Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming	)	MB Docket No. 14-16
	)	
	)	

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REPLY COMMENTS OF
THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

The National Cable & Telecommunications Association ("NCTA") hereby submits its reply comments on the Notice of Inquiry in the above-captioned proceeding.

I. IN A COMPETITIVE MARKETPLACE, RULES THAT SERVE ONLY TO PROTECT COMPETITORS *FROM* COMPETITION ARE CONTRARY TO THE PUBLIC INTEREST.

In our initial comments in this proceeding, we provided our annual update of data showing "the status of competition in the market for the delivery of video programming." As has been the case for years, that data shows that competition is flourishing – among creators, providers, and distributors of video programming. In the multichannel video programming distribution ("MVPD") marketplace, where cable once ruled the roost alone, the DBS and telephone company competitors long ago became full-fledged competitors, and their share of MVPD customers increased again this year, as it has *every* year. Meanwhile, the proliferation of online video has enormously expanded the video programming and viewing options available to consumers.

There is, in this expanding array of video competition and programming options, no evidence at all of anticompetitive conduct, or even any symptom of diminished competition. It's not simply that there are more and more choices; the *quality* of television programming is recognized by consumers and critics as better than ever – a new "golden age." The innovation, choice, and increased quality that viewers are experiencing are the hallmark of a competitive marketplace.

In fact, the only commenting parties that still suggest that the marketplace is less than fully competitive are stakeholders and interest groups that seek to use this proceeding as a forum for repeating arguments on discrete regulatory issues that have been fully considered in other pending or resolved Commission proceedings. In most cases, what these parties seek is not a remedy for a lack of competition but a regulatory boost to protect them from the effects of competition. So, for example, the Writers Guild of America, West, Inc. ("Writers Guild") worries that there are not enough independent sources of programming to maximize opportunities for the creative community. It seeks to alter the programming choices of broadcasters and cable operators with a catalog of regulations. It would, for example, seek to maximize cable operators' retransmission consent payments to broadcasters, force cable-affiliated program networks to make their programming available to online distributors, and impose excessively burdensome Title II regulations in place of the "Open Internet" requirements struck down by the United States Court of Appeals for the District of Columbia Circuit.

Ironically, the Writers Guild acknowledges that the video programming marketplace is more robust than ever as online video soars in popularity.[1] Despite the fact that the proliferation of online video was primarily facilitated by cable operators' investment of hundreds of billions of dollars in facilities robust enough to carry such programming, all that the Writers Guild sees is a threat that cable operators will somehow act in a manner that reverses this state of affairs. The

[1] *See* Comments of the Writers Guild of America, West, Inc. (Mar. 21, 2014) ("Writers Guild Comments") at 3, 18-21.

problem with this plea for intervention in the marketplace is not simply that the Commission is considering or has considered these proposals in other proceedings. It is that all evidence indicates that consumers are finding video programming – whatever the source – more attractive than ever and are consuming more and more of it. This is not a state of affairs that warrants regulatory intervention.

DIRECTV, meanwhile, suggests that the bundling by cable operators and telephone companies of video, voice and Internet options for customers – options that provide consumers with additional value for their money and that result from the efficiencies of providing all three services over a single facility – somehow poses a threat to competition and to consumers. DIRECTV's principal concern seems to be that, despite the fact that it continues to attract more and more customers, its status as an effective competitor in the video marketplace may be diminished because its own technology for distributing multichannel video programming is not sufficiently capable of providing voice and high-speed Internet service.[2] And it urges the Commission to "avoid regulatory activity" that might allow this to happen.[3]

But the time for protecting DBS – or any other competitors in the vibrantly competitive video marketplace – is long past. The Cable Consumer Protection and Competition Act of 1992 included provisions designed to jump start competition in an MVPD marketplace in which a single cable operator, in most local markets, was the sole distributor of multichannel video programming. For example, the "program access" provisions of what became Section 628 of the Communications Act ensured that cable operators could not stifle the entry and growth of DBS

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2 *See* Comments of DIRECTV, Inc. (Mar. 21, 2014) ("DirecTV Comments") at 21-26.

3 *Id.* at 26.

and other new competitors by denying them access to a critical mass of cable-owned satellite-delivered program networks.

The data and charts that NCTA has been providing in the Commission's video competition inquiries for the last two decades have illustrated the steady growth of DBS into a full-fledged competitor in the MVPD marketplace. DIRECTV and Dish Network, which now rank second and third among all MVPDs in subscribers nationwide, together serve 34 percent of the nation's MVPD customers, while incumbent cable operators' share has fallen to 53 percent. Meanwhile, telephone companies have, in an even shorter period of time, captured 11 percent of MVPD customers. There clearly is no need to jump start competition today.

Moreover, it would be especially contrary to the public interest to protect any of today's competitors in the MVPD marketplace from the effects of competition. Competition from DBS impelled cable operators to redesign and rebuild their facilities in order to offer an array of services that could compete effectively with the superior quality and channel capacity of DBS's digital technology. Among the services that those redesigned facilities made possible, in addition to high-quality video service, were voice services, which offered consumers their first significant alternative to the telephone companies, and high-speed Internet service, which spurred the growth of the Internet as we now know it. Cable's development of these services in turn impelled the telephone companies to invest in new fiber technologies and facilities to retain and attract customers.

The bundled "triple play" offerings that DIRECTV describes (all of which are optional and none of which preclude the purchasing of individual services from different providers), as well as the telephone companies' wireless data services and cable's Wi-Fi services, are all the products of this competitive dynamic. Consumers are the beneficiaries when providers are constantly striving to stay ahead of – or trying to catch up with – their competitors. And consumers are the losers when the government keeps in place outmoded regulations that were intended to stimulate competition but now only serve to protect competitors *from* competition.

II. REGULATORY INTERVENTION WILL ONLY HARM TODAY'S ROBUST AND EXPANDING VIDEO DEVICE MARKETPLACE.

The most extensive effort of industry stakeholders to shoehorn their interest in regulatory protection into this proceeding involves the issue of the "competitive availability of navigational devices" under Section 629 of the Communications Act. TiVo and the "AllVid Tech Coalition" ("AllVid") argue that the Commission's "CableCARD" approach to meeting the objectives of Section 629 has failed and that the Commission needs to intervene with a new nationally-uniform IP "successor" technology to CableCARD. But the dynamic and competitive marketplace is addressing and solving the problems that CableCARD was designed to address, with diverse and innovative approaches. In this environment, a government-mandated uniform technology approach would only interfere with and stifle the most consumer-friendly results.

As we explained in our initial comments and will further demonstrate below, consumers today can watch cable and competing MVPD programming on Smart TVs, gaming devices, smartphones, and tablets without a set-top box or CableCARD, delivered via IP-based applications tailored to different platforms and CE devices. TiVo and AllVid denigrate the immensely popular and rapidly changing world of apps markets and IP devices as an irrelevant "whim," but millions of device sales and multi-channel viewing apps on those devices demonstrate a market with real choices far beyond a TiVo Roamio. The competitive market imperative led cable operators to support an ever-growing array of these new devices and expand their apps. Many cable operators have the added financial incentive for the growing use of customer-owned equipment to help reduce incremental set-top box capital as a factor in cable's overall capital structure. In addition to providing cable video services on a wide array of retail CE devices today, cable operators, other MVPDs, and their suppliers are also working in the Digital Living Network Alliance (DLNA) on an open industry standard for delivering MVPD services to even more IP-connected devices via a standard HTML5 browser.

CableCARD-enabled retail devices have not enjoyed great commercial success, but it is not due to poor cable support. The cable industry poured enormous resources and investment into the CableCARD regime, but consumer electronics ("CE") manufacturers abandoned the CableCARD TV market because consumers rejected the large markup that retailers attached to them – a casualty of the notoriously thin margins in the TV business. There is no need to restore any of the CableCARD rules struck down in *EchoStar*. CableCARDs continue to operate as a "fully realized solution." Restoring legacy technical rules that apply only to cable operators – who serve just over half of MVPD subscribers – will *never* provide a national solution.

There is no need for a rulemaking to define a nationally-uniform IP "successor" technology to CableCARD. Cable operators and other MVPDs are already supporting the next generation of IP navigation devices, using different technologies tailored to different platforms and CE devices. Trying to force fit this dynamic market into a common standard defies the lessons of history. Diversity allows for competing approaches to address technological challenges, enables all participants in the market to innovate and compete, and allows consumers to select the most popular technologies in the market, rather than attempting to have the government prescribe a one-size-fits-all solution. Even opening a rulemaking would lead firms that otherwise would invest and compete in the rapidly changing market, or that would collaborate and solve problems together, to instead expend resources arguing before government regulators trying to attain regulatory advantage.

While few retail devices rely on CableCARDs, the market is teeming with non-CableCARD retail video devices on which consumers are enjoying MVPD programming and the options keep expanding. There could not be clearer evidence that allowing the marketplace to produce a wide variety of approaches is far more successful in satisfying consumer needs and demands than a uniform government-prescribed technology mandate.

A. The Video Device Marketplace Has Never Been More Innovative.

As detailed in our initial Comments, consumers today can watch cable and competing MVPD programming on Smart TVs, gaming devices, smartphones, and tablets without a set-top box or CableCARD, delivered via IP-based applications tailored to different platforms and devices.[4] TiVo and the AllVid comments[5] seek to dismiss all these marketplace choices as irrelevant. In their view, only a CableCARD-enabled Roamio DVR from TiVo (at $399 plus $14.99 monthly fees) is a legitimate consumer option.[6] Other platforms do not count if they can also play games or deliver more apps.[7] They even denigrate the immensely popular and rapidly changing world of apps markets and IP devices as unhelpful to consumers. "Apps and other solutions come and go," says TiVo.[8] Just a "whim," says AllVid.[9] No retail navigation device

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4 NCTA Comments at 11-21. *See also* Letter of Michael Powell to Chairman Wheeler, CS Docket No. 97-80 (February 5, 2014) *available at* http://apps.fcc.gov/ecfs/document/view?id=7521071246.

5 Comments of TiVo, Inc. (Mar. 21, 2014) ("TiVo Comments"); Comments of AllVid Tech Company Alliance, et al. (Mar. 21, 2014) ("AllVid Comments").

6 *See* TiVo Comments at 11-12.

7 TiVo Comments at 11 ("devices such as an Xbox or Roku (or similar devices) are not substitutes for cable set-top boxes – they are not purchased principally to watch cable content but rather to play games or watch OTT content from OVDs such as Netflix").

8 TiVo Comments at 13 n. 26.

9 *See* AllVid Comments at 6.

can sell, TiVo asserts, unless the manufacturer is guaranteed that the device can receive all video content from every MVPD source forever.[10]

Millions of device sales and multichannel viewing apps on those devices tell us otherwise. As the FCC recognized in its most recent Video Competition Report: "the CPE marketplace is more dynamic than it has ever been, offering consumers an unprecedented and growing list of choices to access video content."[11] Every one of the Top 10 MVPDs has built apps for those video devices. Time Warner Cable, for example, now provides subscribers with access to 300 linear channels plus video-on-demand using iOS, Android, Mac/OS X, PC/Windows, Xbox 360, Roku, and Samsung Smart TVs.[12] These offerings were not offered on a whim by cable operators, as TiVo and AllVid claim. They are well developed technologies to reach consumers where they are today – not just on leased devices, but on IP-enabled consumer-owned devices of many types.

Today's market compels cable operators and other MVPDs to support an array of third party devices. Consumers with third party devices are still cable customers, and cable operators are strongly motivated to attract and retain these customers in a highly competitive video market. No rule ordered cable to serve these myriad devices, and no rule prescribed the technical support or interfaces that must be used. Today's market imperative led cable to support those devices using a variety of new technologies, and not a universal solution prescribed by government. If cable operators were really hostile to supporting third-party devices, they would not be

[10] *See* TiVo Comments at 11, 17.

[11] *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming,* Fifteenth Report, 28 FCC Rcd 10496, ¶ 354 (2013).

[12] *See* Letter of Michael Powell to Chairman Wheeler, CS Docket No. 97-80 (Feb. 5, 2014) *available at* http://apps.fcc.gov/ecfs/document/view?id=7521071246.

expanding their apps, supporting more platforms, and even litigating with content providers over the rights to extend cable services to these devices.[13]

Leased devices still exist, of course, but not as the supposed cash cow TiVo imagines.[14] If a cable operator charges too much, consumers will switch to satellite or telco or some other video service. It is the same market dynamic that led reviewers to temper their praise for TiVo's Roamio with the headline reservation "but oh, the price,"[15] and has led TiVo to steadily lose its "TiVo-owned" subs as they find more attractively-priced options in the market.[16] Unlike the case with TiVo, cable operators are limited by FCC rules to recover the cost of boxes and a regulated rate of return – and even that often gets discounted in package pricing to meet the competitive market. In fact, the cost of acquiring set-top boxes for lease is such a significant part of cable's capital expense – estimated at $64 billion from 2002 to 2012 and running about $5 billion or more in annual capital[17] – that many cable operators have an added financial incentives, quite independent of the imperative to serve customers, to see the growing use of

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[13] *See, e.g.*, *Viacom International, Inc. v. Time Warner Cable*, No. 11-civ-2387 (S.D.N.Y. filed Apr. 7, 2011) (Time Warner Cable litigating to deploy its services on tablets.).

[14] TiVo Comments at 10. TiVo's explains its claim as the product of the average rate reported by the FCC for the most popular box ($7.29) times 54 million subs times 1.5 boxes per household. The most popular box does not mean that it is present in every home. TiVo's erroneous approach also ignores free or low cost boxes like DTAs and discounts for package pricing.

[15] Nilay Patel, *TiVo Roamio Pro review: this is the ultimate cable box. But oh, the price*, The Verge (Aug. 20, 2003), *available at* http://www.theverge.com/2013/8/20/4638390/tivo-roamio-pro-review.

[16] TiVo seeks to downplay its growing role as a wholesale supplier to cable operators in the United States and abroad, and suggests these are just incidental relations with small- and medium-sized cable operators. TiVo Comments at 11, 14. Those subscribers now constitute approximately 80% of its customers, as retail subscribers have steadily eroded. "In its most recent quarter, TiVo added 319,000 subscribers, 313,000 of which came from its cable- and satellite-TV business. The quarter marked the first increase in six years of the number of people that bought the service directly from the company. In total, the company has 4.2 million subscribers." Jeanine Poggi, TiVo Seeks to Prove Why It Still Matters, Ad Age, (Apr. 8, 2014), *available at* http://adage.com/article/cmo-strategy/tivo-seeks-prove-matters/292487/. Nor are its relationships merely with small and medium sized cable operators. Under its "Cardio" arrangement with Comcast, TiVo devices can access Comcast's video-on-demand content.

[17] Ian Olgeirson and Paul Lauermann, *Continued investment drives U.S. cable CapEx forecast*, SNL Kagan Multichannel Market Trends (July 17, 2013), subscription service.

customer-owned equipment as helping to reduce incremental set-top box capital as a factor in cable's overall capital structure. [18]

B. The Cable Industry Has Invested and Continues to Invest Enormous Support into CableCARDs

CableCARD-enabled retail devices have not enjoyed the scale of success that has been enjoyed by other retail video devices on which consumers now watch cable. But it is not for the reasons that TiVo and AllVid offer in their revisionist history of CableCARD support.[19]

CableCARD devices did not fail from "poor or non-existent support"[20] from cable. The cable industry poured enormous resources and investment into the CableCARD regime, which we have cataloged and summarized in the Attachment. They did not fail because cable refuses to make CableCARDs "two-way."[21] CableCARDs have always supported two-way communication; it is the host device manufacturer who decides whether to access two-way services from the cable operator, or not. Two-way services are flowing through CableCARDs into 45 million leased set-top boxes; Panasonic launched two-way retail CableCARD TVs with the full suite of cable services in retail stores;[22] and two-way capability was incorporated into an

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[18] For example, when the FCC finally granted Charter a temporary waiver in 2013, Charter was able to start its transition to downloadable security. As Charter's CEO Tom Rutledge explained to investors during its Q2 2013 earnings call, "That, in itself, will allow us to buy lower cost CPE, whether it's high-processing power CPE or low-processing power CPE. In the long run, with smart televisions and smart tablets, which essentially allow the TV or the tablet to operate as a set-top box and a TV combined, we think that incremental CPE will become less and less a factor in our overall capital structure. So we think capital intensity is coming out of CPE, and we have a strategy designed to ensure that happens." Charter Communications Management Discusses Q2 2013 Results - Earnings Call Transcript (Aug. 6, 2013) *available at* http://seekingalpha.com/article/1609042-charter-communications-management-discusses-q2-2013-results-earnings-call-transcript.

[19] AllVid Comments at 12-15; TiVo Comments at 7.

[20] *See* TiVo Comments at 5.

[21] *See* TiVo Comments at 7, 18.

[22] John Falcone, *First Panasonic Tru2way TVs hit stores in Chicago, Denver*, CNET (Oct. 16, 2008), *available at* http://www.cnet.com/news/first-panasonic-tru2way-tvs-hit-stores-in-chicago-denver/.

industry-wide two-way agreement.[23] CableCARD TVs disappeared because consumers rejected the $300 or larger markup that retailers attached to the initial wave of devices.[24] This is not a CableCARD issue. TV margins have been under notorious pressure during this same period.[25] As one major TV retailer explained: "It got to the point where we were selling $2,000 TVs and making $10"[26] Indeed, some of the manufacturers who supported and developed "plug and play" TVs, like Pioneer, stopped making TVs altogether in 2009 after four straight years of losses.

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23 The Memorandum of Understanding among Cable Operators and Consumer Electronics Adopters Regarding Interactive Digital Cable Ready Products, or "*Two-Way MOU*," was an enforceable contract signed on April 25, 2008, by cable operators serving more than 82 percent of all U.S. cable subscribers and whose systems pass over 105 million homes. The MOU signatories included major consumer electronics manufacturers - Sony, Samsung, Panasonic, LG Electronics, Funai (known in the United States under the brand names Philips, Magnavox, Sylvania, and Emerson); Digeo, ADB, and chip maker Intel; and the nation's six largest cable providers – Comcast, Time Warner, Cox, Cablevision, Charter and Bright House Networks. *See* CS Docket 97-80, Letters from Kathryn Zachem, Comcast, to Monica Desai, Media Bureau Chief (May 28, 2008) (summarizing the MOU) and June 10, 2008 (attaching its text), and Joint Status Report of the National Cable & Telecommunications Association and the Consumer Electronics Association (July 29, 2008) (advising of additional signatories).

24 CNET explained that "The Panasonic Tru2way models will be priced at $1,600 and $2,300 for the 42-inch and 50-inch model, respectively … a premium of $500 to $670." The editor added his prediction: "Few people are going to accept a 45 percent surcharge for the privilege of losing their cable box. The premium for Tru2way compatibility needs to get closer to the $100 range--at maximum." *See First Panasonic Tru2way TVs hit stores in Chicago, Denver*, CNET (Oct. 16, 2008), *available at* http://www.cnet.com/news/first-panasonic-tru2way-tvs-hit-stores-in-chicago-denver/.

25 Min-Jeong Lee, *LG Profit Falls, TV Business Weighs*, Wall Street Journal (Apr. 24, 2013) ("As the TV business continues to suffer from thin margins due to stiff competition, LG Electronics is betting on its mobile business to drive earnings growth in the coming quarters. … LG's operating profit margin at its TV unit fell to 0.6% in the first quarter from 3.0% a year earlier.") *available at* http://online.wsj.com/news/articles/SB10001424127887324474004578442161748613032; Min-Jeong Lee, *Samsung Profit Climbs 42% on Smartphone Sales*, Wall Street Journal (Apr. 26, 2013) (Profit margin for Samsung's consumer electronics unit which makes TVs fell to 2.0% from 4.3% a year earlier due to weak demand.) *available at* http://online.wsj.com/news/articles/SB10001424127887323335404578445532742015350?mg=reno64-wsj; NPD DisplaySearch, *End-of-Year Surge Pushed 2013 Global Shipments of 4K TVs to 1.6 Million, According to NPD DisplaySearch* (Mar. 18, 2014) ("With panel price premiums falling rapidly, and a growing chorus of non-Chinese brands pushing 4K, it is possible for retail set prices to fall quickly to improve volume, but at the expense of profits.") *available at* http://www.displaysearch.com/cps/rde/xchg/displaysearch/hs.xsl/12339.asp; Nathanael Arnold, *Rumor: Apple's iTV Panels Being Made by a Korean Supplier* (Apr. 6, 2014) ("It should also be noted that the profit margins on television sets are notoriously low.") *available at* http://wallstcheatsheet.com/technology/rumor-apples-itv-panels-being-made-by-a-korean-supplier.html/?a=viewall.

26 Ann Zimmerman, *Sony, Samsung Rein In Retailers' Discounts on TVs*, Wall Street Journal (May 23, 2012) *available at* http://online.wsj.com/news/articles/SB10001424052702304791704577420383631021786.

TiVo calls for a restoration of the CableCARD rules struck down in *EchoStar* to restore confidence in one national CableCARD technology.[27] CableCARD is not a national standard—it applies only to cable operators, and cable operators serve just over half of MVPD subscribers. Restoring these legacy rules will *only* maintain competitive disparity and *never* provide a national solution.[28] Nevertheless, cable operator support for CableCARD continues today. Notwithstanding TiVo's unsubstantiated claims of weak support,[29] a different FCC rule unaffected by *EchoStar* still requires cable to offer a "separable security" solution to retail devices. M-Cards continue to be installed in new TiVos, and CableCARDs continue to operate as a "fully realized solution" (to quote TiVo[30]). No discriminatory encoding signals are being targeted at retail devices.[31] CableCARDs continue to be monitored by the Commission through CableCARD inventory, deployment, price, and trouble reports collected every 90 days from the

27 TiVo Comments at 4 (CableCARD serves as "a single, nationwide technical standard"); TiVo Inc. Petition for Rulemaking, CS Docket No. 97-80 (filed July 16, 2013) at 20 (CableCARD "serves as a national standard").

28 Comments of NCTA on TiVo, Inc.'s Petition for Rulemaking, CS Docket No. 97-80, at 17-21 (Sept. 16, 2013); Reply Comments of NCTA on TiVo, Inc.'s Petition for Rulemaking, CS Docket No. 97-80, at 3-8 (Oct. 25, 2013).

29 TiVo claimed that support for CableCARDs has weakened in the year since the D.C. Circuit vacated some of the FCC's technical rules it had added since adopting the integration ban. TiVo Comments at 7. TiVo never documents those claims and we approach them with some skepticism. When we examined some of TiVo prior claims about "complaints" from its customers, we found them to be somewhat exaggerated. For example, TiVo submitted an Exhibit in 2010 claiming its customers had had a number of CableCARD-related problems based on customer remarks in a TiVo forum. NCTA analyzed that Exhibit which listed redacted comments from the Tivocommunity.com website and which claimed they were from 2010 and illustrated current problems that consumers were having with CableCARDs. In fact, NCTA found that (1) most of the quotes were from earlier years, not from 2010; (2) TiVo redacted favorable statements by the customers from the same posting; and (3) in each instance where we could find the final resolution, the customer had in fact successfully connected their CableCARDs to their TiVos to access cable within a few days. *See* Reply Comments of NCTA, CS Docket 97-80, at 6-7 (June 28, 2010). When TiVo actually has practical concerns it reaches out to cable operators directly and the parties resolve the issues.

30 TiVo Comments at 7.

31 AllVid Comments darkly warn that, without encoding rules, discriminatory copy control signals will be sent to retail devices. *See* AllVid Comments at 10-12. No evidence is advanced for these supposed fears.

five largest operators, with complaint procedures available to consider any disputes. There is no "urgency"[32] calling for the reinstatement of legacy technical rules.

C. There is No Need For a Successor Standard in Light of Developments in the Device Marketplace.

TiVo and AllVid both call for a new rulemaking to define a nationally-uniform IP "successor" technology to CableCARD. Cable operators and other MVPDs are already supporting the next generation of IP navigation devices. They are deploying their services on iPad and Android tablets and smartphones, gaming consoles, PCs and Macs, Rokus, Smart TVs, and more, successfully using different technologies tailored to different CE platforms and devices without any need for "common reliance." That market trend is accelerating to meet consumer demand for these options, all without any regulatory mandate.

Consumer electronics devices are not built to a common standard. Every Smart TV, gaming station, and tablet creates its own ecosystem, with each manufacturer free to adopt non-interoperable security, operating system, media player, application environment, connectors, and content libraries. Retail consumer electronics devices are commonly designed to include support for content received from multiple sources and interfaces: devices may include several different kinds of connectors (such as coax, Ethernet, HDMI, and USB), different applications from different sources (Netflix, Hulu, Amazon, satellite, cable, and telco), and multiple decoding and security technologies, so that these very same devices can be used to access content from all manner of MVPDs, from online, and from other video sources (e.g., an iPad can support MVPD and TV Everywhere apps from a wide range of cable operators, as well as apps from online video providers). The Commission supports the use of home networks, but does not prescribe

[32] AllVid Comments at 10.

wired or wireless, DLNA, or MoCA. MVPDs use vastly different technologies for distribution on their own networks and write different applications optimized for these different retail consumer electronics platforms. Clearly, the retail market does not require a single standard to succeed.

The same flexibility applies in other dynamic technology fields. In adopting rules for wireless PCS, the Commission repeatedly adopted a "flexible approach to encourage the widest range of PCS services and devices," sought to "provide the maximum flexibility in technical standards so as to allow the new service to develop in the most rapid, economically feasible, diverse manner," and turned to "industry and standards groups" to handle the details of roaming and interoperability "in the most efficient and least costly manner."[33] The U.S. government made a conscious decision not to prescribe CDMA or GSM or to micromanage wireless, and now the United States leads in high-speed LTE deployment and subscribership and enjoys what other countries strive to emulate. The FCC does not prescribe PC or Mac, Flash, Silverlight or HTML5, MPEG-2 or MPEG-4. Diversity in technology is not market failure. Diversity allows for competing approaches to address similar technological challenges, enables all participants in the market to innovate and compete, and allows consumers to select the most popular technologies in the market, rather than attempting to have the government prescribe a one-size-fits-all solution.

The last thing the dynamic video marketplace needs right now is for the government to jump in, pick one technology, and lock it into static rules. If a government-mandated standard is imposed in IP, it risks locking consumers into obsolete and/or inferior products. In fact, the

[33] *Amendment of the Commission's Rules to Establish New Personal Communications Services*, Second Report and Order, GN Docket No. 90-314, 8 FCC Rcd 7700, 7755-56, ¶¶ 135-38 (1993). *See also Amendment of the Commission's Rules to Establish New Personal Communications Services*, Memorandum Opinion and Order, GN Docket No. 90-314, 9 FCC Rcd 4957, 5020-22, ¶¶ 159-65 (1994).

FCC's prior efforts to define a single national standard in this area have proven unsuccessful. In 2003, the FCC tried to create a uniform national digital video technology by adopting CableCARD as the mandatory digital solution for cable operators and cable devices. Despite substantial cable industry investments in building and supporting this FCC-prescribed technology, the market did not embrace that approach. The FCC also adopted a rule prescribing the IEEE 1394 "firewire" digital connector, only for the market to abandon that connector and move to Ethernet and HDMI. In 2010, some consumer electronics interests proposed that the FCC adopt a similar prescriptive approach that was uniformly panned by program suppliers, cable, satellite, and IPTV distributors.[34] Had the FCC adopted their proposal, it would have effectively prohibited cable operators and MVPDs from deploying their services on the iPad and Android tablets and smartphones, gaming consoles, PCs and Macs, Rokus, and Smart TVs that have been embraced by consumers today. There is no need for a government prescribed technology for "successor" IP technology to make a market. The market for IP options to meet consumer demand is already here, and the trend is accelerating without any regulatory mandate.

TiVo's offer to sit down and negotiate some universal standard[35] also ignores what follows once the government sets standards. Firms that otherwise would invest and compete in

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[34] This is the proposal that AllVid calls "clearly feasible," (AllVid Comments at 16), a claim which has been thoroughly debunked. *See, e.g.* Letter of AT&T, Comcast Corporation, DirecTV, HBO, Time Warner, Inc., Time Warner Cable, The Walt Disney Company, and Verizon to Marlene H. Dortch, Secretary, FCC, CS Docket 97-80 (Oct. 17, 2011); Comments in the 2010 Notice of Inquiry in CS Docket 97-80 by DIRECTV at 10-18; DISH Network at 4-9; Verizon at 5-20; AT&T at 26-43; Time Warner Cable at 13-19; Charter at 5-8; Cablevision at 17-24; HomePNA Alliance at 5-6; HomePlug Powerline Alliance at 2; Multimedia Over Coax Alliance (MoCA) at 4-6, 8; Entropic at 1-2; NCTA; MPAA, on behalf of Paramount Pictures Corporation, Sony Pictures Entertainment Inc., Twentieth Century Fox Film Corporation, Universal City Studios LLP, Walt Disney Studios Motion Pictures, and Warner Bros. Entertainment, Inc., at 8-9; Time Warner, Inc., at 6 (July 13, 2010); and the Reply Comments of NCTA in the 2010 Notice of Inquiry in CS Docket 97-80 (Aug. 12, 2010).

[35] TiVo's expressions of readiness to negotiate some universal standard (TiVo Comments at 19) should be assessed in light of its past behavior. TiVo was largely absent from, and not a signatory to, the 2002 inter-industry "plug and play" agreement on which the FCC based most of its CableCARD rules. TiVo was also absent from, and not a signatory to, the 2008 "two-way" agreement negotiated among the major cable and consumer electronics companies enabling consumers to purchase innovative "two-way" digital televisions and other devices that can

the rapidly changing market, or that would collaborate and solve problems together, instead expend resources arguing before government regulators trying to attain regulatory advantage.[36] The TiVo and AllVid comments illustrate how opening regulatory processes to set technology standards leads firms to direct their efforts away from collaboration and into seeking regulatory leverage. On Capitol Hill, TiVo's CEO testified that an FCC certified standard would impose "no cost or burden" on cable operators.[37] To the FCC, TiVo and AllVid seek a quite radical burden: a rule by which a retail device could strip out the cable guide and interface, cut and paste and rearrange the content, and offer it in any way it wants.[38] They claim this is the only way to differentiate themselves. But this is the opposite of what is occurring in today's highly successful app world.

receive interactive digital and high-definition video services without a set-top box. More recently, while major consumer electronics makers, chip manufacturers, cable, satellite, and telco providers are working in DLNA, the multi-stakeholder body that has been developing the guidelines to securely link a pay TV provider's full service slate to an array of retail consumer electronics devices, including PCs, Blu-ray players, tablets and smart TVs without requiring a separate set-top box, TiVo has been notably absent from that group. Similarly, while all of the leading pay TV providers and their major equipment suppliers joined in an unprecedented voluntary set-top box energy efficiency agreement with energy efficiency advocates in 2013, TiVo did not join in that effort.

[36] Michael G. Baumann & John M. Gale, *Economic Analysis of the Regulation of MVPD Navigation Devices* (2010), filed by NCTA in Video Device Competition, MB Docket No. 10-91 (July 19, 2010) (explaining how premature standardization can result in a loss of innovation and variety, and an increased difficulty in changing a government mandated standard even after it has become outdated) *available at* http://apps.fcc.gov/ecfs/document/view?id=7020549666; T. Randolph Beard, et al, *Wobbling Back to the Fire: Economic Efficiency and the Creation of a Retail Market for Set-Top Boxes* (2010) (showing that a government-directed commercial market for set-top boxes is unlikely to provide substantial gains in terms of lower costs, lower prices, or increased innovation) *available at* http://www.phoenix-center.org/pcpp/PCPP41Final.pdf.

[37] During Tom Rogers live testimony before the Senate Subcommittee on Communications, Technology, and the Internet Hearing On "Reauthorization of the Satellite Television Extension and Localism Act," April 1, 2014, he stated that a successor standard would entail "no cost or burden to cable" and "doesn't require a regulation." *Reauthorization of the Satellite Television Extension and Localism Act, Hearing Before the S. Subcomm. on Communications, Technology and the Internet of the S. Comm. on Commerce, Science and Transportation*, 113th Cong. (Apr. 1, 2014) *available at* http://www.commerce.senate.gov/public/index.cfm?p=Hearings&ContentRecord_id=23352a01-e1a7-47b0-9a56-27e88e76e378.

[38] TiVo Comments at12-13 (tablets and similar "devices merely display cable 'apps'; they cannot create user interfaces to present the cable content in more innovative, interesting, and user-friendly ways than the cable operator dictates in its app." A retail device should "incorporate Internet-delivered content; [and] frame the experience in a user interface better and more innovative than the basic approach supplied by their cable provider"). AllVid Comments at 16-17.

Consider the smart phone: the user clicks on a button and goes into an application designed by that particular app developer. The developer uses the app to create a product's look and feel, offer its own brand and content, advertise and maybe even upsell the user from free to premium products. The same is true with MVPDs. The MVPD offering reflects negotiated programmer carriage agreements that typically define channel position, tier placement, and presentation of the programmer's content and advertising, plus the MVPD's channel lineups, tier structures, marketing messages, branding, and service look-and-feel in order to maximize their effectiveness as video retailers. Apple, Samsung, Xbox, and PlayStation are having no trouble differentiating themselves with features, functions, networks, drives, speed, look, feel, and price. And, such devices support apps from a variety of content sources including MVPD and OTT sources. They do not need to destroy the retail relationship between an app developer and a customer, nor an MVPD and its customers, in order to distinguish themselves.[39] Opening a rulemaking would invite exactly these kinds of gambits to gain regulatory advantage rather than compete in today's commercial market.

Government mandates also inevitably lead to companies seeking repeated waivers of technical requirements that no longer make sense in an ever-changing world with new interface

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[39] Section 629 was intended to assure the commercial availability of retail equipment that could access *MVPD* services, *not*, as TiVo claims (TiVo Comments at 12-13), to require MVPDs to assure that such a retail device be capable of receiving some supplemental or derivative service that a CE manufacturer may wish its product to provide, such as recording capability, Internet connectivity or the equipment manufacturer's user interface. *See In re Gemstar Int'l Group, Ltd. Pet. for Special Relief; Time Warner Cable Pet. for Declaratory Ruling*, Memorandum Opinion and Order 16 FCC Rcd 21531, 21542, ¶ 31 (2001). Many consumers are choosing to receive on-demand programming, IP content and cloud resources on navigation devices rather than using conventional DVRs. With respect to any differences in content available to specific navigation devices, as noted above and in NCTA's Comments, consumer electronics devices are not built to a common standard and content providers are not uniform in how they license these various platforms; however, cable operators and other MVPDs have continued to negotiate an expansion of the rights available, so that Time Warner Cable, in the example offered above, now provides subscribers with access to 300 linear channels plus video-on-demand using iOS, Android, Mac/OS X, PC/Windows, Xbox 360, Roku, and Samsung Smart TVs. TiVo Comments at 12-13; NCTA Comments at 21.

technologies (in fact, TiVo has filed for several such FCC waivers over the years). Not even a waiver process can adjust quickly enough to changes in the market and technology. The Commission took two years to grant a waiver for early-release theatrical content; well over a year to authorize the DTAs essential for cable's digital transition; and well over a year to deny a waiver NCTA requested to provide a test-bed for new software-based security methods. In today's highly competitive and fast moving technology marketplace, a year delay for the introduction of a new product or service would be devastating. Regulations that impose technical specifications inherently lack the agility called for by innovative markets, and would contravene Congress's instruction to the Commission to "avoid actions which could have the effect of freezing or chilling the development of new technologies and services."[40]

CableCARDs are still supported today, but relatively few retail devices are built to the FCC's prescribed CableCARD standard. By contrast, the market is teeming with non-CableCARD video devices on which consumers are enjoying MVPD programming, and the options keep expanding. There could not be clearer evidence that allowing the marketplace to produce a variety of approaches is far more successful in creating consumer choice and technological innovation than is a uniform government-prescribed technology mandate.

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[40] H.R. Rep. No. 104-458, at 181 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 194. Although TiVo and AllVid both ask for institution of a *Carterfone* regime for all MVPDs (TiVo Comments at 9; AllVid Comments at 3-4), the Commission has rightly and repeatedly rejected the telephone analogy as inapt for cable and other MVPDs. *See, e.g. Commercial Availability of Navigation Devices,* CS Docket 97-80, First Report and Order, 13 FCC Rcd 14775, 14788-14789, ¶ 39 (1998) ("the telephone networks do not provide a proper analogy to the issues in this proceeding due to the numerous differences in technology between Part 68 telephone networks and MVPD networks."). The telephone network was originally built to a common nationwide standard and effectively administered by a single homogenous entity, AT&T. The Commission's Part 68 rules applied to devices connected to a highly stable interface: a telephone loop with electrical characteristics that had remained essentially uniform and unchanged for a century, and used for a well-defined "plain old telephone service" that needed no content protection. By contrast, cable, DBS, and telco TV technology, facilities and services are widely varied and are rapidly evolving content and interactive digital services. The Bell System sought to prevent competition from Carterfone to its wholly-owned Western Electric equipment division. By contrast, cable, for example, does not own any of its set-top box vendors. Cable operators buy set-top boxes supplied by a growing number of consumer electronics manufacturers, including Pace, ARRIS, Cisco, Evolution Broadband, Samsung, and TiVo to rent to consumers at regulated rates that allow only the recovery of costs.

CONCLUSION

For many years, NCTA has demonstrated in these video competition proceedings that competition in the video programming marketplace is flourishing. Consumers can choose among a multitude of video providers, platforms and devices. While various competitors may seek regulatory protection by portraying the video marketplace as less than fully competitive, all evidence is to the contrary.

Respectfully submitted,

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ATTACHMENT

Timeline of Cable Industry Support for CableCARDs

2000

- The cable industry supports FCC's requirement to develop and provide separate security modules.

2002

- Cable operators and major consumer electronics manufacturers negotiate the landmark "plug and play" agreement for Unidirectional Digital Cable Ready Products (UDCPs) and submit it to the FCC for implementation, resulting in FCC rules facilitating the development and commercial availability of UDCPs and enabling retail devices to access cable's scrambled services on any system in the country that is subject to the Commission's "plug and play" rules.

2003

- FCC adopts implementing regulations for UDCPs with extensive cable support.
- Cable expands Go2Broadband to cover video. Go2Broadband is a free Internet-based electronic commerce tool that enables CE manufacturers and retailers to identify a customer's local cable operator and services available so they may recommend compatible hardware to the customer.

2004

- CE manufacturers develop one-way "plug and play" products.
- Cable develops and implements consumer education and internal training for "plug and play" UDCPs. Cable and CE create informal troubleshooting mechanisms to effectively handle the field issues that inevitably arise with start-up technologies.
- CableLabs provides free lab time to CE manufacturers for product development. Thirty major manufacturers of digital televisions and related products utilize CableLabs' state-of-the-art testing facilities, including headend equipment, test tools, and personnel to help evaluate and develop their CableCARD-enabled products.
- Cable operators open their own test labs to assist CE manufacturers in the development process. Cable operators provide extensive technical and developmental support to CE manufacturers.

- Fifteen digital television manufacturers are certified under the testing process. (Eventually 29 CE manufacturers have over 600 models of televisions and other video devices certified or verified for use with CableCARD.)
- Cable operators cultivate direct relationships with large and small CE retailers.
- Samsung signs OCAP/tru2way Agreement for bi-directional devices.

2005

- Cable industry works with Microsoft to create CableCARD-enabled connection to personal computers (PCs) and approval of associated Digital Rights Management systems for protection and handling of content.
- LGE and Panasonic sign OCAP/tru2way Agreement for bi-directional devices.
- Samsung develops bi-directional DTV, which gains certification.

2006

- Microsoft CES booth and keynote feature CableCARD-enabled "digital cable ready" personal computers that receive one-way cable programming, including high-definition premium digital cable content without set-tops.
- Working with TiVo and other manufacturers, CableLabs issues Multistream CableCARD specifications to allow simultaneous recording and viewing of premium cable content from a single CableCARD. Proposed rules are submitted to the FCC. Multistream CableCARD vendors certified.
- UpdateLogic and CableLabs sign agreement to allow UDCPs to be updated via over-the-air digital broadcast television stream.
- Cable industry develops the Java-based tru2way middleware solution to permit portability of interactive applications used on cable systems through a nationwide common software platform. CE industry helps write and rewrite the specification and the test suites to assure their compatibility with CE and multi-function CE devices.
- The cable industry, over a dozen independent CE companies, and more than 50 other equipment, application, and implementation vendors invest years of effort and millions of dollars to develop and improve the tru2way middleware solution, including multi-mode function for CE to present cable content with a CE interface. Later, Intel agrees to put the resulting technology in its system-on-a-chip architecture.
- The tru2way middleware solution becomes an ITU standard. (It is also an SCTE/ANSI standard.)
- Major CE manufacturers sign licenses to implement the tru2way middleware solution.
- LG Electronics, Panasonic, and Samsung voice their support for tru2way middleware at CES 2006.
- Samsung announces the deployment of working certified two-way OCAP-based DTVs with Time Warner Cable in a North Carolina test market.
- Panasonic and Samsung each announce the industry's first agreements for the manufacture and deployment of Comcast's new series of tru2way digital cable set-tops.

- Successful tru2way interoperability lab working sessions held with more than fifty companies, including vendors of Headend/Servers, Tools, Applications, Implementations and major content suppliers such as Walt Disney-ABC and Showtime.
- CE manufacturers begin to retreat from manufacturing UDCPs in favor of ClearQAM TVs.

2007

- Cable industry completes work in helping to establish a worldwide patent pool for making tru2way intellectual property available on reasonable and non-discriminatory terms.
- The cable industry redesigns its leased set-top boxes to rely upon CableCARDs.
- TiVo exhibits its TiVo Series 3 HD Digital Media Recorder with dual CableCARDs at Consumer Electronics Show, allowing consumers to watch one program while recording another on a CableCARD-enabled TiVo.
- Cable operators enter into cooperative development agreements with CE manufacturers for the development of advanced retail devices.
- Cable industry works with TiVo to develop and deploy a "tuning adapter" to help TiVo devices built exclusively as "one-way" receivers to operate as "two-way" cable devices for the tuning of SDV-delivered signals.
- LGE develops bi-directional DTV, which gains certification.

2008

- The cable and consumer electronics industries negotiate the tru2way MOU, enabling consumers to purchase innovative "two-way" digital televisions and other devices that can receive interactive digital and high-definition video services without a set-top box. Contract also resolves the complex business terms surrounding the deployment of tru2way, "common reliance," certification, innovation, protection of consumers' experience and investment, content protection, and CableLabs standards setting processes. Signatories include Sony Electronics, Panasonic, Samsung, LGE, Funai, Intel, ADB, and Digeo.
- The cable industry creates development tools and support for bringing two-way tru2way DTVs to market. CableLabs provides a free open source tru2way Reference Implementation. Multiple sources provide commercial implementations of tru2way and Software Developers Kits ("SDKs"). CableLabs provides development lab time to almost every manufacturer of "plug and play" TVs.
- Cable operators open their own test labs to assist in the tru2way development process.
- Cable operators purchase software stacks and OEM set-tops from new CE suppliers. Cable industry now buys from growing number of competitive consumer electronics manufacturers, including Pace, Motorola, Cisco, Thomson, Evolution Broadband, Samsung, Panasonic, TiVo, and ARRIS (Moxi).
- Cable operators port interactive applications to the tru2way platform, including multiple guides, multiple VOD applications, switched digital video applications, interactive advertising, Caller-ID on TV, email viewers, on-screen subscriptions, and even the TiVo interface.

- The cable and CE industries conduct regular "tru2way summit" meetings.
- Tru2way TVs launched publicly in retail stores with promotional rebates.

2009

- Cable operators roll-out tru2way set-top boxes and platform across the industry.
- Manufacturers of tru2way equipment and developers of tru2way applications hold successful "interops" to test new applications and devices on the tru2way platform.
- CableLabs works closely with CE manufacturers to streamline the certification process so that products can get to market as quickly as possible. CableLabs now provides certification testing on-demand every week; development lab time and interoperability events to any interested manufacturer; short-form test certification; and a path to self-certification.
- CableLabs creates a new Founders Advisory Board composed of representatives of the cable television, content, consumer electronics, and information technology industries, with a formal role in requesting a vote on specification changes that raise costs without adequate justification.
- CableLabs technology licenses and processes are reformed pursuant to the tru2way MOU.
- CableLabs invites the addition of new recordable digital outputs and content protection technologies, either through a CableLabs process or directly through motion picture studio agreements, with specific rights to appeal to the FCC.

2010

- Cable industry proposes consumer principles supporting the Commission's goals for retail availability of navigation devices.
- The ten largest traditional cable operators deploy their 21 millionth CableCARD-enabled set-top box.