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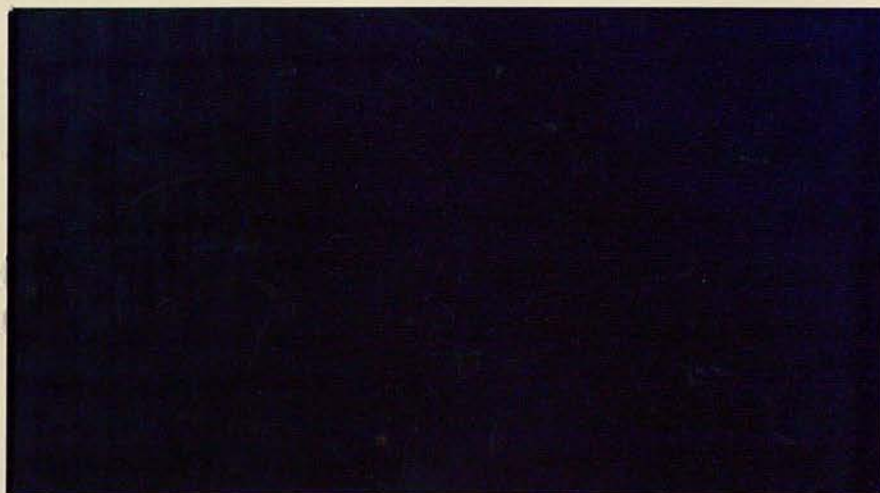
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DUOPOLISTIC COMPETITION IN CATV:
THEORY, PRACTICE, AND POLICY

by

Thomas W. Hazlett

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DUOPOLISTIC COMPETITION IN CATV: THEORY AND PRACTICE

Thomas W. Hazlett

Abstract

Direct competition between cable television companies (called "overbuilds" in industry parlance) currently occurs in at least three dozen jurisdictions nationally, and is an interesting form of market rivalry both on its own merits and due to important public considerations surrounding cable regulatory policy. From an industrial organization perspective, overbuilds pit firms into duopolistic competitions wherein service areas are clearly defined geographically, economies of scope and density are present, and a nontrivial element of sunk cost investment must occur. In a regulatory context, cable systems are largely governed by municipal franchises, wherein incumbent operators have exclusive territorial rights to exploit consumer demand without constraint by any rate-regulating authority (banned by Congress in 1984); the policy alternative of duopolistic competition offers a plausible mechanism for pro-consumer discipline of local cable markets where effective regulation is implausible. This paper attempts both to address the economics of cable overbuilds by analyzing markets in which such competition currently exists, and then to comment upon the lessons thereby available for cable television policy-makers.

While there is no single data authority for the U.S. cable television marketplace, best industry sources have found at least 35-40 jurisdictions experiencing significant cable overbuilds. The economic implications of such head-to-head rivalry are matters in dispute, and apparently of profound legal significance. Advocates of franchise monopoly have argued that the small number of duopolies (in comparison to more than 7,000 "local monopoly" cable systems) stems from the financial irrationality of such rivalry. They see such infrequency as a confirmation of the subadditive cost conditions present in cable, and proceed to build a defense of monopoly franchising by municipal governments. In recent litigation to determine the legality of municipally-erected entry barriers restricting the cable market to but one franchisee, the issue has achieved a central importance.

Several courts have recently stated that cable television has many of the traits of a natural monopoly because of the extremely high fixed costs of constructing a cable system and the low marginal cost for supplying service to each new subscriber... And over 99 percent of the cable systems do not face direct competition from another cable system for subscribers (Meyerson 1985, p. 552).

Conversely, critics of monopoly franchising have noted the widespread illegality of multiple entry as the substantial discouragement of duopoly:

As the cable television business now operates, subscribers are rarely if ever given a choice between cable companies; only one company solicits their patronage. The immediate cause of this, however, is not any inherent characteristic of cable television but the fact that a cable company must obtain a municipal franchise...[and] municipalities do not grant more than one cable franchise in any area within their jurisdiction (Posner 1972, p. 111).

And in the first suit in which a full hearing of the natural monopoly evidence has been conducted before a jury, a special verdict in Pac West v. City and County of Sacramento found in June 1987 that cable television is not a natural monopoly.¹

Whatever the economic feasibility of overbuilds, it is safe to conclude that they are not a popular sort of market phenomenon in the cable TV distribution industry. "In almost all cases, cable operators are unanimous in their assessment that overbuilds do not work as a result of the large capital requirements needed up front and the necessity of cornering at least 40 percent of market once the system is built in order to obtain a return on that investment" (Munger Kahn 1986, p. 61). A cable consultant voices the

¹Pacific West Cable Co. v. City of Sacramento, et al., No. CIV S-83-1034 MLS (E. D. CAL., August 13, 1987), Slip Opinion.

standard view that "overbuilds are really duplication," and goes on to assert that overbuilds are socially inefficient: "Allegedly this duplication of services is good for the subscriber, but it isn't because basic rates have to be higher to support both operators. And what usually happens is that one of the two operators goes down the tubes. The ultimate loser isn't just the overbuilder, but the subscriber as well" (in Mazookis 1985, p. 23).

The analysis is obviously false; as any "duplication" problem stems from the investment of sunk capital, consumers can experience only a heightened (output expanding) competition for their business. Ironically, however, some courts have taken this sunk cost problem quite seriously, believing it to constitute a possible efficiency rationale for monopoly licensure in cable. In Pac West, for instance, Judge Milton Schwartz found that had the jury determined the Sacramento market to constitute a monopoly in cable distribution,

The jury's finding that cable television is not a natural monopoly is particularly important in this analysis... If the jury had determined that cable television in the Sacramento area was indeed a natural monopoly and that competition would have "inevitably" resulted in a single firm controlling the market, then the impact of a single franchise policy on first amendment freedoms would have been much less (Pac West, supra note 1, p. 30).

An obvious danger arises, however, in enforcing the policy desired by industry incumbents (i.e., protection of franchise monopoly) on the straight forward grounds that such managements create, rather than dissipate, market power. It is imperative for those courts which consider the question of natural monopoly to be determinative in deciding the constitutionality of locally-imposed entry barriers, to hear more than a plausible, self-interested

case for scale economies; the existence and consequences of duopoly in cable must be examined in some detail. This has not previously been done.¹

In an analytical treatment of the consumer welfare issues evidenced in the overbuilding controversy, Albert Smiley (1986) has produced a framework which seeks to assess the relative welfare trade-offs resultant from direct cable competition. The benefits of such competition include increased consumer choice due to the introduction of an imperfect substitute, and prices reduced from monopolistic to duopolistic levels (assuming a regime of laissez-faire pricing, the rule now governing U.S. cable systems, save for those 9 percent of systems serving outlying areas receiving fewer than three off-air TV signals). Price reductions improve welfare, of course, by allowing fuller satisfaction of the demand curve lying above the marginal cost curve, and do not take into account transfers to consumers from the incumbent (price-lowering) monopolist. The cost of direct competition is calculated as the increase in expense associated with "duplicate" suppliers. This production inefficiency flows from the losses of imposing a quasi-competitive structure on a presumably subadditive industry cost curve.

Smiley applies a game-theoretic approach to approximate likely price-reduction benefits of duopoly, and deduces duplication cost penalties from construction and operating costs suggested by conversations with informed industry sources. In four benchmark cases for a typical urban/suburban cable

¹Certain consulting reports have been written by defendants (generally) seeking to maintain entry barriers. These have included virtually no economic analysis. (See Touche Ross 1984, Booz Allen 1979, Pearce et al., 1982.) Econometric studies of subadditivity in monopoly cable systems have been performed by Noam 1985 and Owen & Greenhalgh 1986; economies of density are evident but are "not so substantial as to entirely rule out the possibility of effective actual or potential competition in this industry" (Owen & Greenhalgh 1986, p. 78).

system, he finds that a franchise monopoly market structure produces less total welfare than either a simultaneous dual entry or a partial sequential entry scenario, while a fully sequential overbuild (first firm to enter has an absolute first mover advantage) will fail to materialize due to the realization of negative profits by the second entrant. As anticipated by force of logic, the monopoly scenario produces significantly less consumer surplus than each of the duopoly markets, while minimizing supply costs. Moreover, a complete overbuild is unnecessary to produce positive welfare effects due to price reductions; the simultaneous entry scenario predicts an overbuild of but 9 percent of the market, but a price reduction of 7.62 percent, and a summed penetration increase of 14.03 percent (Smiley 1986, p. 24).

Sensitivity analysis reveals the net welfare effects of duopoly to be highly variable: "the degree of overbuilding is highly sensitive to market conditions and...varies inversely with demand elasticity and costs" (Ibid., p. 32). Yet, with a variety of assumptions, "Under mandatory rate deregulation, it is reasonable to conclude that overbuild competition has a potentially significant welfare-enhancing role and that municipalities may opt for overbuilding more often than in the past" (Ibid., p. 35).

Smiley's contribution has enabled us to view overbuilds as a consumer welfare problem, a very large step forward from the policy debate wherein municipalities and cable operators simply refer, in exceptionally vague terms, to the added costs of supply duplication, asserting (contradictorily) that such costs will either (a) be passed along to consumers, or (b) drive one firm out of the market, or (c) a and b. Yet, we shall herein attempt to amend

Table 1

Smiley's Benchmark Scenarios:
Monopoly v. 3 Varieties of Duopoly

	Franchise Monopoly	Simultaneous Entry	Sequential Entry	Partial Sequential Entry
Π_1	\$184,913	\$ 71,365	\$ 77,300	\$ 84,033
Π_2	n.a.	71,365	-\$3,957*	\$ 30,909
CS	\$178,416	\$228,968	\$339,838	\$284,730
W	\$363,329	\$371,698	\$413,181	\$399,671

Source: Smiley 1986, p. 24

*Negative profit for second firm compels single entrant solution, as shown in Column 1.

Smiley's model on two counts. First, it lacks any plausible model of public choice in the political decision as to how to award cable franchises. We shall not fully develop this discussion here, having dealt with it at some length elsewhere (see Hazlett 1986a, b). Secondly, it fails to allow maximizing firms to rationally internalize the costs of duplication. This stems from the fact that entry inevitably improves consumer surplus, as Smiley allows, but concomitantly created supply-cost increases. If we view the welfare question in traditional terms (following Smiley), we have net social benefits calculated as:

$$W = CS + \Pi_1 + \Pi_2$$

where $\Pi_1 = P_1 q_1 - C_1 q_1$ and $\Pi_2 = P_2 q_2 - C_2 q_2$ (with C = average cost). Since $CS = f(N)$, where N = number of market competitors, and $\frac{\partial CS}{\partial N} > 0$, and because ex ante (where entry is partially or wholly sequential) $\Pi_2 \geq 0$, W can only

diminish due to a fall in Π_1 , as N increases. Decreases in Π_1 , attributable to declining revenues ($\partial \frac{(P_1 q_1)}{\partial N} < 0$), are obviously not welfare-detracting for such can only be caused by either a decline in P_1 , in which case welfare increases assuming $P_1 > MC$ (a necessary condition for a profitable unregulated monopolist not practicing perfect price discrimination), or q_1 declines as consumers shift to a preferred alternative -- also a positive sum transaction.

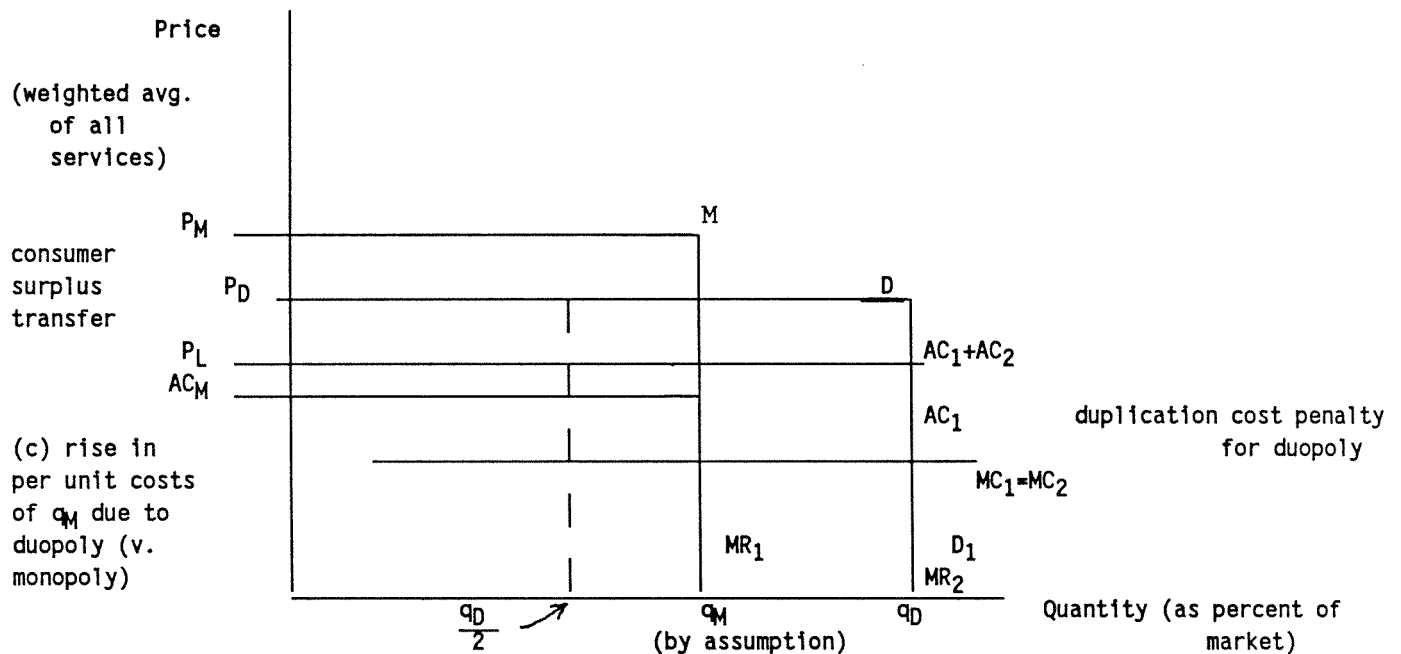
The possibility of a negative effect on welfare via entry of Firm 2 is found where such increases raise unit costs of serving those customers which a monopolist could alternatively serve (without the duplication cost penalty of course). Graphically, we portray the typical case in Figure 1. Consumers gain $P_m \text{MDPD}$ from duopolistic competition (where $AC < P_D < P_m$ is assumed, consistent with plausible duopoly conjectures), while producers lose (the incumbent monopolist, that is) $(P_L - AC_m)q_m$. This latter is entirely an efficiency loss, however, while just the triangle (A) is an efficiency gain. However, the profits of the second firm which are not transferred from the incumbent--see (C)--are counted as efficiency gains. Smiley calculates the net benefit, i.e.,

$$\text{net gain from allowing multiple franchises} = (A) + (B) - (C),$$

with the decision rule to endorse multiple entry whenever the net gain exceeds zero.

Yet, only the entrant's fixed costs are unsunk. The entrant may be relied upon to enter only if the return on investment is sufficient to cover all alternative possibilities perceived by the firm. In contrast, the incumbent's fixed investment is sunk and, hence, irrelevant for analyzing W .

Figure 1. Welfare Trade-offs in CATV Duopoly



Driving up the per unit costs of an incumbent is not properly counted as a "cost" of entry. It may count as a pecuniary loss, certainly, but such losses have been generally ruled out as social costs (Alchian, 1977). Hence, the procedure of summing consumer surplus and firm profits is flawed by allowing a non-cost item to lower Π_1 .

In the simultaneous entry case, we encounter a similar problem in not allowing a rational firm to pursue a limit pricing strategy. With two-firm entry, an alert cost-minimizing approach would allow one firm (the more efficient firm would have a lower cost of "pre-emption," although the analysis has abstracted from cost differences) to set price = P_L and realize all scale economies without compromising the consumer surplus gains from duopolistic

competition ($P_L + \epsilon = AC_{n=2}(q_L)$). The establishment of a long-run price = P_L would serve to deter Firm 2. There is only an incentive to price below P_m , however, should a nonexclusive franchising policy be pursued by the municipality.

Obtaining such a policy is certainly problematic. As Smiley shows, and as logic dictates, total firm profits are maximized in the exclusive franchise scenario. A sole franchise is worth more than twice what either of two duplicate franchises are worth. With a sequential entry policy -- seemingly optimal in a wide range of cases under the Smiley analysis -- the profits of retaining franchise monopoly are inevitably greater than potential profits to available an entrant. The importance of this monopoly rent asymmetry between incumbent and entrant is that the incumbent will inevitably outbid any equally-efficient entrant in the political marketplace. (The problem is exacerbated by free rider problems and the greater riskiness associated with lobbying for a multiple entry policy.) A sequential entry policy thus fails to achieve an equilibrium public choice solution.

A final disequilibrium remains. Should a limited number of franchises be granted, the supracompetitive returns awarded to the guarantee(s) will inevitably provoke a vigorous rent-seeking competition. The cable television market has, in fact, become notorious for the intensity and contentiousness of its franchise battles (see Hazlett 1986b). It can be expected that, while allowing for risk premia, the sum of lobbying expenses undertaken to secure a franchise will be equal to the present value of the monopoly rent stream itself. This profoundly affects Smiley's welfare analysis, for it offsets the monopoly cost savings "approximately precisely." Ironically, the major

difficulty in adding monopoly cost savings as a welfare gain, as Smiley's cost-benefit calculus does, is that such gains are so easily appropriated by the franchising authority as a political unit, and then dissipated in the ensuing quest for private assignment. In that an open-entry policy would entail no political auction, it would entail no similar costs. The rent-seeking associated with open-entry in Smiley's model -- inefficient "racing" to pre-empt potential competitors -- could be remedied via relaxation of antitrust prohibition of gentlemen's agreements. It would be in all rivals' interests to enter into such to such market divisions if pre-emption led to inefficiencies. Indeed, at least two jurisdictions (Columbus, Ohio and Dade County, Florida) have supervised such "peace treaties" to facilitate the cabling of their cities by several firms possessing area-wide nonexclusive franchises. (But where such agreements turn into price-fixing arrangements to limit competition, antitrust action may result as in Houston. [See Affiliated Capital Corp. v. City of Houston, 735 F.2d 1555 (5th Cir. 1984).]

Duopolistic Cable Markets: Case Studies

Perhaps we might learn something about cable duopoly by observing it. The problems here are manifest, of course. Observing the entire set of overbuilds is impossible: many have vanished; data is hard to come by. More importantly, the dynamics of direct competition are displayed where overbuilds occur and where they fail to occur due to pre-emptive strategy by a challenged incumbent. Defining the effects of potential competition is slippery; measurement is beyond hope.

Yet, the analysis of duopoly allows us some framework for evaluating what does appear, in fact, to obtain in overbuilt cable markets. A very basic and, hence, manageable, point of departure in this inquiry is provided in a recent accounting study by the cable consultants Malarkey-Taylor. Reducing the question to its simplest form, the study asked, essentially: what revenue and cost characteristics would a local cable market need to possess to enable two head-to-head rivals to completely overbuild each other. The analysis borrows cost and demand assumptions from Smiley's work, and produces pro formas for the sustainability of two profitable 100 percent overbuilt firms, involving three key variables: penetration, density, and revenue-per-subscriber. One way to interpret the study's results is to look at five different "break-even" scenarios for sustainable duopoly:

Table 2
Overbuild Zero-Profit Scenarios

	1	2	3	4	5
Density (HP/mi.)	110	90	110	90	70
Penetration (Sum for both firms)	.64	.64	.875	.875	.875
Approximate Revenue per Subscriber (\$/Mo.)	21.50	24.50	19.00	20.50	23.25
Implied Subs/Mi./Co.	35.2	28.8	48.1	39.4	30.6
Implied Annual Cash Flow per Plant Mile (\$)*	3,633	3,387	4,389	3,876	3,418

*Assuming operating cash flow equal to 40 percent, a conservative industry benchmark.

Source: Malarkey-Taylor, "Economic Analysis of Cable System Overbuilds" (January 1987), pp. 19, 21.

According to industry analysts, these are the simplest economic variables which merit attention in an analysis of overbuilding. Penetration and average revenue would seem to be both endogenously and exogenously determined; (e.g. penetration is a function of both cable quality and available off-air TV channels); however, this accounting methodology does facilitate a very practical investigation of the parameters of overbuilt competition. Towards this end, I shall discuss several overbuilt markets with which I am personally familiar, offering a brief history and explanation of the emergence of direct competition in light of the accounting model of duopoly discussed above.

1. Allentown, PA. The classic head-to-head cable competition has made its home in Eastern Pennsylvania for the past two decades, covering Allentown, Bethlehem, and now Easton, PA. The stability and efficiency of the duopoly is most impressive; two state-of-the art cable systems peacefully co-exist, without price wars, both 100 percent owned and operated by cable pioneers who have been among the industry leaders in inventing and adapting new services and technologies.

Historically, Service Electric (S.E.) established a local monopoly in Allentown. Bark Lee Yee, the aggressive entrepreneurial owner of Twin County Cable (T.C.), decided to expand over his competitor, John Watson of S.E., in 1963-4 on the simple rationale that he had no virgin contiguous areas to economically exploit. Owing to T.C.'s 12-channel service package (this being long before the advent of satellite premium services; hence, only a basic menu of off-air channels, perhaps with some microwaved "distant" stations, was marketed), the company achieved excellent penetration levels in direct competition with S.E.'s older 5-channel system. The competitive

Table 3
Allentown Overbuild Summary

Firm	Subs	% Overbuilt	Basic Rate (\$/mo.)	1st Pay Rate (\$/mo.)	# Basic Channels	# Pay Channels	Install
Service Electric	73,000	95%	10.25	7.95	32	4	0.00
Twin County	60,000	90%	10.00	8.95	35	9	0.00
Sammons pre-86	20,000	n.a.	13.00	9.95	20	5	10.00
Sammons 1987	17,500	80%	7.25	9.95	38	6	0.00
Twin County- Easton	n.a.	n.a.	7.65	10.00	36	9	0.00

pressure prompted the latter to quickly shift to the newly-available 12-channel cable hardware, upgrading its entire system in one year.

The firms achieved duopolistic equilibrium, charging similar prices and offering similarly sized packages, until 1980. Then it was S.E.'s turn to overbuild T.C.'s solely served area to the north, again on the premise that the only other contiguous alternative for expansion lay in sparsely populated regions of merely 15 housing units per mile of cable plant. The overbuild of T.C. increased penetration from about 75 percent (for T.C. alone) to 95 percent (for both companies combined). Today, both firms are close to 100 percent overbuilt (the non-overbuilt sections lie in areas requiring more expensive underground -- vs. aerial -- construction). While many previous analyses have claimed a special dispensation for Allentown based upon its poor

off-air reception, at least 11 TV signals are available in the area (as defined by the FCC's B-grade contours). Reception comes from Philadelphia, Reading and Wilkes Barre-Scranton television broadcasts.

High penetration has been achieved due to vigorous competition, low rates, intense marketing, and high demand for New York City stations and sports programming. Plainly, competition in an overbuilt market proceeds on margins not seen in sole-supply towns; billboards promoting cable still dot the neighborhood (such are generally seen elsewhere only in initial marketing phases), free installation (by either firm) increases demand elasticity, and companies are ultra-careful to maintain their customer relations, particularly via signal quality. As a Service Electric executive puts it:

If you add something new, you will add it where you have the competition first. Overbuilt customers may get a six month to one year lead on new services. If a customer wants a Saturday connection, he'll get it in an overbuild situation. With a monopoly, he'll wait till Monday. And you will not have [signal] interruptions. You'll schedule work at 4 a.m. in case a wire gets disrupted. Under no circumstance will you touch a wire after 7 a.m. In a monopoly situation, you might take more chances and interrupt service for a few minutes during the day. There are hundreds of smaller instances where you're definitely more sensitive to customers in an overbuild.

Twin County is seeking to expand its overbuild -- but must look to a new competitor. In 1986, it found a Sammons system in neighboring Easton, finding the national multiple system operator (MSO) providing poor service. At the request of the Easton city council, beleaguered by consumer complaints against Sammons, T.C. entered the market, immediately forcing the incumbent to slash prices and upgrade its offerings. Nonetheless, T.C. achieved a profitable penetration and is now looking to overbuild yet another Sammons system in

nearby Phillipsburg, New Jersey. It has received a local franchise, but is awaiting approval by New Jersey's Public Utility Commission.

2. Frankfort, Kentucky. Consolidated Cable began service as a community antenna service in this poor-reception market in 1952 -- it began with ten subscribers, sending them five channels from Cincinnati and Louisville. Meanwhile, the city's municipally-owned electric company began a cable subsidiary, Community Service, and overbuilt Consolidated in 1962. Penetration rose from 70 percent to 95 percent (combined), and rates were exceptionally low. Nonetheless, Consolidated expanded to 12 channel service by 1972, and today features a 36-channel system.

Table 4
Frankfort Overbuild Summary

Firm	Subs	% Over- built	Basic Rate (\$/mo.)	1st Pay Rate (\$/mo.)	# Basic Channels	# Pay Channels	Install
Consol- idated	4,500	95	3.50*/6.50	9.00	18/24**	4	
Community Service	10,000	<50	4.50	9.00	21	3	5.00 25.00(pay)

*4.50 for new customers; 8.50 in nonoverbuilt areas.

**18 channels on basic tier; 6 additional channels on expanded basic.

With respect to our understanding of cable duopoly, what this private-public competition reveals, perhaps, is that the "break-even" point defining the minimums for sustainable head-to-head rivalry may be lower than

forecast in Malarkey-Taylor (and elsewhere). While a private-private competition may have resulted in either (a) higher rates, or (b) a merger, the nature of a municipally-owned entrant tends to lock-in the private incumbent without a consolidation option. Nonetheless, Consolidated has weathered better than two decades against subsidized competition -- sinking significant capital resources into system rebuilds from 5 to 12 to 36 channels of capacity. Certainly this market's overbuild is aided by poor off-air reception. But single firm penetration was much below 100 percent prior to direct competition, and, more importantly, revenues have been suppressed by a government-owned company which pays no property taxes or pole attachment fees, and is unbounded by safety regulations in its wiring operations. Whatever the actual or imaginary impediments to long-lived duopoly in cable may be, insufficient revenues to financially sustain dual suppliers does not appear to be key.

From a policy perspective, the Consolidated cable system provides further interest: it is wholly unregulated. The City does not require it to possess a franchise, it has not (therefore) regulated rates, nor does it collect any more in taxes than an annual business license fee (most cable operators pay 3 percent to 5 percent of gross receipts to the local franchising authority). When a public right-of-way is encroached, Consolidated simply deals with the owner (or regulator) of the road or utility pole in question. Annual fees are paid for telephone or electric pole attachments, and standard rules and regulations govern Consolidated precisely as are such private uses generally.

3. Delaware County, PA. Three cable companies are involved in duopolistic markets in the suburbs west of Philadelphia. The two primary competitors are

Suburban Cable (owned by the Lenfest Group) and American Cablevision (owned by A.T.C.). In that both systems are owned by substantial MSO's (and the third is a Times-Mirror system), serve a top TV viewing market with ample off-air fare, and are relatively new state-of-the-art systems, the Delaware County overbuild is significant precisely because it fails to be dismissed as an outlier.

Suburban's Aston system has 12 franchises, and is overbuilt in nine of them (accounting for two-thirds of its subscribers). Throughout the county, Suburban has 49,800 subscribers. American has 71,000 subscribers (in and out of the county), of which 28,600 are in areas overbuilt by Suburban, and 14,000 are overbuilt by Times-Mirror (the rest are in exclusive areas). The American-Suburban overbuild was achieved by simultaneous entry in 1980-2, and comprises 55-60 aerial miles. No underground cable (1.5-2.0 times the cost of aerial) is overbuilt.

Interestingly, while penetration is perhaps 10 percent higher in the overbuilt regions, prices and services are the same everywhere. Service packages are typical for urban/suburban systems, but prices are moderate. In a Philadelphia Inquirer survey of 40 area cable systems in January 1987, American and Suburban-Aston had the lowest combined rates for basic and HBO, while offering as many or more channels on basic than all but seven of the systems. Marketing is intense; Suburban claims a 200 percent pay-to-basic ratio (i.e., the average basic subscriber takes two premium channels), exceptionally high by industry standards. Two months free service, with free installation, is a typical promotion. Managers for both systems perceive that direct competition provides continual pressure for quality performance.

The firms appear aggressive in their overbuilding: neighborhoods of relatively low density are fair game. Suburban, e.g., reports the following franchise densities:

Table 5
Suburban Franchise Densities

Franchise	Density	Status
Chester	125 HP/mi	Overbuilt
Aston	56 HP/mi	Overbuilt
Middletown	42 HP/mi	Exclusive
Upper Chi	55 HP/mi	Exclusive

The company reports that areas as low as 33 HP/mi are possible for overbuilding, when contiguous to existing plant. Alternatively, American disdains areas of less than 40 HP/mi -- even if the sole supplier. The Lenfest Group, smaller and headquartered nearby, claims a confidence borne of its familiarity with local market conditions, particularly its likely growth.

Table 6
Delaware County Overbuild Summary

		Over-	Basic	1st			
		built	Rate	Pay	# Basic	# Pay	# Off
Subs	%	%	(\$/mo.)	Rate (\$/mo.)	Channels	Channels	Air Channels
Suburban	11,500	67%	9.50	7.95	30	5	8
American	71,000	59%	9.50	8.95	31	5	8

Another interesting policy note emerges in examining the franchising arrangements. Most of the township-issued franchises are absolutely perfunctory in nature, and nonexclusive in fact. In Middletown, however, Suburban was able to obtain an exclusive agreement -- which goes on for 400 pages, listing requirements and "bells and whistles" demanded by the locality. "Middletown got expensive agreements for exclusivity," in the words of a Suburban executive. Upper Chichester also issued Suburban an exclusive, but without voluminous conditions attached. The reason, as company officials readily admit, is that the original owners of Suburban lived in the town and exercised substantial political muscle.

4. Huntington, New York. In 1978, Hempstead Cablevision, a large Long Island cable system, asked the Huntington city council for a franchise to overbuild the existing service provider. It was shelved. Finally, in 1982, frustrated by the incumbent operator's refusal to wire an expensive underground stretch of 900 low density single-family dwellings in a hillside region, the council

Table 7

Huntington Overbuild Summary: 1986

	Homes Passed	Subs	% Over- built	Basic Rate (\$/mo.)	1st Pay Rate (\$/mo.)	# Basic Channels	# Pay Channels	Install	# Off- Air Channels	Density
Hunting- ton	55,100	14,282	100%	8.50	6.00	12	5	n.a.	> 12	n.a.
Hempstead	56,000	25,000	98%	4.50	7.00	19	10	0	> 12	64
				13.50		28				

issued an additional franchise to Hempstead on the condition it first wire the unserved portion of the franchise area. Hempstead accepted the terms, and proceeded to wire the new and overbuild the old.

The new firm offered many more channels and better prices; the incumbent had merely 12 channels of basic service. Moreover, combined with a free installation policy was Hempstead's six-month offer of its top pay tier (consisting of several premium channels) for 19.95 monthly, \$30 off its regular price. In its first year, Hempstead achieved 37 percent penetration, and quickly assumed a dominant market position. Huntington, the incumbent, saw its subscriber base fall from 18,000 to below 14,500. By late 1982, Huntington was pushed into receivership. Hempstead assumed Huntington's remaining customers, without any interruption of service, and consolidated the market supply. It quickly raised prices to levels charged elsewhere in its exclusive service territories: while old customers were grandfathered at \$13.50 for basic, new customers paid \$19.95.

The Huntington overbuild illuminates several key issues. First, in a world of costly information, even altruistically pro-consumer political agents will have trouble distinguishing "good" systems from "bad." A firm of superior efficiency that can readily improve consumer welfare will find it difficult to surmount franchise barriers; in Huntington it took at least four years for such barriers to be overcome. Secondly, the routing of an incumbent by an entrant is a positive, pro-consumer development; there exists no special reason why cable mergers (even under the inconvenience of bankruptcy) cause more customer-anxiety than in other markets. Thirdly, the Huntington market, saddled in the New York City television coverage and possessing but 64 homes

per mile of cable plant, is neither a "high demand" nor a "low cost" market to overbuild. Yet, fully sequential entry -- allowing for a large measure of firm heterogeneity -- was profitable to the entrant and welfare improving to consumers. That this was not immediately apparent to regulators, is a fact worth nothing.

5. Orange, Dade, and Palm Beach Counties, Florida

The most aggressive overbuilder in the country is Telesat Cablevision, Inc., a subsidiary of the huge Florida Power and Light Group Capital. Begun in 1981 as a "private cable" firm providing Satellite Master Antenna (SMATV) service to multiple dwelling units (MDU's) and new developments located purely on private property, and purchased by F.P.L. in 1983, Telesat has recently embarked upon a campaign to secure local franchises to compete across city streets against established cable operators. They currently hold 13 such permits. The company has invested a total of \$30 million capital in its SMATV and CATV operations, and now has over 30,000 subscribers.

In Orange County (Orlando), a county-wide franchise has been secured, permitting competition in all unincorporated areas. Beginning in the Spring of 1987, Telesat marketed overbuilt subscribers in at least eight areas of the County, served by two competing companies (spatially separated), Cablevision Industries and Cablevision of Central Florida. By September 23, 1987, the entrant Telesat had passed 10,000 homes with cable in overbuilt areas, and had signed up 4,000 subscribers in these, a penetration of 40 percent. Just as impressively, the pay-to-basic ratio began at 107 percent, assuring average revenues per subscriber in at least the \$25-30 range (revenues from remote

converter rentals, additional outlets, and advertising must be added to basic and premium prices in calculating revenues).

One easy explanation for Telesat's initial overbuilding success is apparent: overpriced competition. The entrant

Table 8
Orange Co., FL Overbuild Summary

	Subs	% Over- built	Basic Rate (\$/mo.)	1st Pay Rate (\$/mo.)	# Channels on Basic	# Pay Channels	Install	Dentistry
Telesat	5,000	80%	9.95	9.95	40	6	Free/25.00	80-100
Cablevision Ind.		0%	14.45	11.95	27	4	30.00	n.a.
Cablevision Ind.*		100%	7.25	7.50	27	4	Free/30.00	AC
Cablevision C.F. (ATC)	(ATC)	<10%	13.15	12.18	33	4	27.83	ATC

*In overbuilt areas.

charges significantly less while offering significantly more channels than did the incumbents. Interestingly, the post-entry pricing reactions of the two original suppliers has been divergent. Cablevision of Central Florida, after a basic six month contract at eight dollars per month failed to attract interest from consumers, continues to market its product at pre-entry prices; Cablevision Industries has slashed its rates in half, precisely in those regions where it is overbuilt. The strategy has not deterred Telesat from continuing to overbuild in its service area, for the simple reason that it has not prevented consumers from switching to the entrant due to reputational, quality, or other reasons. The importance of Orange County is that modern

cable systems are being overbuilt is an average density (80-100 HP/mi.) market with good off-air reception, and the entrant, in gathering instant 40 percent market share, is easily achieving profitability given the Malarkey Taylor norms (e.g., rev/plant mile = -----).

In Riviera Beach, a city in North Palm Beach County, Telesat is currently involved in a franchise litigation quagmire, but now serves some 700 customers on Singer Island, a high-density beachfront featuring high-rise condos, apartments and hotels. With less than two miles of cable, Telesat passes some 3,000 housing units (but cannot actively market its product while its municipal franchise remains in doubt).

The impact of entry has been clear. The incumbent cable provider, Comcast (previously owned by Group W), served this market with an old 12-channel cable system priced at \$8.40 per month for basic. Telesat (entering originally as a SMATV supplier), offered to wire the high rises on a bulk-rate basis, supplying 26 channels of basic to all units for a price of \$5.75, where one bill is sent to the condo association or developer (i.e., penetration is 100 percent). Other service was provided, including a message board channel for each building to program with building and community news via teletype, as well as (in one case) an emergency over-ride message system to inform residents of faulty fire alarms. The incumbent operator has now upgraded its system capacity and is pricing competitively; it has also joined the City in a lawsuit in an attempt to impose a universal wiring requirement as a condition attached to any Telesat franchise.

In Dade County (Miami), a fascinating political battle is currently being waged between four incumbent cable firms, each serving essentially

non-overlapping territories, and the competitive entrant, Telesat. In 1978, open-entry was indeed the professed policy of the County, and four countywide franchises were issued. But, according to the County's top cable official, a year and a half of confusion ensued (during which just 2,000 subscribers were hooked-up), as firms attempted to string cable in pre-emptory fashion, staking "claims" around presumably exclusive turf. At the behest of the four firms, the County then sponsored a "gentlemen's agreement," wherein each franchise was given a specific sub-county territory to wire linearly over five years; upon cabling 80 percent of said region, a franchise could then request County permission to jump into a rival's area. (The presumption was that permission would be granted, as this was a professedly pro-competitive policy.)

For the most part, wiring proceeded smoothly and in exclusive fashion. In 1982 and 1983, the most aggressive of the four firms, Americable, got permission to cable unbuilt portions of two neighboring franchises. Both were granted and both were wired -- although in the second entry only MDU's were cabled, leaving out low-density areas of West Dade. (This is referred to as "cherry-picking" by industry personnel, "cream-skimming" by economists.) The selective entry of Americable did force the other franchisees to achieve their 100 percent "build-out" performance in much less than five years: "everyone was afraid of big bad Americable coming in and taking their place," as the Dade cable coordinator puts it.

Three overbuilds have emerged, however; one in the County's jurisdiction, and two in incorporated cities. In 1978, a franchise was issued to Hart-Hankes to cable South Miami, but no building occurred. The City asked Americable to enter in 1981 -- at which time the first franchisee regained its enthusiasm. Both firms entered in a simultaneous overbuild.

In 1986, the existing system in Miami Beach, passing 68,000 homes and in place since 1978, was overbuilt by a neighboring operator who had secured the duplicate franchise, apparently, as the result of his formidable political skills. In Spring 1986, Telesat (by purchasing a firm owning a duplicate cable franchise) entered the West Dade County area, and began an ambitious overbuilding of the entire market area of about 100,000 homes. But a flurry of lobbying activity convinced the County Commission that a study was needed before Telesat should be allowed to compete head-to-head.¹ This reversal of the County's long standing pro-competition policy was justified on two grounds:

1. The entrant will serve just the high-density areas, "cherry-picking" in an unfair rivalry to the existing operators;
2. The entrant will force prices down temporarily, but drive out its competitor in the process, and then raise its rates to even higher levels than currently exist in the monopolistic long-run.

The second argument is, of course, nonsensical. As unregulated monopoly prices are currently charged, a "predatory overbuild" could -- at best -- gain the market position to post prices at levels currently enjoyed. Moreover, if cable departs from textbook "perfect competition" due to its above average sunk cost investment requirements, then the predatory entrant is a mythological creature. And, of course, the idea that short-term price cuts followed by long term monopoly pricing is worse than short and long term monopoly pricing suffers arithmetically.

¹The Miami Herald responded: "

The cream-skimming contention is of greater economic interest. It must first be noted, however, that consumer surplus is unaffected by this; as an incumbent has wired 100 percent of the market, and has been granted free market pricing, competitive entry into any one sub-market cannot charge the intersection of marginal revenue and marginal cost in any other.¹ The existing operator may give cry to the existence of an unsustainable natural monopoly, wherein (given a multi-period model with fixed costs not sunk at the margin) entry barriers are required for optimality to obtain (Falhauber 1975). Yet, sustainability of least-cost production methods should not be confused with sustainability of capitalized monopoly rents.

The fact is that unregulated cable markets suffer from no particular disability in thwarting uneconomic entry. To achieve sustainable monopoly, the incumbent must, restrain at least some portion of its monopolistic pricing behavior. In many hundreds of unfranchised and non-overbuilt jurisdictions, this they apparently do. But the cable industry has not been bashful in leveraging its widespread franchised status to price monopolistically, and to make any sustainability rationale for exclusive licensure somewhat incredible.

The value of a cable television system is, of course, the expected present discounted value of its cash flows:

¹Ignorance of this has led to some bizarre policy pronouncements, such as the statement by an attorney for cable firm being overbuilt. If in West Palm Beach: "it sounds like the consumer is getting a break because there's competition. But those low prices are being subsidized by those consumers who don't get any service" (Scott Campbell, "'Cherry Picking' May Turn Sour for Cable Operators," The Palm Beach Post [April 29, 1987], p. 8B).

$$\text{ex ante: } V = \sum_{i=1}^n CF_i(1+r)^{-i} - I_0$$

where an n-year project proceeds from investment I undertaken at t=0, and r = discount rate appropriate for investments of such riskiness.

$$\text{ex post: } V = \sum_{i=1}^n CF_i(1+r)^{-i}, \text{ as } I \text{ (we assume) is 100 percent}$$

nonsalvageable.

A zero profit condition would suggest that $V = I$. Hence, if cash flows were insufficient to sustain $V \geq I$, entry will not be likely. The simple test as to whether sustainability is an issue worthy of further comment in cable, is the simple statistic that, throughout the industry today, $V \geq 3I$. Quoted in prices per subscriber, systems now sell for approximately \$2,000 (see Table 9). Capital costs per subscriber, however, are in the \$200-400 range for a monopoly system (see Table 10). Indeed, market analysis now project 60 percent of (monopoly) cable system's equity value to be derived from intangibles; only 40 percent derives from "property, plant and equipment" (i.e., replacement value), for a Tobin $q = 2.5$ (pro forma analysis by Beloit, Hushins and Sells in Kagan 1987, p. 218). This is a result of current industry cash flows: the 1986 average cash flow (= revenue - operating expenses) = 35.38 percent (Kagan 1987, p. 79). Depreciation expense, however, averages 16.79 percent (Ibid.). Hence, the industry is easily--despite the relative newness of its capital--exceeding its capital requirements (the industry projects cash flow ratios to rise substantially in the immediate future, as well). It appears safe to assume that it is genuine rents -- not quasi-rents -- that incumbent operators seek to protect in arguing that

Table 9
Cable Television System Market Values

Month	n	Basic Subs	Homes Passed	Value (mi./\$)	Price Sub(\$)	Price HP(\$)
June 1986	23	207,088	426,627	328.0	1,584	688
June 1987	25	309,306	498,908	563.5	1,822	1,130

Source: Cable TV Investor (Cormel: Paul Kagan & Assoc., August 21, 1987), p. 5.

Telesat's entry will provoke irreparable economic havoc. A head-to-head comparison of Dade County's firms suggests that the rent-damage may be substantial.

The reaction of the incumbent, Dynamic, now head-to-head with Telesat has been dramatic: they have matched the entrant (a one-third basic price reduction) just in the overbuilt areas. They offer this to customers on a six-month contract basis. Apparently, the firm feels that post-entry price matching is an optimal reaction strategy; their pre-entry prices remain fixed -- while the firm's lawyers work the County Commission feverishly to exclude further overbuild rivalry.

6. Colorado Springs, CO. An overbuild materialized here in 1985-6, as the electorate voted to issue a second franchise, as required in the city code. The entrant, Citizens Cable, has established itself with a larger more expensive basic package, while offering seven pay channels priced cheaply (6.95 each). Most interesting in this market has been the reaction of the incumbent. It has not slashed prices but did, its owner admits, "sharpen our

Table 10
Capital Costs for Current CATV Builds

Company	Franchise	Status	Total Cap. Cost (\$)	HP	\$ Capital HP	\$ Capital Sub
United Cable ^a	Baltimore	Estimated Completion 1989	85M.	300,000	283	700
ATC ^b	Queens, NY	Current build	75M.	275,000	273	682
Comcast ^c	Philadelphia	Spon to build	60M.	155,000	387	968
Pacific West ^d	Sacramento	1987 proposal	96M.	350,000	274	686
Viacom ^e	Cleveland	Current build	60M.			

*Assuming, conservatively, a 40 penetration ratio; i.e., a reasonable level of market demand for a cable operator, even in a duopolistic market.

Source: ^aStandard NUSE Stock Reports (Standard & Poor's Corp.; February 5, 1987), p. 2304.

^bInvestment Research: American Television and Communications (Goldman Sachs; May 6, 1987), p. 2.

^cMerrill Lynch On-Line Research Comment #1392 (June 5, 1987).

^dExpert testimony of Fred C. Bolte in Pac West v. City & County of Sacramento.

^e

approach when it became clear we would have competition." The curious result is that its subscriber count quickly increased from 45,000 to 56,000 -- including a "dramatic increase in the overbuild area" (see "Overbuild Spurs

Table 11

Dade County: Cable Prices and Services

	# Of Channels on Basic (Total)	# Of Basic Satellite Channels	Basic Channels Off Air	# Of Pay Channels	1st Pay (\$/mo.)	Basic Rate (\$/mo.)	Install Fee (\$)
Adelphia	30	14	12	5	12.95	\$19.95	39.95
Storer South	33	17	12	5	11.16	16.50	50.00
Storer North	31	14	10	4	12.00	14.81	25.00
Dynamic	40	22	12	5	9.95	14.81	40.00
Dynamic*	40	22	12	5	9.95	9.95	0.00
Telesat	42	22	13	8	9.95	9.95	15.00

*Only in overbuilt area.

Source: Adelphia; Telesat; Florida Cable Television Assoc., 1987-88 Directory and Desk Guide; Soto, "Cut-rate firm may touch off cable TV war," Miami Herald (March 12, 1987), p. B1.

Growth of System in Colorado," Multichannel News [May 12, 1986], p. 22). The obvious implication is that X-inefficiency is a possible product of monopoly market structure, even where capital markets are active: the incumbent (Colorado Springs cable television) is owned jointly by two of the largest MSO's, ATC and Century Communications.

7. Huntsville, AL. Disappointed by the poor performance of the incumbent Group W (now Comcast) operator, citizens and local officials in Huntsville today enjoy a brisk competitive struggle. In March 1986 the City issued a

Table 12

Dade County Cable Scales and Densities (March 31, 1987)

Firm	HP	Miles	Subs	Density (HP/mi.)	Penetration	Sub/mi.
Adelphia	104,962	1,054	40,718	99.6	.388	38.6
All-Rite	10,000	5	2,531	2000.0	.253	506.4
Cable Sat.	13,405	70	4,091	191.5	.300	57.4
Dynamic	107,473	630	44,013	170.6	.410	69.9
Harte-Hanks	68,409	249	22,001	274.7	.22	88.4
Miami TC1	136,619	626	24,416	218.2	.179	39.0
Storer North	104,215	1,024	66,413	101.8	.637	64.9
Storer South	73,678	773	36,866	95.3	.500	47.7
Telesat	11,585	16	1,431	724.1	.124	89.4
Video	6,800	38	429	178.9	.063	11.3

Source: Metro Dade County Office of Cable Television Coordination.

Table 13

Colorado Springs Overbuild Summary

	HP	Subs	Basic Rate (\$/mo.)	1st Pay Rate (\$/mo.)	# Basic Channels	# Pay Channels	Install	Install Pay
C.S. Cable TV	135,800	60,300 6/30/87	12.50	11.95	30	6	15.00	10.00
Citizens	11,000	5,300	15.00	7.45 (HBO) 6.95 (-----)	43	6	0.00	0.00

new franchise to Cable America (operating since 1974 in Huntsville's suburbs) which promptly entered the market, wiring about half the area in one year (see Wolfe, "Newcomer to Huntsville puts pressure on Comcast system" Cablevision [April 27, 1987], p. 12). The reaction to entry has been dramatic: Comcast instantly upgraded its system from 12 to 33 channels of capacity (as compared to 60 channels for the entrant), and has been "much more responsive to consumers," according to local officials. Even more violent has been the price cut: Comcast offered one year of basic service for \$5.00 monthly early in 1987, and charged new customers but \$2.00 monthly for pay channels (lasting through the end of 1987). This has brought on charges of predatory pricing by the entrant. Prices by Comcast have now settled (presumably) at 8.50 for basic and 9.95 for HBO, while the basic package has been improved from 24 to 29 channels.

Table 14

Huntsville Overbuild Summary

	Subs	HP	% Over- built	Basic Rate (\$/mo.)	1st Pay Rate (\$/mo.)	# Basic Channels	# Pay Channels	Channel Capacity	Density
Comcast: pre-entry (3/31/86)	34,000	70,000	0%	11.95	11.95	24	4	30	92.7
Comcast: post-entry (7/87)	n.a.	70,000	50%	8.50	9.95	29	5	35	92.7
Cable America	8,000	35,000	100%	7.95*	10.00	43	7	62	92.7

*plus \$1.00 converter charge for basic only without cable-ready television set.

A remarkable aspect of the Huntsville duopoly is that it appears--to local observers--as entirely unremarkable. The competition is viewed (by non-Comcast commentators) as the manifestation of tried and true economic forces, entirely unexceptional. The Huntsville Times, indeed, editorializes in "The Free Market Triumphant" (December 12, 1986):

The lively competition that has developed between Huntsville's two cable TV companies constitutes a healthy lesson in how the marketplace directly benefits the consumer... So long as the city considered cable TV a monopoly, the consumers were at the mercy of the company's rate decisions. Now, with either firm, TV fans are getting many more channels at a lower price... It would be naive to suggest that capitalism always works so well... But when the free market works as it has in cable television, isn't it wonderful?

Summary of Overbuilds

A review of existing overbuilt markets is inherently biased in that it observes only survivors. Where duopolies are consolidated or fail to materialize, they do not endure to observe. However, we remain interested in existing duopoly performance due (among other factors) to the regulatory specifics of cable television: it exists as a laissez-faire monopoly in the overwhelming majority of communities. (As an FCC official recently noted, "There are some things that a county can't force a cable company to do. One is to require that certain stations will be carried, and another is set rates" [Filo, "David Eyes Goliath's cable TV turf," Stuart (FL) News (April 15, 1987), p. A3]. This, revealingly, did not stop a local government official from asserting, "What we can do is make sure the [competitive entrant] is complying with our ordinance. The rates and channels have been taken out of our hands by the federal act." [No note of irony was evidenced.]) And because the alternative to multiple entry is unregulated monopoly, the immunity of

consumers to worse-than-monopoly pricing will predictably push consumer welfare arguments towards freer entry policies. As Smiley surmises, "Under mandatory rate deregulation, consumers are likely to favor overbuilding because it increases consumers' surplus" (1986, p. 34). Hence, we should like to examine the duopolistic markets which do, in fact, survive. These generalizations are in order:

1. Hard and fast financial statistics predicting the viability of an overbuild are suspect. Average markets for cost and demand factors are evidently not immune to successful overbuilding. Not only are densities, demand and profitability related, perhaps, in nonlinear fashion, but costs do vary between firms; a "bad" firm is easier to overbuild. Community or revenue growth, X-efficiencies and Schumpeterian-type innovation (better technology, organization, marketing) are abstracted from in any "accounting theory of monopoly," and at a great loss of realism. Even where a static analysis suggests natural monopoly cost conditions, consumers can be seriously hurt by entry barriers denying them access to newer, better cable systems. As Noam (1984) found modest density economies dwarfed by our survey suggests duopolistic entrants are carefully selected to offer significant product improvements.

2. Competitive entry appears likely to come from an established neighbor; complete new entry is exceptional. This, however, does not appear to flow from "technical" scale economies, as no correlation between size and price is evidence in the data reviewed above. Rather, it appears to be demonstrative of informational and organizational efficiencies in exploiting markets with which local managers are familiar and can strategically attack. In

this sense, little firms eyeing the contiguous turf of large firms represent a similar competitive threat as would the reverse situation.

3. As benchmarks, the Malarkey Taylor ("necessary financial conditions for an overbuild") projections fail to integrate the complexity of this contiguous entry dynamic. That is, while a density of, say 100 HP/mi., may be the anticipated minimum for an area-wide de novo entrant to overbuild, a contiguous rival could perceive profit opportunities at lower density (higher sunk capital cost) numbers. Moreover, it would logically enter "a mile at a time," thusly testing its market to check its pro formas. In this risk-minimizing fashion, overbuilders may be willing to enter markets of low density -- on the order of one-half of what Smiley offers as the U.S. average of 90 HP/mi.

4. It is clear that prices are suppressed by duopolistic entry. For comparison, the average U.S. basic cable rate on April 1, 1987 was 13.12 for 33 channels of service; HBO averaged 10.68 (according to Multichannel News quarterly survey, April 6, 1987). Every entry and reactive duopoly price reviewed here is easily below that, while service packages (often vastly expanded due to competition) appear competitively state-of-the-art (see Table 15). It cannot be seriously doubted that duopoly represents a significant consumer surplus gain over monopoly.

Conclusions: Theory and Policy

Ultimately, the social value of information regarding cable duopolies lies primarily in the guidance it offers courts and legislative policy makers. The exclusivity aspect of the current prototypic local cable franchise now under legal challenge rests on an empirical assertion that competitive duopoly

Table 15

Duopoly v. Monopoly Cable Prices: 1987

Duopoly System	Entry Status ^a	Basic Channels	Basic Price (\$)	1st Pay Price (\$)	P _b +P _p (\$)
S.E. - Allentown	se	32	10.25	7.95	18.20
T.C. - Allentown	se	35	10.00	8.95	18.95
Consolidated - Frankfort	i	24	6.50	9.00	15.90
Suburban - Delaware Co.	se	30	9.50	7.95	17.45
American - Delaware Co.	se	31	9.50	8.95	18.45
Telesat - Orange Co.	fs	40	9.95	9.95	19.90
Cable America - Huntsville	fs	43	7.95	10.00	17.95
Cablevision Ind. - Orange Co.	i	27	7.25	7.50	14.75
Cablevision C.F. - Orange Co.	i	33	13.15	12.18	25.33
Dynamic - Dade Co.	i	40	9.95	9.95	19.90
Citizens - Colo. Sps.	fs	40	15.00	6.95	21.95
Century - Colo. Sps.	i	30	12.50	11.95	24.45
Comcast - Huntsville	i	29	8.50	9.95	18.45
(1) Fourteen system unweighted means		34.0	10.00	9.34	19.34
(2) Twenty-four monopoly system means		35.5	13.35	10.67	24.02
(3) (1) - (2)/(1)		4.2%	33.5 %	14.2%	24.2%

^ase=simultaneous entrants (or reasonable approximation)

fs=fully sequential entrant (i.e., overbuilder)

i=incumbent supplier (i.e., overbildee)

Source: This paper for duopoly statistics. "Cable System Retail Pricing Comparison," Multichannel News (August 10, 1987), p. 34, for monopoly figures.

is unworkable and a policy conclusion that, therefore, publicly interested political agents must make a good faith effort to "rationally" select and regulate the "best" potential entrant. It is within this decision context which the costs and benefits of competition must be assessed.

As a public policy, however, the benefit trade-offs associate with franchise exclusivity are severely truncated. In that duopoly reliably raises consumer surplus, the social welfare offset concerns the summed profitability of cable suppliers. As seen above, the "cost" of duopoly (v. monopoly) springs from the enhanced average costs of the industry's first mover. Yet this loss in profit, being internalized wholly by such supplier, can be eliminated at low transaction cost: limit pricing by a incumbent or aggressive de novo entrant (possibly with long-term service contracts or brand name investment thusly making pricing commitments credible), or merger. As firms will profit-maximize in selecting an entry strategy, they will inherently choose to enter an already built market either via purchase or overbuild. A virgin market will be entered solely, or via merger. In any case, the alternative to overbuilding (and its attendant loss of profit) is available without difficult contracting problems. A decision to enter into direct rivalry, then, indicates that the firm's perceived profit alternatives are, indeed, dominated by the duopoly option. No matter the accounting estimates of impartial (outside) analysts, profit is being maximized in a revealed preference sense.

To view market entry decisions as profit-maximizing is far from synonymous with an ex ante laissez faire policy rule, however. The rationale for regulation of a natural monopoly is that certain efficient transactions

cannot realistically be achieved by market forces alone; that public utility-type regulation is an institution crafted to deal with the transacting problem apparent when large numbers of consumers elect to enter long-term commitments with efficient natural monopolists (see Demsetz 1968; Goldberg 1976). Policy, clearly, must be rationally aligned to confront such large-numbers problems; not to mechanically conduct total welfare projections as a substitute for self-interested market judgments not constrained by transacting difficulties.

The importance of this transaction cost asymmetry is elemental to the policy analysis in cable entry decisions. Consumer surplus is positively correlated, clearly, with multiple entry (only the sunk cost fallacy attempts to argue the other way); producer's surplus is negatively correlated with multiple entry. As the latter market participants (i.e., multiple entrants) have low costs and clear alternatives in avoiding such losses, and as the former (i.e., individual consumers) are greatly constrained (by high transactions costs) in imposing efficiency either via economic or political institution, the benefit of duopoly appears not to be offset by costs in a fuller model of market behavior.¹

The duplication cost penalty from overbuilds is borne by two maximizing firms with low costs of transacting. They are, certainly, in the best position to internalize gains from monopoly market structure, accomplished

¹In this light, we should be careful to separate self-interested industry statements (by cable incumbents) from relevant policy considerations. Interestingly, when the Malarkey Taylor overbuild study (above) was released, a cable trade publication, Multichannel News, headlined the results: "Study Finds Profits Elusive When Systems Overbuild" (April 13, 1987; p. 17). This encapsulates the relevant industry information precisely; it, however, is irrelevant to our social welfare calculus, as just discussed.

either by merger or limit pricing. Where such a sole supplier solution fails to materialize, a priori reasoning by disinterested civil servants (hypothesizing such agents for the sake of discussion) would be hard-pressed to perceive the consumer welfare logic of competitive entry. It should not be to do so.

The fact is that the existence of multiple cable suppliers is, in large measure, a correction of a market error. Theoretically, one cable firm may provide everything that two or more could, at a lower cost. Real markets, inhabited by real people, may not conform to idealized solutions. Hence, alert entrepreneurs roam the financial landscape in search of areas where the largest errors have been made. They seek to exploit the opportunity; to bring the consumer back up to the indifference curve he should have been on all along. As the aggressive overbuilder in Huntsville freely concedes: "If there are two cable systems in a community, there is something wrong with one of them." The industry is not surprised by this view. As a cable financial expert recently noted, an overbuild:

It comes about basically because the existing operator lets it happen. He creates a situation by poor service, under-achievement in programming or poor quality signal where he invites and the community invites people to come in to offer competitive service. So it really falls right back on the shoulders of the operator to do a good job. And if you do maintain good equipment and give representative programming, I don't think overbuild is a real concern for a good operator. (In "The economics of cable properties: investment vehicles and overbuilds," Cablevision (April 27, 1987), p. 46.)

Interestingly, this rationale for entry--fixing a mistake--is not dissimilar to the argument for competition generally. It is a typical property of retail or industrial markets that, if all the incumbents were

functioning perfectly, entry would be unprofitable. Entry occurs (and is cheered by economists), however, because it is the least cost method of (a) discovering market mistakes, (b) fixing market mistakes, (c) rewarding mistake-correctors, and (d) punishing mistake-makers. The problematic aspect of relying on competition to correct anticonsumer performance in cable is that, given a degree of capital fixity, poorly behaving incumbents are somewhat difficult to "rout." This calls for public policies which facilitate entry. Reducing the cost of enforcement of long-term contracts (including the legalization of exclusive agreements with developers and condo associations -- now illegal in some states), would be in this spirit.

Smiley suggests, from a similar motivation, that a wise policy course would be for local authorities to foster a number of adjacent cable monopolies, avoiding large territorial exclusivity, the idea being to have contiguous monopolists "keep an eye on each other." The solution appears perfectly reasonable, outside the scope of political decision-making. Yet, once we assign a local governing body with the task of selecting the number of franchises to issue, as well as the terms of the competition, we will soon find consumer welfare criteria simply one set of considerations among many.

Smiley's economic trade-off approach leads him to auger that multiple franchise awards will improve welfare where capital costs are relatively low and firms offer relatively differentiated products, and that such pro-competition opportunities must be discovered "on a case-by-case basis" in so far as "generalizations about the appropriate role of overbuild competition are likely to be misleading" (Smiley 1986, p. 35). Yet this case-by-case approach fails, in practice, to turn optimal entry evaluations over to

economic cost-benefit analysis. Indeed, given Smiley's analysis that opening entry is quite frequently a welfare maximizing policy, the fact that we see so very few local governments pursuing it, even as city councils do indeed deal with their cable franchise on "a case-by-case basis", suggests a rather deterministic result. The equilibrium in the case-by-case policy rule is very nearly a corner solution for competition.

As rational political franchisers are at liberty (just how far at liberty is now being litigated in the federal courts) to craft rent-seeking competitions in which cable licenses are dispensed, there is little prospect that the social value of "consumer welfare" will be squarely represented in the auction. The regularity with which incumbent operators succeed in capturing the exclusive allegiance of local authorities is testimony to the tendency with which a case-by-case methodology is transformed into a rule-of-thumb.

The protectionist sentiments of the cable industry are quite clear. The great source of irony derives from the fact that the most famous "blanket rule" (in contradistinction to a case-by-case calculus) is being discriminatorily employed: the First Amendment. Using constitutional protections of speech and press to toss off federal and local control of rates and programming was last year's game plan; in 1987 the National Cable Television Association has abruptly shifted gears -- and now demands protection from overbuilds. As one cable company chief executive announced recently, without smirk or giggle:

Comcast is seeking...to uphold the position that cities have the right to determine the identity and number of cable operators which

will serve their citizens as well as the reasonable terms and conditions of those franchises. While Comcast believes that a cable operator's programming decisions are unquestionably protected by the First Amendment, it disagrees with those who contend that the Constitution's guarantee of free speech immunizes cable operators from all government regulation (Roberts 1987, p. 15, emphasis in original).

A more compelling argument limiting First Amendment protection to incumbents, however, is supplied by Comcast's 1986 10-K form, filed with the Securities and Exchange Commission on March 31, 1987. It states, simply and reasonably:

The construction of a second cable system in a franchise area, referred to in the cable industry as an "overbuild," is most likely to exist where the first franchise holder is susceptible to competition because it owns an older system or is charging relatively high rates for its services or has not made cable service available to all residents within the franchise area. As a result, when an overbuild exists the prior franchisee often must respond by upgrading, rebuilding or extending its system or lowering its rates. The costs of operating systems where an overbuild exist will be substantially greater than if there were no overbuilding present. There is presently an overbuild situation in the Company's Huntsville, Alabama system and threats of overbuilds exists in several other systems acquired from Group W.

As competitive entry is costly, it appears safe to conclude that entry prohibitions are worth purchasing via the political marketplace. A discretionary public policy will, hence, inevitably be biased not towards welfare, but rent, maximization. Economic analysis should, for purposes of policy, not arbitrarily exclude this fundamental consideration. Partial analysis of interactive markets may well prove more dangerous than no analysis at all.

REFERENCES

- Alchian, Armen. 1977. "Cost," in Alchian, Economic Forces at Work (Indianapolis: Liberty Press); reprinted from Encyclopedia of the Social Sciences 3(1968).
- Booz, Allen. 1979. "Analysis of Overlapping Franchises, Overbuilding and Dividing Urban Markets in the CATV Industry for Cable Atlanta, Inc. and Georgia Cablevision Corp. (New York: Booz Allen; October 9).
- Demsetz, Harold. 1968. "Why Regulate Utilities?" Journal of Law & Economics XI (April), pp. 55-66.
- Falhauber, Gerald R. 1975. "Cross-Subsidization: Pricing in Public Enterprises," American Economic Review LXV (December), pp. 966-77.
- Goldberg, Victor. 1976. "Regulation and Administered Contracts," Bell Journal of Economics and Management Science 7 (Autumn), pp. 426-48.
- Hazlett, Thomas W. 1986a. "Competition v. Franchise Monopoly in Cable Television," Contemporary Policy Issues IV (April), pp. 80-97.
- _____. 1986b. "Private Monopoly and the Public Interest: An Economic Analysis of the Cable Television Franchise," University of Pennsylvania Law Review 134 (July), pp. 1335-1408.
- Kagan, Paul & Associates. 1985. Cable Television Financial Data Factbook (June).
- _____. 1987. Cable Television Financial Data Factbook (June).
- Kaplan, Barry. 1987. "American Television & Communications, Inc." Goldman Sachs Investment Research Report.
- Malarkey Taylor. 1987. "Economic Analysis of Cable System Overbuilds," (January).

- Mazookis, Chuck. 1985. "Range Wars," Cable Television Business (September 15), pp. 20-24.
- Meyerson, Michael I. "The Cable Communications Policy Act of 1984: A Balancing Act on the Coaxial Wires," Georgia Law Review 19, pp. 543-622.
- Munger Kahn, Virginia. 1986. "How Safe is Cable's 'Natural Monopoly'," Cablevision (October 13), pp. 60-70.
- Noam, Eli. 1984. "Private Sector Monopolies: The Case of Cable Television Franchises," in Holzer and Nagel (eds.), Productivity and Public Policy (Beverly Hills: Sage Publication), pp. 193-217.
- _____. 1985. "Economies of Scale in Cable Television: A Multiproduct Analysis," in Noam (ed.), Video Media Competition (New York: Columbia University Press), pp. 93-120.
- Owen, Bruce M., and Peter R. Greehalgh. 1986. "Competitive Considerations in Cable Television Francising," Contemporary Policy Issues IV (April), pp. 69-79.
- Pearce, Alan, Roger Peterson, and Mary Frederickson. 1982. "Competitive Cable Franchising: Analysis of Economic Theory and Empirical Data" (Monroe, GA: Unpublished Study for the City of Monroe).
- Posner, Richard A. 1972. "The Appropriate Scope for Regulation in the Cable Television Industry," Bell J. of Economics and Management Science 3, pp. 98-129.
- Roberts, Ralph J. 1987. "Freedom to Serve," Speech given to Washington Cable Club (May 27).
- Touch Ross. 1984. "Financial and Economic Analysis of the Cable Television Permit of the City and County of Denver" (Kansas City, MO: Touch Ross & Co.; January 20).

