The Regulation of Interactive Television in the United States and the European Union

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I. INTRODUCTION

The broadcasting industry is rapidly entering the era of digitization, distributed intelligence, and interactivity. Despite lingering standardization issues, digital transmission is replacing analog transmission in the three

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major delivery platforms (terrestrial, cable, and Direct Broadcast Satellite ["DBS"]). Programmable user terminals built upon personal computer hardware and software technology are replacing "dumb" analog television sets. More importantly, after several failed attempts, interactive television ("ITV") services are finally poised for large-scale deployment. This transition opens many exciting opportunities for businesses and users, ranging from television-based electronic commerce (known as "t-commerce") to interactive educational programming. These new applications will evolve as broadcasters, software vendors, equipment makers, and users experiment with novel ways to enhance and perhaps transform the television experience altogether.

These changes, however, have also raised several questions about who will shape the architecture of these emerging broadcasting networks, and hence determine business models, communication patterns, and the dynamics of technological innovation for the next generation of television. Will programmers or network operators alone decide which interactive services will be made available to users? Will electronic marketplaces develop as open transactional spaces or "walled gardens"?[1] Will users be able to connect new terminal equipment to the network and experiment with new network uses such as peer-to-peer applications? As they address these questions, policymakers face several pressing concerns. Who will create incentives for firms to invest in this infant marketplace and at the same time protect competition in services and applications, foster decentralized innovation, and secure users' access to a wide range of information and transaction services? Would ex ante regulation squelch the success of a sector that, after many failed attempts, now appears ready for prime time? What regulatory principles and tools should be used to confront the questions raised by ITV?

Far from hypothetical, these questions have already surfaced in several high-profile cases, in particular the merger of America Online ("AOL") and Time Warner, which combined the world's largest Internet Service Provider ("ISP") and early entrant in the ITV market with the United States's second-largest cable operator and major worldwide programmer. In reviewing the merger, the Federal Trade Commission ("FTC") and the Federal Communications Commission ("FCC") found that the combination of distribution facilities, service operations, and content

1. "Walled garden" refers to a network architecture which prevents users from accessing content or services provided by parties unaffiliated with the network operator. *See* Nondiscrimination in the Distribution of Interactive TV Services Over Cable, Comments of Consumers Union, Consumer Federation of America and The Center for Media Education, CS Dkt. No. 01-7, at 5-6 (Mar. 19, 2001), *at* http://www.cme.org/access/press/Itvfin.pdf.

held by AOL/Time Warner raised competition concerns in three markets: broadband Internet access service, broadband Internet transport service, and ITV. While regulators imposed several merger conditions relating to broadband Internet access and transport services, those relating to ITV were, in comparison, rather minor.

In this paper we analyze the development of ITV in the United States and Western Europe and the policy debates that have accompanied it. We argue that despite the nascent character of the market, there are important regulatory issues at stake that will determine the future architecture of this new information distribution platform. In most local markets, cable operators function as monopolies. There is evidence that even in markets where competition exists, it does not significantly affect cable operators or the rates they charge.[2]

Absent rules that provide for non-discriminatory access to network components and a degree of standardization for terminal equipment, these platform operators will have strong incentives to leverage their ownership of delivery infrastructure into market power over ITV services and content. While in the short term, integration between platform operator, service provider, and terminal vendor is likely to facilitate the introduction of services, the lasting result could be a collection of fragmented "walled gardens" offering only the content and applications approved by the infrastructure incumbent. If ITV develops under such a model, the exciting opportunities for broad-based innovation and widespread access to multiple information, entertainment, and educational services in the next generation of television may never materialize.

We recognize that given the incipient nature of the market, particularly in the United States, it would be premature for regulators to attempt to implement detailed industry-wide rules for ITV platforms and services. There is simply too much uncertainty about which services users will want and at what price, how the technology will evolve, and what business models will emerge. It could be argued that platform owners will have incentives to open their networks in order to stimulate the proliferation of content and services upon which they could levy a distribution fee.[3] The dynamics of market competition would then stimulate a migration from proprietary technologies and "walled garden" business

2. *See generally* Implementation of Section 3 of the Cable TV Consumer Prot. and Competition Act of 1992, *Statistical Report*, 12 F.C.C.R. 22756, 10 Comm. Reg. (P & F) 977 (1997), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-07A1.pdf (last visited Oct. 15, 2002).

3. *See generally* James B. Speta, *Handicapping the Race for the Last Mile?: A Critique of Open Access Rules for Broadband Platforms*, 17 YALE J. ON REG. 39 (2000).

models to open standards and interconnected networks, thus making regulatory safeguards less necessary. Experience to date with the development of ITV, however, is not encouraging in this regard. We contend that it is not too early to establish general rules and first principles against which market developments can be monitored. ITV provides another instance where digital convergence calls for adaptation of existing broadcasting and telecommunications policies to balance industry development with the economic and social benefits associated with open network access. The debate over broadband cable Internet offered a first approach to the problem and some important lessons.[4] While technologies may vary from case to case, ultimate policy goals should not.

The case of ITV offers an opportunity to investigate how desirable policy goals—among them competition, broad-based innovation, and widespread access to information "from diverse and antagonistic sources"[5]—should be implemented in the post-convergence environment. In this Article we first review the evolution of the broadcasting industry through three successive models: the traditional "Fordist"[6] television model, the current multichannel television model, and the emerging ITV model. Second, we characterize the basic components of ITV and explore the concerns raised by the evolution of multichannel video programming distributors ("MVPDs") into ITV platform operators. Our conclusion is that dominant MVPDs are likely to have the ability and the incentive to leverage control over the transmission infrastructure into the ITV applications environment, engineering market outcomes in favor of affiliated programmers, electronic retailers, and ITV service providers. We note that, in contrast to the case of broadband cable Internet, the policy concerns go beyond infrastructure access control and include in particular the use of proprietary terminal equipment technology. Third, we review how regulators in the United States and the European Union ("EU") have so far responded to these concerns by contrasting two prominent cases: the AOL/Time Warner merger and British Interactive Broadcasting joint venture. We conclude that the wait-and-see approach taken by American regulators risks tolerating the deployment of a network architecture that

4. *See generally* François Bar et al., *Access and Innovation Policy for the Third-Generation Internet*, 24 TELECOMM. POL'Y 489 (2000) (arguing that the success of the Internet in the United States fundamentally rests on FCC policies aimed at maintaining network openness by making key network components available to all on cost-oriented terms).

5. Associated Press v. United States, 326 U.S. 1, 20 (1945).

6. The term "Fordism" is used to describe the particular system of production and consumption that emerged during the earlier part of the twentieth century. *See* MICHAEL J. PIORE & CHARLES F. SABEL, THE SECOND INDUSTRIAL DIVIDE (1984).

could restrict competition in ITV services, hamper innovation, and leave second-class digital economy citizens with access to a limited array of entertainment, transaction, and educational services. We also note that the imposition of limited open-access requirements in the United Kingdom ("UK") market has hardly hampered investments in ITV. Finally, we outline a general framework for regulatory thinking about open network access that reflects the convergence of communications industry sectors and the need to integrate seemingly conflicting policy goals.

II. THE THREE GENERATIONS OF BROADCASTING

The broadcasting industry has developed through three technological generations—each characterized by different types of services, business models, control strategies, and regulatory environments—as shown in Table 1.[7] It is interesting to note that each new generation has not thoroughly replaced the pre-existing industry structure, but rather added a layer of complexity to it. From the start of commercial broadcasting in the post-war period to about the mid-1970s, television consisted essentially of one-way terrestrial broadcasting of a limited number of channels that each aggregated and sold large audiences to advertisers. Their operators were protected by rules that restricted competition both within the industry and from new entrants. The regulatory model was based on the idea that broadcasters (both public and private) are trustees of a public resource (the radio spectrum) and thus under obligation to serve the public interest as defined by the government. While government protection from competition ensured the profitability of most broadcasting operations, fulfillment of public interest obligations was, at best, questionable.[8]

During the 1970s, a series of technological and regulatory developments created the conditions for the rapid growth of cable, and later DBS These new platforms essentially offered more of the same service: one-way delivery of branded packages of television programming. A new business model emerged, however, based on the collection of payments directly from subscribers, spawning the growth of specialized channels with a limited audience base.[9] The regulatory model was fashioned as a mix of traditional broadcasting and utility regulation. Cable operators were for the most part granted monopolistic franchises by local authorities in return

7. *See infra* p. 67. *See* Eli M. Noam, *Towards the Third Revolution of Television* (Dec. 1, 1995) (symposium presentation, *available at* http://www.columbia.edu/dlc/wp/citi/citinoam18.html).

8. ROBERT BRITT HORWITZ, THE IRONY OF REGULATORY REFORM: THE DEREGULATION OF AMERICAN TELECOMMUNICATIONS (1989).

9. BRUCE M. OWEN, THE INTERNET CHALLENGE TO TELEVISION 3 (1999).

for payments and limited access obligations (the so-called PEG, or Public, Education and Government channels, and leased access channels). The federal government later imposed restrictions on cable operators' editorial control by limiting the number of channels that can be occupied by affiliated video programmers.[10] Notwithstanding these obligations, cable essentially developed as a closed network with tight integration between network layers (transmission infrastructure, service provision, and terminal equipment).

The regulatory model for the second generation of broadcasting thus evolved in remarkable contrast with that of the telecommunications network, particularly after the FCC, starting in the late 1960s, progressively forced open the monopoly phone network by encouraging open attachment of terminal devices,[11] network interconnection,[12] and third-party access to unbundled network elements.[13] As a result of the implementation of these rules, over the last three decades the telecommunications industry has experienced a period of unprecedented innovation based on experimentation by network users and third-party service providers. In comparison, innovation and the introduction of new services in the cable industry has been limited, reflecting only the resources and the narrow economic incentives of those in control of the transmission infrastructure.[14]

10. Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, § 11, 106 Stat. 1460 (1992).

11. *See generally* Use of the Carterfone Device in Message Toll Tel. Serv., *Decision*, 13 F.C.C.2d 420, 13 Rad. Reg.2d (P & F) 597 (1968) (establishing that the Carterfone terminal equipment created no harm to the AT&T network).

12. *See generally* Establishment of Policies and Procedures for Consideration of Application to Provide Specialized Common Carrier Servs. in the Domestic Public Point-to-Point Microwave Radio Serv. and Proposed Amendments to Parts 21, 43, and 61 of the Comm'n's Rules, *First Report and Order*, 29 F.C.C.2d 870, 22 Rad. Reg.2d (P & F) 1501 (1971) (ruling that AT&T would have to make its local telephone exchanges available to new entrants under reasonable terms).

13. *See generally* Regulatory Policies Concerning Resale and Shared Use of Common Carrier Servs. and Facilities, *Report and Order*, 60 F.C.C.2d 261, 38 Rad. Reg.2d (P & F) 141 (1976) (requiring AT&T to make the Bell System network and services available to its competitors on an unbundled basis).

14. In fact, there have been notable failures in the introduction of new services by cable operators, such as Qube, an interactive cable service launched by Warner Amex Cable and available in the early 1980s, and more recently Full Service Network, announced by Time Warner in the early 1990s. *How Blind Alleys Led Old Media to New*, N.Y. TIMES, Jan. 16, 2000, at C1; *see also* Press Release, VR1 Entertainment, VR1 Signs Agreement with Time Warner Cable's Full Service Network (Feb. 26, 1996) *available at* http://www.vr1.com/press_releases/full_pr/1996/022696_fsn.html.

Table 1. The Three Generations of Broadcasting

	1st Generation: Fordist Television	*2nd Generation: Multichannel Television*	*3rd Generation: ITV*
Service	One-way broadcasting of few video channels	One-way broadcasting of multiple video channels	Two-way delivery of multiple video channels and other services
Business Model	Mass advertising and/or license fees	Mass advertising, license fees, and subscriptions	Targeted advertising, subscriptions, and transaction fees
Control Strategies	Property rights over spectrum license	Integration of distribution and content assets	Access control and proprietary standards
Regulatory Model	Public trustee (incumbent protection)	Mix of public trustee and limited utility regulation	* Yet to be defined

After much delay, the revolution in digital processing and transmission of information is finally ushering the broadcasting industry into a new era. As a long-time industry analyst described it, "[a]fter a half-century of glacial creep, television technology has begun to change at the same dizzying pace as the wares of Silicon Valley."[15] But as MVPDs evolve from distributors of video programming into operators of a network that supports a variety of information services, regulators are confronted with a fundamental policy question: Under what regulatory model should the next generation of television services develop? Should we use the model of the second generation of broadcasting—even though cable and satellite operators may effectively act as providers of telecommunications infrastructure rather than as content aggregators and distributors—or that of open network access that has guided much telecommunications policy over the last decades? This question was an important thread of the debate

15. OWEN, *supra* note 9, at 3.

leading to the Telecommunications Act of 1996,[16] and continues to run through current policy discussions. So far, however, television and telecommunications continue to be regulated under separate regimes.

III. WHAT IS ITV?

Due to the infancy of the market, any description of what constitutes ITV is necessarily a working definition. In the context of this article, we follow the definition proposed by the British broadcasting regulator, Independent Television Commission ("ITC"): ITV services are "pull" services initiated by the subscriber to a MVPD that are not necessarily related to any specific video programming.[17] This definition allows for an understanding of ITV that goes beyond a simple extension of current television. In fact, we differentiate between two types of ITV services: program-related and dedicated. The first type of service constitutes relatively straightforward extensions of current television, while the second type of service offers modes of interaction that are fundamentally new.

Program-related services refer to ITV services that are directly related to one or more video programming streams. They enhance and extend the broadcaster's core business. For example, these services allow users to obtain additional data related to the content (either programming or advertising) to select from a menu of video feeds, to play or bet along with a show or sports event, to interact with other viewers of the same program, or to initiate transactions of goods or services featured in the video programming. In this case, ITV enhancements (such as Advanced Television Enhancement Forum ["ATVEF"] "triggers")[18] are overlaid onto the Moving Pictures Expert Group ("MPEG") video programming stream. These enhancements, when selected, direct viewers to content stored either in the set-top box or on a remote server. In the latter case, the enhanced content is delivered either through the same video pipeline or through a separate transmission line (e.g., an Internet connection). Examples of services already available or in the deployment stage are: the delivery of on-demand financial information and stock quotes, along with a business news channel; enhanced television commercials that allow viewers to request more information about the product; enhanced educational

16. *See generally* PETER HUBER, LAW AND DISORDER IN CYBERSPACE (1997).

17. *See* Independent Television Commission, *Interactive Television: An ITC Public Consultation* (2000) (on file with Journal).

18. ATVEF is a cross-industry group formed by programmers, broadcasters, ITV service providers, hardware makers, and software developers intended to create standard protocols for the delivery of ITV enhancements. Advanced Television Enhancement Forum *at* http://www.atvef.com/ (last visited Sept. 30, 2002).

programming; and services that allow users to play or bet along with quiz shows, reality shows, and live sports events.

In the case of program-related services, the programmer or advertiser will typically contract with an ITV service provider for the creation of programming enhancements, storage of interactive content, and management of return channel data. Nevertheless, the agreement of the network operator is still needed to deliver the downstream program enhancements, to allow compatibility between ITV applications and operator-provided customer equipment (unless a stand-alone box is used, which is unlikely for reasons discussed below), and possibly to provide the high-speed return path needed for certain applications. The ability of programmers and ITV service providers to experiment with and to deploy services is, therefore, de facto dependent on access to both the transmission infrastructure and the home terminal functions. As we argue in the next Section, unless regulatory safeguards guarantee such access on nondiscriminatory terms, the network operators will, as in the past, control the terms of innovation for the next generation of broadcasting services.

By contrast, dedicated services are independent from any specific programming stream. Typically, these will be entertainment, information, and transaction services provided by electronic retailers on the basis of contracts with the MVPD, which essentially acts as a platform operator, offering third parties a "window" for t-commerce. Examples of these services already available or in the deployment stage are electronic programming guides ("EPGs"), video-on-demand, e-mail, games, gambling, and electronic banking. While some of these electronic retailers may already have Internet-based services, these typically need to be re-authored for the different systems used by television network operators (though, as discussed below, there are several standardization efforts under way). In contrast with the Internet-based services, however, these television platforms are strictly "walled-garden" environments: The network operator selects a limited number of electronic merchants that are made available to subscribers and typically charges an up-front fee for access control (e.g., authentication) and for billing services as well as a commission on sales.[19]

While the market for ITV is still maturing, the pace of development has accelerated dramatically in recent years. Growth has been fueled by decreasing equipment costs (of both network hardware and home

19. For example, BSkyB reportedly takes an eight percent commission on sales of one of its services. Emma Duncan, *At Least Television Works*, THE ECONOMIST, Oct. 7, 2000, at 27, 30.

terminals)[20] and related infrastructure investments that facilitate the provision of ITV services, in particular the slow but steady migration to digital transmission in terrestrial, cable, and satellite television.[21] Some have argued that such rapid growth makes a case against regulatory action. On the contrary, we argue that it is precisely in this formative stage of network development that rules are critical, much like policy intervention favoring open network access in telecommunications networks starting in the late 1960s that allowed the Internet revolution to unfold several years later. Important architectural features of the ITV network will be established and solidified in this early period. It is precisely during this formative period of the industry that policymakers have an opportunity to favor innovation and competition in the next generation of television services.

IV. POLICY CONCERNS RAISED BY ITV

Opportunities for dominant network operators to foreclose competition in the adjacent market for ITV services exist with three network components: the transmission system, the return path, and the home terminal (typically a digital set-top box). In this Section we examine these opportunities and discuss the incentives for discriminatory behavior by vertically integrated network operators. We argue that as a result of technical, economic, and regulatory factors, a dominant platform for the delivery of ITV services is likely to emerge in every geographic market (in the U.S. case, the local cable franchises). Unaffiliated ITV service providers and third-party programmers may consequently face discriminatory access to network components as the dominant platform operator would have incentives to favor its affiliated ITV service, thus reducing innovation and discouraging entry in this infant market.

A. Transmission System

In the case of program-related services, the most apparent opportunity that exists for network operators to discriminate in favor of affiliated ITV service providers and programmers consists of "stripping" the ITV enhancements from the video signal of an unaffiliated programmer, thus blocking access to the enhanced features offered by competitors. Time

20. For example, the cost of video servers, the core component of video-on-demand systems, has dropped ninety percent over the last ten years. The cost of digital set-top boxes has also dropped dramatically in recent years following the decline in prices for computer components. *See* Ken Kerschbaumer, *Interactive Television: Fulfilling the Promise*, BROAD. & CABLE, July 10, 2000, at 22, 23.

21. *See* Hernan Galperin, *Can the US Transition to Digital TV be Fixed?: Some Lessons from Two European Union Cases*, 26 TELECOMM. POL'Y 3 (2002).

Warner Cable, for example, has repeatedly blocked subscriber access to Guide Plus+, a free EPG offered by ITV provider Gemstar that is carried over the Vertical Blanking Interval ("VBI").[22] By stripping out the data inserted by Gemstar in the VBI of local television broadcast stations, Time Warner was favoring a competing EPG offered by its own cable subsidiaries.[23]

It is important to note that in the case of program-related services, the issue is not of programmers' access rights to cable distribution per se. Even when the network operator has agreed (or is forced by statute, as in the case of local television stations) to carry an unaffiliated programmer, it has the ability to favor its own related programmer (e.g., AOL/Time Warner's Cartoon Network as compared to Disney's Disney Channel) by stripping the interactive features of a rival's video signal (e.g., the ATVEF "triggers"). Alternatively, the platform operator can slow down the rate of transmission of the downstream interactive data, thus interfering with the synchronization between the interactive service and the programming to which it is related. The ultimate effect is similar: to make an unaffiliated video signal less compelling as an information/entertainment experience.

In the case of dedicated ITV services, the bundling of transmission and ITV service presents questions similar to those discussed in the context of the debate over broadband cable Internet. Nonetheless, in this case the concerns are exacerbated by the fact that, unlike ISPs, ITV service providers are faced from the start with the closed network architecture of the second generation of broadcasting, rather than the end-to-end architecture of the first-generation Internet. Hence, if a single transmission network emerges as the only viable alternative to compete in the provision of ITV services (an assumption we explore *infra*), the network operator does not need to re-engineer the network in order to favor its affiliates because entry will be, from the outset, by invitation only. As the ITC explains:

> The distinctiveness of interactive television services as compared with the [I]nternet is manifested in the "walled garden" concept, where a limited number of sites or parts of sites are selected by the interactive licensee. . . . In this environment an interactive licensee has the

22. The VBI is the interval between television frames in analog broadcasting, which allows for a limited capacity of data transmission. OWEN, *supra* note 9, at 103-05.

23. Gemstar Int'l Group, Ltd. and Gemstar Dev. Corp. Pet. for Special Relief, *Memorandum Opinion and Order*, 16 F.C.C.R. 21531, para. 28, 25 Comm. Reg. (P & F) 333 (2001). Due to regulatory scrutiny of the AOL/Time Warner merger, Time Warner Cable has reportedly ceased such practice. Ex Parte Filing of The Walt Disney Company to the FCC, CS Dkt. No. 00-30, at 28 (July 25, 2000), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6511458333.

> potential to exercise a degree of pre-selection and control of content through their contractual relationships with the providers of the walled garden content. This factor . . . suggests that a somewhat different treatment is needed from that applied to the [I]nternet.[24]

Critics of ex ante regulatory action on ITV nonetheless contend that network operators are unlikely to have incentives to discriminate against unaffiliated ITV providers or programmers, and that any rules imposed will have costly effects on investments and service efficiency:

> [I]t is implausible that any local ITV platform could hope to raise entry barriers by denying access to rival ITV service providers. Because it could not raise entry barriers, it would have incentives to deny access if and only if such a denial were efficient: either because the denied service provider would not efficiently fit the platform or because vertical integration of ITV platforms and services is more efficient. Any interference with such decisions would make ITV markets inefficient, with higher costs or lower quality for consumers.[25]

In our opinion, the argument that network operators will lack incentives to discriminate, and will therefore offer access to as many programmers and service providers as would "fit the platform" is weak for a number of reasons. First, while it is clear that a network operator will want to maximize available content in order to attract new subscribers or to sell more products to existing subscribers, it is not clear that it will have incentives to grant users access to competing ITV service providers, particularly given the existence of close substitutes in the programming market.[26] Further, where there are capacity constraints that prevent carriage of all possible content, operators naturally will privilege affiliated content. In addition, the very nature of many interactive services creates further incentives to discriminate. These new services routinely generate transactions that bring revenues in addition to basic subscription—for example, payments to play online games, product or services purchases, or commissions. Network operators certainly will want to capture some share of these additional revenues, and therefore will have strong incentives to favor affiliated providers of such interactive services.

Furthermore, the above argument is based on a static notion of market efficiency and consumer welfare that overlooks two fundamental goals in

24. Independent Television Commission, *supra* note 17, at 7.

25. Nondiscrimination in the Distribution of Interactive Television Services Over Cable, *Comments of National Cable Television Association*, CS Dkt. No. 01-7, Attachment A at 35 (March 19, 2001), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6512562663.

26. *See* Nondiscrimination in the Distribution of Interactive Television Services Over Cable, *Declaration of J. Gregory Sidak & Hal J. Singer*, CS Dkt. No. 01-7 (June 8, 2001), *at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6512569104.

communication policymaking: that of fostering dynamic innovation in broadcasting services and that of promoting widespread access to information "from diverse and antagonistic sources."[27] The very existence of a gatekeeper between ITV services and end users will suffice to discourage entry by application developers and programmers. The ultimate result would be an efficient (in static terms) but highly constrained environment for the conduct of commerce and speech. Finally, the argument simply contradicts the actual evidence of discriminatory behavior by cable operators against unaffiliated ITV service providers, which as discussed *infra* has been amply documented in the AOL/Time Warner merger review.

B. Return Path

ITV is based on the existence of a return path that provides upstream communication between the home terminal and the service provider. This return path can potentially take many forms: It may be a standard dial-up Internet connection (used for example by WebTV), a proprietary version of a dial-up connection (used by AOLTV), an "out-of-band" reverse data channel (as used by most cable operators), or even a wireless two-way radio connection (used by Gemstar's GuidePlus+).[28] For most dedicated ITV services, the speed and synchronization of the return path with the video signal do not pose significant market-entry barriers. For program-related services and dedicated services that do not tolerate latency or require full-screen video streaming, the availability of a high-speed, high-capacity return path that works in close coordination with the related video feed is essential to create a compelling ITV experience. In most cases, this is best achieved through a broadband Internet connection.

As a result, cable is likely to become the dominant platform for ITV services, at least in the United States, where the cable plant is already installed and rapidly being upgraded to provide two-way digital services (we discuss *infra* the European case where DBS seems to have a first-mover advantage over cable). As the FTC explains:

> Cable has distinct advantages over alternative ITV transport and connection methods. The television signal is already transmitted over cable, which makes synchronizing viewer interaction with the programming easier. Neither satellite nor DSL connections can

27. Associated Press v. United States, 326 U.S. 1, 20 (1945).

28. *See generally* Nondiscrimination in the Distribution of Interactive TV Servs. Over Cable, *Notice of Inquiry*, 16 F.C.C.R. 1321, para. 21 (2001) [hereinafter *Nondiscrimination in the Distribution of ITV Servs. Notice of Inquiry*] (describing the various methods of distribution of video access signals).

> integrate the cable video programming and the interactive functionality as smoothly as cable.[29]

Cable networks also provide extensive transmission capacity in both directions (downstream and upstream), a critical factor for the new generation of broadcasting services. Furthermore, operators have already made substantial investments in upgrading facilities to offer digital television packages and broadband cable Internet, upon which ITV services could be piggybacked.[30] As the FCC concludes, "[o]ur understanding of the current state of technology suggests that the cable platform is likely to be the best suited for delivering ITV services, particularly high speed services, for at least the near term."[31]

The lack of a credible competitor to discipline cable operators opens several avenues for discriminatory behavior in favor of affiliated programmers and ITV service providers. Cable operators can simply refuse to provide a return path to third parties. In fact, during the AOL/Time Warner merger review the FCC received several complaints from unaffiliated programmers about Time Warner Cable's refusal to provide guarantees in terms of nondiscriminatory use of the return path.[32] The network operator may also degrade the quality of the return path (in terms of speed or reliability) offered to third parties. In addition, it could seek charges for t-commerce transactions originated through its platform. This would be similar to an ISP seeking compensation from electronic retailers such as Amazon.com for every item sold to its subscribers. Rather than simply enabling transactions under the end-to-end principle, the transport operator would erect a tollgate between buyers and sellers.[33] Lastly, valuable customer data can be obtained from the return path even when the platform operator is not a party of the commercial transaction taking place. This has raised concerns not only from third-party programmers and ITV

29. Compl., America Online, Inc. & Time Warner Inc., FTC Dkt. No. C-3989 at 4 (2000) [hereinafter FTC Complaint].

30. The National Cable & Telecommunications Association estimates that by the end of 2001, seventy percent of households were passed by cable broadband. CABLE & TELECOMM. INDUS., Mid-Year Overview 2, chart 2 (2002), *at* http://www.ncta.com/pdf_files/Mid'02Overview.pdf.

31. *Nondiscrimination in the Distribution of ITV Servs. Notice of Inquiry*, *supra* note 28, para. 21.

32. *See* Application of America Online, Inc. & Time Warner Inc. for Transfers of Control, *Ex Parte Submission of The Walt Disney Company*, CS Dkt. No. 00-30 (filed Oct. 25, 2000), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6511960660.

33. As Time Warner Cable executive Kevin Leddy stated, "If a programmer wants to offer its advertisers the ability to have two-way communication with viewers, the cable operator has to be part of that." Saul Hansell, *AOL-Time Warner Rivals Preparing for Interactive TV Fight*, N.Y. TIMES, Sept. 11, 2000, at C1.

service providers, but also from consumer groups alarmed about viewers having little control over how the return-path data will be compiled and used.[34]

C. Home Terminal

The third necessary component of an ITV system is the home terminal or digital set-top box. As the number and complexity of ITV services increases, so will the processing and storage capacity of the home terminal in order to perform the different tasks. In essence, a digital set-top box is similar to a stripped-down personal computer. There are at least two components within the digital set-top box that, absent regulatory safeguards or open industry standards, present opportunities for discriminatory behavior by dominant platform operators. The first is the Application Program Interface ("API"), which is the software layer between the operating system and the different applications running on the terminal. Unlike the more mature personal computer industry, there is no de facto industry standard for set-top box APIs. If such a standard were to develop in the future, and if its technical specifications were available to application developers on nondiscriminatory terms, the competitive concerns associated with the API would be mitigated. There are a number of industry consortia working to create an open platform for ITV. Among them are OpenCable's OpenCable Applications Platform ("OCAP"),[35] the Digital Video Broadcasting ("DVB") group's Multimedia Home Platform ("MHP"),[36] and even a Linux-based platform sponsored by the TV Linux Alliance.[37] For the foreseeable future, however, proprietary (i.e., non-interoperable) APIs will be deployed by network operators, forcing developers to rewrite ITV applications for several different environments.

In order to enter the market, an ITV service provider (assuming it has secured both downstream and upstream carriage) faces two options: it can either contract with the dominant platform operator to gain access to the

34. *See, e.g.*, CENTER FOR DIGITAL DEMOCRACY, TV THAT WATCHES YOU: THE PRYING EYES OF INTERACTIVE TELEVISION (June 2001), *at* http://www.democraticmedia.org/privacyreport.pdf (last visited Oct. 1, 2002).

35. OpenCable is an initiative of CableLabs, a Research and Development consortium formed by U.S. cable operators. *See generally* http://www.cablelabs.com (last visited Oct. 7, 2002).

36. The DVB group is an European consortium formed by equipment manufacturers, broadcasters, content producers, software developers, and representatives of national regulatory bodies. *See generally* http://www.dvb.org (last visited Oct. 7, 2002).

37. The TV Linux Alliance is a U.S.-based consortium of technology suppliers to cable, satellite and telecommunications network operators. *See generally* http://www.tvlinuxalliance.org (last visited Oct. 7, 2002).

installed base of terminals, or it can deploy a stand-alone box and bypass the proprietary terminal components altogether. The second option, while theoretically possible, is nonetheless uneconomical for most potential entrants. It is highly unlikely that users will be willing to buy a new box for every new ITV application. Who would be willing to buy a separate personal computer for every new application? The failure of stand-alone boxes marketed by companies like TiVo (which allowed digital video recording) and WebTV (despite heavy marketing spending by its parent Microsoft) has shown that consumers prefer a single box that integrates traditional video programming with new services.[38] Furthermore, the evidence from the introduction of DBS, wireless telephony, and digital television shows that heavy terminal subsidies are necessary. Thus, as a European competition official said, "[T]he scale of investment required means that the new entrants' most realistic option is to provide a . . . service using the set top boxes which already exist."[39]

Access to the API specifications and related facilities (authoring tools, authorization keys, memory control, etc.) is therefore critical for potential entrants in the ITV services market. This creates several opportunities for strategic behavior by dominant network operators such as refusing to provide authoring tools, discriminatory access pricing, discriminatory allocation of set-top boxes facilities (e.g., set-top box memory for caching), and bundling of API access with other services (e.g., conditional access or subscription management). That fair competition in ITV services requires either standardization or nondiscriminatory licensing of API specifications has been long recognized by European regulators. Accordingly, the new EU communications regulatory package contains several measures to promote API standardization in member-states, and allows national regulatory authorities to take steps to ensure nondiscriminatory access to API specifications and related facilities.[40]

The second component that raises policy concerns is the EPG, a navigation tool that allows users to browse and select television channels

38. *See generally* CONSUMER ELECTRONICS ASSOCIATION, DIGITAL AMERICA 2002, THE U.S. CONSUMER ELECTRONICS INDUSTRY TODAY, *at* http://www.ce.org/publications/books_references/digital_america/default.asp. In fact, Personal Video Recorders ("PVRs") by TiVo and others are now being embedded into cable and satellite receivers. *See generally* Jennifer 8. Lee, *In the US, Interactive TV Still Awaits an Audience*, N.Y. TIMES, Dec. 31, 2001, at C1.

39. Linsey Mc Callum, *EC Competition Law and Digital Pay TV*, 1 COMPETITION POL'Y NEWSL. 4, 11 (1999).

40. *See, e.g.*, Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on Access to, and Interconnection of, Electronic Communications Networks and Associated Facilities, 2002 O.J. (L 108) 7, *available at* http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l_108/l_10820020424en00070020.pdf.

and services. With the manifold increase in the number of channels and applications made possible by the transition to digital television, the EPG is expected to become to the broadcasting industry what Web portals have become to the Internet: powerful tools to direct traffic and obtain advertising revenues. From a regulatory standpoint, the main concern is that dominant platform operators do not use the EPG to leverage their power onto the market for content and ITV services. As European regulators explain:

> Issues of ensuring listing of third-party services or programming, and the quality of such listings, will be of critical importance. Exclusive arrangements tying particular EPGs to particular service bundles may become a problem requiring regulatory intervention to ensure third-party access on fair, transparent and non-discriminatory terms.[41]

U.S. regulators increasingly have grown concerned about issues of first-screen and presentation bias in EPGs, although regulatory action so far has been limited. For example, a few nondiscriminatory provisions were adopted in the Telecommunications Act of 1996[42] in the case of EPG services offered by Open Video Systems operators,[43] as well as in the Satellite Home Viewer Improvement Act of 1999[44] in the case of EPGs offered by DBS operators. Yet, these rules do not extend to cable systems. In 1999, the merger of the two major EPG providers (Gemstar and TV Guide) was the subject of an antitrust investigation by the U.S. Department of Justice, which ultimately declined to challenge the deal.[45] In Europe, by contrast, regulators have taken a more active role in regulating EPG services, either to protect third-party programmers and service providers or to favor publicly funded broadcasters. In the UK, for example, the Office of Telecommunications ("OFTEL") has interpreted EPGs as covered by the nondiscriminatory rules for telecommunications access services,[46] while the ITC has adopted a "code of conduct" for EPG providers that, among other things, mandates that the visual interface grants public service channels "due prominence."[47] As discussed *infra* in the British Interactive

41. Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation, Commission of Eur. Cmtys., COM(97)623EC 24-25 (Mar. 12, 1997) (citations omitted).

42. Pub. L. No. 104-104, 110 Stat. 56 (codified at scattered sections of 47 U.S.C.).

43. 47 U.S.C. § 573(b) (2000).

44. 47 U.S.C. § 338 (2000).

45. Christopher Grimes, *Gemstar Closes TV Guide Deal*, FIN. TIMES, July 13, 2000, at 34, *available at* LEXIS, News Library, Financial Times.

46. *See* OFFICE OF TELECOMM., DIGITAL TV AND INTERACTIVE SERVICES: ENSURING ACCESS ON FAIR, REASONABLE, AND NONDISCRIMINATORY TERMS (1998), *at* http://www.oftel.gov.uk/publications/1995_98/broadcasting/dig398.htm. (Mar. 1998).

47. *See generally* INDEPENDENT TV COMMISSION, CODE OF CONDUCT ON ELECTRONIC

Broadcasting ("BiB") case, European competition authorities also have acted against exclusivity arrangements between EPG providers and dominant network operators.

V. THE CASES: THE AOL/TIME WARNER MERGER AND BRITISH INTERACTIVE BROADCASTING

The debate about the proper tools and scope of regulatory action vis-à-vis ITV services already has surfaced in a number of cases. In this Section we analyze two of the most prominent ones: the AOL/Time Warner merger and the BiB case. BiB was a joint venture for the launch of ITV services in the UK created by BSkyB, British Telecommunications ("BT"), Midland Bank (part of the HSBC banking group), and Matsushita, the Japanese consumer electronics giant.[48] We contrast the approach taken by American and European regulators with the issues raised by these cases and analyze the implications of the regulatory obligations imposed in each case.

A. The AOL/Time Warner Merger

The January 2000 announcement of the merger between AOL and Time Warner triggered close scrutiny by federal regulators. The investigation conducted by the FTC concluded that the combination of AOL's Internet properties with Time Warner's cable holdings and content assets had anticompetitive effects in three distinct markets: broadband Internet access service, broadband Internet transport service, and ITV services.[49] While most of the debate about the competitive effect of the merger focused on the first two issues, the FTC findings brought attention to the architecture of next-generation broadcasting networks. The main concerns that were raised related to AOLTV, AOL's ITV product.[50] The existing generation of the AOLTV service consisted of a stand-alone set-top box that connected to a cable or DBS receiver and blends this video programming with interactive content transmitted via a narrow-band dial-up modem.[51] While regulators raised few concerns about this service, AOL's plan to upgrade it by embedding AOLTV within Time Warner cable boxes and utilizing the broadband Internet platform of the cable

PROGRAMME GUIDES (1997), *at* http://www.itc.org.uk/itc_publications/codes_guidance/electronic_programme_guide/epg_code.asp (last visited Sept. 30, 2002).

48. David Teather, *Closing time: BskyB is set to close Open, the interactive TV firm, in order to boost its own business. But has the market lost its taste for TV shopping?*, THE GUARDIAN, May 7, 2001, at 30.

49. America Online, Inc. and Time Warner Inc., *Complaint*, FTC Dkt. No. C-3989, at 3-4 (2000).

50. *Id*. at 4.

51. *Id.*

operator troubled competition authorities. As the FTC explained:

> AOL recently launched AOL TV [sic], a first generation ITV service, and is well positioned to become the leading ITV provider. Local cable companies will play the key role in enabling the delivery of ITV services. After the merger, AOL/Time Warner will have incentives to prevent or deter rival ITV providers from competing with AOL's ITV service. Thus, the merger could enable AOL to exercise unilateral market power in the market for ITV services in Time Warner cable areas, which also affects the ability of ITV providers to compete nationally.[52]

Despite the strong wording of these findings, the FTC ultimately imposed rather weak remedies related to ITV. The consent decree that authorized the merger simply prohibits AOL/Time Warner from interfering with its subscribers' ability to use the interactive signals or "triggers" provided by programmers that it has agreed (or is forced by statute) to carry.[53] In essence, the FTC order only addressed one of the possible anticompetitive strategies discussed *infra*, that of network operators "stripping" the signals of unaffiliated programmers from its interactive content. Other discriminatory practices related to downstream transmission, upstream transmission (the return path), and the home terminal were left unaddressed.

The FCC investigation concurred with the findings of the FTC review:

> AOL Time Warner would have the potential ability to use its combined control of cable system facilities, video programming and the AOLTV service to discriminate against unaffiliated video programming networks in the provision of ITV services. We also find that AOL Time Warner may have incentives to engage in such discriminatory behavior.[54]

The FCC analysis is broader in scope and acknowledges that the anticompetitive strategies available to AOL/Time Warner go beyond the "stripping" of interactive content of unaffiliated programmers. It also notes that the Memorandum of Understanding, by which the merger parties committed to provide customers with a choice of ISPs, does not obligate the company to provide access for ITV uses. Nonetheless, the FCC declined to impose additional conditions on the parties pending further

52. America Online, Inc. and Time Warner Inc., *Analysis of Proposed Consent Order to Aid Public Comment*, FTC Dkt. No. C-3989, at 2 (2000).

53. America Online, Inc. and Time Warner Inc., *Decision and Order*, FTC Dkt. No. C-3989, at 11 (2000).

54. Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee, *Memorandum Opinion and Order*, 16 F.C.C.R. 6547, para. 217, 23 Comm. Reg. (P & F) 157 (2001).

examination of market developments and the potential incentives for discriminatory behavior by AOL/Time Warner. In the Commission's analysis, the FTC's prohibition on "stripping," coupled with the conditions relating to the availability of multiple ISPs, suffice to protect competition, at least during the initial stages of the ITV market. In the words of then-Commissioner (and now Chairman) Michael Powell, "[A]lthough it is surely possible to hypothesize public interest harms flowing from a cable operator's control of assets like those at issue in this merger, the [ITV] market is too immature to conclude with any confidence whether such harms are sufficiently probable to warrant direct government intervention."[55]

B. The British Interactive Broadcasting Case

BiB operates one of the largest and most advanced ITV services worldwide. It is available to the more than six million subscribers of BSkyB's digital television satellite service, offering a variety of dedicated services such as e-mail, electronic banking, games, and gambling, as well as program-related services tied to channels offered by BSkyB.[56] It provides ITV services in the UK by means of satellite broadcasting (leased from BSkyB, with BT responsible for the uplink) in combination with a narrow-band return path through a standard telephone line. The terminal equipment required to use BiB services is embedded in the BSkyB digital television set-top box, which BiB partly subsidizes (this includes a proprietary API developed by OpenTV and BSkyB's EPG).[57] Revenues come from end-users, from retailers and from ITV service providers that BiB carries on its platform.[58]

European competition authorities raised two main concerns about BiB. First, that the company would use its control of the set-top box software components to foreclose competition in ITV services, denying third parties access to the boxes being deployed. Second, that BiB would enhance the already-dominant position of BSkyB and BT in the markets for

55. Press Statement, FCC Commissioner Michael Powell, Approval of AOL-Time Warner Merger (Jan. 11, 2001), *available at* http://www.fcc.gov/Speeches/Powell/Statements/2001/stmkp0101.html.

56. BRITISH SKY BROADCASTING GROUP PLC, ANNUAL REPORT AND ACCOUNTS (2002), *available at* http://media.corporate-ir.net/media_files/lse/bsy.uk/reports/BSKYB_ar_2002.pdf.

57. Notice published under Article 19(3) of Council Regulation No. 17 Concerning an Application for Negative Clearance or an Individual Decision to Grant an Exemption Pursuant to Article 85(3) of the EC Treaty (Case No IV/36.539—BiB), 1998 O.J. (C 322) 6 (Oct. 21, 1998).

58. Duncan, *supra* note 19, at 27, 30.

pay television and telecommunications local loop respectively. In October 1998, the European Commission approved the joint venture subject to a number of conditions.[59] In contrast with the AOL/Time Warner case, the main regulatory concern was to ensure that "third parties, whether operators of digital television or digital interactive TV services, have fair, reasonable, and nondiscriminatory access to all proprietary components of the digital set top box which BiB will subsidise."[60] The difference in focus is due to the fact that while cable operators effectively control the transmission infrastructure, satellite television operators lease capacity from (often unaffiliated) satellite carriers.[61] Market power, therefore, stems not from control over transmission infrastructure but rather from first-mover advantages and switching costs associated with proprietary home terminals.[62]

One of the conditions imposed concerned the recovery of the set-top box subsidy. The Commission forced BiB to establish a separate company to manage the subsidy payments in order to ensure that the recovery is evenly distributed among service operators and broadcasters, whether affiliated with BiB and its partners or not. It also demanded that the subsidy was not linked to a subscription to BSkyB's pay-television service.[63]

Another condition related to the terms of access to the home terminal components. BiB agreed to provide, upon request, the API specifications and other proprietary technical information to third parties. The Commission also forced BiB to end its exclusivity agreement with BSkyB, whereby BiB would be the only available ITV service on BSkyB's EPG. In addition, the Commission also imposed several obligations on the joint venture partners. BSkyB agreed to offer access services to programmers and ITV service providers (including BiB) on fair, reasonable, and nondiscriminatory terms regulated by OFTEL. It also agreed to supply, upon request, a "clean feed" (i.e., stripped of interactive applications) of its film and sports channels to other MVPDs (e.g., cable operators) in order to

59. Mc Callum, *supra* note 39, at 6.

60. *Id.* at 13.

61. In the case of BSkyB, it leases satellite capacity from Société Européenne des Satellites. OFFICE OF FAIR TRADING, DIRECTOR GENERAL'S REVIEW OF BSKYB IN THE WHOLESALE PAY TV MARKET (1996) *at* http://www.oft.gov.uk/NR/rdonlyres/eupiymw5hitxeuawrxfukg44iowwyubhp33q4nimzdezdp33wgfi2kg2vigxp6r5ma55pmtejiigl7a3fottlsocjwb/oft179.pdf.

62. *See* Martin Cave, *Regulating Digital TV in a Convergent World*, 21 TELECOMM. POL'Y 575 (1997).

63. Notice published under Article 19(3) of Council Regulation No. 17 Concerning an Application for Negative Clearance or an Individual Decision to Grant an Exemption Pursuant to Article 85(3) of the EC Treaty (Case No IV/36.539—BiB), 1998 O.J. (C 322) 6 (Oct. 21, 1998).

prevent bundling strategies that would favor BiB. Finally, BT agreed to divest from its existing cable interests.[64]

The conditions imposed by the EC on the BiB venture are consistent with the established doctrine among community competition authorities that ex post rules are insufficient to remedy the problem of access to telecommunications facilities, and thus need to be supplemented by ex ante, sector-specific obligations.[65] This doctrine has been implemented through a series of Council Directives under the so-called Open Network Provision ("ONP") framework, which imposes on telecommunications operators having significant market power certain nondiscriminatory obligations that go beyond those that would normally apply under general competition law.[66] It is interesting to note that a few weeks before the BiB decision, the Commission adopted the Access Notice that explicitly stated that the ONP framework extends not only to telecommunications facilities, but also to "access issues in digital communications sectors generally."[67] This doctrine was crystallized in the recently passed Access Directive, which specifies the instruments for extending interconnection obligations to providers of ITV facilities such as the API and the EPG.[68] Through these efforts, EU policymakers are progressively bringing about a policy convergence that mirrors technological convergence, aiming for technology-independent rules that govern communication activities according to general principles.

64. *Id.*

65. *See* HERBERT UNGERER, ACCESS ISSUES UNDER EU REGULATION AND ANTITRUST LAW: THE CASE OF TELECOMMUNICATION AND INTERNET MARKETS (Harvard Univ. Weatherhead Ctr. for Int'l Affairs, Working Paper No. 00-05, 2000).

66. *See generally* Council Directive of 28 June 1990, Establishment of the Internal Market for Telecommunications Services Through the Implementation of Open Network Provision, 1990 O.J. (L 192) 1 (discussing the general framework provided by the ONP Framework Directive); *see also* Council Directive 92/44/EEC of 5 June 1992 Application of Open Network Provision to Leased Lines, 1992 O.J. (L 165) 2; Council Recommendation 92/382 of 5 June 1992, Harmonized Provision of a Minimum Set of Packet-Switched Data Services (PSDS) in Accordance with Open Network Provision (ONP) Principles, 1992 O.J. (L 200) 1; Directive 95/62/EC of the European Parliament and of the Council of 13 Dec. 1995, Application of Open Network Provision (ONP) to Voice Telephony, 1995 O.J. (L 321) 6.

67. Application of the Competition Rules to Access Agreements in the Telecommunications Sector—Framework, Relevant Markets and Principles, Notice, 1998 O.J. (C 265) 2, 3.

68. European Council Directive of 7 March 2002, Access to, and Interconnection of, Electronic Communications Networks and Associated Facilities (Access Directive), 2002 O.J. (L 108) 7.

VI. CONCLUSION

In the aftermath of the AOL/Time Warner merger, the debate about open cable access has faded considerably. The more general problem of nondiscriminatory access to the basic layers of communications infrastructure, whether cable lines,[69] the local loop,[70] the emerging wireless data networks,[71] or the digital television user terminal,[72] is arguably the crucial issue for industry and regulators in the post-convergence era. In this Article we examined how this problem unfolded in the migration to the third generation of broadcasting services, that of ITV. We argued that absent regulatory safeguards that provide for nondiscriminatory access to several network components (including digital set-top box components), dominant platform operators are likely to leverage ownership of delivery infrastructure into market power over ITV services and content, foreclosing competition and discouraging third parties and users from experimenting with yet-unimagined ways to use television.

In the case of ITV, the question of open access is not about extending existing regulatory principles to the new generation of technologies. Rather, it is about seizing the opportunities offered by these new technologies to better serve our policy goals. Broadcasting regulation has traditionally taken distribution scarcities and closed network architecture as a fact of life dictated by the available technology, thus relying on ownership caps, content obligations, must-carry rules, and other instruments of structural regulation to attain its goals. It is now widely acknowledged that this approach has not only largely failed on its own merits, but also is inadequate for a post-convergence world. The third generation of television calls for shifting the focus of regulatory action from government "tinkering with the configuration of a mass media market"[73] to rules that ensure nondiscriminatory access to the capacity to

69. *See generally* Mark Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001) (arguing that cable modem services threaten the open architecture of the Internet, and thus its growth and innovation).

70. *See generally* UNGERER, *supra* note 65 (outlining the ONP doctrine used to introduce competition in the European telecommunications sector).

71. *See generally* Eli M. Noam, The Next Frontier for Openness: Wireless Communications (Sept. 25, 2001) (paper for the 2001 Telecommunications Policy Research Conference, Alexandria, Va.), *at* http://arxiv.org/ftp/cs/papers/0109/0109102.pdf.

72. *See generally* Galperin, *supra* note 21 (discussing how problems of access to the terminal equipment threaten competition in digital television services).

73. Yochai Benkler, *From Consumers to Users: Shifting the Deeper Structures of Regulation Toward Sustainable Commons and User Access*, 52 FED. COMM. L.J. 561, 562 (2000).

experiment with and provide information, entertainment, and transaction services over broadcasting networks.

American regulators prefer to wait and observe the unfolding of the new media. They have been content so far with rather toothless safeguards to prevent discriminatory behavior by incumbent network operators in the ITV market. Furthermore, these rules are dispersed across statutes addressing different platforms, thus distorting market competition. European authorities, by contrast, are in the process of fashioning a comprehensive framework that addresses problems of access and interconnection across electronic communications networks. This framework does not impose specific remedies but rather lays out general principles to tackle problems as they arise. By addressing access in a piecemeal, ad hoc fashion, U.S. policymakers may undermine the very basis of the unprecedented innovation in communications technology of the last decade, and, in the case of television, forgo the possibility to revamp a failed regulatory regime. As media converge, it is becoming clear that access will be a generic issue, relevant to wireless, cable, broadcast, telephone, and the Internet alike. Whether one agrees with specific EU rules or not, there is a compelling logic in the European endeavor to revert to basic principles and to apply them uniformly across communication media.