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**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matters of	)	
	)	
International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51, NBP PN #27
	)	
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	)	GN Docket No. 09-137
	)	
Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices	)	CS Docket No. 97-80
	)	

**NBP PUBLIC NOTICE #27  
COMMENTS OF CISCO SYSTEMS, INC.**

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## SUMMARY

As consumers are increasingly demanding delivery of high-quality Internet video to their television screens and other devices such as PCs and mobile phones, the market is responding to this need. In particular, Cisco is working actively with its multichannel video programming distributor (“MVPD”) customers to define the architecture and other parameters for Cisco’s Internet Protocol (“IP”) video delivery product, Next Generation Video Delivery. This product includes not only Internet connectivity, but also a home gateway system. Given market-driven solutions such as Cisco’s, a mandate requiring Internet video capability in set-top boxes is unnecessary. Moreover, such a requirement would be counterproductive, delaying or even derailing development of new, consumer-friendly offerings currently on their way to market.

Nor are new CableCARD requirements warranted. Cisco has devoted substantial resources to enabling its customers to implement separable security, yet these requirements have in no way served to enhance new services. Instead, they have imposed additional costs on consumers’ preferred use of leased navigation devices, a model that as a general matter is cost-effective and far more consumer-friendly.

In any event, if the Commission takes any action in this area, it should be reserved for a separate proceeding rather than addressed as part of the Plan. Issues surrounding video devices and the implementation of Section 629 are complex and cannot properly be addressed within the abbreviated timeframe for completion of the National Broadband Plan. Accordingly, to the extent the FCC decides to take action in this area, Cisco supports the National Cable & Telecommunications Association (“NCTA”) proposal that the Commission initiate a broad notice of inquiry (“NOI”) to examine whether and how to achieve a robust retail marketplace for consumer video devices.

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COMMENTS OF CISCO SYSTEMS, INC.**

Cisco Systems, Inc. (“Cisco”)<sup>1</sup> submits these comments in response to National Broadband Plan Public Notice #27 (“Notice”), which seeks comment on video device innovation in connection with the National Broadband Plan (“Broadband Plan”).<sup>2</sup>

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<sup>1</sup> Cisco is the worldwide leader in networking that transforms how people connect, communicate, and collaborate (see [www.cisco.com](http://www.cisco.com)). Cisco customer premises solutions provide powerful home-networking and content-sharing options that allow subscribers to live the “Connected Life” with simple, affordable tools to enjoy and interact with content in new ways. These solutions draw on Cisco’s rich experience in providing more than 40 million set-top boxes worldwide.

**I. CONSUMERS INCREASINGLY DEMAND HIGH-QUALITY INTERNET VIDEO DELIVERY TO THEIR TELEVISION SCREENS, AND THE MARKET IS RESPONDING TO THIS DEMAND**

As the Broadband Taskforce has correctly recognized, the popularity of Internet video is unquestionable.<sup>3</sup> It is indeed the case that new applications will emerge, Internet use will increase, consumers will have more viewing options, and more viewers will want to access Internet content on their televisions.<sup>4</sup> This bright future provides the industry with significant incentive and opportunities to innovate in order to satisfy consumer demand. For example, Intel and Motorola have petitioned the Commission to permit the inclusion of Ethernet ports in set-top boxes in lieu of a 1394 interface in order to facilitate Internet access for MVPD-leased devices. In addition, non-MVPD solutions are in development, such as new retail set-top boxes and television sets with direct Internet connectivity.<sup>5</sup>

Yet because some products and services that meet the goals in the Notice are still on their way to market, the Commission may not yet be fully aware of them. Cisco submits these comments to provide the Broadband Taskforce with additional information regarding forthcoming product architectures that will help achieve the Commission's goal of increasing the delivery of Internet content to television screens.

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<sup>2</sup> *Comment Sought on Video Device Innovation*, DA 09-2519, GN Docket Nos. 09-47, 09-51, 09-137; CS Docket No. 97-80 (rel. Dec. 3, 2009) (Public Notice) ("Notice").

<sup>3</sup> The term "Internet video," as used in the Notice, does not apply to all video content that is delivered via Internet Protocol ("IP"). Internet video – i.e., content available on the Internet – requires IP transmission. Yet although conventional linear and on-demand multichannel programming also may be delivered by IP, it is not "Internet video."

<sup>4</sup> Notice at 2.

<sup>5</sup> *See supra* p. 5.

Specifically, Cisco has been working actively with its multichannel video programming distributor (“MVPD”) customers to define the fundamental architecture and a variety of potential products for Cisco’s Next Generation Video Delivery service (“Next Generation Video”), an Internet Protocol (“IP”) video delivery system that will allow Internet connectivity. The fundamental components of Next Generation Video have been established. Importantly, Next Generation Video represents a move to a standards-based, all-IP delivery of services that incorporates World Wide Web Consortium (“W3C”) standards for both headend equipment and browser-based set-top software, as shown in the diagram below:



As illustrated above, Next Generation Video also features an advanced services “gateway” in the home that enables consumer devices to access open MVPD content through

standards-based access protocols, such as HTTP and Digital Living Network Alliance (“DLNA”).<sup>6</sup> This gateway can be used for Voice over IP (“VoIP”) and high-speed data services in addition to video. For cable operators, the network architecture will be a DOCSIS 3.0 standard wideband cable modem on the network-facing side of the gateway.

The Next Generation Video system will likely utilize a variety of open home networking standards, as illustrated in the diagram above. This includes DLNA-compliant media servers and media players.<sup>7</sup> An in-home Next Generation Video network can support Multimedia over Coax Alliance (“MoCA”) standards for wireline with current in-home cable wiring, and also can support Institute of Electronics and Electrical Engineers (“IEEE”) 802.11 wireless local area network (“WLAN”) specifications and Ethernet local area network (“LAN”) technology. Standards-based content protection for home networking will likely include support for Digital Transmission Content Protection (“DTCP”) over IP. In addition, multiple open client devices can support DLNA media players, with the option to incorporate W3C and Consumer Electronics Association (“CEA”) 2014-B-compliant browsers for displaying a user interface (optional elements shown in the diagram).

With the establishment of the Next Generation Video architecture, Cisco and its customers have begun developing related products. Applications and services for these products

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<sup>6</sup> The Broadband Taskforce has expressed an interest in deployment of gateway devices. *See Options for a National Broadband Plan, Task Force Provides Framework for Final Phase in Development of Plan* (rel. Dec. 16, 2009) (News Release) (noting that the Commission may seek to “require[e] video services providers to supply a small, low-cost, network-interface device whose only function is to bridge proprietary network elements with retail navigation devices.”).

<sup>7</sup> *See* Notice at 3 (seeking comment on implementation of DLNA and other home networking standards).

can be authored using standard web services, enabling delivery across a range of both MVPD-provided and consumer-provided devices.

## **II. MANDATING INTERNET VIDEO CAPABILITY IN SET-TOP BOXES IS UNNECESSARY**

The industry is moving rapidly toward product and service offerings that will allow increased access to Internet content on television screens. As discussed above, Cisco's Next Generation Video architecture contemplates a gateway device and Ethernet connectivity. Similarly, Intel and Motorola each have petitioned the Commission to permit the inclusion of Ethernet ports in set-top boxes in lieu of a 1394 interface. The desire to include this technology demonstrates a clear movement toward IP and delivery of Internet video. Even non-MVPD solutions are in development, such as new retail set-top boxes and television sets that have direct Internet connectivity.<sup>8</sup> With all of these developments underway, the Commission need not intervene to ensure that consumer demand for advanced, IP-based access to Internet video is met.

In fact, Commission intervention mandating Internet video capability could delay or derail the development of these new, consumer-friendly solutions that already are on their way to market. As the CableCARD requirements (further discussed below) have demonstrated, regulatory mandates forcing adoption of certain set-top box capabilities generally are not effective to promote innovation.

Moreover, at this time, all platforms are not yet fully IP-based. Thus, different technologies necessarily require different business models and functionalities. Throughout this

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<sup>8</sup> See, e.g., Stone, Brad, *A New Set-Top Device To Put Web Video on TV*, NEW YORK TIMES, Dec. 8, 2009 at B10.

period of transition, the Commission should encourage, not discourage, platform-specific innovations that allow for competition among all MVPDs.

The Broadband Taskforce is correct that all content will eventually be delivered by IP, but this is not yet the case. Satellite and IPTV providers utilize digital networks. But as the National Cable & Telecommunications Association recently explained, “[t]he cable industry is undergoing its own digital transition – reclaiming analog bandwidth in order to provide consumers with more high-definition and niche programming, faster (DOCSIS 3.0) broadband, and other services.”<sup>9</sup> This consumer-friendly transition is progressing, but it is not yet complete. And, like all transitions, the cable migration to digital is both disruptive and challenging. The Commission should continue its efforts to facilitate the cable digital transition by encouraging the launch of innovative and efficient technologies, such as switched digital video (“SDV”), and continuing to grant waivers to allow deployment of low-cost digital-to-analog converter boxes with integrated security.<sup>10</sup> By hastening the migration to all-digital cable systems, the Commission will also be hastening the transition to an all-IP world without any additional regulation. The move to IP is a foregone conclusion, and the Commission should allow the market to move to IP delivery at its own pace, which will ensure consistent quality of service over the course of the transition.

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<sup>9</sup> Letter from Kyle McSparrow to Carlos Kirjner and William Lake, GN Docket Nos. 09-47, 09-51, 09-137; CS Docket No. 97-80 (Comments – NBP Public Notice #27) (Dec. 4, 2009) (“NCTA Letter”).

<sup>10</sup> See *Oceanic Time Warner Cable, et al.*, Order on Review, FCC 09-52, File Nos. EB-07-SE-351, et al. (rel. June 26, 2009) (vacating Enforcement Bureau orders restricting deployment of SDV technology); *Evolution Broadband, LLC’s Request for Waiver of Section 76.1204(a)(1) of the Commission’s Rules*, Memorandum Opinion & Order, 24 FCC Rcd 7890 (2009).

### **III. NEW CABLECARD REQUIREMENTS ARE NOT WARRANTED AND WOULD IMPOSE FURTHER COSTS ON THE CONSUMER-PREFERRED LEASED MODEL**

Cisco has devoted substantial resources to enabling its customers to implement the Commission's separable security requirement.<sup>11</sup> These rules, along with pressure from the consumer electronics industry, have required a major focus by cable operators and their vendor partners to implement multistream two-way CableCARDS and OCAP tru2way middleware. Cisco has focused its software resources on middleware development and the porting of operator-specific Resident Navigators with Program Guides. Cisco's efforts also include developments such as the Cronus ASIC System On a Chip, MoCA Home Networking, HD Graphics, Multiroom DVR, larger hard drive, new user interfaces.

Yet while the major resources applied by Cisco and its customers have satisfied the Commission's requirements, they appear to have done little to enhance new services or benefit consumers. In fact, they have mainly served to impose additional costs on leased navigation devices, a model that as a general matter is cost-effective, consumer-friendly, and overwhelmingly preferred by MVPD subscribers.<sup>12</sup>

### **IV. ANY COMMISSION ACTION IN THIS AREA SHOULD BE RESERVED FOR A SEPARATE PROCEEDING AND NOT ADDRESSED AS PART OF THE NATIONAL BROADBAND PLAN**

Issues surrounding video devices and the implementation of Section 629 are complex, and they cannot be properly addressed within the abbreviated timeframe remaining for

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<sup>11</sup> 47 C.F.R. § 76.1204(a)(1).

<sup>12</sup> See NCTA Letter at 3 (discussing consumer preferences for leased devices available at "cost-plus" rates that can be upgraded when a new model is released); Comments of DIRECTV, Inc. in CG Docket No. 09-158; CC Docket No. 98-170; WC Docket No. 04-36 (filed Oct. 13, 2009) at 8-9.

completion of the Broadband Plan. As these Comments demonstrate, the MVPD marketplace is working actively to forge ahead with new IP-based architectures that will transform the set-top box consumer experience. The industry should be afforded ample time to provide the Commission with information regarding evolution and innovation efforts in the video device segment, and the Commission should carefully consider any information provided. In light of the complexity of these issues and the rapid pace of technological change in this sector, if the Commission seeks to take any action in this area, it should be reserved for a separate proceeding rather than addressed as part of the Broadband Plan. Accordingly, to the extent the FCC deems action necessary, Cisco supports the NCTA proposal that the Commission initiate a broad notice of inquiry (“NOI”) to examine whether and how to achieve a robust retail marketplace for consumer video devices.<sup>13</sup>

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<sup>13</sup> NCTA Letter at 1.

**V. CONCLUSION**

For the reasons set forth above, the Commission should not impose new set-top box mandates and should refrain from addressing video device issues in the context of the Broadband Plan.

Respectfully submitted,

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