and group-egotism have led them to stick to inadequate regulatory frameworks for convergence, which has led to endless discussions and wastes of valuable public resources. As for the government, poor national mechanisms for ensuring accountability, competition, transparency, and political oversight both explicitly and implicitly allowed the MIC and the KBC to abnormally dominate their respective sectors contributing to the stifling of telecom and broadcasting providers through business-government collusion. The alternative route of the post-industrial era has been labelled with the catchword "convergence." The problems in convergence can be the tip of a huge iceberg in the Korean political economy milieu. Convergence in Korea has occurred only at a functional/technical rather than at a formal/political level, leaving the underlying traditional policies largely intact. There are significant obstacles that stand in the way of such convergence: politics, economics, culture, social and commercial norms and legal mentality. Unless there is paradigm change in policy in communications, similar problems will likely continue to occur in the future. Despite the turmoil over convergence policy development, technological convergence in Korea continues to be developed in industry, markets, and technology sector at a fast rate.

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