

core objective. In addition, such voluntary preferences also could discourage capacity expansion, since the telephone companies undoubtedly would be more resistant to expand capacity in order to serve programmer-customers whom they deemed unworthy of preferences.

B. THE CONSTITUTION FORBIDS THE COMMISSION FROM MANDATING PREFERENTIAL VIDEO DIALTONE TREATMENT FOR CERTAIN CLASSES OF PROGRAMMERS

It is beyond cavil that video programmers "engage in and transmit speech, and they are entitled to the protection of the speech and press provisions of the First Amendment."^{49/} If the Commission requires telephone companies to grant preferences to "commercial broadcasters or ... certain classes of PEG or not-for-profit video programmers,"^{50/} it would implicate the First Amendment by denying a class of speakers (all other potential programmer-customers not included in the advantaged group) an opportunity to compete for favored capacity and rendering it more difficult for them to obtain carriage via the remaining capacity.^{51/}

A Commission-sanctioned preferential access policy would grant privileged access to communications media based upon a speaker's membership in particular groups favored by the government. The blatant constitutional infirmities of the instant proposal exceed even those of the 1992 Cable Act's must carry rules,^{52/} which still have not been declared permissible under

^{49/} Turner Broadcasting Sys., Inc. v. FCC, 114 S. Ct. 2445, 2456 (1994); Leathers v. Medlock, 499 U.S. 439, 444 (1991).

^{50/} Third Notice at ¶ 281.

^{51/} See Turner Broadcasting, 114 S. Ct. at 2457 (must carry rules regulate speech by rendering it more difficult for cable programmers to compete for carriage on the limited channels remaining).

^{52/} 47 U.S.C. §§ 614-15.

the First Amendment after one round of Supreme Court review.^{53/} Even assuming arguendo that there are any circumstances under which the government can grant such a preference consistent with the First Amendment,^{54/} such a policy must, at a minimum, be supported by substantial evidence to justify its scope and necessity.^{55/} But there is no empirical basis for concluding that broadcasters or any other category of programmer would be denied the opportunity to articulate and disseminate their messages absent a government mandate of privileged access to video dialtone networks. Indeed, there is no possibility of establishing the appropriate factual basis for granting preferences to certain video dialtone programmer-customers, for the simple reason that there is no way to assess empirically a service that has never been actually offered to the public.^{56/}

^{53/} See Turner Broadcasting, 114 S. Ct. at 2472 (remanding issue of must carry's constitutionality to district court for development of "a more thorough factual record").

^{54/} See R.A.V. v. City of St. Paul, 112 S. Ct. 2538, 2545 (1992)(government may not regulate speech based on hostility or favoritism).

^{55/} Turner Broadcasting, 114 S. Ct. at 2469-72; United States v. O'Brien, 391 U.S. 367, 377 (1968) (even a content-neutral speech regulation may be upheld only if it (1) advances an important or substantial governmental interest (2) is unrelated to the suppression of free expression and (3) restricts First Amendment freedoms in a manner that is no greater than is essential to the furtherance of that interest).

^{56/} In Turner, the Court stated that "in applying O'Brien scrutiny we must ask first whether the Government has adequately shown that the economic health of local broadcasting is in genuine jeopardy and in need of the protections afforded by must-carry." 114 S. Ct. at 2470. The Court concluded that "[o]n the state of the record developed thus far...we are unable to conclude that the Government has satisfied either inquiry." Id.

Of course, the record in the must carry case that failed to satisfy the Court was more developed than any record that has emerged in support of the instant preferential access proposals.

As a threshold matter, NCTA submits that any Commission decision to grant such a preference inevitably implicates content considerations. There is simply no content-neutral basis for deciding that, for instance, speech by commercial broadcasters is entitled to more favorable treatment on video dialtone networks than is speech by cable programmers. In Turner Broadcasting, the Court declined to characterize the must-carry rules as content-based^{57/} -- and therefore not subject to strict scrutiny -- principally because it believed that "Congress granted must-carry privileges to broadcast stations on the belief that the broadcast television industry is in economic peril due to the physical characteristics of cable transmission and the economic incentives facing the cable industry."^{58/}

The "economic incentives" identified by the Turner Court are wholly absent in the video dialtone context, however. In Turner, the Court noted the Congressional interest in ensuring the viability of over-the-air television in the face of alleged economic incentives by cable operators to harm broadcasters.^{59/} Specifically, the Court noted that Congress was concerned that increased competition between cable operators and broadcasters for advertising revenues -- and growing vertical integration between cable operators and cable programmers -- created economic incentives for operators to deny carriage to local broadcast stations.^{60/} There is no finding that the telcos have any economic incentives to discriminate against broadcasters or non-

^{57/} It is noteworthy that the Court reached its decision on whether the must-carry rules are content-based by a 5-4 margin.

^{58/} Turner Broadcasting, 114 S.Ct. at 2467.

^{59/} Id. at 2454.

^{60/} Id.

profit programmers. Indeed, the record thus far indicates that the telcos appear inclined to discriminate *in favor* of such programmers.

The physical characteristics of cable systems identified by the Turner Court are also missing from video dialtone. The must-carry rules, according to the Court,

are justified by the special characteristics of the cable medium: the bottleneck monopoly power exercised by cable operators and the dangers this power poses to the viability of broadcast television. Appellants do not argue, nor does it appear, that other media -- in particular, media that transmit video programming such as MMDS and SMATV -- are subject to bottleneck monopoly control, or pose a demonstrable threat to the survival of broadcast television. It should come as no surprise then, that Congress decided to impose the must-carry obligations on cable operators only.^{61/}

As the Commission has repeatedly reaffirmed, its video dialtone policies are designed to ensure that telco video platforms do not operate as a bottleneck.^{62/}

In short, the Court in Turner Broadcasting hesitated to view the must carry rules as content-based because of the Congressional emphasis on putatively content-neutral considerations -- economic incentives and physical characteristics -- that are not present in the video dialtone context. A governmental effort to privilege a class of speakers in the absence of such factors is far more likely to be content-based, since there are no neutral economic or technological

^{61/} Id. at 2468.

^{62/} Under the policy framework articulated by the Commission, video dialtone providers will be competing with cable operators and thus cannot be said to represent the only means of transmitting programming to the home. Moreover, the obligations imposed on carriers to expand their video dialtone capacity are aimed at preventing them from becoming bottlenecks.

As argued above, the pending channel sharing proposals would flatly contravene the nondiscriminatory principles underlying its video dialtone proposals and resurrect bottleneck-type concerns. In any event, the record thus far suggests that the attendant discrimination arising from these measures would operate in favor and not against broadcasters, and thus could not justify the proposed preferences.

considerations underlying its action. Accordingly, the Court's rationale for declining to impose strict scrutiny in Turner Broadcasting would be absent here. If these preferential access proposals were subject to strict scrutiny review, it is virtually certain that they would fail to withstand constitutional muster.

Even if a content neutral rationale could be proffered, there is no substantial government interest to be furthered via a preferential access proposal. Indeed, there has not even been a Congressional declaration of such an interest.^{63/} In the case of broadcasters, moreover, the government already has allocated a substantial portion of a public resource (*i.e.*, spectrum) for free, and has granted them privileged access to cable systems. Either the efficacy of the government's actions in support of broadcasters begins to diminish the importance of taking further action to advance their interests, or the persistent inability of those efforts to advance those interests reveals their lack of importance to the public. In either instance, further governmental action in support of preferential treatment is not justified.^{64/}

Even if an important government interest could be identified in this instance, there is absolutely no factual or empirical basis for advancing it via preferential access to video dialtone systems. In the must carry context, the Supreme Court has stated:

^{63/} Cf. Turner Broadcasting, 114 S. Ct. at 2471 ("courts must accord substantial deference to the predictive judgments of Congress").

^{64/} Not only would a preferential access proposal fail to advance a substantial government interest, it also would seriously harm such an interest. The Commission's declared interest in establishing a method of video programming distribution "based for the first time on nondiscriminatory video common carriage," Video Dialtone Order, 7 FCC Rcd at 5787, would be thwarted by a policy that grants preferences to a class of video programmers.

That the Government's asserted interests are important in the abstract does not mean, however, that the must-carry rules will in fact advance those interests. When the government defends a regulation on speech as a means to redress past harms or prevent anticipated harms, it must do more than simply "posit the existence of the disease sought to be cured." Quincy Cable TV, Inc. v. FCC, 768 F.2d 1434, 1455 (CA DC 1985). It must demonstrate that the recited harms are real, not merely conjectural, and that the regulation will in fact alleviate these harms in a direct and material way.^{65/}

In the video dialtone context, there is no empirical or market experience which yields a record of harms inflicted upon broadcasters or PEG and non-profit programmers, *for the simple reason that there is no empirical or market experience with video dialtone service at all.* Accordingly, there is simply no basis upon which the government can demonstrate that the groups proposed to be favored by video dialtone preferences have suffered "harms [that] are real" that would be alleviated "in a direct and material way" by a policy of preferences.^{66/} If anything, the record thus far indicates that telephone companies have every intention of being particularly solicitous of, and accommodating to, commercial broadcasters and PEG and non-profit programmers.^{67/} Because, *a fortiori*, there can be no factual record upon which to justify a policy of preferences, the First Amendment bars the Commission from adopting one.^{68/}

^{65/} Turner Broadcasting, 114 S. Ct. at 2470.

^{66/} Id.

^{67/} See, e.g., Third Notice at ¶ 272.

^{68/} Id. at 2472; see also Home Box Office, Inc. v. FCC, 567 F.2d 9, 37 (D.C. Cir. 1977) (invalidating anti-siphoning rules because of lack of evidentiary basis).

III. THE COMMISSION SHOULD ADOPT A FLEXIBLE POLICY REGARDING TELEPHONE COMPANY ACQUISITION OF IN-REGION CABLE OPERATIONS THAT PREVENTS WASTEFUL AND UNECONOMIC DEPLOYMENT OF CAPITAL IN FRANCHISE AREAS INCAPABLE OF SUPPORTING TWO WIRELINE VIDEO PROGRAMMING PROVIDERS

The Commission has asked for comment regarding the establishment of a policy permitting telephone company acquisition of in-region cable facilities "in markets in which two wire-based multi-channel video delivery systems are not viable."^{69/}

As a threshold matter, the Federal antitrust laws^{70/} are well suited to accomplish the pro-competitive objectives underlying the Commission's restriction on the acquisition of in-region cable facilities by telephone companies.^{71/} Section 7 of the Clayton Act bars acquisitions whose effect "may be substantially to lessen competition or tend to create a monopoly."^{72/} Application of the Clayton Act standard on a case-by-case basis would enable the agencies with the broadest responsibility for competition policy to examine all of the issues raised by the Commission in connection with the in-region acquisition of cable facilities by telcos. The antitrust agencies have demonstrated a willingness to closely scrutinize proposed acquisitions which could render two-wire competition less likely.^{73/}

At a minimum, there is no justification for a buyout policy that forces cable operators to remain in business in markets that are unable to sustain competition from two wireline

^{69/} Third Notice at ¶ 277.

^{70/} 15 U.S.C. § 1 et. seq.

^{71/} See Video Dialtone Order, 7 FCC Rcd at 5837-38.

^{72/} 15 U.S.C. § 13.

^{73/} See, e.g., "FTC Clustering Scrutiny Slows Deal, Viacom Says," Multichannel News, Nov. 21, 1994 at 77.

providers of video programming service. The attached economic analysis prepared by Economists Incorporated concludes that franchise areas with fewer than 50,000 inhabitants are unlikely to be capable of sustaining two-wire competition among multichannel video programming providers: in "rural areas and isolated small cities, the extent of the market may not be sufficient to support competing video services given the high fixed costs incurred in establishing such services."^{74/} Likewise, the report suggests that in many urban areas, the disparity between the size and subscriber base of telephone companies and cable companies will give the former a significant advantage over the latter by virtue of their lower per-subscriber costs.^{75/} The report also notes that in smaller franchise areas, the telephone companies enjoy an enhanced ability to successfully employ a cross-subsidization strategy because the success of such a scheme requires a subsidy which is both smaller and harder to detect.^{76/}

The Commission has suggested that, absent a buyout restriction, two-wire competition will not develop because the telcos will simply purchase, rather than construct, video programming distribution facilities. In many small and medium-sized markets, two-wire competition also may be foiled by telco overbuilders employing cross-subsidization and predatory pricing strategies. In such circumstances, a buyout prohibition will waste assets and prevent

^{74/} Economics Incorporated, "Viability of Competition between Wire-Based Video Systems in Franchise Areas with Fewer than 50,000 Inhabitants" at 2 ("Economists Inc. Report"). The report is appended to these comments.

^{75/} Id. The Commission benchmark rate regulations for cable service expressly confirm the accuracy of Economists Inc.'s observations. Under the benchmarks, per-subscriber revenues decline as an operator's subscriber base increases, reflecting the relatively higher unit costs absorbed by smaller systems.

^{76/} Id. at 2, 9.

operators from recouping and redeploying capital, which would actually thwart -- rather than spur -- infrastructure development and modernization.

In markets where cable operators face higher fixed costs, greater per-subscriber costs, and an enhanced risk of cross-subsidy, the Commission's rules should not bar acquisitions of cable facilities by telcos that would otherwise be permissible under the antitrust laws:

In those instances where the market cannot sustain two wire-based multichannel video providers, it is a wasteful use of society's resources to incur the costs of constructing two broadband wire networks. Whether because of insufficient market demand relative to fixed costs, cost advantages enjoyed by telephone companies from having larger service areas, or the ability of telephone companies more easily to cross-subsidize video operations from regulated services in smaller communities, one video provider eventually will be forced to exit and its expenditures on plant will go unrecouped. To prevent this resource waste, it is desirable in these circumstances to have a public policy that allows the telephone companies either to purchase or to create a joint venture with the existing cable operator. This will encourage the development of advanced video facilities without incurring unproductive duplication of resource expenditures.^{77/}

After reviewing the economic literature on head-to-head competition between cable operators, Economists Inc. concludes that it is "unlikely that [such] competition will develop and persist in communities of less than 50,000 inhabitants."^{78/} New entry into a market of this size will produce a rise in per-subscriber costs and a decline in revenue per subscriber. The resulting decline in cash flow, according to the report, is likely to yield a rate-of-return in markets of 50,000 or less that is significantly below the 11.25 percent cost of capital determined as reasonable by the FCC. Given sub-par returns to capital, it is unlikely that both competitors can survive in such markets.

^{77/} Id. at 2.

^{78/} Id. at 10.

While Economists Inc. strongly suggests that acquisition of in-region cable facilities by telcos in markets below 50,000 inhabitants should not be restricted, the Commission's rules also should not flatly ban such acquisitions in larger markets. At a minimum, the Commission should establish a good-cause waiver permitting buyouts in larger markets where the acquirer and acquiree can establish that two-wire competition is unsustainable. The Commission can and does provide for "good cause" waivers of its rules.^{79/} It should state expressly that a showing that two-wire competition is not economically viable would be sufficient to justify the waiver of its buyout restrictions in larger markets. Parties should also be permitted to seek a waiver if they can show to the Commission's satisfaction that the public interest would otherwise be served thereby.

IV. THE COMMISSION MUST ADOPT RULES TO PROHIBIT TELCOS OFFERING VIDEO DIALTONE FROM USING THEIR POLE OR CONDUIT SPACE IN A DISCRIMINATORY OR ANTI-COMPETITIVE MANNER

The Commission has suggested a need to fashion rules designed to prevent telcos offering video dialtone service from leveraging their control over pole and conduit space in a manner that discriminates against cable operators.^{80/} The ability of cable operators to utilize "excess space" on telco poles and conduits has been critical to the cable industry from its inception. Telephone companies, however, have repeatedly used their control over utility poles and conduits in an effort to frustrate the emergence of competing providers of telecommunications services.^{81/}

^{79/} See 47 C.F.R. § 1.3; WAIT Radio v. FCC, 459 F.2d 1203, cert. denied, 409 U.S. 1027 (1972).

^{80/} Further Notice at ¶ 285.

^{81/} See, e.g., H.R. Rep. No. 721, 95th Cong., 1st Sess. 3 (1977); 123 Cong. Rec. H 5079, 16, 694-95 (Statement of Rep. Wirth).

The Pole Attachment Act of 1978 was enacted in response to instances of anti-competitive leveraging of pole and conduit space by telephone companies against cable operators.^{82/}

As documented extensively in the Joint Comments filed in this proceeding by four cable companies and three state cable trade associations, the onset of entry into video programming distribution by telephone companies has intensified their anti-competitive abuse of control over pole and conduit space.^{83/} Such discriminatory tactics underscore the importance of adopting rules to ensure that telco control of poles and conduits does not hamper the development of the competition the Commission seeks to promote through its video dialtone policies. As the Joint Comments suggest, it is particularly important for the Commission to bar telcos from imposing any pole attachment rate, term or condition that distinguishes between transmission medium type (e.g., fiber versus coaxial conductors) or service offering, or has the intent or effect of preventing cable operators from deploying their facilities.^{84/}

In addition to adopting the proposals advanced by the Joint Comments, the Commission must take one further step: telcos should be required to impute a portion of the cost of poles and conduits to their video dialtone service, and charges for video dialtone should reflect this

^{82/} S. Rep. No. 580, 95th Cong., 1st Sess. 13 (1977).

^{83/} In the Matter of Telephone Company - Cable Television Cross-Ownership Rules, Sections 63.54 - 63.58, CC Docket No. 87-266, Pole Attachment Comments of Continental Cablevision, Inc., Jones Intercable, Inc., Western Communications, Inc., Greater Media, Inc., Texas Cable TV Association, New York State Cable Television Association, Florida Cable Television Association at 18-24 ("Joint Comments").

^{84/} With electric utilities contemplating entry into the video distribution business, see, e.g., Rivkin, "More Power to the Utilities," The New York Times, Oct. 22, 1994 at 23, the same safeguards should be applied to their provision of pole attachments.

imputed cost. To complete the equation, revenues so recovered from video dialtone customers must be used to defray pole and conduit costs.

The construction, maintenance and repair costs of utility poles and conduits are financed by regulated local exchange monopoly ratepayers. Unless a telco's video dialtone services compensate the local exchange monopoly for their use of those poles and conduits, regulated telephone service ratepayers will be forced to bear the costs of an input -- pole and conduit space -- that is critical to the provision of video programming services. Not only would telco video dialtone affiliates garner an unfair competitive advantage, but their uncompensated use of utility poles and conduits would accelerate the decline of those assets and put upward pressure on regulated telephone rates.

To ensure competitive equity, a share of a telco's pole and conduit costs must be apportioned to its video dialtone service and its video dialtone rates must include a charge designed to recover those costs. This charge should be no less than the rate paid by a competing cable operator using the same pole and conduit space.^{85/} Absent such a requirement, telcos would be able to compete unfairly by pricing video dialtone services below their true costs.

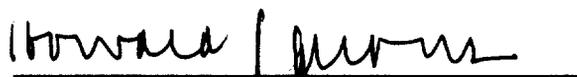
^{85/} The Pole Attachment Act establishes a formula under which cable operators pay a proportionate share of the costs of poles and conduits they use, reflecting the fact that operators do not own the poles and conduits but rather obtain their attachments under licenses granted by the utility-owners. In the case of a telco's video dialtone service, the appropriate charge for pole attachments should be a portion of the telco owners' pole and conduit costs rather than an amount based upon the fee paid by cable operators or other licensees for such attachments.

CONCLUSION

For the foregoing reasons, the Commission should reject proposals that would give particular programmers preferential access to the video platform; adopt an exception to its buyout restriction for communities with less than 50,000 inhabitants; and adopt rules to prohibit telcos from using their pole or conduit space in a discriminatory or anti-competitive manner.

Respectfully submitted,

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**VIABILITY OF COMPETITION BETWEEN WIRE-BASED VIDEO
SYSTEMS IN COMMUNITIES WITH FEWER THAN 50,000
INHABITANTS**

Introduction

In order to further the public interest by promoting facilities-based local competition in the provision of multi-channel video services, the Commission has determined generally to prohibit telephone companies from acquiring cable facilities in their service areas. 7 FCC Rcd at 5837-38. However, recognizing that some markets may be incapable of supporting two video delivery systems, the Commission is considering modifying its ban. In the Matter of Telephone Company-Cable Television Cross-Ownership Rules, Memorandum Opinion and Order on Reconsideration and Third Further Notice of Proposed Rulemaking, CC Docket 87-266, released November 7, 1994, at ¶276. The Commission seeks comment on what criteria would help identify those markets in which two wire-based multi-channel video delivery systems would likely not be viable.

Telecommunications policy bills considered in the Senate and the House of Representatives in the last session of Congress suggested allowing telephone company acquisitions of cable systems in communities or franchise areas smaller than 50,000 inhabitants. (S. 1822, section 501 and H.R. 3626, section 656) This paper examines the existing economic literature to determine whether it is consistent with the notion that two wire-based multi-channel video delivery systems would likely not be viable in communities smaller than about 50,000 inhabitants. (In this paper, we use the word "community" to mean local franchise or service area.)

Employing a franchise or service area size criterion is reasonable because, as the Commission notes, the rationale of allowing acquisitions in certain situations is that the market may not be able to support more than one wired video provider. In rural areas and isolated small cities, the extent of the market may not be sufficient to support competing video services given the high fixed costs incurred in establishing such services. In urban contexts, because telephone company franchise areas typically are much more extensive than cable franchise areas, cable systems limited to small franchise territories may be unable to compete with more efficient, lower-cost telephone company video delivery systems.

In those instances where the market cannot sustain two wire-based multichannel video providers, it is a wasteful use of society's resources to incur the costs of constructing two broadband wire networks. Whether because of insufficient market demand relative to fixed costs, cost advantages enjoyed by telephone companies from having larger service areas, or the ability of telephone companies more easily to cross-subsidize video operations from regulated services in smaller communities, one video provider eventually will be forced to exit and its expenditures on plant will go unrecouped. To prevent this resource waste, it is desirable in these circumstances to have a public policy that allows the telephone companies either to purchase or to create a joint venture with the existing cable operator. This will encourage the development of advanced video facilities without incurring unproductive duplication of resource expenditures.

This paper examines two economic studies of the economies of scale in cable service, and explores the potential for competition between two video providers. Lacking data on telephone company video service offerings in the relevant size range, we look at these cable overbuild studies, which show that having two competing video suppliers is more costly than having one. These effects are more important for small systems than for large ones, because the role of fixed costs declines as the systems grow. Hence, for a small enough market area, two competing systems cannot profitably coexist. The studies also show that smaller cable systems have distinctly higher per-subscriber costs than larger ones. In short, there is a cost disadvantage from having two competing video suppliers, and the impact on costs

is larger for the smaller system. Hence, the smaller operator is disadvantaged vis-à-vis the larger operator.

The first study, by Smiley,¹ develops a theoretical model of competition between overbuild cable systems and examines the equilibrium outcome implied by the model. The second paper, by Hazlett,² explores whether overbuild entry is feasible by examining the rate of return an entrant could expect to attain under various cost and demand assumptions.

The work by Smiley suggests that the minimum market size at which it becomes profitable to have direct competition is larger than 50,000 inhabitants. The approach taken by Hazlett illustrates that the cost per subscriber is higher when there is head-to-head competition between two video providers relative to when service is provided by only one operator. Depending on market size, cost and demand conditions, and the impact of competition on revenue and cash flow, this cost disadvantage may be sufficient to preclude the profitable existence of two competing cable operators. These studies lend support to the conclusion that it is unlikely that stable, long-term head-to-head competition will develop in communities of fewer than 50,000 inhabitants.

While both studies use cost data from the mid to late 1980's, and hence do not reflect the cost conditions experienced by cable operators today, it is likely that the costs of providing the types of residential broadband services envisioned as part of the information superhighway will exceed the costs experienced by cable operators in the 1980s. Therefore, the cost penalty of having two video providers in the future, relative to having a single provider, is likely to be greater than the cost penalty under 1980's technology.

¹ Smiley, Albert K., "Direct Competition Among Cable Television Systems," U.S. Department of Justice, Economic Analysis Group Discussion Paper 86-9 (1986).

² Hazlett, Thomas W., "Regulating Cable Television Rates: An Economic Analysis," U. C. Davis, Institute of Government Affairs, Program on Telecommunications Policy Working Paper Series No. 3 (1994).

Smiley

Smiley develops a theoretical model of the competitive interaction between two cable operators with overlapping franchise areas. The model encompasses both the plant construction and cable service pricing decisions of the firms. The model determines the equilibrium degree of overbuilding as a function of cost and demand conditions and the nature of the competitive interaction between the firms.

Smiley derives benchmark parameters for cost and demand variables, examines the equilibrium outcome for the benchmark case, and tests the sensitivity of the solution over a range of parameter values. Smiley's results suggest that complete overbuilding is unlikely in most cases, and that an incumbent operator can often foreclose subsequent entry by cabling the entire franchise area.

Smiley's benchmark case assumes the demand elasticity faced by an overbuilt firm is -3 . In other words, if two overbuilt firms are charging the same rate and one firm raises its rate by 1 percent while the other firm stands pat, the firm raising price would lose 3 percent of its subscribers in the overbuilt area. Smiley's benchmark also assumes a potential market of 50,000 homes with a density of 90 homes per mile. Based on interviews with cable personnel and an analysis of cable operator financial statements, Smiley arrives at a headend fixed cost of \$28,480 per month, a cable plant cost of \$258.19 per mile per month, and a marginal cost per subscriber of \$12.22 per month.

In his benchmark case, Smiley determines that the equilibrium is characterized by no overbuilding under an assumption of sequential entry (i.e., one firm gets to build its plant before the other firm starts, and fully anticipates the other firms actions).³

Smiley's benchmark assumption of 50,000 homes corresponds to roughly 133,500 inhabitants, since in 1986 there were 2.67 persons per household. However, as Smi-

³ Smiley also considers the situation when both firms start at the same time, but given the assumption of the existence of a cable operator this situation seems less applicable.

ley notes, because of the structure of the model, the effects of varying the number of households and the households per mile are captured by varying the fixed costs and cable plant costs. In particular, decreasing the number of households has the same effect on a firm's behavior as increasing fixed costs. Therefore, analyzing Smiley's model assuming 50,000 inhabitants, or roughly 18,725 households, produces the same result in the model as increasing fixed costs by 167 percent. Given that a second operator does not enter under the benchmark cost assumptions, clearly assuming any higher costs than the benchmark case also yields the result of only one cable system in equilibrium. Hence, Smiley's model predicts only one cable system will exist in equilibrium at the proposed cutoff of 50,000 inhabitants, and that, in fact, a higher population cutoff could be used.

Hazlett

Hazlett examines whether competition from a second cable operator is feasible by computing the rate of return a firm would achieve if it overbuilt an incumbent cable operator.

Hazlett considers a market with 50,000 households, having a density of 93 homes passed per mile of cable plant, and a 62 percent cable penetration of homes passed. After incurring the cost of building a second cable system, Hazlett assumes that the entrant achieves a 50 percent market share (i.e., evenly divides the market with the incumbent) in the first year. Hazlett takes his capital costs from Smiley's paper. He uses \$1.2 million for head-end and start-up costs, \$23,000 per mile for plant costs, and \$120 per subscriber for converter/installation charges. He assumes that there is a fifteen year life for all capital, and that there is zero salvage value. Based on data from Paul Kagan Associates, Hazlett uses an average revenue per subscriber per month of \$29.93 and a cash flow margin of 42.9 percent. Finally, he assumes a 5 percent per year growth in revenue.

Using these benchmark parameters, Hazlett determines that a cable entrant would be able to attain an 18 percent rate of return. However, Hazlett immediately recognizes that entry is likely to reduce average subscriber revenue and increase cable penetration. To account for this, Hazlett assumes that entry results in a 20 percent decrease in revenue per subscriber and is accompanied by a 20 percent increase in

penetration. Even though revenue falls by 20 percent, Hazlett assumes that the cash flow margin remains unchanged. In this revised scenario, Hazlett finds that a cable entrant would earn a 16 percent rate of return.

The remainder of this section considers three modifications to Hazlett's revised scenario. First, the rationale behind the assumption that a reduction in revenues does not affect the cash flow margin is discussed, and the impact of relaxing that assumption is explored. Second, the sensitivity of the result to the number of households, or community size, is presented. Finally, some of Hazlett's data from Paul Kagan Associates is updated.

Cash Flow Margin

While Hazlett recognizes and adjusts for the impact of competition on prices and revenues, he fails to account for the impact of reduced revenues on cash flow. Under Hazlett's assumption that there is no change in the cash flow margin, the \$6.00 reduction in average subscriber revenue caused by competition in his model produces less than a \$2.60 reduction in per subscriber cash flow. Hazlett accounts for this differential by assuming that the cable operator recovers the other \$3.40 in X-efficiency gains. That is, there are \$3.40 in costs savings per subscriber that the cable operator could realize now, without entry or competition, but does not.

Assuming there is no efficiency gain, a \$6 reduction in revenue could conceivably reduce cash flow by \$6, since the cable operator is providing the same level of service. Assuming a complete pass-through of the revenue reduction to cash flow on a per subscriber basis reduces the entrant's expected rate of return to 9.6 percent. This is substantially below the 11.25 percent cost of capital that the FCC determined was appropriate for the cable industry. Even if cash flow falls by less than the full reduction in revenues, if the cash flow margin falls to less than 31.8 percent, the rate of return would be below the 11.25 percent standard established by the FCC.

Community Size

The relationship between community size and the capital cost per subscriber in Hazlett's model (and by implication in Smiley's model) is depicted in Figure 1. This

figure contains two curves, one showing the average cost of capital per subscriber if a single cable firm serves the community, and the second showing the average cost per subscriber if there are two firms serving the community. The average cost per subscriber with two firms is higher because each firm's individual costs are roughly the same as their costs would be if they were the sole firm in the market, but now each firm has approximately only one-half the number of subscribers it would have if it were the sole cable operator.

Capital Costs Based on Hazlett's Analysis

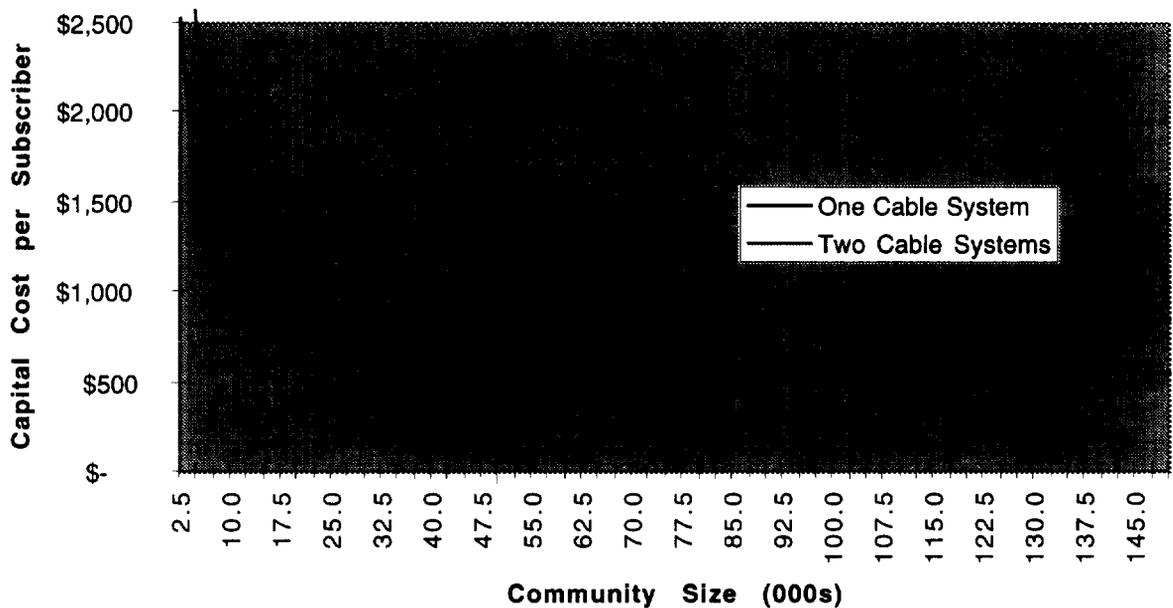


Figure 1 also shows that initially there is a rapid decline in the capital cost per subscriber as the community size grows, and that eventually the cost per subscriber begins to "level out." Hence, cable operators who serve small markets face a higher cost per subscriber than do operators who serve larger markets in order provide the same level of service. Moreover, the cost penalty of having two operators, as measured by the higher average cost per subscriber, is greater in smaller markets.

For current purposes, an adjustment must be made to Hazlett's analysis in terms of the number of households. In his analysis, Hazlett assumed 50,000 households,

which corresponds to well over 100,000 inhabitants. Using the 1993 U.S. average of about 2.6 persons per household, a community size of 50,000 inhabitants corresponds to about 19,250 households. Reducing the number of households to 19,250 in Hazlett's revised analysis (and retaining his assumption that the cash flow margin is unchanged) reduces the entrant's rate of return to 14 percent.

Assuming a complete pass-through of the revenue reduction to cash flow reduces the entrant's expected rate of return to 8 percent. This is substantially below the 11.25 percent cost of capital that the FCC determined was appropriate for the cable industry. Even if cash flow falls by less than the full reduction in revenues, if the cash flow margin falls to below 35.7 percent (or, equivalently, if the assumed \$6.00 reduction in revenue per subscriber produces a \$4.30 reduction in cash flow per subscriber) then the rate of return would be below the 11.25 percent standard established by the FCC.

Data Updates

It is possible to update some of the parameters of the Hazlett analysis using data from Paul Kagan Associates, a source for several of Hazlett's numbers.⁴ For 1993, Kagan estimates that the cost per mile of new cable plant is \$32,000, that 83 households are passed per plant mile on average, that cable penetration is 61 percent, that the average revenue per subscriber is \$33.52, and that the average cash flow margin is 46.1%. Making these parameter changes, using Hazlett's numbers for head-end, start-up, and converter/installation costs, and assuming 19,250 households, yields a rate of return of 11.8 percent, assuming the revenue reduction has no impact on cash flow margin. However, the rate of return falls below 11.25 percent if the reduction in revenue under competition pushes the cash flow margin below 44.5 percent (or, equivalently, if a \$6.70 reduction in revenue per subscriber produces a \$3.52 reduction in cash flow per subscriber).

⁴ See, *The Cable TV Financial Databook*, Paul Kagan Associates, Inc., June 1994, at 7, 8, 10, 37

Unfair Competition

Cable operators in smaller communities may also be more likely to face cross-subsidization by the telephone companies. To the extent that telephone companies retain regulated monopolies of local telephone services, they will have the incentive and ability to cross-subsidize video services by shifting video plant costs to the telephone side of their operations. This will permit them to increase the regulated price of telephone service, and provides an incentive to lower prices for competitive video services below cost. This can profitably continue indefinitely. While telephone company cross-subsidization of competitive video services will be a problem for communities of all sizes, it is likely to be a particular problem for cable systems in smaller communities. The ability of a telephone company to succeed in cross-subsidization probably is greater in smaller communities because less subsidy is required to undercut the price of the cable system in such communities. Further, smaller cross-subsidies are presumably more difficult to detect than the greater ones required to undercut the prices of larger, lower-cost cable systems.

Conclusion

While there is no hard and fast measure of the community size where it becomes unprofitable for two competing cable systems to coexist, some conclusions can be drawn. There is significant evidence that the cost per subscriber is higher when there is head-to-head competition between two cable systems relative to when service is provided by only one cable operator. Depending on market size, and cost and demand conditions, this cost disadvantage may be sufficient to preclude the profitable existence of two competing cable operators.

The work by Smiley suggests that the market size at which it becomes profitable to have direct competition is well beyond 50,000 inhabitants. The approach taken by Hazlett, appropriately modified, suggests that the cutoff point is somewhere around 50,000 inhabitants, depending upon the assumptions one makes regarding the impact of competition on a cable operator's cash flow margin. Taken together, these studies lend support to the notion of it being unlikely that head-to-head competition will develop and persist in communities of fewer than 50,000 inhabitants.