

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

In the Matter of)	
)	
Expanding Consumers' Video Navigation Choices)	MB Docket No. 16-42
)	
)	
Commercial Availability of Navigation Devices)	CS Docket No. 97-80

REPLY COMMENTS



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EXECUTIVE SUMMARY

The initial comments filed in response to the Navigation Device Notice of Proposed Rulemaking (“*Navigation Device NPRM*”) demonstrated widespread opposition to the Commission’s proposed mandate that multichannel video programming distributors (“MVPDs”) disaggregate their networks into three information flows and provide a compliant security system. The record in this proceeding supports the view of the American Cable Association (“ACA”) that the mandate is both unwarranted, because the market is working, and flawed, because it will inflict harm without offsetting benefits. Smaller MVPDs will bear the brunt of this burden, even though they are responding to their subscribers’ desire for access to the vast array of traditional linear and over-the-top video programming over a plethora of innovative navigation devices. As ACA demonstrates in these reply comments, the Commission’s proposal, to the extent it is known, would force smaller providers to divert resources from productive uses to covering a “deadweight” mandate, causing approximately 225 smaller MVPDs to go out of business or shut off their video services and hundreds of others to scale back network investments and the roll out of new offerings.

The Commission’s proposal is not only bad policy; its adoption would also exceed statutory and constitutional limits on the Commission’s authority. Commenters agree with ACA that the *Navigation Device NPRM* represents an attempt to re-imagine the scope of the Commission’s authority under Section 629, 624A, and 335 and that its proposals would conflict with other statutory provisions – including Section 631 cable subscriber privacy requirements, Section 338 satellite subscriber privacy requirements, the Copyright Act, and other intellectual-property protections – as well as the First and Fifth Amendments to the Constitution.

Because the Commission's proposal is not needed, is so flawed, and is so harmful to MVPDs, particularly smaller providers, and their subscribers, the Commission should eschew moving forward to adopt it and instead allow the market to work and a successor to the CableCARD solution to evolve in the marketplace. If the Commission insists on acting, however, it should not apply the new rules to any MVPD systems with fewer than 600,000 subscribers that are not affiliated with either (i) an MVPD serving more than one percent of all MVPD subscribers; or (ii) an MVPD, or any entity with an attributable interest in an MVPD of 50 percent or more, that has a market capitalization of greater than \$100 billion.

There is widespread recognition in the record – including by a bi-partisan group of 60 Members of Congress and proponents of the Commission's proposal – that relief for small providers is warranted. The Members of Congress, for instance, expressed concern that “the proposal threatens the economic welfare of small pay-TV companies providing both vital communications services to rural areas and competitive alternatives to consumers in urban markets,” and urged Chairman Wheeler “to press pause on the set-top box proceeding and reconsider the proposed rules.” While several commenters suggested alternative forms of relief, ACA's proposal is the only one that is based on a thorough analysis of known implementation costs and their impact on small providers and their subscribers, and thus is the only one that is tailored to provide appropriate relief where it is most needed.

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**AMERICAN CABLE
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The American Cable Association¹ (“ACA”) hereby submits reply comments in response to the Notice of Proposed Rulemaking in the above-referenced dockets and comments filed in response to the *Navigation Device NPRM*.²

¹ ACA represents approximately 750 smaller cable operators, incumbent telephone companies, municipal utilities, and other local providers of multichannel video programming services (“MVPD services” or “pay-TV”) that serve smaller communities and rural areas or compete with much larger multichannel video programming distributors (“MVPDs”) in urban and suburban markets. In aggregate, these providers pass nearly 19 million homes and serve nearly 7 million homes. The vast majority of ACA members have fewer than 5,000 subscribers, and half have fewer than 1,000 subscribers.

² *Expanding Consumers' Video Navigation Choices*, MB Docket No. 16-42, *Commercial Availability of Navigation Devices*, CS Docket No. 97-80, Notice of Proposed Rulemaking and Memorandum Opinion and Order, FCC 16-18 (rel. Feb. 18, 2016) (“Navigation Device NPRM”).

I. INTRODUCTION AND OVERVIEW OF REPLY COMMENTS

The breadth of opposition to the Commission’s navigation device proposal is overwhelming and telling – multichannel video programming distributors (“MVPDs”),³ broadcasters,⁴ content providers,⁵ including independent and minority programmers⁶ and

³ See Comments of the National Cable & Telecommunications Association, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“NCTA Comments”); Comments of Comcast Corporation and NBCUniversal Media, LLC, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Comcast Comments”); Comments of EchoStar Technologies L.L.C. and DISH Network L.L.C., MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“DISH Comments”); Comments of AT&T, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“AT&T Comments”); Comments of Frontier Communications Corporation, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Frontier Comments”); Comments of ITTA, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“ITTA Comments”); Comments of NTCA – The Rural Broadband Association, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“NTCA Comments”); Comments of the United States Telecom Association, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“USTelecom Comments”); Comments of WTA – Advocates for Rural Broadband, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“WTA Comments”); Comments of CenturyLink, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“CenturyLink Comments”); Comments of Midcontinent Communications, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Midco Comments”).

⁴ See Comments of the National Association of Broadcasters, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“NAB Comments”).

⁵ See Comments of 21st Century Fox, Inc., A&E Television Networks, LLC, CBS Corporation, Scripps Networks Interactive, Time Warner Inc., Viacom Inc., and the Walt Disney Company, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Content Company Comments”).

⁶ See Comments of TV One, LLC, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“TV One Comments”); Comments of Revolt Media and TV LLC, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Revolt Comments”); Comments of Creators of Color, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Creators of Color Comments”).

content creators,⁷ civil rights advocates,⁸ labor unions,⁹ legal and economic experts,¹⁰ manufacturers,¹¹ not for profit groups and think tanks,¹² as well as hundreds of thousands of consumers, all oppose the proposed mandate. In their often voluminous comments, these parties demonstrated that the Commission’s mandate would harm virtually all participants in the video programming ecosystem, from upstream content producers to downstream consumers. The record further demonstrates that smaller MVPDs and their subscribers would bear the brunt of this harm.

In its initial comments, ACA pointed out several major flaws in the proposals contained in the *Navigation Device NPRM*. First, ACA explained that the distribution of video programming and provision of navigation devices comprise a single, integrated, heterogeneous market into

⁷ See Comments of the Independent Film and Television Alliance, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“IFTA Comments”); Comments of Victor Cerda and Other Independent Content Creators, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Cerda *et al.* Comments”).

⁸ See Comments of the Multicultural Media Telecom and Internet Council, *et al.*, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“MMTC Comments”); Comments of the Cuban American National Council Hispanic Leadership Fund, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“CNC Comments”).

⁹ See Comments of the Communications Workers of America, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“CWA Comments”); Comments of the Directors Guild of America and the International Alliance of Theatrical Stage Employees, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“DGA-IATSE Comments”).

¹⁰ Comments of the International Center for Law and Economics, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“ICLE Comments”); Comments of the Advanced Communications Law & Policy Institute at New York Law School, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“ACLP Comments”).

¹¹ Comments of the National Association of Manufacturers, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“NAM Comments”); Comments of Roku, Inc., MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Roku Comments”); Comments of ARRIS Group, Inc., MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“ARRIS Comments”); Comments of Cisco Systems, Inc., MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Cisco Comments”).

¹² Comments of the Taxpayers Protection Alliance, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“TPA Comments”); Comments of the Free State Foundation, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) (“Free State Comments”).

which MVPDs provide a unified offering for their customers – and thus the offering of devices cannot be analyzed separate and apart from this market. In addition, that market is working with consumers to offer a vast array of video programming from MVPDs and over-the-top providers over a large number of navigation devices. Smaller MVPDs in particular are offering consumers a wide array of innovative choices for accessing video programming,¹³ and, as ACA demonstrated, they are not overcharging for navigation devices.¹⁴ All of these attributes – greater consumer choice, increasing supply, and low profits – are hallmarks of a market that is working. Moreover, it is a dynamic market, with innovative services and products constantly being developed and offered. In sum, this is a textbook case where government intervention of the sort contemplated by the *Navigation Device NPRM* is unwarranted and would prove counterproductive.¹⁵

Second, ACA demonstrated that, contrary to the Commission’s claim that its proposal is the “least burdensome” way to assure commercial availability of navigation devices,¹⁶ the proposal would impose substantial costs, particularly on smaller MVPDs, while providing few, if any, benefits for consumers.¹⁷ Finally, ACA argued that the proposal is unlawful, exceeding the Commission’s statutory authority and violating constitutional and statutory principles.

¹³ Comments of the American Cable Association, MB Docket No. 16-42, CS Docket No. 97-80, at 15-23 (Apr. 22, 2016) (“ACA Comments”).

¹⁴ *Id.* at 24-28.

¹⁵ ACA further noted that the Commission should not intervene because regulation, at best, tends to work “on average” without acknowledging the significant differences among sectors and firms and which cannot capture new technologies and shifting demand because it is static.

¹⁶ *Navigation Device NPRM*, ¶ 81.

¹⁷ For purposes of evaluating the Commission’s proposal in these comments, ACA equates it to the proposal of the Consumer Video Choice Coalition (“CVCC”), which is the same approach it took in its initial comments. See Comments of the Consumer Video Choice Coalition, MB Docket No. 16-42, CS Docket No. 97-80, (Apr. 22, 2016) (“CVCC Comments”). ACA has two principal reasons for taking this

Because the Commission's proposal is not needed, is so flawed, and will cause substantial harm throughout the video programming ecosystem, ACA urged the Commission to eschew moving forward to adopt it and instead allow the market to work and a successor to the CableCARD solution to evolve in the marketplace. If the Commission nonetheless insists on acting, however, it should not apply the new rules to MVPD systems with fewer than 600,000 subscribers that are not affiliated with either (i) an MVPD serving more than one percent of all MVPD subscribers; or (ii) an MVPD, or any entity with an attributable interest in an MVPD of 50 percent or more, that has a market capitalization of greater than \$100 billion.¹⁸

The record in this proceeding confirms that the proposal will place substantial technical and financial burdens on all MVPDs, particularly smaller providers. Today's marketplace is particularly challenging for smaller operators, whose smaller scale translates into higher operating costs, fewer financial resources, and more costly access to capital. Nonetheless, small providers continue to hone their operations, invest in their networks, and deploy innovative services and products to retain and attract subscribers. As ACA reiterates herein, notwithstanding that the Commission's proposal is reliant on undeveloped and hypothetical technologies, based on just the identifiable costs alone, the proposal, if adopted, would force smaller MVPDs to divert resources from productive uses to implementing a "deadweight" mandate. ACA conservatively estimates that approximately 225 hundred smaller MVPDs would go out of business or cease video operations. Moreover, many hundreds of other smaller

approach. First, the Commission describes a key objective as device portability, that is, consumers should be able to use the same device with different MVPDs throughout the country without purchasing additional equipment. This objective is shared by CVCC and is the basis for its specifications. Second, the Commission suggests the possibility of relying on the specifications advanced by CVCC as a "fallback" or "safe harbor" set of specifications should Open Standards Bodies be unable to reach agreement.

¹⁸ ACA Comments at 90.

providers would scale back network investments and the roll out of new offerings, including advanced video and broadband services. ACA notes that concerns about the impact of the proposal on smaller MVPDs was expressed to the Commission by 60 Members of Congress.¹⁹

The record also demonstrates that the Commission's proposal is reliant on undeveloped and hypothetical technologies. Despite the claims of some commenters, the Commission's proposal cannot be implemented with "off-the-shelf" technologies. Even assuming that it could be, those technologies would not work seamlessly with every MVPD's networks. The proposal also lacks sufficient details as to how the Commission could achieve its mandate that MVPDs enable their information flows in an equivalent manner for hardware and software solutions (technology neutrality) given the contractual limitations on programming and metadata. And it ignores significant security gaps that would result from a self-certification process.

The comments make plain that ACA's original estimate of the identifiable and quantifiable implementation costs of the Commission's proposal was far too conservative, as it did not account for numerous additional cost factors as revealed by comments of the proposal's advocates. In addition to the cost of developing and deploying the network and in-home equipment to convert existing video streams into the information flows and compliant security system required by the Commission's proposal, there are substantial integration costs, as well as the costs associated with conformance testing, new customer service demands, and even participation in Open Standards Bodies.

The comments also set forth in extensive detail that the Commission's proposal exceeds statutory and constitutional limits on its authority. Commenters agree with ACA that the

¹⁹ Letter from Representatives Cramer, Schrader, et al. to the Honorable Tom Wheeler, Chairman, Federal Communications Commission (May 5, 2016).

Navigation Device NPRM not only attempts to re-imagine the scope of the Commission's authority under Sections 629, 624A, and 335 of the Communications Act, but also conflicts with other statutory provisions – including the Section 631 cable subscriber and Section 338 satellite subscriber privacy requirements, the Copyright Act, and other intellectual-property protections – as well as the First and Fifth Amendments to the United States Constitution.

Finally, there is widespread recognition in the record – including from a bi-partisan group of 60 Members of Congress²⁰ and even among proponents of the Commission's proposal – that, should the Commission nonetheless move forward and adopt its proposal, relief for small providers is warranted. These Representatives, for instance, explained that “the proposal threatens the economic welfare of small pay-TV companies providing both vital communications services to rural areas and competitive alternatives to consumers in urban markets,” and, as a result, urged Chairman Wheeler to “press pause on the set-top box proceeding and reconsider the proposed rules, including the impacts they would have on small businesses and consumers alike.”²¹

While several commenters suggested alternative forms of relief, ACA's proposal that smaller providers not be subject to the mandate is the only one that is based on an analysis of known implementation costs and their impact on small providers and their subscribers. Thus, it is the only one that is tailored to provide appropriate relief where it is most needed.

In these reply comments, ACA focuses first on the harm to smaller MVPDs that will result from imposition of the Commission's mandate. It then expands upon the reasons why the

²⁰ *Id.*

²¹ *Id.*

Commission's proposal is unlawful. Finally, ACA examines the rationale not to apply the mandate to smaller MVPDs should the Commission nonetheless proceed with its proposal.

II. THE RECORD AND NEW ACA EVIDENCE CONFIRMS THAT SMALLER MVPDS WOULD BE HARMED SUBSTANTIALLY BY THE COMMISSION'S INCHOATE, FLAWED PROPOSAL

The record is replete with evidence that the Commission's proposal would place substantial technical and financial burdens on all MVPDs. "It is almost certain ... that MVPDs would have to make substantial changes to how they deliver video services in order to implement and comply with the Commission's proposed rule."²² These necessary changes would disproportionately impact smaller providers. They "lack the scale and scope" to absorb the substantial costs required to comply with the Commission's proposed mandate.²³

²² ARRIS Comments at 10; *see also* ITTA Comments at 10 ("The Commission's proposal, which requires MVPDs to make three 'Information Flows' available to third-party devices and apps, will require numerous changes to MVPDs' networks and delivery mechanisms."); AT&T Comments at 23 ("The standards the NPRM envisions for the three proposed Information Flows would be more complicated. Standards for all MVPDs – which use a variety of different system architectures – would need to be developed.... The NPRM-contemplated standards will need to address such differences in MVPD architectures for many different issues."); Comcast Comments at 60 ("[T]he Commission's Set-Top Box Mandate would in truth force MVPDs to make substantial and costly network changes and would require the deployment of additional in-home equipment – i.e., a second, mandatory leased box."); NCTA Comments at 131 ("The MVPD industry experts who operate systems and participated in DSTAC have concluded that, whether or not the NPRM explicitly calls for network redesign or a new in-home government-designed box that consumers would have to lease from their MVPD, the functional demands of the proposal require both"); NTCA Comments at 3 ("Unfortunately, compliance with this proposal can best be characterized as an exercise in how and not whether, as adoption of the proposal will require MVPDs of all sizes to make substantial software, hardware, and middleware and other system architecture modifications to make the Information Flows available to third-party device manufacturers.").

²³ WTA Comments at 7. *See also* ARRIS Comments at 11 ("Costly network changes and new equipment would be particularly burdensome for smaller operators, who can face significant budget constraints in meeting new government mandates"); Comcast Comments at 68-69 ("For MVPDs that are not as far along ... in their IP transitions or have not even started their transitions, the Set-Top Box Mandate may discourage investment in those transitions given the costs associated with complying with the new mandate."); ITTA Comments at 2 ("Many ITTA members are much smaller and have far more limited resources than cable MSOs, national DBS providers and other MVPDs in the industry, which poses unique challenges in complying with the mandates proposed by the instant NPRM."); NTCA Comments at 3 ("The NPRM fails to explain, and in fact cannot explain, how the standards body proposed would avoid imposing a specific technological mandate or, at the very least, avoid requiring smaller MVPDs in particular to choose from a few government-mandated standards before the actual market has had any

As ACA explained in its initial comments, “[s]mall MVPDs, however, are working hard and investing significant capital to upgrade their networks to improve both multichannel video programming services and broadband Internet access offerings.”²⁴ The burdens associated with the proposed rules would divert important resources away from these investments, raise costs for consumers, and in some cases lead MVPDs to go out of business or discontinue their video service all together, ultimately reducing consumer choice in the marketplace.²⁵

A. The Substantial Implementation costs of the Commission’s Proposal Would Force Smaller MVPDs to Curtail Productive Investment or Discontinue Video Services

All MVPDs will be harmed by the Commission’s proposal, but those harms will be especially acute for smaller MVPDs that already face significant contractual, technological, and financial constraints. First, while programming fees have risen significantly for MVPDs across the board, smaller MVPDs pay significantly higher fees than other industry participants because they lack leverage in negotiations with programmers.²⁶ To make matters worse, smaller providers are typically required to accept highly restrictive terms and conditions which raise their costs of service.²⁷ These restrictive terms and conditions also often result in smaller MVPDs –

meaningful opportunity to test and execute upon implementation of such standards.”); USTelecom Comments at 9 (“While the costs for all MVPDs to retrofit their networks and customer premises equipment will be substantial, they will be particularly acute for smaller ILEC MVPDs. Such MVPDs could be uniquely impacted since they would be forced to adopt and implement the same standards as larger providers, resulting in a technology mandate by default for the former.”) (internal quotations omitted).

²⁴ ACA Comments at 100.

²⁵ ACA Comments at 101-102.

²⁶ Reply Comments of the American Cable Association, Appendix, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 14-126, (Apr. 6, 2015) (“ACA Deployment White Paper”).

²⁷ See Comments of the American Cable Association, *Promoting Availability of Diverse and Independent Sources of Video Programming*, MB Docket No. 16-41, at 14-15 (filed Mar. 30, 2016). The majority of networks carried by smaller MVPDs must be bundled, per distribution agreements. Programmers also

unlike larger providers – being unable to offer subscribers the choice of a “skinny bundle.”²⁸ At the same time, smaller providers face direct competition from larger providers, which limits their ability to pass those higher costs through to subscribers. For all these reasons, smaller MVPDs have narrower margins and produce less free-cash flow from their video business. They will soon reach, if they have not already, the point where their video business is no longer profitable.²⁹ Some smaller MVPDs have already decided to exit the business.³⁰

Second, smaller MVPDs have higher costs to access to capital (assuming they can access it all).³¹ Smaller operators are typically unable to raise funds through credit markets or publicly traded equity because the higher fixed costs of bond issuance relative to bank loans limits access to bond markets to firms with large sales revenues.³² Therefore, the majority of

often impose multicast bundling requirements on smaller MVPDs, which require smaller operators to carry largely valueless secondary channels. Smaller MVPDs are further limited in their ability to flexibly determine the content they provide to their subscribers by “first on” requirements, under which an MVPD does not have to bundle now but cannot launch any new programming without first launching additional networks from the programmer.

²⁸ See American Cable Association, *Polka: ACA Will Push to Remove Barriers Preventing ‘Skinny Bundles,’* (Mar. 2, 2016), <http://www.americancable.org/node/5625>. ACA’s concerns are not merely theoretical. Smaller MVPDs are losing customers at a much faster rate than larger MVPDs. See also Jan Dawson, *Q1 2016 Cord Cutting Update*, BEYOND DEVICES, (May 16, 2016), <http://us3.campaign-archive1.com/?u=eed5124fc29661885cb5f76f3&id=6bfcc3a589&e=7332cc6ac1>; Paul Sweeting, *In Cable, The Rich Get Richer*, CONCURRENT MEDIA, (May 12, 2016), <http://concurrentmedia.com/2016/05/12/in-cable-the-rich-get-richer/>.

²⁹ See ACA Deployment White Paper. See also Samson X Horne, *Pitcairn Council votes to end borough-owned cable, Internet services*, TRIB LIVE, (May 10, 2016), <http://triblive.com/news/neighborhoods/monroeville/10418429-74/council-customers-borough>.

³⁰ See Shalini Ramachandran, *More Cable Companies Take TV Off Menu*, WALL STREET JOURNAL, (Oct. 3, 2014), <http://www.wsj.com/articles/more-cable-companies-take-tv-off-menu-1412120310>.

³¹ See Shahin Firoozmand, Philip Haxel, Eujin Jung, and Kati Suominen, *State of SME finance in the United States in 2015*, TradeUp Capital Fund and Nextrade Group, at 4 (Mar. 2015), http://www.tradeupfund.com/uploads/2/6/0/4/26048023/state_of_sme_finance_in_the_united_states_2015.pdf (“TradeUp Article”). (“Given that SMEs tend to have greater volatility in earnings and growth than do larger companies, they are seen as riskier investments, and thus subject to higher cost of capital.”).

³² See Katheryn N. Russ and Diego Valderrama, *A Theory of Banks, Bonds, and the Distribution of Firm Size*, Federal Reserve Bank of San Francisco Working Paper Series, Working Paper 2009-25, at 2 (Oct. 2009), <http://www.nber.org/papers/w15454> (“There are two types of contracts available to the firms,

smaller MVPDs typically obtain capital from small regional banks, which tend to charge higher rates.

As a result, smaller MVPD have less capacity than larger providers to make substantial capital outlays, especially when the investment produces no return. That is why the smaller MVPDs are so concerned about the Commission's proposal; they cannot afford it.

Setting aside that the Commission's proposal is reliant on so many undefined, undeveloped, and hypothetical technologies and standards that make it nearly impossible to identify the full cost of compliance, based on just the estimated costs of components that ACA has identified, as set forth in Section B below, implementing the Commission's proposal would cost no less than \$1.1 million per cable system.³³ This cost does not include the costs associated with supplying gateway devices – approximately \$350 for each household -- to subscribers adopting a third party navigation device. Based on these costs, ACA estimates that the Commission's mandate would force hundreds of smaller MVPDs, covering at least 40 states, to go out of business or cease video operations.³⁴ This is a conservative estimate and

intermediated bank loans and public bonds. Bond issuance involves a higher fixed cost than bank loans, which limits access to firms with large sales revenues.”). See also *TradeUp Article* at 4 (“However, small firms consistently report higher financing hurdles than large enterprises given their small size, limited assets, and general inability to raise funds through credit markets or publicly traded equity.”).

³³ As noted in Section II.C below, it is impossible to fully cost out compliance with the Commission's proposal because so many aspects of it remain undefined today, including the critical standards for provision of the information flows.

³⁴ ACA's analysis is based on the following assumptions. MVPDs would be required to fund the costs of compliance over two years. Because smaller MVPDs have high barriers to accessing external capital, due in part to financial institutions deeming smaller MVPDs' systems too illiquid to be used as collateral, ACA assumes these providers would need to fund the costs out of existing cash balances and profits from all business units. ACA also assumes that video service prices over the two year period could be increased by \$10 per month above and beyond any other cost increase, for instance, to offset higher programming costs, which may be difficult to achieve as the current growth rate in price is lower. ACA further assumes these MVPDs would allocate the entirety of their cash flow margins over the two years towards implementation of the proposed standards. To calculate estimate cash flow margins, ACA's analysis assumes total monthly average revenue per user of \$80 from video, \$45 from broadband and

can be expected to increase as unidentifiable costs become known and unquantifiable costs can be calculated.

As for those smaller MVPDs that remain in the video business, they would be forced to reallocate funds from other more productive initiatives, such as the development and deployment of over-the-top applications and new devices, TV Everywhere initiatives, efforts to integrate over-the-top content with their linear TV and on-demand content, and network-capacity improvements to increase broadband speeds and provide consumers with improved quality of service.

If subjected to the proposed rules, smaller MVPDs, their subscribers and other consumers in their coverage areas would be harmed. As smaller MVPDs do not have sufficient cash flow to absorb the costs of implementing the Commission's proposal, they would be forced to divert resources from other initiatives that would provide greater value to consumers.³⁵ This could mean sacrificing such initiatives as network expansion, enhancement of broadband speeds and capacity (which collaterally benefits other video providers), video-system upgrades

\$25 from phone services in 2016, with base case annual growth rates of 3.5 percent, 2.5 percent and -4.5 percent respectively, and 38 percent cash flow margins. See American Cable Association, *High and Increasing Video Programming Fees Threaten Broadband Deployment*, 23, 28, (Apr. 2015), <http://www.americancable.org/node/4728> ("ACA Hometown America White Paper"); SNL Kagan, "Public MSO's revenues and operating cash flows summary" (Aug. 2015). Finally, ACA assumes these MVPDs would allocate their entire prior cash balance toward these standards. (ACA assumes that operators hold 5 percent of their annual revenues in cash balances. This assumption is based off of the average cash to revenue ratios of a number of U.S. public cable companies.) Based on these assumptions, as well as an assumed 20 percent adoption level for third party navigation devices, ACA determined that 227 of the smallest MVPDs by subscriber size, which does not include MVPDs that are analog-only and expected to be exempted, would have negative cash balances by the end of the two year implementation period. As this video product would offer no return on investment, ACA projects these MVPDs could not continue to fund the operation of their video businesses if required to comply with the Commission's proposal and would either go out of business or cease offering video service. See SNL Kagan Mediensus Data (Mar. 2016); SNL Kagan, "Public MSO's revenues and operating cash flows summary" (Aug. 2015).

³⁵ While smaller MVPDs may seek to pass the cost to consumers through price increases, they are limited in their ability to do so, as described above.

and the introduction of new video services - all of which would improve consumer experience and expand consumer choice. Consumers also would experience service deterioration. The mandate, by introducing a heterogeneous device ecosystem, would create a lack of clear procedures for subscribers to address technical issues and would require subscribers assume the costs to upgrade devices when middleware changes rendered older third-party devices non-compatible. These factors would substantially increase complexity and frustration among consumers.³⁶

The most obvious and severe harm would fall on all consumers in an area when a smaller MVPD goes out of business or shuts down its video services. The subscribers would experience decreased choice and increased prices. In addition, the loss of an MVPD would increase market concentration, which may drive remaining MVPDs to decrease their investments, increase prices, and degrade service quality.

This is not a parade of “imaginary horrors;”³⁷ these are predictions based on a conservative economic analysis of the Commission’s proposal and the facts of commercial life

³⁶ In addition to these effects, ACA has identified a variety of additional consumer harms, including:

- Reliance on an additional device that provides no additional benefit
- Additional power consumption
- An additional remote control and usage made more complex
- More wires behind the TV stand
- Long boot time (gateways often take several minutes to start up)
- Additional noise (such a box often needs fans to avoid overheating)
- Decreased reliability, thus lower level of service
- Decreased performance, thus lower level of service

³⁷ David Lieberman, *FCC’s Tom Wheeler: Opponents Of Set Top Box Rules Inventing “Imaginary Horribles,”* DEADLINE HOLLYWOOD, (May 19, 2016), <http://deadline.com/2016/05/fcc-tom-wheeler-opponents-set-top-box-rules-inventing-imaginary-horribles-1201759686/>.

for smaller MVPDs. For these reasons alone, the Commission should refrain from adopting its proposal and from imposing it on smaller MVPDs.

B. The Record Shows That the Commission's Proposal is Riddled with Unresolved Flaws and Impracticalities

Other commenters in this proceeding have enumerated the myriad issues that render the Commission's proposal unworkable, including, among other things, privacy and consumer protection concerns,³⁸ copyright and licensing issues,³⁹ content protection and security

³⁸ See NCTA Comments at 20 ("The NPRM would undermine consumer protections built into cable and satellite service and apps, rendering unenforceable the protections mandated by Congress for protecting consumer privacy, protecting children, assuring accessibility, and delivering emergency alert messages."); Comcast Comments at 92 ("In effect, the *Notice* is creating significant consumer protection issues with its proposal, and then shrugging its shoulders and walking away from those problems without any credible plans for addressing them."); Frontier Comments at 14 ("[The proposed privacy] framework presents several problems. Most importantly, the proposed privacy framework would not actually be enforceable as to any set-top manufacturer that violates consumer privacy. Even if the company openly ignores the privacy rules, the Commission apparently would have no way to address these violations."); ITTA Comments at 18 ("The NPRM waves privacy concerns away with a nod to 'self-certification.' The NPRM acknowledges that its self-certification concept for protecting consumer privacy remains undeveloped, and fails to explain how self-certification by third-party developers will somehow allow MVPDs to police bad actors they cannot control."); NTCA Comments at 15 ("Beyond content security issues, a number of parties – including proponents of the NPRM's proposal – note the serious privacy implications at issue in this proceeding."); AT&T Comments at 48 ("The NPRM proposals would undermine the privacy and personal-information protections that Congress has put in place to protect consumers. Under these proposals ... third parties that make competitive devices or user interfaces would have access to the same information that MVPDs receive about consumer viewing habits, but would not be subject to the same protections that Congress put in place.").

³⁹ See NCTA Comments at 33-41; DISH Comments at 19 ("Third-party manufacturers, for their part, made clear that they do not feel bound by any limitations imposed in the contracts through which content providers authorize MVPDs to distribute their programming."); Comcast Comments at 74 ("The proposal effectively creates a zero rate compulsory copyright license for third parties to retransmit programmers' content; does not address critical licensing terms around advertising and channel placement; and provides no legal or technical means for enforcing entitlement restrictions around the copying and outputting of content."); Frontier Comments at 14 ("If the Commission adopts rules that render portions of contracts void and lead to the unbundling of services, MVPDs will be required to expend significant resources to renegotiate contracts. Given the contentious and complicated environment for content negotiations, there are no guarantees that consumers will still receive the same programming at the same price."); ITTA Comments at 17 ("Among [the reasons why MVPDs utilize proprietary set-top boxes or MVPD-provided apps] are licensing terms and conditions negotiated with programmers, copyright concerns, and network security issues that are given short shrift by the NPRM."); AT&T Comments at 78 ("The Commission's proposed unbundling rules will necessarily violate MVPDs' exclusive rights. The proposed rules require MVPDs to unbundle their services and make them available to their direct

concerns,⁴⁰ customer service problems,⁴¹ and the stifling impact on innovation and investment that a technical mandate of this kind and magnitude will inevitably have on the industry.⁴² ACA

competitors so that these competitors can produce their own competing services based on the MVPDs' copyrighted materials.”).

⁴⁰ See NCTA Comments at 20-21 (“The NPRM would dismantle the security system that protects the distribution of high-value content and combats piracy. It would also dismantle the technical, testing, licensing and business arrangements that protect consumers against the malware that steals consumers’ credit card information, passwords and other data and hijacks their devices into botnets to send spam and viruses and participate in denial-of-service attacks.”); Comcast Comments at 86 (“[T]he Commission’s Set-Top Box Mandate would severely undermine the security of MVPDs’ services and lead to theft of MVPD service and theft of programmers’ content; content that is once stolen can easily be copied and distributed worldwide in a matter of hours, a cat that will never be put back in the bag.”); *id.* at 87 (“The Commission’s proposal will weaken the content security system and potentially put MVPDs in violation of contractual obligations to programmers – all of which undermine the trusted environment MVPD apps create and make content more vulnerable to piracy.”); Comments of Cox Communications, Inc. and Cox Media Group, MB Docket No. 16-42, CS Docket No. 97-80, at 9 (Apr. 22, 2016) (“Cox Comments”) (“... CMG’s redistribution of network and syndicated content depends entirely on our ability to control retransmission of the programming by MVPDs. To the extent the NPRM proposes a set-top box model that makes it impossible for us to guarantee that our programming suppliers’ copyrights will be respected, then it will become virtually impossible to negotiate retransmission consent contracts with MVPDs.”); *id.* at 8 (“While the Commission’s efforts to facilitate over-the-top (‘OTT’) video distribution vehicles are commendable in general, the agency must understand that OTT is a different model altogether for programming rights and content protection, with different consumer expectations, and it cannot simply be layered onto the cable architecture. Using Section 629 to promote pure OTT offerings that disaggregate MVPD services is misplaced.”).

⁴¹ See DISH Comments at 23-26; Frontier Comments at 16 (“The Commission’s proposal ... presents a much greater challenge than creating customer confusion by attaching third party devices to customer networks. Instead, the Commission’s proposal would remove almost any control the service provider has over service delivery.”); ITTA Comments at 27 (“Once any customer-facing problem arises, it will be the MVPD, not the unaffiliated device manufacturer, who will be held accountable and liable by its customers for problems and complaints, malware, or other issues not under the MVPD’s control.”); Comcast Comments at 70 (“The Commission’s Set-Top Box Mandate would also create significant customer service issues and lead to customer confusion and frustration, as well as unnecessary costs.”); AT&T Comments at 57 (“The proposed rules will impair consumers’ experience in using MVPD services, inevitably adding layers of needless and unwanted complexity to high-touch customer care functions such as service installation, repair, and maintenance.”).

⁴² See NCTA Comments at 21 (“Instead, the proposal would prevent MVPDs from innovating in their existing distribution networks and apps that operate today. It would arrest the launch of cloud-based services, prevent content providers from experimenting with new offerings, freeze MVPDs’ competitive offerings, squander limited bandwidth, and frustrate the migration to new media formats, higher resolutions, new content protection systems and other new technologies.”); Comcast Comments at 69 (“the Notice’s ‘parity’ requirements would erect significant barriers to innovation by subjecting changes in MVPD service to standards-setting and regulatory delays, and could essentially freeze technologies by preventing MVPDs from launching new ‘Navigable Services’ – such as new content or existing content in a new resolution or format – on their own apps and devices unless and until MVPDs have also ensured that third parties can receive these same products and services.”).

focuses its discussion on in the technical and practical feasibility of implementing the Commission's proposal as it directly would affect smaller MVPDs.

In its comments,⁴³ ACA explained that the solutions advanced by commenters that support the Commission's proposal depend on technologies that do not exist and approaches that have a track record of failure. Nothing in the comments filed by the proponents, especially those filed by the main proponent, the CVCC, alters this assessment.⁴⁴ In fact, CVCC's comments confirm that their proposal is dependent on imaginary, infeasible, or, at best, undeveloped technologies and approaches. The CVCC comments also confirm that their approach relies on MVPDs to introduce an additional device into the home, which would create substantial system integration efforts.

1. The Commission's proposal cannot be implemented using "off-the-shelf" technologies

While CVCC contends that "through its technical demonstration that the Commission's proposals are technically feasible using existing technologies,"⁴⁵ the record belies that assertion.⁴⁶ Even assuming *arguendo* that it is correct, the proposals cannot be readily and

⁴³ See ACA Comments at 41-43.

⁴⁴ CVCC admits that the technologies upon which its proposal relies are still in development. See CVCC Comments at 40.

⁴⁵ CVCC Comments at 6.

⁴⁶ Comcast Comments at 62 ("[T]here are several significant flaws in the Notice's logic. While Comcast and some other cable operators are beginning to migrate to IP delivery, a large swath of the cable industry continues to rely on QAM delivery of video, and DBS providers do not use IP for satellite delivery of their service. Likewise, as explained below, VidiPath is a standards-based solution that relies on an HTML5-based MVPD app for delivery of service on client devices, and was not designed for the disaggregation of MVPD service."); *id.* ("[T]he Notice vastly understates the level of work, and associated costs, that would be necessary to implement its Set-Top Box Mandate. Comcast which, even in its early stages, is far ahead of other MVPDs in the IP transition, would nevertheless need to re-architect its network in order to deliver video in the three Information Flows contemplated by the proposal."); NCTA Comments at 122-23 ("The NPRM's suggestion that standards already exist is simply incorrect. But even if there were some way to deliver the information flows today on the Google Fiber network, as was supposedly demonstrated to the Commission, any assumption that such a test demonstrates readiness

practically implemented by smaller MVPDs. CVCC's arguments continue to rely heavily on technologies that would have to be substantially repurposed to be used to allow implementation of the proposal, but provides no evidence that this repurposing could be achieved in any reasonable timeline.⁴⁷ For instance, while the proponents allege that "a virtual head end ... is simply software that could run on existing equipment in the home ... or could run in the cloud,"⁴⁸ in reality, a cloud-based virtual headend approach would require MVPDs to develop and integrate a system with hardware and software that ensured the delivery of audio-video signals with high levels of availability, readability and operability.⁴⁹ This system would need to be self-redundant, supervised, maintained, power-supplied and operated as would be any headend. Only in theory does such a solution exist today. The proponents' cloud-based conversion choice – DTCP-HE⁵⁰ – has never been implemented, would require development of largely a new platform, and would take several years to come to fruition.⁵¹ To be clear, all existing solutions

for all QAM, satellite, and IPTV and other MVPD networks ignores the divergent requirements and characteristics of the various MVPD networks identified in DSTAC.”).

⁴⁷ CVCC Comments at 6.

⁴⁸ Letter from Consumer Video Choice Coalition, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at 2 (filed Jan. 21, 2016) (“CVCC Jan. 21, 2016 *Ex Parte*”).

⁴⁹ See NTCA Comments at 10-11 (“NTCA members ... report that the NPRM’s proposals will require a near total overhaul of their existing MVPD networks, at the very least including software and hardware upgrades throughout their networks.... [T]he Commission should not move forward with the NPRM’s proposals based on the untested, unsupported and indeed highly controversial ‘virtual headend’ scheme that has emerged as a purported ‘cure all’ technological solution.”); *id.* at 17-18 (noting the “significant implementation burden that the Competitive Navigation proposal would impose on MVPDs of all sizes and technologies and ... relies on a ‘virtual headend’ that does not exist today.”); ITTA Comments at 10, n.29 (“[T]he Device Proposal does not take account of the technological differences among [MVPDs], and thus would require exactly that kind of rebuild to engineer a Virtual Headend, widgets apps, and other unspecified technologies.” (quoting DSTAC Final Report at 286-86)).

⁵⁰ See CVCC Comments at 38-40.

⁵¹ See ACA Comments at 48-49 (“The Competitive Navigation proposal’s cloud based conversion approach is not feasible because it would require MVPDs to allocate bandwidth that is not available. For MVPDs using digital technology, bandwidth is a scarce resource, and they are constantly working to make their bandwidth available as efficiently as possible and to optimize its allocation, for instance, to

leveraging DTCP⁵² today exist only for in-home use, and so there is no evidence a cloud-based conversion could work. Similarly, proponents suggest that DTCP-2 could enable third party devices to receive high value content. However, development of this specification has not yet been completed.⁵³

2. The Commission's proposal lacks key details

Similarly, proponents suggest the Commission's proposal would achieve the goal of technology neutrality – *i.e.*, that MVPDs provide information flows supporting both hardware and software solutions (including applications).⁵⁴ However, they provide no details for how this could be done. Programmers generally include as many different limitations for as many different devices can be authorized for services such as DVR downloads and TV Everywhere

make available premium services and enhance the capacity of their broadband networks.... Because every video stream sent to every customer requires dedicated bandwidth, this approach would require large amounts of bandwidth, which are not available in practice. Put simply, MVPDs do not have nearly sufficient bandwidth available to implement the cloud based approach in tandem with their current offerings.”).

⁵² “Because there are very few options for link protection (especially ones already approved by CableLabs/MovieLabs), DTCP-IP seems ideal as a link protection mechanism and DTCP-HE (in development) would support cloud delivery.” CVCC Comments at 39-40.

⁵³ See CVCC Comments at 40.

⁵⁴ See CVCC Comments 29-31.

streams.⁵⁵ Proponents never explain how this could be achieved.⁵⁶ In the end, the proponent’s “solution”⁵⁷ is merely an inventory of existing standards that might be used as a starting point for a several-year effort to develop detailed specifications, including design, proof-of-concept, security validation, content owner approval and interoperability achievement.⁵⁸

3. The Commission’s proposal is dependent on MVPDs implementing “infeasible” solutions

Even assuming technologies exist to support the Commission’s proposal, there will not be a single solution for implementing the mandate because MVPDs’ systems are far from homogenous. They differ greatly in their technologies, their equipment ecosystems, and the

⁵⁵ Some content providers also limit high resolution content to hardware, while others allow software flows higher resolution content than is possible via broadcast. Comments of the National Cable and Telecommunications Association, MB Docket No. 16-42, CS Docket No. 97-80, Appendix B, “Sidney Skjei, A Technical Analysis of the FCC’s Navigation Device Proposal,” at 22 (Apr. 22, 2016) (“NCTA Technical White Paper”) (“Content licenses often dictate the specific channel number on which a linear stream may appear within the guide; impose restrictions regarding what types of programming may appear adjacent to the licensed stream; specify in which neighborhood the licensed stream may reside; or otherwise limit where and how the MVPD may present the licensed stream.”); *id.* at 23 (“Programmers may require that their content be shown with a specific video resolution and aspect ratio. There is no requirement for third-party Navigation Devices to maintain these specifications, however. In fact, the retail device could show a programmer’s content at a lower resolution, or in a different aspect ratio, than that which the MVPD is required to deliver by contract, or at a higher resolution than the programmer allows on a certain device.”); Comcast Comments at 78-79 (The Commission cannot “claim that the Information Flows at the heart of the Set-Top Box Mandate capture all of the contractual requirements negotiated between the relevant programmer and the MVPD and thereby ensure compliance with the contractual provisions.... [T]he Service Discovery and Entitlement Data Flows will not – and *cannot* – convey to third parties obligations regarding technical quality....”).

⁵⁶ See NCTA Technical White Paper at 23.

⁵⁷ See Comments of the Consumer Video Choice Coalition, MB Docket No. 16-42, CS Docket No. 97-80, Technical Appendix (Apr. 22, 2016) (“CVCC Technical Appendix”).

⁵⁸ See Comments of the Digital Living Network Alliance, MB Docket No. 16-42, CS Docket No. 97-80, at 2 (Apr. 22, 2016) (“DLNA Comments”). DLNA suggests it could take two to four years to prepare a solution that could make the Commission’s approach viable. Even DLNA’s solutions, which offer useful standards that allows interoperation between devices from different vendors, are far from perfect in terms of performance, interoperability and reliability. As the proposed solution would likely require a higher level performance, it is virtually certain that development of this new technology would take even longer than DLNA projects.

services offered.⁵⁹ Given this diverse environment, MVPDs, particularly smaller MVPDs, find it challenging even today to upgrade plant and operations. Most often, they do not “drop in” a solution, but converge over time on one technology that works sufficiently well. Moreover, they usually need to customize any solution to each system; thus, solutions should not be expected to be widely scalable across systems. Yet, with its proposal, the Commission assumes a “one size fits all” Resolution. As set forth below, that approach is unworkable.⁶⁰ Smaller MVPDs, lacking the resources to dedicate to such tasks, would incur substantial costs, and would be unable to continue offering reliable, high quality service and confront increased subscriber dissatisfaction.

a. Even if a cloud-based technology solution were developed, it could not be implemented by smaller MVPDs

As an alternative to an in-home gateway device (which, as ACA explains below, is necessary to convert existing video streams into the required information flows), proponents

⁵⁹ See ACA Comments at 46 (“As MVPDs vary greatly in terms of available resources, vendor ecosystems, subscriber size, levels of headend integration and other factors, their ability to meet and comply with the Commission’s proposed requirements not only is limited, but varies across each requirement in the Commission’s proposal.”); NCTA Comments at 119 (“The NPRM understates its disruptive and destructive effects by trivializing the enormous diversity in MVPD networks and operations on which it proposes to impose standards.”); *DSTAC Summary Report, Final*, MB Docket No. 15-64, at 2 (Aug. 28, 2015), <https://transition.fcc.gov/dstac/dstac-report-final-08282015.pdf> (“DSTAC Final Report”) (“[T]here is a wide diversity in delivery networks, conditional access systems, bi-directional communication paths, and other technology choices across MVPDs (and even within MVPDs of a similar type).”). See also *Navigation Device NPRM*, ¶ 34.

⁶⁰ See ACA Comments at 100-101 (“[S]mall MVPDs are seeking to upgrade their networks in response to consumer demand, either by investing in fiber-to-the-home networks, by upgrading to DOCSIS 3.1, or by expanding capacity through other means. These upgrade are costly, especially for operators of smaller multichannel video programming systems, which face ever-shrinking video margins and often find it difficult to borrow money from traditional financial institutions.... [T]he proposal’s untimely and burdensome regulatory mandates are likely to disrupt these operators’ ability to make the transition necessary to provide innovative communications in a cost-effect manner at a pace that balances technological developments, financial circumstances, and customer needs.”); NCTA Comments at 123 (“...[T]he NPRM proposes to force the highly differentiated technologies of competing MVPDs to conform to a new, uniform and innovation-constraining straight jacket that impedes competition and innovation in networks, services, and customer offerings.”).

have proposed that MVPDs could provide the necessary information flows using a cloud-based technology solution.⁶¹ Nothing in the record, however, changes ACA's initial assessment that even if a cloud-based technology solution could be developed, it would not be feasible for MVPDs to implement.⁶² The reason is straightforward and unassailable: MVPDs do not have the spare bandwidth required to make this work. While in theory MVPDs could expend capital to create additional bandwidth, it would not be economic to expend resources on an endeavor that would provide no return on investment. The cloud-based conversion requires MVPDs to deliver from the headend to every customer premises all video content over compliant IP streams. That uses large amounts of bandwidth.⁶³ MVPDs are thus faced with two options to implement the conversion. First, they could completely upgrade their networks, replacing all non-compliant streams with new compliant streams, and provide every subscriber with new navigation devices that are compatible with the new compliant streams.⁶⁴ Such a complete "changeover" would be tremendously expensive even if it is done in stages. Virtually all ACA members consider it economically prohibitive.

⁶¹ See AT&T Comments at 34-35 (discussing the effect of the parity requirement on cloud-based MVPD services); Comcast Comments at 63-64 (explaining that Comcast, like other cable operators, delivers its applications on a cloud-to-ground basis, and the Commission's proposal would make it more difficult and expensive for MVPDs to deploy cloud-based services); NCTA Comments at 142 ("[T]he NPRM would require MVPDs to provide the three very different disaggregated 'information flows' to retail devices, which is much more complicated than boxless delivery of an MVPD app to specific retail devices.").

⁶² ACA Comments at 48-49 (explaining that under the proposal's cloud-based conversion approach, MVPDs would have to allocate bandwidth, a "scarce resource," that they do not have).

⁶³ See ACA Comments at 48-49. See also NCTA Technical White Paper at 45-46 (explaining how any approach to the conversion would create a burden on an MVPD's bandwidth: "If the MVPD chooses to implement the three Information Flows in the cloud it will consume additional network bandwidth.... Creating that new MVPD network architecture also locks in the use of scarce bandwidth for an FCC mandated approach.").

⁶⁴ See NCTA Technical White Paper at 45-46 (explaining that MVPDs would have to "develop, test, and deploy an FCC mandated device in the home to generate these three Information Flows from the MVPD's specific network technologies...This is essentially creating a new MVPD network architecture that constrains the operation of the entire MVPD architecture that exists today and in the future.").

Second, as an alternative, MVPDs could duplicate their streams in a compliant IP-based format. However, providing duplicate streams requires large amounts of bandwidth.⁶⁵ As a scarce and valuable resource, nearly all of MVPDs' bandwidth is typically allocated to serve a purpose. Though MVPDs work to make additional bandwidth available by installing new equipment and delivering video more efficiently, they generally have limited additional bandwidth. And that bandwidth they allocate for improving broadband speeds and capacity, expanding service to new customers, and making new services available. Therefore, bandwidth limitations alone preclude nearly all smaller MVPDs from achieving a cloud-based conversion.

b. The proponents' approach to exposing metadata has important copyright implications

Another example of the flaws in the Commission's approach is demonstrated in the comments of Gracenote, which creates, publishes and licenses programming metadata. Gracenote explains that "the Commission's specific proposal – to require MVPDs to provide third parties with a proprietary and non-universal program ID number belonging to one of Gracenote's competitors – simply will not work," since MVPDs that do not use that competitors' product "would have nothing to pass through."⁶⁶ As a result, MVPDs would be unable to comply

⁶⁵ NCTA Technical White Paper at 45 (MVPDs could "deploy cloud services supporting the three Information Flows.... If the MVPD chooses to implement the three Information Flows in the cloud it will consume additional network bandwidth to simulcast the content for retail devices, duplicating the existing bandwidth used to carry the content to MVPD set-tops or apps.").

⁶⁶ Comments of Gracenote, MB Docket No. 16-42, CS Docket No. 97-80, at ii (Apr. 22, 2016) ("Gracenote Comments"). The EIDR ID referred to in the Commission's proposal is not a "universal unique identifier" or an industry standard, but rather the proprietary information owned by one particular vendor that controls a minority of the metadata market. Other providers in the market make use of similar, but different proprietary identifiers such as Gracenote's TMS numbers. These proprietary identifiers are considered the intellectual property of metadata vendors, and their licensing agreements explicitly forbid MVPDs from providing the metadata, or any component thereof, to third parties.

with the Commission's requirements.⁶⁷ CVCC nonetheless wants the Commission to add requirements that drive additional reliance on proprietary metadata because it finds the Commission's metadata requirement "insufficient" to achieving its objective.⁶⁸ This clearly demonstrates the proponents have not fully considered the feasibility of their approach.

c. The Commission's proposal should not permit self-certification because it would result in a substantially weakened security ecosystem

In its *Navigation Device NPRM*, the Commission proposes that "MVPDs be required to support a content protection system that is licensable on reasonable and nondiscriminatory terms, and has a 'Trust Authority' that is not substantially controlled by an MVPD or by the MVPD industry."⁶⁹ While MVPDs would be free to support additional, more robust, content protection systems, they would be required to use at least one compliant content protection system to secure their programming.⁷⁰ More importantly, the Commission qualifies MVPDs' ability to choose any compliant content security system under the proposed rules by inquiring about any potential burden a "lack of uniformity" would place on third party device manufacturers.⁷¹ This qualification, taken in the context of the Commission's commitment to

⁶⁷ *Id.* Gracenote adds that it "should be unthinkable (and would surely be unlawful) for the Commission to require MVPDs to subscribe to one competitor in the market in order to 'universalize' metadata ID numbers."

⁶⁸ See CVCC Comments at 31 ("Where EIDR information is not available to a navigation device, an MVPD should provide sufficient data to enable guides and search, in a competitive UI, to uniquely identify the program."). See also CVCC Technical Appendix at 3 ("EPG and VOD items in the CDS must provide full metadata that matches what is in the MVPD's UI or provide enough information to look up that content in a licensable third party content database (via an EIDR or enough other information to uniquely identify the content).").

⁶⁹ *Navigation Device NPRM*, ¶ 50.

⁷⁰ *Id.*, ¶ 58.

⁷¹ *Id.*, ¶ 62.

rules which would ensure device portability,⁷² makes the Commission's security proposal closely aligned with the approach suggested by CVCC and other proponents of the Commission's proposal. The Commission also inquires whether the authentication of third party devices should adopt a self-certification process,⁷³ which serves as one of the key components of CVCC's proposed standards.

CVCC expands upon the security standards it and others proposed in its latest filing by suggesting that any DRM selected by an MVPD must be based on technology that is widely available and easy to deploy.⁷⁴ As CVCC recognizes, this requirement would "effectively limit the scope of DRM to the three most widely deployed versions: Microsoft PlayReady, Widevine, and Apple FairPlay."⁷⁵ DLNA link protection is proposed as the only alternative to Microsoft PlayReady and Widevine.⁷⁶ CVCC also suggests that self-certification be employed as the mechanism for determining third party device compliance with consumer requirements.⁷⁷

The security standards described by CVCC in its latest filing are closely aligned with the Commission's goal of requiring that it be possible for third party device manufacturers to license a content protection system that interoperates with and across MVPD networks without undue

⁷² *Id.*, ¶ 31.

⁷³ *Id.*, ¶ 74.

⁷⁴ CVCC Comments at 39 ("DRM should not be based on technology not widely available or that is difficult to deploy.").

⁷⁵ *Id.*

⁷⁶ *Id.* at 38-39.

⁷⁷ *Id.* at 29-30 ("To fulfill Section 629's requirements and to meet expectations in STELAR, MVPDs must field standards-based and RAND-licensed technologies that support . . . [c]ommercial entry not subject to MVPD approval, apart from receipt of a certificate of compliance with consumer protection requirements."); *id.* at 43 ("... [C]ompliance with incorporated specifications and necessary implementations of compliance and robustness rules as required by license or covenant may imply self-certifications specific to those technologies.").

burden. In the *Navigation Device NPRM*, the Commission suggests the possibility of relying on the specifications referred to in the proponent's approach as a "fallback" or "safe harbor" set of specifications should Open Standards Bodies be unable to reach agreement.⁷⁸ CVCC also advocates for the proponent's approach described in its comments as supporting full compliance with the Commission's objectives and proposed rules.⁷⁹ Therefore, ACA's approach of analyzing the impact of the Commission's proposed rules on the security ecosystem relies, to the extent that they are comprehensible and workable, on the requirements described in CVCC's latest comments.

CVCC's comments, as well as the record as a whole,⁸⁰ confirm that their proposal would result in a weakened security environment that places at risk not just the security of pay-TV content and MVPD networks, but the security of the entire interconnected ecosystem. Today, MVPDs can choose among a variety of conditional access and DRM solutions, which limits the potential impact of any security breach. CVCC proposes that content protection be achieved through a universal standard approach – one with either DTCP-IP or DTCP-2 link protection or a

⁷⁸ *Navigation Device NPRM*, ¶ 43.

⁷⁹ CVCC Technical Appendix at 1.

⁸⁰ See NCTA Comments at 91 (The NPRM would "strip[] cable operators and other MVPDs of the security tools with which they protect their licensed content, services, networks and customers."); NCTA Technical White Paper at 36-45 ("Because the retail devices are 'connected' devices, and because the FCC proposal dismantles all the network segregation, security architectures and best practices, it raises the threat level not just to pay TV content and networks but to the entire interconnected ecosystem."); ARRIS Comments at 14 ("[T]o the extent the *Notice* contemplates that security vendors like ARRIS would be responsible for enforcing and monitoring third-party device manufacturers and app developers to ensure that compliance and robustness requirements are met, it bears noting that security vendors do not always have the capability to confirm that their security solutions are properly integrated on devices or apps. Even in instances where ARRIS can confirm proper integration, third parties could modify configurations and compromise security after any such check. This concern is not present today with MVPD apps and devices, because MVPDs are legally bound to ensure that compliance and robustness requirements in their agreements with programmers are met. However, third-party device manufacturers and apps developers do not have privity with programmers, and therefore do not share the same incentives as MVPDs to comply with these obligations.").

DRM that relies on Common Encryption and supports key exchange via either Widevine or Microsoft PlayReady⁸¹ – which depends on self-certification by the retail navigation device manufacturers.⁸² This approach would result in a limited number of security systems being relied upon by every MVPD, contrary to the situation today. Therefore, if the security system were breached, this homogenizing effect would result in a breach across the entire MVPD ecosystem, a far broader threat than currently exists. Further, as attackers could derive more value from achieving a successful attack, the move to “single” weak link across all MVPD networks (e.g. cable, satellite, IPTV) would invite attacks and exploitation.

CVCC further suggests that authentication in an in-home gateway-based implementation could be achieved through third party devices providing “an HTTP header that specifies the URL that hosts a webpage that indicates compliance with all aspects of the Certificate.”⁸³ Not only does this suggested approach to authentication rely on an unknown webpage managed and updated by an unspecified entity, it also fails to provide any clear recourse in the event that a certificate is falsely represented. In fact, CVCC proposes that, in the event of any breach of representations, warranties, or covenants made by a device provider in a “certificate,” the MVPD should be barred from terminating service to the device until the breach has remained “uncured for 60 days following the date of notice.”⁸⁴ If adopted, this proposal would clearly continue to place the security of the MVPD’s network at risk while it works with the device provider to resolve the issue.

⁸¹ See CVCC Technical Appendix at 4 (“DTCP or DTCP-2 may be used for link protection as specified in DLNA Guidelines Part 3. Common Encryption should be used for DRM, with support for either Widevine or Microsoft PlayReady DRM clients for key exchange.”).

⁸² See CVCC Comments at 38-39.

⁸³ CVCC Technical Appendix at 5.

⁸⁴ CVCC Comments at 43.

CVCC's on-line self-certification and 60-day cure proposal should be rejected out of hand, if for no other reason than the fact that it compounds the diagnostic capability and network security problems already present in the Commission's proposal. CVCC's self-certification proposal provides no meaningful recourse for the MVPD in the event of the false representation of certificates by device manufacturers, making it impossible for MVPDs to rely on the proposed certificates for assurance that a commercial device is compliant with consumer protection and content protection requirements. Once the third party devices are attached and receiving the information flows from the MVPD's network, the MVPD will have limited visibility into the robustness of the software used by the devices that are connecting to MVPD networks.⁸⁵ This limited visibility combined with the one-way authentication characteristic of the information flows means that MVPDs will have no way of validating whether a third party device is running complaint or compromised software until a breach impacting the MVPD's network has already occurred.⁸⁶

The NIST Cybersecurity Framework, which is a seminal tool for maintaining and improving cybersecurity, specifically identifies the use of integrity checking mechanisms to verify software and firmware as an important element of data security.⁸⁷ It is evident that CVCC's

⁸⁵ See NCTA Technical White Paper at 41 ("The NPRM proposes that all MVPDs be forced to have large numbers of devices with unknown, untested code accessing their protected networks.").

⁸⁶ It also is possible a valid third party navigation device could fail to connect to an MVPD's system altogether or fail to complete registration or authentication. This could be due to a home networking issue, software defect, hardware default, user error, invalid login, password error or expired or a black-listed certificate. Should any of these issues occur, resulting in a failure for the device to connect, the MVPD could be unaware that these issues had occurred and be left unable monitor and resolve the issue. MVPDs' current reporting platforms may identify, some, but not all of these issues.

⁸⁷ National Institute of Standards and Technology (NIST), *Framework for Improving Critical Infrastructure Cybersecurity, Version 1.0*, at 26 (Feb. 12, 2014), <http://www.nist.gov/cyberframework/upload/cybersecurity-framework-021214.pdf> ("NIST Cybersecurity Framework"). See also Remarks of FCC Chairman Tom Wheeler As Prepared for Delivery, RSA Conference, at 3 (April 21, 2015) ("We see the FCC's role as building on the NIST Framework in the

proposed architecture is inconsistent with this Framework, and instead severely constrains MVPDs' ability to take adequate preventative measures to protect their networks from the risk of a breach. The content security risk of allowing un-vetted third party devices to connect to MVPD networks is significant. For example, four years ago, personal computers and unauthorized set-top boxes were used in a piracy phenomenon known as "control word sharing."⁸⁸ Allowing Internet-connected devices to directly access internal organization networks such as MVPDs' private, managed video networks also would create significant cybersecurity risks, as demonstrated by the widely-reported 2015 Jeep Grand Cherokee hack.⁸⁹ The proposed one-way flow of information from MVPDs to third party devices also places limitations on MVPDs' ability to carry out other important cybersecurity practices such as the collection and storage of information about connected physical devices and software platforms to identify exposure⁹⁰ and ongoing monitoring to detect anomalies, malicious code, and cybersecurity events in a timely manner.⁹¹ As a result, MVPDs are placed in a reactive position when it comes to the security of their networks.

context of our responsibility to promote the reliability and resiliency of the communications networks themselves.") https://apps.fcc.gov/edocs_public/attachmatch/DOC-333127A1.pdf.

⁸⁸ See Audiovisual Anti-Piracy Alliance, *Piracy – Card Sharing*, (2012), <http://www.aapa.eu/about-aapa/piracy-card-sharing/>. Legitimate smart cards were attached to personal computers or unauthorized set-top boxes, providing decrypted control words authorizing access to MVPD programming to other receivers over the Internet.

⁸⁹ See Dr. Charlie Miller and Chris Valasek, *Remote Exploitation of an Unaltered Passenger Vehicle*, (Aug. 10, 2015), <http://illmatics.com/Remote%20Car%20Hacking.pdf>. Hackers accessed the Jeep's infotainment system that included Internet access via a cellular network connection. Because the infotainment system was connected to the Jeep's internal communication bus, hackers were able to then hack into the car's computer to take over the car.

⁹⁰ See National Institute of Standards and Technology, *NIST Special Publication 800-53 Revision 4 – Security and Privacy Controls for Federal Information Systems and Organizations*, at F-73 (April 2013), <http://dx.doi.org/10.6028/NIST.SP.800-53r4> ("NIST 2013").

⁹¹ See NIST Cybersecurity Framework at 30.

Just as there is a risk presented from allowing unknown devices to connect to a network, there also is a risk inherent in an ecosystem that allows untrusted device manufacturers equal access to an MVPD's network. It is widely understood that equipment that connects to networks can risk security, both through deliberate action and through inadvertent weakness in design. The cybersecurity vulnerabilities of the communications supply chain have raised concerns by numerous sources within the United States government.⁹² This remains a significant concern in an open ecosystem where security vulnerabilities have already been established that could prove devastating for U.S. business and millions of people subscribing to MVPDs.

Under the content security and authentication approach proposed by CVCC, MVPDs also would be faced with increased risk due to potential piracy of proprietary video content from their networks, consequences due to deliberate or inadvertent weaknesses in device design, and non-compliance with the content security terms of their contracts with programmers. MVPDs and content producers cooperate to offer subscribers high value and diverse content

⁹² In multiple instances, national security red flags have been raised over the use of equipment associated with certain firms, particularly with significant foreign ownership, in relation to the United States communications market. See House Permanent Select Committee on Intelligence, *Investigative Report on the U.S. National Security Issues Posed by Chinese Telecommunications Companies Huawei and ZTE*, at 1 (Oct. 8, 2012), [https://intelligence.house.gov/sites/intelligence.house.gov/files/documents/Huawei-ZTE%20Investigative%20Report%20\(FINAL\).pdf](https://intelligence.house.gov/sites/intelligence.house.gov/files/documents/Huawei-ZTE%20Investigative%20Report%20(FINAL).pdf) ("The threat posed to U.S. national-security interests by vulnerabilities in the telecommunications supply chain is an increasing priority given: the country's reliance on interdependent critical infrastructure systems; the range of threats these systems face; the rise in cyber espionage."). ACA notes that Huawei recently filed reply comments to rebut national security concerns. Reply Comments of Huawei Technologies, Inc. (USA) and Huawei Technologies Co., Ltd., MB Docket No. 16-42, CS Docket No. 97-80 (May 16, 2016) ("Huawei Reply Comments"). That said, given the great harms that can result from security breaches, ACA members welcome the government's use of its resources to assist in identifying and addressing potential threats. See also *Application of SoftBank Corp., Starburst II, Inc., Sprint Nextel Corp., and Clearwire Corp. for Consent to Transfer Control and Authorizations, Petitions for Reconsideration of Clearwire Corp. for Pro Forma Transfer of Control*, IB Docket No. 12-343, ULS File Nos. 0005480932, et al., 28 FCC Rcd 9642, 9693 ¶¶ 125-31 (2013) (noting the adoption of an agreement between the Applicants (SoftBank, Sprint, Clearwire and Starburst) and national security agencies (Department of Homeland Security, Department of Defense and the Department of Justice) that included permitting the national security agencies a one-time right to require the removal of certain network equipment).

through “carefully negotiated agreements”⁹³ that specify numerous terms related to security and programming integrity, including well-defined agreed-upon procedures that programmers and MVPDs rely upon when any distribution methods prove to endanger content security.⁹⁴ The “single weak link” security environment that would result from CVCC’s proposal makes stealing content from MVPD networks easier and more profitable, thus increasing the likelihood that attackers will attempt this form of theft as well as the chances of their success in doing so. The unreliable self-authentication process would also increase the risk that unauthorized devices connect to MVPD networks and steal content. It is unlikely that this weakened security system would be compliant with the existing terms of MVPDs’ contracts with programmers. As proponents’ proposed rules bar MVPDs from terminating service to a commercial device until 60 days after “the date of notice,”⁹⁵ MVPDs would be unable to take the necessary steps and could be left in breach of contract.

In sum, CVCC’s proposal would severely damage the security of the overall interconnected ecosystem and any subscriber data that is stored within it. Because the proposed self-authentication process is lacking in rigor or robustness, devices connecting to MVPD networks would become an uncontrolled variable, effectively allowing anyone to connect to an MVPD network and bypassing the MVPD’s first line of defense. By connecting directly to MVPD networks, malicious or compromised third party devices could more easily engage in the theft of sensitive and confidential subscriber data such as credit card information and passwords

⁹³ See Content Companies Comments at 7 (“These carefully negotiated agreements reflect requirements associated with rights acquisitions and production commitments, as well as individualized decisions of the Content Companies regarding the manner in which they reach their audiences and present their content.”). See also *id.* at 6-7 (“Agreements between the Content Companies and distributors, including traditional MVPDs and alternative platforms, ensure that audiences enjoy a wealth of curated, high-quality programming.”).

⁹⁴ See *id.* at 10.

⁹⁵ See CVCC Comments at 43.

via the spread of malware or participate in DOS attacks that serve to disable networks. This risk is controlled and mitigated by MVPDs today through extensive testing that serves to ensure that any set-top boxes or other proprietary devices deployed are fully robust and compliant with security requirements, but this could not be done in the proposed open ecosystem. The security risk posed by self-authenticated third party devices is exacerbated by the single point of attack that would be created under the proponents' proposed approach. By providing potential attackers with a "single weak link" environment, CVCC's proposed approach would increase the portability of attacks across MVPD networks.

C. Although the Total Cost of the Commission's Proposal Cannot Be Estimated, the Record Confirms That the Identifiable Costs Alone Will Be Substantial

In its comments, ACA described the limited set of costs an MVPD would incur to comply with the Commission's proposal that could be identified and ascertained based on the *Navigation Device NPRM*⁹⁶ and demonstrated how they would be unduly burdensome for smaller MVPDs. The record in this proceeding, including comments filed by proponents of the Commission's proposal, makes clear that the costs identified by ACA, while accurate and substantial,⁹⁷ tell only part of the story. The comments further demonstrate that there are additional costly steps that smaller MVPDs would need to take to implement the Commission's proposal.⁹⁸ Thus, with no guarantee that there are yet more costs not accounted for, the record

⁹⁶ ACA Comments at 52-55.

⁹⁷ WTA Comments at 9 ("Small digital cable operators would need to either implement changes at head-ends to convert the delivery of their linear cable service in IP or add an additional device at the customer premise to enable conversion into a video stream that could interface with a third party device. Given current resource constraints, requiring a transition to all-IP delivery in just two years as proposed in the NPRM would be unduly burdensome for small MVPDs who are unable to secure financing and/or shift additional costs to consumers due to the upward pressure on retail rates caused by programming cost increases in recent years.").

⁹⁸ See CVCC Comments at 26.

shows that the overall burdens created by the proposal are even worse than previously anticipated.

1. The record affirms ACA's estimates of the cost of implementing the technology necessary for compliance

A key cost that ACA quantified in its comments is an in-home gateway device that would be required to convert existing data streams to a compliant format capable of delivering the three information flows that are the cornerstone of the Commission's proposal. Contrary to claims made by the proposal's advocates that "no additional in-home device would be required,"⁹⁹ the record is clear that in most cases MVPDs cannot deliver the "Navigable Services" the Commission mandates in the manner contemplated in the *Navigation Device NPRM* without the use of such a device.¹⁰⁰

Although CVCC maintains that an in-home gateway device is merely one option, and that MVPDs could instead elect to deliver their service through a cloud-based platform, they acknowledge that cloud-based conversion currently remains "in development"¹⁰¹ and depends on bandwidth resources that are not available. Thus, the only feasible option for MVPDs would

⁹⁹ See CVCC Comments at 33 ("For every potential implementation, there is a home device ... on which necessary software for supporting client displays or devices resides. Thus, it's not necessary for a network operator to provide an additional 'box.'"). See also CVCC Technical Appendix at 1.

¹⁰⁰ See NCTA Comments at 130-132 ("The FCC's DSTAC Report explains that the satellite and IPTV providers (which together serve more than 40% of the market) would have no choice but to deploy an additional device. . . . [E]ven Public Knowledge (a primary proponent of the proposed rules) has conceded that if the NPRM proposal is adopted 'you're probably in the short term going to need something in the house.' . . . Providers would therefore be compelled to use new devices inside the home to deliver the 'information flows.'"). See also NCTA Technical White Paper at 46 ("A new MVPD device will be needed in the home wherever a retail in-home device is needed."); ARRIS Comments at 10-11 ("MVPDs may also need to develop additional in-home equipment in order to support any new standards and third-party devices and apps.").

¹⁰¹ CVCC Comments at 38-40.

be to rely on “an in-home MVPD-supplied device” to convert MVPDs’ information flows to a compliant format.

This proposed gateway device, which would convert MVPDs’ information flows to a compliant format, would drive substantial costs, as it would need to convert an MVPD’s security system and other information flows from one format to another. Performing these tasks has so far proven to be challenging, particularly when the incoming and outgoing security systems are not controlled by the same vendor, as would be necessary under the proponent’s proposal.¹⁰² Gateway conversion projects that have been attempted so far have typically been large and expensive, and have depended on an MVPD to make substantial investments in ensuring the new systems could work with their billing, inventory and provisioning management systems (e.g. Nagravision and NDS/Cisco).¹⁰³

In its comments, ACA estimated that, for a gateway device meeting the Commission’s intended specifications (e.g., converting linear and VOD streams to IP from other delivery approaches, accommodating a variety of audio and video formats), the cost, based on

¹⁰² Even when the incoming and outgoing security systems are controlled by the same vendor, the deployment of such high-complexity gateways can be very challenging, and such efforts sometimes launch with significant delays (e.g., Horizon in the Netherlands), if at all (e.g., Canal Digital). See Jim Barthold, *Long-awaited Horizon gateway set for launch this week*, FIERCECABLE, (Sept. 4, 2012), <http://www.fiercecable.com/story/long-awaited-horizon-gateway-set-launch-week/2012-09-04>. The Horizon gateway was originally planned for rollout Spring 2012, but was not launched until September 2012 due to a number of complications, including difficulty negotiating content rights with programmers. See also *Canal Digital and NDS Enable a New Generation of Immersive, Personalised TV Entertainment*, BUSINESSWIRE, (Aug. 9, 2012), <http://www.businesswire.com/news/home/20120809005142/en/Canal-Digital-NDS-Enable-Generation-Immersive-Personalised>. The Canal Digital project, announced in Norway in 2012, has not launched to date.

¹⁰³ ACA assumes use of proprietary systems would be impermissible under the Commission’s proposed rules. See also Jim Barthold, *Long-awaited Horizon gateway set for launch this week*, FIERCECABLE, (Sept. 4, 2012), <http://www.fiercecable.com/story/long-awaited-horizon-gateway-set-launch-week/2012-09-04>; *Canal Digital and NDS Enable a New Generation of Immersive, Personalised TV Entertainment*, BUSINESSWIRE, (Aug. 9, 2012), <http://www.businesswire.com/news/home/20120809005142/en/Canal-Digital-NDS-Enable-Generation-Immersive-Personalised>.

equipment with comparable functionality in the market today, would be approximately \$350 per device, excluding development costs.¹⁰⁴ Nothing in the record suggests that ACA's estimate is too high. In fact, the gateways described by CVCC in its comments would be substantially more complex than those available in the market today, requiring additional components, as well as high levels of reliability and availability (e.g., redundancy).¹⁰⁵ This could significantly increase cost beyond the level ACA has projected. Moreover, affixing a minimum price of this conceptual gateway does not suggest that such a device could be produced at all or in a timely manner.

2. The system integration required by the Commission's proposal remains a major driver of cost to MVPDs

CVCC's comments also confirm that MVPDs would be required to make substantial changes to their systems to appropriately integrate the new required capabilities. Each MVPD would need to conduct an extensive testing process encompassing both laboratory tests and limited field trials.¹⁰⁶ In addition, other requirements associated with the Commission's proposal, such as the authorization and management of third party devices, would require MVPDs to make substantial revisions to how their controllers operate and modify their billing, inventory and provisioning management systems.¹⁰⁷ Smaller MVPDs would typically rely on external consultants to complete many of these systems integration elements. While there is no way to

¹⁰⁴ See ACA Comments at 53-53.

¹⁰⁵ See CVCC Comments at 33-34.

¹⁰⁶ See CVCC Comments at 42-43 ("Conformance certification of devices should not be necessary to protect MVPD networks, but a test suite verifying proper support of the three information flows from MVPD implementations is necessary to assure that competitive devices will be supported.... In the absence of common reliance, conformance testing and certification of the MVPD's implementation of the information flows should be required.").

¹⁰⁷ See ACA Comments at 54 ("[R]equirements associated with the Commission's proposal, such as the authorization and management of third party devices, would require MVPDs to make substantial revisions to how their controllers operate and modify their billing and inventory management systems."). See also NCTA Technical White Paper at 49-50.

know the full extent of changes that would be required, CVCC supplies no evidence that ACA's cost estimate of at least \$1 million per headend should be adjusted downward, and in fact it now appears that this estimate is even more conservative than initially anticipated.

3. Smaller MVPDs, which do not drive the industry-wide adoption of new standards, would face problems in making their offerings available on third party devices

Given that the circumstances and needs of smaller MVPDs do not drive the standards process, many of their unique differentiated offerings may not become available on third party devices.¹⁰⁸ For example, if smaller MVPDs were to enter into partnerships with programmers to offer new content such as ultra-high definition ("UHD"), these agreements may require the MVPD to make changes to their navigation devices. While MVPDs have an incentive to make those changes, a third party device manufacturer may not have the same incentives if the proportion of affected customers represents a small portion of their overall business segment. Therefore, while third party device manufacturers can be expected to upgrade their devices to match the capabilities that larger MVPDs introduce on their proprietary devices, smaller MVPDs may find that the latest features offered on their own proprietary navigation devices may not become available on third party devices.

Accordingly, should third party boxes achieve high levels of adoption, smaller operators would either need to expend additional costs to attempt to enable their devices to meet standards¹⁰⁹ or would risk losing subscribers using third party devices to competitors, as they

¹⁰⁸ See NCTA Comments at 92; NCTA Technical White Paper at 21-24 (The operational challenges associated with attempts to monitor the compliance of a potentially unknown and unbounded number of third party Navigation Devices (that is, both devices and apps) would make it infeasible for MVPDs, and in particular smaller MVPDs, to ensure that channel-placement requirements are respected in all cases, at all times, by all models and versions of third party Navigation Devices.).

¹⁰⁹ See ITTA Comments at 13 ("The proposal would impose many new costs on MVPDs, whether or not video is profitable or their principal line of business, including costs attributable to: participation in the

would be unable to replicate their full services within a third party device ecosystem.

Alternatively, smaller MVPDs may be less likely to roll out innovative services until after such services are offered by larger MVPDs, which would decrease competition in the marketplace.

4. MVPDs would incur other costs to comply with the Commission's proposal

Based on submissions of other commenters into the record, ACA has identified costs in addition to those described in its comments that smaller MVPDs would incur to meet the requirements of the Commission's proposal, only some of which can be fully quantified at this time.

a. Costs required to conduct conformance testing

Several commenters, including NCTA and CVCC, recognized the need for conformance testing prior to implementing the technologies necessary to comply with the Commission's proposal. NCTA commented that the initial proposal "ignores the essentials of security, device authentication, testing and certification,"¹¹⁰ and its technical analysis claims the *Navigation Device NPRM* "fails to recognize any costs for . . . new product testing and implementation."¹¹¹ CVCC states that it expects there will be "conformance testing and certification of the MVPD's

standards process; development and engineering to comply with newly created standards and technical specifications; testing and implementation; and infrastructure and network modifications."); WTA Comments at 4 ("[D]eveloping MVPD services that are compatible with large numbers of set-top boxes and applications only becomes more challenging and expensive. The most likely results of such an endeavor are higher costs for MVPDs and higher prices for consumers without any true offsetting service quality increases."); NCTA Comments at 18-19 ("The proposed rules would not help consumers cut the cord or lower costs. Every user of a retail set-top box would have to continue to subscribe to an MVPD, and the costs for those services would inexorably go up as *all* subscribers bear the massive costs that would be imposed on MVPDs to invent new standards and specifications, clear new intellectual property rights, and develop, test, and deploy new equipment.").

¹¹⁰ NCTA Comments at 175.

¹¹¹ *Id.* Appendix B at 50.

implementation of the information flows should ... a navigation device must conform to receive content.”¹¹² ACA did not discuss this activity and its associated costs in its initial comments.

Based on experience, ACA estimates the assessment described above could cost as much as \$100,000, which ACA anticipates would be borne by MVPDs.

b. Costs driven by security ecosystem weaknesses

As ACA and others have noted, content security would be weakened under the Commission’s approach.¹¹³ It would be particularly challenging, and disproportionately costly, for smaller MVPDs to maintain security within this ecosystem. As the proposed approach would increase the burden on MVPDs to maintain security in unknown ways, it is impossible to predict how smaller MVPDs would be able to address these issues. However, it is clear that doing so would be challenging and likely very costly.

In addition, as described above, MVPDs’ agreements with content providers generally include provisions for maintaining the security of their content.¹¹⁴ MVPDs would be put at risk of

¹¹² CVCC Comments at 43.

¹¹³ See ACA Comments at 50-52; NCTA Comments at 6 (“The NPRM would ... dismantle the security system that protects the distribution of high-value content [and] combat[s] piracy.”).

¹¹⁴ See Comments of the National Cable and Telecommunications Association, Appendix A, Theodore B. Olson, Helgi C. Walker, and Jack N. Goodman, Legal White Paper, *The FCC’s ‘Competitive Navigation’ Mandate: A Legal Analysis of Statutory and Constitutional Limits on FCC Authority*, MB Docket No. 16-42, CS Docket No. 97-80, at 45 (Apr. 22, 2016) (“NCTA Legal White Paper”) (“Programmers and content providers typically negotiate carriage and copyright license agreements with MVPDs . . . including terms related to content security that go to the heart of protecting proprietary works from unauthorized use.”); ACA Comments at 51 (“Content security is not only integral to the MVPD business case which is based on the delivery of proprietary programming to subscribers, it is also a key MVPD responsibility in agreements with programmers.”); NCTA Comments at 33 (“The modern TV ecosystem is built on licensing agreements that programmers and creators negotiate with the companies that distribute their work. These contracts establish clear, enforceable terms for distribution limits, acceptable advertising, restrictions against overlays, channel location, the display, placement, branding and security of content, and the compensation and advertising revenues that fund the creative work, production, program acquisition and operations that drive the video market.”); Comments of the Motion Picture Association of America and SAG-AFTRA, MB Docket No. 16-42, CS Docket No. 97-80, at 23 (Apr. 22, 2016) (“MPAA and SAG-AFTRA Comments”) (“[T]oday the MVPD has end-to-end control over its security system. Under the proposal, the control is split between the MVPD and one or more unaffiliated trust authorities.

violating the terms of these agreements under the Commission's proposal. If it is adopted, MVPDs would need to be reviewing and potentially modifying all of their agreements with programmers and other content providers or face potentially severe liability implications. Not only would this increase direct costs, it is possible that programmers, seeking to compensate for a weakened security ecosystem, would raise programming fees for MVPDs. Should this occur, smaller MVPDs are likely to receive disproportionate fee hikes, given their limited negotiating power.

c. Costs of participating in Open Standards Bodies

In the *Navigation Device NPRM*, the Commission proposed that MVPDs comply with specifications adopted by Open Standards Bodies.¹¹⁵ As TiVo and others have explained, smaller MVPDs “cannot afford to participate in standard-setting activities, much less have any real ability to influence those activities,”¹¹⁶ as participation in the work of Open Standards Bodies is often contingent on the ability to pay expensive membership fees. For example, the Digital Living Network Alliance (“DLNA”), whose standards serve as the foundation of the proponents’ proposed implementation,¹¹⁷ does not include any smaller MVPDs in its membership. While membership to DLNA is “open to consumer electronics, multichannel video programming

But the proposal does not make clear what the relationship is between the trust authority, the MVPD, and the programmer. As a result, some responsibilities may get dropped, and whenever a problem arises there is likely to be an enforcement gap. Having taken away contracts as a way for programmers and MVPDs to implement compliance and robustness to manage and secure content, the FCC will have created big challenges.”); ITTA Comments at 22 (“[T]he proposed regime allows third parties to ignore the complicated licensing that MVPDs and content providers have traditionally negotiated, creating an FCC-sanctioned end run around the normal content provider/MVPD licensing paradigm.”).

¹¹⁵ *Navigation Device NPRM*, ¶ 41.

¹¹⁶ Comments of TiVo, Inc., MB Docket No. 16-42, CS Docket No. 97-80, at 33 (Apr. 22, 2016) (“TiVo Comments”). See also WTA Comments at 7 (“small operators lack the time, resources and expertise necessary to participate in the setting of industry standards”).

¹¹⁷ See CVCC Technical Appendix at 3 (“Overall, the implementation is based on existing DLNA & UPnP specifications.”).

distributors, content companies, application developers, and consumer interest organizations”¹¹⁸ in accordance with the definition of an Open Standards Body contained in the *Navigation Device NPRM*,¹¹⁹ the annual cost of membership can be quite significant to smaller MVPDs. A higher tier membership to DLNA costs \$50,000 a year, which is prohibitively expensive for a small provider with only a few thousand subscribers.¹²⁰ This amount represents as much as seven to fifteen percent of available cash flow for ACA’s smallest operators. While lower tier memberships may be made available, they are often not a cost effective solution for small providers, which have reason to believe that, as lower paying members, their contributions are unlikely to lead to standards that accurately reflect their needs and concerns.¹²¹ This problem would be exacerbated by the Commission’s proposed “fallback” of adopting the specifications laid forth by the proponents, which creates significant disincentives for any other participants to consider the position of smaller MVPDs that will have an especially difficult time implementing these specifications.¹²²

In addition, even if an Open Standards Body does facilitate participation by smaller MVPDs and guarantees that their contributions will hold equal weight, these providers may find it difficult to dedicate the time of their experts. While smaller MVPDs are not without expert

¹¹⁸ *Navigation Device NPRM*, ¶ 41.

¹¹⁹ *Id.*

¹²⁰ See Digital Living Network Alliance, *Summary of Fees*, (June 12, 2012), http://www.dlna.org/s/dlna_exhibit-d_summary-of-fees_revised-6-12-12.pdf.

¹²¹ A 2015 study on the 3GPP standards setting process found that the distribution of contributions submitted had been skewed toward a few firms submitting the vast majority of contributions. See Justus Baron, Kirti Gupta, and Brandon Roberts, *Unpacking 3GPP standards, Northwestern University Searle Center Data on Technology Standards, Industry Consortia, and Innovation*, (Mar. 24, 2015). The top two percent of firms (nine firms) are responsible for submitting 60 percent of all contributions. Approximately one-third of all participating firms (33 percent, 161 firms) have not submitted a single contribution to 3GPP. This highlights the fact that a few highly active authoring firms are largely responsible for the technical development of 3GPP.

¹²² *Navigation Device NPRM*, ¶ 43.

staff, they do not have as many as larger MVPDs and must spread them across a wider range of initiatives. Therefore, for the foregoing reasons, smaller MVPDs' voices may not be fully represented within these groups and their needs and interests overridden by those of larger private entities with opposing interests.

d. Costs driven by new customer service requirements

The Commission's proposal will introduce additional installation and maintenance costs that will fall particularly hard on small MVPDs. The record makes clear that, as new third-party devices are installed, it is likely that many subscribers would require support for initial installation or subsequent technical problems, resulting in additional customer service calls and truck rolls for MVPDs.¹²³ This would be disproportionately burdensome for smaller operators whose teams are smaller and less equipped to manage a high number of service requests and

¹²³ See, e.g., DISH Comments at 23-26; Frontier Comments at 16 ("The Commission's proposal ... presents a much greater challenge than creating customer confusion by attaching third party devices to customer networks. Instead, the Commission's proposal would remove almost any control the service provider has over service delivery."); ITTA Comments at 27 ("Once any customer-facing problem arises, it will be the MVPD, not the unaffiliated device manufacturer, who will be held accountable and liable by its customers for problems and complaints, malware, or other issues not under the MVPD's control."); Comcast Comments at 70 ("The Commission's Set-Top Box Mandate would also create significant customer service issues and lead to customer confusion and frustration, as well as unnecessary costs."); NCTA Comments at 90 ("It would also generate significant customer service inquiries, truck rolls, and complaints."); AT&T Comments at 57 ("The proposed rules will impair consumers' experience in using MVPD services, inevitably adding layers of needless and unwanted complexity to high-touch customer care functions such as service installation, repair, and maintenance."); NCTA Comments at 73 ("Consumers could not upgrade or change their subscription, or order technical support from their on-screen guide. Technicians and customer service representatives would no longer have the diagnostic tools inside devices or apps to help identify and resolve problems remotely."); NCTA Technical White Paper at 20 ("[T]hird parties would not be required to certify to all of the regulatory requirements that apply to MVPD-provided set-top boxes (and/or MVPDs themselves) – self-certifications need only address certain advertising restrictions relating to children's television, privacy and EAS. This not only would lead to compliance gaps, it also would create customer confusion and customer-service issues directed at the MVPD."); *id.* at 18 ("Under the proposal, device manufacturers and makers of apps would have no similar obligation to help customers with captioning-related issues, despite the fact that the problem may be on their retail device, and not the MVPD service."); WTA Comments at 5 ("[I]n the event of malfunctions of a third-party box purchased at retail by the consumer, the customer is most likely to blame the MVPD for poor service in the first instance rather than first pursuing a complaint and remedy with the set-top box manufacturer. The MVPD will likely have to address the customer's complaints with a truck roll to determine whether its service or the third-party box is the cause of the service issue.").

whose technicians would, on average, need to travel greater distances to subscribers.

Assuming a third party navigation device adoption rate of 25 percent and a truck roll rate of 75 percent,¹²⁴ the additional total cost burden for smaller operators could represent as much as 18 percent of monthly video ARPU.¹²⁵ That cost would further deteriorate the profitability of the video business for smaller MVPDs.¹²⁶

III. THE COMMISSION'S PROPOSAL IS UNLAWFUL AND SHOULD BE ABANDONED

A. The Record Conclusively Establishes That the Proposal Exceeds Statutory and Constitutional Limits on the Commission's Authority

In its comments, ACA demonstrated that the proposed rules exceed the Commission's statutory and constitutional authority in the following respects:

- Section 629, the provision principally relied upon by the Commission, requires it to address the availability of retail devices that can receive multichannel video service "offered" and "provided" by MVPDs. It does not authorize the Commission to mandate, as its proposal would do, that MVPDs disaggregate or "unbundle" their service into three information flows to enable third parties to offer their own services. Nor does Section 629 authorize the proposed regulation concerning software inherent in the Commission's proposal.¹²⁷
- Section 624A, also cited in support of the proposal, provides the Commission only with authority to ensure compatibility between cable systems and a limited class of consumer premises equipment, namely television receivers, video cassette recorders, converter boxes, remote control devices, and units that afford

¹²⁴ Comcast stated that "over 20 percent of all new connects to Comcast cable are self-installations." See Comcast, *Self-Installation Kits Create Eco-Friendly Convenience*, (Dec. 8, 2012), <http://corporate.comcast.com/news-information/news-feed/open-install-activate>.

¹²⁵ This assumes a cost per truck roll of \$75 and video average revenue per user of \$80.

¹²⁶ ACA has identified, but is unable to quantify, several other costs that MVPDs are likely to incur to achieve compliance. This includes costs such as licensing of new software, implementation of new DRMs should a link protection solution be deemed not viable, lost advertising revenue, and lost programming diversity. It is impossible to fully estimate the impact of these costs. Regardless, these costs would be disproportionately burdensome for smaller MVPDs.

¹²⁷ See ACA Comments at 59-71. See also NCTA Comments at 161-166; NCTA Legal White Paper at 17-30.

consumers decrypted or unscrambled access to their cable service. It prohibits the Commission from adopting regulations that affect features, functions, protocols, and other product and service options associated with cable service. Yet that is what the set-top box mandates contemplated by the *Navigation Device NPRM* would do.¹²⁸

- Section 335 authorizes public interest mandates for DBS providers only. It cannot be relied on as a source of authority to adopt rules applicable to MVPDs generally, such as the Commission's proposal.¹²⁹

ACA also demonstrated that, while the provisions invoked by the Commission do not authorize adoption of the Commission's proposal, other provisions of the Act specifically bar the proposed rules:

- Section 624(f) specifically bars adoption of the proposal by prohibiting any Federal agency or State or franchising authority from regulating the provision or content of cable services, except as expressly provided by Title VI.¹³⁰
- Section 621(c) also bars Commission action to unbundle cable service (provide "open access" to their networks or services) because it prohibits regulation of cable as a common carrier or utility. The proposed rules would run afoul of this provision by constituting *per se* common carriage under recent federal case law.¹³¹

In short, no section in Title VI expressly allows for the Commission's proposal and several preclude it.

Finally, ACA established that the proposal is statutorily and constitutionally infirm, because it proposes delegating Commission authority to non-governmental Open Standards Bodies. Although the Commission must *consult* with standards bodies to assist it in developing specifications to implement Section 629, it may not *delegate* authority, as it proposes to do, to

¹²⁸ See ACA Comments at 71-73.

¹²⁹ See ACA Comments at 73-74.

¹³⁰ See ACA Comments at 70-71. See also NCTA Comments at 163; NCTA Legal White Paper at 30-33.

¹³¹ See ACA Comments at 71. See also NCTA Comments at 164; NCTA Legal White Paper at 34-35; Comcast Comments at 43-44.

establish those requirements to a private body. Should an Open Standards Body develop a standard, the specific standard, once adopted, must be subject to notice-and-comment rulemaking before it may be formally incorporated into a Commission rule. Otherwise, any attempt to enforce adherence to that standard would run afoul of non-delegation principles and of the Administrative Procedures Act's notice-and-comment requirements.¹³²

ACA's legal positions are echoed in the extensive comments of other MVPDs, including NCTA, AT&T and Comcast.¹³³ These commenters do not merely expose the errors in the Commission's attempt to re-imagine the scope of its authority under Sections 629, 624A and 335; they also demonstrate that the *Navigation Device NPRM's* proposals would conflict with other statutory provisions – including the Section 631 cable subscriber privacy requirements, the Copyright Act, and other intellectual-property protections – as well as the First and Fifth Amendments to the Constitution.¹³⁴ ACA agrees with these commenters about the legal

¹³² See ACA Comments at 74-85.

¹³³ See NCTA Comments at 161-169; NCTA Legal White Paper at 11-36, 63-69; AT&T Comments at 59-76, 102-103; Comcast Comments at 32-46. See also Comments of TechFreedom and Competitive Enterprise Institute, MB Docket No. 16-42, CS Docket No. 97-80, at 2-31 (Apr. 22, 2016) (“TechFreedom-CEI Comments”). While these commenters are not alone in their identification of the myriad legal flaws in the Commission's proposal, their comments are among the most detailed and extensive on these topics submitted in the initial round of comments primarily from the MVPD perspective. ACA also agrees with the comments of the video programming providers whose intellectual property is also put at risk by the Competitive Navigation proposal, that the proposal is unlawful and should be rejected. See, e.g., Content Companies Comments at 12-25 (the proposals in the NPRM exceed the Commission's statutory mandate under Section 629, would encourage Copyright violations, effectively create a new compulsory license, and raise serious First and Fifth Amendment concerns by compelling content companies to speak and by creating a compulsory license); IFTA Comments at 3-9 (the proposal eliminates content producer and distributor rights to negotiate for the condition their content is viewed in; enabling navigation tools to access infringing files and pirate sources of content will be irreparably damaging to independent producers); MPAA and SAG-AFTRA Comments at 4-27 (the proposal encroaches on copyrights' holders' rights, exceeds the FCC's authority, and raises significant First and Fifth Amendment issues; in addition to interfering with protected rights of copyright holders, the proposal may also interfere with provisions of agreements with MVPDs, is inconsistent with Section 1201 of the DMCA, and increases the risk of piracy by jeopardizing content security and impeding the legal rights of programmers to prevent theft, contravening Section 629).

¹³⁴ See NCTA Comments at 75-85 (on privacy and Section 631), at 167-168 (on copyright/trademark violations), at 166-167 (on First Amendment violations); NCTA Legal White Paper at 36-40 (on privacy), 41-63 (on copyright/trademark/IP concerns) and 69-74 (on First Amendment violations); Comcast

infirmity of the Commission's proposals as well as with the cogent and thorough legal analysis in the NCTA Legal White Paper. The sheer weight of the legal problems with the Commission's proposal would surely sink it in the courts if the Commission does not alter its course.

As discussed below, none of the contrary arguments pressed by the *Navigation Device NPRM's* proponents hold water. All rest on the same shaky foundation as the *Navigation Device NPRM*.¹³⁵ And, since ACA filed its initial comments, the non-delegation problems with the Commission's approach have grown even more apparent. Recent precedent shows that the Due Process Clause likewise prohibits the Commission from delegating rulemaking authority to self-interested, private entities. Finally, the record shows that it is not necessary to impose any of the requirements, even if they could be lawfully adopted, on smaller MVPDs. Applying the rules to these providers would result in undue and disproportionate costs while achieving no net public interest benefits. Adoption of rules based on the *Navigation Device NPRM's* proposals, accordingly, would be arbitrary and capricious.

Comments at 92-97 (on privacy and other consumer protections), at 46-54 (on copyright and other IP concerns), at 54-56 (on First Amendment concerns). See also AT&T Comments at 48-53 and 82-86 (on privacy), 77-82 (on copyright) and 87-95 (on First and Fifth Amendment); ITTA Comments at 17-27 (on privacy and copyright); ICLE Comments at 27-31 (on copyright and privacy); Frontier Comments at 14-15 (on privacy); Comments on behalf of Intellectual Property Law Scholars, MB Docket No. 16-42, CS Docket No. 97-80 (Apr. 22, 2016) ("IPLS Comments") (on copyright); MPAA and SAG-AFTRA Comments at 4-12 (on copyright). ACA agrees with these commenters analysis of the additional statutory and constitutional violations the set-top box proposal would result in if adopted by the Commission.

¹³⁵ Inasmuch as ACA has already addressed the shortcomings of the NPRM's jurisdictional analysis in its comments, in these reply comments, ACA focuses primarily on arguments of Competitive Navigation proponents that go beyond the Commission's own analysis.

B. The Proposal Exceeds the Scope of the Commission’s Authority under Section 629 and STELAR

Several commenters maintain that the Commission has authority to implement the rules proposed under both Section 629 and Section 106(d) of the Satellite Television Extension and Localism Act Reauthorization Act of 2014 (“STELAR”).¹³⁶ They are incorrect on both counts.

1. STELAR did not expand the scope of the Commission’s jurisdiction under Section 629

Public Knowledge advances the curious argument that Congress effectively “re-authorized” Section 629 through STELAR; that Section 629 cannot be fully implemented unless the Commission adopts regulations that are “effective;” and that, unless the Commission adopts “a recommendation” – the Device Proposal – contained in the report of the advisory committee formed pursuant to Section 106 of STELAR (DSTAC), its rules will not be effective.¹³⁷ CVCC makes the related argument that Section 629 and STELAR give the Commission “a clear mandate to ensure that consumers can use retail video navigation devices to access MVPD programming” and that, through STELAR, “Congress gave the Commission *a new grant of authority* to develop a successor to the CableCARD regime that had been the Commission’s most prominent effort to promote competition to date.”¹³⁸ CVCC asserts that of the two proposals the DSTAC produced, only the “Competitive Navigation” proposal “would facilitate

¹³⁶ CVCC Comments at 21-23; TiVo Comments at 10-13.

¹³⁷ Comments of Public Knowledge, MB Docket No. 16-42, CS Docket No. 97-80, at 5, 7 (Apr. 22, 2016) (“Public Knowledge Comments”) (emphasis added). TiVo similarly argues that Section 629 and STELAR require the Commission to adopt meaningful rules to assure that there will be a successor to CableCARD that spurs competition and innovation. TiVo Comments at 10-11.

¹³⁸ CVCC Comments at 21-22 (emphasis added).

retail competition by promoting custom features and user interfaces in third party navigation devices.”¹³⁹

As a preliminary matter, Public Knowledge’s argument that STELAR “re-authorized” Section 629 makes no sense. In no respect did Congress “re-authorize” Section 629 in STELAR. That provision, by its terms, required no “re-authorization.” Nor did STELAR, as CVCC suggests, expand the scope of the Commission’s authority with respect to navigation devices under Section 629.¹⁴⁰ If anything, Congress’s clear direction to the Commission in STELAR regarding navigation device rules was to repeal the agency’s costly and ineffective integration ban.¹⁴¹ The charge to the Chairman of the Commission in Section 106(d) of STELAR, following repeal of the set-top box integration ban, was to establish an advisory committee to report on downloadable security, and nothing more. This stands in sharp contrast, for example, to Section 103(c) of STELAR, which directs the Commission to reform the totality

¹³⁹ *Id.* at 22-23.

¹⁴⁰ *Id.* at 22.

¹⁴¹ *Satellite Television Extension and Localism Act Reauthorization Act of 2014*, Pub. L. No. 113-200, § 106, 128 Stat. 2059, 2063-4 (2014) (“STELAR”) (stating that the “second sentence of section 76.1204(a)(1) of title 47, Code of Federal Regulations, terminates effective on” December 4, 2015 and that by June 1, 2016, “the Commission shall complete all actions necessary to remove that sentence” from its rules). The Commission carried out that command in this proceeding by removing that sentence from its rules in the instant proceeding. See *Navigation Device NPRM*, ¶ 92. If anything, STELAR curtailed a particular interpretation of Section 629 by the Commission that prohibited cable operators from deploying navigation devices with integrated security after a date certain based on its “predictive judgment” that the short term costs associated with the integration ban would be outweighed by long term competitive and consumer benefits that even the Commission has now recognized have not materialized. See *Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices*, Report and Order, 13 FCC Rcd 14775, ¶ 69 (1998) (“1998 Navigation Device Order”); *Comcast Corp. v. FCC*, 526 F.3d 763, 766 (D.C. Cir. 2008) (noting FCC predictive judgment that common reliance on an identical security function was necessary to achieve the goals of Section 629; rejecting Comcast arguments that it was entitled to a waiver of the integration ban); *Charter Communications v. FCC*, 460 F.3d 31, 41 (D.C. Cir. 2006) (rejecting challenges to the integration ban; finding it instead supported by FCC predictive judgment that “[a]bsent common reliance on an identical security function, we do not foresee the market developing in a manner consistent with our statutory obligation”); *General Instrument Corp. v. FCC*, 213 F.3d 724 (D.C. Cir. 2000) (same).

of the circumstances test in its retransmission consent good-faith rules.¹⁴² Congress also circumscribed the task of the advisory committee to recommending a “technology- and platform-neutral software-based downloadable security system” that would not be “unduly burdensome.” Even if STELAR expanded the scope of Section 629, which it did not, this admonition alone would sink the Commission’s proposal given the costs of its implementation. The record demonstrates, without question, as described above, that the Commission’s proposal would be highly and unduly burdensome for MVPDs, especially smaller MVPDs.

Public Knowledge argues that, unless the Commission adopts *one* of the recommendations – the Device Proposal – contained in the report of the advisory committee formed pursuant to Section 106 of STELAR (DSTAC), its rules will not be effective. Specifically, it argues that in this proceeding, “the Commission is acting consistently with a recommendation of the technical committee it established to carry out [Section 629[]], and to carry out the underlying policies of Section 629.”¹⁴³ To the extent Public Knowledge is suggesting that STELAR expanded the scope of the Commission’s authority under Section 629 to authorize adoption of the Navigation Device NPRM proposals, it is simply wrong. Had Congress wished to alter the language of Section 629, it would have done so explicitly, rather than surreptitiously.¹⁴⁴ Moreover, in advancing this implausible claim, Public Knowledge conveniently omits the fact that DSTAC did not “recommend” the device proposal, but rather its members could not agree on a recommendation and reported out two different possible options. The

¹⁴² See *Motion Picture Ass’n of Am. v. FCC*, 309 F.3d 796, 807 (D.C. Cir. 2002) (where Congress has authorized the Commission only to prepare a report on video description and nothing further, once the Commission’s task of preparing the report is complete, its delegated authority on the subject ends).

¹⁴³ Public Knowledge Comments at 7.

¹⁴⁴ See *Am. Libr. Ass’n v. FCC*, 406 F.3d 689, 704 (D.C. Cir. 2005) (cautioning the Commission against attempts to expand its authority by adopting “strained and implausible interpretations” that “Congress – does not . . . hide elephants in mouseholes.”), quoting *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 468 (2001).

record before the Commission amply demonstrates that the other option reported by the DSTAC, the Apps Proposal, would be equally effective in achieving the aims of Section 629.¹⁴⁵ To the extent DSTAC reached consensus positions, one key position was that it would not be reasonable to expect all operators to re-architect their networks to promote competitive set-top box options – a conclusion the record amply confirms for the vast majority, if not all, MVPDs.¹⁴⁶ As NCTA observes, the DSTAC Final Report reflects the fact that, “[d]espite the areas of disagreement, all parties agreed that ‘[i]t is not reasonable to expect that all MVPDs will re-architect their networks in order to converge on a common solution,’ that it ‘is unreasonable to expect that MVPDs will modify their access networks to converge on a single common security solution,’ ‘that the downloaded security components need to remain in the control of the MVPD,’ and that ‘[i]t should not be necessary to disturb the potentially multiple present and future [conditional access]/DRM system choices made by cable, [satellite], and [Internet protocol television] systems.’”¹⁴⁷ The *Navigation Device NPRM* ignores these “major points of agreement”¹⁴⁸ and focuses solely on the DSTAC Report Device Proposal. Ignoring evidence undermining a set of proposals set out for public comment in a notice of proposed rulemaking would itself be reversible error. But, as discussed in more detail in Section III.F below, so is ignoring substantial record evidence demonstrating that the costs associated with the Commission’s proposal will far outweigh any putative benefits.

¹⁴⁵ See, e.g., NCTA Comments at 22-31.

¹⁴⁶ *DSTAC Final Report* at 2-3. See also CVCC Comments at 22-23 (“After seven open meetings, extensive study, and presentations, the DSTAC submitted its report, which contained two major proposals, and recommendations to the Commission on Aug. 28, 2015.”).

¹⁴⁷ NCTA Legal White Paper at 79; *DSTAC Final Report* at 3.

¹⁴⁸ NCTA Legal White Paper at 80.

CVCC argues that Section 629 and STELAR “provide explicit instructions to the Commission to assure a competitive market,” and that taken together, they give “the Commission a clear mandate to ensure that consumers can use retail video navigation devices to access MVPD programming.”¹⁴⁹ That may describe the legislation that CVCC *would have liked* Congress to enact, but it bears little resemblance to the actual statutory mandate, which authorizes and circumscribes the Commission’s potential sphere of action. Section 629 directs the Commission to assure that competitive navigation devices are commercially available – meaning no more than that they are available for purchase by consumers from parties other than their MVPD provider – not that the Commission must order all MVPDs to render all MVPD-programming receivable by all retail navigation devices.¹⁵⁰

As ACA and others have observed, “Section 629 addresses nothing more than the commercial availability of retail equipment that can receive multichannel services and other services MVPDs have chosen to ‘offer’ and ‘provide.’”¹⁵¹ The statute does not speak in terms of a consumer’s ability to “access MVPD programming.” Nor does it speak of creating a new category of services beyond those that the MVPDs themselves provide. Rather, what Congress intended was for consumers to be able to use third party devices to access the multichannel video programming services that MVPDs provide, in their composite form, not for third party devices to access a subset of MVPD programming data stripped of other service features and

¹⁴⁹ CVCC Comments at 21.

¹⁵⁰ As several other commenters have noted, the Commission can fulfill its statutory obligation under Section 629(a) simply by adopting rules along the lines of the Apps Proposal discussed in the *DSTAC Final Report*. See NCTA Legal White Paper at 74-77; Comcast Comments at 35-39.

¹⁵¹ ACA Comments at 59; see also 47 U.S.C. § 549(a); AT&T Comments at 62; NCTA Comments at 161-162; Comcast Comments at 38-41.

functions so that third party device makers can provide consumers whatever add-on or sub-set services they may desire.

That distinction is critically important. The Commission's proposal rests on its unlawful creation of a new category of disaggregated "navigable services" (nowhere contemplated by the statute) that is comprised solely of an MVPD's multichannel video programming, every format and resolution of the programming that an MVPD sends to its own devices and applications, together with EAS messages.¹⁵² As ACA and others have shown, Section 629 is addressed to competitive devices that enable users to access the multichannel video programming and other services in the form that their MVPDs choose to offer them, not derivative services created by third parties from disaggregated elements of MVPD services.¹⁵³ An approach similar to that was expressly considered and rejected by Congress in favor of the more narrowly tailored provisions contained in Section 629 as enacted.¹⁵⁴

Moreover, as AT&T notes, Congress recently refused to enact legislation that would have required anything like unbundling by MVPDs.¹⁵⁵ Had STELAR included the Markey amendment that AT&T references, Public Knowledge and CVCC might have some basis for asserting that STELAR and Section 629 together authorize the Commission to adopt rules based on their proposal. But Congress specifically rejected that approach in favor of the far

¹⁵² See *Navigation Device NPRM*, ¶ 26.

¹⁵³ ACA Comments at 67; AT&T Comments at 68-69; TechFreedom-CEI Comments at 11-12; MPAA and SAG-AFTRA Comments at 161-162.

¹⁵⁴ ACA Comments at 67, n.191.

¹⁵⁵ AT&T Comments at 65 ("In the legislative proceedings that led to Congress's 2014 enactment of STELAR, Senator Markey offered an amendment that would have established a group of technical experts to propose standards for unbundling MVPD services and required the Commission to promulgate unbundling rules. Congress, however, declined to adopt Senator Markey's drastic proposal."). See also *CableCARD Policy: TiVo and Other Set-Top Box Retailers Likely To Win Current Fight vs. Cable on CableCARD Provision in Satellite Television Reauthorization Bill; Fight to Continue in Next Congress in Telecom Rewrite*, THE CAPITAL FORUM, (Nov. 11, 2014), <https://thecapitolforum.com/wp-content/uploads/2015/05/CableCARD-2014.11.11-1.pdf> (listing policy options before Congress).

more limited charge to the Chairman to convene an advisory committee to report on a software-based downloadable security solution that would not be “unduly burdensome” for MVPDs to implement. The Commission should not permit the administrative process to be used to achieve ends Congress itself has rejected.

2. Congress did not draw an explicit link to the use of software as a navigation solution in STELAR.

Several commenters incorrectly argue that the Commission’s authority over navigation devices extends to software. These arguments overstate the scope of the Commission’s authority with regard to navigation devices.¹⁵⁶

As ACA and others have explained, Section 629 is concerned with the physical equipment subscribers use to access the “multichannel video programming and other services

¹⁵⁶ For example, INCOMPAS and CCIA claim that Congress has drawn an explicit link to the use of software as a navigation solution in STELAR. See Comments of INCOMPAS, MB Docket No. 16-42, CS Docket No. 97-80, at 9-10 (Apr. 22, 2016) (“INCOMPAS Comments”); Comments of the Computer & Communications Industry Association, MB Docket No. 16-42, CS Docket No. 97-80, at 6-7 (Apr. 22, 2016) (“CCIA Comments”) (in STELAR, Congress required that the DSTAC recommend a “platform-neutral software-based downloadable security system designed to promote the competitive availability of navigation devices in furtherance of Section 629 of the Communications Act”). INCOMPAS asserts that arguments to the contrary are “intended to maintain the current MVPD-controlled framework.” INCOMPAS Comments at 10. Public Knowledge argues that, unless the Commission adopts the reforms that proponents “have indicated are necessary to assure a competitive market, such as competitive user interfaces and cross-MVPD standardization,” it cannot “assure” the availability of “competitive navigation solutions.” Public Knowledge Comments at 5. Accordingly, Public Knowledge maintains that the Commission’s authority under Section 629 and STELAR “extends to promoting software-based interfaces (“apps”) as well as hardware solutions.” Public Knowledge Comments at 5-6. TiVo also argues that “the Commission’s authority extends to both hardware and software means used by consumers to access multichannel video programming and thus extends to assuring a competitive retail market for ‘apps’ used to access MVPD content.” TiVo Comments at 12. TiVo cites language in the *Navigation Device NPRM* noting that the Commission “has already interpreted the term ‘navigation device’ to include software apps for the purposes of CVAA.” *Id.*; *Navigation Device NPRM*, ¶ 22, n.66. CVCC claims that Congress wanted the Commission to be “forward-looking and embrace technological changes” as it implemented Section 629. CVCC Comments at 23-24. Invoking Section 629’s legislative history, CVCC argues that a “software-based solution was within the contemplation of Congress, which discussed how the ‘devices will connect consumers to the network of communications and entertainment services.” CVCC Comments at 25, *citing* H.R. REP. No. 104-204, at 112 (1995).

offered over multichannel video programming systems.”¹⁵⁷ Interpreting the term “equipment” in Section 629 to encompass “software,” including applications, conflicts with that term’s plain meaning.¹⁵⁸ Contrary to the claims of CVCC, CCIA, Public Knowledge, INCOMPAS and others, there is *no* evidence that Congress granted the Commission authority to regulate software-based navigation solutions in either Section 629 or in STELAR.¹⁵⁹ Proponents creatively attempt to avoid this foundational problem by referencing “competitive navigation *solutions*,” such as user interfaces or applications. But the statutory term is “equipment.”

Moreover, as demonstrated in ACA’s comments: (i) the ordinary meaning of “equipment” is physical devices and does not encompass software; (ii) other examples of navigation devices in Section 629 are physical devices – boxes – confirm that “equipment” means hardware; (iii) the Communication Act’s definitional section confirms that “equipment” does not ordinarily encompass software; (iv) the Commission previously understood that its Section 629 authority extended only to physical equipment; (v) the plain text of the statute forbids a more capacious reading; and (vi) the courts have rejected similarly expansive

¹⁵⁷ 47 U.S.C. § 549(a); ACA Comments at 61-64; NCTA Comments at 161-163; NCTA Legal White Paper at 15-17; AT&T Comments at 62, 70-71 (the Commission cannot lawfully define software as “equipment”).

¹⁵⁸ 47 U.S.C. § 549(a); ACA Comments at 61-64; NCTA Comments at 165; NCTA Legal White Paper at 19-24; AT&T Comments at 62.

¹⁵⁹ The snippet of language from the 1995 House version of Section 629, cited by CVCC – H.R. REP. No. 104-204, at 112 (1995) – proves nothing. CVCC Comments at 13. The version of Section 629 it describes was not the same version as enacted by Congress in 1996. Moreover, the full passage from that legislative history, the first sentence of which was omitted in CVCC’s quote, makes it evident that Congress was contemplating giving the Commission authority only over hardware and not software: “Section 203 directs the Commission to adopt regulations to assure the competitive availability to consumers of converter boxes, interactive communications devices, and other customer premises equipment from manufacturers, retailers, and other vendors not affiliated with a telecommunications operator. These devices will connect consumers to the network of communications and entertainment services that will be provided by telecommunications providers.”

interpretations of Section 629.¹⁶⁰ Or, as AT&T succinctly explains, the claim that the plain terms “navigation device” and “equipment” include software “is nonsense.”¹⁶¹

Nor, as explained above, did Congress expand the reach of Section 629 to user interfaces or applications by enacting STELAR. The focus of Section 106 of STELAR was the establishment of an advisory committee and production of a non-binding report on the narrow issue of creating a “not unduly burdensome, uniform, and technology- and platform- neutral software-based downloadable security system” to advance the goals of Section 629.¹⁶² Neither Section 629 nor STELAR (taken separately or together) mandate that the Commission regulate user interfaces, or assure a competitive market for user interfaces/applications or “cross-MVPD standardization,” as proponents suggest.¹⁶³

Public Knowledge contends that Section 629 applies to “app competition” as well as device competition because “apps run on hardware” and applications effectively turn “a device into a competitive navigation device while it is being run.”¹⁶⁴ Public Knowledge reasons that, “even if one were to interpret Section 629 as directly applying only to hardware devices – and there is no reason to do so – an unaffiliated app running on an unaffiliated piece of hardware is

¹⁶⁰ ACA Comments at 61-70. See also NCTA Comments at 166; NCTA Legal White Paper at iii-vi; Comcast Comments at 39-42; AT&T Comments at 60-61.

¹⁶¹ AT&T Comments at 70 (“While it may well be true that much (or even all) of the hardware that consumers use to access MVPD programming and services *includes* software elements, this does not magically transform software applications themselves into ‘equipment.’”).

¹⁶² AT&T Comments at 65; STELAR, § 106(d)(1).

¹⁶³ As ACA and AT&T note in their Comments, Congress specifically rejected a version of Section 629 that would authorize rules akin to those proposed by the Commission, adopting instead a more “circumscribed” or “narrow” provision focused solely on ensuring access to existing MVPD services on competitive navigation devices, not to enable and subsidize the creation of new services by third parties through disaggregated open access to the content of MVPD services. ACA Comments at 67-68; AT&T Comments at 64-65. See also Comcast Comments at 38-41; NCTA Comments at 163-165.

¹⁶⁴ Public Knowledge Comments at 6.

a ‘competitive navigation device’ in the same sense as TiVo.”¹⁶⁵ That interpretation cannot be correct, as it accepts no limit and would impermissibly read the words “equipment” and “devices” out of the statute, leaving only applications or software in its stead. Rather, as the Commission has previously found, “Section 629 covers not just equipment used to receive video programming, but also equipment used to access ‘other services offered over multichannel video programming systems.’ Such equipment includes televisions, VCRs, cable set-top boxes, personal computers, program guide equipment, and cable modems. *The focus of Section 629, however, is on cable television set-top boxes, devices that have historically been available only on a lease basis from the service provider.*”¹⁶⁶ The Commission’s initial understanding of the scope of Section 629 as focused on a particular type of physical equipment designed and used to access services offered and provided by MVPDs was correct then and remains correct today, notwithstanding the *Navigation Device NPRM*’s and certain commenters’ efforts to the contrary.

Moreover, while software necessarily runs on a physical device, the Commission’s statutory mandate is to allow consumers to buy *competitive* reception equipment, not to enable the creation of software that will *run* on generic equipment to *convert* it into an MVPD-capable device. As the NCTA Legal White Paper explains, there is an enormous gap between a mandate that the Commission enable the development of competitive navigation equipment and that it create a scheme in which software developers can convert any device with a screen, whether designed for MVPD service navigation in the first instance or not, into an MVPD navigation-capable device. Indeed, the aim of the Commission’s proposal does not even appear to be to allow consumers to acquire set-top boxes from third party sources; it is to eliminate the need for set-top boxes in favor of applications from third parties that allow access

¹⁶⁵ Public Knowledge Comments at 6.

¹⁶⁶ *1998 Navigation Device Order*, ¶ 8 (emphasis added).

to MVPD programming that run on other types of equipment. That exceeds the Commission's statutory mandate.

The *Navigation Device NPRM's* suggestion, echoed by TiVo, that an interpretation of Section 629 as extending to software as well as hardware is consistent with the interpretation of the term "navigation devices" in its 2013 User Interface Order is simply wrong. As AT&T observes,

[T]he Commission's prior interpretation of the term 'navigation devices' in its 2013 order implementing the CVAA's accessibility rules also confirms that the term does not apply to software. There the Commission 'interpret[ed] the term 'navigation devices' as encompassing only *devices* that support conditional access to control consumer access to programming and services,' and listed as examples 'digital cable ready televisions . . . , set-top boxes . . . , computers with CableCARD slots, and cable modems.' There, as here, there must be a physical device to satisfy the statute.¹⁶⁷

Simply put, software is not a "device." None of proponents' imaginative renderings of the Commission's authority under Section 629 can turn an otherwise limited statutory mandate into an authorization for the Commission to do whatever it wishes so long as it draws a relation, however attenuated, to assuring the commercial availability of navigation devices.¹⁶⁸

Nor, for the reasons identified by ACA and others, does language in the legislative history of Section 629 that the Commission "take cognizance of the current state of the marketplace" and extend the scope of the Commission's authority to software.¹⁶⁹ The

¹⁶⁷ AT&T Comments at 71-72. See also *Accessibility of User Interfaces, and Video Programming Guides and Menus*, MB Docket No. 12-108, *Accessible Emergency Information, and Apparatus Requirements for Emergency Information and Video Description: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010*, MB Docket No. 12-107, Report and Order and Further Notice of Proposed Rulemaking, 28 FCC Rcd 17330, 17344-45, ¶ 23 (2013) ("User Interface Order").

¹⁶⁸ See *EchoStar Satellite L.L.C. v. FCC*, 704 F.3d 992, 1000 (D.C. Cir. 2013) ("*EchoStar*").

¹⁶⁹ ACA Comments at 66 ("A directive simply to take cognizance of the current state of the marketplace in navigation devices as described in Section 629 cannot suddenly change a statutory limitation into an administrative discretion to replace the critical term 'equipment' with the phrase 'hardware or software.' If it could, the Commission's authority would truly become untethered from the words of the statute, a result

Commission can take cognizance of the market, but the market cannot make the words “equipment” and “device” mean software when they clearly do not. For this reason alone, CVCC is simply wrong to urge that, “[b]ecause many MVPDs already deliver content over IP, the Commission is within its proper authority to ‘modify [its] regulations . . . to reflect improvements and changes in cable systems’ related to IP delivery.”¹⁷⁰ Besides, the factual premise underlying CVCC’s argument – that IP delivery is widely used – is incorrect.¹⁷¹

C. No Other Provision of the Act Affords the Commission Discretion to Adopt the Competitive Navigation Mandate

Following the *Navigation Device NPRM*’s lead, Public Knowledge and other proponents of the Commission’s proposal argue that Section 629 does not stand by itself as a legal directive or as a signal of Congressional intent, but is augmented by Section 624A’s directive to address compatibility problems between cable systems and television receivers and video cassette recorders engendered by encryption of cable signals.¹⁷² INCOMPAS asserts that Section 624A plays a complementary role in granting the Commission authority over cable systems to ensure that consumers enjoy the entire menu of features offered via consumer electronics equipment, including navigation devices given “improvements and changes in cable systems, television receivers, video cassette recorders, and similar technology,” and that “[i]nclusion of the forward-

Congress could hardly have intended.”). See also NCTA Comments at 161-162; Comcast Comments at 40; AT&T Comments at 64-67.

¹⁷⁰ CVCC Comments at 25.

¹⁷¹ *Id.* at 25. ACA and others have explained that most cable systems do not deliver their video programming in IP, either in whole or in many cases, even in part. See ACA Comments at 44 (most smaller MVPDs are still transitioning from analog to digital technology and are years away from IP delivery as they are constrained in their progress toward advanced video delivery strategies principally due to their limited resources). See also, e.g., ITTA Comments at 16 (“many of the larger MVPDs are farther along on the IP conversion process than smaller MVPDs.”).

¹⁷² See Public Knowledge at 6-7; INCOMPAS Comments at 7-10; CVCC Comments at 24-25; TiVo Comments at 11-12 (Section 624A provides the Commission additional authority to adopt the proposals at least with respect to cable systems).

looking term ‘similar technology’ and the reference to navigation devices’ abilities to serve as ‘recorders’ indicates that the statute should be applied to the compatibility of video navigation solutions as well.”¹⁷³ CVCC argues that Section 624A is both a grant of authority and an instruction to promote competition.¹⁷⁴ More specifically, and similar to INCOMPAS, CVCC claims that “Section 624A provides the Commission with an additional grant of authority and instruction to make sure its regulations do not become stale or obsolete.”¹⁷⁵ TiVo agrees, at least insofar as cable systems are concerned, arguing that the statute “was written to give the Commission the authority to adapt its regulations to changing technology, such as today’s Digital Video Recorders and other similar navigation devices that serve as modern-day VCRs.”¹⁷⁶

These arguments are unavailing, as demonstrated by the comments of ACA and others. First, as the NCTA Legal White Paper observes, the D.C. Circuit has already “recognized the ‘obvious implausibility of interpreting [Section] 629 [itself] as empowering the FCC to take any action it deems useful in its quest to make navigation devices commercially available,’” thus rendering the Commission’s attempt “to rely on an even more attenuated source of rulemaking authority – be it ancillary or otherwise – ‘as a proxy for omnibus powers limited only by the FCC’s creativity in linking its regulatory actions to the goal of commercial availability of

¹⁷³ INCOMPAS Comments at 10.

¹⁷⁴ CVCC Comments at 24-25. Recognizing that the scope of Section 624A is limited to cable systems, CVCC falls back on the Commission’s authority to impose public interest obligations on DBS to shore up its argument that the NPRM’s proposals can be lawfully applied to all MVPDs. *Id.*, at 24. As ACA has observed, whatever the precise scope of the Commission’s authority over DBS in Section 335, that provision cannot serve as source of authority to adopt the rules proposed in the NPRM, as they would apply to MVPDs generally. ACA Comments at 73. See also AT&T Comments at 75-76; Comcast Comments at 45; NCTA Comments at 163; NCTA Legal White Paper at 64-65.

¹⁷⁵ CVCC Comments at 24.

¹⁷⁶ TiVo Comments at 12.

navigation devices,” that much more doubtful.¹⁷⁷ Put simply, the plain, operative language of Section 624A pertains solely to “compatibility between televisions and video cassette recorders and cable systems.”¹⁷⁸ It clearly does not extend to navigation devices, equipment whose regulation Congress specified would be carried out under Section 629. Nor is Section 624A, either standing alone or in conjunction with Section 629, so capacious as to permit the Commission to require the unbundling of MVPD service and no-cost open access to its core content by third party devices and applications under the guise of assuring compatibility between specifically identified types of equipment and cable systems.¹⁷⁹

Section 624A is a particularly inapt source of authority for the *Navigation Device NPRM*'s sweeping proposals. Section 624A limits the Commission's authority to adoption of “narrow technical standards that mandate a minimum degree of common design and operation, leaving all other features, functions, protocols, and other product and service options for selection through open competition in the market.”¹⁸⁰ Section 624A also, as the NCTA Legal White Paper astutely observes, affirmatively prohibits the Commission from adopting rules that “affect features, functions, protocols, and other product and service options” other than those specified

¹⁷⁷ NCTA Legal White Paper at 63-64, quoting *EchoStar* at 999-1000.

¹⁷⁸ 47 U.S.C. 544a(b)(1) (“Within 1 year after October 5, 1992, the Commission, in consultation with representatives of the cable industry and the consumer electronics industry, shall report to Congress on means of assuring compatibility between televisions and video cassette recorders and cable systems, consistent with the need to prevent theft of cable service, so that cable subscribers will be able to enjoy the full benefit of both the programming available on cable systems and the functions available on their televisions and video cassette recorders.”).

¹⁷⁹ TechFreedom-CEI Comments at 27 (“ . . . Section 624A is also focused on physical devices (not apps), but since it is concerned with compatibility, rather than availability, it used appropriate vocabulary to describe the software that those physical devices must be able to ‘interface’ with (at the MVPD side). If Congress had intended for Section 629 to concern the availability of software, rather than physical devices, it would have used the same sort of language. That it chose not to do so, and instead used language in Section 629 significantly different from that in Section 624A, must be presumed to have been deliberate, and the FCC is duty-bound to give meaningful effect to this deliberate variation.”).

¹⁸⁰ 47 U.S.C. 544(a)(4).

in Section 624A(1)(B).¹⁸¹ Taken together, this guidance instructs the Commission that any action taken pursuant to its authority under the provision should be as minimally intrusive as possible. By ignoring this direction, the Commission blinds itself to Congress's obvious intent and the limited extent of its authority.

D. *Carterfone* Does Not Provide the Requisite Authority for the Competitive Navigation Proposal

Public Knowledge suggests that the Commission look to its *Carterfone* decision, where it “remedied problems in a market analogous in many ways to the video devices market place today.”¹⁸² This freewheeling view that the Commission may, at will, pick among “communications policies” must be rejected.

The Commission itself has already recognized that the appropriate regulatory frameworks for regulation of telephone networks and MVPDs are not the same. In its initial implementation of Section 629, the Commission recognized that “the telephone networks do not provide a proper analogy . . . due to the numerous differences in technology between Part 68

¹⁸¹ NCTA Legal White Paper at 64-65; 47 U.S.C. § 544a(c)(2)(d). See also TechFreedom-CEI Comments at 27-28 (amendments to Section 624A that further undermine the NPRM's interpretation of Section 629 include the findings in Section 624A(a) “that ‘compatibility among televisions, video cassette recorders, and cable systems can be assured with narrow technical standards that mandate a minimum degree of common design and operation, leaving all features, functions, protocols, and other product and service options for selection through open competition in the market,’ evidencing again a preference for minimal regulation in this area).

¹⁸² Public Knowledge at 7. See *Use of the Carterfone Device in Message Toll Telephone Service*, Decision, 13 F.C.C.2d 420 (1968) (“*Carterfone*”). INCOMPAS relatedly argues that “Congress hoped to inject the same type of innovative possibilities that the telecommunications industry experienced following *Carterfone* into the stagnant retail navigation device market.” INCOMPAS Comments at 8. That statement of Congressional “ends” may very well be accurate. However, it does not mean that Congress gave the Commission the “means” under Section 629 to require the uncompensated unbundling of MVPD services for the benefit of third party navigation device and applications providers that would be required to support the mandates contemplated by the NPRM under the rubric of assuring the competitive availability of navigation devices, particularly where, as here, it would conflict with other statutory limitations.

telephone networks and MVPD networks.”¹⁸³ Moreover, *Carterfone* was developed by the Commission to address simple carrier prohibitions on attachments to their networks under the entirely different regulatory framework of Title II, not Section 629 directives concerning equipment used to access MVPD services. Titles II and VI of the Act were created by Congress at different times to address entirely different market problems though completely different, but appropriately tailored, regulatory means.

As AT&T observes,

Because the networks of MVPDs vary significantly, the proposed rules require MVPDs dramatically to restructure their networks (at their own cost) to enable the unbundling of their services for the use of third party navigation devices, which will then profit by modifying MVPDs’ services. That is far afield from *Carterfone*, which did not require the telephone networks to do anything and merely prohibited them from restricting attachment of non-harmful devices to their system.¹⁸⁴

It is one thing to reject common carrier tariffs that prohibit attachment of non-harmful devices; it is quite another to demand that cable companies redesign their networks and/or disaggregate the elements of their services at their own cost to enable yet-to-be-developed technologies and offerings by others. Moreover, there is zero similarity between the overwhelmingly dominant competitive position of the Bell System in the voice telecommunications service marketplace at the time of *Carterfone* and the MVPD industry today, which the Commission has found effectively competitive.¹⁸⁵ As ACA observed in its comments, “MVPDs face substantial competition from other MVPDs. In virtually all markets, consumers have a choice in video

¹⁸³ 1998 *Navigation Device Order*, ¶ 39.

¹⁸⁴ AT&T Comments at 67; see *Carterfone*, 13 F.C.C.2d at 423-24.

¹⁸⁵ See *Amendment to the Commission’s Rules Concerning Effective Competition; Implementation of Section 111 of the STELA Reauthorization Act*, Report and Order, 30 FCC Rcd 6574, ¶ 4 (2015) (“2015 Competition Report and Order”) (finding effective competition in more than 99.5 percent of communities evaluated and adopting presumption that there is effective competition everywhere, based nationwide presence of DISH and DIRECTV serving more than 15 percent of the market in each franchise area).

service from least three providers, resulting in effective competition.”¹⁸⁶ In short, nothing about the *Carterfone* decision provides support for the Commission’s proposal.

E. Delegating the Authority to Develop Enforceable Standards Open Standards Bodies Violates Anti-Delegation Principles and Due Process

The Commission’s proposal is also flatly unconstitutional and contrary to statutory command in another respect. The *Navigation Device NPRM* proposes that MVPDs be required to comply with specifications set by Open Standards Bodies – *i.e.*, private groups of interested companies, application developers, and consumer organizations.¹⁸⁷ As ACA explained in its initial comments, that arrangement violates decades-old principles forbidding delegation of regulatory authority to private groups.¹⁸⁸ Since initial comments were filed, the constitutional infirmity of that approach has become clearer still. As the D.C. Circuit recently reaffirmed in *Association of American Railroads v. U.S. Department of Transportation*, “private entities cannot wield the coercive power of government.”¹⁸⁹ Specifically referencing its prior decision in that same case making the same points – which ACA invoked in its comments – the D.C. Circuit added, “we stand by that analysis.”¹⁹⁰

The difference between participating in a market and regulating it “is, of course, fundamental.”¹⁹¹ “The former is a private activity; the latter is necessarily a government

¹⁸⁶ ACA Comments at 30; *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Sixteenth Report, 30 FCC Rcd 3253, Table 2 (2015) (estimating that, as of 2013, 99 percent of households had access to at least 3 MVPDs and 35 percent of households had access to at least 4 MVPDs).

¹⁸⁷ *Navigation Device NPRM*, ¶ 41.

¹⁸⁸ ACA Comments 74-85; see also *Ass’n of Am. R.R. v. U.S. Dep’t of Transp.*, ___ F.3d ___, 2016 WL 1720357, at *15 (D.C. Cir. April 29, 2016).

¹⁸⁹ *Ass’n of Am. R.R.*, 2016 WL 1720357, at *15 (internal citation omitted).

¹⁹⁰ *Id.* at *15 (citing *Ass’n of Am. R.R. v. U.S. Dep’t of Transp.*, 721 F.3d 666 (D.C. Cir. 2013), rev’d on other grounds sub nom. *Dep’t of Transp. v. Ass’n of Am. R.R.*, 135 S. Ct. 1225 (2015)).

¹⁹¹ *Carter v. Carter Coal Co.*, 298 U.S. 238, 311 (1936).

function, since, in the very nature of things, one person may not be intrusted [sic] with the power to regulate the business of another, and especially of a competitor.”¹⁹² Thus, eighty years ago, the Supreme Court held unconstitutional a statute that purported to delegate, to private industry groups, the authority to set minimum wages and maximum hours.¹⁹³ Granting market participants with power over their competitors, the Court explained, violated *both* the separation-of-powers prohibition against “legislative delegation” *and* “the Due Process Clause of the Fifth Amendment.”¹⁹⁴

The D.C. Circuit’s most recent *American Railroads* decision reaffirms that conclusion. There, Congress had required Amtrak, “a for-profit corporation,” to develop “metrics and standards” guiding how railroad companies share track.¹⁹⁵ But the court held that Amtrak may not pursue its “economic self-interest” and “regulate” its competitors.¹⁹⁶ “To do both,” the court explained, “is an affront to the ‘very nature of things,’ especially due process.”¹⁹⁷

That same principle applies here. The proposed regulations would require MVPDs to “make available” information flows that “conform to specifications set by Open Standards Bodies.”¹⁹⁸ Those specifications – which the *NPRM* envisions would be mandatory and enforceable by the Commission – would have the force and effect of law.¹⁹⁹ They would “lend

¹⁹² *Id.*

¹⁹³ *Id.* at 310-11.

¹⁹⁴ *Id.*

¹⁹⁵ *Ass’n of Am. R.R.*, 2016 WL 1720357, at *1-2.

¹⁹⁶ *Id.* at *10, 14.

¹⁹⁷ *Id.* at *14.

¹⁹⁸ *Navigation Device NPRM*, ¶¶ 35-41; *Navigation Device NPRM*, Appendix A (proposed rule §76.1211(a)).

¹⁹⁹ *See* ACA Comments 76-77.

definite regulatory force to an otherwise broad statutory mandate” and “channel” its enforcement.²⁰⁰ Yet the Commission proposes to let private “companies, application developers, and consumer interest organizations,” pursuing their own economic or member interests, develop specifications that would govern MVPDs.²⁰¹ Members of Open Standards Bodies therefore would do precisely what the Due Process Clause forbids: They would *both* act as “market participants” *and* “regulate” as “official bodies.”²⁰²

Moreover, the requirement that Open Standards Bodies have a “fair balance of interested members” does not cure the problem.²⁰³ As noted before, the Commission does not propose any requirements that ensure Open Standards Bodies will adopt standards that actually protect members’ diverse interests.²⁰⁴ Nor are the bodies politically accountable for failing to adopt standards that promote the public interest. Besides, even if there were some democratic check, the mere “ability” of a self-interested party “to co-opt the state’s coercive power to impose a disadvantageous regulatory regime on its market competitors would be problematic.”²⁰⁵ And even absent the constitutional concern, the Commission can point to nothing in the statute that authorizes it to delegate such authority.

The Commission thus may not afford private Open Standards Bodies any regulatory power. At most, Open Standards Bodies may have a purely advisory role. Any standards they

²⁰⁰ *Ass’n of Am. R.R.*, 2016 WL 1720357, at *11.

²⁰¹ *Navigation Device NPRM*, ¶ 41.

²⁰² *Ass’n of Am. R.R.*, 2016 WL 1720357, at *14.

²⁰³ *Navigation Device NPRM*, ¶ 41.

²⁰⁴ See ACA Comments 77-78.

²⁰⁵ *Ass’n of Am. R.R.*, 2016 WL 1720357, at *9.

might develop cannot become enforceable, unless and until the Commission itself considers and adopts them through the proper notice-and-comment process.

F. Adoption of Rules Based on the Commission’s Proposal Would Be Arbitrary and Capricious

ACA agrees with the MVPD commenters that the Commission’s proposal “fails to meet basic requirements of ‘reasoned decision making’ and is therefore arbitrary, capricious, and contrary to law.”²⁰⁶

To pass muster under the Administrative Procedure Act (“APA”), an agency decision must “examine the relevant data and articulate a satisfactory explanation for its action, including a ‘rational connection between the facts found and the choice made.’”²⁰⁷ In reviewing that explanation, courts “consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment.”²⁰⁸ An agency rule is “arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so

²⁰⁶ Comcast Comments at 56-59 (the Commission’s favored approach is based on unsupported and speculative assumptions about consumer demand, ignores the Commission’s past unsuccessful experiences with similar tech mandates and disregards evidence that less burdensome alternatives are available to achieve statutory goals). See also NCTA Comments at 168-169 (the NPRM proposals conflict with prior interpretations of Section 629; are designed to fix problems the marketplace is already addressing; rejects alternative less costly approaches with no reasoned explanation; and ignores the avoidable costs it would entail); NCTA Legal White Paper at 74-81 (extended discussion of how rules based on NPRM proposals “would fail to meet the essential requirements of reasoned decision-making under the Administrative Procedure Act (‘APA’)” for the reasons identified by NCTA); AT&T Comments at 96-97 (the Commission’s “proposed scheme is so convoluted and incomplete that it could not possibly be the result of rational decision-making”).

²⁰⁷ 5 U.S.C. § 706(2)(A); *Motor Veh. Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (“*State Farm*”).

²⁰⁸ *State Farm*, 463 U.S. at 43.

implausible that it could not be ascribed to a difference in view or the product of agency expertise.”²⁰⁹

MVPD commenters demonstrated that the Commission’s proposal would fail to pass muster under the APA for several reasons:

- The *Navigation Device NPRM* fails to adequately explain why its massive new tech mandate, with the enormous costs and risks it would impose on industry participants, is necessary in the face of a flourishing applications environment, as recognized by DSTAC. The NPRM also assumes without explanation that the availability of MVPD applications on a wide range of consumer devices would not achieve a competitive market for navigation devices, disregarding the competitive marketplace that already exists.²¹⁰
- The *Navigation Device NPRM* is riddled with gaping holes about what the proposed rules would ultimately require and how they would operate in practice. It fails even to acknowledge the major legal issues the rules would create, contrary to the requirement that agency actions based on predictive judgment rest on “logic and evidence” rather than “sheer speculation.”²¹¹
- The *Navigation Device NPRM* fails to reconcile the proposed rules with contrary recommendations in the DSTAC Final Report from a diverse cross-section of experts selected by the FCC Chairman himself, ignoring “major points of

²⁰⁹ *Id.*

²¹⁰ NCTA Legal White Paper at 74-77. See *ALLTEL Corp. v. FCC*, 838 F.2d 551, 558 (D.C. Cir. 1988) (“*ALLTEL Corp.*”) (agencies must provide reasoned explanations for their actions); *State Farm*, 463 U.S. at 43; *U.S. Telecom Ass’n, et al. v. FCC*, 290 F.3d 415, 428 (D.C. Cir. 2002) (“U.S. Telecom I”) (vacating FCC order because “in ordering [Section 251] unbundling of the high frequency spectrum of copper loop so as to enable [competitive local exchange carriers] to provide DSL services, [the FCC] completely failed to consider the relevance of competition in broadband services coming from cable”); see also *Fox Television Stations, Inc. v. FCC*, 280 F.3d 1027, 1051 (D.C. Cir. 2002), opinion modified on reh’g, 293 F.3d 537 (D.C. Cir. 2002) (vacating FCC rules governing cable ownership limits because “[t]he Commission failed to consider competition from DBS”); *Time Warner Entm’t Co., L.P. v. FCC*, 240 F.3d 1126, 1134 (D.C. Cir. 2001) (“*Time Warner Entm’t*”) (the FCC’s assessment of a cable operator’s market power must “take account of the impact of DBS”). *Accord* Comcast Comments at 57; AT&T Comments at 97 (“Such a Rube Goldberg approach to regulation would be facially unreasonable in any case, but is particularly arbitrary where the alternative Apps Approach is already working well and is fully consistent with the statutory scheme.”).

²¹¹ NCTA Legal White Paper at 77-78; *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1155 (D.C. Cir. 2011) (when agency action is predicated on predictive judgments, it must still be grounded in substantial evidence, not mere “*ipse dixit*”); *Sorenson Commc’ns Inc. v. FCC*, 755 F.3d 702, 707-708 (D.C. Cir. 2014) (The Commission is not permitted to ignore valid questions about logic and reasoning in its decisions by merely “predictive judgment,” but rather “must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made” and cannot leave serious concerns unaddressed.).

agreement” that undermine its proposed approach. The *Navigation Device NPRM* thus fails to provide an explanation for why its view is based on reasonable analysis.²¹²

- The “NPRM fails to address the immense costs the proposed rules would impose on the industry and society at large, and to weigh these costs against the purported benefits.”²¹³ “Aside from the direct benefits to interested third parties such as TiVo and Google, the rules’ benefits are entirely speculative.”²¹⁴

Applying the *Navigation Device NPRM*’s mandate to smaller MVPDs would exacerbate many of those problems, rendering application of the rules to these providers in particular arbitrary and capricious. If adopted, the Commission’s proposal would substantially increase MVPDs’ costs across the board. Those costs would most burdensome to smaller MVPDs, accelerating the deterioration of their businesses and causing many to go out of business or cease providing multichannel video service.

Leaving aside whether the proposal would offer benefits that outweigh the increased costs imposed on MVPDs in general, *no* meaningful benefits would offset the harm of applying the proposed rules to smaller MVPDs. Smaller MVPDs serve only seven percent of the MVPD market – too little to drive the commercial development and mass adoption of new navigation devices. By contrast, larger MVPDs cover 93 percent of MVPD subscribers. As demonstrated in ACA’s comments and below, that is more than enough coverage to promote any possible development and use of competitive navigation devices. Moreover, assuming for the sake of discussion that the Commission’s set-top box experiment be imposed on and succeed with

²¹² NCTA Legal White Paper at 79-80; *ALLTEL Corp.* at 558.

²¹³ NCTA Legal White Paper at 80.

²¹⁴ NCTA Legal White Paper at 80; *see Michigan et al. v. E.P.A.*, 135 S. Ct. 2699, 2706-07 (2015) (“agency action is only lawful if it rests ‘on a consideration of the relevant factors’” and “cost” is “a centrally relevant factor when deciding whether to regulate”). *See also State Farm*, 463 U.S. at 54 (reasoned decision making requires consideration of “the costs as well as the benefits” of agency action); *U.S. Telecom I*, 290 F.3d at 428.

larger MVPDs, competitive pressures will create incentives for smaller MVPDs to adopt similar technologies and equipment as quickly as possible.

Given the unique position of smaller MVPDs, if the Commission decides to adopt any rules flowing out of its proposal, the Commission must consider the alternative of adopting regulations that apply to larger MVPDs only.²¹⁵ In this instance, even if the Commission adopts new rules with the intention of promoting third party navigation devices, the Commission may safely employ its predictive judgment, firmly grounded in record evidence, to conclude that it should rely on competition rather than regulation to ensure that smaller MVPDs adopt technologies that benefit the public.²¹⁶ Failure to pursue this course would not be reasoned decision making and therefore render the Commission's rules vulnerable in court.

IV. THE COMMISSION SHOULD NOT APPLY ITS PROPOSED NAVIGATION DEVICE MANDATES TO SMALLER MVPDS

A. ACA's Proposed Relief for Smaller MVPDs is Warranted

In the *Navigation Device NPRM*, the Commission inquires whether it should "impose different rules or implementation deadlines" on smaller MVPDs because of the effects of its proposed navigation device mandate.²¹⁷ The best way to protect small providers is to reject this ill-advised proposal outright; however, if the Commission does decide to move forward, there is no doubt that it should not, and need not, apply these rules to MVPD systems serving 600,000

²¹⁵ See *International Ladies' Garment Workers' Union v. Donovan*, 722 F.2d 795, 817-818 (D.C. Cir. 1983) (failure to consider relevant and rational known alternatives are the quintessential aspects of reasoned decision making).

²¹⁶ *Time Warner Entm't*, 240 F.3d at 1133, 1137 (courts "must give appropriate deference to predictive judgments that necessarily involve the expertise and experience of the agency;" however, "failure to take adequate account of the competitive pressures brought by the availability and increasing success of DBS make the [cable ownership] horizontal limit arbitrary and capricious").

²¹⁷ *Navigation Device NPRM*, ¶ 81.

or fewer subscribers that are not affiliated (i) with an MVPD serving more than one percent of all MVPD subscribers, or (ii) with an MVPD or any company with an attributable interest in the MVPD of 50 percent or more that has a market capitalization of greater than \$100 billion (“qualifying multichannel video programming systems”).

As discussed in ACA’s comments and above in Section II, smaller MVPDs would incur substantial costs (disproportionately greater than larger MVPDs) to comply with the mandate. Their subscribers would be harmed as these MVPDs either go out of business, cease video operations altogether, or reduce network and service upgrades.²¹⁸ Further, the Commission can achieve its objectives even if the proposed rules do not apply to smaller MVPDs. Not only would the combined subscriber bases of the larger MVPDs offer sufficient critical mass to achieve the commercial development and mass adoption of devices conforming to the Commission’s proposed rules, smaller MVPDs have a history of adopting the technologies and equipment after they are developed, tested and deployed by larger MVPDs.

1. The market for retail navigation devices would not be harmed if the rules do not apply to smaller providers, as large MVPDs provide a critical mass for industry-wide adoption

As discussed in ACA’s comments, the video programming market served by larger MVPDs is sufficient to reach the critical mass necessary to ensure an adequate addressable commercial market for third party devices to evolve for the industry.²¹⁹ Nothing in the record suggests that this is not the case.²²⁰ Large MVPDs serve over 93 percent of all MVPD

²¹⁸ In ACA’s Comments, it set forth in detail that the mandates would impose upon smaller MVPDs substantial compliance costs without commensurate new revenues, that the video business produced little, if any, margin for smaller MVPDs, and that many smaller MVPDs lacked the financial strength to withstand major new costs. ACA Comments at 39-56.

²¹⁹ ACA Comments at 86.

²²⁰ See TiVo Comments at 32.

subscribers, covering urban communities, rural areas and diverse demographics.²²¹ This level of coverage provides more than sufficient critical mass to achieve whatever commercial development and mass adoption of devices is achievable under the Commission's proposed rules.²²² Moreover, nearly all subscribers of MVPD systems not covered by ACA's proposal have access to pay-TV service from at least two other large MVPDs (*i.e.*, AT&T/DirectTV and DISH).²²³ Therefore, should the Commission not apply coverage of its rules to operators of qualifying MVPD systems, subscribers served by smaller MVPDs today would still have substantial options for using third party devices dependent on the Commission's mandate, thereby denying no consumer the benefits of the Commission's proposed rule.

2. Smaller MVPDs cannot afford the risk of deploying untested technology and uncertain market response

As ACA has demonstrated, the high fixed costs associated with the Commission's proposal are prohibitively high for smaller MVPDs. Smaller MVPDs are also ill-equipped to bear the burden of deploying untested technologies, particularly when consumers' reaction to them is uncertain. It is clear from CVCC's comments that the proposed rules rely on technologies that either do not exist or would require significant repurposing for use with MVPD networks.²²⁴ Therefore, MVPDs will not only need to allocate financial and human resources to develop new

²²¹ SNL Kagan MediaCensus, "Operator Subscribers by Geography," (Dec. 2015).

²²² See Alwin Mahler & Everett M. Rogers, "The diffusion of interactive communication innovations and the critical mass: the adoption of telecommunications services by German banks," *Telecommunications Policy Vol. 23* (1999) ("The critical mass point in the diffusion process is generally expected to occur approximately between 10 and 20% adoption.").

²²³ As the Commission has recognized, nearly 100 percent of MVPDs face competition from at least two other MVPDs, with DirectTV providing local broadcast channels to 197 markets representing over 99 percent of U.S. homes and DISH Network providing local broadcast channels to all 210 markets. *Amendment to the Commission's Rules Concerning Effective Competition*, Report and Order, 30 FCC Rcd 6574, ¶ 4 (2015).

²²⁴ See CVCC Comments at 40.

technologies, they also will need to deploy technologies that may result in significant customer friction or simply not work. This would be excessively burdensome for smaller MVPDs, which do not possess the resources and scale required to absorb these costs and risks and would exacerbate an already deteriorating video business.

3. Larger MVPDs generally adopt new technologies before smaller MVPDs

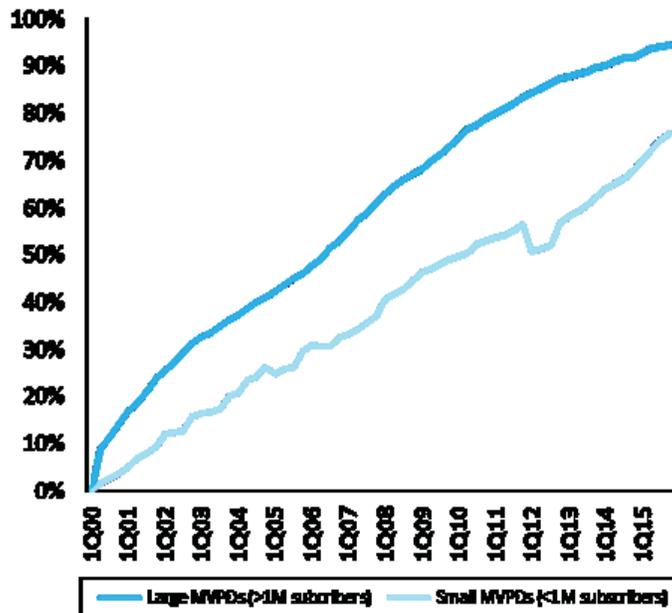
Larger MVPDs generally lead the way in testing and introducing new technologies to the video ecosystem.²²⁵ Smaller MVPDs adopt them only after they have become more widely available, usually in an “off-the-shelf” version form.²²⁶ For instance, as depicted below, smaller operators moved much more slowly than larger operators in migrating from analog toward digital system technology.²²⁷

²²⁵ Traditionally, large MVPDs introduce new standards. See Jeff Baumgartner, *Cable Show 2013: Comcast: We'll Be Ready for Ultra HD*, MULTICHANNEL NEWS, (June 12, 2013), <http://www.multichannel.com/news/distribution/cable-show-2013-comcast-well-be-ready-ultra-hd/261713>; Steve Donohue, *Comcast demo lights path to 4K Ultra HD*, FIERCECABLE, (June 11, 2013), <http://www.fiercecable.com/story/comcast-lights-path-4k-ultra-tv-demo-elemental-arris-broadcom/2013-06-11-0>. For example, Comcast was the first MVPD to pursue the technical challenge of delivering 4K/UHD content over both IP and QAM, leveraging its internal development resources through Comcast Labs and its partnerships with technology vendors to conduct a 4K demo at The Cable Show in 2013. See also Comcast, *DTA Security, Prepared for DSTAC WG3*, (July 2, 2015). Comcast introduced DTA Advanced Security, a security platform developed by Comcast in partnership with ARRIS, Cisco, and CCAD. Comcast negotiated with ARRIS and Cisco to develop a DTA security platform that is portable across ARRIS and Cisco systems. See also Steve Donohue, *Cox may license Comcast RDK middleware platform*, FIERCECABLE, (June 12, 2013), <http://www.fiercecable.com/story/cox-may-license-comcast-rdk-middleware-platform/2013-06-12>. ARRIS, Pace, and Humax also all license the RDK from Comcast, allowing the Comcast-developed toolkit to serve as an industry standard.

²²⁶ ACA Comments at 44. Many ACA members have discussed the cycle of smaller operators obtaining access to innovative technology and equipment, citing a “trickle-down effect.”

²²⁷ SNL Kagan, “Multichannel Top Cable MSOs Data,” (Dec. 2015).

Growth in Digital Service Availability (Percent of Subscriber Base) by MVPD Size



The Commission has acknowledged this reality, stating that “large cable operators ... generally dictate equipment features to manufacturers and commonly get priority in the delivery of that equipment,” and that there is a strong rationale for the Commission to provide relief for smaller operators from regulatory mandates.²²⁸

4. Smaller MVPDs should voluntarily adopt compliant technologies once they achieve critical mass

Although smaller MVPDs are ill-equipped to implement the Commission’s proposed mandate – they lack the resources to develop and deploy experimental technologies – smaller providers should voluntarily adopt proposed standards that become accepted in the market. As

²²⁸ See *Accessibility of User Interfaces, and Video Programming Guides and Menus; Accessible Emergency Information and Apparatus Requirements for Emergency Information and Video Description Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010*, Report and Order and Further Notice of Proposed Rulemaking, MB Docket Nos. 12-107 and 12-108, ¶ 115 (rel. Oct. 31, 2013).

critical mass is achieved, growth in adoption may reduce implementation costs, making it less burdensome for smaller MVPDs to adopt the proposed mandate.²²⁹ Further, smaller MVPDs would be motivated to voluntarily adopt these solutions because vendors will generally only sell equipment that complies with Commission mandates. They will not support, much less sell, non-compliant equipment. As ACA has made clear, smaller MVPDs have limited influence over their vendors, which focus on developing equipment for large MVPDs. As equipment manufacturers concentrate on the development of equipment meeting the needs of large MVPDs, which will be required to comply with the proposed standards, manufacturers will likely shift away from supporting many of the legacy, non-compliant equipment and standards. Should this occur, as smaller MVPDs upgrade their systems, they would have little choice but to implement any requirement mandated for larger MVPDs, as alternative technologies would no longer be available.

If the envisioned market for navigation devices among subscribers of larger MVPDs takes hold, then smaller MVPDs, which compete with multiple MVPDs, also will be inclined to purchase new equipment so they can offer any additional services and capabilities being provided by their larger competitors. Further, smaller operators, in response to market forces, will be motivated to voluntarily adopt compliant equipment as growth in adoption potentially reduces implementation costs. In addition, as discussed above, smaller MVPDs expect costs to become more manageable over time as they evaluate the experience of larger providers and observe consumer demand for retail navigation devices. Assuming these cost reductions

²²⁹ See Geoffrey A. Moore, *Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers*, HARPER BUSINESS ESSENTIALS, (1991).

occur, it could become possible for some smaller MVPDs to phase implementation over time, as they do with other projects,²³⁰ investing incrementally until they achieve full coverage.

B. The Record Affirms that the Commission’s Proposal Could Harm Smaller MVPDs and Relief Should be Granted

ACA was far from alone in seeking relief for smaller MVPDs. Perhaps most importantly, proponents of the Commission’s proposal agreed that relief was warranted. TiVo, for instance, in calling for relief in its comments, offered a number of salient points about the nature of smaller MVPDs:

- “[S]maller MVPDs are disadvantaged in the set-top box marketplace because they lack the economies of scale to participate meaningfully in standards-setting and implement any technology changes required by a new standard in a cost-efficient manner.”
- “[S]maller MVPDs are helped greatly by standardization, because they lack the purchasing power to negotiate affordable rates from set-top box manufacturers, conditional access vendors, etc.”
- “[S]maller MVPDs pay significantly higher programming and other costs to deliver video service to consumers.”²³¹

TiVo then expressed its support either to – (1) exempt MVPDs serving one million or fewer subscribers from the Commission’s proposed mandates because of the “economic challenges

²³⁰ For example, many smaller MVPDs are undertaking the IPTV transition gradually, often deploying IP networks in new markets while slowly upgrading legacy ones. See ACA Comments at 44 (most smaller MVPDs are still transitioning from analog to digital technology and are years away from IP delivery as they are constrained in their progress toward advanced video delivery strategies principally due to their limited resources). See also, e.g., ITTA Comments at 16 (“[M]any of the larger MVPDs are farther along on the IP conversion process than smaller MVPDs.”).

²³¹ TiVo Comments at 32-33.

faced by smaller MVPDs;” or (2) limit the application of the proposed mandates for these smaller MVPDs because they “have little ability to advance the statutory goal of assuring the availability of third-party navigation devices.”²³²

Other commenters representing the interests of smaller MVPDs supported an exemption or greater time for implementation. WTA, in calling for a permanent exemption for small MVPDs, noted that “smaller operators lack the time, resources and expertise necessary to participate in the setting of industry standards ... lack the scale and scope to avoid passing through substantial amounts of their compliance costs to individual customers ... [and] rely heavily on device manufacturers and middleware vendors to ensure compliance with the Commission’s rules.”²³³ NTCA explained that “small MVPDs do not have the same level of technological capabilities and resources as large and mid-sized providers” and “already face significant challenges in the video business.”²³⁴ NTCA also supported ACA’s assertion that “any mandate ... is likely to ‘trickle down’ to smaller providers.”²³⁵

²³² *Id.* at 33-34. See Public Knowledge Comments at 54-55. Public Knowledge acknowledged that smaller operators have “special needs,” and stated that they “would not be opposed [to] the Commission granting smaller MVPDs extra time or greater flexibility” in implementing the proposed rules. ACA disagrees with Public Knowledge’s assertion that the Commission’s proposal would “significantly benefit smaller and new entrant MVPDs.” *Id.* at 54 (“In a competitive app and device market a smaller MVPD will need to do nothing more than provide access to the three information flows according to an open standard, and allow their customers to supply their own equipment and apps from the competitive market. This will save smaller MVPDs time and money while providing their customers with a better experience.”). Public Knowledge’s argument that smaller providers would benefit from the new mandate is apparently premised on two suppositions: First, that providing access to the contemplated information flows is a simple matter, and second, that 100 percent of an MVPD’s subscribers would prefer to purchase their set-top box from a third party rather than leasing it from their provider, thus relieving the MVPD from having to provide any set-top boxes at all. Both suppositions are wrong. As ACA discusses herein, smaller MVPDs cannot easily disaggregate their networks and will incur excessive costs if required to do so. Second, as ACA set forth in its initial comments, the subscribers of smaller MVPDs have shown little, if any, interest in purchasing devices from a third party.

²³³ WTA Comments at 7-8.

²³⁴ NTCA Comments at 28-29.

²³⁵ NTCA Comments 29-30. NTCA defines smaller MVPDs as those with 100,000 or fewer subscribers based on exemptions provided in the *Open Internet Order (Protecting and Promoting the Open Internet)*, GN Docket No. 14-28, Report and Order on Remand, Declaratory Ruling, and Order, FCC 15-24, ¶ 173

The record in this proceeding clearly demonstrates that the Commission, if it adopts the proposed mandate at all, should not apply it to smaller MVPD systems. ACA submits its proposed relief best balances the Commission's need to implement any mandate with the need of smaller MVPDs to avoid incurring substantial costs that will jeopardize their video business. Accordingly, the Commission should not apply its proposed mandate to MVPDs with fewer than 600,000 subscribers that are not affiliated with either (i) an MVPD serving more than one percent of all MVPD subscribers; or (ii) an MVPD, or any entity with an attributable interest in an MVPD of 50 percent or more, that has a market capitalization of greater than \$100 billion.

ACA's proposal is based on research into and analysis of the known and quantifiable costs of implementing the proposal.²³⁶ ACA's cost analysis "conservatively projects ... that operators of systems with 600,000 subscribers and not affiliated with a larger MVPD or entity, would be financially burdened by the Commission's requirements," as the "variable implementation costs driven by the Commission's proposed requirements would be cost-prohibitive if just 20 percent of subscribers deployed a third party device."²³⁷ As such, ACA's proposal would provide sufficient relief to all of those MVPDs which are least able to absorb the

(rel. March 12, 2015)) and *Rural Call Completion Order (Rural Call Completion, WC Docket No. 13-39, Report and Order and Further Notice of Proposed Rulemaking, 28 FCC Rcd 16154 (2013))*. ACA submits that definition is not apt for the *Navigation Device* proceeding, which involves an entirely different mandate and much more onerous compliance costs, to the extent they can even be determined. ACA's proposed definition (MVPD systems with fewer than 600,000 subscribers) reflects these more substantial costs, as well as the fact that 93 percent of consumers would still be covered by the new mandate. ACA also differs with NTCA that, in the alternative to an exemption, the Commission should permit smaller providers to delay implementing the mandate for a period of three years after competitive navigation devices achieve a 15 percent market share. While ACA appreciates NTCA's proposal, it is not necessary because, as both ACA and NTCA agree, smaller MVPDs will inevitably adopt the same technologies as the larger providers should they prove successful. Finally, ACA agrees with NTCA in supporting the Commission's tentative conclusion to exempt from any mandate analog-only MVPDs.

²³⁶ See ACA Comments at 52-56.

²³⁷ ACA Comments at 90.

proposal's substantial burdens. Further, unlike suggestions by some commenters,²³⁸ ACA's proposal recognizes that smaller MVPDs are likely to provide the information flows and compliant security system on a voluntary basis as vendors develop and sell equipment for larger providers, competitive pressures continue, market demand grows, and implementation costs decrease.

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²³⁸ See NTCA Comments at 30 ("The Commission could, for example, delay implementation for small carriers until competitive navigation devices achieve 15 percent market share of all set-top boxes used by all MVPD subscribers."); Public Knowledge Comments at 54-55 ("Understanding their special needs, Public Knowledge would not be opposed to the Commission granting smaller MVPDs extra time or greater flexibility in other ways when it comes to complying with the Commission's new rules.").