

## Policy Initiative Dilemmas Surrounding Media Convergence: A Cross National Perspective<sup>1</sup>

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**ABSTRACT** *The discourse surrounding convergence of mass media content and infrastructures has been fraught with extravagant expectations and rhetoric. This article utilizes a cross-national perspective and focuses on regulatory aspects of the media convergence issue in order to explore the disconnect between the hype and realities of convergence. Three research questions characterize the relevant existing policy initiatives, identify obstacles to convergence and in comparativist terms ascertain which policy models have been relatively more effective. This paper adopts a case study structure integrating convergence policy models in the US, South Africa, Japan and India.*

**Keywords:** convergence; digitalization; integration; policy initiatives; United States; South Africa; Japan; India.

### Introduction

The process of achieving technological convergence of traditionally discrete media forms (voice telephony, broadcasting and data-based information technology) has been highly problematic. Progress towards this media convergence phenomenon has been fraught with complications as policymakers and industry players struggle to reach agreement on the best way to offer converged, multimedia and digitalized services. Many scholars<sup>2</sup> have pointed to a fundamental disconnect or dichotomy. On the one hand, there has been considerable exaggeration regarding convergence in theoretical terms spurred by the emergence of digitalization. On the other, is the reality that convergence has not materialized in concrete practical terms, despite numerous policy initiatives and industry attempts. While there are numerous corporate and technology-based factors, which to varying degrees have impeded convergence, ultimately the fact remains that the phenomenon of convergence has not lived up to its hype.<sup>3</sup>

Given the scope of the challenges that true convergence faces, it is important to address the issue from an ambitious and multi-faceted international perspective. As

Verhulst<sup>4</sup> aptly points out, 'in addressing the new regulatory paradigm, governments do not have the comfort of being able to consider issues simply within the confines of their four territorial walls'. Consequently, technological advances such as innovation-based converged services transcend traditionally defined political boundaries. Therefore industry and policymakers need to be cognizant of such boundary erosion in the development of their services and policy initiatives. This study offers a cross national approach addressing policy initiatives adopted in various regulatory environments that are still struggling with the complex task of establishing regulatory frameworks that cohesively address the issue of multimedia services. Such a comparative perspective offers distinct value in drawing out insights into why the process of convergence is necessarily so slow and deliberate.

Before addressing the policy implications for convergence in international contexts, it is necessary to operationally define the term 'convergence'. This is crucial in order to construct a realistic, accurate and focused treatment of the term that does not subscribe to or fall victim to the hype and unrealistic expectations surrounding the phenomenon. It is also critical to the process of ascertaining whether media convergence is an inevitable phenomenon and whether it has positive or negative connotations. Convergence is typically identified as a three-dimensional phenomenon comprising technical, organizational, market and regulatory components.

In this paper convergence is defined within two contexts: integration and digitalization. It focuses on the technological dimension of convergence. While integration has many meanings in different contexts, here it will be defined as a process of transformation measured by the degree to which diverse media such as phone, data, broadcast and information technology infrastructures are combined into a single seamless all purpose network architecture platform. As van Dijk<sup>5</sup> has observed, it involves an

integration of transmission lines, transmission capacity and transmission and reception techniques that amalgamate digitalized media signals by cable (twisted pair phone lines and cable television) and by air (radio and television broadcasting). Data on telecommunication lines and television receivers constitute a fundamental metric assessing the extent of integration.<sup>6</sup>

The second construct is digitalization which, unlike the definition of integration presented here, is not so much defined by the physical infrastructure as by the content or medium itself. The term may be measured or operationally defined by the proportion of diverse old analog media such as conventional voice telephony and broadcasting which has been converted and is available in digital form. Van Dijk<sup>7</sup> describes four key trends in communication and information technologies, which have established the foundation for convergence including: 'micro-electronics; digitalization; new connections and software programming'. However, digitalization will be emphasized here as it is most germane to the phenomenon which will be subsequently discussed. Van Dijk<sup>8</sup> suggests that digitalization means breaking down analog signals into bytes consisting of ones and zeros.<sup>9</sup>

This paper discusses comparative international implications of the convergence issue through an exploration of multiple policy initiatives to promote digitalized multimedia services in five sections.<sup>10</sup> The first section poses three inter-related research questions that establish the foundation for the conceptual themes explored in the ensuing discussion. The second section serves as a literature review.

The review synthesizes two of the dominant paradigms or conceptual frameworks, which have contextualized the founding influential thinking surrounding policy aspects of the media convergence issue, namely technological determinism and social shaping theory.

The third section offers in-depth comparative assessment and evidence from four cases: the United States, South Africa, Japan and India, all of which have adopted prominent policy initiatives in pursuit of convergence in the last few years. The analysis of each case centers on two primary variables, namely: the level of development of media/telecom infrastructure and the interventionist orientation of regulation. Each of the four countries displays divergent interests and varying levels of basic socio-economic and mass media infrastructure/development. Each also favors unique methods for setting policy such as pro-competition, pro-private sector participation, independent and regulatory involvement. Each also displays varying leanings towards liberalization, corporatization, or deregulation agendas. However, they all share two policy imperatives that are essential to this analysis. One, all countries have highlighted policy initiatives recognizing that convergence is a top priority in the communication sector. Secondly, all have been unsuccessful in achieving an adequate and comprehensive solution to the convergence issue. The fourth section is structured around articulating the study's findings. Here the paper's research questions will be revisited. Finally, the fifth section critically assesses the value of convergence within the context of the four country models.

### **Research Questions**

Several studies<sup>11</sup> have addressed the discourse over convergence and its limitations as a real world phenomenon. This paper offers an original contribution to existing scholarship by raising three interrelated research questions, which collectively produce insights into political and structural impediments to convergence. The questions are explored within the context of diverse national models noting similarities and differences in their experiences with converged media initiatives. The three linked research questions are as follows.

- (1) What are the elements that lead to the disconnect between policy conception and implementation in different countries?
- (2) What are the primary obstacles that obviate convergence and how are they manifest in impeding progress towards realizing a cohesive regulatory framework for digitized multimedia services?
- (3) Based on respective policy initiatives, is it possible to reach any meaningful conclusion on which case is furthest developed and most likely to attain pervasive convergence at a systemic level, and if so why?

### **Literature Review**

Policy analysis provides an apt methodological basis approach which is analytically useful in addressing the subject matter presented here.<sup>12</sup> In order to assess the significance of convergence within diverse settings and its regulatory ramifications in a contemporary context, it is important to consider briefly how the media has been regulated in the past. Pool<sup>13</sup> has explored the regulation of various analog technologies and media. He argues that a convergence of modes is upsetting what was, for a while, a neatly trifurcated system. This suggests that regulators, sensing

the disquieting effects of convergence, began to address the development of new digital technologies as they ventured into un-chartered territories. Consequently, in order to obtain meaningful insights, it is important to understand the trajectory of the media sectors over time. Pool<sup>14</sup> addresses convergence between historically separated modes of communication. Specifically he explores the 'convergence between the telegraph and the telephone, the telephone and the radio and print and electronics' from a historical perspective going back to the early twentieth century. For example, his discussion sheds light on the uneasy relationship between AT&T and RCA in the 1920s who had carved out separate but complementary domains but were exploring technologies that could integrate their networks.

Theory is useful in understanding the ramifications of policy initiatives within the context of convergence among media sectors. Technological determinism serves as an apt example of a theory which explains how technological innovations, such as convergence and digitalization, have deep and profound policy and societal implications. According to Chandler,<sup>15</sup> technological determinism may be defined as 'a conceptual school of thought that seeks to explain social and historical phenomena in terms of one principal or determining factor', namely technology. It is a doctrine of historical or causal primacy. Two scholarly works are particularly emblematic of the relevance of technological determinism to thinking on new technologies such as the convergence issue. First Thomas<sup>16</sup> outlines some of the major changes that are taking place in information technology and their potential social impact. Furthermore, he classifies the changes on the basis of whether: 'a.) they represent extrapolations of existing trends; b.) are imminent breakthroughs in new technologies; or c.) finally are meta-technological changes (changes in the way new technology is developed or deployed)'. Thomas is a proponent of technological determinism and his work posits 'correlations and even causal relationships between evolving technologies and their cognitive and social effects on the individual'.

In the second contribution worth noting, Verhulst<sup>17</sup> draws a distinction 'between "hard" and "soft" variations of technological determinism that are particularly relevant to the convergence issue'. For example, hard or strong technological determinism posits that 'a particular communication technology is either a sufficient condition or at least a necessary condition for determining social organization and development'. Consequently, technological development is perceived to be an autonomous force independent of social constraints. Alternatively, soft or weak determinism claims that 'the presence of a particular communication technology is an enabling or facilitating factor leading to potential opportunities which may or may not be taken up in particular societies or periods'. However, it is important to point out that Verhulst does not particularly subscribe to the technological determinist perspective and at times is critical of its assumptions. Consequently, he describes this referenced article as taking a middle path between technological determinism and social choice.

Social shaping theory (SST) functions as a countervailing theoretical paradigm that offers an alternative perspective on how policy initiatives on convergence are socially constructed and framed. Studies of SST emerged in the 1980s through a critique of the prevailing 'technological determinism' tradition, which limited its scope of inquiry to monitoring the social adjustments required by technological progress.<sup>18</sup> From the outset, the theory was influenced by a desire to democratize technological decision making (so as) to subject it to forms of social accountability and control.<sup>19</sup> Much of the research on technology policy within the SST

paradigm<sup>20</sup> highlights the role of the state in the regulation and promotion of specific innovations. For example, the analysis of technological convergence focuses on how the wider social system can limit choice and technological change.<sup>21</sup> SST is framed on the assumption that technological change is patterned by the conditions of its creation and use, rather than developing solely according to inner technical logic.<sup>22</sup> The scholarship<sup>23</sup> thus far has focused on at least two key socio-economic factors that pertain to new communication technologies—the content of the technologies and the processes of innovation.

To complement the literature on technological determinism and social shaping theory, it is necessary to consider some of the seminal conceptual studies on the import of those factors which arguably have had the most profound impact within the ongoing context of convergence. Herman and McChesney<sup>24</sup> have drawn attention to the market power of media corporations and systems. According to them, when the global media system is thought of as part of a converging global communication system, it alters our perspective in two important ways. First ‘the information and communications media sector is an enormous part of the global economy, with output valued at almost \$1.5 trillion in 1994’.<sup>25</sup> Secondly, ‘global convergence has created greater uncertainty in what had been relatively stable global oligopolistic media, computer, and telecommunications markets’. The authors also demonstrate that ‘these corporations are able to use corporate power to forge markets that are not competitive in the traditional sense’. They state that ‘competition in media markets is quite different from the notion of competition that dominates popular usage of the term’. Such popular usage is based on competitive markets where there are innumerable players, price competition, and easy entry. They argue that this notion of competition is not applicable to communication markets because of synergies and mergers and acquisitions in the sector that have accorded actors quasi monopoly power. Consequently, multimedia markets allow oligopolistic conditions where only a handful of firms compete on a non-price basis with structural barriers to entry.

In a more recent work, McChesney<sup>26</sup> notes how

a global oligopolistic market that covers the spectrum of media is now crystallizing with very high barriers to entry. Aside from oligopolistic dynamics due to privatization and commercialization we are in the midst of a sweeping reconstruction of global telecommunications from the system of non-profit monopolies that dominated 15 years ago.

It is important to keep in mind that, ‘national markets remain, and are indispensable for understanding any particular national situation, but they are becoming secondary in importance’.<sup>27</sup> Given the capacity of transnational corporations to forge oligopolistic markets and the phenomenon of privatization in global multimedia markets, these actors’ power may be explained by a ‘market-force determinist’ model in addition to the technological determinist theoretical model referenced earlier. However, some scholars<sup>28</sup> take issue with the notion of the oligopolization of international media markets. These authors suggest that there is no consensus that media markets are becoming more concentrated on average. They suggest that as firms get bigger, the markets also expand. This phenomenon dilutes MNCs’ market power.

To sum up, the literature that is relevant to the policy initiatives on convergence that different countries have pursued adopts two divergent approaches. On

one hand, there is a strain of research that subscribes to technological determinism. This assumes that technology plays a strong direct role in influencing policy and other variables in the media landscape. On the other hand, social shaping theory offers a countervailing approach which rejects technological determinism and submits that a number of variables including policy initiatives can play a strong role in shaping how technology is framed and implemented in social contexts. A review of the literature on technological determinism and social shaping theory will be useful in raising insights into the ensuing concepts based on converged technologies.

### **Case Evidence**

The cases were selected because they pose an analytically interesting set of advantages and disadvantages inherent in the various countries' policy initiatives. In order to justify the inclusion of these four cases, it is important to identify key critical variables that are implicit in the theoretical discussion presented earlier. This discussion illustrates how exploring permutations in the values of these variables is analytically useful in gaining a comprehensive and comparative understanding into how the different countries are approaching the convergence issue. Within the context of these case studies the two primary critical variables are the level of development of media/telecom infrastructure and the interventionist orientation of regulation. Consequently, based on these two variables the US provides an example of a developed, non-interventionist model; South Africa a developing, interventionist model; Japan a developed, interventionist model; and India a developing, non-interventionist model.

Each of the four cases has distinct advantages and disadvantages in its progress towards convergence. For example, the US was chosen as a case because it represents one of the more relatively highly developed media markets, which would seem to be an advantage in the realization of convergence.<sup>29</sup> However, the US case also faces a disadvantage in that the Federal Communications Commission (FCC) and other government agencies have been loathe to impose policy initiatives and consequently prefer to leave the convergence issue up to the marketplace.<sup>30</sup>

South Africa, the second nation covered, unlike the US, has an advantage in actively pursuing convergence in that the government has been traditionally very involved in media in general and this would suggest it devotes considerable attention to policy position papers and initiatives to facilitate multimedia services.<sup>31</sup> However, also unlike the US, South Africa faces a barrier to convergence in that it is a developing country with a middle range national income level and consequently lacks critical national resources such as media infrastructure and sufficient government revenue to commit the requisite funds needed to follow through on commitments to convergence.

Japan, the third nation covered, like the US, is an industrialized country that has an indigenous infrastructure with content and service providers necessary to facilitate a flourishing multimedia sector. The nation also shares South Africa's advantage in pursuing convergence in that its government agencies, such as the Ministry of Posts and Telecommunications (MPT), have traditionally played a leadership role in setting the media's agenda, which could be applied to a coherent and effective convergence policy. However, in the 1990s the government's sphere of influence on the media steadily declined, which casts doubt on the continued efficacy of its policy instruments.



India, the fourth and final model covered, like South Africa, represents an example of a developing country that is struggling to address convergence issues against a backdrop of scarce government resources and limited state capacity to satisfy basic economic development. Moreover, the Indian government's policy approach resembles that of the US in some respects, in that market competition and private sector participation in the sectors have been accorded priorities over government intervention in pursuing convergence.

*United States (Developed, Non-interventionist Model)*

In the US case, the FCC, the regulatory body that oversees telephony and broadcast communications, has adopted numerous policy initiatives over the past few years to promote convergence in the electronic mass media sector. The two policy prescriptions, covered below, share commonalities in that they all demonstrate the Commission's reluctance to prescribe strictly defined and loophole free recommendations for convergence in terms of the conversion to digital television. The first US policy initiative<sup>32</sup> covered here was adopted on 4 April 2003 and released on 16 April 2003. The purpose of the initiative was to establish remedial measures to be followed when requests to extend digital television (DTV) construction deadlines were denied. The Commission intended the measures provided for in the Report to reflect a commitment to the rapid build out of a nationwide system of DTV, to remind television licensees of the importance of their DTV construction efforts, and to prevent undue delay in the required build out of DTV facilities. In addition, they provide guidance to stations seeking extensions of time and provide a unified and predictable set of procedures for treating stations that fail to meet their DTV construction deadline. While the drafting of this particular report does suggest a genuine interest on the part of the Commission to ensure that broadcasters that are lagging in their progress to convergence speed up their conversion process, the initiative lacks specific enforcement mechanisms. For example, the document provides for a three step approach to its remedial measures for laggard stations and broadcasters, however there are no substantive sanctions or penalties for broadcasters that disregard the Commission's recommendations. Instead the broadcasters are served with written admonishments and empty threats to 'revoke the station's DTV authorization' without any monetary penalties or more substantive consequences for non-compliance.

The second US initiative<sup>33</sup> involves the Commission's 'Plug and Play' rules, which involve the compatibility of cable and digital television receivers and was drafted on 10 September 2003. According to the new rules in a 'plug and play' world, consumers can plug their cable directly into their digital TV set without the need of a set-top box. In addition the rules would ease the transition to digital TV by promoting competition, convenience and simplicity for consumers. Moreover, the FCC's Consumer and Government Affairs Bureau suggests that the salience of these rules to convergence are evidenced in their 'ability to facilitate the direct connection of digital navigation devices or customer premises equipment, such as television receivers, set-top boxes, and digital recorders that are purchased from retail outlets to cable television systems'.<sup>34</sup> However, the policy initiative's recommendations for service providers are too ill defined and ambiguously defined to compel service providers to pursue DTV with much urgency. For example, in the section 'Digital Cable System Transmission Standards and Support Requirements' the rules state that 'all digital cable systems must operate in conformity with

specific technical standards. Small cable systems can obtain a waiver where the requirements would be unduly burdensome'.<sup>35</sup> However, there is no discussion of what exactly is involved in the 'specific technical standards'. Also the initiative is unclear on what circumstances allow small systems to gain waivers and how burdensome requirements will be defined.

*South Africa (Developing, Interventionist Model)*

Unlike the US case, where one regulatory agency (the FCC) oversees discrete media, in South Africa there are multiple regulatory institutions with overlapping jurisdiction over the various media taxonomies. It is worth mentioning two of the more prominent examples of agencies that are currently struggling with the convergence issue. The first relevant initiative<sup>36</sup> was drafted by South Africa's Ministry of Posts, Telecommunications and Broadcasting (MPTB) in 1995. The section entitled 'Regulation of the telecommunications sector and the radio frequency spectrum' is particularly pertinent to the government's position on convergence. The Green Paper poses the following analytical question: 'Should broadcasting and telecommunications be regulated within a single authority?'<sup>37</sup> Unfortunately, there is a dearth of forthcoming discussion to make clear in substantive terms, what the government's position on the question would be in a converged environment. In fact, it leaves many pertinent questions unanswered such as how the authority that the document mentioned would be structured. Instead, the paper's discussion provides considerable diffuse and abstract organizational principles and objectives, none of which are specific to achieving meaningful convergence in the South African case. The only material remotely related to the posed question suggests that many different structures for regulatory authorities can be found around the world. The main characteristics relate to: 'organizational structure and status, decision making processes, implementation and enforcement mechanisms'.<sup>38</sup> Moreover it is very telling that after posing another policy question on convergence namely: 'What type of telecommunications regulatory authority will be most appropriate to South Africa?', there is no substantial discussion of the powers given to such an authority whatsoever.

The second relevant South African policy initiative<sup>39</sup> was drafted in June 1998. Chapter 7 entitled 'Digital convergence and Multimedia' is the most relevant to this paper's central thesis. Once again, the text lacks any discussion specifically on how convergence will be pursued in a concrete, deliberate and methodical manner and consequently the initiative is exceedingly vague. The document tends to passively assume that convergence will naturally emerge as an organic phenomenon in the South African media environment. One main example is worth noting. According to the policy initiative, the government will examine whether there can be vertical integration between multi-channel distributors and broadcasters. The document suggests that the department 'reports on mechanisms to ensure that neither a multi-channel provider nor a broadcaster provides undue influence to an affiliated company'.<sup>40</sup> The concern about vertical integration, concentration of ownership and abuse of market power is a valid one, but only after convergence materializes and companies abuse this power. However, convergence of this kind is not even a reality in the US and European Union, which have greater media resources, therefore emphasizing limits on vertical integration merely ignores the nature of the realities at hand. In addition, the White Paper does not specify what the Department of Communications means by 'mechanisms'.



*Japan (Developed, Interventionist Model)*

Out of the four cases addressed in this paper, the policy initiatives prescribed in Japan are the most ambitious, coherent and specific in terms of how the government defines and prioritizes the convergence issue. However, despite the attention that the Japanese government has accorded to promoting multi-media digitalized services, converged technologies have yet to become prevalent. Some have attributed this to the fact that the 'administrative influence of the MITI (which in 2001 was reorganized as the Ministry of Economy, Trade and Industry—METI) and Ministry of Posts and Telecommunications (MPT) are declining under the belated deregulation climate in Japan' through the 1990s and consequently deregulation has become less effective in facilitating converged services.<sup>41</sup> Nevertheless, compared to the policy initiatives in the two preceding nations, it is a model case.

Two examples of Japanese policy initiatives provided under the auspices of the Office of the Prime Minister of Japan (OPM), addressing digitalization and convergence aspects of information technology (IT) bear close reading and analysis. The first initiative<sup>42</sup> was drafted on 29 March 2001. The section entitled 'Cross-Cutting Issues' is most integrally tied to this paper's thesis. The document affirms the importance of promoting R&D activities to realize new generation computing that enables all users to conduct advanced information processing and to connect to the network, without any restrictions posed by such interfaces as the keyboard. The initiative has a distinct approach in addressing convergence from a hardware and software perspective. Specifically it stresses the importance of digital markets that uniformly convert and integrate various types of content regardless if the data is in broadcast or telephony analog form. While the rhetoric is promising, it neglects to describe industry's involvement in these digital networks. One specific aspect of interest would be the role that private companies would have in the R&D process, such as who would provide the funding and capital and what the limits of industry's role would be in terms of intellectual property protection or concerns. For example, if the government and the private sector were involved in the R&D process without a clear distinction between their roles, there is a potential problematic issue of conflict of interest in the government's pursuit of copyright laws or other intellectual property related infringements. The text needs more specific language to mollify such concerns.

A second policy initiative<sup>43</sup> relevant here was authored on 14 May 2000. This policy instrument recognizes the immediacy of the convergence issue. According to it, from then on there was great importance in developing technology for the Internet not only for PCs, but also for all kinds of equipment from digital televisions to portable terminals. Furthermore, the document suggests that in order 'to enable easy use of digital televisions as Internet terminals, we will promote the digitalization of broadcasting, while taking into consideration compatibility with the Internet'.<sup>44</sup> Unfortunately, while such language is encouraging and represents a genuine interest in fostering convergence, ultimately it is essentially academic in value without provisions that would keep the government and industry accountable within a reasonably swift time frame in rolling out multimedia services. For example, the text stipulates that, 'it will be up to industry to make software and hardware at a low cost and mass-produced in a short period of time'.<sup>45</sup> In addition, the piece charges industry with the responsibility for international interoperable standards that are transparent and conducive to carrying diverse media forms.<sup>46</sup>

*India (Developing, Non-interventionist Model)*

The Indian government has adopted contrasting approaches to deregulating its broadcast industries (specifically television) compared to the telecommunications sector. Within the TV broadcast sector, the approach to governance has been characterized by deregulation, which is typically marked by a reduction in government-imposed constraints on the behavior of the firm. Consequently, the reduction in red tape and in government involvement precipitated an environment conducive to the proliferation of private owned cable and satellite delivered channels instead of facilitating substantive direct head to head market competition. Alternatively, on the telecommunications side, the governance strategy consciously pursued corporatization, which is defined as the transformation of a state monopoly organization into an entity that is partially autonomous. Comparatively, within the telecommunications environment, the government owned service provider's monopoly was not drastically transformed by the corporatization as such, but the transfer of control of managerial and administrative functions outside the government's authority weakened the provider's link to the Indian government enough to ensure rigorous competition.

The regulatory asymmetry which has been noted in some of the relevant literature<sup>47</sup> suggests that the government is unwilling to aggressively and systematically intervene in the two sectors by adopting a universal policy agenda that embraces deregulation and privatization on an equal footing within the broadcast and telecommunications domains alike. While such an approach would not have assured the inception of convergence in itself, it would have established the government's leadership role in stewarding progress towards convergence between the media in the respective sectors. In order to substantiate this position it is necessary to cite at least one article of legislation from the broadcast and telecommunication sectors respectively. The underlying assumption of this legislation was non-interventionist in that a preference was accorded to market based initiatives towards integrating the two sectors. Even in cases where the government did play a defined role in telecommunications service, the expectation was that the government entities involved would compete with each other, which mirrors the private sector approach.

On the broadcast side, the focus of the Indian Broadcasting Bill (IBB), much like the earlier Act, demonstrates a willingness to encourage private sector participation at the expense of not stimulating direct market competition within the sector. A prime example is manifest in its provision on direct to home (DTH) broadcasting services. While DTH is a growing vibrant market segment, it still lacks the pervasive market domination and penetration of the terrestrial broadcast network, which was a fundamental reason why the government was willing to make concessions towards privatization. In other words, it sanctioned deregulation here since it could do so without DTH posing a significant threat to the government owned broadcaster, Doordarshan. Having said that, the IBB provided private DTH service operators with a host of new entrepreneurial opportunities to exploit. For example, the IBB did not set aside any quota for licenses specifically for government owned DTH broadcasting. Instead, the Bill 'invites for grant of licenses, not less than two for direct-to-home service and the license will be granted to the highest bidder'.<sup>48</sup> In order to court investment from foreign private sector interests, the Bill incorporates a special provision in which permission will be granted 'for reception of an unlicensed foreign satellite broadcasting service in India that carries

sports and international content'.<sup>49</sup> CNN, BBC and ESPN serve as concrete examples of specific services, which already offer service in these areas and stand to benefit from the special provision.

On the telecommunications side, The New Telecommunications Policy 1999 (NTP99)<sup>50</sup> was released in March 1999. The text's anti-private sector agenda is evidenced in its measures on spectrum management. In addition, the text's commitment to corporatization is evidenced in its articulation of a 'firm government commitment towards the corporatization of the DoT/Department of Telecommunications Services (DTS), the introduction of competition for domestic long distance service (DLD) and the increase of competition for basic and mobile services'.<sup>51</sup> While NTP99 did not elaborate on specific functions that bind the private and public sector, it did promote an environment that was more conducive to increased competition by public sector entities such as the DTS and MTNL, rather than one that encouraged the emergence of private sector operators.

Telecommunication spectrum management and related regulatory issues are important factors that convey the government's position prioritizing the corporatization of the sector over encouragement for private enterprise and capital. While the government had a number of options in terms of opening spectrum allocations and licenses so that the private sector could take advantage of them, it ultimately pursued a more cautious revenue sharing option instead of a more ambitious market driven system of auctioning the resource to the highest bidder. According to the terms of the revenue sharing regime, factors such as 'the appropriate level of entry fee (the spectrum license fee), percentage of revenue to be shared, and the basis for selection of new market entrants for different service areas would be set by the Telecommunications Regulatory Authority of India (TRAI)'.<sup>52</sup> The TRAI is the administrative body that is charged with the duties of facilitating interconnection and technical interconnectivity between operators, regulating revenue sharing, promoting competition and settling disputes between service providers. The terms provided in the regime intimate that the TRAI would have considerable control over the spectrum allocation process. They also offer the authority the control to make substantive decisions, which could dampen the private sector's access to licenses and revenue streams from these assets.

In contrast to the policy position on the spectrum issue, the pivotal development within the telecommunications sector that offers evidence of the government's leanings towards competitive corporatized institutions is articulated in the public sector's decision to restructure the role of the DTS. As Singh points out in the drafting of the NTP99, the government made a deliberate strategic decision to divide 'the DoT into a policy making body (named DoT) and a service provider, Department of Telecom. Services (DTS)'.<sup>53</sup> This institutional restructuring reflected a commitment on the part of the government to break down administrative bodies that handle telecommunication matters into smaller units, which would have overlapping roles with other government affiliated entities. Consequently, as he points out, the DTS views the Manahar Telephone Nigam Limited (MTNL), the government-owned telecom provider in large cities such as Delhi and Mumbai, as a direct competitor. This leaning towards facilitating competition between the DTS and MTNL is corroborated in a section of the NTP99 entitled 'Restructuring of DoT' which states that all the future interactions between the MTNL and the corporatized DTS would be based on principles of rigorous competition and market dynamics.<sup>54</sup>

## Findings

The first of the three research questions posed earlier in this paper raised the issue of: what are the essential characteristics of policy initiatives and approaches in different countries that leave the disconnect between the potential and reality of convergence unresolved? Discussion of the various policy initiatives brought to light numerous similarities and differences worth noting. With respect to the similarities, all policy papers highlight the validity and prominence of the issue. In addition, each initiative recognizes the symbiotic relationship between policymakers and industry, both of which have vested interests in convergence, even though the specifics of the relationship require further clarification in most cases. Furthermore, the policy position papers across the board in all country cases reflect recognition on the part of regulatory institutions overseeing the transitions to convergence to be flexible, dynamic and responsive to the needs of industry and consumers. Having said that, there are notable differences in the various country policy initiatives. For example, the FCC in the US demonstrates the most resistance to introducing initiatives that are invasive in forcing convergence, while the Japanese policy papers are more proactive and express a greater role for government within the process of achieving convergence. Also, there are differences in the structure of the regulatory institutions. While the US treats multimedia services through one unified structure, the FCC, South Africa, Japan and India, have relied on multiple agencies with overlapping jurisdictions.

The second research question poses the issue: what were the primary obstacles that obviated convergence and how were they involved in impeding progress towards realizing a cohesive regulatory framework for digitized multimedia services? The findings in this paper suggest that there were numerous obstacles reached in each context. The vagueness in the language of the FCC policy initiatives muted its efficacy in providing leadership for industry on how to most effectively pursue convergence. Alternatively, in South Africa, like many developing countries, while there was interest in convergence, the inadequacy of the proposals articulated in the policy initiatives suggests that the country does not have the necessary public resources to dedicate to the convergence issue. While Japan is relatively advanced in its progress towards convergence, the reluctance voiced in its policy initiatives to hold industry accountable to a reasonable timetable and regime provides insight into the delay in the rolling out of converged services in Japan. Finally, it is likely that India's pursuit of an asymmetric approach to policy issues in the broadcast and telecommunications media has made the process of convergence to an integrated regime more complicated.

The third research question was as follows: based on the respective policy initiatives is it possible to reach any meaningful conclusion on which case is furthest advanced and more likely to attain pervasive convergence at a systemic level, and if so why? It is difficult to know in quantitative terms which cases are more advanced than others, particularly since industry and policy can change rather rapidly even over relatively short periods of time. Also it is important not to infer any value judgment on the merit of convergence as a policy priority and assume that convergence is necessarily an optimal outcome in the collective interest of a country. Nevertheless, based on past trends, the Japanese approach of allowing industry to operate in a relatively open dynamic deregulated policy framework, but at the same time endowing regulators with a proactive role in overseeing service providers, has been relatively more successful. Ultimately, the factors that explain success and

failure in pursuing convergence reflect a larger more endemic process of a digital divide between countries.<sup>55</sup> In other words, a nation's ability to realize convergence cannot be determined solely by policy initiatives.

## **Discussion**

This section has one fundamental purpose, namely to critically evaluate or challenge the applicability of a convergence policy within the context of the four country models. There are some benefits that would arise from a more proactive framework to pursuing convergence on a public policy agenda. For example the phenomenon, in some respects, can involve a minimization of financial uncertainty, risks and costs for businesses that are committed to rolling out emerging converged technologies. A regime that is significantly more adept in responding to market needs in this regard could ideally free service providers from having to duplicate expenses/overheads on organizational and management costs that come from operating discrete broadcast and telecommunications services. In addition there may be economies of scale and scope in offering converged services that, through digitalization and integration, can accommodate a greater volume and diversity of content and applications for users within one central all encompassing platform or business model.

However this section stresses the necessity to problematize the convergence issue through a critical lens. With respect to the Indian and South African models, I cite the need to consider lacunas in their multi-media indicators, which can significantly constrain the deployment of converged services. In the case of the United States and Japan, I raise institutional factors and actors which would likely be threatened by convergence and utilize their power as the status quo to oppose the implementation of multimedia services that disrupt their preexisting and dependable revenue stream sources.

### *India and South Africa*

Within the two developing countries, India and South Africa, the lack of development of ICTs and digital divide concerns have posed long-term systemic and profound gaps and inequalities. The lack of diffusion of even basic telecommunications services for the vast majority of the population on a reliable and consistent basis, in developing countries such as these two, casts doubt on the realism and appropriateness of policy initiatives that stress the immediacy and urgency of the convergence issue. This is important in challenging the notion that convergence is inevitable as well as the even stronger notion that it is positive and desirable.

While there are asymmetries in the technological development of countries such as India and South Africa, it would not be necessarily accurate to deduce that the disparity between, on the one hand, the teledensity and Internet penetration rates in these nations and, on the other hand, those in the developed countries, means that convergence is irrelevant or impossible. For example, there is an argument that converged technologies can be used to alleviate or leapfrog gaps and disparities that are ingrained in older or traditional media. However, it remains unclear whether convergence is a viable, realistic and long-term policy objective in developing countries such as India and South Africa, given their lack of development in media technologies. The ITU's and UNDP's annual reports<sup>56</sup> offer data on diverse telecommunications, broadcast and information technology indicators,

which facilitate a comparative analysis that is particularly insightful in understanding gaps in India's and South Africa's media development. For the purposes of this study numerous examples of indicators will be considered (see Table 1) for analytical purposes and are divided into two categories: the level of development of media/telecom infrastructure; and the interventionist orientation of regulation. Furthermore, the data reported here also integrates statistics from the US and Japan for points of comparison, which represent the developed world.

With respect to the indicators<sup>57</sup> on the variable category—the level of development of media/telecom infrastructure—the indicators considered include: ISDN Subscribers (000s) for 2002; ADSL Subscribers As A % of Subscriber Lines for 2002; Internet Users (000s) for 2002; Internet Subscribers (000s) for 2002; Broadband Total (000s) for 2002; Internet Hosts per 100 Inhabitants for 2002; Digital Main Phone Lines for 2002; Capacity for Main Phone Lines for 2002; Television Broadcast Coverage; Television As A % of Total Households 2002; and PCs Per 100 Inhabitants for 2002. These were included because the market size for integrated media such as those on ISDN and ADSL as well as data on Internet hosts which offer Internet Access (a digitalized service), Internet Users, digital mainline phones, broadband, and television broadcast demand, are important factors in measuring the extent of the development of digitalized multimedia media networks and infrastructures. Moreover the data on PC diffusion is critical because the PC serves as a vital tool for access to the architecture that carries digitalized media. As the data in Table 1 demonstrates, two statistics stand out. First, in terms of the

Table 1

	India	South Africa	United States	Japan
<b>Variable on level of development</b>				
ISDN Subscribers (000s) 2002	29.20	24.10	1,656	9,598
ADSL Subscribers As A % of Subscriber Lines 2002	0.09	0.06	3.45	11.56
Internet Users (000s) 2002	16,580	3,100	159,000	57,200
Internet Subscribers (000s) 2002	3,640	937.50	70,000	29,563
Broadband Total (000s) 2002	82.40	2.7	19,882	9,092
Internet Hosts per 100 Inhabitants 2002	0.01	0.44	39.99	7.27
PCs Per 100 Inhabitants 2002	0.72	7.26	65.89	38.22
Main Phone Lines—Digital (%) for 2002	100	99.80	96.90	100.00
Main Telephone Lines Capacity Used (%) 2002	78.40	n/a	n/a	n/a
Television Population Coverage (%) 2002	89	91	99.00	100
Television As A % of Total Households 2002	31.9	66.5	97.80	100
<b>Variable on level of intervention</b>				
Patents Granted to Residents (per million people) 1999*	1	0	298	1,057
Public Telephones Total (000s) 2002	2,006	179.00	1,385	715
Public Telephones per 1,000 Inhabitants 2002	1.93	3.92	4.86	5.63
Public Telephones As % of Mainlines 2002	4.80	3.70	0.70	1.00
Residential Telephone Tariffs for Monthly Subscribers (US\$) 2002	5.10	6.40	23.40	14.40
Business Telephone Tariffs for Monthly Subscribers (US\$) 2002	5.10	8.50	43.60	21.40
Telephone Tariffs for Local Calls (US\$) 2002	0.02	0.09	n/a	0.07
Prepaid Cellular Tariffs US\$, October 2003	3.76	14.14	n/a	n/a

Notes: n/a—data not available.

Sources: \* United Nations Development Program's *Human Development Report 2003*; International Telecommunication Union's *World Telecommunications Development Report 2003*.



number of ISDN subscribers for 2002, while India had only an average of 29,200 and South Africa had a relatively meager 24,100, the US had 1,655,900 and Japan had 9,598,000. Second, in terms of broadband totals for 2002, India had only 82,400 and South Africa had only 2,700, while the US had 19,881,500 and Japan had 9,092,000. Given this data, it is doubtful whether a pro-convergence policy is a realistic policy agenda given these limitations in countries such as India and South Africa.

The data on the interventionist orientation of regulation variable<sup>58</sup> also reflects deep divergence between, on the one hand, developing countries such as India and South Africa, and, on the other hand, developed countries such as the US and Japan. The relevant indicators include: Patents Granted to Residents (per million people) 1999; Public Telephones Total (000s) 2002, Public Telephones per 1,000 Inhabitants 2002; Public Telephones As % of Mainlines 2002; Residential Telephone Tariffs for Monthly Subscribers (US\$) 2002; Business Telephone Tariffs for Monthly Subscribers (US\$) 2002; Telephone Tariffs for Local Calls (US\$) 2002; Prepaid Cellular Tariffs US\$, October 2003. These are important indicators because data on patents that governments assign to inventors, public equipment resources such as public phones, and tariff rates, constitute a vital metric for assessing the extent to which the public sector intervenes in its nation's media regime.

Based on the statistics reported in Table 1, it is important to clarify two specific interrelated indicators. The data on residential telephone tariffs for monthly subscribers in India was \$5.10 (US\$) and was \$6.40 for South Africa, on the other hand these same types of tariffs were \$23.40 for the US and \$14.40 for Japan. Moreover the data on business telephone tariffs for monthly subscribers in India was \$5.10 (US\$) and was \$8.50 for South Africa, while these same types of tariffs were \$43.60 for the US and \$21.40 for Japan. On the face of it, this data seems to detract from my argumentation that, for example, the US represents a non-interventionist model given that it has the highest tariffs in both of the categories mentioned immediately above. However, while all the data has been converted into dollars, the figures do not appear to take into account cost of living expenses and inflation in the long run in relative terms, which would suggest purchasing power parity. This holistic perspective is essential in order to accurately and comparatively evaluate the burden that the respective governments' tariffs place on business and residential telecommunication and media users. From the data in Table 1 it is unclear if varying levels of government intervention in media technologies lend themselves to pro-convergence policies.

### *US and Japan*

Despite the benefits of and incentives for convergence referenced at the outset of this section, it is important to raise questions and challenges to the inherent value and applicability of multimedia policy reforms in developed countries such as the US and Japan. Three examples bear mentioning. The first is that while technical convergence is possible due to integration and digitalization, especially in the US and Japan, the industries are having a hard time converging in practice. There is a disconnect between the rhetoric and hyperbolic promises of technical convergence in media and information industries, on the one hand, and the reality where initiatives to pursue convergence have not lived up to the promise. Therefore, rushing into convergence policy/legislation may be 'jumping the gun' as it may have little relevance when industrial convergence, where converged media and information services are widely available to consumers, has yet to be realized.

A second related impediment to the move by the US and Japan towards convergence policy builds on the first point but goes even farther by suggesting that entrenched institutional actors such as traditional telecommunications and broadcasting firms are not only having a hard time with the process of seamlessly integrating and digitalizing their services, but also they may have a vested interest in not converging their services. This is based on the assumption that there are very high start-up and transaction costs involved in the transition to converged multimedia services. This transition may require entrenched broadcasters and phone companies to transform every aspect of the way that they operate and this poses uncertainties and risks which can jeopardize their businesses. Therefore, these service providers which predominate in developed countries such as the US and Japan may have a strong incentive to resist changes towards convergence that may pose vulnerabilities to their business operations. Status quo actors such as traditional broadcasters and telecommunication providers have power and no real incentive to radically transform their institutional structures to facilitate pervasive convergence. This may involve rebuilding their enterprises from the ground up and pose no foreseeable tangible benefit.<sup>59</sup>

In order to appreciate this possible resistance among institutional players, particularly in developed media markets such as the US and Japan, it is important to adopt a perspective that considers institutionalism as a theoretical lens. Institutionalism is useful in explaining why certain stakeholders are consistently favored over others, why certain governments are capable of passing reforms and others are not, or why diffused interests are represented in some cases and not others; it is necessary to examine the institutional fabric that underlies the making of information and communication policies. New institutionalism, which offers a starting point for addressing this theoretical approach, is a conceptual label that refers to a broad range of studies bound together by their emphasis on institutional factors to explain policy and economic outcomes.<sup>60</sup> This form of institutionalism differs from preceding approaches in at least two ways. One, it takes a broader view of institutions, looking not only at formal political structures, but also at informal structural arrangements such as routine organizational procedures and accepted behavioral norms.<sup>61</sup> Two, contemporary institutional analysis avoids the grandiose theorizing that tends to define the earlier thinking, focusing instead on middle-range studies that connect specific economic and political outcomes with particular institutional patterns at national and local levels.

Institutional analysis focuses attention on state actors and structures to explain public policies. It underscores how both formal and informal arrangements shape political interactions and influence the outcome of government action in cases such as the US and Japan. In general terms, institutions refer to the

composite of rules, informal constraints, norms of behavior and conventions and their enforcement characteristics. Together they define the humanly devised constraints that shape human interaction. They are the rules of the game and therefore define the way the game is played.<sup>62</sup>

An institutional approach does not ignore policy language and interest group factors as important determinants of policy outcomes. The theoretical approach suggests that a complex web of institutions mediates between these and government officials (such as those quoted at the beginning of this article), filtering ideas in specific ways. Policymakers make specific choices within an institutional

structure that defines the information available to them, the policy instruments at hand, the way interest groups are organized and the costs associated with alternative courses of action. This structure not only determines that capabilities and constraints of those who make policy but also of those who try to influence policy. The choice of institutional design affects the ability of different interests to influence outcomes. Therefore the actions of the US and Japanese governments have to be assessed collectively and holistically, rather than addressing each within a distinct context. Consequently, this institutional approach offers a solid conceptual foundation to examine the determinants of communication and information policies 'and is particularly useful for international comparisons'.<sup>63</sup>

The third example of an impediment to convergence questions the fundamental assumptions of the US and Japan that convergence is inevitable and the stronger assertion that it is positive and desirable. Convergence may be a positive development for a few firms that are investing and marketing converged media and information services and covet access to the Indian market. However, convergence may have a serious deleterious impact on a diversity of actors in the relatively developed media markets of the US and Japan broadcast and telecommunications sectors such as independent analog content providers and civil society groups in the non-profit sector. In fact, it is possible that the costs to these legitimate interests and actors far outweigh the benefits that a move to convergence would pose for a minority of firms or organizations at this particular point in time.

## **Summary**

The primary purpose of this paper is to explore the disconnect between the rhetoric of convergence and the on-the-ground realities of the media phenomenon in practical terms, where convergence has yet to materialize. Based on the cases that were reviewed here, it is worth noting that the barriers to achieving real convergence are not merely a function of flaws in regulatory measures or shortcomings of the industries involved, but are endemic to unrealistic conceptualizations of the phenomenon in the literature. Specifically, research<sup>64</sup> has been loathed to address convergence in methodical and incremental terms. Instead, much of the research has glorified the process of convergence as an ICT (information and communication technology) panacea that has no bearing on the rudimentary day-to-day logistics involved in integrating media types and digitalizing content. For example, given the costs involved in policy transformation based on swiftly changing technologies, rather than aiming for an idealized grand reform, it might be more rational and cost effective to 'muddle through' the process of convergence at an incremental pace.

This dichotomy between convergence as theory and reality is presented in five discrete steps. The first posed the paper's guiding research questions, which frame varying initiatives towards convergence. The second offered a literature review highlighting the key scholarly contributions which frame the convergence issue. The third step offered case evidence of the pivotal policy initiatives and position papers in four countries: the US, South Africa, Japan, and India based on their level of development of their media environments and the level of intervention by their respective governments in their media sectors, in comparative terms. The fourth section articulates the findings on how policy initiatives are tied to the study's core research questions. The final section critically appraises the utility and

the intrinsic value of a pro-convergence regulatory approach in each of the four countries.

Dilemmas over the convergence issue reflect limitations in current policy initiatives. These initiatives often fail to realize that convergence is not merely a matter of perceptual irregularities that are unique to policymakers in an isolated case. Instead, limitations in progress towards convergence are endemic to and reflective of profound borders between the political actors, industries and political regimes in various regulatory communication environments. The problems in achieving convergence are also symptomatic of varying legal and judicial systems that have been socially and culturally shaped and constructed over time to treat individual media types discretely based on traditional norms. Therefore, the transformation from a legal environment in which regulatory institutions and structures are media specific to a policy framework in which regulation addresses converged technologies, requires a methodical approach. This can be a time consuming process.

The policy initiatives discussed suggest that there are still very fundamental political issues that need attention before rushing into the deployment of bundled and/or converged services. This deliberate and methodical process is important because it allows governments to draft their policy initiatives to be malleable and relevant to a diversity of unanticipated developments and technological innovations in the future. The analysis of the cases mentioned implies that those initiatives that have a profound lasting significance and viability are those that recognize that convergence may become an industrial reality in very different ways than can be expected in the short-run. This flexibility empowers the initiatives so that they have a significance and validity in the long run, in that they are not too tied to short-run fads in technology related to convergence, which lack lasting significance.

## Notes and References

1. A version of this paper was presented as the 2005 Oxford Internet Institute's (OII's) Summer Doctoral Program. I would like to thank William H. Dutton, Director of the OII, for his thoughtful comments on an earlier draft of this paper.
2. S. G. Verhulst, 'About scarcities and intermediaries: the regulatory paradigm shift of digital content reviewed', in L. Lievrouw and S. Livingstone (eds), *The Handbook of New Media*, Sage Publications, London, 2002, pp. 432–47; L. Hitchens, 'Introduction to the special feature on communication regulation—new patterns and problems', *The Journal of Information, Law and Technology*, 3, 1997; C. Marsden, 'The European digital convergence paradigm: from structural pluralism to behavioral competition law', *The Journal of Information, Law and Technology*, 3, 1997, available at: [http://elj.warwick.ac.uk/jilt/commsreg/97\\_3mars/](http://elj.warwick.ac.uk/jilt/commsreg/97_3mars/); M. Feintuck, 'Regulating the media revolution: in search of the public interest', *The Journal of Information, Law and Technology*, 3, 1997, available at: [http://elj.warwick.ac.uk/jilt/commsreg/97\\_3fein/](http://elj.warwick.ac.uk/jilt/commsreg/97_3fein/).
3. Some have suggested that convergence has failed to materialize due to fundamental incontrovertible differences in the media formats. See W. J. Drake and E. M. Noam, 'The WTO deal on basic telecommunications: big bang or little whimper?', *Telecommunications Policy*, 21, 9/10, 1997, pp. 799–818; S. Menon, 'The influence of US foreign DBS policy on Indian DBS TV: a case study of policy transfer', *Telecommunications Policy*, 25, 8/9, 2001, pp. 543–64. In addition, differences in the corporate cultures in the discrete media lead to inter-corporate rivalry and detract from the transparencies and economies of scale, scope and distribution that could potentially arise from mergers and acquisitions that consolidate corporate entities in traditionally different media sectors. Examples of this include the corporate instability and

- lack of true vertical integration at Bertelsmann, AOL–Time Warner, Vivendi–Universal and AT&T–TCI among others.
4. Verhulst, *op. cit.*
5. Jan Van Dijk, *The Network Society*, Sage Publications, London, 1999.
6. One prominent manifestation of integration that bears mentioning is integrated networks which are designed from the start to exchange several communication and information facilities, traffic patterns and types of data simultaneously and seamlessly. Integrated broadband networks, such as those affiliated with ISDN systems, serve as prime examples that fit the operational definition of integration used here.
7. Van Dijk, *op. cit.*
8. *Ibid.*
9. The process of digitalization is furthered with the market adoption of services such as ISDN, the proliferation of Internet hosts and the increase in market demand for PCs, which is a prime example of a digitized consumer electronics artifact. Moreover, digitalization of audio-visual mass communication enables the development of links between the world of television and that of computers. The concepts behind this definition are reinforced in the empirical component of the ensuing sections of this paper.
10. At the outset it is important to offer at least two clarifications on key assumptions resident in this study. First, with regard to the relation between policy measures (legislative, reform, regulation) and convergence, the discussion here does not assume that policy reform is a necessary precondition for convergence to occur and no *a priori* causal relationship should be assumed. For example, many forms of convergence occur at the level of terminal equipment, which is almost fully deregulated. The regulation of the production of tele- and data communication equipment has been reduced more and more to matters of standardization. Secondly, it would be too simplistic to assume that policy initiatives are the only factors or variables that impact progress towards convergence. The analysis here recognizes that there are a host of technological, political and economic variables or considerations which play a role in the process, aside from policy initiatives. However, this paper is focused on regulatory instruments.
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13. Ithiel Sola de Pool, *Technologies of Freedom*, Harvard University Press, Cambridge, MA, 1983.
14. *Ibid.*
15. Daniel Chandler, *Technological or Media Determinism*, Aberystwyth, London, 1995.
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17. Verhulst, *op. cit.*
18. R. Williams and D. Edge, 'The social shaping of technology', in W. H. Dutton (ed.), *Information and Communication Technologies: Visions and Realities*, Oxford University Press, New York, 1996, pp. 53–67.
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20. N. Garnham, 'Constraints on multimedia convergence', in Dutton (ed.), *op. cit.*, pp. 103–19.
21. Williams and Edge, *op. cit.*
22. *Ibid.*
23. Donald MacKenzie and Judy Wajcman, *The Social Shaping of Technology: How the Refrigerator Got its Hum*, Open University Press, Philadelphia, 1985; Wiebe Bijker and John Law, *Shaping Technology/Building Societies: Studies in Socio-technical Change*, MIT Press, Cambridge, MA, 1992.

24. Edward Herman and Robert McChesney, *The Global Media*, Cassell, London, 1997.
25. *Ibid.*
26. Robert McChesney, *Corporate Media and the Threat to Democracy*, Seven Stories Press, New York, 1997.
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28. E. M. Noam, 'Will Internet TV be American?', in E. M. Noam, J. Groebel and D. Gerbarg (eds), *Internet Television*, Lawrence Erlbaum Press, Mahwah, NJ, 2004, pp. 235–42; D. Waterman, 'Business models and program content', in Noam *et al.* (eds), *op. cit.*; Benjamin Compaine and Douglas Gomery, *Who Owns the Media?: Competition and Concentration in the Mass Media Industry*, Lawrence Erlbaum Associates, Mahwah, NJ, 2000.
29. Moreover the US has attained the level of socio-economic development, particularly in its mass media sector, to pose significant advantages relative to the other countries covered in this study, to capitalize on pursuing convergence.
30. This resistance to intervene manifests, as an impediment to convergence when there are structural barriers to convergence that non-intrusive policy initiatives cannot resolve.
31. In fact the government has placed its policy initiatives regarding convergence on-line and has sought comment on them from the public and industry.
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33. Federal Communication Commission, 'Plug and Play' Rules, Government Printing Office, Washington, DC, 2003.
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35. *Ibid.*
36. Ministry of Posts, Telecommunications and Broadcasting, *Green Paper on Telecommunication Policy*, Ministry of Posts, Telecommunications and Broadcasting, South Africa, Capetown, 1995.
37. *Ibid.*
38. *Ibid.*
39. Department of Communications, *White Paper on Broadcasting Policy*, Independent Broadcast Authority, South Africa, Capetown, 1998.
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43. Office of the Prime Minister, *Outline of the First Follow-up of the Action Plan of the Basic Guidelines Toward the Promotion of an Advanced Information and Telecommunication Society*, Office of the Prime Minister, Japan, Tokyo, 2000.
44. *Ibid.*
45. *Ibid.*
46. Policy initiatives, in themselves, cannot dictate the level of convergence within each case. However, in the Japanese context, the Outline lacks an appropriate timetable or even loosely defined accountability measures, mechanisms or policy instruments that would bind industry to deliver services that it has committed to in a timely fashion. These mechanisms should not be designed as an albatross for industry but should merely serve as an effective tool to ensure that at least some progress is made in terms of converged services on a fairly easily accessible basis to the average Japanese citizen.
47. Menon, 2001, *op. cit.*; S. Menon, 'India's convergence policy within its communication sector: a long road ahead', *Government Information Quarterly*, 21, 2004, pp. 319–36.
48. Ministry of Information and Broadcasting, *Summary of the Indian Broadcast Bill, 1997*, Resource Center of the Ministry of Information and Broadcasting, New Delhi, 1997.



49. *Ibid.*
50. According to the New Telecommunications Policy 1999–2000 Details Report released by the DoT (Department of Telecommunications), the strategic objectives of the NTP99 include creating modern and efficient telecommunications taking into account the convergence of IT, media, telecommunications and consumer electronics. Another policy goal involves transforming in a time bound manner, the telecommunications sector to a greater competitive environment in both rural and urban areas, providing equal opportunities and a level playing field for service providers.
51. L. Srivastava and S. Sinha, 'Case study—TP case study: fixed-mobile interconnection in India', *Telecommunications Policy*, 25, 1/2, 2001, pp. 21–38.
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53. J. P. Singh, 'The institutional environment and effects of telecommunication privatization and market liberalization in Asia', *Telecommunications Policy*, 24, 2000, pp. 885–906.
54. Most recently the government passed a Communication Convergence Bill in 2001 which was intended to restructure its broadcast and telecommunication administrative bodies under a single regulatory structure, namely the Communication Commission of India. While the legislation and the establishment of a new administrative body may seemingly imply that the government is taking an interventionist role in forging convergence, this is actually not the case. The substance of the 2001 Bill invests the new CCI with too ill defined power and little authority to make significant strides towards convergence. Moreover, the new legislation fails to offer critical specifics on how it would operate to make convergence a reality in the marketplace and instead relies too heavily on rhetoric. This lack of specificity and interventionism is due to the bifurcated approach that had dominated the nation's regulatory approach in the past.
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56. International Telecommunication Union, *World Telecommunication Development Report 2003: Access Indicators for the Information Society*, International Telecommunication Union, Geneva, 2003; United Nations Development Program, *Human Development Report 2003: Millennium Development Goals: A Compact Among Nations to End Human Poverty*, Oxford University Press, New York, 2003.
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58. *Ibid.*
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