

providers, there are still major distinctions and architectural differences between the technologies. In fact, the Commission is attuned in the Notice to the problems associated with a one-size fits all approach to the cable and telephony network.

First of all, when the telephone is not in use, the twisted pair wiring inside the premises is “dead”, i.e. the line is devoid of any electrical signals or other information. By contrast, cable wiring is active at all times. The signals transmitted by the operator over the entire frequency spectrum are constantly pulsing through the internal wiring, even when the television receivers in the home are turned off. This is why cable wiring, if not properly installed and maintained, unlike telephone wiring, is capable of harmful signal leakage that may interfere with critical aeronautical and over-the-air frequencies and the performance of terminal devices. This interference also may degrade the customer’s picture quality and feed back into the system to interfere with reception on another subscriber’s receiver. Thus, experience has shown that consumer access to cable inside wiring greatly increases the risk of signal leakage and harm to system integrity.³⁴

Nevertheless, the current rules give consumers freedom to use their wire to receive service from an alternative provider. But placing the demarcation point at some arbitrary point far outside the customer premises -- e.g., the lockbox or the

³⁴ Nevertheless, in the interest of giving consumers added flexibility, the cable industry has taken measures to educate consumers about handling inside wiring. The Society of Cable Television Engineers (“SCTE”) recently developed a handbook on consumer management of cable home wiring.

basement -- raises not only legal and statutory questions but in a real-world sense, creates practical consequences that can not be ignored: who maintains the wire for signal quality and ensures the integrity of the system from leakage and other hazardous effects, and from theft of service? Once a competitor is free to access the lockbox and tamper with the operator's taps, connectors and other equipment, it is virtually impossible to guard against signal leakage and theft of service.

The NPRM recognizes that moving the demarcation point for cable inside wiring may exacerbate critical signal leakage issues. This threat to public safety from improperly maintained and monitored inside wiring makes it all the more important that inside wiring rules allow cable operators to maintain control over the system. As Congress said:

“nothing in [the home wiring provision] should be construed to create any right of a subscriber to inside wiring that would frustrate the cable operator's ability to prevent or protect against signal leakage during the period the cable operator is providing service to such subscriber.”³⁵

Once the operator is forced to convey the common area wiring to the subscriber for use by a competitor, however, the operator cannot be held responsible for signal leakage or defects in the wiring. NCTA submits that the provider that is delivering service on a broadband wire should be responsible for signal leakage and related technical standards.

The FCC also expresses concern that with convergence of video, telephony and data, consumers will be confused over different demarcation points. But there

³⁵ H.R. Rep. No. 628, 102d Cong., 2d Sess. at 119.

is no reason for confusion. Consumers have the right to access and control the wiring within their units. If each service provider builds and maintains its own network, the end user will only benefit from the choice and flexibility of using one or more providers for different services delivered separately or in combination with other services.³⁶

In light of the differences in broadband and narrowband technology, the Commission should retain its separate demarcation points in MDUs. As described earlier, this will promote competition and consumer choice in MDUs.

B. The Telephone Inside Wiring Model is Inappropriate for Cable Inside Wiring

The Commission looks to the deregulation of telephone inside wiring as justification for moving the demarcation point for cable home wiring. But the telephone inside wiring rules were not developed in the context of multiple competitive providers accessing the same facilities or vying for the same customers. The Commission's policy objectives in deregulating telephone inside wiring were to "increase competition in the provision of installation and maintenance of inside wiring, to promote new entry into the inside wiring market, to produce cost savings for ratepayers, and to create an unregulated competitive marketplace environment

³⁶ As the Commission recognized, sharing the wire is not technically or economically feasible because one wire can not sustain the transmission of more than one broadband multichannel video programming service occupying the same frequency range. Even if the providers used a different part of the bandwidth, the signal losses and other technical performance problems that would result would greatly reduce the quality and reliability of service to the customer.

for the development of communications.”³⁷ Thus, the Commission prohibited carriers from restricting “the removal, replacement, rearrangement or maintenance of inside wiring that had ever been installed or maintained under tariff” in order to facilitate competition in installation and maintenance.³⁸ It was not to facilitate competition among service providers. Indeed, such competition was not even contemplated at the time. The demarcation rules were designed to assure that the customer “will be able to install inside wiring and access carrier-installed inside wiring on his premises.”³⁹

As the Commission describes, the demarcation point in single unit dwellings, both new and existing, is at a point within twelve inches of the protector, or if there is no protector the demarcation point is within twelve inches of where the wiring enters the customer’s premises. In existing multi-unit buildings, the demarcation point is determined in accordance with the carrier’s reasonable and nondiscriminatory standard operating practices, provided it does not interfere with the customer’s ability to access wiring on his or her premises (i.e. 12 inches from where wiring enters customer’s premises).

³⁷ Review of Sections 68.104 and 68.213 of the Commission’s Rules Concerning Connection of Simple Inside Wiring to the Telephone Network, CC Docket No. 88-57, 5 FCC Rcd No. 4686 (rel. June 14, 1990).

³⁸ Id.

³⁹ Congress rejected the telephone inside wiring model for cable home wiring during consideration of the 1992 Cable Act. In limiting subscribers' access to wiring after termination of service, it also made sure that cable systems were not to be treated as common carriers.

The “minimum point of entry” demarcation point, that is (1) where the wiring crosses the property line or (2) where the wiring enters a building or buildings, only arises in the context of new multiunit installations. This rule is designed to “assure that the carrier is not required to provide inside wiring services where its practice is not to provide such services.” Again it has nothing to do with permitting a competitor to access the common area wiring owned by the incumbent in order to serve an individual subscriber.

Congress’ limited objective in the cable “home wiring” provision was to facilitate multichannel competition by ensuring that the operator's ownership of home wiring does not create a barrier to entry should a subscriber wish to switch to another service provider upon termination of cable service. We submit that in the vast majority of MDUs, an alternative provider can readily access the subscriber’s wiring at the 12-inch demarcation point. In those limited cases where it cannot access the wiring, it can connect at the wallplate inside the unit. But usurping the operator’s facilities by moving the demarcation point to the point where it is “solely dedicated to serving a single unit” will not promote competition or consumer choice.

Moreover, many of the policy goals of consumer access to telephone home wiring are, as a practical matter, already served by existing cable wiring, further obviating the need for identical regulation. First, the ability of consumers to acquire their internal wiring upon termination of service under the 1992 Act accomplished much of the sought-after convergence goals since the wiring is under

the consumer's control.⁴⁰ In new single and multiunit construction, coaxial wiring is part of a developer's plans. And with "how to" wiring guides, such as the SCTE booklet, and the retail availability of splitters and coaxial wire, many consumers are able to control aspects of their home wiring. What is unnecessary is a change in the demarcation point to accomplish consumer self-management of customer premises wiring.

While the era of convergence has a lofty sound, the Commission should not miss the point of the telephone and wireless industries' desire for unrestricted access to cable-installed wiring -- to gain a free ride over cable wiring without incurring the capital costs or risks of installing their own facilities. If the Commission harmonizes the rules, telephone companies, with FCC sanction, will be able to force cable operators to subsidize their entry into the broadband video market -- whether or not the wire actually carries any one or a combination of video, telephony and data services.

IV. CABLE-RELATED CUSTOMER PREMISES EQUIPMENT AND TELEPHONE CUSTOMER PREMISES EQUIPMENT ARE NOT THE SAME

In the NPRM, the Commission asks whether it should permit consumers to connect their cable-related customer premises equipment ("CPE"), such as set top boxes, to cable facilities while allowing cable operators to protect their legitimate security interests and to provide new and innovative services. It also asks, among

⁴⁰ Congress did not grant pretermination access to cable home wiring in the 1992 Cable Act. Operators may voluntarily turnover ownership of the wiring upon installation, if the FCC, for example, deregulated rates for inside wire installation and home wiring maintenance contracts.

other things, whether the Commission should establish a common regulatory scheme to govern both cable and telephone network CPE or, alternatively, whether it should tailor its rules to accommodate different types of CPE technologies and functions.

In the interim, Congress enacted a provision in the Telecommunications Act that requires the Commission to adopt, in consultation with industry standards-setting organizations, regulations to assure the commercial availability of navigation devices and other equipment used to access multichannel video programming and other services. The provision also instructs the Commission not to prescribe regulations in this area that “would jeopardize security of multichannel video programming and other services” or “impede the legal rights of a provider of such services to prevent theft of service.”⁴¹ The Commission is preparing a Notice on this provision that presumably will address the cable-related CPE issues raised in the inside wiring NPRM.

In any event, our initial response to the retail availability issue and efforts to harmonize telephone and cable CPE rules is that the Commission’s analysis must take into account the vastly different technical characteristics of the telephone and cable networks and the devices that connect to them. While it is easy to draw surface parallels between cable and telephony, Part 68 of the FCC’s rules and Computer II-type rules are not readily applicable to cable. As described below, the telephone and the set top converter are like apples and oranges in the types of

⁴¹ Telecommunications Act of 1996, § 304.

functions they perform. Even as cable and telephony converge, these differences will remain and will be readily apparent to the consumer.

Today consumers have considerable flexibility to connect various cable-related devices to the cable network. Most operators allow customers to pick up a set top box at the cable system office and install it themselves with instruction from the operator. Customers may purchase plain cable converters, remote control units and game units at retail and connect them to the cable system. It is also anticipated that high speed broadband data modems will be commercially available for use with the cable network.

While set top descramblers may be installed by customers, the operator retains ownership of the device because it is the primary means of controlling cable system security. Unauthorized reception of cable programming diminishes the economic value of the creative product and the ability to improve and create new product. Thus, scrambling protects the legitimate proprietary interests of program producers, creators and copyright holders by enabling them to control the distribution of their product.

Nevertheless, even though cable operators incorporate proprietary encryption systems into their descramblers, the industry loses over \$2 billion in revenues annually from services that are obtained by consumers with illegally modified descramblers (out of a total \$4 billion in signal theft losses). If cable descramblers are made readily available to consumers at retail, cable pirates will

be able to freely purchase boxes, modify them to illegally receive encrypted services and then resell them to the public.

For this reason, the cable industry strongly believes that set top boxes that perform the descrambling function should not be sold at retail. This is the only way to ensure that cable system security is not jeopardized as Congress made clear in the Act. The Act requires, however, that other types of converter boxes, navigation devices or other equipment be made commercially available. In fact, in the cable/consumer electronic equipment compatibility proceeding, the Commission already decided that all new cable ready equipment should permit non-security functions to be accessible through competitive retail products.⁴² The question arises, however, as to whether commercially available equipment will be required to meet FCC signal leakage and other performance standards, and if not, who will be responsible for inferior equipment that radiates harmful signals.

Although the Commission is mindful of the signal theft issue throughout the NPRM -- and now has a Congressional mandate to ensure that its equipment regulations do not thwart cable security -- it seeks to analogize cable CPE to telephone CPE in the era of convergence. But, as we noted earlier in Part III, convergence has not happened yet and for the foreseeable future the following differences in cable and telephony should guide Commission analysis of this issue.

⁴² Compatibility Between Cable Systems and Consumer Electronics Equipment, ET Docket No. 93-7, First Report and Order, para. 42, rel. May 4, 1994.

First, the telephone line is inactive when not in use, while the cable line is always activated. Moreover, even when the telephone line is in use, the spectrum used for telephony is a fraction of the frequencies used by cable. If voice frequencies leak out into the environment, they will cause little harm because they are not used for other purposes. On the contrary, cable systems use frequencies that extend upwards into the hundreds of megahertz in a closed environment and, if allowed to leak into the spectrum have the potential to interfere with critical navigation, communications and emergency services and business applications. Any cable terminal equipment connected to the network must be built and maintained to protect against harmful signal leakage.

Second, the telephone system is made up of separate, direct circuit paths dedicated to each customer. The customer's line is connected to a central office and is not shared with any other customer. If the telephone CPE emits interfering signals back into the telephone line, it will only disrupt that customer's link and perhaps the phone connected at the other end. It will cause no interference to other customers. On the other hand, cable television is a shared network, which means subscribers utilize a common trunk and feeder cable that provides the same signals and is tapped off to each customer in the area. Signals emitted back into the system by one customer's CPE have the potential to degrade or even block the signals received by other subscribers. The interfering signals may come directly from the TV tuner or from circuits inside the tuner which control other functions or features of navigation devices sold at retail.

Third, it is virtually impossible to steal dialtone from a telephone system.

This is because the individual circuit path is connected to a central switching office that provides the signal just to the subscriber physically connected to that line.

Because a cable system disperses all of its signals simultaneously to all subscribers on the system, signal security is much harder to detect and to control. Unlike a passive telephone, the subscriber's set top descrambler actually contains a major part of the intelligence in a cable system. It performs functions similar to a central switching office, decoding and directing the signals that come into the home. By controlling access to the signals on the cable system, the set top descrambler is the focal point for cable signal theft. Therefore, customer access to this device through retail availability greatly increases the cable system's susceptibility to piracy of signals.

For these reasons alone, the Commission should retain different regulatory schemes for cable-related CPE and telephone CPE.

As cable, telephony and data services converge in the future, there is no reason to assume that there will be a need for uniform regulation. Even if, for example, cable operators integrate voice and video services over their distribution network, the telephone end unit will still be the same and should be subject to the existing telephone rules. On the other hand, cable operators could utilize a new digital telephone device for broadband services that might necessitate a different set of rules. Similarly, operators are experimenting with various types of

interactive set top boxes.⁴³ The point is that this is new territory and it is just too early to tell whether new registration programs or a new regulatory scheme should be adopted.

In any event, the Commission can be assured that current cable set top boxes with telephone connectors already meet Part 68 standards. And for video services, the cable industry is complying with CPE standards in Part 15, 73 and 76 of the Commission's rules. The Commission should reject, however, a uniform regulatory scheme for cable and telephony CPE equipment at this time.

V. THE COMMISSION SHOULD NOT IMPOSE TECHNICAL STANDARDS FOR CONNECTION

The NPRM seeks comment on whether it should establish standards for interface jacks used in connection with consumer electronics equipment. There are currently many industry-wide standards and specifications on connection-related issues, such as those developed by Bellcore, IEEE, EIA, and SCTE. As the Commission recognizes, the F connector has become the de facto standard in the cable industry for interconnecting cable service with TV receivers and VCRs. It will soon become an accredited standard by SCTE.

The delivery of multiple telecommunications services over a single broadband network does not necessitate the creation of a whole new set of connection standards. Evolving technologies will utilize existing broadband

⁴³ There are two types of interactive boxes. The first type is passive device, which interacts with the network, loads information but does not communicate with the headend or central office. The second type is active, that is, it transmit information to the headend or central office. The Commission may need to differentiate its rules with respect to each type of equipment.

standards where appropriate and will develop new voluntary standards through industry standards-setting bodies to meet future needs. The marketplace has worked effectively in this area. Government regulation will only stifle experimentation with alternative technical standards for fiber and other distribution technologies.

VI. COMPELLING CABLE OPERATORS TO CONVEY THEIR FACILITIES TO ANOTHER CONSTITUTES AN UNCONSTITUTIONAL TAKING UNDER THE FIFTH AMENDMENT

Moving the demarcation point to encompass the cable operator's common plant facilities would raise insurmountable taking issues under the fifth and fourteenth amendments of the Constitution.⁴⁴ Loretto v. Teleprompter Manhattan CATV Cor., 458 U.S. 419 (1982). As we have shown, Congress did not intend to transfer the cable home wiring to the subscriber automatically; it is only upon termination of service that the subscriber has the right to acquire -- that is, pay for -- the wiring in his premises. The Commission's proposals would circumvent Congressional intent and force the operator to relinquish its property outside the dwelling unit without just compensation.

But simply adopting a "just compensation" formula is not the answer here. Cable operators would not, unless compelled by the government, convey critical portions of their distribution infrastructure if they were only provided

⁴⁴ U.S. Const. Amend. V ("nor shall private property be taken for public use, without just compensation"). See Kaiser Aetna v. United States, 444 U.S. 164 (1979); Bell Atlantic Telephone Cos. v. FCC, 24 F.3d 1441 (D.C. Cir. 1994); Yancey v. United States, 915 F.2d 1534 (Fed. Cir. 1990).

compensation. To the contrary, cable operators have invested in distribution facilities so they can compete, not so they can be forced to sell out to competitors. Indeed, in the video dialtone context, the Commission recognized the detrimental effect to competition from allowing cable operators to voluntarily sell out to the local telephone company.⁴⁵ It would contravene the Telecommunications Act and the Commission's own policies to adopt rules in this proceeding that would permit telephone companies and other competitors to force cable operators to sell out against their will.

The government could never adequately compensate an operator for the lost opportunity costs resulting from this unlawful seizure. Moreover, just compensation must be determined in an adjudicatory proceeding subject to judicial review.⁴⁶

Simply paying the cable operator the "replacement cost" for the wiring does not compensate the operator for the lost opportunity to compete in the provision of telecommunications services. Indeed, any compensation scheme devised by the Commission will still run counter to the overall policy goal of facilities-based competition. It will also impair the customer's ability to receive alternative services from multiple providers simultaneously. Cable's competitors are eager of

⁴⁵ Video Dialtone Report and Order, 7 F.C.C. Rcd 5781, 5835-36 (1992).

⁴⁶ Florida Power Corporation v. FCC, 772 F.2d 1537, 1546 (11th Cir. 1985), rev'd on other grounds, 480 U.S. 245 (1987) (the Commission may not "prescrib[e] a 'binding rule' in regard to the ascertainment of just compensation." The determination of just compensation is "clearly a judicial function".)

course to pay the replacement cost, instead of build their own facilities, because they will effectively eliminate cable as a competitor for that subscriber.

CONCLUSION

For the foregoing reasons, the Commission should not adopt uniform rules for cable inside wiring and telephone inside wiring.

Respectfully submitted,



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