

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Video Device Competition)	MB Docket No. 10-91
)	
Implementation of Section 304 of the Telecommunications Act of 1996)	
)	
Commercial Availability of Navigation Devices)	CS Docket No. 97-80
)	
Compatibility Between Cable Systems and Consumer Electronics Equipment)	PP Docket No. 00-67
)	

**TiVo Inc. Reply Comments On
Notice Of Inquiry**

August 12, 2010

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**TiVo Inc. Reply Comments On
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TiVo Inc. submits these Reply Comments in further support of the Commission's AllVid Notice of Inquiry. In these comments, TiVo responds to the comments of multichannel video programming distributors and others and urges the Commission to proceed to a rulemaking on the AllVid proposal.

I. Introduction And Summary

The comments of some MVPDs and their vendors urge the Commission to draw simplistic and incorrect conclusions from its experience in implementing Section 629. The incorrect conclusion is that the Commission's approach of referring to industry standards has been a failure. The correct conclusion – supported by TiVo's experience – is that the successful open standard approach to security embodied by CableCARD was not built upon by private companies for other services as expected by the Commission, and instead was marginalized and crippled by adding additional complexity not in the

interest of consumers or CE manufacturers. Measures that were intended solely to preserve operators' control over navigation devices lessened their potential utility to consumers.

The initial challenge faced by the Commission in 1997 was that there were three DBS providers with nationally standard means of transmission, security, and interaction but approximately 1100 cable systems that were under no obligation to standardize their means of transmission, security, or interactive selection of features. The Commission focused on the immediate issue of digital cable, giving forbearance to DBS operators *and* to any further standardization of analog cable systems.¹ The emergence of MPEG2 as a *de facto* standard allowed the FCC and the private sector to focus on diverse approaches to system security as the biggest obstacle to national portability of retail devices. The private sector came forward with the CableCARD solution. This provided a foundation that *could* have been built on to standardize feature access, at least in the cable domain.²

Every participant in the 2003 “Plug & Play” rulemaking, including the FCC, recognized that standardization at the *security* level was a foundational rather than a

¹ *In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, CS Docket No. 97-80, First Report and Order ¶ 8 (rel. June 24, 1998). The request to relieve cable operators of obligations to further standardize analog techniques was initiated by consumer electronics and IT manufacturers and retailers, to allow cable operators to focus on digital standards. *In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, CS Docket No. 97-80, Order on Reconsideration ¶¶ 7-22 (rel. May 14, 1999).

² TiVo need not repeat here its observations as to why and how CableCARD has been undermined by the very industry that came forward with it. *See In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment*, CS Dkt. No. 97-80, PP Dkt. No. 00-67, Comments of TiVo Inc. on Fourth Further Notice of Proposed Rulemaking at 3-7 (June 14, 2010) (“TiVo FNPRM Comments”); CEA-CERC FNPRM Reply Comments at 13-15.

complete solution. The cable and CE industries promised³ and the FCC expected⁴ that the parties would build on the “security level” solution to achieve a “two-way,” feature-level solution.⁵ Once negotiations broke down, the Commission in 2007 asked for and received comment on a Third Further Notice Of Proposed Rulemaking,⁶ but this initiative was overtaken by events as several major CE manufacturers were persuaded by the cable industry to try a “tru2way” solution on the cable industry’s own technical and licensing terms. This solution has yet to produce a nationally distributed product, and it now appears doubtful that it ever will.⁷

³ Letter from Cable MSO and Consumer Electronics Industry to Michael K. Powell, Chairman, FCC, Re: Consensus Cable MSO-Consumer Electronics Industry Agreement on “Plug & Play” Cable Compatibility and Related Issues (Dec. 19, 2002).

⁴ In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment, CS Dkt. No. 97-80, PP Dkt. No. 00-67, Second Report and Order and Second Further Notice of Proposed Rulemaking, Statement of Cmmr. Abernathy at 82, Statement of Cmmr. Copps at 83, Statement of Cmmr. Martin at 85, Statement of Cmmr. Adelstein at 86 (rel. Oct. 9, 2003).

⁵ Instead of building similar standards around video-on-demand, pay-per-view, electronic program guides (EPGs), etc., the operators obfuscated and delayed them with unneeded complexity (OCAP) to maintain their full control and not have to agree among themselves on standards. Even OCAP doesn’t have a single video-on-demand standard. The Commission showed the way by having a single national standard for security, but the industry never followed suit with single standards for video-on-demand, pay-per-view, etc.

⁶ *In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment*, CS Dkt. No. 97-80, PP Dkt. No. 00-67, Third Further Notice of Proposed Rulemaking (rel. June 29, 2007).

⁷ TiVo has repeatedly explained to the Commission why tru2way was not a workable approach for creating two-way retail devices. *See, e.g., In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment*, CS Dkt. No. 97-80, PP Dkt. No. 00-67, Comments of TiVo Inc. at 17-24 (Aug. 24, 2007); *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Dkt. No. 07-269, Comments of TiVo Inc. at 9-14 (July 29, 2009). In late July 2010, Panasonic, an early and prominent supporter of tru2way, and the *only* consumer

TiVo's view, based on its experience in licensing and implementing these technologies and in devising and marketing products based on them, is that these failures have not been due to standardization, Section 629, or the FCC's role in its implementation. Rather, the failure has been in not building on progress so as to reach the next and appropriate level of standardization, as was successfully done with TV broadcasting, FM radio, the telephone industry, and the Internet. In the National Broadband Plan and in this NOI, the Commission has recognized the inadequacies in its earlier standardization objectives, and has focused on the proper interface. The home network-level, IP-based interface has proven successful for broadband support of a growing range of devices, now including televisions.

Middleware-level integration has little or no role to play in building toward a standards-based implementation of this interface to achieve the goals of Section 629. A successful CableCARD implementation, by contrast, is a fundamental building block to success at the IP level. With the failure of tru2way at retail, there is now only one way for retail products to combine subscription programming with programs and services obtained via interactive, broadband techniques. This is the "UDCP" CableCARD implementation plus broadband interactivity. This approach, as implemented by TiVo today, affords the consumer the option, for example, of finding a Netflix program, as offered and presented by Netflix, in the context of TiVo's own search functionality. The consumer sees the Netflix offering plus cable subscription and other choices. This approach should be built upon and not ignored while pursuing the AllVid concept.⁸ The

electronics manufacturer to come to market with a product, announced that it had no further plans to introduce a retail product based on this technology. Todd Spangler, *Tru2Way Stalls at Retail*, Multichannel News (Aug. 2, 2010).

⁸ Google Inc. comments at 14.

FCC will not make progress toward a IP-level home network interface by failing to support the key element – CableCARD reliance – that makes choices at this level possible today. Nor need the Commission extinguish this choice in favor of the more complete implementation that it now is prepared to propose.

Some MVPDs call consumer choice “disaggregation” and thus turn language on its head. What TiVo has accomplished, with the full support of program providers such as Netflix, is an *aggregation* of consumer choices. Providing this *aggregation* has not required the *disaggregation* of Netflix’s service. Nor has it or will it require the disaggregation of any MVPD’s own service. What Section 629 fundamentally requires and what the consumer has every right to expect is access to the *facts* that give her the ability to aggregate, search, and select among choices of services. While elements of MVPD electronic program guides (EPGs) may be proprietary (e.g., creative arrangement or presentation), the underlying *facts* about the programs being presented (e.g., what program is available on a particular channel or stream and where to tune the channel) are not protectable.⁹

TiVo is encouraged that at least one MVPD¹⁰ and the leading licensor of guide data¹¹ appear to appreciate the difference between aggregation of facts and the purported disaggregation of “services.” The disaggregation bogeyman, like other purported obstacles interposed by some MVPDs and their vendors, should not divert the Commission from building on experience to select a useful IP-based interface between MVPD programming and home networks.

⁹ *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 358 (1991).

¹⁰ Dish Network L.L.C. and EchoStar Technologies L.L.C. comments at 7-8.

¹¹ Rovi Corp. comments at 6-9.

II. The Commission Must Act To Initiate Standardization At The Gateway Level.

The Commission properly recognizes that new regulations are needed to assure competition in home video devices. It should resist the invitations of some commentators to do nothing. The Commission must “assure the commercial availability” of devices from unaffiliated manufacturers that access interactive, multichannel video content and services.¹² This is a requirement set by the Congress that the Commission cannot ignore.

Experience in the market shows that competitive availability of devices will only be “assured” when consumers have real choices among user interfaces, combinations of features, and content sources. Consumers generally will not buy devices at retail that provide the same user experience and the same set of features as standard leased devices. This is why devices like TiVo DVRs, and other devices with unique capabilities, have been able to persevere, while theoretically more capable (in terms of access to two-way cable services) tru2way devices – which present a user experience controlled by the MVPD – have seen no demand in the retail market.

The AllVid approach, which draws a clear demarcation line between the MVPD’s network and the home network, will permit real consumer choice – a prerequisite for assuring a viable competitive market. TiVo urges the Commission to adopt rules laying out the *required*, *permissible*, and *prohibited* features of the AllVid gateway. This will give all device manufacturers the ability to create and combine innovative features that will work with any MVPD through the common interface, while preventing MVPDs from denying access to programming and essential data for business reasons. A well-

¹² 47 U.S.C. § 549(a) (2010).

specified set of industry standards, backed by Commission rules, will create confidence that will lead to investment in new “smart devices.”

No one who commented on this NPRM claims that there is, today, a robust competitive retail market in navigation devices that can access MVPD programming and services. Yet many commentators have urged the Commission to do nothing. NCTA argues that the “broader aspirations of Section 629 have already been met” because, *inter alia*, several new manufacturers have begun selling cable boxes to cable operators for leasing to subscribers.¹³ NCTA also implies that inter-MVPD competition and competition from “over-the-top” video providers can substitute for the specific goal that Congress called for in Section 629: competition in *devices*, including from non-affiliated manufacturers.¹⁴ Likewise, DirecTV asserts that the innovations it has made to compete with cable render the AllVid proceeding unnecessary.

While the inter-MVPD competition described by these commentators is beneficial and welcome, and should be encouraged by the Commission, it does not fulfill the specific mandate of Section 629 for intra-modal competition, and it does not address the barriers and needless uncertainty faced by manufacturers like TiVo that have been well-documented in this docket. While a consumer in a given location might have three MVPD choices – often less – a thriving retail market for video devices would give the same consumer many more options for how to find and interact with offers of video

¹³ NCTA comments at ii, 6-7. Ironically, the ability for new manufacturers such as TiVo, Panasonic, Samsung, Evolution, and EchoStar to sell cable boxes to MSOs is entirely based on the requirement that all digital cable operators support CableCARD – the very technology that several commentators have suggested that the Commission abandon.

¹⁴ See NCTA comments at 7-8 (“In this highly competitive video marketplace, MVPDs and over-the-top providers engage in equipment differentiation . . .”).

programming and services.¹⁵ Given the specific mandate of Section 629 and the real benefits that would flow from its fulfillment, the Commission should proceed to a rulemaking on AllVid, and not be lulled into inaction.

III. Device Competition Does Not Require “Disaggregation” Or “Unbundling.”

Commentators who favor inaction seek to portray the NOI as a proposal to turn MVPDs into “dumb pipes” that simply deliver content to devices on request. Conversely, consumer electronics manufacturers see device innovation disappear as “dumb terminals” simply render the MVPD’s user interface. Neither scenario need occur. Establishing a demarcation line between the MVPD and home network allows both MVPDs and independent manufacturers to build full-featured devices on the home network side of that line. MVPDs can offer legacy and new services that will flow through the AllVid gateway to advanced devices that can access them. Consumers will be able to choose whether to access their content using the interfaces and applications supplied by the MVPD in its own, separately offered, client devices, or by the independent manufacturer. Consumer choice – of devices, services, and experience – is the hallmark of fair and full competition that the Commission can assure through the AllVid concept.

This result is similar to, and builds on, the model that TiVo uses today. Subscribers search for and select programming from multiple video sources, including MVPDs. When searching for video-on-demand content, for example, the subscriber can

¹⁵ It should go without saying that the Commission cannot simply declare Section 629 or any other part of the Communications Act obsolete, as some have suggested. *See ex parte* letter from William M. Wiltshire, Counsel for DirecTV to Marlene H. Dortch, Secretary, FCC, Re. MB Dkt. No. 10-91, CS Dkt. No. 97-80, PP Dkt. No. 00-67, “AllVid Talking Points” attachment (July 29, 2010).

choose to use the video provider's interface (e.g., Netflix, Amazon, Blockbuster) or the interface provided by TiVo that aggregates all of these sources. Program providers control the ordering, appearance, and branding of their programming. TiVo does not "disaggregate" or "unbundle" program providers' services, and neither will devices that use an AllVid gateway.

Time Warner Cable asserts that its "service" includes the EPG, so that allowing independent devices to access EPG data somehow would contravene Section 629.¹⁶ The argument proves too much. The fundamental purpose of Section 629 is to promote competition in navigation devices. The user interface is a primary differentiator between MVPD-supplied and retail-available navigation devices. Innovation in set-top box applications, as well as in hardware, is specifically contemplated within the scope of this NOI¹⁷ and the NBP.¹⁸ If all any navigation device can do is to display MVPD content within the MVPD interface, then Section 629 leaves no room for innovation at all.¹⁹

¹⁶ Time Warner Cable comments at 10.

¹⁷ "[D]evice manufacturers distinguish their products from one another by providing better user experiences." *In the Matter of Video Device Competition, Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment*, MB Dkt. No. 10-91, CS Dkt. No. 97-80, PP Dkt. No. 00-67, Notice of Inquiry ¶ 43 (rel. Apr. 21, 2010) ("NOI").

¹⁸ "The lack of innovation in set-top boxes limits what consumers can do and their choices to consume video, and the emergence of new uses and applications." Nat'l Broadband Plan at 18.

¹⁹ Time Warner Cable cannot possibly be arguing that a customer's inability to receive each and every feature that TWC offers constitutes disaggregation of TWC's service. If this were so, then TWC "disaggregates" its own service whenever it serves analog-only customers who cannot receive video-on-demand and other features. *See Part V, infra.*

A. TiVo Offers Global Search And UI Choice Without Unbundling Or Rebranding Content.

TiVo's current DVRs allows consumers to select among several commercial video services, including cable and broadcast TV programming, and "over-the-top" Internet video from Netflix,²⁰ Amazon, YouTube, and other sources. Subscribers use TiVo's user interface to search for shows, movies, and other content. After selecting a program, the subscriber sees the individual provider's own user interface for ordering a program. TiVo does not disaggregate, unbundle, or rebrand content from any source; the viewer is never confused as to which service is providing the programming. At the same time, the TiVo interface brings together content from these multiple sources to present the viewer with many more choices than using the cable interface alone.

Importantly, what TiVo currently provides is more integrated, and more sophisticated, than the "shopping mall" approach put forward by DirecTV.²¹ Although the DirecTV approach, which apparently requires every connected device to contain an RVU server or client, would serve the business desires of the MVPDs, it would restrict the competitive choices available to the navigation device manufacturer – which Section 629 was designed to expand. The TiVo user interface, by contrast, is not limited to simply offering a choice among video provider "storefronts." It preserves the video

²⁰ The comments of Time Warner Cable, commending TiVo's integration of Netflix into the TiVo user interface, demonstrate that the AllVid concept can and will work. *See* Time Warner Cable comments at 15. First, TWC concedes that content from various sources can be integrated into a single interface. Second, TWC implicitly admits that the source of the content (there, Netflix) was absolutely clear to the viewer. Thus, there will no disaggregation or blurring of services. It can be as clear to the user that they are receiving subscription or on-demand content from TWC as from Netflix. Third, the "potential far-reaching consequences on the consumers" that TWC perceives are already understood by every TiVo user: all accessible content presented in a compelling, easy-to-use viewer experience that is better than the MVPD's. This is the essence of the competition Section 629 intends.

²¹ DirecTV comments at 8.

providers' own secure ordering and branding while still giving subscribers the benefits of an integrated guide and universal search. In short, it does not constrain consumers to live with either a "dumb pipe" or a "dumb terminal." It allows for innovation by all competitors.

This concept is clearly extensible to all MVPDs via the AllVid proposal. Through the AllVid, MVPD and independently-manufactured devices can integrate video-on-demand, pay-per-view, and other forms of MVPD programming. All that is needed is for the AllVid gateway to make the necessary data concerning the MVPD service available to client devices.

B. AllVid Does Not Require Infringement Of Proprietary Guide Data.

For a "smart video device" to provide useful and innovative alternatives to leased devices, it must have a way of locating video programming by channel, time, and means of access (such as video-on-demand). It is essential that an AllVid gateway provide client devices the means of determining the programming actually delivered by the MVPD. For example, a video device must be able to inform the subscriber of the channels offered by the MVPD, and which channel number or IP address is associated with each channel. For video-on-demand compatibility, the device must have information as to what programs are offered by the MVPD. This "factual guidance information" *must* be available from MVPDs, through the gateway, if AllVid is to be successful.

MVPDs' objections to providing any sort of guidance data through an AllVid gateway are based on the assumption that MVPDs would be required to provide a full set

of copyrighted data to infringing devices.²² This assumption is unwarranted and misleading. Guide data can consist of both unprotectable and protectable elements. Each must be separately considered.

1. There Is No Proprietary Right In Basic Listing Data.

The MVPD commentators fail to distinguish full program guide data, including program descriptions and episode synopses which may be protectable expression, from factual guidance information. The latter consists of pure facts – a program name associated with a time and a channel. The principle is well established in copyright jurisprudence that copyright does not protect such plain factual information. “That there can be no valid copyright in facts is universally understood.”²³ For example, the Supreme Court has held that a white pages telephone directory organized by geographic region and name, and including the address and telephone number of each resident, could not be protected by copyright. Despite the substantial investment of time, effort, and capital to compile tens of thousands of listings, such basic factual information lacked the constitutionally-required element of originality.²⁴ In analogous contexts, courts have found that lists of hyperlinks do not violate copyright law, inasmuch as a link is merely a

²² See NCTA Comments at 40-42; DirecTV Comments at 20; AT&T Comments at 22-23.

²³ *Feist*, 499 U.S. 340, 344 (1991); 17 U.S.C. § 102(b). See Copyright Office FAQ, *What Does Copyright Protect*, <http://www.copyright.gov/help/faq/faq-protect.html>. EPG data also can be viewed as essential to the function and operation of the method of selecting television channels, and such functions and methods of operation also are excluded from copyright protection. 17 U.S.C. § 102(b); see *Lotus Dev. Corp. v. Borland Int’l, Inc.*, 49 F.3d 807 (1st Cir. 1995) (determining that commands and hierarchical menu command structure for selection of spreadsheet operations is not protectable by copyright). “If specific words are essential to operating something, then they are part of a ‘method of operation’ and, as such, are unprotectable.” *Id.*, 49 F.3d at 816.

²⁴ *Feist*, 499 U.S. at 345.

fact, like an address, and that search engines do not violate copyright by linking to web content.²⁵

Similarly, MVPDs cannot protect the underlying facts in an EPG. Like the data in a white pages phone book, the EPG contains basic facts as to time, channel, program name, and, in the case of on-demand content, availability. That HBO can be found on a certain channel in an MVPD's lineup, or that the movie "Invictus" is available on demand, are mere facts, containing no protected creative expression. These facts themselves are not protectable by copyright, regardless of whether these facts could be ordered or arranged in an original way.²⁶

Nor can the provision of these basic facts be called a "misappropriation." There is no federal law of misappropriation, and if access to EPG data were permitted by a Commission regulation, it could not be considered a misappropriation under any state

²⁵ See, e.g., *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146 (9th Cir. 2007) (hyperlinking and framing of images is fair use); *Kelly v. Arriba Soft Corp.*, 336 F.3d 811 (9th Cir. 2003) (display of thumbnail images in response to search request is fair use); *Ticketmaster, Inc. v. Tickets.com*, 54 U.S.P.Q.2d 1344 (C.D. Cal. 2000) (web links are analogous to using a library's card index to get reference to particular items, albeit faster and more efficient).

²⁶ Contrast these facts with those of *Nat'l Ass'n of Broadcasters v. Copyright Royalty Tribunal*, 675 F.2d 367 (D.C. Cir. 1982). Although that court found that the selection of programming for a broadcast day may be protected by copyright, it is because that selection and ordering of programming contained some element of authorship. The same cannot be said of the facts that merely identify the programs, time, and channel. Similarly, a competitor has the right to extract and use non-protectable facts from a copyrighted work. See, e.g., *Sony Computer Entertainment v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000) (fair use to disassemble and copy game console code in order to analyze non-copyrightable functions to make competing system interoperable with console-specific games); *Sega Enterprises Ltd. v. Accolade, Inc.* 977 F.2d 1510 (9th Cir. 1993) (fair use for game software competitor to make a copy of copyrighted game console code and to copy non-copyrightable security elements so as to facilitate interoperability). "To the extent that a work is functional or factual, it may be copied." *Id.*, 977 F.2d at 1524. To hold otherwise would effectively extend copyright protection in the arrangement of facts to the facts themselves, contrary to the express provisions of the Copyright Act.

law. But even in the absence of regulation, the narrow tort of misappropriation would not cover access to facts in an EPG. State “misappropriation” theories are restricted for a limited time, as a “hot news” exception.²⁷ Absent that additional temporal element, the misappropriation theory is preempted by federal copyright law precluding protection over facts.²⁸ Television schedules, even late schedule changes, do not qualify as “hot news.” Thus, no misappropriation theory could apply here.²⁹

In sum, this basic, plain vanilla factual information is not protectable proprietary information. It should and must be made available from MVPDs, through the gateway, if AllVid is to be successful.

2. Supplemental EPG Data That Is Licensable Can And Should Be Available Through The AllVid Gateway.

To the extent an EPG includes protectable information, device manufacturers can and do license guide data from Rovi and other providers.³⁰ The AllVid gateway should also pass a full set of guide data, including program descriptions, for use by devices that have a license to present such data. Where the consumer has paid the MVPD for the right to receive that guide data, the consumer should be entitled to have it displayed in the

²⁷ *Nat'l Basketball Ass'n v. Motorola, Inc.*, 105 F.3d 841 (2d Cir. 1997) (sports scores, descriptions of plays, and player and team statistics transmitted via sports pagers held not to be misappropriated). As that Court explained, the misappropriation theory in *Int'l News Serv. v. Associated Press*, 248 U.S. 215 (1918) “is not about ethics; it is about the protection of property rights in time-sensitive information so that the information will be made available to the public by profit-seeking entrepreneurs.” *Nat'l Basketball Ass'n*, 105 F.3d at 853.

²⁸ *See also Fin. Info., Inc. v. Moody's Investors Serv., Inc.*, 808 F.2d 204 (2d Cir. 1986) (information in Moody's “Financial Daily Card Service” held not copyrightable, and defendant's use of those facts was not a misappropriation under New York law).

²⁹ In any event, the ability of consumers to gain access to EPG data through another interface will not reduce any incentive by cable operators to create an EPG. MVPDs will continue to be paid by consumers for access to the EPG. And, competition from companies such as TiVo has and will continue to spur innovation by MVPDs to create a better EPG than what consumers have been forced to settle for to date.

³⁰ Rovi comments at 6.

interface of his or her choice, and it should not matter how the content is being presented. But certainly where the navigation device manufacturer also has paid for the right to receive and display such data on its devices, then all parties have been properly compensated for the distribution and copying of that data.

The Commission, however, does not need to make any determination of what is protectable or not. If devices cannot use such data without a license, the licensor has full legal recourse and remedies against unlicensed activities available under other applicable laws, without need of any Commission regulation. Conversely, if no license is necessary under other applicable laws, the Commission should not create a licensing obligation by regulation.³¹ All the Commission should, and must, do, is to require that access to the EPG data be available via the AllVid gateway.

Finally, any concern by the MVPDs that independently-manufactured navigation devices might somehow take and repurpose for use in their EPGs and interfaces original graphics, text, video and other content created by an MVPD is simply a red herring. Any regulation requiring an MVPD to make EPG data available through the AllVid gateway need not grant any rights to protectable elements created by an MVPD. And, as noted in the cases cited above, MVPDs cannot use their rights over protectable elements in their EPG presentation to prevent lawful access to unprotectable elements in the EPG data.³²

³¹ The National Broadband Plan objective of an AllVid client that does not require an MVPD-specific license is, as experience has amply shown, vital to its success.

³² Similarly, the ability of the AllVid gateway to pass EPG data for use in a third party manufacturer's device interface raises no trademark issues, and no issue of "passing off" a competitor's guide as that of an MVPD, or vice versa. As TWC's comments demonstrate, it is clear to consumers who they pay to acquire cable services and whose interface they choose – the MVPD's or a competitor's. Time Warner Cable comments at 15. TiVo has been providing its own guide and user interface for over ten years and consumers have not been confused as to its source. Moreover, gaining access to EPG metadata does not involve stripping of any MVPD trademarks visible

IV. The AllVid Gateway Presents No Insurmountable Technical Barriers.

The technology to build robust AllVid gateways exists today. Yet some commentators have put forth a litany of functions that leased set-top boxes perform. They assume that an AllVid gateway will not or cannot support these functions, and on that basis declare the gateway technically infeasible. For example, NCTA mentions interactive applications used by Showtime and the Weather Channel, and implies that such applications could not interact with a cable operator through a gateway.³³ There is simply no reason to assume that a gateway could not support interactive applications, or any other feature of a client device. In fact, the alleged technical hurdles raised by MVPDs in their comments have ready solutions that are already in practice in the Internet context and can be applied to video networks as well, without any need for new technologies.

A. Web Server Architecture Can Provide The Needed Functionality And Flexibility For A Gateway.

At its core, an AllVid gateway will perform the same functions as a Web server. Like any Web server, a gateway fields requests for content and services, and in return provides data implementing such content and services. It also facilitates two-way communication to allow interactivity. Web server architecture uses pluggable modules to respond to different kinds of requests. In the AllVid gateway, a linear TV channel module could respond to a request to view a given channel with an audiovisual data stream, a configuration module could send client devices a stream of XML data detailing important parameters of gateway operation, such as how to request a particular channel,

to the consumer. Rather, the AllVid should enable access to the underlying data *without* any trademarks or other intellectual property of the MVPD.

³³ NCTA comments at 36.

and a video-on-demand module could send the MVPD's own ordering screen to the client device to begin the ordering process in the MVPD's branded, secure environment. These pluggable modules can be easily upgraded by the network operator, and new ones supporting new services can be added at any time. Network operators already continually manage updates and service enhancements across many deployed set-top devices; adding and updating server modules on a gateway device is no different.³⁴ Server architecture scales readily, and the gateway device's server implementation can be scaled to serve a reasonable number of client devices, taking into account the MVPD's capacity constraints.

Thus, there is no reason to assume as DirecTV does that "navigation functions" in an AllVid environment must occur without any "communicat[ion] with the MVPD service."³⁵ A gateway, responding to a "navigation" command in the form of an HTTP request, can communicate with the MVPD by whatever means the MVPD specifies.

B. Web Server Architecture Can Allocate Resources and Monitor Their Use.

A typical Web server incorporates traffic monitoring and management capabilities. As a Web server, the AllVid gateway can monitor network load and modulate the services it provides to achieve quality-of-service goals. If a client device makes a request that would over-tax the capacity of the gateway or the MVPD network, the gateway can respond with an error code. In addition, the capacity limits enforced by the gateway could be adjusted by the MVPD in real time based on conditions on the

³⁴ DirecTV Comments at 25; AT&T Comments at 27 n.31.

³⁵ DirecTV Comments at 10.

MVPD's network. This addresses AT&T's concern that MVPDs must have the ability to "mediate the different demands for service and reject or modify some."³⁶

The gateway, like any Web server, can also support traffic logging capabilities, allowing the MVPD to collect detailed operational information that can be used for audience research, operational control or diagnostics, and this information could be relayed in real time to the operator.³⁷

C. Web Server Architecture Can Include Transparent Proxies to Cloud-Based Services.

Web servers are commonly configured to act as transparent proxies to other servers for certain types of requests. An AllVid gateway could act as a proxy for any set of "cloud"-based services an operator might wish to provide. If a gateway requires local storage to mimic network storage in a one-way environment (as with DBS), the gateway server could proxy requests for programming to local storage. To the client device, programming accessed in this way would appear to be coming from the network. Likewise, a proxy could relay the upstream messages needed to operate switched digital video, eliminating the need for this "information to be translated and relayed twice: once for delivery to the gateway, and again for delivery to the headend."³⁸

The AllVid gateway does not inherently "favor[] the locus of network intelligence in edge devices" at the expense of cloud-based services, as Cablevision believes.³⁹ On the contrary, the gateway can be agnostic as to whether storage and processing take place in the client device or in the MVPD network. Client devices could access whatever

³⁶ AT&T Comments at 29.

³⁷ *Compare* Charter Comments at 5-6 ("If there is no method to measure audiences in this way, MVPDs are handicapped in their ability to optimize programming to meet changing viewer demand.").

³⁸ Time Warner Cable Comments at 17.

³⁹ Cablevision Comments at 20-21.

functionality exists in the network through a common vocabulary of commands understood by the gateway, which can be updated when needed. This could reduce the expense of shifting functionality into the network, as the MVPD would only have to update a single device – the gateway – and not each set-top box in the home.

D. Web Server Architecture Is Secure.

A typical Web server incorporates sophisticated security technologies. On the Internet, these technologies secure billions of dollars in transactions every day, including electronic commerce, person-to-person payments, and banking. These technologies, including X.509 security certificates, are widely supported and flexible enough to implement device authentication. Nothing in the NOI suggests, as several commentators imply, that AllVid gateways must be limited to using DTCP-IP.⁴⁰

Likewise, nothing suggests that the chain of trust that establishes security for content must end at the gateway.⁴¹ Through the use of standard certificates, consumer devices could be authenticated for services by the gateway. For example, the device might browse to a URL on the gateway, which is a proxy back to an authentication server on the MVPD's secure network. That server could authenticate the user via the gateway's conditional access, and then deliver a custom, one-time certificate to the device. The device would present this certificate to the AllVid gateway when requesting services. The certificate could include information specifying the services that can be provided, allowing automatic provisioning on the fly. A certificate could also implement "rental" of content and other security models tied to the programming rather than the

⁴⁰ DirecTV Comments at 17; AT&T Comments at 33.

⁴¹ NCTA Comments at 38-39, AT&T Comments at 33.

link. Thus, the security and DRM requirements of the operator can be implemented without the development of any new standards.

E. Network And Management Data Can Be Wrapped In Web-Standard Containers For Communication With The Gateway.

The metadata that client devices will need to access MVPD services through the AllVid gateway, including the “network data” that DirecTV uses,⁴² and the “device management” information discussed by Verizon,⁴³ is easily provided in standard containers that exist today. For instance, a client device contacts the gateway and downloads a sequence of XML records describing the linear channels available on the operator network – the “factual guidance information” discussed in Part III, *supra*. These records can be generated dynamically from information supplied on the operator’s network, so that they are always up to date. Standardized tools, such as WSDL (Web Services Description Language), allow a device to automatically parse and handle the metadata that might be found in such records. With this data, “tuning” a channel is a simple matter of making an HTTP request on a particular URL, which returns a stream of audiovisual data, in the same way that any Web video server works today.

In summary, an AllVid gateway based on Web server architecture and implementing a set of Web-standard protocols can address MVPDs’ requirements for functionality and security without the need for new technologies or protocols.

V. Smart Video Devices Should Be Allowed To Compete On Their Feature Sets.

It should be evident that video device manufacturers distinguish themselves in the market both by offering new and unique features and by choosing *not* to offer certain

⁴² DirecTV Comments at 15.

⁴³ Verizon comments at 18-19.

features to customers who don't want them. If competing products are compelled to offer homogeneous feature sets, competition suffers. The AllVid solution should not, and need not, require such conformity. MVPDs recognize the value of flexibility to offer or not offer new features: commentators in this proceeding ask the Commission not to hinder MVPDs' flexibility to add features in any way,⁴⁴ while many cable operators have informed the Commission that many of their customers want only plain, linear television service and will not pay for advanced features.⁴⁵

Infinite "flexibility" comes ultimately at the expense of innovation and, hence, is achieved in no other industry. Nor is it actually achieved by an MVPD in its own services and devices, which, like those of other industries, are actually offered in tiers and generations while legacy approaches are served and preserved. No MVPD-leased device can or will support every present and future feature developed by the MVPD, nor is every MVPD service offered to, or desired by, every subscriber. On many cable systems, for example, a large percentage of subscribers – even a majority – lease no-frills "digital transport adapters" which do not support a program guide, video-on-demand, or any interactive applications.⁴⁶ Thus, introducing new features has *always* required the

⁴⁴ See NCTA Comments at 28-29 ("MVPDs also need the flexibility to offer a variety of options to consumers . . ."); see also Verizon Comments at 15 ("A uniform, lowest common denominator mandate would undermine MVPDs' ability to offer differentiated services to consumers.").

⁴⁵ *In the Matter of Implementation of Section 304 of the Communications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment*, CS Docket No. 97-80, PP Docket No. 00-67, Comments of Comcast Corporation at 12 (June 14, 2010) ("[T]raditional cable operators still have significant numbers of analog customers and typically dedicate 50% or more of their plant to analog channels."). Comcast does not suggest that providing less than all available functionality to these analog customers disaggregates their service.

⁴⁶ See, e.g., *In the Matter of Implementation of Section 304 of the Communications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between*

business calculation that DirecTV expressed concern about in its comments: whether to introduce a new feature that only some subscribers can make use of or wait and risk losing the first-mover advantage. This will not change under an AllVid regime.

Nothing in AllVid, properly implemented, would prevent an MVPD from introducing a new feature on its own leased client devices. The MVPD need not unveil its plans, initiatives, or proprietary information in order to initiate a new feature – it can simply send the necessary video, data, and control messages through the gateway to be received by its client device. This would preserve a first-mover advantage.

Conclusion

The AllVid NOI is a positive step toward jumpstarting retail video device competition, as the Commission is required to do to implement Section 629. Rather than offering up straw-man arguments and worst-case scenarios, all stakeholders that purport to support the Commission’s goal of enabling competitive retail smart video devices should provide the Commission with constructive input on how to make an AllVid gateway work, building upon successful technical integration examples that *balance* the interests of service providers, device makers, and consumers.

Respectfully submitted,

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Cable Systems and Consumer Electronics Equipment, CS Docket No. 97-80, PP Docket No. 00-67, Comments of Pace Americas, Inc. at 1-2 (June 14, 2010).