

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 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
	)	

**COMMENTS OF THE INFORMATION TECHNOLOGY INDUSTRY COUNCIL**

The Information Technology Industry Council (ITI) hereby submits its comments in response to the Notice of Proposed Rulemaking in the above-captioned proceeding.<sup>1</sup>

**INTRODUCTION**

ITI commends the Commission for considering options to bring greater innovation and consumer choice to the video set top box market. ITI represents 60 of the nation's leading information and communications technology companies.<sup>2</sup> ITI is the voice of the high-tech community, advocating for policies that advance U.S. leadership in technology, promote innovation, open access to new and emerging markets, protect and enhance consumer choice, and foster increased global competition. ITI's member companies include wireless and wireline network equipment providers, computer hardware and software companies, Internet and digital service providers, mobile computing and communications device manufacturers, consumer

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<sup>1</sup> Expanding Consumers Video Navigation Choices, MB Docket Number 16-42, Notice of Proposed Rulemaking and Memorandum Opinion and Order, FCC 16-18 (February 18, 2016) ("NPRM").

<sup>2</sup> For more information on ITI, including a list of its member companies, please visit: <http://www.itic.org/about/member-companies>.

electronics, and network security providers. As such, ITI's member companies are involved in all aspects of video content delivery and consumption by consumers.

**I. MOST CATEGORIES OF CONSUMER DEVICES HAVE SEEN RAPID CHANGE, INNOVATION, AND EVOLUTION IN RECENT DECADES**

The consumer electronics marketplace has seen unprecedented evolution across nearly all categories in recent decades. These evolutions have brought new features, functionality, and choice for consumers.

Perhaps the most pertinent to this proceeding was the evolution of uses for data transmission following the Carterfone decision in 1968. This decision paved the way for competitive household telephones, cordless telephones, answering machines, and facsimile machines.<sup>3</sup> Once the Commission allowed competitive devices to be connected to the network, so long as they did not cause harm to the network, numerous innovations took place, many building on top of each other.

Music and audio choices have seen a similar transition, driven largely by consumer demand and advances in technology. What once required large devices to receive broadcast radio signals or play vinyl discs has evolved through various iterations, due to advances in technology and changes in consumer behavior and demand. Eight track tapes, cassette tapes, and compact discs each provided consumers with increased sound quality and the ability to transport

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<sup>3</sup> See, e.g., *Carterfone Case Showed How Regulations Promote Competition*, U.S. News & World Report, (June 28, 2012), available at: <http://www.usnews.com/opinion/blogs/economic-intelligence/2012/06/28/carterfone-case-showed-how-regulations-promote-competition> (from the article: "This crucial ruling led to extraordinary innovation. At first, it made possible an abundance of phones with advanced features and creative designs, plus modems, answering machines, computer terminals, and office telephone systems. Then it opened the way to routers, gateways, switches and all the third-party gear that powers the public Internet. Without this crucial act of regulatory bravery in the face of corporate power we might still be tethered to copper wire to talk to each other. We might still be mailing CDs to share files.").

the audio they wanted. This evolution eventually led to the multiple digital audio options available today, including MP3, and other digital, streaming audio formats.<sup>4</sup>

Similarly, consumer-selected video progressed much in the same way, giving consumers significantly increased picture and audio quality as video cassette tapes were replaced by digital video discs, and then Blu-ray video discs, as well as streaming video options. This development also coincided with advances in consumer television sets, as the transition from analog to digital broadcast signals took place, which led to high-definition televisions becoming more affordable and widely adopted. These advancements are still taking place as three dimensional and ultra high definition (4K and 8K) video choices are increasing and the price of this consumer technology is decreasing.<sup>5</sup>

The mobile device market has seen the most rapid change and innovation over the previous two decades. From analog mobile service for large single-use handsets over the advanced mobile phone system - to feature phones - and now to widely adopted smartphones and tablets; the mobile device market has experience unprecedented growth and innovation. This innovation has given consumers countless options and features, both in range of functionality and in device cost. In the case of the smart phone, this single device is capable of performing the same functions that previously required multiple consumer devices (e.g. mobile phone, camera, music or audio player, personal digital assistant, etc.). Furthermore, this evolution has fueled a veritable explosion of device choice and network use by consumers,<sup>6</sup>

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<sup>4</sup> See, e.g., *Chronology: Technology and the Music Industry*, PBS Frontline, available at <http://www.pbs.org/wgbh/pages/frontline/shows/music/inside/cron.html>.

<sup>5</sup> See, e.g., *A (very) brief history of television displays*, Reuters, Dec. 17, 2014, available at <http://blogs.reuters.com/data-dive/2014/12/17/a-very-brief-history-of-television-displays/>.

<sup>6</sup> See, *Ericsson Mobility Report*, Feb. 2016, available at <http://www.ericsson.com/res/docs/2016/mobility-report/ericsson-mobility-report-feb-2016-interim.pdf> (e.g., mobile data traffic grew 65 percent between Q4 2014 and Q4 2015).

driving further investments in network infrastructure and innovation in communications technology to meet consumer demand.

Some of these changes in consumer electronics happened as a result of changes in government policy or regulations. Others were driven by consumer demand and advancing technology. Collectively, however, they demonstrate significant innovation and change across a wide range of consumer electronics.

## **II. COMPETITIVE NAVIGATION OPTIONS WOULD CREATE NEW OPPORTUNITIES FOR CONSUMERS, DEVICE MANUFACTURERS AND SOFTWARE DEVELOPERS**

While there are some limited exceptions, 99% of set-top boxes are still leased to consumers by multichannel video program distributors (MVPDs).<sup>7</sup> In contrast to the developments described above for other consumer equipment, upgrades to set-top boxes have focused generally on accommodating extrinsic innovation to some extent (e.g., apps, streaming to personal devices). By and large, however, choice has been forced on this segment, rather than originating from it. Many online video providers offer predictive features for consumers, including recommending content based on past viewing habits. These types of features increase consumer choice and drive greater video consumption. More innovation can be expected in the set-top box market if it were to become competitive, thereby providing consumers with choices comparable to those seen in other areas of consumer electronics.

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<sup>7</sup> NPRM ¶ 13; also, Press Release, Sen. Edward Markey, Markey, Blumenthal Decry Lack of Choice, Competition in Pay-TV Video Box Marketplace (July 30, 2015), <http://www.markey.senate.gov/news/press-releases/markey-blumenthal-decry-lack-of-choice-competition-in-pay-tv-video-box-marketplace>.

If the Commission’s rulemaking succeeds in establishing the preconditions for competitive device sales, many ITI member companies would have new opportunities in the competitive market that would be created. In addition to competitive set-top boxes or devices, navigation software could be integrated into TVs without the need for a set-top box. Similarly, video navigation could be offered without the need for additional consumer equipment at all – such as through a cloud service – giving consumers greater flexibility, choice, and viewing options. Each opportunity would provide a greater number of companies the prospect of competing in this market, driving investment and innovation, and ultimately benefitting the consumer through increased choice.

### **III. IMPROVED NAVIGATION CAPABILITIES WILL LEAD TO ADDITIONAL VIDEO CONSUMPTION AND INFLUENCE NETWORK INVESTMENT**

Consumers are enjoying a golden age of video programming. High-quality content is available today from both traditional and new sources, including pay TV providers, subscription streaming services, online stores, and free on the Web.<sup>8</sup> Consumers want to be able to watch all this programming on a “device with a larger screen that uses a home broadband connection.”<sup>9</sup> Yet, to see all of this content on their TV sets, they must juggle set-top boxes, streaming sticks, tablets, smartphones, and remote controls. The Commission’s proposed rules would change this

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<sup>8</sup> See, e.g., Daniel Bukszpan, *Netflix, Amazon Rack Up Emmy Nominations*, Fortune, July 16, 2015, available at <http://fortune.com/2015/07/16/emmy-nominations-2015/> (describing the wide variety of programming sources recognized in the 2015 Emmy nominations; online streaming services Netflix and Amazon respectively received 34 and 12 nominations; premium TV networks HBO and Showtime respectively received 126 and 18 nominations; basic cable channel AMC received 24 nominations; and broadcast networks ABC, CBS, and NBC each received more than 40 nominations).

<sup>9</sup> See John B. Horrigan & Maeve B. Duggan, *Home Broadband 2015*, Pew Research Center, Dec. 21, 2015, at 3, available at <http://www.pewinternet.org/files/2015/12/Broadband-adoption-full.pdf> (noting that “when given a choice, people prefer to use their smartphone for getting in touch with family or friends but, for watching video, they prefer a device with a larger screen that uses a home broadband connection.”).

cumbersome situation for the better, enabling consumers to access all of the content they have the right to view through a single competitive navigation device they can purchase at retail or rent from their MVPD.

Making it easier to access online content on TV sets will lead Americans to view more video programming across a variety of platforms. Video consumption historically “drive[s] demand for faster broadband,”<sup>10</sup> advancing the Commission’s goals of “improving the speeds and quality” of broadband available to the American public.<sup>11</sup> Simply put, a better viewing experience requires a better broadband connection.<sup>12</sup>

The link between network investment and video consumption is well-established. USTelecom notes that “broadband investment enables increased adoption of innovative network technologies and services, such as online video.”<sup>13</sup> Similarly, Comcast links the “golden age of

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<sup>10</sup> *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 Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment, 30 FCC Rcd 1375, ¶ 30 (2015).

<sup>11</sup> See FCC, *2015 Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed Broadband Performance in the United States* (Dec. 31, 2015), available at <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-broadband-america-2015>.

<sup>12</sup> See OECD, *The Development of Fixed Broadband Networks* at 14 (2014), available at <http://www.oecd-ilibrary.org/docserver/download/5jz2m5mlb1q2.pdf?expires=1460232047&id=id&acname=guest&checksum=F22B70238D73682CD0C3744F5A108758> (explaining that video streams require significant amounts of bandwidth, as well as low latency and jitter, to deliver good picture quality across the network). See also S. Shunmuga Krishnan and Ramesh K. Sitaraman, *Video Stream Quality Impacts Viewer Behavior: Inferring Causality using Quasi-Experimental Designs*, Proceedings of the ACM Internet Measurement Conference (IMC), Boston, MA, at 3-4 (Nov. 2012), available at [http://people.cs.umass.edu/~ramesh/Site/PUBLICATIONS\\_files/imc208-krishnan.pdf](http://people.cs.umass.edu/~ramesh/Site/PUBLICATIONS_files/imc208-krishnan.pdf) (finding that “viewers start to abandon a video if it takes more than 2 seconds to start up, with each incremental delay of 1 second resulting in a 5.8% increase in the abandonment rate.”).

<sup>13</sup> Patrick Brogan, *Latest Data Show Broadband Investment Surged In 2013*, USTelecom, Sept. 8, 2014, available at <http://www.ustelecom.org/sites/default/files/documents/090814%20Latest%20Data%20Show%20Broadband%20Investment%20Surged%20in%202013.pdf>.

video services” to the “\$1.2 trillion that cable companies, phone companies, and wireless companies have invested” in broadband nationwide.<sup>14</sup> Making it easier to view online video content will lead consumers to favor higher broadband speeds and quality, and which would promote additional network investment.

At the same time, reducing revenue from MVPDs’ leasing of set-top boxes and increasing their costs of compliance would tend to have a negative impact on those MVPDs’ investment in advanced broadband capability like fiber to the home (“FTTH”). If network investment decisions are based on a net present value (“NPV”) calculation<sup>15</sup> to determine whether the return is sufficient to justify the investment, then declining revenue or increasing cost adversely affects the business case for the investment. The Commission should therefore examine the impact that rules adopted in this proceeding will have on industry revenue and network investment, so as to maximize opportunities for investment due to increased demand for broadband, while limiting impacts that could negatively affect investment.

#### **IV. CREATING ADDITIONAL CONSUMER OPTIONS CAN AND SHOULD PROTECT CONTENT AND CURRENT REQUIREMENTS**

For purposes of this latest content delivery regime, the Commission proposes to require MVPDs to deliver to third party devices their “Navigable Service,” defined as an MVPD’s video programming and Emergency Alert Messages.<sup>16</sup> We assume that this was intended to encompass the audio feed accompanying that video programming, including all watermarks and other

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<sup>14</sup> David L. Cohen, *U.S. Senate Examines the Future of Video*, July 16, 2014, available at <http://corporate.comcast.com/comcast-voices/us-senate-examines-the-future-of-video>.

<sup>15</sup> An NPV model reflects the net effect of expected revenue minus expected cost.

<sup>16</sup> See *NPRM*, ¶ 26; Proposed Rule 76.1200(e). Technically, MVPDs would be required to deliver “Content Delivery Data,” which is defined as data that contains the Navigable Service. See *NPRM*, ¶ 40; Proposed Rule 76.1200(h).

material native to that feed. Such materials include, for example, encoding embedded in the feed to allow measurement of the viewing audience, which is a critical input to the advertising market. Any rules adopted in this proceeding should clarify that MVPDs must deliver the complete audio feed as a component of the Navigable Service.

## **CONCLUSION**

ITI appreciates the opportunity to comment in this proceeding. We believe the opportunity exists to bring similar innovation to the set-top box and video delivery and navigation market that has been realized in many other categories of consumer devices. This innovation will lead to increased video choice, demand, and consumption, thereby driving demand for high-speed broadband connectivity. We commend the Commission's focus on promoting competition in the video navigation marketplace, and look forward to working with you on this undertaking.

Respectfully,



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