

**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	)	PS Docket No. 00-67
	)	

**COMMENTS OF MICROSOFT CORPORATION**

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**INTRODUCTION & SUMMARY**

The Commission seeks comment on steps it can take to promote the development of two-way digital cable-ready devices. Microsoft Corporation (“Microsoft”) brings a unique perspective to this proceeding, because it promotes navigation device availability at the consumer level and also enables competition at the network level, which acts as a further catalyst for retail competition for navigation devices. Specifically, Microsoft works with a variety of manufacturers to offer consumers navigation devices in the form of PCs, and consequently has urged the Commission to adopt rules that recognize the critical and ever increasing role that the PC plays in the entertainment marketplace. Microsoft, therefore, remains committed to enabling a competitive retail environment for navigation devices, and supports the objectives of Section 629 for all multiple video programming distributors (“MVPDs”).

In addition to its work on navigation devices, Microsoft also has been at the forefront of driving competitive video services by developing next-generation MVPD platforms

in the form of Internet Protocol Television (“IPTV”) for network operators. Microsoft’s TV division has pioneered an innovative IP video services platform, called “Mediaroom,” that enables traditional telephone companies like AT&T to compete with cable. Mediaroom, formerly called IPTV Edition, is a comprehensive software platform for broadband providers to offer an IPTV service that integrates seamlessly and economically with other IP-based communications and media services for televisions, PCs, phones and other consumer devices. In contrast to cable networks, Mediaroom IPTV is delivered over a managed IP network, not a broadband QAM network. The IP network is an interactive, two-way switched network with a server-based architecture designed to support a range of IP-based services, including video, in an integrated environment. The architecture of the typical cable network is based on the receipt of a signal at a local head-end for distribution to a defined, closed community. By contrast, IP-based networks rely on a handful of regional servers to distribute bits of data, broken into IP packets, over a widely dispersed network. This managed IPTV system also contrasts sharply with web-based video services that deliver video over a customer’s Internet connection. The IPTV industry is still young and is still evolving technologically. Microsoft believes that these fundamental architectural differences must be taken into account when setting rules for achieving the goals of Section 629.

Microsoft brings these perspectives, along with its long-standing involvement in this proceeding, to the questions put forth by the Commission and offers the following observations. In order to create a successful solution, any rules the Commission adopts should encourage continued innovation, and consequently the Commission should adopt rules that suit each network technology. While the goal of ensuring retail competition for navigational devices will guide the Commission’s rules for each network technology, the Commission should avoid

adopting a single set of technical rules to achieve this goal that would apply to all network platforms. As Microsoft has argued in the past, rules that work in the traditional cable environment should not be applied wholesale to other technologies because in many instances it would be technologically impractical given the technology and architectural differences among various services, and this would lead to a lack of innovation in this crucial market. The Commission therefore should match its rules with the technology being deployed so that the goals of Section 629 can be achieved in a sensible and viable manner that fosters technological innovation by all affected industry sectors – *i.e.* CE, IT and MVPDs.

#### **I. MICROSOFT SUPPORTS THE GOALS OF SECTION 629 FOR ALL MVPDs.**

Microsoft has long advocated for retail availability of navigation devices and remains committed to achieving the goals of Section 629 and enabling a competitive retail environment for navigation devices. As the IT Industry Commenters stated in 2004, “the transition of entertainment media to digital technology has led consumers increasingly to view the PC as a new engine for delivering entertainment in the home. . . . If allowed to develop and deploy to their full potential, these devices and technologies could also finally drive the large-scale deployment of competitive navigation devices that the Commission has been seeking to achieve since 1997.”<sup>1</sup> More recently, Microsoft reiterated its commitment to “facilitate the Commission’s success in implementing Section 629 of the Communications Act and to achieve Congress’s goal of creating consumer choice in the market for navigation devices.”<sup>2</sup>

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<sup>1</sup> Comments of IT Industry Commenters (Apple, Dell, Hewlett-Packard, Microsoft) at 5, 7 (Feb. 13, 2004).

<sup>2</sup> Comments of Microsoft Corporation, Comcast Corporation’s Request for Waiver of 47 C.F.R. §76.1204(a)(1), CSR-7012-Z, CS Docket No. 97-80 (June 15, 2006).

To achieve the goals of Section 629, Microsoft urges the Commission to (1) take the PC into account for any rules it may adopt, and (2) ensure that any rules it adopts are economically viable for all parties concerned.

**A. Rules Should Include the Personal Computer.**

By working with cable operators, Microsoft's Media Center Edition PCs are now commercially available using a unidirectional CableCard, a result achieved through business arrangements and licensing of necessary technologies. These unique business arrangements and licenses were necessary because in the one-way cable *Plug and Play* proceeding, the rules failed to take into account the needs of the PC which precluded the PC from entering the retail navigation market.<sup>3</sup> Microsoft is aggressively working on similar business arrangements for bi-directional services and intends to bring bi-directional services from cable and satellite providers to consumers through future versions of Windows Media Center PC. The Commission's efforts to promote retail availability of cable-ready digital devices is vital because of the increasingly important role that PCs are playing as entertainment devices in the home. For this reason, Microsoft has long urged the Commission that any rules should take into account the unique needs of the PC and not just the needs of the CE industry.<sup>4</sup> Unlike a television or traditional set-top box, PCs offer significant storage and computing power and as such are emerging as important devices on which premium MVPD content can be used by authorized consumers.

To ensure that consumers obtain the full advantage of these devices in a home video network, the Commission's rules should not exclude the PC from being able to function as a receiver of premium content from MVPDs. As stated above, in the one-way cable *Plug and Play*

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<sup>3</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices and Compatibility Between Cable Systems and Consumer Electronics Devices*, 18 FCC Rcd 20885 (2003).

<sup>4</sup> *See, e.g.*, Letter from Paula Boyd of Microsoft and David Isaacs of Hewlett-Packard Corp. to Marlene Dortch, CS Docket No. 97-80; PP Docket No. 00-67 (Aug. 8, 2003).

proceeding, the rules failed to take into account the needs of the PC. Microsoft nonetheless was able to negotiate a private agreement with the cable industry that enabled PCs to enter the retail market with OpenCable Unidirectional Receiver (“OCUR”)-enabled Media Center PCs that receive premium linear cable content including high definition content. Likewise, a rule that requires devices to have only uncompressed video outputs would not be adequate for PCs. To take into account the PC, the Commission’s rules should provide that any device would have to include both compressed and uncompressed video outputs. The compressed outputs would need to be based on broadly adopted PC industry standards (*e.g.*, Ethernet, USB, etc.). Furthermore, it is important that any rulemaking not impose unnecessary technologies and costs on the PC industry.

Another instance in which the Commission needs to avoid tilting the field against PCs is content protection. The PC industry uses digital rights management (“DRM”) to enable copyright holders to manage and propagate their digital media rights. In order to fully enable the broad range of PC scenarios that are enjoyed by PC users today, the Commission’s rules should include DRM on parity with any other method the Commission adopts for the protection and delivery of media to consumers. The Commission embraced this approach in recognizing Windows Media Digital Rights Management (“WMDRM”) in the context of the *Broadcast Flag* proceeding, and it should continue the march against TV-centric rules. Rules that take into account the PC and other non-TV centric devices will expand the market for retail devices and ultimately benefit consumers.

**B. Rules Should Attempt to Achieve Economic Viability for all Interested Parties.**

The Commission also should adopt rules, as Microsoft has long maintained, that are economically viable for all parties concerned. For that reason, Microsoft has not supported

disaggregation of video services, since that would threaten the video services business model of cable and other video services operators. As Craig Mundie, Chief Technology Officer of Microsoft, wrote to the Commission in 2006, the Commission’s rules should not “interfere with the ability of cable operators to aggregate content and to establish and control the ‘basic look and feel’ of its offering . . . .”<sup>5</sup> In short, giving consumers maximum choice in retail navigation devices does not require disaggregation, just as giving consumers maximum choice does not mean taking away from network operators the ability to make technology choices.

One technology choice that many cable operators have made is to deploy switched digital broadcast technology to deliver less popular linear program services. Switched digital broadcast has the ability to give cable operators tremendous efficiency benefits, and the record in this proceeding reflects that it is being widely deployed.<sup>6</sup> However, present unidirectional digital cable ready (“UDCR”) devices cannot receive program services delivered using switched digital broadcast as switched digital broadcast is a bi-directional technology. That reality, which cannot be undone, underscores the importance of prompt Commission and industry action to adopt a workable solution for bi-directional devices used with traditional cable systems.

## **II. THE COMMISSION’S RULES SHOULD PROMOTE RETAIL AVAILABILITY OF DEVICES BY PROMOTING NETWORK COMPETITION AND TAKING INTO ACCOUNT THE TECHNOLOGY BEING USED BY DIFFERENT MVPDs.**

### **A. Network Competition Promotes Retail Availability.**

The ultimate goal of Section 629 – retail availability of navigation devices – can be achieved using two strategies, and the Commission has been smart about pursuing both. The first method is to focus on how the traditional cable-provided set-top box market can be

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<sup>5</sup> Letter from Craig Mundie to Chairman Martin, CS Docket No. 97-80 (Nov. 13, 2006).

<sup>6</sup> Letter from Steven Teplitz of Time Warner Cable, Inc. to Marlene H. Dortch, Secretary (May 11, 2006).

transformed into a competitive market. The Commission has done yeoman's work in that regard, and this proceeding represents a further step, but progress has been slow. The other strategy is to promote competition at the network level. As wireline telephone companies enter the video distribution market and compete with cable operators, they give consumers choice of programming, choice of services, and choice of navigation devices. That competition benefits consumers in multiple ways, and also encourages innovation from the CE and IT industries.

Microsoft lauds the Commission for the important steps it has taken to encourage network competition, including the effort to streamline the franchising process. Microsoft supported a national franchise process in testimony before Congress, and also urged the Commission to take all actions within its authority to encourage network competition.<sup>7</sup> The telephone companies have responded to these reforms at the state and federal level by deploying new-build video distribution platforms, and that is a positive development for consumers and the entire IT/CE ecosystem. The Commission should not lose sight of these exciting pro-competitive developments when it writes rules for navigation devices. Saddling new entrants with rules that do not fit their technology would harm this competitive development and would not advance the goal of retail availability of navigation devices. Microsoft urges the Commission to use both of these strategies – network competition and device competition – as tools to achieve the goals of Section 629.

**B. The Commission's Cable-Centric Navigation Device Rules Should Not Be Applied to Non-Cable MVPDs.**

The *Notice* specifically asks whether the Commission's rules should apply to non-cable MVPDs, and Microsoft believes that the Commission should not automatically apply to

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<sup>7</sup> Statement of Paul Mitchell, before the Subcomm. on Telecommunications and the Internet, Comm. on Energy and Commerce, 109th Cong., 1st Sess. (2005).

DBS or IPTV providers the same rules that have been crafted for traditional cable operators.<sup>8</sup>

The Commission instead should recognize the different technologies and how the goals of Section 629, which remain important, can be achieved by those different technologies. When it first adopted rules implementing Section 629, the Commission stated that its objective was “to ensure that the goals of Section 629 are met without fixing into law the current state of technology.”<sup>9</sup> By adopting a regime specific to each technology, the Commission can encourage technological innovation while enabling a competitive market for retail navigation devices.

The *Notice* also seeks comment on whether there are technological solutions that are deployable across all MVPD platforms.<sup>10</sup> The answer to this question is no. Different network technologies may require different solutions. Separable security is an example where the Commission took one approach for cable operators and a different approach for DBS providers. Both approaches helped fulfill Section 629’s goal of retail availability, but reflect a fundamental difference in network technology and business models. If there is any lesson learned during the somewhat torturous history of Section 629, it is that while there is an important role for the Commission to create a framework for industry cooperation, solutions must be appropriate technologically and economically for all parties concerned. The Media Center Edition PC with its unidirectional CableCard is a case in point.

Microsoft urges the Commission to act appropriately towards each distribution technology, promote innovation and competition at the retail level for devices, and refrain from imposing technology mandates. This does not require that each of the technical requirements that are implemented for the cable industry be extended to other MVPDs, where those

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<sup>8</sup> *Notice* at para. 1.

<sup>9</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 13 FCC Rcd 14775, 14781, ¶16 (1998) (“First Report and Order”).

<sup>10</sup> *Id.*

requirements are unnecessary or impractical. More specifically, in order to create a successful solution, the Commission's approach to Section 629 should encourage continued innovation, and consequently the Commission should not simply extend rules that suit one network technology to other technologies delivering similar service over wholly distinct network architectures. No single technology is appropriate for all network architectures. Each MVPD relies on unique technology and often different network technologies and architectures.

One example of how different network technologies can lead to different implementation for navigation devices involves the protection of video content. Traditional cable networks use conditional access to secure content from the cable head-end to the consumer's device in the home. Usually, the host device in the home is a set-top box or TV using some form of conditional access (including CableCARD versions). This security model works well for cable operators but does not have the flexibility of more modern controlled-copy mechanisms like DRM. Microsoft worked with the cable industry to develop the OCUR solution that bridges between a traditional conditional access system and a DRM system. OCUR enables linear content to flow to a variety of devices in the home based on controlled copy protection rights controlled by the cable industry. Looking into the future we see DRM systems enabling MVPDs to take advantage of new business models for content distribution that are just beginning to emerge. These include scenarios in which controlled content is distributed to devices in the consumer's home, to family members, and locations beyond the home. DRM systems are able to assure that the business models defined by MVPDs will be honored before content can be accessed by authorized consumers. Traditional MVPD conditional access systems (including CableCARD) do not enable the flexibility offered by DRM in the management and distribution of controlled content. Traditional telephone companies using a pure IPTV solution, such as

AT&T, can take advantage of the DRM technology that is built into their network technology to enable many new distribution scenarios. This provides significant flexibility for consumers by enabling multiple in-home scenarios for viewing, moving and using content within the home, an issue that has been more difficult to enable in a CableCARD regime. Clearly, different MVPDs have invested in different network technologies to support their business models. Microsoft believes a single technology solution applicable to all MVPDs would stifle innovation and flexibility and leave consumers with fewer options of truly differentiated service.

The Commission's role is not to pick the technology solution for creating bi-directional cable-ready devices, but instead to take on the important job of creating a framework that enables network operators and third parties to figure out a technology solution and then implement it in a transparent and fair manner.<sup>11</sup> The key elements of that framework are rules on mandatory licensing of technology and intellectual property to third parties to enable them to design and develop a compatible navigation device, transparent testing processes that third parties can use to ensure their devices as designed are compatible and will fully function with the network and its features and capabilities, and ongoing network support of the device.

Any rules adopted in this proceeding should appropriately consider the rights of the network operator to determine the composition of their service, and, subject to their willingness to make the necessary technologies available for license to device manufacturers, they should be free to select the technology they feel is most appropriate in their context. Any Commission rules should only address reasonable licensing regimes and the necessary commitments so that competing device manufactures can have assurance that if they license the technologies and build products, they will work with and fully function in connection with the

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<sup>11</sup> The *Notice* at para. 12 seeks comment on whether other rule changes or proposals are needed. As noted above, the right answer is for the Commission to create the framework and to leave to the network operators and CE/IT industries design of the solution.

MVPD service. Microsoft suggests that the particular choice of technology (DCR+, CHILA, or any other) should not be the subject of regulation and is best left to individual MVPDs to determine considering the requirements of their businesses and the market. Instead, the Commission should focus on ensuring that MVPDs subject to the requirements of Section 629 implement an appropriately open and non-discriminatory licensing and support program for the technologies they select to ensure that those wishing to make compatible devices and place them into the retail market are able to do so with assurance that they will be supported when they attach to the networks for which they are designed.

**C. The CEA and NCTA Proposals Under Consideration Should Not Be Applied to IPTV.**

As Microsoft has stated to the Commission in several previous filings, simply extending the existing rules to all MVPDs is technologically impractical given the technology and architectural differences among various services, and that would lead to lack of innovation in this crucial market segment.<sup>12</sup> The *Notice* seeks comment on the November 2006 proposal submitted by CEA, Microsoft and other CE and IT companies outlining a solution for bi-directional cable-ready devices, and an alternative proposal put forth by NCTA.<sup>13</sup> Microsoft worked on developing the CEA proposal to advance the discussion on a bi-directional solution for cable operators in a manner that recognized the ability of cable operators to make fundamental technology decisions but enabled third parties to develop devices that were compatible with those technology decisions. However, neither the CEA proposal nor the NCTA OpenCable Applications Platform (“OCAP”) proposal presents a technologically viable option for IPTV architectures, such as Microsoft’s Mediaroom services.

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<sup>12</sup> See, e.g., Letter from Gerard Waldron to Marlene Dortch, In re: Comcast’s Request for Waiver of 47 CFR 1204.(a)(1), CSR-7012-Z; CS Docket No. 97-80 (December 1, 2006).

<sup>13</sup> *Notice* at paras. 9-12.

**D. A Navigation Device Solution for IPTV Providers.**

In response to the *Notice*'s request for comment on whether non-cable MVPDs should be tasked with promoting bi-directional compatibility, Microsoft believes that non-cable MVPDs should ultimately have to meet the requirements of Section 629, and that the Commission has a role in implementing the statutory mandate in the setting of non-cable video programming distributors.<sup>14</sup> Instead of mandating a specific technology solution, however, the Commission should require commercial availability of navigation devices and, especially with non-cable providers, leave to the parties how to implement a technology solution. In fact, Microsoft has been working with various IPTV companies in standards organizations to identify an industry solution, but even as those efforts continue, has pushed ahead with AT&T on a technology solution for Mediaroom IPTV.

As the Commission knows, Microsoft has worked closely with telephone companies in the U.S., including SBC (now AT&T), and around the world to develop sophisticated software to deliver to consumers high-quality multichannel video using IPTV. To achieve the goals of Section 629 on IPTV networks using Microsoft's Mediaroom platform (*e.g.*, AT&T's U-Verse), Microsoft has been working to develop an original equipment manufacturer ("OEM") adaptation kit ("OAK"). The goal of OAK is the same as the goal of Section 629: to enable independent, third-parties – whether set-top box manufacturers or other IT or CE device manufacturers – to design and build navigation devices that can connect to any deployed Mediaroom-based network nationwide. The OAK will be licensable to any navigation device manufacturer making devices for use with Mediaroom IPTV networks through a licensing

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<sup>14</sup> *Notice* at para. 13.

arrangement with Microsoft. Manufacturers will be able to build a variety of different devices that can be sold at retail to IPTV subscribers or sold to an IPTV network provider.<sup>15</sup>

The Microsoft OAK is a framework that enables set-top box manufacturers unaffiliated with an IPTV network operator to work with Microsoft's System on a Chip ("SoC") providers to build and test set top boxes that can be attached to an IPTV network and sold at retail or to the IPTV network provider directly. To do this, set-top box manufacturers license from Microsoft the necessary software products, documentation, processes, development and testing tools, network environment, porting kits, build environment, technical support and training. Using the OAK, a set-top box manufacturer can build their systems using a predefined SoC that they can obtain from a number of different Microsoft partners. Using the SoC and a pre-defined hardware abstraction layer, each set-top box manufacturer is able to incorporate software supplied by the IPTV Network operator into their unique set-top box design. A basic set-top box might only include the supplied IPTV Network operator software, and a more advanced box might augment that basic functionality in innovative ways.

Microsoft believes that the OAK approach described above will achieve Section 629's goal of retail competition while taking a different path than what the Commission has chartered before. New technologies demand fresh looks at the means to achieve important policy goals. For this reason, Microsoft urges the Commission to recognize in the context of IPTV providers, that the far better course is not to blindly extend the current Section 629 rules to IPTV providers, but instead to achieve the goal of retail competition by allowing alternative approaches, such as the OAK solution described above, to do the job.

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<sup>15</sup> In Mediaroom IPTV, network content is protected using DRM rather than traditional conditional access. Consequently, the separable security rules the Commission has adopted for cable television based on cable's conditional access technology are not relevant or necessary to achieve the commercial retail availability objectives of Section 629 for the IPTV network technology.

## CONCLUSION

For the reasons stated herein, we urge the Commission to adopt an approach on commercial availability of navigation devices that reflect the technology being deployed to deliver multichannel video programming.

Respectfully submitted,

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