

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of:)	
)	
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 PUBLIC KNOWLEDGE AND CONSUMERS UNION

Mike Godwin
Gigi B. Sohn
Public Knowledge
1875 Connecticut Avenue, NW
Suite 650
Washington, DC 20009
(202) 518-0020

Nathan Mitchler
Law Clerk
Public Knowledge

Christopher Murray
Consumers Union
1666 Connecticut Avenue, NW
Suite 300
(202) 462-6262
Washington, DC 20009

March 28, 2003

*Counsel for Public Knowledge and
Consumers Union*

Table of Contents

I. SUMMARY AND INTRODUCTION	1
II. THE ENCODING RULES WILL THWART CURRENT CONSUMER USES AND EXPECTATIONS AND THUS WILL RISK SLOWING THE DTV TRANSITION.....	5
III. COPY PROTECTION IS NOT NECESSARY FOR “CABLE-READINESS.”	7
A. The Commission’s Prior Findings Concerning Copy Protection Do Not State or Imply that the Commission Must Endorse Copy Protection or Encoding Rules.....	7
B. Members of Congress Have Made Clear That the Commission Must Not Attempt to Interpret Copyright Law By Crafting Encoding Rules.	8
C. A Comprehensive Copy Protection Scheme Is Not Necessary for “Security” and is Likely to Slow the DTV Transition.....	9
IV. IF THE COMMISSION EMBRACES 5C AND RELATED ENCODING RULES IN THIS RULEMAKING, IT WILL UNDERCUT THE COMPETITIVE SCHEME PROPOSED IN THE BROADCAST FLAG RULEMAKING.	11
V. THE COMMISSION SHOULD CLARIFY THAT THE DFAST LICENSE WILL NOT DISFAVOR COMPUTERS AND OTHER DIGITAL DEVICES AND TECHNOLOGIES.....	12
VI. “DOWN-RESOLUTION” IS CONCEPTUALLY ILLOGICAL, MAY CREATE CONSUMER CONFUSION OR DISSATISFACTION, MAY PROMOTE RATHER THAN DISCOURAGE UNLAWFUL COPYING, AND MAY SLOW THE TRANSITION TO DIGITAL TELEVISION.	16
VII. IF THE COMMISSION DOES ADOPT A COPY-PROTECTION TECHNOLOGY AND/OR SET OF ENCODING RULES, THE COMMISSION MUST USE ITS LABELING PREROGATIVE TO FULLY INFORM CONSUMERS AS TO THE LIMITATIONS OF “DIGITAL CABLE READY” PRODUCTS.	17
VIII. CONCLUSION	18

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of:)	
)	
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 PUBLIC KNOWLEDGE AND CONSUMERS UNION

Public Knowledge and Consumers Union (hereinafter “Consumer Groups”) hereby submit these comments in connection with the Commission’s *Further Notice of Proposed Rulemaking* FCC No. 03-3 (released Jan. 10, 2002) (“*FNPRM*”) in the above-captioned proceeding

I. SUMMARY AND INTRODUCTION

The two organizations that are submitting these comments each play a unique role in advocating and protecting citizen interests as they may be affected by changes in technology policy and regulation. Public Knowledge is a nonprofit advocacy and educational organization that seeks to address the public's stake in the convergence of communications policy and intellectual property law. Consumers Union, publisher of *Consumer Reports*, is an independent, nonprofit testing and information organization serving only consumers. Its advocacy offices address the crucial task of influencing policy that affects consumers.

The Consumer Groups support the goals of promoting both high-definition television (“HDTV”), delivered over cable as well as through other delivery systems, and of promoting

“plug-and-play” and “cable-ready” compatibility among consumer-electronics and computer devices. Further, we are committed to the protection of copyright, through considered policy developed by the Congress and courts, and we support creators’ and publishers’ prerogative to protect their rights under copyright law through technical means. Consumers have valid interests in the protection of copyrighted works, in the rewarding of creators to ensure the availability of a rich variety of content, and in the commercial viability of those businesses and enterprises that transmit or otherwise make that content available to the public.

At the same time, consumers also are concerned that their established expectations and legal rights with regard to the functionality, convenience, and cost of television receivers and display devices, personal computers and related devices, and other digital and consumer-electronics devices be maintained, to the extent possible, by any government regulation aimed at plug-and-play compatibility and “cable-readiness” in and among consumer-owned equipment. Consumers particularly favor open standards that, while allowing interoperability between consumer-owned devices and the cable network, do not hinder other industry sectors, technologies, or products from competing as delivery systems for cable content. These values — compatibility, interoperability, consumer convenience, lower costs, protection of copyright, and open standards — inform our comments in this proceeding.

The Consumer Groups applaud the cable-services and consumer-electronics industries for working out a framework for true plug-and-play compatibility among consumer devices that can receive cable services — a framework that is explored at length in the *Memorandum of Understanding Among Cable MSOs and Consumer Electronics Manufacturers* (“MOU”). Similarly, we are pleased that the Commission has signaled in its Further Notice of Proposed Rulemaking¹ its readiness to move forward quickly on the issues of cable compatibility plug-

¹ In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronics Equipment, Federal Communications Commission Further Notice of Proposed Rulemaking, FCC 03-3 (Jan. 10, 2003) [hereinafter *FNPRM*].

and-play and cable-ready compatibility for devices that are capable of receiving digital cable signals. We believe that quick Commission action in this area will smooth the way for consumers who wish to make the transition to HDTV by purchasing devices that can link up to the providers of digital cable television services. We also endorse the *MOU*'s proposal to adopt well-established standard computer interfaces such as Firewire (IEEE 1394), DVI, and VGA, in addition to the consumer-electronics standard HDMI, with some reservations which we detail below.

Our reservations about the *MOU* and *FNPRM* focus primarily on the three aspects of the *MOU* and related documents: (1) the decision to seek Commission endorsement for so-called "encoding rules" generally, (2) the choice of encoding rules designed to fit a particular content-protection technology (a limited implementation of the group of technologies sometimes collectively referred to as "5C technologies"²) and, (3) a DFAST (Dynamic Feedback Arrangement Scrambling Technique) license that locks in a particular content-protection technology at the expense of other technologies, and with the further consequence that computer platforms may be locked out of participation in this market.

The Commission has come to a fork in the road: if the Commission were to standardize only on hardware interfaces — that is, on the *basic* technical requirements of the physical "plugs" that are part of "plug-and-play," *apart from* any requirement that those

² The "5C" consortium is made up of Hitachi Ltd., Intel Corporation, Matsushita Electric Industrial Co. Ltd., Sony Corporation, and Toshiba Corporation. 5C has developed the Digital Transmission Content Protection System, or DTCP. DTLA is the licensing authority joint venture founded by the 5C companies, which administers the licensing of DTCP. The DTLA has approved three technologies that are designed to protect DTCP-protected content: (1) HDCP, High-bandwidth Digital Content Protection, developed by Intel Corporation, license administered by Digital Content Protection, LLC, for protection of content transmitted from DVI outputs; (2) D-VHS, developed by Victor Company of Japan, Ltd. (JVC), license administered by JVC, for protection of content recorded on D-VHS; and (3) CPRM, Content Protection for Recordable Media, developed by the 4C companies, license administered by the 4C Entity, LLC, for enabling protected interchange of stored content among different devices and protection of content on recordable media (storage). The "4C" consortium is made up of Intel Corporation, IBM, Panasonic, and Toshiba. DTCP, HDCP, D-VHS, and CPRM are the four associated technologies collectively referred to herein as the "5C technologies".

interfaces incorporate any particular content protection scheme³ — the question of which encoding rules to choose could be worked out by providers in the marketplace, competition for delivery systems would be enhanced, and the transition to digital-television over cable would be hastened. If, however, the Commission were directly or indirectly to dictate a content-protection scheme such as the limited implementation of the 5C technologies proposed in the *MOU* or to embrace encoding rules that were designed specifically to fit that limited 5C scheme, such a rulemaking would have the effect both of limiting competition among content-protection technologies and of restricting consumers in the extent to which they can do what they have grown accustomed to being able to do with the cable content they have paid for, including time-shifting, space-shifting, and sharing among family members. In addition, standardization on 5C (and in particular on the starkly limited version of 5C outlined in the *MOU*⁴) will limit compatibility between new devices designed to take advantage of digital cable signals and older home-entertainment devices and/or computers and other digital devices. The Consumer Groups believe it is best for consumers if, once a basic “plug-and-play” hardware standard that is no more complex than necessary has been dictated, equipment providers have a range of products and features to pick from. We also believe it is best for content owners if there is marketplace competition among technologies that protect content.

In addition to these reservations regarding the *MOU*'s recommendations regarding encoding rules, its proposed implementations of the 5C technologies, and the DFAST license, the Consumer Groups also herein state our objections to the “down-resolution” approach to

³ In other words, the same sort of basic standard setting that led to the original rulemaking regarding the meaning of the “cable ready” in the analog television context.

⁴ The 5C Consortium’s flagship technology, DTCP, can interoperate with other protection schemes, and in particular with protection schemes that are better designed to be implemented on computers and other digital devices than on dedicated consumer-electronics players and recorders. The Consumer Groups oppose FCC-imposed standardization on 5C in general, for reasons in detail *infra*, but we further note that the particular limitations imposed by the DFAST license on the 5C technologies make that scheme far less flexible and enabling of innovation even than are the 5C technologies as a whole.

protecting video content, and to a labeling approach for “Digital Cable Ready” products that we feel runs the risk of misleading consumers. We recommend the following:

- (a) The Commission limit its “cable compatibility” standard setting to the strict physical requirements of interoperability for labeling purpose and not embark in this proceeding on the embrace of particular encoding rules, content-protection technologies, business-model approval, or licensing terms;
- (b) The Commission act quickly as to the “hardware interface” standard-setting so as to enable truly “digital cable ready” consumer-electronics and information-technology products to proceed to the marketplace and accelerate the embrace of digital television;
- (c) The Commission eschew any schemes involving “down-resolution” or “downrezzing” of content on consumer and information-technology products; and
- (d) Should the Commission proceed in spite of our reservations here to embrace a particular content-protection technology and particular DFAST licensing terms, its “Digital Cable Ready” labeling scheme be properly modified to fully inform consumers about the limitations the Commission is endorsing for digital-cable-compatible equipment.

Our reservations and other comments are further detailed below.

II. THE PROPOSED ENCODING RULES WILL THWART CURRENT CONSUMER USES AND EXPECTATIONS AND THUS WILL RISK SLOWING THE DTV TRANSITION.

The Consumer Groups support new measures that prevent theft of cable service and harm to cable networks, so long as they also promote the transition to DTV.⁵ Our concern about the terms of the encoding-rule scheme and related licenses outlined in the *MOU* is that they attempt to prohibit or constrain the copying or other use of commercial content received over a cable system regardless of whether such copying or other use poses any security threat.

⁵ “DTV” can be a confusing term, since “digital television” can mean anything from current digital delivery systems (e.g., satellite and cable digital transmission) to high-definition television schemes (“HDTV”) to implementation of digital-transmission technologies as a way of using broadcasting spectrum more efficiently, resulting in higher-quality broadcasts. We take “DTV” as used in the context of the cable-compatibility discussion to refer primarily to HDTV and secondarily to any digital “high-quality” television content.

For example, it is difficult to see how the time-shifting of a “pay-per-view” program by a paying subscriber constitutes a threat to the network or a theft of services. Similarly, a scheme that prevents a subscriber from making a copy of HDTV programming (perhaps a copy made from his new digital personal video recorder, compliant with the 5C technologies dictated by the DFAST license) and playing it on non-5C equipment at his mother’s house seems likely to diminish enthusiasm for the DTV transition at the same time it does comparatively little to protect the network.⁶

Apart from the question of whether the security/copying threats raised by parties to this proceeding have been accurately assessed, there is also the question of how well consumers will accept a response to those purported threats that significantly limits what they will be able to do with the commercial content they have paid to receive, as compared to what they now can do with analog content. The 5C-based encoding-rules scheme presented in the *MOU* would limit copying to a greater degree than such copying is limited with currently available consumer-electronics and computer equipment. We believe endorsement of such a scheme by the Commission not only poses problems for the Commission itself⁷ but also creates a great risk of both triggering consumer backlash and slowing the transition to DTV. We do not believe consumers will happily purchase new, more expensive equipment that

⁶ Encoding rules such as those proposed in the *MOU* may diminish the functionalities of digital Personal Video Recorders (“PVR”) in several ways. It appears to us that the third tier of proposed encoding rules – copy one generation, applicable to subscription TV – will eliminate digital PVR users’ ability to transfer content captured on the PVR to a portable digital medium (e.g. DVD-R). While copy one generation may enable a user to simultaneously stream content to both a digital PVR and a portable digital medium, content captured on such a PVR cannot be *subsequently* transferred to a portable medium. In other words, users who utilize a digital PVR as their primary TV watching device will lose portability for subscription TV, a significant use they currently enjoy in the analog-TV context.

⁷ Consumer anger at the limitations imposed by, and the confusion and doubt caused by, new home-entertainment equipment will find an easy target in the Commission if the agency endorses the *MOU*’s 5C encoding-rules proposal. While many of the same limitations may be imposed on consumers as a result of purely private agreements among businesses or consortia, we believe the marketplace, unhampered by what would be in effect a Commission technology mandate, would let manufacturers know quickly if the copy-protection scheme they agreed upon turned out to be unacceptable. This in fact is what happened when vendors tested so-called “Divx” optical-disk content delivery only a few years ago; consumers turned away from “Divx” in droves and embraced the more permanent DVD format, even though the latter had its own content-protection/access-control technology that limited some consumer uses.

limits lawful copying and/or other uses far more than their current home-entertainment systems do and that poses significant cost and compatibility problems with regard to other equipment as well.⁸ While it is clear that the negotiators of the *MOU* have made a notable good-faith effort to accommodate at least some consumer expectations, it is also clear that they have felt immense pressure from content companies to restrict consumer copying and other uses more than such copying and other uses are restricted today. The resulting “compromises” set forth in the encoding rules and other provisions are likely to sow consumer confusion, dissatisfaction, and doubt at a time when consumer confidence is a necessary building block of the DTV transition.

III. COPY PROTECTION IS NOT NECESSARY FOR “CABLE-READINESS.”

A. The Commission’s Prior Findings Concerning Copy Protection Do Not State or Imply that the Commission Must Endorse Copy Protection or Encoding Rules.

The Consumer Groups recognize that the Commission has held in the past that a modicum of copy protection may be coincidental with security measures that are built into point-of-deployment (“POD”) devices or into navigation devices, and that allowing some degree of copy protection is not inconsistent with prior policy.⁹ Nevertheless, the conclusion drawn by the Commission in the Sept. 18, 2000, Further Notice and Ruling¹⁰ does not entail that the Commission *embrace* a particular *comprehensive* copy-protection¹¹ scheme as part of

⁸ While proponents of 5C technology have asserted that 5C will not prevent copying of any kind, or thwart any activity the typical consumer engages in today, that statement is both misleading and underinclusive. In the 5C world, once marked commercial content is recognized by a 5C compliant device, it cannot be transmitted to (or played on, or copied by) any noncompliant legacy digital device. So if 5C is the endorsed technology, consumers will increasingly be able to copy and play content only on 5C devices. For many consumers, this may mean substantial (and perhaps surprising) required upgrading of their home entertainment systems and networks.

⁹ See In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Federal Communications Commission Further Notice of Proposed Rulemaking and Declaratory Ruling, FCC 00-341 (Sep. 18, 2000) [hereinafter *Sept. 18, 2000 Further Notice and Ruling*].

¹⁰ *Id.*

¹¹ See *id.* In earlier proceedings in this docket, the Commission expressly used “copy protection” in reference to these technologies. The recent effort to rename these technologies in terms of preventing “retransmission” seem

setting the standards for what devices can be labeled “Digital Cable Ready.” In fact, the finding of the Sept. 18, 2000 Further Notice and Ruling is aimed at a much narrower result. To wit, the Commission expressly narrowed its finding with the following language: “We address the narrow question of whether the inclusion of some measure of copy protection within a host device violates the separation requirement of the Commission’s navigation devices rules.... [W]e find that it does not.”¹² There is nothing in the Sept. 18, 2000 Further Notice and Ruling that suggests the Commission must endorse a particular copy protection scheme, or even that it must endorse a set of requirements (such as encoding rules) for copy protection.¹³

B. Members of Congress Have Made Clear That the Commission Must Not Attempt to Interpret Copyright Law By Crafting Encoding Rules.

The *MOU* explains on page 2, paragraph 2.3, that “[t]he Parties have jointly developed proposed consensus encoding rules that are ... based upon and generally consistent with the principles and policies of Section 1201(k) of the Digital Millennium Copyright Act of 1998.”¹⁴ This section of the *MOU* goes on to explain that the Commission will be asked to change the encoding rules over time “for new services within defined business models.”¹⁵ As a practical matter, this means the Commission will be asked to interpret the “principles and policies” of Section 1201(k) of the Copyright Act in administering and changing encoding rules whose purpose is to allow some degree of lawful consumer copying of content. If the Commission adopts a rule that requires it to regularly interpret copyright law, that ongoing duty would run counter to the warnings of ranking members of the House of Representative

to us to be misleading, since transmission over the Internet entails the making of copies. We further take the view that efforts by the Commission to limit copying necessarily implicate copyright policy.

¹² *Sept. 18, 2000 Further Notice and Ruling* at ¶ 25.

¹³ *See id.*

¹⁴ *Memorandum of Understanding Among Cable MSOs and Consumer Electronics Manufacturers* at 2 ¶2.3 [hereinafter *MOU*].

¹⁵ *Id.*

subcommittee that oversees intellectual property law.¹⁶ In general, Congress reserves to itself the prerogative to strike the basic balances between copyright owners' rights and public uses of copyrighted works.¹⁷ To avoid running afoul of this Congressional prerogative, the Commission should refrain from endorsing a set of encoding rules or any copy-protection technology that entails a particular set of encoding rules.

C. A Comprehensive Copy Protection Scheme Is Not Necessary for “Security” and is Likely to Slow the DTV Transition.

In the course of proceedings in this docket, the Commission and participants have suggested that the primary security concerns raised by the DTV transition are (1) that digital television content is more copyable, and suffers less degradation in being copied, than does analog content, and (2) that digital television content is particularly susceptible to unlawful copying over the Internet. Neither of these commonly held beliefs is true, as a technical matter.¹⁸ First, we and others have demonstrated that copyability of content has no relationship to whether it originates in analog or digital form, since analog-to-digital and digital-to-analog conversion is commonplace in consumer-grade electronic devices – what matters instead is that all content, once it is digital, can be copied by computers and other digital devices. That analog copying (followed by digitization) is seen by some content providers as no less a threat than digital copying can be demonstrated by provisions in the

¹⁶ See Declan McCullagh, *Congress Questions FCC copyright plan*, CNET News.com, March 7, 2003, at <http://zdnet.com.com/2100-1104-991482.html>. See also Pamela McClintock, *Copyright Guardian Raises Piracy Flag*, Reuters/Variety, March 7, 2003.

¹⁷ See *Eldred v. Ashcroft*, 123 S.Ct. 769, 782, ___ U.S. ___ (2003) [quoting *Sony Corp. v. Universal Studios Inc.* 464 U.S. 417, 424 (1984)] (“[I]t is Congress that has been assigned the task of defining the scope of the limited monopoly that should be granted to authors ... in order to give the public appropriate access to their work product.”).

¹⁸ See Comments of Public Knowledge and Consumers Union, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230, 6-9, available at <http://www.publicknowledge.org/reading-room/documents/admin-filings/broadcast-flag/flag-filing-pk-cu.pdf>; Reply Comments of Public Knowledge and Consumers Union, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230, 10-11, available at <http://www.publicknowledge.org/reading-room/documents/admin-filings/broadcast-flag/flag-filing-pk-cu-reply.pdf>. See also Comments of Computer & Communications Industry Association, In the Matter of Digital Broadcast Copy Protection, MD Docket No. 02-230, 8-9; Reply Comments of Philips Electronics North America Corporation, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230, 15-19.

MOU for possible “down-resolution” of content for analog outputs, as well as by the recent formation of the “Analog Reconversion Discussion Group,” which has been set up to explore possible ways of controlling analog outputs¹⁹

The purported threat of Internet redistribution of HDTV content is equally easy to dispel. The file sizes of HDTV content are so large that it is “effectively impossible” to redistribute that content over the Internet, and such redistribution will likely remain impossible for at least the next decade, and perhaps longer, because of “last mile” limitations on broadband infrastructure.²⁰

Not only is there no special threat posed to content owners by the transition to delivering high-definition digital content, but analog television at present is vastly more subject to unauthorized copying and distribution than digital television content is, due to the former’s relatively smaller file sizes.²¹ For this reason, we favor as quick a transition to high-definition television content as possible because a quick transition will both (a) improve consumers’ experience of TV and (b) protect content better because the content is too large to be easily copied and effectively impossible to redistribute over the Internet. For this latter reason, we also oppose “down-resolution” (“downrezzing”) treatment of television content.²²

¹⁹ For a number of technical reasons, the Consumer Groups believe the likelihood of finding a true “solution” to the “analog reconversion” problem in the near term is exceedingly low. Nevertheless, we are participating in the ARDG discussions, which may lead to development of proposals for feasible long-term solutions.

²⁰ See Reply Comments of Public Knowledge and Consumers Union, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230, 10-11, *available at* <http://www.publicknowledge.org/reading-room/documents/admin-filings/broadcast-flag/flag-filing-pk-cu-reply.pdf>. In the same proceeding on the Broadcast Flag (MB Docket No. 02-230), *see also* Comments of Computers & Communications Industry Association, 8-9; Reply Comments of Electronic Frontier Foundation, 2-6; Reply Comments of Edward W. Felten; Reply Comments of Raffi Krikorian; Reply Comments of Philips Electronics of North America, 15-19.

²¹ Even the file sizes of digitized analog-TV content — commonly 500-megabytes to more than a gigabyte for an hour of compressed, lowered-resolution NTSC programming — are too large for consumers to retransmit over the Internet with any ease or frequency. This can be confirmed by anyone who experiments with such uploading on a typical cable-modem or DSL consumer broadband connection. For an extended discussion of this phenomenon, see Reply Comments of Public Knowledge and Consumers Union, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230, footnotes 12, 13, and 21. Nevertheless, because what little television content file-trading that now occurs is attributable to the digitization and compression of analog TV content, we favor policies that accelerate the transition to digital television.

²² See also our discussion in Section VI, *infra*.

IV. IF THE COMMISSION EMBRACES 5C AND RELATED ENCODING RULES IN THIS RULEMAKING, IT WILL UNDERCUT THE COMPETITIVE SCHEME PROPOSED IN THE BROADCAST FLAG RULEMAKING.

Any Commission action that locks in a particular copy-protection technology will undermine the proposal in the broadcast-flag proceeding²³ to create a competitive market among content-protection technologies.²⁴ A primary element of the “broadcast flag” proposal advocated by the Motion Picture Association of America and other content companies is the “Table A” procedure under which competitors can propose different copy-protection technologies designed to protect television content that may be approved either by industry players or by the Commission. The MPAA asserts that this Table A procedure is objective and will allow different, competing copy-protection technologies to emerge. The Consumer Groups remain skeptical that such competition will ever occur, largely because the licensors of 5C technologies appear to be predestined to be listed on Table A – indeed, the Table A criteria were written with these technologies in mind – and thus will have a significant advantage over competitors as a “first mover.” This “first mover” advantage will be compounded if the Commission follows through on the recommendation of the *MOU*; a Commission endorsement of 5C copy protection in the cable context (through endorsement of the DFAST license) would, in effect, “pick a winner” of the Table A competition before that competition even begins. Because few if any manufacturers will manufacture broadcast-TV receivers that don’t also interoperate with cable systems, effectively mandating 5C in the cable arena would essentially compel broadcast-tuner manufacturers to incorporate (and license) 5C technologies. By approving the *MOU* and the DFAST license in their current state, the Commission will be locking in the 5C group of technologies. This will create substantial barriers to entry for other copy-protection technologies, and will make competition in this market extraordinarily difficult.

²³ In the Matter of Digital Broadcast Copy Protection, Federal Communications Commission Notice of Proposed Rulemaking, MB Docket No. 02-230 (Aug. 9, 2002).

²⁴ See generally Comments of the American Antitrust Institute, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230.

V. THE COMMISSION SHOULD CLARIFY THAT THE DFAST LICENSE WILL NOT DISFAVOR COMPUTERS AND OTHER DIGITAL DEVICES AND TECHNOLOGIES.

Consumers will benefit if convergence between cable/CE equipment and computers and other digital devices continues. This is partly because innovation in the information-technology sector proceeds at a fast pace due to the generally open hardware and software architectures that are used in that sector, and partly because developments in computer display technologies continue to provide an alternative delivery system for television content, both digital and analog. The Consumer Groups have argued in the Broadcast Flag proceeding that delivery of DTV via computer platforms is central to accelerating the DTV Transition.²⁵ The Commission itself has advanced a similar argument.²⁶

But the DFAST license by its own terms excludes “interactive” products from participating in a cable-system-connected home network — including “digital television products” that are capable of “using the return path of the cable system.” In effect, these terms seem to rule out computers, which are capable of connecting to the Internet through their cable modems. We do not believe the exclusion of computers from the DFAST terms was deliberate (in part because, as we note, many consumer-electronics companies are also computer companies), but we do believe the taxonomy used in the DFAST license of “unidirectional” versus “bidirectional” or “interactive” seems, on its face, to exclude personal computers and, indeed, many other digital devices. We ask the Commission to clarify whether the DFAST license does exclude computers and other flexible digital devices.

²⁵ See Comments of Public Knowledge and Consumers Union, In the Matter of Digital Broadcast Copy Protection, MB Docket No. 02-230, *A Public Knowledge White Paper: Harry Potter and the Prisoners of the DTV Transition*, at Appendix B, available at <http://www.publicknowledge.org/reading-room/documents/admin-filings/broadcast-flag/flag-filing-pk-cu.pdf>.

²⁶ See *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, Fourth Report and Order*, MM Docket No. 87-268, 11 FCC Rcd 17,771, 17,789 (1996).

The Consumer Groups further believe that the DTV transition would be better promoted in the cable context if computers could be modified to use PODs (*e.g.*, through a card slot). This would allow convergence between the computer industry and the consumer electronics industry to continue to reduce the costs of high-definition displays as well as adding new playback features and other functionalities. Any license term that hinders or excludes the participation of the computer industry in the market for delivery and display of cable content will slow public investment in DTV equipment. Furthermore, the limited 5C technologies that are entailed by a DFAST license also hinder the integration of general-purpose computers into the home entertainment network. Since the Internet piracy and analog-versus-digital problems that are the root justification for DFAST's incorporation of 5C are primarily the result of misconceptions, it is unnecessary to risk putting up a "Chinese Wall" between personal computers and television delivery systems. The Commission should reaffirm its commitment to convergence and take advantage of the pace of technological development to accelerate the transition of cable subscribers to digital television (which will also accelerate the transition of broadcast viewers to DTV). This approach is also consistent with Congressional intent, as expressed in Section 629 of the Communications Act, as amended by the Telecommunications Act of 1996, just as it is consistent with the prior ruling in this docket (CS 97-80) that grants subscribers the right to attach any compatible navigation device to a multichannel video programming system, sometimes referred to as the *Carterfone* "right to attach" principle. The Commission should hesitate before redefining "compatible" in a way that undoes the policy of opening up to competitors the market for navigation devices attachable to multichannel video programming systems.

There are two ways to develop "plug-and-play" standards. One way involves detailed, complex, closed requirements that lock in current market players at the same time they discourage innovation and competition; this is what we see prescribed in the limited version of the 5C technologies, and the constricted standard-setting for new digital outputs, that is

prescribed in the *MOU*. The other way to promote “plug and play” is to set simple, “open” standards that maximize the opportunities for innovation and competition. Just as it is counterproductive and harmful to consumers to put up a “Chinese Wall” around the personal computer, it is also counterproductive and harmful to consumers to define “digital cable compatibility” in such a way as to require to put such a wall *inside* the computer at the hardware and/or operating-system level. Requiring computers and other digital devices to be essentially “closed” architectures, for the purpose of preventing ordinary users from getting uncontrolled access to content, would require a fundamental redesign of such devices, because for a quarter of a century computers have been designed around open architectures that enable third-party vendors to create interoperable hardware and software products — standard-setting that creates competition and innovation rather than stifling them. The flip side of this redesign requirement—closing the architectures of computers along the specific 5C hardware implementation called for in the DFAST license—would reduce the opportunities for third-party manufacturers to develop new products. The cost of the redesign would be passed on to consumers, and the impact on third-party developers would diminish consumer choice; these harms are potentially greater even than those associated with cutting off convergence between information-technology products and consumer-electronics products.

We recognize that the social and economic value of “open architectures” is not typically an issue raised before the Commission, and that it may seem incongruous, in the context of “plug-and-play” standard-setting, to preach the value of open computer hardware and software design. In other forums, however, that value is well-established; in the Microsoft antitrust case, for example, great attention was given by the litigants and the courts to the issue of whether Microsoft had or should have an obligation to disclose its “APIs” (application-programming interfaces) for its operating-system products. Disclosure of such interfaces – themselves standards – enable third-party developers to create new products that

integrate and interoperate with the operating-system platform. Similarly, in the 1970s and 1980s, the introduction of Apple and IBM computer designs with standard “slots” for integration of new hardware created vast markets of third-party developers who in turn created countless new products that expanded uses of the personal computer. We believe it is possible to devise plug-and-play standards that are “open” and provide opportunities for many new kinds of products and applications. We further believe that that the Commission could set such an open standard based on interface standards such as (but not necessarily limited to) IEEE 1394, DVI, and HDMI. At the same time, we believe the standards outlined in the licensing terms of DFAST and 5C are “closed” standards that will have the effect of either hindering or locking out market participants who could increase consumer choice and hasten the transition to digital television.

Since the two major threats stated by content companies are illusory,²⁷ the only remaining reason to require such a comprehensive redesign of computer and other digital-device architectures is the desire of some content providers to offer a new tier of programming that does not allow for any home copying.²⁸ While this is an interesting business model, and worth exploring for its possible consumer value, we do not think it is appropriate to limit home copying of this kind of content (*e.g.*, pay-per-view) more than it is limited today ***in the context of setting a standard for what “digital cable-ready” means.*** As we discuss in Section VII, *infra*, the meaning of “cable ready” for consumers has nothing to do with instantiating business models – it has to do with the raw fact of whether the equipment they buy will be easy to set up and easy to integrate into their home-entertainment systems.

²⁷ See *supra* Section II.B.

²⁸ We are unaware of any evidence that, for example, home copying of pay-per-view or view-on-demand content has undermined either business model in the analog-cable context.

VI. “DOWN-RESOLUTION” IS CONCEPTUALLY ILLOGICAL, MAY CREATE CONSUMER CONFUSION OR DISSATISFACTION, MAY PROMOTE RATHER THAN DISCOURAGE UNLAWFUL COPYING, AND MAY SLOW THE TRANSITION TO DIGITAL TELEVISION.

The Consumer Groups are pleased that the *MOU* does not include any recommendation for “down-resolution” (“downrezzing”) of digital content in any context, and that it expressly calls for a bar on “downrezzing” of broadcast television content. We believe that prohibition should be extended by the Commission across the board, primarily because consumers will resist and disfavor technologies that deliberately reduce quality of the presentation of television content. Moreover, we find the reasoning offered by proponents of “downrezzing” to be logically incoherent. The theory is that, by reducing the quality of an output, one can simultaneously please the consumer by allowing at least some degree of copying of content while ensuring that the copies are of sufficiently lower quality so that they will not compete, licitly or illicitly, with the higher-definition content from which the copies were derived. We believe this is an inherently inconsistent pair of requirements. Either “downrezzing” noticeably reduces the quality of video content or it does not. If the former, then consumers will not be satisfied by devices that inherently and noticeably degrade outputs. If the latter – that is, if the lowered resolution is unnoticeable or at least not bothersome – this raises the question of why any content owner should insist on “downrezzing.”

Furthermore, “downrezzing” undermines the single most effective factor that prevents Internet infringement of HDTV content both currently and in the foreseeable future. To wit, it reduces the file sizes of the “downrezzed” content to “mere” DVD quality. While DVD-quality content is itself too large for any significant transmission of it, in full resolution, over today’s or tomorrow’s Internet, it is also smaller, by as much as a factor of four, than full 1080i high-resolution content. Even if we were to believe that Internet-based infringement of

digital TV content were a threat, we would not think it prudent to “protect” content owners by making their content four times easier to copy and retransmit.²⁹

In any case, if “downrezzing” becomes a feature of any constellation of “digital cable ready” devices, and if it does in fact cause a noticeable lowering in quality of the content, we may reasonably predict that consumers will be reluctant to adopt “digital cable ready” devices that include such features and that this reluctance will tend to slow consumer adoption of digital TV products generally.

VII. IF THE COMMISSION DOES ADOPT A COPY-PROTECTION TECHNOLOGY AND/OR SET OF ENCODING RULES, THE COMMISSION MUST USE ITS LABELING PREROGATIVE TO FULLY INFORM CONSUMERS AS TO THE LIMITATIONS OF “DIGITAL CABLE READY” PRODUCTS.

If, however, the Commission determines that it must promulgate a rule requiring that manufacturers of devices that either state or imply that they are “Digital Cable Ready” meet certain copy-protection technology requirements and enforce certain “encoding rules,” the Consumer Groups believe that such a labeling requirement must be designed to inform consumers rather than confuse them. “Cable ready” has an established meaning for consumers today³⁰ – the term tells consumers that a so-labeled device can be connected to the cable outlet without any additional equipment. Furthermore, it does *not* imply any limitation on home copying or other use of the cable content for which a subscriber has paid. The label “Digital Cable Ready” strongly implies a similar meaning; for this reason, tying the use of that label to a requirement that a content-protection scheme be included, will mislead consumers, absent further disclosures. We suggest an alternative label – *e.g.*, “Digital Cable

²⁹ A recently captured four-minute transport-stream clip of “Law and Order,” broadcast in 1080i/30 format, took up 667 megabytes on a writeable CD disk. That file itself is effectively untransmittable over current and foreseeable commercial broadband -- a full hour of 1080i programming, even assuming the commercials were removed from the transport stream file, would take more than 10 times the amount of time to be transmitted than would the four-minute clip.

³⁰ Apart from its usage in common parlance, the meaning of “cable ready,” considered in pure dictionary-definition terms, does not contain or even hint at the concept of content protection or limiting of copies.

Ready/Content Protected From Unauthorized Copying by 5C Technologies” – that would signal to consumers that the product they are buying places greater limitations on consumer use of content than traditional “cable ready” equipment does.

The Consumer Groups are not wedded to any particular language for such a label, but we do believe that there is no legitimate public-policy argument that can be made against informing consumers fully prior to their purchase about how their expectations about television-related products will change as they choose to move into the world of digital cable. Should the Commission insist on binding a particular content-protection scheme to the label “Digital Cable Ready,” then the labeling scheme should also inform consumers prior to purchase as to what the new limitations will be on their purchased equipment.³¹

VIII. CONCLUSION

Although the Consumer Groups have proceeded at some length to detail serious concerns with regard to this rulemaking and the proposals before the Commission, we nevertheless favor quick rulemaking by the Commission in this proceeding. We believe our suggestions, if followed, would make it easier rather than more difficult for the Commission to act quickly to develop relatively straightforward rules concerning “Digital Cable Ready.” Our suggestions free the Commission from treading on Congress’s copyright prerogatives, as well as from approving and administering a range of business models, and they are consistent with the Commission’s longstanding policies to promote convergence and the subscriber’s “right to attach.” The simplest way for the Commission to proceed – setting very basic standards for hardware compatibility as it did in earlier “cable ready” rulemaking – is also the

³¹ The Consumer Groups recognize that the *MOU* contemplates informing consumers fully about the limitations on their newly purchased equipment “post sale.” Because we now live in a period in which consumer-electronics and other equipment is routinely purchased over the World Wide Web, often from out-of-state vendors, we cannot accept the notion that post-sale information will be enough to ensure that consumers are adequately informed, at time of purchase, about such limitations. Even online vendors with liberal return policies cannot overcome the inherent difficulty facing someone who wishes to return equipment via mail or other transportation service because it did not live up to long-established consumer expectations. There is no effective substitute for fully informing consumers at the outset.

best, whether considered in terms of innovation and competition, in terms of protection of content, in terms of promoting the transition to DTV, or in terms of benefits to consumers through less expensive, more functional products and new, innovative services. We look forward to working with the Commission to move this important process forward.