

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:)	
)	
TiVo Inc.)	
Petition for Clarification or Waiver)	MB Docket No. 12-230
of 47 C.F.R. §76.640(b)(4))	
)	
Implementation of Section 304 of the)	CS Docket No. 97-80
Telecommunications Act of 1996;)	
Commercial Availability of Navigation)	
Devices)	

COMMENTS OF VERIZON

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II. INTRODUCTION AND SUMMARY

TiVo's request for waiver of the audiovisual output requirement raises industry-wide issues, and the Bureau should, on its own motion, extend the deadline for all parties in light of the current status of standards development.¹ In particular, an extension of at least 18 months is appropriate in the case of Verizon and others who have worked in good faith to develop standards and devices that meet the Commission's requirements.

While TiVo seeks an extension only for set-top boxes that it manufactures, its petition generally underscores the need for broader relief across providers and equipment. As the Commission has acknowledged, "standard setting procedures can be complex and resource intensive."² Despite great progress in industry-led, open and accredited standards bodies by Verizon and a wide range of other industry participants, the "open industry standards" contemplated in the *Order* are not yet completed. The Commission thus was correct in recognizing that its "predictions with respect to finalization of appropriate standards [to meet 76.640(b)(4)(iii) might] prove inaccurate."³

¹ *Media Bureau Seeks Comment on TiVo's Request for Clarification and Waiver of the Audiovisual Output Requirement of Section 76.640(b)(4)(iii)*, Public Notice, MB Docket No. 12-230, DA 12-1347 (MB rel. Aug. 16, 2012) ("*Public Notice*"). Petition of TiVo Inc. for Clarification or Waiver of 47 C.F.R. § 76.640(b)(4)(iii), filed July 25, 2012. ("*TiVo Petition*"). Section 76.640(b)(4)(iii) of the Commission's rules requires cable operators to "ensure that ... cable-operator-provided high-definition set-top boxes, except unidirectional set-top boxes without recording functionality, ... comply with an open industry standard that provides for audiovisual communications including service discovery, video transport, and remote control command pass-through standards for home networking" by December 1, 2012.

² *Implementation of Section 304 of the Telecommunications 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, Third Report and Order and Order on Reconsideration, 25 FCC Rcd 14657, 14679 n.151 (2010) ("*Order*").

³ *Id.*

Verizon has been actively engaged in the various standard-setting bodies while also working diligently on a device – the Verizon Media Server (VMS) – that once implemented will fully meet the Commission’s output and home networking requirements and create new choices for consumers in the how and on which devices they access content. In coming months, Verizon will begin the rollout of the VMS, a new, in-home device that ultimately will enable third-party devices to discover, access, and control the suite of FiOS media services. The VMS, when fully implemented to include upcoming industry standards for home networking, will be capable of accepting requests from and simultaneously streaming high-definition (HD) FiOS content to multiple third party-devices over a subscriber’s home network using industry home networking standards, and therefore will fully meet the Commission’s audiovisual output requirements. More broadly, it will achieve the Commission’s goal of facilitating consumer access to content over a wide range of devices.

While the rollout of this innovative device is now just months away, some of the technical standards that the device ultimately will support – and that will facilitate various home networking features over additional devices – are still in the works. To be clear, Verizon and others involved have already made much progress and many of these standards are already in the oven, but they are not quite yet fully baked. Moreover, after these standards are finalized (likely sometime in 2013), Verizon and other providers will need some time to implement them on devices like the VMS. As a result, the Commission should provide at least an additional 18 months to allow time for standards development to be completed and implemented in the field.

Even aside from the VMS, Verizon has been actively engaged in efforts to meet consumer demand for expanded choice in how, and on which devices, they access content. Verizon and many other video providers already offer their content and services to third-party

devices through a variety of business models and technology platforms, and offerings in this area continue to evolve and expand. For example, FiOS TV already has made dozens of channels and thousands of VOD titles available on computers, tablets, smart phones, and a growing number of consumer electronics devices, like game consoles and smart TVs. In this way, Verizon has already taken significant steps to advance the goals the Commission expressed in the *Order* and the Bureau reiterated in the *Public Notice* – allowing consumers to “connect consumer electronics devices that they own to set-top boxes that they lease from their cable operators for whole-home viewing and recording.”⁴ And once the VMS is deployed and fully implemented, the choices available to consumers will expand still more.

While TiVo’s description of the need for additional time is well-grounded, its request that the Commission require all cable operator-distributed set-top boxes to employ a *single*, industry-wide, IP interface standard is not. Adoption of one, uniform home networking standard is inconsistent with the *Order* and with the circumstances that led the Commission to modify its interface rules in the first place. The Commission determined that consumers would have access to more home networking interfaces with more functionalities if video providers have flexibility to decide which interfaces to include on the set-top boxes they lease.⁵ Rather than adopting a technology mandate for which obsolescence is inevitable, the Commission should deny TiVo’s request and allow various home networking standards to compete in the marketplace. Flexibility and competition ultimately will lead to the best outcome for subscribers.

⁴ *Public Notice* at 1, citing *Order*, 25 FCC Rcd at 14677-79 ¶¶ 39-44.

⁵ *Order*, 25 FCC Rcd at 14677, 79 ¶¶ 39, 44.

III. THE BUREAU SHOULD GRANT AN EXTENSION TO ALL PARTIES

A. The Bureau Can Extend the Deadline on an Industry-Wide Basis

Given the uncertainty over the time required for necessary standards development, the Commission already has recognized that extensions would be justified with a “demonstrat[ion of] good faith efforts to work toward [the] functionalities” specified in Section 76.640(b)(4)(iii). In establishing this standard, the Commission explicitly noted that its timing prediction regarding the development of standards might “prove inaccurate.” Because it is clear that the Commission’s prediction has, in fact, proven overly ambitious, despite good faith efforts by video providers, the Bureau can and should act on its own motion to extend the deadline by at least 18 months. This short amount of additional time will afford standards-setting bodies the opportunity to complete their processes and will allow manufacturers and operators to incorporate the resulting standards into the products they deploy, while not substantially delaying the realization of the audiovisual connector requirement.

B. The Efforts of Verizon and Other Video Providers Are in Step With Consumer Demand and the Commission’s Policies, and Show a Good Faith Commitment to Incorporating the Required Functionalities

Regardless of whether the Commission grants an industry-wide extension, it nevertheless should grant at least an additional 18 months to Verizon and other similarly situated providers who have engaged in significant good faith efforts to develop needed home networking standards and devices, like Verizon’s VMS, that ultimately will use those standards to expand consumers’ choices. At this time, implementation and deployment of such devices in a manner that fully meets with the Commission’s requirements is dependent on further development of the necessary industry standards and time to incorporate them into equipment being deployed in the field.

As an initial matter, Verizon is committed to meeting evolving customer demand, which, consistent with the Commission’s policies, will include whole-home viewing and recording over

a wide variety of consumer devices without the need for a separate set-top box. Today’s technology already provides many ways for subscribers to access video content through third-party devices, and tomorrow’s technology will continue to make such access more convenient and more comprehensive. Facing intense intermodal competition from both traditional and newer providers of video content, Verizon and other video providers are finding new and innovative ways to offer a range of content over a wide variety of devices, while also increasing the sophistication and capabilities of their video offerings. Video providers are breaking down old technology barriers to deliver to their customers the entertainment experience they demand – one in which they will increasingly have the freedom to view and interact with content on any device, anytime, anywhere.

As part of this effort, Verizon and other providers have been working hard toward the goal of “ensur[ing] that video ... can be received and displayed by devices manufactured by unaffiliated manufacturers.”⁶ Verizon and other distributors and content providers already have plugins and apps that allow subscribers to access video content on their computers, tablets, or smartphones.⁷ But while substantial progress has been made on standards that will enable more robust home networking and the ability to access video content on a wider range of devices, more work remains to be done. Groups such as Digital Living Network Alliance (DLNA) and

⁶ *Order*, 25 FCC Rcd at 14677 ¶ 39; *Implementation of Section 304 of the Telecommunications 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, Fourth Further Notice of Proposed Rulemaking, 25 FCC Rcd 4303, 4311 ¶ 21 (2010) (“FNPRM”).

⁷ *See, e.g.*, Adrienne Maxwell, *Slowly But Surely, TV Everywhere Is Becoming a Reality*, HomeTheaterReview.com, Aug. 13, 2012, <http://hometheaterreview.com/slowly-but-surely-tv-everywhere-is-becoming-a-reality/> (describing the offerings by major content providers and the TV Everywhere efforts of nine major MVPDs).

the Multimedia Over Coax Alliance (MoCA) continue to enhance their existing home networking standards and develop new standards to meet the consumer demand for access to media content and services across devices.⁸ Verizon has been actively engaged with these and other standards setting bodies that are developing useful IP-based home networking technologies.

Verizon also has been a leader at developing and deploying innovative new technologies that better serve consumers. As Verizon works to meet evolving consumer demand, particularly in regard to the ability of consumers to get access to the content they want on the devices of their choice, its actions have directly furthered the Commission's aim to increase proliferation of smart video devices that can access content delivered by MVPDs and other types of video providers. For example, even as standards setting work has continued, Verizon already streams dozens of channels to home network-connected consumer electronic devices such as the Xbox and some Smart TVs, with more devices and channels coming. Verizon's FiOS TV online gives subscribers the convenience of watching TV shows and movies – from channels including HBO, Starz, ESPN, TNT, Comedy Central, and many more – on their computers or laptops. FiOS On Demand with Flex View makes it easy to buy or rent more than 15,000 movies and TV shows, and then watch them anytime on a computer (using downloadable software), a compatible smartphone (using a custom app), or FiOS TV. Flex View also enables subscribers to upload

⁸ See generally, Letter from Donna Moore, Executive Director, Digital Living Network Alliance, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 10-91 (filed Apr. 3, 2012) (describing a revised version of the DLNA guidelines to provide additional functionality); Multimedia over Coax Alliance, Press Release, *MoCA Passes 100 Certified Products Milestone*, Aug. 30, 2011, http://www.mocalliance.org/news/prM_110830_MoCA_Passes_100_Certified_Products_Milestone.php (describing the wide range of products into which MoCA has been integrated, including routers, set-top boxes, and cable modems).

their own music, photos, and videos and then access them remotely online or with compatible mobile devices. Verizon also has been at the forefront of the integration of Internet content and traditional MVPD content, making certain content available online to subscribers and delivering an expanding range of Internet video content to FiOS subscribers on their television screens.

Looking forward, Verizon continues to innovate in video delivery on multiple platforms and devices, and it will soon offer devices – like the VMS described above – that will create a wider range of choices for consumers in the devices they use to access video and that will fully meet the Commission’s audiovisual output requirements. The VMS is a new, in-home device that ultimately will provide an interface to the full suite of FiOS media services for use by third-party devices. After the various standards are finalized, the VMS will use DNLA and MoCA standards to enable simultaneous streaming of FiOS content to multiple devices over a subscriber’s home network, ultimately without the need for any additional Verizon equipment at all. Once the standards are finalized and fully implemented in the VMS (via a software upgrade), the VMS will enable third party devices to discover, access and control the suite of FiOS services and content, satisfying the requirements of Section 76.640(b)(4)(iii).

However, given that the standards on which VMS and other devices will rely are still a work in progress, the TiVo Petition correctly highlights some of the challenges in doing all of these things in time for the December 1, 2012 date set out in Section 76.640(b)(4)(iii). As TiVo explains, “the DLNA standards development consortium has made important strides, in its published standards and specification references, toward some common understanding of what will constitute ‘an open industry standard’ that fulfills ...76.640(b)(4)(iii),” but this is “not sufficient for TiVo to develop a robust retail product ... that may also be supplied to cable

operators.”⁹ The information yet to be developed for TiVo’s purposes also is missing for operators and other equipment vendors. While Verizon and other members of the industry have worked studiously to develop standards for home networking, some additional standards-setting work remains. For example, the next DLNA standard is unlikely to be approved until sometime in 2013. Moreover, even after standards are established, manufacturers will have to implement those standards in their devices, and subsequently deploy those devices into the marketplace – a process that can often take a year or more. This process cannot be completed in the less than three months that remain before the current deadline. The Commission should recognize the efforts described above, and the reality that some of the relevant standards have not been completed, and extend the current deadline by at least 18 months.

IV. THE BUREAU CANNOT ESTABLISH A NEW TECHNICAL MANDATE BY REQUIRING USE OF A SINGLE HOME NETWORK INTERFACE STANDARD

The Bureau should implement the Commission’s finding that *flexibility* in the IP interface requirement is essential to “further[] the goals of Section 629” and should deny TiVo’s request for clarification of the phrase “open industry standard” as being limited to a single, specific approach.¹⁰ In the *FNPRM*, the Commission tentatively concluded that “allowing manufacturers greater choice in the specific interface they include in their set-top boxes will serve the public interest,”¹¹ and proposed that cable operators be able to choose to deliver video to third-party devices using “any industry standard format.”¹² In the *Order*, the Commission adopted these

⁹ TiVo Petition at 7-8 (emphasis omitted).

¹⁰ *Order*, 25 FCC Rcd at 14678-79 ¶ 43; *see also* 47 U.S.C. § 549.

¹¹ *FNPRM*, 25 FCC Rcd at 4311 ¶ 20.

¹² *Id.* at 4311 ¶ 21.

proposals to increase flexibility for providers and manufacturers, noting that commenters in the proceeding widely agreed that a specific physical interface need not be mandated.¹³ Specifically, the Commission “require[d] cable operators to include an IP-based interface on all two-way high-definition set-top boxes that they acquire for distribution to customers *without specifying a physical interface*,” thereby permitting consumers to “choose the physical transport method that they prefer for networking their devices, in furtherance of the goals of Section 629.”¹⁴ Likewise, the Commission rejected calls to mandate a specific set of protocols (such as DLNA) for communication between the set-top box and the home network.¹⁵ Instead, the Commission adopted a functional requirement, specifying the functionality that cable operator-provided set-top boxes must enable through the IP interface.¹⁶ The Commission recognized that, “as with the physical interface itself, ... it is appropriate ... to refrain from specifying the exact manner in which this baseline functionality is to be implemented.”¹⁷

In addition, as Verizon previously has cautioned the Commission, and experience has confirmed, one-size-fits-all technology mandates lead to a host of technical and policy problems. They generally limit consumer choice, constrict manufacturers, hamper innovation, and prevent new technologies and services from developing and competing. Mandating a single, industry-wide standard here would amount to repeating the mistakes of past mandates, such as CableCARD and IEEE 1394, which failed to achieve (and arguably undermined) the

¹³ *Order*, 25 FCC Rcd at 14677 ¶ 39.

¹⁴ *Id.* at 14678-79 ¶ 43 (emphasis added).

¹⁵ *Id.* at 14677-78 ¶¶ 40-41 (listing certain possible standards such as tru2way and DLNA).

¹⁶ *Id.* at 14679 ¶ 44.

¹⁷ *Id.*

Commission's goals.¹⁸ No matter how wisely the FCC chooses the standard, history shows that, ultimately, obsolescence is inevitable. It is simply impossible to predict with any accuracy the successor technologies to the various standards and interfaces available today; even those standards that appear best suited for a particular task may rapidly be overtaken by events. For example, even if the Commission were to mandate a broad list of permitted protocol standards, existing or yet-to-be-developed standards would inevitably be left off the list. Adopting (or re-interpreting) rules to give a regulatory advantage to a particular standard or set of standards would place other standards (and the providers who use them) at a marked disadvantage and would slow the adoption of new technologies.

TiVo itself in the past has emphasized the benefits of allowing manufacturers to choose a home networking interface, stating that “[t]he Commission should not mandate what particular interfaces CE Manufacturers must use for home networking functionality. Companies should be free to innovate and to use their choice of interface as long as the content is kept secure from redistribution outside of the home.”¹⁹ TiVo also sought a waiver of the Commission's now-defunct IEEE 1394 home networking interface requirement, arguing, in part, that IEEE 1394 was adopted because it was the only standard at the time that supported home networking, but it was subsequently supplanted in the marketplace.²⁰ It is unclear why TiVo has now expressed a fear

¹⁸ See, e.g., Comments of Verizon, CS Docket No. 97-80; PP Docket No. 00-67, at 7-8 (filed June 14, 2010).

¹⁹ Comments of TiVo Inc., PP Docket No. 00-67, at 6 (filed Mar. 31, 2003).

²⁰ See Petition of TiVo Inc. for Clarification or Waiver of 47 C.F.R. § 76.640(b)(4), CS Docket No. 97-80, at 3-4, 7-8 (filed Nov. 6, 2009).

that permitting multiple standards could fragment the market.²¹ Instead, the market will be more competitive, expanding consumer choice and allowing for the emergence of new technologies.

Moreover, there is no need for a single standard to ensure TiVo's success in this market – any obstacles to implementing multiple protocols in third-party hardware generally are manageable. As TiVo notes, the physical component of the IP interface – Ethernet, WiFi, and/or USB – are well-established and well-supported standards. Third-party manufacturers can engineer their devices to support multiple protocols operating across those well-established and popular physical interfaces. For example, there is no technical or practical obstacle to a third party device using both tru2way and DLNA over an Ethernet connection, just as a desktop computer can use both HTTP and FTP over its Ethernet connection. Since protocols are generally implemented as software, manufacturers could also upgrade or add new protocols to their third-party home networking devices remotely, over the Internet.

Finally, no party raised on reconsideration the argument that the IP output requirement might “fail[] in its intent” unless and until the Commission limits the set of permitted options,²² and TiVo cannot properly raise it now.

V. CONCLUSION

For the foregoing reasons, the Commission should grant an industry-wide extension of the deadline for meeting the requirements of Section 76.640(b)(iii) by at least 18 months, or, at a minimum, provide Verizon and similarly situated, actively engaged providers with at least an additional 18 months to meet the requirements. The Commission also should decline to issue the requested clarification of the “open industry standard” language. These actions will ensure that

²¹ TiVo Petition at i.

²² *Id.* at 5.

cable operators and manufacturers together can provide the IP home networking functionality that best serves consumers' interests.

Respectfully submitted,

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