Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Video Device Competition	)	MB Docket No. 10-91
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
	)	
Commercial Availability of Navigation Devices	)	
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	PP Docket No. 00-67
	)	

COMMENTS OF THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION ON THE COMMISSION'S NOTICE OF INQUIRY

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EXECUTIVE SUMMARY

Although the cable-centric CableCARD regime has not fulfilled the Commission's expectations for Section 629, in many ways the broader aspirations of Section 629 have already been met. No one who wants multichannel video is forced to lease a set-top box from the incumbent cable operator. Competing digital distribution platforms – from DBS providers such as DISH Network and DirecTV, telco TV providers such as AT&T and Verizon, to "over the top" video providers riding on personal computers, gaming stations and retail televisions – engage in equipment differentiation and innovate quickly to deliver new features and options to consumers. Set-top boxes have grown from tuning devices into high-definition DVRs, offering on-demand content, interactive program guides, Internet content, and other interactive and cross-platform services. Cable operators now purchase set-top boxes from a growing number of consumer electronics manufacturers, including Pace, Motorola, Cisco, Evolution Broadband, Samsung, Panasonic, ARRIS, and TiVo. "Over the top" and other new platforms offer access to multiple sources of Internet video programming through competing set-top boxes or via navigation functionality embedded directly in DTVs, all without cable set-top boxes. These unprecedented consumer choices – more than the authors of Section 629 likely imagined possible – emerged without any technology mandate or regulatory guaranty, but in response to actual consumer demand. And the choices for consumers can be even better tomorrow.

The Commission's purpose in launching the *NOI* was to explore ways to promote investment, competition, innovation, and consumer choice in the video device marketplace, including making it easier for consumers to watch video content from various sources, and encouraging wider broadband use and adoption. The cable industry is committed to the same fundamental goals. As consumer demand grows for access anywhere, anytime, on any device, the cable industry is committed to providing video content to consumers where and when they

want it, on all possible consumer devices, and for those devices to be innovative platforms for new applications:

- Cable operators are testing and exploring models like the TV Everywhere concept that enable multichannel video customers to enjoy TV programming they receive from their MVPD on personal computers and other IP-connected devices at no extra charge.
- Cable operators are leveraging Internet Protocol (IP) technology so that cable programming and services can be delivered to personal computers and other IP-enabled devices and so that CableCARD-enabled devices can connect directly to PCs and home networks.
- Cable operators are developing residential gateways that can consolidate multiple set-top box functionalities and provide signals to a wide variety of home receiving devices.
- Cable operators reached agreement with the satellite, telephone, information technology (IT) and consumer electronics (CE) industries in the Digital Living Network Alliance (DLNA) to allow recorded MVPD content to be shared within home networks, and are continuing the work needed for handling live content, EAS, parental controls, closed captioning, and interactive features in the home network.
- Cable operators are working in the multi-industry Digital Entertainment Content Ecosystem (DECE) consortium to expand the "buy once, play anywhere" model used for DVDs so that consumers may buy content from many sources (including the Internet, retail, wireless, or cable) and have it forwarded over multiple distribution platforms to devices using different digital rights management (DRM) technologies.
- Cable operators are working across industries in the Multimedia over Coax Alliance (MoCA) to make in-home coaxial cable into a non-proprietary home networking architecture.
- Cable operators are deploying and supporting tru2way middleware through a nationwide footprint to enable a wide variety of manufacturers to make devices that can receive one-way and two-way cable services.

We have offered seven Consumer Principles to help guide fulfillment of the Commission's vision in a way that embraces multiple creative approaches. Some approaches may rely on a physical device, others on the "cloud" or a virtual network. Some may blend commercial MVPD video with Internet content, others may use physical or virtual home networks to relay PC content to the TV. The market is also experimenting with different kinds of search capabilities. On the web, The Wall Street Journal, The New York Times, Facebook,

Twitter and myriad retailers all have different (and evolving) arrangements with Internet search portals. The same experiments are occurring in video: TiVo has a software interface on certain Comcast and satellite set-top boxes, and is working on a co-branded interface with Suddenlink. Netflix and others appear as retail sites on Blu-ray, TiVo, and other retail devices.

When cable operators and consumer electronics manufacturers sought to address "search" capabilities in the tru2way MOU, they came to an agreement for retail devices to have their own optional manufacturer-provided guide and top-level navigator among gaming, widgets, Internet content, and cable service, and for cable to appear as an individual retail site when selected. The same model is used in parallel arrangements with Microsoft for PC or Xbox searches for cable content, and in the TV Everywhere concept offering programming from the "cloud." Within Chairman Genachowski's vision of a retail "mall" in which many different video providers can operate as retail stores, there is ample room for such creative business-to-business deals. The "right" approach will vary with network architecture, business experimentation, and (evolving) consumer demand.

In varying ways, competing MVPDs are bringing their services to retail devices. Delivery of MVPD services involves sophisticated interplay between network, hardware, and software in order to present services on a television or other display device. The headend is engaging servers, edge devices, channel maps, authentication and entitlement systems, and billing systems. At the same time, the headend is interacting with set-top boxes, which themselves are equipped with specific resources and programmed to respond to particular network signals and instructions. And that is just to present traditional television programming. It takes even more sophisticated interaction and data flows to offer video-on-demand; to let consumers push a button on their remote control to re-start a live show from the beginning

without using a digital video recorder; to run an interactive program guide, switched digital video, interactive video enhancements, and interactive advertising offering consumers free coupons at the click of the remote control; or to offer secure delivery of first-run movies in early release windows.

MVPDs use complex and different architectures to weave these elements together and present them for consumer use and interaction through the MVPD's user interface. Today, there are a variety of approaches to networking this experience to multiple devices, with different tradeoffs of network and device capability. One forum in which such networking discussions are occurring with cable, satellite, telephone, and CE participants is DLNA, which strives for guidelines incorporating multiple approaches rather than setting a single standard. Flexible solutions can more easily be embraced by MVPDs, manufacturers, and consumers without sacrificing benefits of differing and competing network architectures and device capabilities.

The *NOI* anticipates a single standardized solution and pays insufficient attention to these critical end-to-end integration aspects of MVPD services. The Commission can play a more constructive role by working with stakeholders to develop voluntary market-driven solutions that generally let consumers, rather than government-imposed technology mandates, drive innovation. The Commission could instead point towards solutions that make MVPD services available over one or more "AllVid" user interfaces. These interfaces should include video services and associated security, transactional, advertising, and promotional elements that rely on interactions between the device and the network and interactions between the consumer and the services. This simple approach, for a defined time, would engage the creative energies of all stakeholders to achieve one or more practical approaches without stifling innovation through technology mandates.

It is essential that the Commission leave industry with the flexibility to test and use diverse solutions that can adapt to rapid changes in technology, competition, and consumer demand. No one can be certain about the future course of technology or consumer demand, except that it will outrun our predictions. Consumers should have the right to buy solutions not devised by the government, and competitors should have the right to shape and reshape their offerings to meet actual consumer demand as it evolves. In the case of the CableCARD, the vast majority of consumers made a rational choice not to buy UDCPs that worked only with one-way cable services, were not offered at low cost, required up front payments, and required the consumer to assume the risk of obsolescence. Instead, consumers chose to lease devices that offered more services and the flexibility to swap boxes when the next model was released or return their device if they didn't want service anymore. That is not market failure – it is the operation of the market and actual consumer demand. The Commission would be running a high risk of immediate obsolescence if it again picked a particular technical solution that will be rapidly overtaken by changes in marketplace demand and by innovation.

The Commission also should not impose artificial constraints on the development of a variety of approaches and devices in the name of "common reliance." MVPDs need the flexibility to offer a variety of options in order to assure that devices that support all of their services are actually available to consumers at attractive prices, including fully-featured set-top boxes for consumers who just want a familiar connection to their television, as well as new boxes with features that we cannot imagine today that might not be supported by the "smart" devices available at retail.

The Commission should also not seek premature standardization. The cable industry intends to continue its active participation in many inter-industry efforts and standards

development organizations. But creative solutions are developed in proprietary implementations in business ventures and consortia, incubating "founder" groups, or well-established specifications development bodies. This is the approach to technology development in the IP, web, home networking, and Smart Grid arenas, and it should be permitted to work here as well. Standards development organizations and DLNA, for example, are among the many natural locations for networking-related discussions, but they should not be the exclusive forum for discussions and development.

A standardized AllVid approach outlined in the *NOI* strives for the right outcome but fails to account for how constraining innovation will harm consumers, how data is actually delivered to devices, how devices interact back with the network, how the integrity of programming and advertising is protected, how the distribution of commercial video content is secured through licenses, and the role that intellectual property plays in shaping architectures. The *NOI* also fails to address that retail device markets cannot be built through mandates only on MVPDs, when consumer electronics manufacturers will not commit to build devices, and major retailers will not commit to stock devices except in response to market demand. To some extent, the *NOI* suggests unworkable (and unlawful) elements of disaggregation and disintermediation of the cable business, ignoring the realities of how MVPDs negotiate rights from content owners; how they choose content, lineups, marketing, and service look-and-feel in order to deliver customer care and compete as video retailers; and how that structure has fueled competition, innovation, network upgrades, broadband deployment, and consumer choice. This approach is beyond the bounds of Section 629 as well as other provisions of the Communications Act delimiting Commission authority over the provision or content of cable services. It is

constrained by the First and Fifth Amendments, by federal copyright, patent, and trademark law, and by state laws against unfair competition and misappropriation.

A key goal in this process is to develop solutions that will allow consumers to enjoy the benefits of continuous innovation from many creative sources: from MVPD networks, products and services; from manufacturers of retail video devices; from developers; and from Internet and other video sources. There are no easy answers to these complex issues in an area that affects many industries whose services, products and business models are all different, and constantly changing. Developing flexible solutions through industry consultation, specifications, standards, and other private initiatives will be far preferable to static technology mandates ill-suited to such a dynamic marketplace. The Commission's role will be invaluable in bringing the necessary parties together to assure the development of an even more vibrant retail market for video devices.

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COMMENTS OF THE
NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION
ON THE COMMISSION'S NOTICE OF INQUIRY

The National Cable & Telecommunications Association (NCTA)[1] hereby submits its comments in response to the Notice of Inquiry ("*NOI*")[2] in the above-captioned proceedings.

The Commission's purpose in launching the *NOI* was to explore ways to promote investment, competition, innovation, and consumer choice in the video device marketplace, including making it easier for consumers to watch video content from various sources, and encouraging wider broadband use and adoption. The cable industry is committed to the same fundamental goals.

The cable industry was born six decades ago as an innovative challenge to the paradigm of how television programming was financed and delivered. Since then, cable innovators and

[1] NCTA is the principal trade association for the U.S. cable industry, representing cable operators serving more than 90 percent of the nation's cable television households and more than 200 cable program networks. The cable industry is the nation's largest provider of broadband service after investing over $160 billion since 1996 to build two-way interactive networks with fiber optic technology. Cable companies also provide state-of-the-art competitive voice service to more than 22 million customers.

[2] *See* Notice of Inquiry, FCC 10-60, 75 Fed. Reg. 27264 (May 14, 2010) ("*NOI*").

investors have continuously poured creativity and private investment into making it possible for more consumers to access an expanding variety of programming and services using ever more creative technologies. This success story has fueled tremendous growth in the retail television market, in digital equipment and programming, in broadband and the Internet, in voice competition, in content and applications, and in new opportunities for future innovators. That innovation in turn has led others to invest in competing digital distribution platforms – from DBS providers such as DISH Network and DirecTV, telco TV providers such as AT&T and Verizon, to "over the top" video providers riding on personal computers, gaming stations and retail televisions – fueling a virtuous cycle of competition, innovation, and consumer choice.

The cable industry wants this cycle of innovation to continue so that we can offer our customers even more compelling experiences. For that reason we developed the tru2way platform so that consumers can receive cable's one-way and two-way services on a wide variety of devices. As we stated in NCTA's recent letter to the Commission "*Consumers should have the option to purchase video devices at retail that can access their multichannel provider's video services without a set-top box supplied by that provider*."[3] Cable operators want to retain our existing customers and encourage others to become cable customers by giving them the opportunity to access our programming and services from a variety of devices. When our customers can enjoy cable services using a retail DVR, a computer, or a mobile device, the value to them of their cable subscription increases. Thus, when the cable industry says that it is "*committed to providing video content to consumers where and when they want it, on all possible*

[3] *See* Exhibit A attached hereto, Letter from Kyle McSlarrow, President and CEO, National Cable & Telecommunications Association, to Chairman Julius Genachowski, Federal Communications Commission, GN Docket Nos. 90-47, 09-51, 09-137, CS Docket No. 97-80 (Mar. 12, 2010) ("*Consumer Principles*").

consumer devices, and for those devices to be innovative platforms for new applications,"[4] that commitment reflects a natural extension of cable's central organizing principle since its birth. As we describe in Section I, that is the reason that the cable industry committed to its Consumer Principles that provide a foundation for efforts to promote consumer access to video over a wide variety of smart devices. In Section II, we describe the avalanche of new video services and service providers that are already delivering this promise to consumers. It is important that any new regulations complement, rather than undermine, these innovations and the market flexibility that has fostered them. In Section III, we explain why the best way to assure the success of such a cumulative complementary approach would be for the Commission to specify functionalities for AllVid interfaces, and then press the industries to develop the technical standards needed to deliver those functionalities. We conclude with a critique of the alternate approach of mandated technical standards advocated by certain other parties, which would fail to address key technical and market requirements (Section IV) and exceed the Commission's legal authority (Section V).

I. THE CABLE INDUSTRY'S CONSUMER PRINCIPLES FOR A COMPETITIVE AND INNOVATIVE MARKETPLACE SHOULD SERVE AS THE FOUNDATION FOR COMMISSION AND INDUSTRY EFFORTS

Based upon the cable industry's history and philosophy of competition, innovation, and consumer choice, on March 12, 2010, NCTA's President and CEO wrote to Chairman Genachowski to express the cable industry's strong support for the concepts that the Commission is now exploring through this *NOI*.[5] That letter included seven "Consumer Principles" to promote access to a dynamic and wide selection of competitive retail devices that deliver content to consumers where and when they want it. The *NOI* recognizes these Consumer Principles as

[4] Comments of NCTA on Fourth Further Notice of Proposed Rulemaking, CS Docket No. 97-80, PP Docket No. 00-67 (filed June 14, 2010) at 2 ("NCTA FNPRM Comments").

[5] *See Consumer Principles*.

"largely supportive of [the Commission's] objectives,"[6] and we urge the Commission, other multichannel video programming distributors (MVPDs), and the consumer electronics (CE) industry to use them as a foundation for this proceeding. These seven Consumer Principles are:

1. *Consumers should have the option to purchase video devices at retail that can access their multichannel provider's video services without a set-top box supplied by that provider.*
2. *Consumers should also have the option to purchase video devices at retail that can access any multichannel provider's video services through an interface solution offered by that provider.*
3. *Consumers should have the option to access video content from the Internet through their multichannel provider's video devices and retail video devices.*
4. *Consumers should have the option to purchase video devices at retail that can search for video content across multiple content sources, including content from their multichannel provider, the Internet, or other sources.*
5. *Consumers should have the option to easily and securely move video content between and among devices in their homes.*
6. *Consumers should be assured the benefits of continuous innovation and variety in video products, devices and services provided by multichannel providers and at retail.*
7. *To maximize consumer benefits and to ensure competitive neutrality in a highly dynamic marketplace, these principles should be embraced by all video providers, implemented flexibly to accommodate different network architectures and diverse equipment options, and, to the maximum extent possible, serve as the basis for private sector solutions, not government technology mandates.*[7]

If carefully implemented with participation by all MVPDs and other stakeholders, these Consumer Principles can serve as the foundation for the development of an exciting array of navigation device approaches and architectures resulting in increased consumer choices. One approach might deliver content and services directly to retail televisions or digital devices equipped with special functionality needed to enjoy MVPD and other video services without the

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6 *NOI*, ¶ 14.

7 *Consumer Principles* at 1-2.

need of a traditional set-top box. Another might employ modules or gateways that translate MVPD-specific networks to common outputs used in televisions or other digital devices. Retail devices could let consumers "shop" in a video "mall" for content available from a variety of video "stores," and enjoy the retail experience delivered from their MVPD, via the Internet, and/or from other video providers when they enter the "store" for a particular video provider. Home networking techniques could enable consumers to easily and securely move content among their home devices, so that video can be watched in the living room, bedroom, or on a mobile device at the customer's option.

The potential options to achieve this vision are many – set-top boxes, set-back-boxes, tru2way televisions, gateway devices, robust home networks, or delivery from the cloud – and will evolve over time as improvements to technology are made. Our collective efforts should expand consumer video device options in response to dynamic and varying consumer demands, rather than requiring that all devices include all features for all consumers, or restricting devices to only a subset of features identified at a static point in time. A key goal is to develop solutions that will allow consumers to enjoy the benefits of continuous innovation from many creative sources: from MVPD networks, products, and services; from manufacturers of retail video devices; from application developers; from programmers, content owners, and advertisers; and from the Internet and other video sources.

We do not expect this implementation effort to be easy. We do know – as years of inter-industry efforts have demonstrated – that there are no easy answers to these complex issues, particularly in an area that affects several industries whose services, products, and business models quite different, are constantly changing. Well-crafted solutions will need to account for complex issues, such as how (and on what conditions) content providers license programming,

how distributors (like cable) operate as video retailers, how video providers associate security, transactional, advertising, and promotional elements with their video products, how consumer electronics manufacturers and retailers build and support new product categories, whether and when consumers are willing to buy rather than lease, and how to assure that solutions do not inadvertently handicap future innovation.

Given such complex and dynamic issues, developing flexible solutions through industry consultation, specifications, standards and other private initiatives will be far preferable to static technology mandates, which are ill-suited to such a dynamic marketplace. The Commission can play an invaluable role in bringing the parties together and serving as an honest broker.

The best starting point for this collective undertaking is to understand where the market is today, and where it is going.

II. TODAY'S MARKET IS DELIVERING EVER-INCREASING CHOICES FOR CONSUMERS

Congress directed the Commission, in adopting regulations under Section 629, to "take cognizance of the current state of the marketplace and consider the results of private standards setting activities."[8] The current video marketplace is exploding with new options and choices for consumers, with even more choices, functionalities and service providers on the way. It is important that the Commission study these developments so that it can seek to build on ongoing momentum.

A. Consumer Options for Accessing Video Are Already Exploding

While the retail market for MVPD navigation devices has yet to fulfill the Commission's expectations for Section 629, in many ways the broader aspirations of Section 629 have already been met. In 1996, 90% of consumers who purchased multichannel video did so from the

[8] Joint Explanatory Statement of the Committee of Conference, S. Conf. Rep. 104-230, 104th Cong., 2d Sess. at 181 (1996).

incumbent cable company.[9] In each cable system, set-top boxes generally came only in a single flavor from a single provider and did little more than enable channels of video programming to appear on a television. Congress adopted Section 629 "to help ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system."[10] In 2010, no one who wants multichannel video is forced to lease a set-top box from the incumbent cable operator. Nearly forty million consumers – 40% of the multichannel video market – now purchase video service from our satellite and telco competitors. Consumers may also purchase CableCARD-enabled devices at retail or use one of numerous retail over-the-top video services, none of which require a set-top box from the cable operator.

In this highly competitive video marketplace, MVPDs and over-the-top providers engage in equipment differentiation and use complex interactions between networks and access devices to innovate quickly and deliver new features to consumers. Navigation devices power many of the features that video providers now use to distinguish their service, and as a result, set-top boxes have grown from devices that merely extended the tuning range of consumers' televisions into high-definition devices and DVRs, offering on-demand content, interactive program guides, t-commerce, voting, polling and other interactive and cross-platform services.

Each innovation by one provider spurs competitive responses by others in the market. DISH launched its commercial DVR in 1999; DirecTV and cable operators soon followed. Subsequent innovations by one MVPD lead others to match or better their offerings: multiple

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[9] *See Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Second Annual Report, CS Docket No. 95-61, 11 FCC Rcd 2060, 2063, ¶ 5 (1995) ("overall subscribership for all distributors using alternative technologies is just 9% of total multichannel video programming distributor ('MVPD') subscribership, whereas cable systems account for 91% of the total.").

[10] H.R. REP. NO. 104-458, at 181 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 194.

tuners (so that customers can record and watch multiple programs at the same time); high definition (HD) tuners; remote scheduling of DVRs; multi-room DVRs (enabling customers with multiple TVs to watch shows recorded on a single DVR from any television in the house); video-on-demand libraries; StartOver (enabling a customer to go back to the beginning of a program that they tune to midstream, even though they have not recorded it); and Caller ID on TV. This competitive need to make cable service and set-top boxes more useful to our customers is among the reasons that our Consumer Principles state that "*Consumers should have the option to access video content from the Internet through their multichannel provider's video devices and retail video devices*." Many cable operators have already employed widgets linking consumers to Internet content.

Competition spurred by set-top box innovation triggers improvements in video and other services as well. Verizon devoted an entire fiber wavelength to its linear video offering and transitioned to all-digital. AT&T launched its all-digital U-verse service with all channels switched to maximize its bandwidth for HD and other services. Cable operators responded with switched digital video ("SDV") and Digital Terminal Adapters to repurpose analog spectrum and add more channels, more High Definition, faster broadband, and more innovative services. The cable industry's launch of next-generation DOCSIS 3.0 broadband speeds, cable company entry into the telephone market, telco entry in the video market, and popular bundles of video, broadband and voice services are all evidence of vibrant competition in the communications and video markets.

As a result, video services and operator-provided navigation devices are anything but static and non-competitive like the black rotary phones and AT&T monopoly telephone service to which some have tried to compare them. And whereas in the past most cable systems could

only use devices from a single vendor, cable operators now purchase set-top boxes from a growing number of consumer electronics manufacturers, including Pace, Motorola, Cisco, Evolution Broadband, Samsung, Panasonic, ARRIS, and TiVo. This diversity and wholesale competition for cable operator business drives even more rapid development of new and better features and lower prices that flow through to consumers. Many consumers can choose between four or more MVPDs, each of which offers multiple varieties of set-top boxes. And of course cable operators and Verizon support the use of retail UDCPs such as TiVo and Moxi DVRs and CableCARD-enabled OCUR adapters for access on personal computers.

For consumers seeking more choice, a variety of IP-based, over-the-top, and other new platforms offer access to multiple sources of video programming without the need for any cable set-top box, from Apple, Boxee, Blu-ray, and DivX all the way through the alphabet to PlayStation, Roku, TiVo, Vudu, and Xbox. Other platforms are being embedded directly in DTVs.[11] They link to video libraries such as Netflix, Amazon, HBO, ESPN, out-of-area Major League Baseball, MSNBC, The Weather Channel, and other video content. Microsoft, Sony, and Nintendo have already sold more than 61 million game consoles that can be used to watch Internet-delivered video.[12] Sony's PlayStation 3 platform has on-demand access to 2,400 movies and 15,000 TV episodes, and its users download over 25 petabytes of video programming

[11] *See* Yukari Iwatani Kane, *Beyond Gaming: Watching TV on Your Xbox*, WALL ST. J. (Nov. 12, 2009), available at http://online.wsj.com/article/SB10001424052748704328104574516240890098438.html (reporting – 5.3 million networked TVs, Blu-ray players and set-top boxes sold in U.S. that can receive video, in addition to game consoles).

[12] *See* Nat Worden, Game Consoles to Challenge Pay TV, WALL ST. J. (May 26, 2010) (reporting combined sales of 61 million video-enabled game consoles in the United States by Sony, Microsoft and Nintendo, and stating that each "have struck a series of distribution deals recently with leading media providers, including cable networks, major film studios, Netflix Inc. and Major League Baseball. The agreements position the console makers to challenge pay-TV service providers like cable and satellite companies."), available at http://online.wsj.com/article/SB20001424052748704026204575266503977640906.html#printMode.

annually.[13] More than one-third of Xbox owners use their game consoles to watch video on at least a monthly basis.[14] Major networks and other content owners have placed top-tier content on-line on an authenticated basis, and niche and other content is also being made available on-line. Consumers watch video using Hulu, Apple iTunes, YouTube, other Internet-based sources, and it is now easy for consumers to connect all of this content from a PC to their digital television in just minutes using cables readily available at Best Buy and elsewhere.[15] Alternatively, over fifty Internet-enabled TV models from Samsung, Sony, Panasonic, Vizio, and other top manufacturers are on sale now, equipped with Ethernet ports that can plug into a home network or a networked PC.[16] Best Buy and Wal-Mart have entered the video distribution market with their own services under the CinemaNow and Vudu brands. Video is streaming to wireless handsets, iPads and iPods, as well as TiVos, Rokus, and Apple TV boxes.

This is not a portrait of market failure. Competitive investment and innovation have flourished in the IP, web, and video markets, without one-size-fits-all technology mandates or regulatory restrictions. Innovators have responded to marketplace forces, built businesses and consortia, and responded to actual consumer demand. These new IP devices and services are part of the cycle of intermodal competition and innovation within which MVPDs must operate, compete, and innovate.

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[13] *Id*.; *also* John Koller, Director, Marketing, Playstation Platforms, Sony Computer Entertainment America on December 15, 2009 at Digital Living Room Conference, Santa Clara, CA.

[14] "Google TV – Searching for Success," Kurt Scherf, Parks Associates, June 2010, p. 1.

[15] *See NOI*, Statement of Commissioner Robert M. McDowell, at 25 (stating that, during visit to a local electronics store, "I found options ranging from the latest flat-screen TVs preloaded with specific web-based offerings to simpler devices that can move content from the open Internet straight to the TV screen via 'high definition multimedia interface' ('HDMI') cables or through simple wireless technologies.").

[16] *See* Yukari Iwantani Kane, *Beyond Gaming: Watching TV on Your Xbox*, WALL ST.J. (Nov. 12, 2009), available at http://online.wsj.com/article/SB10001424052748704328104574516240890098438.html ("Research firm iSuppli Corp. estimates there are over 50 Internet-enabled TV models from the top five manufacturers on sale now, more than double the number last year.").

These options, along with many more to come, give consumers access to a wide and growing array of retail devices to watch video programming. But as our Consumer Principles demonstrate, we believe that the choices for consumers tomorrow can be even better.

B. Many Additional New Options for Consumers are on the Cusp of Emerging

As consumer demands have changed, even more innovative approaches have developed for meeting them. Until relatively recently, most approaches still relied on a specific "box" in one form or another connected to a specific display. But as consumer demand grows for access anywhere, anytime, on any device, the market is responding with more and more innovative ways of delivering service. Through its *NOI*, the Commission is striving to make it easier for consumers to watch video content from various sources, and encouraging wider broadband use. As described below, many initiatives already underway are working to fulfill the objectives of the *NOI* and our Consumer Principles.

1. Network and Cloud Delivery

The *NOI* suggests one possible approach for routing content throughout a subscriber's home network for enjoyment on other networked devices.[17] Our fifth Consumer Principle endorses that objective. It provides that "*Consumers should have the option to easily and securely move video content between and among devices in their homes*." When consumers wanted the option to record a program downstairs and watch the rest of the show upstairs, MVPDs responded with multi-room DVRs. Cable and other distributors are already working on means for distributing services through a wide variety of home networking approaches connecting far more devices:

[17] *See NOI*, ¶ 22.

TV Everywhere. MVPDs and programmers are exploring and deploying the "TV Everywhere" concept that enables subscribers to receive their MVPD programming from the cloud on a variety of devices in addition to the television, including personal computers and IP connected devices. Comcast's Fancast Xfinity TV service already offers full-length programming from nearly 30 content providers, including major cable channels like HBO, Starz and Cinemax.

Personal Computer Connections. The cable industry has also worked cooperatively with Microsoft to enable consumers to access cable content on personal computers using CableCARD-enabled OCUR adapters. Microsoft's keynote at CES 2010 featured a new CableCARD device delivering four simultaneous streams of live HD cable content to a Windows 7 Media Center PC.[18] The cable industry has also enabled retail devices to move cable content in IP through home networks using DTCP-IP.[19]

Residential Gateways. Cable is exploring delivery of services via residential gateways that feed video content to home networks, personal computers, routers, game consoles, Blu-ray players, televisions and other networked devices.[20]

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[18] *See Reflections on CES 2010*, MICROSOFT "CLUBHOUSE" BLOG (Jan. 18, 2010), http://clubhouse.microsoft.com/Public/Post/654c71d4-44ff-4024-9bef-fcf235c9a537 ("The ability to watch and record four streams of HD programming (using the forthcoming Ceton CableCARD tuner) received an enthusiastic round of applause from the audience."); *see also* Ceton Corp., Multi-Stream Tuner Cards, http://www.cetoncorp.com/products.php (describing the Ceton InfiniTV 4, "the world's first multi-tuner PC card for watching digital cable TV on the PC, including support for premium cable channels").

[19] Letter of Seth Greenstein, Counsel for DTLA, and Paul Glist, Counsel for CableLabs, to Marlene Dortch, CS Docket No. 97-80 (Aug. 22, 2007), summarizing approval of DTCP-IP for protection of audiovisual content in unidirectional and bidirectional digital cable products.

[20] *See* Jeff Baumgartner, *Cable's Got Ideas for a Universal Retail Box*, CABLE DIGITAL NEWS (Dec. 11, 2009), available at http://www.lightreading.com/document.asp?doc_id=185738&site=cdn.

2. Inter-Industry Efforts to Facilitate Home Networking

Cable and other distributors are not limiting themselves to solutions that work only within their own "ecosystems." They are already working on means for distributing services through a wide variety of home networking approaches connecting far more devices.

DLNA Networking. Multi-industry agreement has already been reached in the Digital Living Network Alliance (DLNA), among cable, satellite, telephone, information technology and consumer electronics companies to allow recorded MVPD content to be shared within home networks.[21] A key feature of DLNA is that its Guidelines incorporate multiple protection technologies, content formats, and output interfaces, rather than defining a single solution, so that manufacturers and consumers have more flexibility to choose the solutions that are right for them. Flexible solutions can more easily be embraced by MVPDs, manufacturers, and consumers, without sacrificing benefits of differing and competing network architectures and device capabilities.

DECE. Another initiative is the Digital Entertainment Content Ecosystem (DECE). DECE takes its inspiration from the "buy once, play anywhere" model used for DVDs. With DVDs, consumers can buy a "hard" DVD from a wide variety of retailers and play it in any number of compatible players, without having to worry about whether the seller is affiliated with the player. (This compatibility is handled out of sight from the consumer through licensing and security arrangements.) DECE is striving to create an equivalent model for "soft" copies, in which consumers may buy software versions of content from many retail sources (including the Internet, brick and mortar retailers, wireless, and cable) and have it ready for play in a personal library. When the consumer wants to play the content, it can be made available over multiple

[21] We discuss below DLNA's continuing work to share live television and to enable remote user interface options.

distribution platforms (cable, Internet, telephone, etc.) to devices using different digital rights management (DRM) technologies that the parties have endorsed as secure.[22] Under this approach, networks and devices may speak many different languages of DRM, and offer many different screen formats and resolution. A DECE approach could permit content to be networked with even more agility over multiple networks to more devices.

MoCA. Yet another private sector initiative is the Multimedia over Coax Alliance (MoCA), which includes consumer electronics manufacturers, cable, telephone, and satellite distributors, and retailers. MoCA develops specifications for the transport of digital entertainment and information content over in-home coaxial cable, which turns the in-home coaxial cable into a home networking architecture that may be shared by service providers, gaming platforms, and other connected devices.

C. The Market Is Experimenting with Different Kinds of Search Capabilities

The *NOI* takes networking a step further, specifically envisioning a home in which "search functionality" in a retail device is enabled across a variety of video sources.[23] We share that vision. As we said in our Consumer Principles: "*Consumers should have the option to purchase video devices at retail that can search for video content across multiple content sources, including content from their multichannel provider, the Internet, or other sources*."

Part of this vision is drawn from consumer experiences with Internet search portals, which offer some instructive lessons. Consumers surfing the Internet have grown accustomed to the many different approaches being followed for search. Certainly, search engines have a commercial interest in accessing all information from all websites, but each website exposes only

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[22] *See* Digital Entertainment Content Ecosystem, Press Release, *DECE Announces Key Milestones* (Jan. 4, 2010), http://decellc.com/PDF/CES_2010_Press_Release.pdf (approving five DRMs solutions).

[23] *NOI*, ¶ 2.

the information that it chooses to expose. The government does not compel sources on the Internet to present their content to commercial search engines. Each retailer chooses how much information is available for search and navigation. The Wall Street Journal has long required a subscription for access and full search. The New York Times allowed unrestricted search, but is now adjusting to restrict unlimited searches. Retailers may display in general search results the sales price for goods being offered, or they may not expose the price until a consumer has placed an item into a shopping basket on the retailer's site (as opposed to an aggregator or search site). When Facebook launched within its own domain and did not accept Google crawlers or search some criticized it for being insufficiently "open," yet it has come to serve over 400 million enthusiastic users and has driven Google to launch a competing social network. Twitter also launched without giving itself over to Google or Microsoft search, and changed its practice only for compensation.[24] On the web, there is no one-size-fits-all search solution. What is open to search varies by source and reflects dynamic arrangements. Few believe that the economics are yet fully developed.

When the cable operators and consumer electronics manufacturers sought to address "search" capabilities in the tru2way MOU, they came to an agreement reflecting a shared sense of balance and choice. Retail tru2way devices could of course adopt the cable user-interface, and search all cable content. But tru2way devices could also be multi-function, multi-sourced devices, delivering Internet content, creating and managing home networks, and including gaming, widgets, or other features and functions. A top-level navigator (for example, Sony's cross-bar navigator, the TiVo interface, or a Microsoft Media Center interface) could guide the consumer to cable services, Internet service, local services, or any other choices. When selected

[24] Google and Microsoft are reported to have paid $25 million for rights to incorporate the Twitter feed into their respective search engines.

from the navigation bar, cable service would be presented to the customer as its own retail store, just as it is presented to other customers of that service.

The device could also have its own guide for linear programming (as does TiVo), and the cable operators agreed to help populate such an alternative CE guide with guide data for linear channels, so that consumers may have a choice of user interfaces within the same device. Parallel arrangements with Microsoft for PC searches follow a similar model, in which the Windows Media Center top-level navigator can direct a customer to cable as one of many offerings. TV Everywhere models offer MVPD programming from the "cloud" and present the MVPD's own searchable retail presence on Internet-enabled devices such as PCs.

Today, experiments in video search are continuing. TiVo is experimenting by appearing as a software interface on certain Comcast and satellite set-top boxes. On its own hardware, TiVo enables "meta" search for content across multiple content sites such as Netflix, Blockbuster, and Amazon. TiVo has individual marketplace-driven business agreements with each site, but subscribers must enter the individual sites (as consumers must enter individual retail stores) in order to purchase and receive the content.[25] Roku chooses not to enable cross-store search: each store is entered and searched separately, and the consumer decides which is better. Netflix is also experimenting in appearing as a retail site on Blu-ray, TiVo, and other retail devices. Likewise, in the tru2way MOU, a cable operator's current VOD library is

[25] *See* NCTA Comments on National Broadband Plan Public Notice #27 (Dec. 22, 2009) ("TiVo currently offers VOD from Netflix, Amazon, and Blockbuster, but the consumer entering TiVo's Netflix-branded service will enter the Netflix library courtesy of a direct Netflix account that the consumer manages (and pays for) via his or her PC. At the highest level of navigation, the user is presented with a user interface dictated by TiVo, but once the user enters the Netflix content area, for example, the Netflix user interface guidelines are implemented to govern access to the 'walled' Netflix VOD library, which is separated from TiVo's and other VOD libraries. (citing *See* Netflix Developers page at http://developer.netflix.com/page. ('Why all the Rules? We want to ensure a great customer experience. We want things to work. …'). Similarly, Amazon and Blockbuster make their offerings available, but do not turn their underlying catalogues into an aggregated TiVo VOD library, and TiVo does not provide the equivalent of PC web-browser access. TiVo only accesses and presents the content as determined by the relationship between it and the content companies with which it has relationships.").

displayed through that cable operator's VOD user interface, rather than being dismantled and combined with other VOD libraries.

It is clear that in all of these models, there is no one "right" solution to search. The approaches may vary with content and platform and change with time and experience. Cable operators are actively developing new ways to access cable content and to enable ways to search and enjoy cable programming on multiple devices. Last week, for example, Suddenlink announced an agreement to use TiVo DVRs in selected Suddenlink markets, enabling consumers to access both Suddenlink programming and selected Internet sites (like YouTube, Pandora, Rhapsody, and Fandango) through a co-branded user interface.[26] Within Chairman Genachowski's vision of a retail mall in which many different video providers can operate as retail stores, there is ample room for experimentation and creative business-to-business arrangements around search. But regardless of the precise solution, the cable industry is committed to continuing to explore ways of making it easier for consumers to find and use the content they want.

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The market is clearly already responding to consumer demand for more access to programming, and it is doing so in multiple creative ways that are embraced by multiple MVPDs and other video providers. Some approaches may rely on a physical device, as envisioned by the *NOI*. Some may rely on delivery from the cloud or from even more extensive DECE virtual networks. Some may blend Internet with television in the same service, enabling consumers to watch commercial MVPD video and access services such as Facebook, Twitter, and Internet

[26] As Suddenlink CEO Jerry Kent stated: "We believe this is a great example of how the cable industry can work with retail device manufacturers on innovative solutions that benefit consumers." Suddenlink and TiVo also intend to collaborate on the development of a next generation "whole home" solution for deployment by Suddenlink in 2011. http://www.marketwatch.com/story/suddenlink-tivo-announce-strategic-distribution-agreement-2010-07-08?reflink=MW_news_stmp.

video. Some may blend Internet content with television over physical or virtual home networks, as with Cablevision's new PC to TV Relay, which creates a private channel between a consumer's PC through the headend and back to the consumer's television. The "right" approach will vary with network architecture, business experimentation, technology, and evolving consumer demand.

In considering a framework for AllVid interfaces, as we discuss below in Section III, it is therefore essential that the Commission consider how to try to complement, rather than override, the ongoing market developments that we have described and that continue to emerge.

III. A FUNCTIONAL FRAMEWORK FOR ALLVID INTERFACES

Both the *NOI* and the Consumer Principles share a common vision of promoting investment, competition, innovation, and consumer choice in the video device marketplace. In providing a framework for achieving that vision, the Commission needs to permit the flexibility to test and use diverse solutions that can adapt to rapid changes in technology and consumer demand. As we emphasized in our sixth Consumer Principle, "*Consumers should be assured the benefits of continuous innovation and variety in video products, devices and services provided by multichannel providers and at retail*." The freedom to innovate, and the flexibility to explore multiple approaches for meeting consumers' needs, represents the best way to achieve the *NOI's* fundamental vision.

By contrast, limiting service providers to any single approach, as suggested by the *NOI*, would only frustrate innovation, competition, and consumer choice. Moreover, the standardized technology-specific approach described in the *NOI* does not address or provide for the technical or licensing characteristics and complexities of modern interactive MVPD services.

A. AllVid Interfaces Can Enable Greater Consumer Accessibility and Choice

A key challenge in bringing today's MVPD services to new devices is the complexity of the digital experience that MVPDs are offering. But there are promising developments in video interfaces that may hold the key to achieving the *NOI's* vision of expanding the availability of MVPD video to an expanding array of devices.

1. MVPD Services Involve Sophisticated Interactions that Are Integrated into a User Interface

Delivery of MVPD services involves sophisticated interplay between network, hardware, and software in order to present services on a television or other display device. A cable headend is engaging servers, edge devices, channel maps, authentication and entitlement systems, and billing systems. At the same time, the headend is interacting with set-top boxes, which themselves are equipped with specific resources and programmed to respond to particular network signals and instructions. And that is just to present traditional television programming. Many services require interactive signaling between the client device and the network. For cable operators, such signaling is needed for video-on-demand and advanced on-demand services,[27] interactive program guides, SDV, news tickers, interactive video enhancements, interactive advertising (such as free coupons by clicking your remote control), and cross-platform interactive services like Caller ID on TV and remote DVR programming. Securely delivering first-run movies in early release windows will also require interactive signaling between the client device and the network. Cable operators integrate these sophisticated interactive elements

[27] For example, Start Over™ is a digital cable feature that allows customers to tune into a show midway, then by pushing a button on their remote control, re-start the show from the beginning without using a digital video recorder. Look Back™ is a time-shifting service where viewers can tune into prior episodes or watch certain shows later on that they missed, just the way a digital video recorder does, but without a DVR. Quick Clips is a digital cable feature that allows customers to easily access short-form video content, including content produced for the Internet, on their televisions. Quick Clips initially launched on CNBC, CNN and The Weather Channel. Viewers are alerted to this feature by an onscreen prompt notifying them that enhanced television features are available on the currently-viewed channel. By pressing "Select" on the remote, the viewer can to jump to the desired Quick Clip.

in an end-to end system in order to provide an enriched experience to their customers and to optimize and simplify maintenance, updates, and support. The services keep changing, and the complexity continues increasing, in order to meet consumer demand. Analog broadcasting and video streaming are far simpler by comparison.

The sophisticated interaction and data flows required to offer these advanced services do not magically "work" on the display device. Rather such functionality entails significant software and other development work. The same is true in other comparable networks. For example, in the mobile devices space, application developers must write separate applications to each mobile platform. Apple iPhone apps do not run except on the proprietary Apple platform, and the app developer must rewrite the app to run on Android, Qualcomm's BREW, and *each* screen size of BlackBerry.[28] The same is true in video. Each CE device may share some common features, such as a Linux operating system, but CE manufacturers do not build a common application platform. Netflix has open APIs and appears on multiple retail devices, but "open APIs" do not write Netflix "data" to retail platforms. Because CE manufacturers have not built to any standard, Netflix has to custom build and support many different versions of their client software for every different device, and each client must be individually coded, tested, improved, and maintained.[29] As of May 2010, the Netflix client was available on 12 different TV platforms, including the top three game consoles, TVs and Blu-ray players from Vizio, Insignia, LG, Panasonic, and Sony, as well as TiVo DVRs. Likewise, the Xbox 360 and Sony's PS3 each have their own unique development environment, interface, streaming platform and

[28] All carriers want to provide applications, but each has learned the lesson that an unmanaged application platform does not give developers the confidence in a stable, functioning platform on which they can rely. As a result, wireless carriers use active platform management, rules, software development kits (SDKs), handset certification, application testing, and subscription-handset bundles.

[29] *See* Colin Dixon, *All Netflix Clients Are Not Created Equal*, TDG OPINIONS (May 11, 2010), http://tdgresearch.com/blogs/tdg-opinions/archive/2010/05/11/all-netflix-clients-are-not-created-equal.aspx.

encryption technology. Each manufacturer also seeks to differentiate itself with its own proprietary portals and app stores

MVPDs use complex and different architectures to weave these elements together and present them for consumer use and interaction through the MVPD's user interface. As we stated in announcing the Consumer Principles, we believe that "Consumers should have the option to purchase video devices at retail that can access their multichannel provider's video services without a set-top box supplied by that provider;" that "Consumers should have the option to purchase video devices at retail that can search for video content;" and that "well-crafted solutions must account for . . . how all video providers associate security, transactional, advertising, and promotional elements with their video products…"[30] What is needed are technical solutions to present these services for the retail experience that preserve these sophisticated interactive features. As we discuss in more detail in Section IV below, the AllVid proposal in the *NOI* focuses only on the lowest physical and network levels of the process and pays insufficient attention to these critical end-to-end, interactive application and integration aspects of MVPD services.

2. AllVid Interfaces Must Enable Networked Devices to Receive a Provider's User Interface for Interactive Services

Today, there are three basic approaches for bringing a provider's user interface for interactive services to a broader set of devices.

The first approach creates the entire user interface at a source and bit maps the graphics to downstream devices. One example is RVU,[31] which uses the "first" set-top box in the home

30 *Consumer Principles* at 1-2.

31 The RVU Alliance is a consortium of content service provider, semiconductor and consumer electronic companies gathered to advance the use of Remote User Interface (RUI) technology for home networked television entertainment.

to generate the user interface and then transmits the bit maps to downstream devices in the home. RVU relies fairly heavily on the set-top box in the home, and is fairly bandwidth intensive. This approach may work well in a DBS-type distribution system which has some limitations in the one-way network architecture, but it is ill-suited to cable's more interactive architecture.

In the second approach, a server simply sends instructions to the downstream device on how to render the graphics, instead of sending actual bitmap images. The client device, of course, needs to have sufficient graphics rendering capabilities, and needs to understand (and follow) the instructions. CEA-2014-A and HTML5 are examples of this approach and could be appropriate for so-called "cloud" based content distribution networks.[32]

The third approach is to provide a common application platform inside the client device and run applications and generate graphics on each retail device. One example is tru2way. When this standardized Java-based "middleware" layer is installed in client devices, it acts as a universal translator between retail devices and networks, so that interactive applications written to tru2way are understood and can run on any operating system that interfaces with a tru2way network. The same approach is followed in Windows, iPhone, and Android.

Each approach involves different tradeoffs of network capability and device capability. But one way or another, competing MVPDs will be bringing their services to diverse retail devices. Various MVPDs have already announced their intention to create iPad apps,[33] and

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[32] CEA-2014-A is a standard that defines a protocol for a user interface to be remotely displayed on and controlled by devices or control points other than source hosting the interface, based on UPnP networks and UPnP devices in the home. HTML5 is a new standard for structuring and presenting content on the World Wide Web which incorporates video playback features.

[33] *See* Marisa Guthrie, *Cable Show 2010: Content Ubiquity: Threat, Opportunity and Reality*, MULTICHANNEL NEWS (May 12, 2010) (describing Comcast's CEO Brian Roberts demonstration of the use of an Apple iPad to view content and interact with and control a home television remotely), http://www.multichannel.com/article/452582-Cable_Show_2010_Content_Ubiquity_Threat_Opportunity_and_Reality.php.

competitive pressures will force the resolution of the many security and other issues that remain to be resolved.

One forum in which such home networking discussions are occurring on an inter-industry basis is DLNA.[34] DLNA Guidelines specify how recorded commercial video programming content can be shared within home networks using approved outputs and content protection technologies.[35] DLNA is now moving forward to address live video content and remote user interface issues.[36]

In order for a framework for AllVid to become real, it will be necessary to point all MVPDs, all consumer electronics companies, and all of the myriad related parties to an interactive interface capability that can deliver the MVPD user experience. All parties should be pointed towards some AllVid Interface (AVI), but, as discussed further below, the exact technology and features for an AVI should be able to vary by platform, technology, and retail device, and no one size will fit all. We turn next to suggestions on how the Commission can best provide that framework.

B. Service Providers Must Be Able to Respond to Changing Consumer Demand

No one can be certain about the future course of technology or consumer demand, except that it will outrun our predictions. As we said in offering our Consumer Principles, "*None of us*

[34] The Digital Living Network Alliance (DLNA) promotes home networking specifications through agreements among consumer electronics, computer and mobile device manufacturers, component and software developers, content providers, cable, telephone and satellite distributors, and retailers.

[35] *See* DNLA, Press Release, *DLNA Enables Premium Commercial Content Across Home Networks; Alliance Joins with Service Providers to Develop Standards to Enjoy Commercial Video and Music on DLNA Devices* (Jan. 7, 2010), http://www.dlna.org/news/pr/view?item_key=e2c163bfab8076edc2b33eba8293e82cd2f11e3e; *see also* Mike Robuck, *Gateways a Keystone for Future Cable Operator Architectures*, CED MAGAZINE (Jan. 1, 2010), http://www.cedmagazine.com/Article-Gateways-Cable-Operator-Architectures-010110.aspx; Jeff Baumgartner, *Will Intel Go Inside Cable Multimedia Gateways?*, LIGHT READING'S CABLE DIGITAL NEWS (Sept. 25, 2009), available at http://www.lightreading.com/document.asp?doc_id=182289&site=cdn.

[36] This work is also directed at meeting the difficult challenges of handling live content in the home network, which requires consideration of the "television" experience such as Emergency Alert System (EAS), parental controls, closed captioning, and interactive features. To date, the obligation for a client device to recognize and convey EAS signaling has usually been defined by FCC rule or by license obligation on the client device.

can predict with any certainty which is the better or more likely path and it is quite possible that multiple paths will emerge."

There are basic economic forces in play that must be allowed to work. Consumers should have the right not to buy a solution devised by the government, and competitors should have the right to shape and reshape their offerings to meet evolving consumer demand and competition. UDCPs worked only with one-way services, were not offered at low cost, required up-front payments, and required the consumer to assume the risk of obsolescence in a rapidly changing technology market.[37] Not surprisingly, most consumers chose to lease devices that offered more services and the ability to swap boxes when the next model was released, with more memory, more processing power, more features and newer ports. If under all of these circumstances, consumers made the choice not to buy UDCPs, that is not market failure – it is the operation of the market in response to actual consumer demand. And that demand will continue to change beyond anyone's ability to predict or control.

To be sure, in hindsight we can learn lessons, and recognize (as does the *NOI*) that CableCARD-equipped UDCPs suffered because the Commission did not apply its rules to DBS providers, AT&T, or others, and thus UDCPs worked only with cable. That mistake should certainly not be repeated. As we said in our Consumer Principles: *Consumers should also have the option to purchase video devices at retail that can access any multichannel provider's video services through an interface solution offered by that provider*.

But to try to predict and prescribe the exact technology that will meet the vision of the *NOI* runs the significant risk of frustrating, rather than facilitating, consumer choice. Prior

[37] *Consumer Reports* recommended that consumers lease rather than buy DVRs for exactly this reason, advising that "a DVR from a cable or satellite provider is the best way to go – it's convenient and you need not worry about investing in obsolescent equipment." *Digital Recorders: Lease a Model in this Time of Transition*, CONSUMER REPORTS (Nov. 2006) at 35.

efforts at prediction prove the point. As part of the 2003 "Plug and Play" agreement, the Commission mandated the inclusion of a costly 1394 output in HD devices that almost no one uses.[38] The integration ban has cost consumers approximately a billion dollars and counting, in the name of supporting 520,000 retail devices.[39] The integration ban stands today as a barrier to low-cost HD DTAs, and probably to the manufacture of the AllVid Adapter as imagined in the *NOI*.[40] In 1998, the Commission predicted that it was unnecessary to include DBS set-top devices in its Section 629 rules because DBS equipment was already available at retail. In the intervening years, however, DBS has moved almost entirely away from retail to a lease model – leaving a gaping hole in the Commission's outdated reasoning and regulatory framework.

These were the predictions that the Commission made in this area at a time when the video market was simpler than it is today. And the regulations based upon these past predictions were far more modest than the imposition of a single "right" technology mandate for all home video services and devices for all MVPDs. Even trying to solve for discrete offerings runs headlong into the unpredictability of consumer demand. The Commission would be running a high risk of immediate obsolescence by picking a particular technical solution that is rapidly overtaken by changes in marketplace demand and by innovation – or worse, that impedes innovation and the ability of the marketplace to respond to consumer desires. DVRs have loyal fans, but may be eclipsed by on-demand, network- or cloud-based remote-storage (RS) DVRs, or streaming. The truth is that no one knows.

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[38] *See* NCTA FNPRM Comments at 27-29; *see also* Leslie Ellis, *FireWire: A $400 Million Black Hole*, Multichannel News blog, available at http:///www.multichannel.com/blog/Translation_Please/31241-FireWire_A_400_Million_Black_Hole.php

[39] *See* NCTA FNPRM Comments at 47-53.

[40] *See NOI*, ¶ 16 (proposing that AllVid devices "would perform the conditional access functions as well as tuning, reception, and upstream communication ….). The integration ban seems to prohibit cable operators from offering the precise devices that the Commission contemplates in the *NOI*. The ending of the integration ban would enable cable operators to test through experience the types of devices that the Commission is considering in this proceeding, which could provide valuable real-world information to the Commission.

NCTA is not saying that the Commission should not try to anticipate future developments, but in doing so it must learn from the past. General predictions that consumers will demand new means of accessing video content likely are accurate. Predictions of which technologies will be best able to meet that demand likely are not. And technology mandates based upon inaccurate predictions would likely hinder, rather than advance, the revolution in delivering next-generation video programming and broadband to American consumers.

C. The Commission Should Promote AllVid Interfaces, but Not Specify Technology

The Commission can play a constructive role by working with stakeholders to develop voluntary, market-driven solutions that generally let consumers, rather than government-imposed technology mandates, drive innovation. The Commission should point towards solutions requiring involvement by all MVPDs in making services available on AllVid Interfaces (AVIs) that allow consumers with retail devices to receive not just services that are broadcast downstream but also services that rely on interactions between the consumer, the device, and an MVPD's network.

The Commission should not seek to capture and mandate one particular implementation. It should instead take a simpler approach. For example, it could require each MVPD to make available a device or service that presents the MVPD's services through one or more AVIs available on devices not owned by the MVPD. An AVI may be defined as one or more user interfaces that permit the delivery of video services provided by the MVPD including video services and associated security, transactional, advertising and promotional elements that rely on interactions between the device and the network and interactions between the consumer and the service. Any such order would drive all parties to work with all stakeholders and in private sector industry and standards organizations in order to achieve one or more practical solutions.

Such an approach will engage the creative energies of all stakeholders and avoid the risk that technology mandates will stifle innovation and delay the introduction of new consumer services.

Cable, satellite, telephone, and CE participants are working on this very issue in DLNA: methods of networking MVPD services to include interactivity, transactions, and advertising, as they are designed to be presented. Flexibility and diversity is the premise in DLNA's current efforts, where multiple, rather than exclusive, solutions are embraced. The solutions agreed upon must allow for the reality of network differentiation and a variety of approaches.

Allowing for multiple, rather than exclusive, solutions is the approach successfully used by the Commission in dealing with dynamic technology environments. The Commission imposes "must carry" rules, but explicitly leaves carriage technology to the operator "to the extent technically feasible in accordance with good engineering practice."[41] The Commission, and then Congress, preempted state and local efforts to re-design set-top boxes in order to free innovation from regulatory constraints.[42] In the "plug and play" rules, the Commission endorsed the use of any "commercially adopted access control method" for home domains without constraining the market's ability to chose which access control method would become commercially accepted.[43] The same flexibility applies in other dynamic technology fields. In adopting rules for wireless PCS, the Commission repeatedly adopted a "flexible approach to

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41 47 C.F.R. § 76.62

42 *See City of New York v. FCC*, 486 U.S. 57, 65 (1988) (quoting with approval Commission findings that "[t]echnical standards that vary from community to community create potentially serious negative consequences for cable system operators and cable consumers in terms of the cost of service and the ability of the industry to respond to technological changes"); 47 U.S.C. § 544(e) ("No State or franchising authority may prohibit, condition, or restrict a cable system's use of any type of subscriber equipment or any transmission technology."); *Implementation of Cable Act Reform Provisions of the Telecommunications Act of 1996*, Report and Order, CS Docket No. 96-85, 14 FCC Rcd 5296, 5350-51, ¶ 126 (1999) (quoting H.R. REP. NO. 104-204, pt. 1, at 110 (1995)) ("The Committee intends by this subsection to avoid the affects of disjointed local regulation. The Committee finds that the patchwork of regulations that would result from a locality-by-locality approach is particularly inappropriate in today's intensely dynamic technological environment.").

43 47 C.F.R. § 76.1908.

encourage the widest range of PCS services and devices," sought to "provide the maximum flexibility in technical standards so as to allow the new service to develop in the most rapid, economically feasible, diverse manner," and turned to "industry and standards groups" to handle the details of roaming and interoperability "in the most efficient and least costly manner."[44] The Commission does not prescribe MPEG-2 or MPEG-4 for satellite, or tell web designers to use Flash, Silverlight or HTML5.

D. The Commission Should Not Preclude Diverse Approaches by Mandating "Common Reliance" on any AllVid Device or Standard

It is essential that the Commission not impose artificial constraints on the development of a variety of approaches and devices in the name of "common reliance." The *NOI* recognizes that common reliance on CableCARDs did not lead to the manufacture or consumer adoption of retail CableCARD devices. Instead it only saddled consumers with enormous and unnecessary costs. That is not a model for future policy.

An MVPD may well create a sophisticated and innovative offering that combines the capabilities of a new device with the resources available from the retail device and the home network. That development is occurring today, as MVPDs work to make cell phones, iPads, and other consumer electronics into companion devices that program DVRs remotely, add more options to navigation, or receive programming over a home network. Similar developments can of course occur as MVPDs develop AVIs. But MVPDs also need the flexibility to offer a variety of options to consumers in order to assure that devices that support all of their services are actually available to consumers at attractive prices. Congress expressly recognized that consumers benefit from this flexibility when it barred the Commission from adopting regulations

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

that would prohibit MVPDs from offering their own navigation devices.[45] Any requirement to use an AllVid adapter *and* a separate set-top box for all customers would likely be a more expensive solution than integrated, low-cost set-top boxes for consumers who just want a familiar connection to their television and do not want to connect any additional devices. The Commission should not saddle every MVPD consumer with the cost of AVI-equipped devices that many consumers may neither want nor need.

In addition, while MVPDs would have an incentive to design services that are compatible with retail devices so that their services would be accessible to the widest possible audience, a rigid prohibition on devices that are not compatible with an AllVid adapter would likely preclude new innovations that we cannot imagine today that might not be supported by other devices available at retail. Such a barrier to innovation would contravene Congress's instruction to the Commission to "avoid actions which could have the effect of freezing or chilling the development of new technologies and services."[46] As we said in offering the Consumer

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[45] 47 U.S.C. § 549(a) ("Such regulations shall not prohibit any multichannel video programming distributor from also offering converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, to consumers, if the system operator's charges to consumers for such devices and equipment are separately stated and not subsidized by charges for any such service.").

[46] H.R. REP. NO. 104-458, at 181 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 194. Congress also narrowed the Commission's prior technical authority to the minimum, leaving all features, functions, protocols, and other product and service options for selection through open competition in the market. In 1992 Congress sought to address incompatibilities between premium functions and features of television receivers and video cassette recorders ("VCRs") and cable scrambling, encoding, and encryption technologies, by directing the Commission to report on "means of assuring compatibility between televisions and [VCRs] and cable systems...;" and to establish technical requirements for "cable-compatible" or "cable-ready" retail converter boxes and remote controls. 47 U.S.C. § 544A(a)(1). The Commission was in the process of establishing overreaching technical standards when Congress stepped back in 1996 and expressly retracted the Commission's technical authority and sought balance. *See* 142 Cong. Rec. H1145, H1160 (daily ed. Feb. 1, 1996) ("Section 301(f) modifies the FCC's authority in order to reign in the Commission's ongoing rulemaking on cable equipment compatibility"). It stated that Congress' compatibility goals could be achieved through much narrower technical standards that leave features, functions and protocols to be determined through the open market: "[C]ompatibility 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.*" Telecommunications Act of 1996, § 301(f)(1), codified at 47 U.S.C. § 644A(a)(4) (emphasis added).

Principles, it is "*critical to accommodate the flexible use of different architectures – now existing or developed in the future – for accessing multichannel video provider services*," because that flexibility fosters innovation and consumer choice:

> *We believe these principles should be implemented in ways that facilitate the deployment of different video device options in response to dynamic and varying consumer demands, rather than requiring that all devices include the same features for all consumers. It is also critical to accommodate the flexible use of different architectures – now existing or developed in the future – for accessing multichannel video provider services. These could include, for instance, set-back boxes, gateways, network interface units, or delivery from the "cloud" without the need for any dedicated receiving device. Therefore, we should allow for the possibility of ever more innovative devices while preserving alternative possibilities such as innovation in the network or the cloud which may lead to fewer or simpler devices in the home.*

Because a prohibition on alternative devices would reduce the number of options available to consumers and close off new paths of innovation, it should be rejected.

It is also especially important that the Commission not deny MVPDs this flexibility if over-the-top video providers are unconstrained in the devices and services they provide. As we have shown, there has been, and continues to be, explosive growth in over-the-top video products and services. In this dynamic marketplace, MVPDs must also be able to continue to offer innovative options to customers. Such an even-handed approach would be consistent with the Commission's well-established policy to favor a "regulatory regime that is technology and competitively neutral."[47]

For all of these reasons, the Commission should not and cannot prohibit MVPDs from offering navigation devices that do not use an AllVid adapter.

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[47] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order, 20 FCC Rcd 14853, 14857 ¶ 4 (2005).

E. The Commission Should Promote Inter-Industry Specifications and Standards

We appreciate that the Commission's *NOI* is not necessarily seeking to invent a new standard, and refers to many existing marketplace-driven industry specifications, as well as traditional standards, in the AllVid concept. As discussed earlier, the cable industry is an active participant in many inter-industry efforts and standards development organizations. Tru2way is an ANSI/SCTE, ATSC, and an ITU standard. But even as outlined by the Commission in the *NOI*, both standards and inter-industry solutions may play an important role in defining various solutions. Technologies identified in the *NOI*, including UPnP, DTCP, Ethernet, DLNA, and MPEG, are, for example, not ANSI-accredited standards. In fact, many creative solutions are developed in proprietary implementations in business ventures and consortia, incubating "founder" groups, or well-established specifications development bodies.

Technology development in the IP, web, and home networking space does not require that all specifications be developed in an ANSI standards body. Smart Grid, for example, already has millions of devices based on UPnP (which is the foundation for DLNA), but UPnP is not an ANSI body. Neither is W3C (World Wide Web Consortium) or IETF, both important to the web. MoCA is not an ANSI standard, but Verizon and DirecTV use it; Time Warner Cable, Cox, and Bright House Networks have publicly committed to MoCA in their networks; and Intel has a tru2way server that runs on MoCA. NIST approved PacketCable specifications for Smart Grid, even though they were developed as CableLabs specifications. It is common in technology to allow design to evolve from competing solutions to specifications and then eventually to move specifications into standards. This is how CableLabs has designed the cable specification development process.

Requiring solutions to start life in Standards Development Organizations would inflict crippling delays. Standards activities are extremely time consuming, often divisive, and sometimes used by one faction to block the progress of another or to promote its own intellectual property portfolio. For example, the P1901 IEEE standard for home networking over home electrical wiring has been in discussion since 2005. Five years later, it is still only a draft standard and may be on the verge of being overtaken by newer approaches such as G.hn, which also remains under development in the ITU standards process. Mandatory standards processes can also be misused as vehicles to push through proposals over the objection of key stakeholders, or even foster anticompetitive behavior. Thus, it could require years just to get standards envisioned in the *NOI* developed, at which point products would still have to be designed, manufactured, and brought to market – by which time the "right" solution chosen by the Commission in 2010 likely will have become outdated, just as a separable security solution applied only to cable operators was outdated not long after it was implemented.

The cable industry intends to continue its active participation in many inter-industry efforts and standards development organizations. DLNA, for example, is one among many natural locations for discussions about home-networking solutions, but it should not be the exclusive forum for discussions and development. Putting the brakes on innovation until competing industries all agree in a standards body would paralyze innovation in networks and services.

In contrast, the approach we have described above would avoid the drawbacks associated with forced standardization, while enlisting the full creative energies of every sector of the market. This will leave ample room for business-to-business arrangements and allow, as we urged in offering the Consumer Principles, that "*these principles should be implemented in ways*

that facilitate the deployment of different video device options in response to dynamic and varying consumer demands, rather than requiring that all devices include the same features for all consumers."

We further suggest that, however framed, any Commission regulation – even a directional order of the type we recommend – have a defined life. For example, by scheduling a sunset in five years, the Commission could provide adequate time for the market to develop, without unduly risking once again that its regulations would live on far beyond their useful life.

IV. THE TECHNOLOGY MANDATES CONTEMPLATED IN THE *NOI* WOULD HARM CONSUMERS

In adopting its initial navigation device rules in 1998, the Commission observed that any regulation in this area "is perilous because regulations have the potential to stifle growth, innovation, and technical developments at a time when consumer demands, business plans, and technologies remain unknown, unformed or incomplete. Our objective thus is to ensure that the goals of Section 629 are met without fixing into law the current state of technology."[48] Similarly, in launching its National Broadband Plan inquiry, the Commission explained that, "With technology developing at such a rapid pace, it is important that we do not lose sight of the potential for monumental shifts in technological platforms that would render definitions obsolete or indeed harmful to developments that might otherwise take place in the market."[49]

The AllVid approach outlined in the *NOI* ignores these cautions. It does not account for how constraining innovation will harm consumers, how data is actually delivered to devices,

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[48] *Commercial Availability of Navigation Devices*, CS Docket 97-80, First Report and Order, 13 FCC Rcd 14775, 14788-14789, ¶¶ 15-16 (1998).

[49] *A National Broadband Plan for Our Future*, Notice of Inquiry, GN Docket No. 09-51, FCC 09-31, ¶ 22 (rel. Apr. 8, 2009).

how content security is assured, how intellectual property is used and respected, what markets and business models fuel MVPD and broadband services, or basic legal constraints.

A. The *NOI* "Adapter" Approach Would Reduce Consumer Choice

We agree with the basic goal of the *NOI* to facilitate innovation and consumer choice. But attempting to do so with a one-size-fits-all standardized approach imposes significant harm on consumers. Rapidly changing technology markets are characterized by firms devoting substantial R&D resources into competing features and technology approaches to attract more consumers (and market share) than their rivals. Groups of firms may increase the popularity of a particular solution by coalescing around one design, or one specification, or even one standard. But these voluntary, marketplace developments do not foreclose innovation. Firms can develop new services and devices that do not conform to a current standard, and compete through price and innovation to displace the standard. Businesses can choose not to participate in standard setting, or can form competing groups, or otherwise contract around an emerging standard. Consumers are the ultimate winners from a regulatory framework that permits diversity in innovation. It is because the government did not standardize around a single method of video delivery that consumers have the choice of satellite, U-Verse, FiOS, or over-the-top delivery methods.

Premature government standardization reduces this competition, experimentation, and creativity, thereby limiting options for consumers. The mere presence of the regulatory process may discourage market-based and voluntary attempts at improving services and technology. The dynamic process of innovation taking place now in the video marketplace along with convergence of computer and television services could easily be suspended or skewed by a premature government-dictated interface standard. The need to adhere to a standard limits firms' product design choices and ability to invest in new technological approaches. The loss of

innovation and variety that can be the result of standardization is a loss to consumers. When an unsound or outdated rule is codified by government, the market loses its safety valves for innovation. There is often no way to contract around the rule, or even to conduct an experiment that can prove the rule should be abandoned. Under a government-mandated standard, firms with innovative new devices must instead argue before government regulators for a formal decision to change the standard.

We have witnessed this very drag on innovation with CableCARDs. Leased set-top boxes have been needlessly saddled with the costs of CableCARDs, and attempted innovation has been delayed or derailed in proceedings in which regulators are being asked to block deviations because they offer consumers features that are "too advanced"[50] or are "unnecessary"[51] – when the Commission should instead be most interested in facilitating the availability of advanced and new services for consumers. Congress directed the Commission to avoid this very trap, by directing it towards working in complementary fashion with private standards-setting groups and away from actions that can chill innovation.[52] By taking the opposite approach, a one-size-fits-all AllVid standard would harm consumers by foreclosing them from the very innovations that a dynamic technology market can deliver.

B. The *NOI* "Adapter" Approach Does Not Track Actual Data Flow

The AllVid approach outlined in the *NOI* does not track how data is actually delivered to devices and how devices interact with the network and applications, or what is taking place inside premises devices with the operating system, firmware, platform, graphics capability and

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[50] *See, e.g., Cable One, Inc.'s Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, Memorandum Opinion and Order, 24 FCC Rcd 7882 (rel. May 28, 2009) (considering whether to make high-definition DTAs available to consumers because they are no longer "advanced").

[51] Petition for Rulemaking of Public Knowledge, *et al.*, CS Docket 97-80 (Dec. 18, 2009) at 36 ("It is important that the universal gateway not provide *unnecessary* capabilities...") (emphasis added).

[52] *See supra* n. 46.

screen. Today, for example, programmers are launching interactive applications that rely upon the presence of a common interactive applications platform in the client device. For example, Softel has designed an interactive application for use on Showtime networks, and Clearleap and Fourthwall have partnered to create a video-centric, interactive weather application featuring content from The Weather Channel. To make these models work, MVPD providers have developed certain tools and platforms to deliver such services to consumers. They maintain a predictable execution environment, meaning an end-to-end service delivery architecture as a scalable common platform for interactive programmer enhancements, including tru2way and EBIF.[53] The Showtime and Weather Channel applications depend on these platforms. The Commission's proposal omits any predictable platform on which advanced interactive programming features depend. The AllVid proposal would adversely affect interactive applications and programs, and more robust consumer interaction with the MVPD services.

The AllVid proposal in the *NOI* also fails to protect the integrity of advertising transactions, and promotional marketing that comes with MVPD services, which are far more complex than broadcasting or streaming content. MVPD advertising models that help to fund high quality programming are likely to include an increasing level of interactivity between the network and client device. Interactive advertising allows a request-for-information icon to appear during an ad (say, for a pizza chain), and for a viewer to press a button on the remote control to click to receive a coupon (say, for a free pizza). Addressable advertising allows a cable or satellite provider to send different ads during the same commercial break to different groups of households, based on the specific ad the advertiser wants to deliver. For example, a cable operator may send one commercial to customers who have not subscribed to premium

[53] Enhanced TV Binary Interchange Format (EBIF) is a multimedia content format that allows multimedia pages, similar to web pages, to operate on an enhanced television or interactive television system.

services, and a different one to those who have. Video-on-demand streams also rely upon interactive advertising. Cox uses dynamic ad insertion to refresh the ads in "My Prime Time" shows. Other MSOs plan to use dynamic ad insertion to refresh the ads in VOD, so that they are relevant when played. Data about actual advertising delivery is also essential for audience measurement, for proof of performance to advertisers, and to limit the delivery of overly-repetitious commercials. To make these models work, MVPD providers not only on a predictable, scalable common platform, but assign unique identifiers to devices to measure ad delivery and record and respond to upstream requests from viewers. As proposed, a stripped-down AllVid device that only streams content selected by a downstream device on the home network would lose these capabilities. The AllVid proposal would disenfranchise the very advertisers that help to fund the high quality programming delivered to consumers.

As stated in our Consumer Principles, we believe that "*well-crafted solutions must account for … how all video providers associate security, transactional, advertising, and promotional elements with their video products*." What are needed are technical approaches that do not undermine the sophisticated interactive features of today's MVPD services, and which do not undermine the basic economics that fund them.

C. The *NOI* "Adapter" Approach Does Not Adequately Protect Content Or Security

The AllVid approach put out for comment suggests that it can "give device manufacturers the ability to develop 'smart' products that can access any service that an MVPD provides without the need to enter into restrictive license agreements with MVPDs." This position ignores the entire system of secure distribution of commercial video content. MVPDs acquire content from content providers, but that content comes with certain restrictions requiring devices to respect the license that content providers offer to MVPDs. Although MVPDs have a

contractual and licensed relationship with content providers for content, manufacturers of retail devices that provide consumers access to such licensed content do not have such privity with content providers. Complementary content protection license regimes are designed to ensure that content is secure in the devices receiving licensed commercial video content.

Almost every form of content protection technology is based on some set of patents, copyrights, or trade secrets which are licensed to implementers under complex licenses that require certain levels of "compliance and robustness." For example, a "compliance rule" might allow the licensed device to decrypt protected content only if it reads and respects signals not to copy early-release on-demand content. Another "compliance rule" might require the device to limit copies of later-release cable network programming to circulation inside the home, rather than to output content for indiscriminate redistribution over the Internet. Typical "robustness rules" might require the manufacture of devices that meet an agreed-upon level of resistance to hackers, to respond to breaches, and to update the resistance over time. Such compliance and robustness rules are arduously negotiated in proprietary content protection regimes among all affected parties in the marketplace – studios, consumer electronics manufacturers, and distributors.

Content agreements may require additional security protections. For example, under a recent waiver, studios are able to negotiate agreements with MVPDs to provide theatrical-release movies to the home before they are available on DVDs. But to offer that service, a distributor needs to limit the offer to consumers with devices that will honor the terms of sale – such as not sending the movie out through an unprotected interface onto the Internet.

If there is no license condition on the device that receives the programming, then there is no assurance that the video distributors can assure content suppliers that a chain of trust will limit

the distribution and use of the content to consumers who are entitled to receive the programming. Without such assurance to the content supplier, no content will flow to the distributor, and the distributor cannot offer it to the consumer. This licensing structure is evident in a wide array of licenses and agreements covering the flow of commercial video content: DTCP, which protects many compressed digital interfaces; HDCP, which protects uncompressed high-definition digital interfaces; various flavors of digital rights management (DRM) such as Windows Media DRM or Apple's FairPlay; DVB-CPCM, covering the protection for DVDs; AACS, covering the protection applied to Blu-Ray discs; OMA, covering mobile devices; DFAST, CHILA, and tru2way, covering the CableCARD interface and the middleware needed for reception of high-value on-demand cable content. Inter-industry home networking organizations will usually point to these proprietary technologies and their licenses in order to assure, for example, that a DLNA-connected device will protect content using one or more of a suite of licensed protections, such as DTCP-IP, WMDRM, and others. Therefore, a licensing regime for retail devices is essential to enable video service providers to be able to procure content. The AllVid approach dismisses all of this as "restrictive license agreements," undermining the very systems that deliver high-value content to consumers.

As we said in adopting the Consumer Principles, "*well-crafted solutions must account for how content providers license programming to distributors*." These types of difficult technical and business issues are best addressed via market-based agreements that establish and enforce technical and licensing rules for respecting content protection and intellectual property. The Commission does not have the jurisdiction, expertise or administrative resources to manage such issues.

D. The *NOI* "Adapter" Approach Does Not Adequately Protect Intellectual Property

The AllVid approach gives little explicit attention to the role that intellectual property plays in shaping different network architectures, but any solution must be far more sensitive to protecting such rights. There are hundreds of patents around which VOD, impulse pay-per-view, and EPG vendors have specifically designed their products in order to avoid patent infringement claims (or take appropriate licenses to such intellectual property) and to provide adequate intellectual property indemnification in commercial contracts.

Some have proposed that cable networks and cable guides should be reworked to permit CE manufacturers to extract guide data to build their own guides.[54] Cable operators do not own the electronic program guide metadata they use in their own guides. This metadata is the property of other companies such as Rovi and Tribune who charge service providers and device manufacturers alike for the data. Likewise, the structure of the guide itself is subject to complex intellectual property rights, with a record of patent litigation and large law suits.[55] Gemstar's claims extend to such basics as *pointing* to an entry in a grid guide and *clicking* to tune the channel. Cable operators themselves have had to pay more than $400 million to clear the intellectual property rights to offer their own EPGs. Other MVPDs have recognized the same

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54 Metadata includes information such as a description of the actors, genre, directors, and synopsis of a program.

55 *See Gemstar-TV Guide, Scientific-Atlanta Settle Patent Lawsuits*, SOCALTECH (June 2, 2005), http://www.socaltech.com/gemstar_tv_guide_scientific_atlanta_settle_patent_lawsuits/s-0002006.html ("The companies estimated that license payments from Scientific-Atlanta to Gemstar-TV Guide would be worth $154M, and payments from Gemstar-TV Guide to Scientific-Atlanta $89M."). *See also* these highly litigated patents owned by Gemstar: U.S. Pat. No. 6,262,722 INTERACTIVE PROGRAM GUIDE NAVIGATOR MENU SYSTEM; U.S. Pat. No. 5,479,268 USER INTERFACE FOR TELEVISION SCHEDULE SYSTEM; U.S. Pat. No. 5,809,204 USER INTERFACE FOR TELEVISION SCHEDULE SYSTEM; U.S. Pat. No. 4,706,121 TV SCHEDULE SYSTEM AND PROCESS; U.S. Pat. No. 4,751,578 SYSTEM FOR ELECTRONICALLY CONTROLLABLY VIEWING ON A TELEVISION UPDATEABLE TELEVISION PROGRAMMING INFORMATION; U.S. Pat. No. 5,038,211 METHOD AND APPARATUS FOR TRANSMITTING AND RECEIVING TELEVISION PROGRAM INFORMATION; U.S. Pat. No. 5,293,357 METHOD AND APPARATUS FOR CONTROLLING A TELEVISION PROGRAM RECORDING DEVICE.

myriad intellectual property rights and taken licenses.[56] In the *Two-Way MOU*,[57] the major CE manufacturers recognized these rights and agreed that there should be no requirement for cable operators to provide services, metadata, or guide data in a disaggregated way.[58] Nonetheless, cable operators agreed to help populate an alternative CE guide in tru2way devices with guide data for linear channels. The guide data is delivered via the CBS digital channel for use by CE manufacturers *who have license rights* to use such guide data from the owner of the guide data, for implementation in a guide that has independently cleared any necessary patent rights.[59]

Video-on-demand and switched digital video (SDV) implementations are likewise laced with patents, and competing vendors use those IP rights as a key foundation for their businesses. There is no indication that these vendors, who base their businesses on licensing intellectual

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[56] *See Gemstar-TV Guide In Deal With Verizon*, SOCALTECH (May 2, 2007), http://www.socaltech.com/gemstar_tv_guide_in_deal_with_verison/s-0008892.html; *Gemstar, Yahoo In Licensing Deal*, SOCALTECH (Sept. 15, 2006), http://www.socaltech.com/gemstar_yahoo_in_licensing_deal/s-0005346.html. *See Gemstar Grants Patent License To Pioneer*, SOCALTECH (Aug. 30, 2005), http:/www.socaltech.com/gemstar_grants_patent_license_to_pioneer/s-0002317.html; *Gemstar-TV Guide, LG Electronics in Licensing Deal*, SOCALTECH (Jan. 8, 2004), http://www.socaltech.com/gemstar_tv_ guide_lg_electronics_in_licensing_deal/s-0000025.html; *Gemstar-TV Guide Extends Mitsubishi License*, SOCALTECH (July 18, 2007), http:///www.socaltech.com/gemstar_tv_guide_extends_mitsubishi_license/s-0010175.html; *Gemstar Expands License With Sony*, SOCALTECH (Mar. 24, 2005), http://www.socaltech.com/gemstar_expands_license_with_sony/s-0001721.html; *Gemstar Signs Samsung*, SOCALTECH (May 2, 2006), http://www.socaltech.com/gemstar_signs_samsung/s-0003882.html ("Gemstar holds patents covering its VCR Plus system for setting up VCR recording times, along with patents around interactive programming guides, and has licensed that technology to a large number of electronics manufacturers.").

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

[58] Section 629 was intended to allow equipment to receive MVPD services, not to receive some supplemental or derivative service that a CE manufacturer may wish its product to provide. *See Gemstar Int'l Group, Ltd.*, Memorandum Opinion and Order, CSR 5528-Z, CSR 5698-Z, 16 FCC Rcd 21531, 21542, ¶ 31 (2001).

[59] For example, Tivo, Microsoft, and Digeo have each negotiated rights for their own guides.

property, will agree on a standard and pool their intellectual property. For example, a standards body might well want a "standard" VOD application to include DVD "chaptering" – the ability for the consumer to jump to a specific section of the video. They would discover quickly that SeaChange owns patents in this area.[60] These intellectual property issues do not go away in the standards process, where they are subject to potentially intractable delays as discussed above, and where they remain a subject of vigorous ongoing debate and litigation. Intellectual property can be mystifying to consumers, but in an information age it provides the incentives for content providers to produce great content, for inventors to create new methods of distribution and new applications, all to the benefit of consumers. By failing to account for intellectual property, the *NOI*'s AllVid approach would undermine the very incentives that create innovative offerings for consumers.

E. The *NOI* "Adapter" Approach Does Not Adequately Reflect Market Dynamics

The *NOI* suggests that the Commission can jump start a retail device market by specifying the outputs of an MVPD AllVid device. This theory does not account for how consumer electronics manufacturers and retailers build support for new product categories, what consumers are willing to buy, or how markets are actually formed. Even if its predictive judgment were correct, the Commission will not build a market with mandates only on MVPDs. MVPDs are only one part of the market. Without regulatory compulsion, CE will not commit to build devices and big box retailers will not commit to stock devices that they do not see as having adequate market demand. Many CE manufacturers are of the view that it takes several

[60] *See nCUBE Responds to SeaChange Patent Suit*, MULTICHANNEL NEWS (June 18, 2000), http://www.multichannel.com/article/61236-nCUBE_Responds_to_SeaChange_Patent_Suit.php; *VOD Patent Battle Turns Bitter*, CABLE WORLD (Jan 15, 2001) ("nCube's patent appears to be fairly broad, describing a fundamental process that covers, among other things, video-on-demand (VOD)."); *nCUBE Claims Victory in VOD Patent Spat*, CED MAGAZINE (July 1, 2002) ("The jury also ruled that SeaChange must pay nCUBE in excess of $2 million in damages, plus a seven percent royalty on all sales of infringing products after Feb. 1, 2002.").

manufacturers working in parallel to build a new product category. CE manufacturers and retailers are essential parties of the retail content distribution network. And even if retail devices are built and stocked, unless consumers want to buy them, the end result will be similar to the result for UDCPs. As we said in adopting the Consumer Principles, "*well-crafted solutions must account for … how consumer electronics manufacturers and retailers build support for new product categories, what consumers are willing to buy rather than lease.*" Imposing requirements on only the MVPD portion of the market (or worse, at its exclusive expense) will not create a market. It will only saddle MVPD consumers with more expenses.

F. Retail Device Manufacturers are Not Entitled to and Do Not Need Wholesale Disaggregated Cable Content to be Repackaged as Their Own

The *NOI* envisions a model for retail products that can gather content from numerous different sources and present it in a unique, branded manner.[61] Cable operators certainly understand the attraction of such products, since that is exactly the retail service business that cable operators are in: putting immense energy and investment in negotiating the terms of carriage agreements and then packaging (and repackaging) content and services in a manner that is most attractive to consumers in a highly-competitive video market. But the *NOI* suggests unworkable (and, as discussed in Section V below, unlawful) elements of disaggregation and disintermediation of MVPD services. For example, it suggests providing "flexibility for consumer electronics manufacturers to develop new technologies, including combining MVPD content with over-the-top video services (such as videos offered from, for example, Amazon, Hulu, iTunes, or NetFlix), [and] manipulating the channel guide…"[62]

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[61] *See NOI*, ¶¶ 17 and 43.

[62] *NOI*, ¶ 17.

Furthermore, some parties have asked the Commission to require MVPDs to give away their investment and their retail business. These proposals would convert MVPDs into wholesalers of programming for reuse by retail equipment providers. For example, TiVo asks for this result "even if this disrupts the MVPD's preferred financial models [and] irrespective of an MVPD's desire to turn its bottom-line preferences into licensing obligations."[63] Another proponent asks for rules under which "[c]ontent is successfully decoupled from the delivery medium, and navigation from the content" and "content can float anywhere**.**"[64] This concept is in conflict with business realties of content distribution, with Section 629 itself, and copyright law.

Such proposals ignore the realities of negotiating for rights from content owners and the commercial contracts and agreements that result from such negotiations. Content is not the cable operators' property to give away or allow to be used without restriction. Cable operators acquire rights to content at wholesale and serve as licensed retail distributors. Programmers negotiate carriage agreements with distributors that typically include detailed terms surrounding channel position, tier placement, compensation, commercial placement, the scope of distribution permitted, and presentation of the programmer's content. MVPDs collectively pay about $30 billion annually for programming licensed from content suppliers under thousands of individually-negotiated contracts and copyright licenses. They would be hard pressed to obtain rights in the first place if they had to permit redistribution of content to unlicensed retail devices without regard to these negotiated contract terms, or if they could not guarantee that devices would not replace the accompanying commercials or insert competing ads.

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[63] *See* Comments of TiVo, Inc. on NBP Public Notice # 27, CS Docket No. 97-80, GN Docket Nos. 09-47, 09-51, 09-137 (filed Dec. 22, 2009) at 4-5, 17.

[64] *See* Comments of Netmagic Solutions Inc., on NBP Public Notice #27, CS Docket No. 97-80, GN Docket Nos. 09-47, 09-51, 09-137 (filed Dec. 21, 2009) at 4.

Disaggregation of content from the service that provides the content would also rob cable operators of the value of their own video "retail" product. A CE manufacturer that does not have contractual arrangements with programmers should not have the ability to present an MVPD service as if it were its own without responsibility to programmers or to the MVPD. Third-party devices as envisioned by some disaggregation proponents could remove the advertisements that cable operators place into programming pursuant to agreements with content owners and replace them with the device manufacturer's own ads, without any compensation to the cable operator or the content owner. Also, operators invest substantial resources in choosing content, channel lineups, tier structures, navigation features (guides, on-demand, look back, etc.), prices, bundle prices, promotions, price guarantees, equipment features, marketing messages, and service look-and-feel in order to maximize their effectiveness as video retailers, and keep adjusting them in response to competition. This is what has fueled competition, innovation, network upgrades, broadband deployment, and consumer choice. The Commission and the market have recognized that forcing service providers into a wholesale model that undermines the economics of their retail offering ultimately would reduce their ability to invest in the new broadband infrastructure that is called for by the National Broadband Plan.[65] A dismantling of our business model for retail video services would therefore undermine broadband investment and deployment.

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[65] *See Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, CC Docket Nos. 01-338, 96-98, 98-147, 18 FCC Rcd 16978, 17141, ¶ 272 (2003) (exempting telephone company fiber-based loops from unbundling requirements, and predicting that "with the certainty that their fiber optic and packet-based networks will remain free of unbundling requirements, incumbent LECs will have the opportunity to expand their deployment of these networks, enter new lines of business, and reap the rewards of delivering broadband services to the mass market. Thus, we conclude that relieving incumbent LECs from unbundling requirements for these networks will promote investment in, and deployment of, next-generation networks."). *See also Connecting America: The National Broadband Plan* at 81-82 (Mar. 16, 2010) (recommending approach in which the Commission works with industries to harness incentives to recover or reassign spectrum).

Disaggregating MVPD services also would be highly disruptive to the consumer experience. When consumers subscribe to video services, they expect to receive the services to which they subscribed. If customers experience a problem, they typically seek help first from the service provider. Disaggregation would prevent consumers from seeing and using MVPD services in the way they were delivered by the MVPD and purchased by the consumer. This would create consumer confusion over who is responsible for problems with access to content or for basic device operation, who is the supplier of interactive applications and advertisements, parental controls, and other services, and who is responsible for answering such customer complaints. Often consumers of cable service expect and appreciate the simplicity and benefit of a common user experience that is independent of their choice of video display device.

To be clear, the cable industry is not at all opposed to product differentiation by retail device manufacturers[66] and has no objection to the use of competing guides: under the landmark *tru2way MOU*, cable operators agreed to help populate a guide provided by the CE manufacturer in a tru2way device – but not by dismantling a cable operator's services or commercial agreements with the providers of its video programming. Cable operators also agreed with CE manufacturers on specifications allowing multiple functions, multiple screens, and multiple feeds to work together, but in ways that respect both how cable operators function as video retailers and how CE manufacturers seek to incorporate multiple functions in differentiated devices. While we oppose any disaggregation mandates, cable operators are also open to discussing creative direct relationships with individual manufacturers and retailers under commercial business terms driven by the marketplace and consumer demand.

[66] The applicable CableLabs license terms do not restrict manufacturers from combining video sources or adding full-fledged Internet access to their "digital cable ready" devices. Cable operators have invited CE and applications developers to innovate further, and to present cable services along with new features, feeds, and functionalities. *See, e.g.*, tru2way Host Device License Agreement, § 1.0, "Innovation in Host Devices," available at http://www.opencable.com/downloads/tru2way_agreement.pdf. CE can build multiple-MVPD, agnostic receivers.

Retail devices can also distinguish themselves through other non-cable content that they bring to the device, and they can also negotiate directly with the same programmers that provide content to cable operators for their own access, as the current explosion of "over-the-top" video providers is illustrating. This broadband option did not exist at the time that Section 629 was adopted in 1996, but it is clearly possible today.

V. LEGAL LIMITS TO COMMISSION AUTHORITY

The Commission invited comment on legal limitations to its authority to adopt an AllVid approach, as outlined by the *NOI*, or alternative approaches. The AllVid proposal, as outlined, runs into at least three limitations built into Section 629 itself. First, as described above, it fails to maintain the necessary license relationships and chains of trust to assure security, when Section 629(b) requires the FCC to do nothing to "jeopardize security" of MVPD services. Second, if it were to mandate the use of a stripped-down piece of gateway hardware in the home which lacks basic set-top functionality, then it would violate two other limitations: (1) Section 629(a) requires FCC rules to permit MVPDs to continue offering their own set-top boxes; and (2) Congress directed the Commission to "avoid actions which could have the effect of freezing or chilling the development of new technologies and services."[67]

Third, disaggregation and disintermediation approaches are prohibited by the Communications Act. Such approaches appear to be pursuing a goal of forcing MVPDs to deliver content stripped of the MVPD's unique arrangement, to be repackaged and rebranded as a third party's own service. Such an unbundling mandate is well beyond the scope of the Commission's authority. As the Commission has previously confirmed, in Section 629 Congress authorized the Commission only to assure a market for retail devices that receive *MVPD*

[67] *See supra* n. 45.

services, not to receive some selected parts or derivative service that a CE manufacturer may wish its product to provide.[68] Such an unbundling mandate is well beyond the scope of the Commission's authority. However one stretches Section 629, it cannot be read to authorize the Commission to forcibly unbundle and disaggregate MVPD systems and services.

When Congress directs unbundling, it spells out highly detailed plans, as it did with for limited portions of the telephone networks of defined incumbent local exchange carriers. There is no hint of such legislative intent for MVPD systems. To the contrary, there are clear statutory barriers. Section 624(f)(1) bars any "Federal agency, State, or franchising authority" from "impos[ing] requirements regarding the provision or content of cable services, except as expressly provided in [Title VI]." Section 621(c) prohibits the Commission from imposing any type of common carrier regulation on a cable operator's provision of cable services.[69] Section 629 expressly did not override those prohibitions.[70] Any disaggregation proposal, which in essence calls for turning MVPD systems into common carrier pipes for the transport of disaggregated "elements," such as wholesale video, or piece-parts of programming guides, decoupled from the operator's retail service, is prohibited.

There are additional constitutional constraints against dismantling cable services. The Supreme Court has long recognized that a cable operator's choice of programming and services is protected editorial expression under the First Amendment.[71] But the scope of that protection

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[68] *See Gemstar Int'l Group, Ltd.*, Memorandum Opinion and Order, CSR 5528-Z. CSR 5698-Z, 16 FCC Rcd 21531, 21532, ¶ 31 (2001).

[69] *See* 47 U.S.C. § 541(c) ("Any cable system shall not be subject to regulation as a common carrier or utility by reason of providing any cable service.").

[70] *See* 47 U.S.C. § 549(f) ("Nothing in this section shall be construed as expanding or limiting any authority that the Commission may have under law in effect before February 8, 1996.").

[71] *See Turner Broadcasting System, Inc. v. FCC*, 512 U.S. 622, 636 (1994) ("Cable programmers and cable operators engage in and transmit speech, and they are entitled to the protection of the speech and press provisions of the First Amendment").

extends to *the arrangement* of programming as well,[72] the very arrangement that some gateway proponents would seek to abridge by government regulation.

Significant copyright interests also limit the scope of regulation. Creators develop valuable content with the understanding that they can use the content, license the content, restrict its uses, and even refuse to provide the content if they cannot reach a reasonable economic agreement as to price and usage. This is why affiliation agreements may define channel placement, presentation, security, and permissible devices to address the content provider's interest in penetration, appearance, reputation, content protection, and right to repurpose content for other uses, platforms or windows. For their part, cable operator licensees in turn use and sublicense the content on their own terms, consistent with the scope of their rights. Cable operators also create or license original graphic, text, video and other content for use in their program guides and user interfaces. They create original packages or bundles of underlying materials as "collective works"[73] or as "compilations" that are protected under copyright law whether or not all of that underlying material is independently protectable under copyright law.[74] Each of these creators and purchasers/licensees base long-term business decisions and strategy

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[72] *See Hurley v. Irish-American Gay, Lesbian and Bisexual Group of Boston*, 515 U.S. 557, 570 (1995) (likening cable channel lineup to newspaper's opinion page and advertising selections).

[73] A collective work is defined in the Copyright Act as "a work, such as a periodical issue, anthology, or encyclopedia, in which a number of contributions, constituting separate and independent works in themselves, are assembled into a collective whole." 17 U.S.C. § 101.

[74] Some commenters have sought to dismiss these substantial copyright limitations as inconsequential, as though the components of the retail cable service offering were only "facts" no more subject to protection than telephone directory listings. Obviously, far more than that is at issue: in some conceptions, cable retailers would be converted into wholesale suppliers of unbundled "elements" of service. In any event, the original selection, order and arrangement of even factual data are protectable even when the facts themselves are not protectable. *See Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340 (1991) ("Factual compilations . . . may possess the requisite originality. The compilation author typically chooses which facts to include, in what order to place them, and how to arrange the collected data so that they may be used effectively by readers. These choices as to selection and arrangement, so long as they are made independently by the compiler and entail a minimal degree of creativity, are sufficiently original that Congress may protect such compilations through the copyright laws."). The arrangement of content being provided by other parties may itself qualify as a collective work or compilation, such as an entire "broadcast day" of television programming from a network. *See National Assoc. of Broadcasters v. Copyright Royalty Tribunal*, 675 F.2d 367 (D.C. Cir. 1982).

upon these intangible interests and the confidence that they will not be arbitrarily taken away (or their value destroyed) by the government, but rather are protected by the Constitution's guarantee to respect works of authorship brought to the public. "The copyright owner's exclusive ability to exercise this bundle of rights allows him to safeguard, in large measure, the pecuniary value of the copyrighted work."[75] If a third-party manufacturer were to copy this underlying content, disaggregate it, and reassemble it with a different organizational structure and presentation, this would constitute copyright infringement.[76]

Even with respect to non-copyrightable portions of cable service, intangible property can still be protected against unfair competition by state law against misappropriation.[77] If a CE manufacturer sought to extract, rearrange, repackage (even inserting of own commercials), and present as its own the content that has been created at great expense by cable operators, cable operators would certainly claim unlawful misappropriation. And to the extent that a valid property right exists that is recognized by state or federal law, the taking of that property on the

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[75] Robert R. Kwall, *Governmental Use of Copyrighted Property: The Sovereign's Prerogative*, 67 TEX. L. REV. 685, 686 (1989).

[76] Depending on the circumstances, the manufacturer might be directly liable for such infringement, but regardless cable operators likely would seek to hold the manufacturer secondarily liable for the infringement. This is not "fair use," among other reasons, since repackaging is designed as a market substitution that merely "usurp[s] the demand" for the original. *Castle Rock Entertainment, Inc. v. Carol Publishing Co.*, 150 F.3d 132, 145 (2d Cir. 1998).

[77] *See Internat'l News Serv. v. Assoc. Press*, 248 U.S. 215 (1918) (recognizing tort claim where "hot news" collected by the Associated Press was being intercepted and used by a competing service). The tort remains actionable today, and has been expanded to include even more types of property. Courts have defined the elements of misappropriation as: "(i) the creation of plaintiff's product through extensive time, labor, skill, and money, (ii) the defendant's use of that product in competition with the plaintiff, thereby gaining a special advantage in that competition (i.e., a "free ride") because defendant is burdened with little or none of the expense incurred by the plaintiff, and (iii) commercial damage to the plaintiff." *Aldridge v. The Gap, Inc.*, 866 F.Supp. 312, 313 (N.D.Tex.1994); *see also National Basketball Ass'n v. Motorola, Inc.*, 105 F. 3d 841 (2d Cir. 1997); *US Golf Ass'n v. Arroyo Software Corp.*, 81 Cal. Rptr. 2d 708 (Cal. Ct. App., 1st Dist. 1999). The extent of New York misappropriation law is again in debate in *Barclays v. TheFlyOnTheWall.com*, No. 06 Civ. 4908 (DLC) (S.D.N.Y., May 7, 2010), injunction stayed, May 20, 2010. But regardless of the outcome in that specific case, misappropriation law is clearly alive and well, and would apply to the wholesale dismantling and appropriation of retail cable service in the supposed name of competition.

basis of a federal mandate is constrained by the Fifth Amendment, even when dealing with regulated industries.[78]

Cable operators and cable programmers also brand their goods and services with trademarks and other identifying information. Subscribers generally know which provider or programmer is supplying them with conventional content. But cable services are growing more interactive, tailored, and sophisticated – for StartOver, Look Back, Quick Clips, games, news and information tickers, interactive digital programming, instant polling/voting, interactive advertising (such as free coupons by clicking your remote control), shopping, parental controls, widgets, and cross-platform interactive services like Caller ID on TV, to name a few. As services grow more complex, branding becomes even more essential to identify the cable operator as the source of these services, both for consumers to know who is the responsible supplier, for the service provider to effectively market its services, and for consumers to make informed decisions about which products and services to select in the future. Dismantling cable service will damage or dilute the source-identifying capability of, and the goodwill associated with, the cable operator's name and trademarks in connection with cable products.[79] The

[78] The Supreme Court has rejected government efforts to convert data developed at great cost and expense into a commodity for third-party commercial use. In *Ruckelshaus v. Monsanto Co.*, the Environmental Protection Agency required a chemical company to submit proprietary research and testing data that it had developed at great effort and expense for use by commercial competitors. 467 U.S. 986 (1984). The Court held that the EPA could not simply "preempt" the company's reasonable investment-backed expectation. *Id.* at 1003. The Court explained: "If Congress can 'pre-empt' state property law in the manner advocated by EPA, then the Taking Clause has lost all vitality. This Court has stated that a sovereign, 'by *ipse dixit*, may not transform private property into public property without compensation . . . . This is the very kind of thing that the Taking Clause of the Fifth Amendment was meant to prevent.'" *Id.* at 1012 (quoting *Webb's Fabulous Pharmacies, Inc. v. Beckwith*, 449 U.S. 155, 164 (1980)). *Ruckelshaus* did allow some latitude for the government to make data publicly available when it was voluntarily submitted by a company in order to take advantage of a government registration program. However, in delivering cable services to customers, cable operators are not submitting content or other intellectual property into any government benefits program. Any requirement to provide property to third party competitors would be the taking of property constrained by the Fifth Amendment.

[79] In *Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23 (2003), the Supreme Court was careful to distinguish between elements of branding for DVDs that identified the source of the product, which were protectable under trademark law, and those that identified the creator or owner of the copyrighted work (*i.e.*, the motion picture

Lanham Act and state unfair competition laws protect against the creation of such confusion among consumers.[80] Stripping the trademarks off of a cable operator's guide and programming services, and repackaging them under another's mark – as one commentator proposes to do[81] – is reverse passing-off, that is, the provision of products or services of the trademark owner as if those products or services originate from the infringer.[82] Just as is the case with copyright interests, forcing cable operators to give up their trademark protection in the name of a disaggregated platform constitutes a government taking of a valuable property right that severely interferes with reasonable private investment-backed expectations of the cable operators and their investors.

Several parties advocate that the Commission should ignore such restrictions – allegedly in order to promote innovation and differentiation. But in seeking to eliminate content providers' and distributors' chosen arrangements, they are ignoring intellectual property rights. Some companies might be cavalier about intellectual property, but the government cannot be. Intellectual property must be respected as property if we are to preserve incentives for content providers to produce great content, if we are to preserve opportunities for distributors to retail that content, and if we are to give inventors the incentives to create new methods of distribution and new applications.

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stored on the DVD), which were not. Cable operators have every right to brand the *service* being provided whether or not they originate the content.

[80] *Virgin Enters., Ltd. v. Nawab*, 335 F.3d 141, 146 (2d Cir. 2003) ("claim of trademark infringement ... is analyzed under [a] familiar two-prong test[.] ... The test looks first to whether the plaintiff's mark is entitled to protection, and second to whether [the] defendant's use of the mark is likely to cause consumers confusion as to the origin or sponsorship of the defendant's goods.").

[81] *See* Letter from Matthew Zinn, Senior Vice President, General Counsel, Secretary, and Chief Privacy Officer, TiVo Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80 (Feb. 17, 2010) at 15 ("TiVo does not want to be forced to use any of the MVPD's branding….").

[82] *See Peaceable Planet, Inc. v. Ty, Inc.*, 362 F. 3d 986 (7th Cir. 2004).

VI. CONCLUSION

A key goal for this proceeding should be to develop solutions that will enable consumers to enjoy the benefits of continuous innovation from many creative sources: from MVPD networks, products and services, from manufacturers of retail video devices; from developers, and from Internet and other video sources. There are no easy answers to these complex issues in an area that affects many industries whose services, products and business models are constantly changing. Developing flexible solutions through industry consultation, specifications, standards and other private initiatives will be far preferable to static technology mandates ill-suited to such a dynamic marketplace. The Commission's role will be invaluable in bringing the necessary parties together to assure the development of an even more vibrant retail market for video devices.

Respectfully submitted,

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July 13, 2010

Exhibit A

NCTA's Consumer Principles for Video Devices

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March 12, 2010

The Honorable Julius Genachowski
Chairman
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: NBP Public Notice #27; GN Docket Nos. 09-47, 09-51, 09-137; CS Docket No. 97-80

Dear Mr. Chairman:

You have consistently expressed the view that one of the hallmarks of the Broadband Plan should be to support innovation across the board, and specifically in the video and Internet marketplace. I would like to take this opportunity to again express our support for a broad Commission proceeding that explores new cross-industry approaches to develop a fully-competitive and innovative retail video device marketplace. This is especially important now that four of the ten largest multichannel video providers are direct broadcast satellite and telephone companies which collectively serve nearly 40 million video households.

Our industry is committed to providing content to consumers where and when they want it, on all possible consumer devices, and for those devices to be innovative platforms for new applications. We want consumers to be able to buy video devices at retail and to know that cable content can be among their video sources. To that end, we offer the following consumer principles to which cable operators are committed and which we believe could serve as the foundation for Commission and inter-industry efforts.

1. *Consumers should have the option to purchase video devices at retail that can access their multichannel provider's video services without a set-top box supplied by that provider.*

2. *Consumers should also have the option to purchase video devices at retail that can access any multichannel provider's video services through an interface solution offered by that provider.*

3. *Consumers should have the option to access video content from the Internet through their multichannel provider's video devices and retail video devices.*

4. *Consumers should have the option to purchase video devices at retail that can search for video content across multiple content sources, including content from their multichannel provider, the Internet, or other sources.*

5. *Consumers should have the option to easily and securely move video content between and among devices in their homes.*

6. *Consumers should be assured the benefits of continuous innovation and variety in video products, devices and services provided by multichannel providers and at retail.*

7. *To maximize consumer benefits and to ensure competitive neutrality in a highly dynamic marketplace, these principles should be embraced by all video providers, implemented flexibly to accommodate different network architectures and diverse equipment options, and, to the maximum extent possible, serve as the basis for private sector solutions, not government technology mandates.*

We believe these principles should be implemented in ways that facilitate the deployment of different video device options in response to dynamic and varying consumer demands, rather than requiring that all devices include the same features for all consumers. It is also critical to accommodate the flexible use of different architectures – now existing or developed in the future – for accessing multichannel video provider services. These could include, for instance, set-back boxes, gateways, network interface units, or delivery from the "cloud" without the need for any dedicated receiving device. Therefore, we should allow for the possibility of ever more innovative devices while preserving alternative possibilities such as innovation in the network or the cloud which may lead to fewer or simpler devices in the home. None of us can predict with any certainty which is the better or more likely path and it is quite possible that multiple paths will emerge.

In addition, well-crafted solutions must account for how content providers license programming to distributors, how all video providers associate security, transactional, advertising, and promotional elements with their video products, how consumer electronics manufacturers and retailers build support for new product categories, what consumers are willing to buy rather than lease, and how to assure that solutions do not inadvertently handicap future innovation. Solutions must also assure that, as Internet content is delivered over the television, it is afforded all of the copyright protections that apply when it is delivered to the home computer.

We believe that the vision of a competitive and innovative marketplace described above is in complete harmony with the Commission's goals and with the Communications Act, and should serve as the foundation for Commission and industry efforts going forward. The Commission can play an invaluable role by bringing various stakeholders together in this important work. As you (and we) take next steps in developing and implementing these goals, you will have our active participation and our full support.

Sincerely,

/s/ Kyle McSlarrow

Kyle McSlarrow

cc: Marlene H. Dortch