Ownership Chart
AT&T/MediaOne/Time Warner Entertainment

Ownership	U.S. Homes Passed	U.S. Subscribers	% U.S. Homes Passed	% U.S. Subscribers
National[1]	95,632,284	66,065,000		
AT&T[2] 100% Ownership	17,249,000	10,670,000[3]	18%	16%
Consolidated	1,753,000	747,000	2%	1%
Non-Consolidated	16,195,000	10,389,000	17%	16%
Minus Comcast Subs	- 2,900,000	- 2,000,000		
AT&T Total	32,297,000	19,806,000	34%	30%
MediaOne[4] 100% Ownership	8,530,000	4,970,000	9%	8%
AT&T + MediaOne	40,827,000	24,776,000	43%	38%
Time Warner Entertainment[5]	15,254,000	9,734,000	16%	15%
AT&T + MediaOne + Time Warner Entertainment	56,081,000	34,510,000	59%	52%

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[1] National Cable Television Association, "The Cable Industry At A Glance" (citing Paul Kagan Associates, Inc., *The Cable TV Financial Databook, 1999).*

[2] AT&T Corp. and MediaOne Group, Inc., "Applications and Public Interest Statement," *In the Matter of Applications for Consent to Transfer of Control of Licenses,"* before the Federal Communications Commission (*"AT&T/MediaOne Statement"*).

[3] According to AT&T's 2nd Quarter 1999 Earnings Statement (SEC Form 10-Q) and accompanying company statements, the company's cable systems serve 11.3 million cable subscribers and pass 19.3 million homes. Moreover, this number would increase further by nearly .5 million subscribers if the FCC approves AT&T's acquisition of certain Cox systems.

[4] MediaOne Group (Quarterly Report SEC form 10-Q, Second Quarter 1999).

[5] MediaOne Corp (Quarterly Report SEC form 10-Q, Second Quarter 1999) and *AT&T/MediaOne Statement.* Figures exclude AT&T interests in 2 systems shared with Time Warner Entertainment (Texas Cable Partners, Kansas City Cable Partners).

EXHIBIT 2

Cable Modem Subscribership

Entity	U.S. Subscribers	% US Subscribers
Total[1]	1,000,000	
Excite@Home[2]	620,000	62%
Road Runner[3]	340,000	34%
COMBINED	960,000	96%

[1] *See e.g.*, "Mass Media," *Communications Daily*, at 8 (August 3, 1999) ("*Mass Media*").

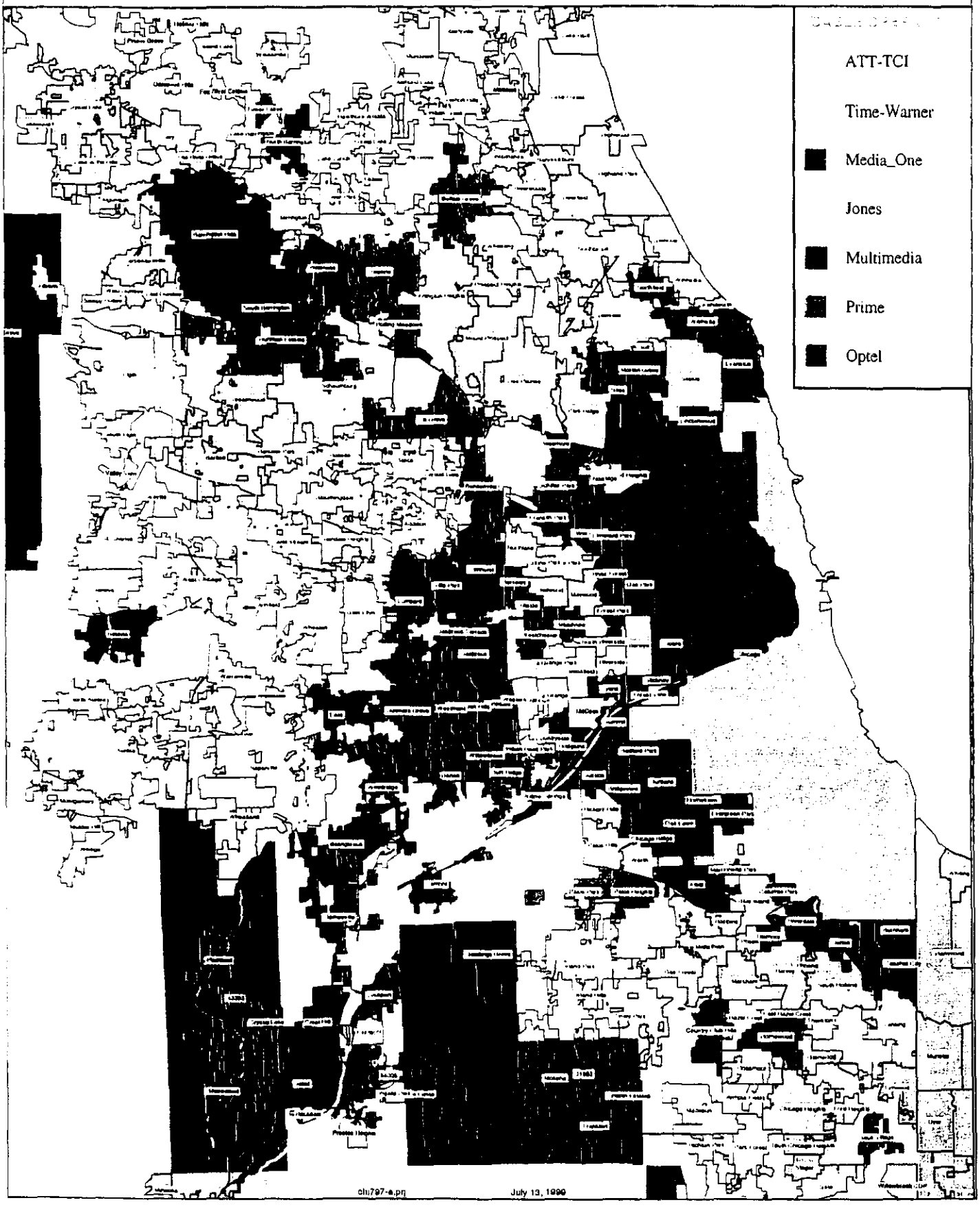
[2] Excite@Home Second Quarter 1999 Earnings Results (SEC Form 10-Q).

[3] *Mass Media, supra.*

EXHIBIT 3

Cable Competition as of July 1, 1999

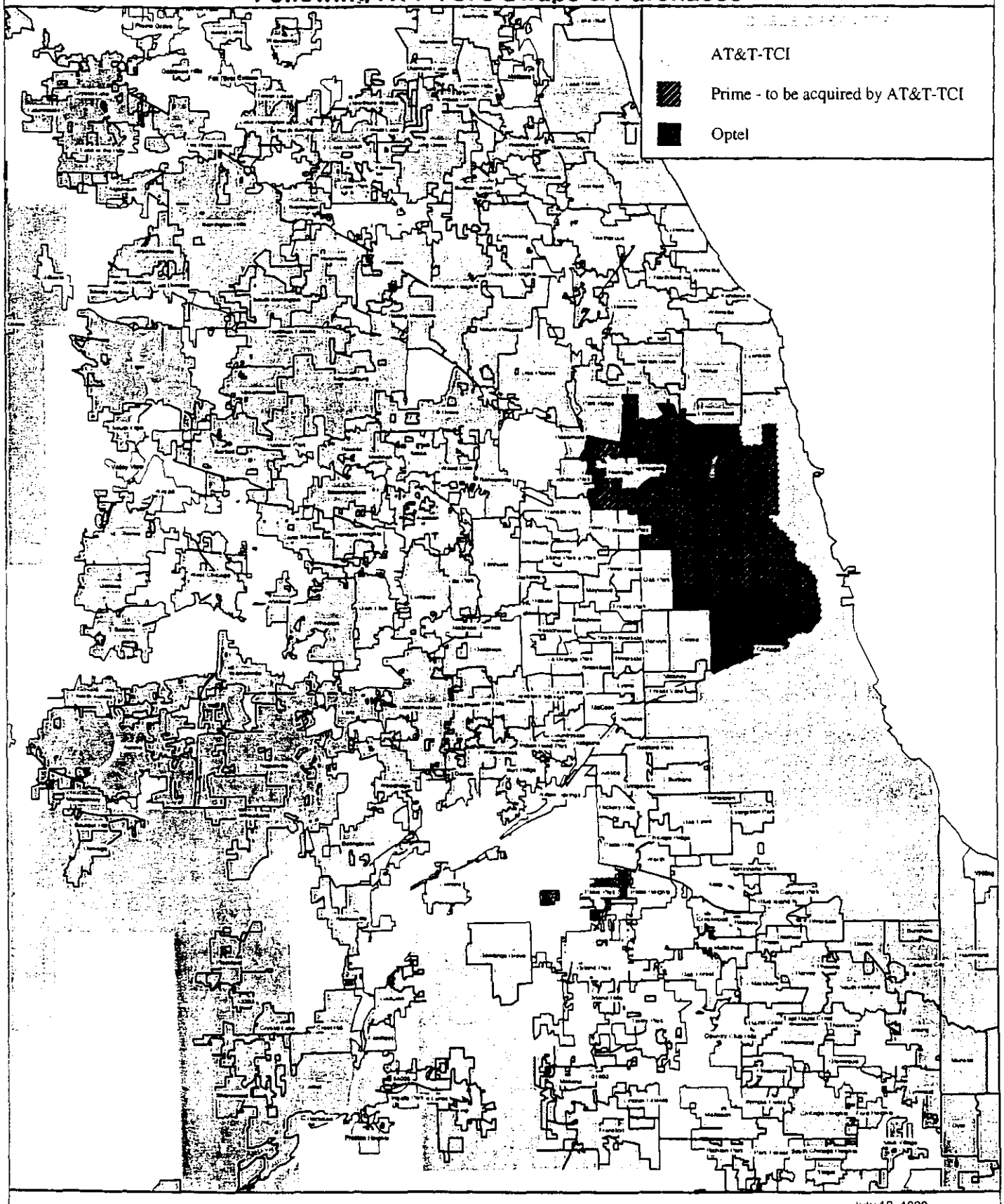
Chicago Area



Cable Competition

Chicago Area

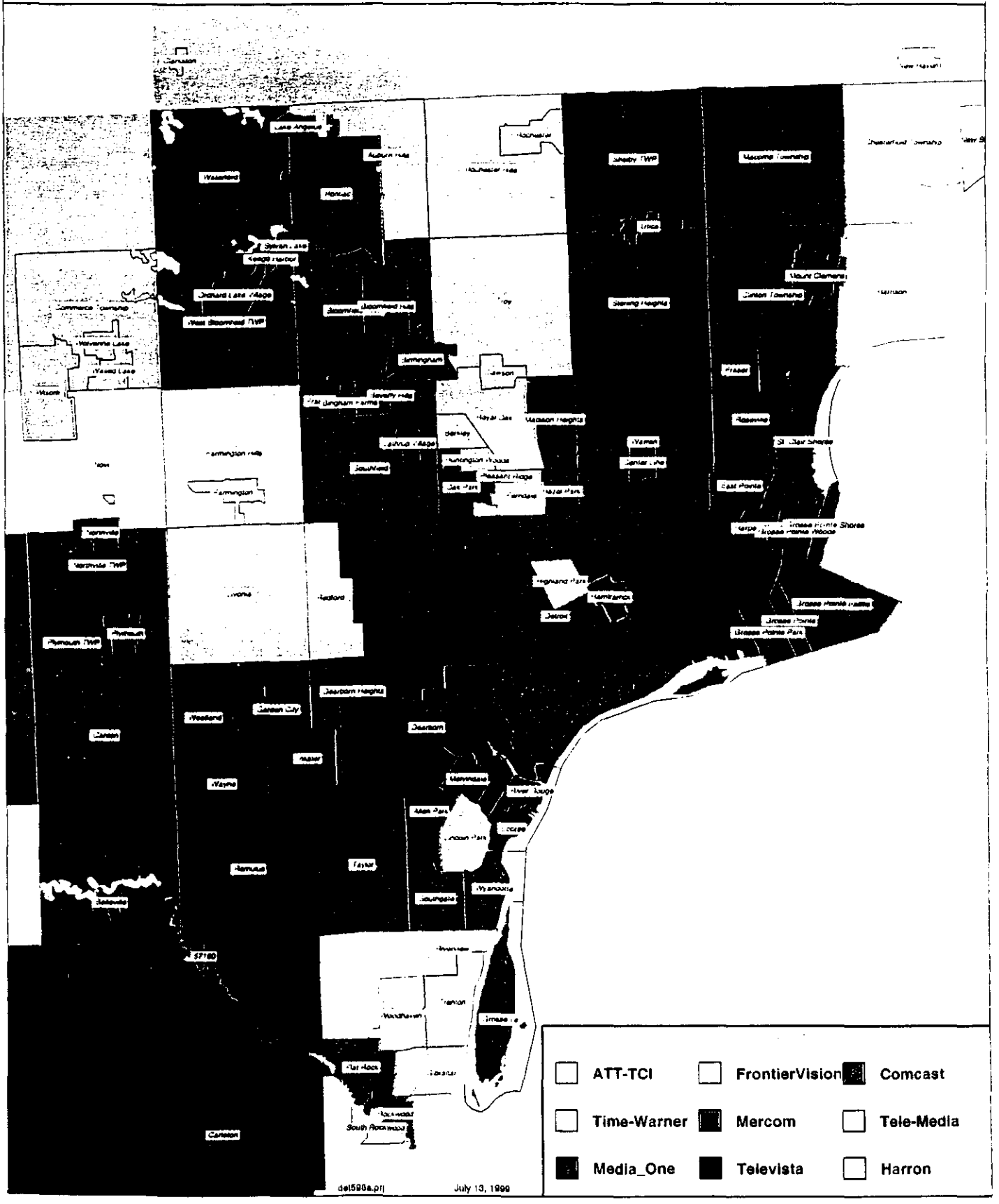
Following ATT-TCI's Swaps & Purchases



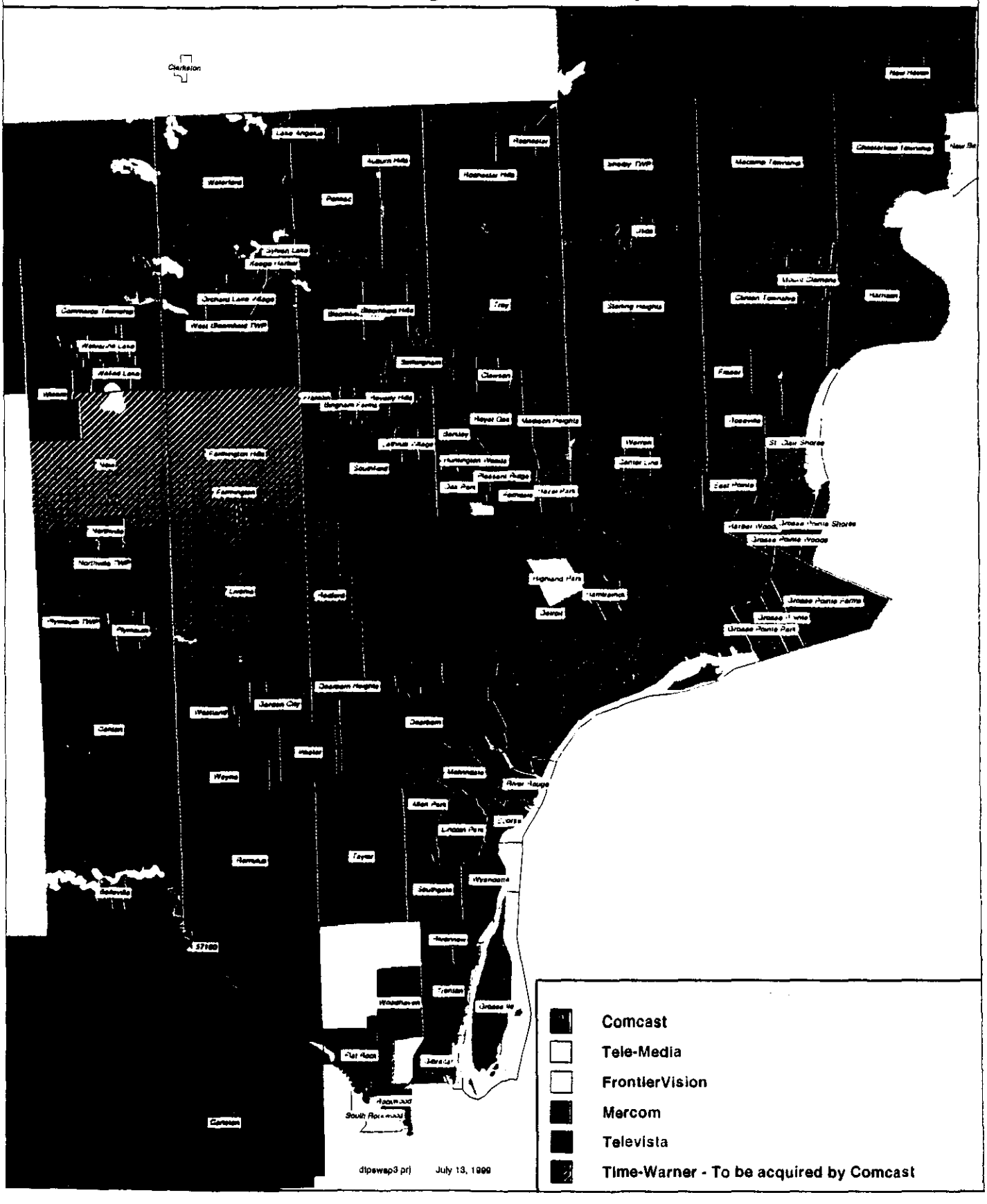
July 13, 1999

Cable Competition as of July 1, 1999

Detroit

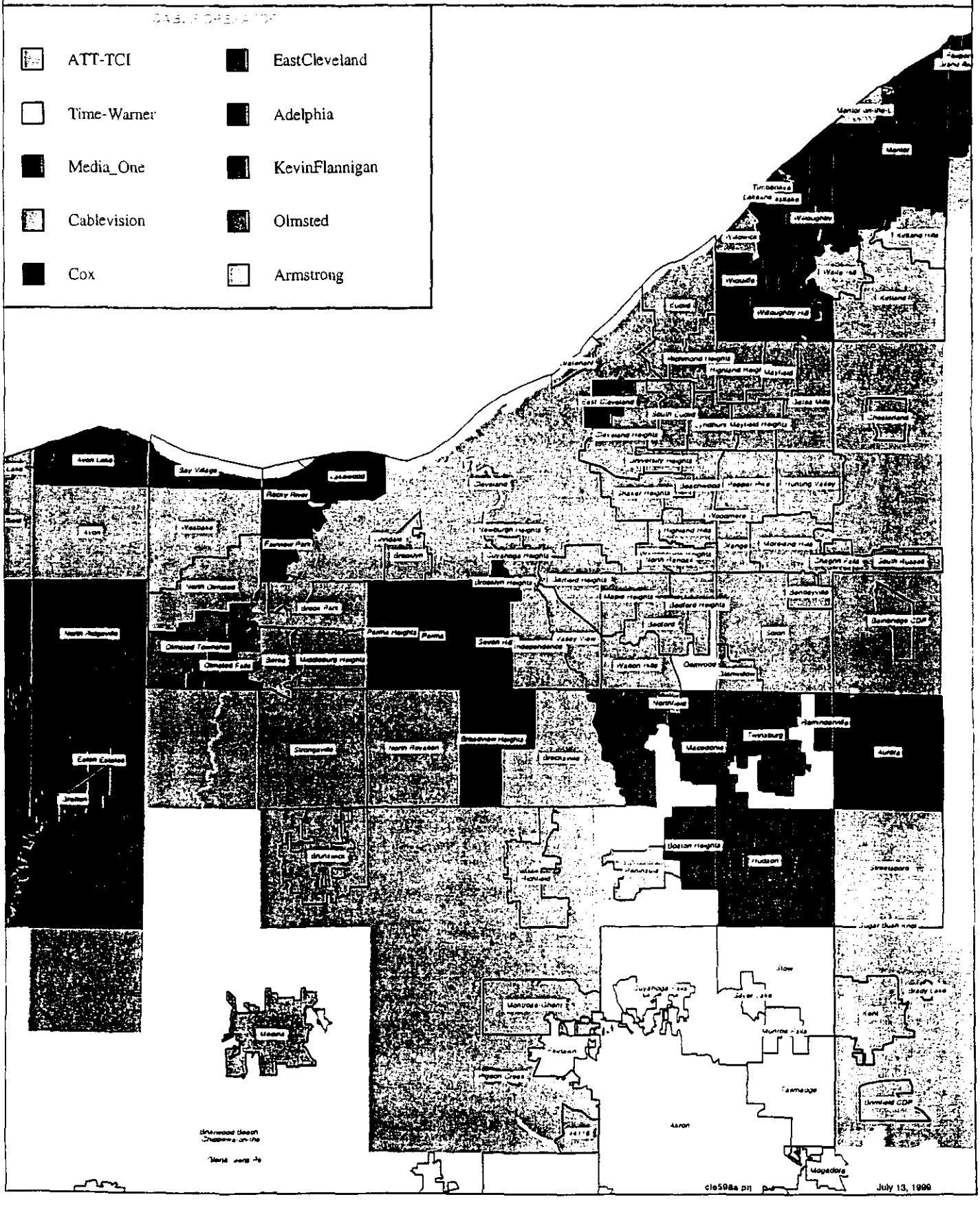


Cable Competition
Detroit
Following Comcast Swaps

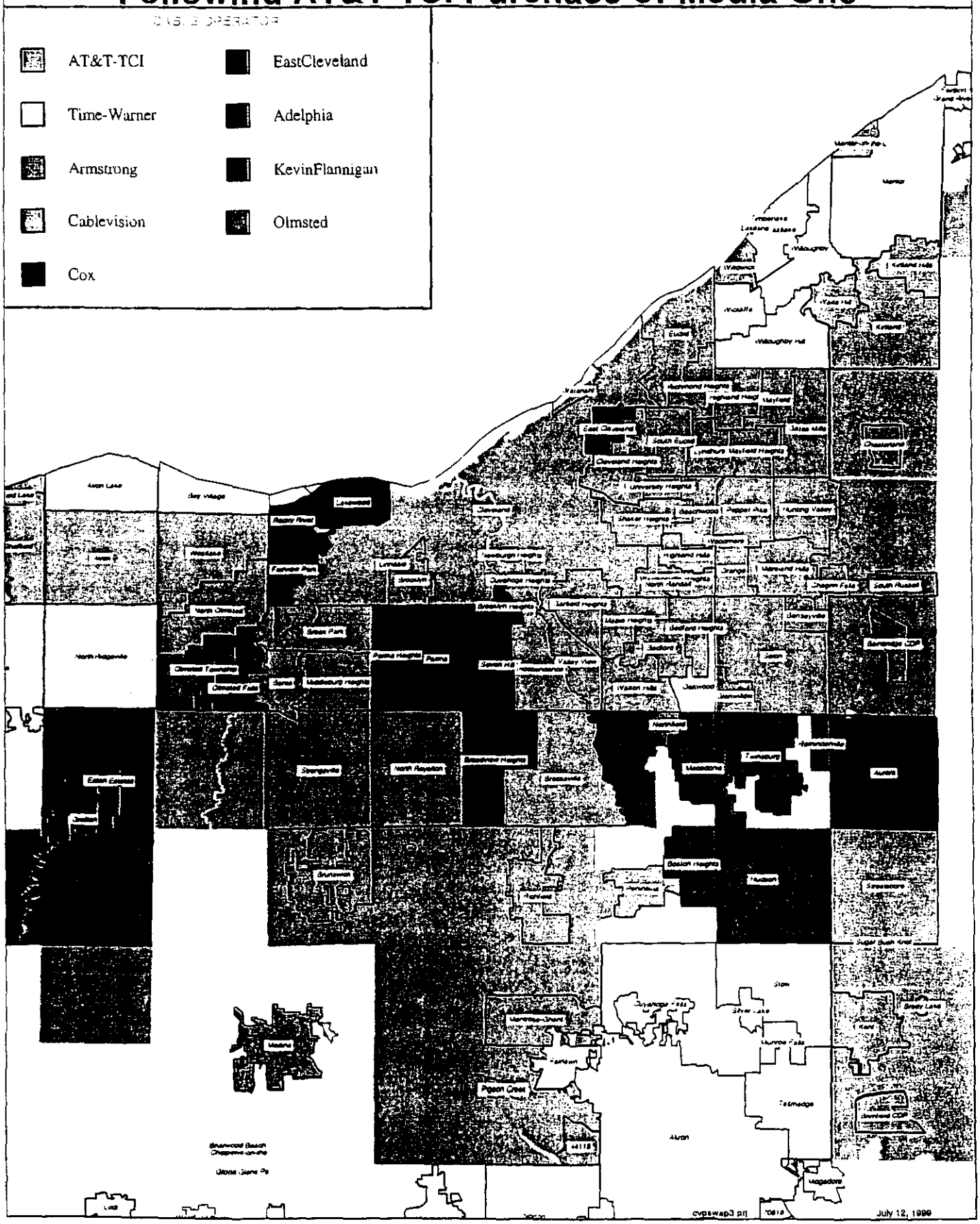


Cable Competitors as of July 1, 1999

Cleveland

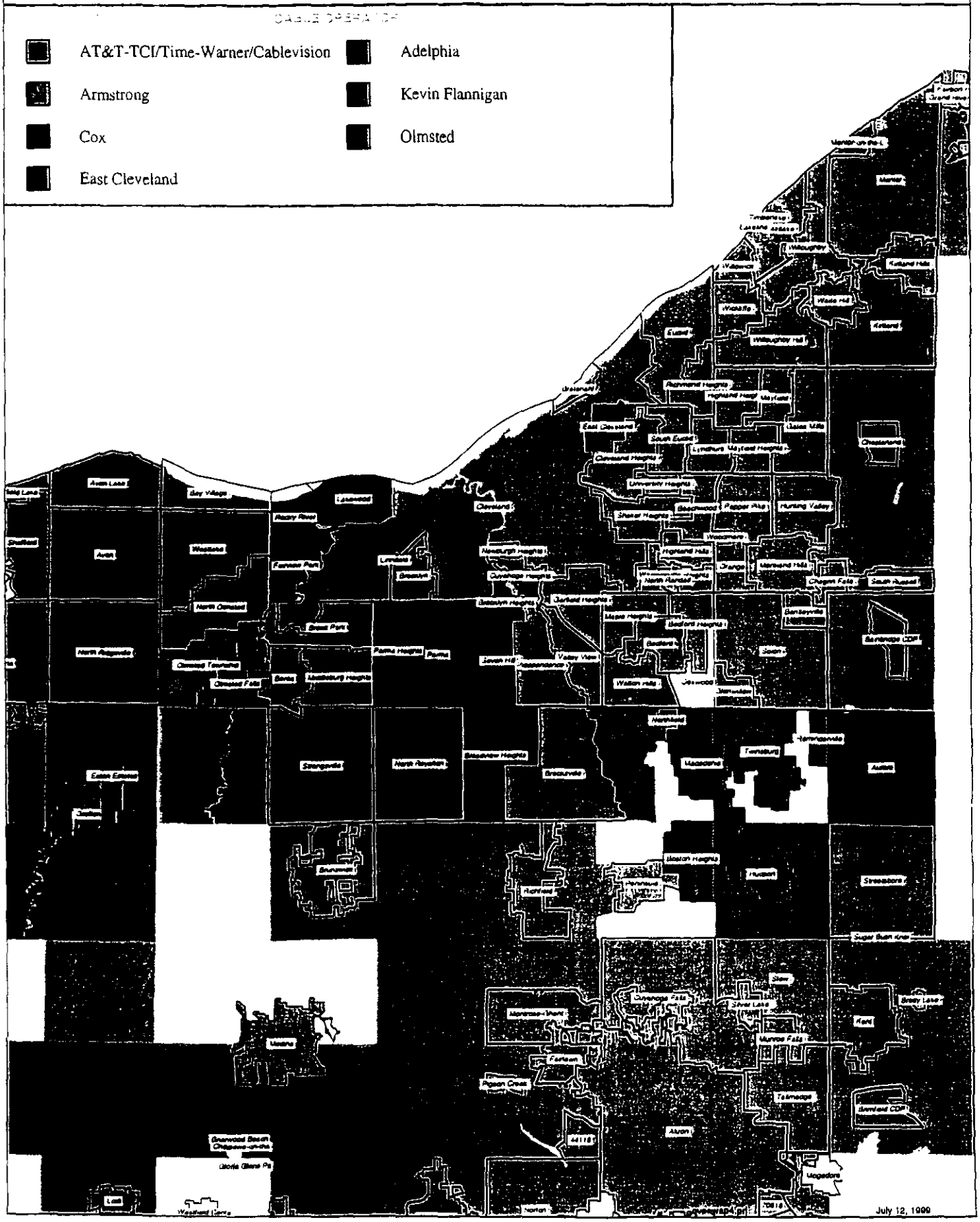


Cable Competitors--Cleveland Area
Following AT&T-TCI Purchase of Media One



Cable Competitors--Cleveland Area

Systems in Which AT&T Has An Attributable Interest



Cable Competition as of July 1, 1999
Columbus Area

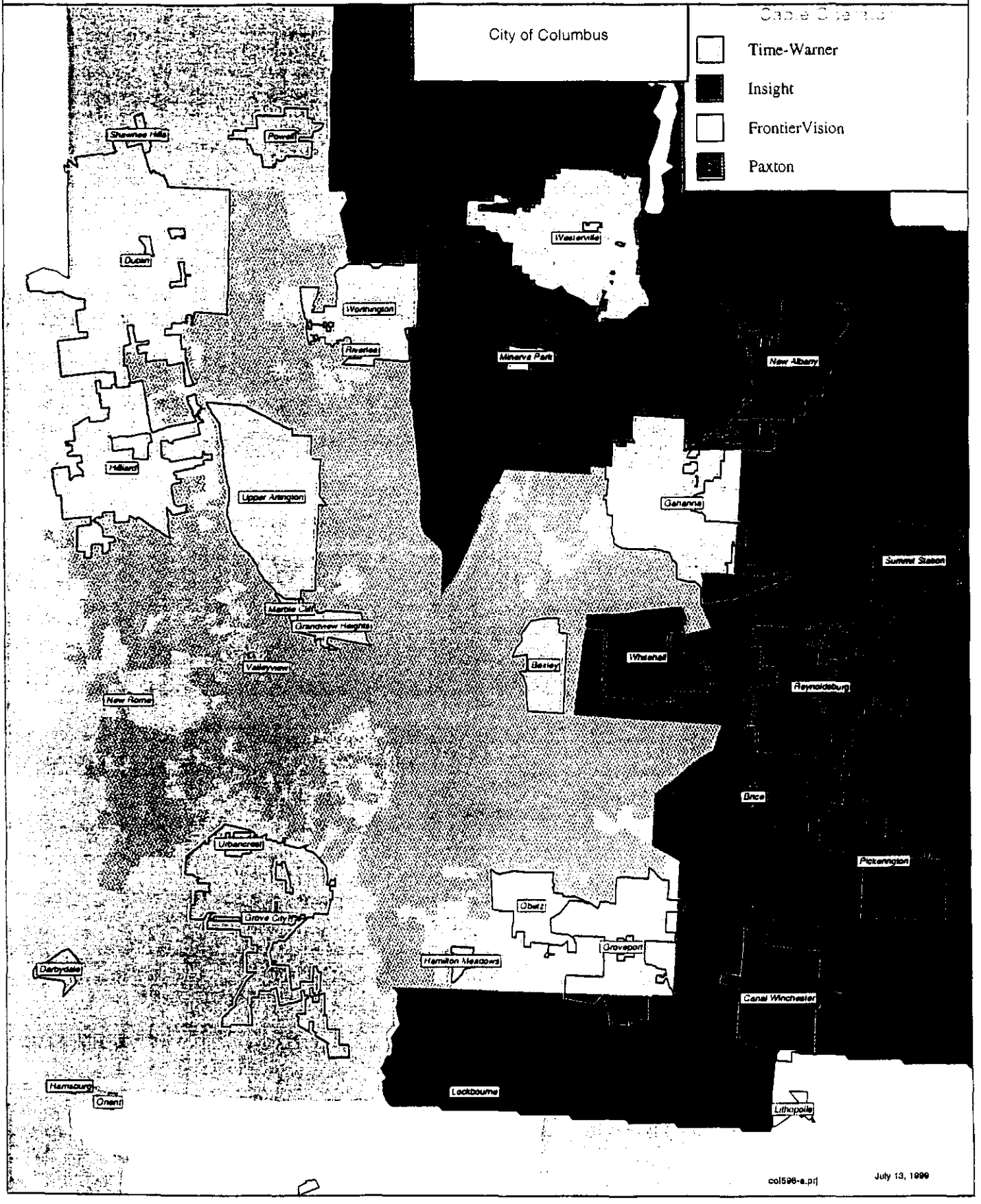


EXHIBIT 4

THE ECONOMICS OF LICENSE FEE DISCOUNTS

By

James N. Dertouzos*

&

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** Professor of Telecommunication, Michigan State University.

I. INTRODUCTION AND SUMMARY

Competitors to incumbent cable companies have complained that they are charged unjustifiably higher prices for programming than larger cable incumbents. As a result, entrants are placed at a significant cost disadvantage compared to their incumbent competitors. This report examines the differences in prices charged to large incumbents and small operators, including new entrants, and concludes that there are both sound theoretical reasons and empirical evidence for believing that these complaints have merit.

For new entrants to compete effectively with an industry's incumbents, they must have fair and equal access to critical inputs. This is no less true for the multichannel video programming distribution (MVPD) industry where programming is clearly the most critical input for MVPDs. Small operators, including new entrants, however, have been forced to pay unjustifiably higher prices for programming than their incumbent competitors. Indeed, as discussed below, the data suggests that the programming cost disadvantage faced by small MVPDs may be large enough to constitute a crippling handicap for new entrants while safeguarding high margins for incumbent systems.

Moreover, there is no apparent efficiency justification for price differentials of this magnitude. As discussed below, neither reduced delivery costs nor savings in transaction costs can explain the very large differences in prices paid for networks by large, incumbent Multiple System Operators ("MSOs") and smaller MVPDs. Nor can these price differentials be attributed to any of the factors identified by the FCC as potentially justifying price differentials.[1] In fact, some of these factors, such as advertising revenue and channel tiering, actually warrant payment of higher, not lower, prices by large incumbents.

[1] Implementation of Sections 12 and 19 of the Cable Television Consumer Protection and Competition Act of 1992, MM Docket No. 92-265, *First Report and Order*, 9 FCC Rcd 3359 (1993).

Finally, it is difficult to see how network suppliers benefit from price differentials so large that entrants find it hard to compete. While entrants can be expected to take some customers away from incumbents, their efforts typically increase the total subscriber count which is a benefit of competition to networks. Furthermore, consumers tend to be offered more channels in competitive markets,[2] which reflects an increase in the wholesale demand for networks.

In light of these findings, one cannot help but conclude that the substantial discounts offered to large incumbents are not cost-justified and, therefore, constitute a barrier to competition in the MVPD industry.

This report is organized as follows. Section II reports the results of two studies of prices charged by network suppliers to cable system operators. Both studies reveal substantial cost disadvantages faced by cable entrants in acquiring programming. Finally, Section III examines the possible economic justifications for such differentials and concludes that none of these factors justifies the magnitude of the price differentials revealed in the studies.

II. THE SIZE OF INCUMBENT MSOs' PROGRAMMING COST ADVANTAGE

It is commonly understood in the MVPD industry that large incumbents are able to license cable networks for distribution to their subscribers at considerably lower rates than smaller MSOs and other MVPDs with fewer subscribers, including their direct competitors in local cable markets.[3] Small operators and new entrants (who, by definition, start small) are therefore compelled to compete at a cost disadvantage to

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[2] Dertouzos, J. and Wildman, S., "Regulatory Standards: The Effect of Broadcast Signals on Cable Television, in *A Communications Cornucopia: Markle Foundation Essays on Information Policy*. R. Noll and M. Price (eds.), Brookings Institution, 1998.

[3] *See e.g.* Chipty, T., "Horizontal Integration for Bargaining Power: Evidence from Cable Television Industry," *Journal of Economics and Management Strategy*, Vol. 4 (1995), pp. 375-397; Waterman, D., "Local Monopsony and Free Riders," *Information, Economics and Policy*, Vol. 8 (1996) pp. 337-355.

incumbent operators. The magnitude of this disadvantage and the extent to which it can be justified by operational efficiencies attributable to size are important questions for the fashioning of cable competition policy.

Below we examine two sources of data that provide some indication of the magnitude of the discounts offered to large incumbents and the size of the financial disadvantage due to higher programming costs that small MVPDs must deal with in competing with systems operated by larger incumbents. First, rate card data reflecting rate schedules for 12 basic cable networks provides an initial indication of the significant magnitude of the discounts that are offered to large incumbents, but are denied small MVPDs. As explained below, however, it is generally believed that large MSOs are able to negotiate substantially higher discounts than those reflected on rate cards. Thus, we believe that the information contained on these rate cards significantly understates the true discounts received by incumbents for programming.

For this reason, we also examined industry data published by Paul Kagan Associates, which revealed substantially higher discounts than those reflected on the rate cards. As a result of these tremendous discounts, smaller operators, including new entrants, face substantial programming cost disadvantages which, in turn, hamper their ability to compete meaningfully in the MVPD industry.

Although the industry data presented by Kagan Associates presents a more accurate picture by which to gauge cost disadvantages, conservative estimating assumptions employed due to the nature of the pricing information contained in this data also likely result in a substantial understatement of the small MVPD cost disadvantage. As discussed below, the Kagan data reports average industry discounts, but not maximum discounts. Thus, the cost disadvantage of small MVPDs calculated using this data is probably substantially less than the actual disadvantage, which would be revealed if true off-card rate discount information were available. Because the terms by which programming is sold to large incumbents typically are not available to the public (let

alone competing MVPDs), there is no way to determine the true cost disadvantage suffered by small MVPDs.

A. Rate Card Data

Contracts between networks and MVPDs specify per subscriber license fees. Typically, the per subscriber fee falls as the number of subscribers an MVPD makes available to a network increases. Moreover, of the contracts we examined, an MVPD had to deliver at least a million, and often several million, subscribers to a network to qualify for the maximum discount on its card. As a first step toward quantifying the size of the programming cost disadvantage of cable entrants, we examined rate cards for 12 networks.[4] Rate cards describe pre-set price schedules offered to cable operators by network suppliers and, thus, do not reflect the off-card discounts large MSOs are able to negotiate.[5] Nevertheless, the rate cards provide useful information regarding the relationship between MVPD size and network supply prices -- especially since smaller MVPDs apparently have little choice but to pay the card rates.

Summary statistics describing these contracts are presented in Table 1.

[4] The identities of these networks were not disclosed to us.

[5] For this reason, we believe the estimates of entrant disadvantages based on the Kagan industry data are more reliable.

Table 1
Summary Statistics for 12 Network Rate Cards

Network	Maximum discount off top rate	Largest MSO (# subs) paying top rate	Subs required for Max discount	Length of Contract[6] (years)
1	15.0%	99,999	5 million	5
2	20.0%	499,999	4 million	5
3	20.0%	99,999	3.5 million	5
4	24+%	999	1.6 million	2
5	7.4%	249,999	1.5 million	1
6	2.7%	3,999,999	4 million	4
7	23.1%	49,999	1 million	2
8	21.1%	249,999	10 million	5
9	10%	99,999	1 million	5
10	20%	499,999	4 million	7
11	14.3%	499,999	1 million	10
12	25%	99,999	1 million	5
Average	16.9%	537,582	3.1 million	4.67

As Table 1 indicates, the number of subscribers required to qualify for the maximum rate card discount ranged from 1 million to 10 million. As a percent of top rates, maximum discounts varied from just under 3% to 25%, with most being in the 15% to 25% range.[7] For all but Network 6, the discount increases through several smaller increments until the top rate is reached. Moreover, as Table 1 illustrates, very few small MVPDs would qualify for even the minimum discount. Only two of the 12 networks offer their minimum discounts to MVPDs with fewer than 100,000 subscribers. The average discount available to the largest MSOs was approximately 17%, while an MSO

[6] Length of contract is the number of years for which the operator is guaranteed a pre-set schedule of license fees.

[7] For all networks except network 4, volume discounts applied to all subscribers. By contrast, Network 4's contract specified a blended rate schedule for which quantity discounts applied only to the number of subscribers by which an MSO's total number of subscribers exceeded the number that triggered the discount. While Network 4's maximum discount is 27.7% of its top rate, when averaged across all subscribers, the average percentage discount per subscriber must be less. For the largest MSOs, the average discount can be above 24% for this rate card.

with less than 250,000 subscribers would receive no discount for fully half of the networks examined.[8] Of course, rate card data will not reveal off-card discounts negotiated by the largest MSOs. For this reason, we examine industry data in the next subsection.

B. Industry Data

It is generally believed that the largest incumbents are able to negotiate rates substantially below those reported on rate cards. Thus, there is good reason to believe that rate cards substantially understate the magnitude of the discounts offered to large MSOs. For this reason, we turned to data published by Paul Kagan Associates that allowed us to compare top of card rates to industry average license fees for a number of popular networks.[9] Because the lowest fees paid contribute to the average, this data provides us a second, and more realistic, index of the programming cost advantage realized by the largest MSOs relative to the smaller competitors. However, because the industry average rate will always be higher than the lowest rate, the difference between the top rate and the lowest rate offered the largest MSOs may well exceed substantially the difference between the top rate and the average industry rate reported by Kagan.[10] An example illustrating this point was the subject of an article in the April 14, 1997 issue of

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[8] The average minimum discount was 5%.

[9] These networks are: A&E, American Movie Classics, The Cartoon Network, Country Music Television, CNBC, CNN/HN, CNN(fn), The Comedy Channel, Court TV, Discovery, E!, ESPN, ESPN2, The Family Channel, Fox Sports, FX, The Golf Channel, Home and Garden TV, The History Channel, Lifetime, MTV., Nickelodeon, Prevue, Sci-Fi, TBS, Turner Classic Movies, The Learning Channel, TNT, The Nashville Network, USA, VH1, and The Weather Channel.

[10] As an example, consider a network with 20 million subscribers: 10 million subscribers served by small MSOs paying $ .20 per subscriber per month and 10 million served by a single large MSO paying $ .10 per subscriber per month. The industry average license fee would be $ .15. Therefore, using the $ .05 difference between the $ .20 rate and the industry average rate as an estimate of the programming cost disadvantage of small MVPDs would understate by half the true disadvantage which is $ .10.

Multichannel News where it was reported that TCI received a bulk rate for ESPN carriage of between 50 and 65 cents per subscriber, representing a 20-30 percent discount over the typical rate.

Table 2 presents Kagan figures for the top rates charged MVPDs (rates charged small MVPDs who receive no discounts) and the average industry discount off the top rate for 33 basic networks in the Kagan data set that are offered to Ameritech's Chicago customers.[11] The average per subscriber rate for the industry was calculated by dividing a network's total licensing revenues by its national subscriber count, and this was used to calculate the average discount off the top rate. Also provided is Kagan's estimate of average local advertising revenue per subscriber for each network. All figures reported are monthly rates. Local ad revenue figures are reported because, as discussed below, economic theory and our econometric analysis suggest that cable operators should be willing to pay higher license fees for networks that enable them to generate additional income by selling local ad time.[12]

[11] The CNN/HN figures are combined numbers for CNN and Headline News, which are separate networks. Kagan, presumably reflecting the joint pricing of these two Time Warner news networks reports the data this way.

[12] *See* Appendix A for our econometric analysis of local advertising.

Table 2
Top Rates, Discounts, and Ad Revenues for 33 Basic Networks in 1997[13]

Network	Top Rate ($/month)	Discount %	Discount ($/month)	Local Ad Rev ($/month)
A&E	0.30	51	0.15	0.11
AMC	0.25	35	0.09	-
Cartoon	0.18	57	0.10	-
CMT	0.11	91	0.10	0.02
CNBC	0.23	44	0.10	0.04
CNN/HN	0.44	62	0.27	0.53
CNN(fn)	0.06	11	0.01	-
Comedy	0.17	89	0.15	0.02
Court	0.16	50	0.08	-
Discovery	0.32	50	0.16	0.12
E!	0.14	30	0.04	0.03
ESPN	0.76	20	0.15	0.47
ESPN2	0.20	30	0.06	0.04
Family	0.23	40	0.09	0.04
Fox Sports	0.20	40	0.08	-
FX	0.27	4	0.01	0.08
The Golf Channel	0.14	0	0.00	-
HGTV	0.17	72	0.12	0.04
History	0.27	71	0.19	0.01
Lifetime	0.22	50	0.11	0.18
MTV	0.39	60	0.23	0.08
Nickelodeon	0.50	60	0.30	0.07
Prevue	0.09	70	0.06	-
Sci-Fi	0.14	50	0.07	0.01
TBS	0.25	20	0.05	-
TCM	0.39	60	0.23	-
TLC	0.14	50	0.07	0.02
TNT	0.63	20	0.13	0.23
TNN	0.35	60	0.21	0.07
USA	0.37	7	0.02	0.32
VH1	0.14	50	0.07	0.03
Weather	0.13	50	0.07	0.02
Total	8.74	45 (avg)	3.92	2.60

Assuming that a 100,000 subscriber MSO pays the top rate, Table 3 reports for each of the 33 networks estimates of the additional programming costs a 100,000 subscriber MSO would incur paying the top rate compared to payments it would make if

[13] Source: License fees and average discounts were taken from Paul Kagan Associates, *The Economics of Basic Cable Networks*, 1998. Local advertising revenue were taken from Paul Kagan Associates, The Cable TV Advertising Report, 1996. Advertising

it received the average industry discount. The fact that small MVPDs receive either small or no discounts means that the average industry discount must be less than the maximum discounts offered the largest incumbents, most likely by a substantial amount. Therefore, the license fee disadvantage estimates reported in Table 3 almost certainly understate substantially the true programming cost disadvantages of cable entrants. By themselves, the license fee disadvantage estimates reported in Table 3 mask the higher implicit payments for local advertising time (commonly called avails) built into the largest MSO's license fees. Local ad avails are more valuable to the large MSOs because they are more likely than small MSOs to operate large urban systems with sophisticated ad insert technology. Economic theory predicts that this extra value will be reflected in higher license fees – a prediction supported by the regression analysis reported in the appendix. The largest MSO's higher implicit payments for local ad time make the license fee disadvantage appear smaller than it really is. Also reported are estimates of entrants' programming cost disadvantages which adjust for the implicit payments large incumbents make for the right to sell advertising on these networks by adding half of local ad revenues to the unadjusted discount.

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numbers were from 1996. Note that the financial figures for two networks, CNN and Headline News, are combined because they are reported this way by Kagan.

Table 3
Estimates of Entrant Programming Cost Disadvantage with Kagan Data[14]

Network	License Fee Disadvantage ($/yr.)	50% Local Ad Revenue ($/yr.)	Lic. Fee Disad plus 50% Ad Rev ($/yr.)
A&E	182,880	68,600	251,480
AMC	105,600	-	105,600
Cartoon	122,904	-	122,904
CMT	119,724	12,600	132,324
CNBC	121,164	26,600	147,764
CNN/HN	327,888	320,600	648,488
CNN(fn)	7,326	-	7,326
Comedy	182,376	12,600	194,976
Court	96,000	-	96,000
Discovery	192,000	72,800	264,800
E!	50,400	19,600	70,000
ESPN	181,200	281,400	462,600
ESPN2	72,000	21,000	93,000
Family	110,400	26,600	137,000
Fox Sports	96,000	-	96,000
FX	12,960	50,400	63,360
The Golf Channel	-	-	0
HGTV	142,560	21,000	163,560
History	228,420	4,200	232,620
Lifetime	132,000	106,400	238,400
MTV	279,360	46,200	325,560
Nickelodeon	356,400	44,800	401,200
Prevue	75,600	-	75,600
Sci-Fi	84,000	7,000	91,000
TBS	60,000	-	60,000
TCM	280,800	-	280,800
TLC	84,000	12,600	96,600
TNT	151,200	138,600	289,800
TNN	252,000	44,800	296,800
USA	29,748	193,200	222,948
VH1	85,800	16,800	102,600
Weather	78,000	14,000	92,000
Total	4,703,910	1,562,400	6,266,310

As these tables demonstrate, discounts calculated as the difference between the top of the rate card and the industry average rate varied from nothing to 91%, with the

[14] Source: License fees and average discounts were taken from Paul Kagan Associates, *The Economics of Basic Cable Networks*, 1998. Local advertising revenue were taken from Paul Kagan Associates, The Cable TV Advertising Report, 1996. Advertising numbers were from 1996.

average for the 33 networks being 45%.[15] Assuming for simplicity that a 100,000 subscriber MSO paid the top card rate, we calculated the *average per channel* cost disadvantage to be $142,553 annually. This annual per network handicap translated into a ***total annual cost disadvantage of over $4.7 million for all 33 networks, or about $47 per subscriber.***

This $47 per subscriber, per year estimate ignores the fact that the advertising time in cable network programming reserved for sale by local cable companies is more valuable to large MSOs than to small MVPDs. This is because large MSOs' systems are generally located in larger markets where operators have invested in the technology needed to exploit fully local advertising opportunities. One would expect the value of local advertising revenues to system operators to be reflected in the network license fees these operators pay. When the realization of an economic benefit is dependent on the cooperation of two parties, a 50-50 sharing of the benefit is a common outcome of the bargaining between them. Thus, we assume that half of the value of local advertising revenues for the largest MSOs is built into network license fees, a figure that is consistent with the econometric analysis reported in Appendix A. After adjusting Kagan-reported license fees to reflect that portion of the value of local ad time to large MSOs, we found that the ***total annual cost disadvantage for all 33 networks increased to over $6.2 million for a 100,000 subscriber MSO,*** which, in turn, translated into an ***annual per subscriber cost disadvantage of over $62.***[16] But these 33 networks are only a subset of the channels available on most cable systems. The total programming cost disadvantage likely would be substantially higher if we added what are likely to be analogous price disadvantages for the additional basic networks and premium channels most MVPDs offer their subscribers.

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[15] This represents the average of the 33 individual network discount percentages reported in Table 2.

[16] *See* Appendix A.

A comparison of programming costs as a percentage of analog service revenue for Time Warner systems, as reported by Morgan Stanley Dean Witter,[17] with corresponding figures for Ameritech New Media, supports the above observation that these estimates of the programming cost disadvantage of entrants and small systems based on Kagan industry data must understate the true disadvantage because they compare top of card rates to industry average rates, rather than to the lower rates paid by the largest MSOs. For Time Warner, the 1997-1998 two-year average of analog services programming costs as a percentage of analog revenues was 22.1 percent.[18] For the last quarter of 1998 and the first quarter of 1999, Ameritech New Media spent slightly more than double Time Warner's percent of analog revenues for the associated programming.[19] Thus, for every dollar of revenue generated, Ameritech New Media paid more than twice what Time Warner paid for programming.

This comparison of Time Warner and Ameritech New Media programming costs supports our earlier observation that our estimates of the entrant and small operator disadvantage based on Kagan data must understate the true disadvantage because we had to use Kagan's average industry discount as a proxy for the actual discounts given the largest MSOs. For the 33 networks listed in Table 2, the sum of the top of card monthly per subscriber license fees is $8.74 and the sum of the average industry discounts is $3.92. A MSO receiving only the average industry discounts would thus pay $4.82 per subscriber for this set of networks. $3.92 is 81.3 percent of $4.82. While 81.3 percent is a large disadvantage, it is considerably smaller than Ameritech New Media's more than 100 percent programming cost disadvantage relative to Time Warner. Of course, the

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[17] Morgan Stanley Dean Witter, "U.S. and the Americas Investment Research: Entertainment,""April 9, 199, page 90.

[18] This is the simple average of 21.4 percent for 1997 and 22.8 percent for 1998.

[19] Calculation based on confidential information provided to the authors by Ameritech New Media.

monthly per subscriber fees and discounts used in this calculation are those that underlie the $47 lower bound of our $47 to $62 annual per subscriber disadvantage for entrants and small operators.

To start with a per subscriber cost handicap of from $47 to $62 annually is certainly a barrier to overbuild competition, especially when the FCC reported in its *Fourth Annual Report on Competition in Markets for the Delivery of Video Programming*, that the average price for expanded basic service was $28.83 in mid-1997.[20] In the same report, the FCC stated that cash flow averaged 44.9% of cable industry revenue in 1996. Applying this figure to non-premium cable services suggests that for the average cable system, basic service contributes just under $13 per subscriber to cash flow monthly, or about $155.34 annually. Thus the programming cost disadvantage estimated above would be between 30% and 40% of cash flow. Of course, as a fraction of profits, this cost disadvantage would be much larger. This is an enormous competitive handicap.

III. ANALYSIS OF POSSIBLE EXPLANATIONS FOR PRICE DIFFERENTIALS.

We also analyzed the various explanations that have been offered as justifications for price differentials in order to determine whether any of these rationales could possibly explain the magnitude of the difference in network license fees paid by large MSOs and small MVPDs, including new entrants. Our analysis revealed that neither true cost differences nor legitimate business incentives could possibly justify the magnitude of these substantial price differentials. Accordingly, we conclude that these price differentials are discriminatory in nature and, given their size, constitute a barrier to competition in the MVPD industry.

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[20] Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, CS Docket No. 97-141, *Fourth Annual Report*, 13 FCC Rcd 1034, 1039 (1998).

A. Distribution and Transaction Cost Savings

In searching for efficiency-based explanations for the dramatic differences in license fees suggested by the Kagan data, we considered the two possibilities that seemed to be most plausible: distribution cost savings and transaction cost savings, where the latter would reflect savings from being able to negotiate with a single cable operator representing many millions of subscribers, rather than a great number of small operators that collectively might represent the same number of subscribers.

Distribution costs are easily dismissed as an explanation for the license fee differences reflected in the Kagan data, at least for satellite delivered networks. The cost of delivering a network's signal to one more cable operator's headend is essentially zero because the signal falls automatically on every headend within its satellite footprint. Accordingly, distribution costs cannot justify the substantial price differentials between large incumbents and their smaller competitors.

We also concluded that transaction/negotiation costs also cannot justify these price differentials. To evaluate the plausibility of negotiation costs as an explanation for the network supply price advantages of large incumbents, we calculated the negotiation costs implicit in the figures on top rates and discounts published by Kagan for representative MVPDs of different sizes. Calculations are based on the assumption that the cost of negotiating a network supply contract is independent of the number of subscribers represented by the MVPD a network supplier negotiates with.[21] Thus if one MSO represents 10 times more subscribers than another, a network supplier's negotiation cost savings from dealing with the larger incumbent rather than 10 smaller ones would be

[21] There is good reason to believe that negotiations might be more contentious and time consuming, and therefore more costly, between larger incumbents and networks because the financial consequences are much larger for both parties than in network negotiations with small MVPDs. Therefore, our assumption that negotiation costs are independent of MSO size is conservative in the sense that it overstates the negotiation cost advantage of dealing with large MSOs over small ones.

nine times the cost of negotiating with a single MSO. The formula employed for the estimates is presented in a footnote.[22]

Tables 4 through 6 present calculations of negotiation costs for 18 popular networks implicit in the Kagan data employing the conservative assumptions that: (1) the average industry discount is equivalent to the maximum discount;[23] (2) a 100,000 subscriber MSO pays the top rate;[24] and (3) the number of subscribers required to receive

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[22] The formula employed to estimate negotiation costs is straightforward. Suppose the cost of negotiating a network supply contract is X, a network's supply price to an operator offering the network to Y consumers is P_y per subscriber, and the per subscriber supply price to an operator offering the network to Z subscribers is P_z, with P_y and P_z being the sum of annual per subscriber license fees paid by the operators over the term of the contract. Further assume that $Y>Z$ and $P_y<P_z$, the latter relationship reflecting the discount the larger operator realizes for lower per subscriber negotiation costs. If the difference between P_y and P_z is due entirely to the effect of averaging the negotiation cost of X over Y subscribers as opposed to averaging it over Z subscribers, the following relationship must hold:

$$P_z - P_y = \frac{X}{Z} - \frac{X}{Y} = X\left(\frac{1}{Z} - \frac{1}{Y}\right)$$

Solving for X, we have the following formula for negotiation costs:

$$X = \frac{P_z - P_y}{\frac{1}{Z} - \frac{1}{Y}}.$$

To illustrate how the second equation is employed, let $Z = 100$ and $Y = 200$ be the number of subscribers to hypothetical small and a large MSOs, respectively, and consider a network sold to the small MSO for 15¢ per subscriber per month and to the large MSO for 10¢ per subscriber per month. For 5-year contracts, P_z would be $9 and P_y would be $6. Plugging these values into the equation, we get $X = $600 as the negotiation cost implicit in the difference in network's supply prices to the two MSOs.

[23] This reflects the fact that Kagan reports only the average industry discount, not the maximum discount. Use of the average industry discount in place of the true maximum discounts results in an estimate of a small MVPD and entrant disadvantage that is smaller than it really is.

[24] This assumption is based on our findings that MVPDs with 99,999 or fewer subscribers were required to pay the maximum rate for 10 of the 12 networks whose rate cards we examined. Rounding up by one from 99,999 to 100,000 greatly simplifies the calculation.

the maximum discount from a network is equal to the average number of subscribers provided each network by an MSO that is statistically average for those ranked among the top 50 by subscriber counts. While dominated by the giants with millions of subscribers, this average also includes MSOs with subscriber counts in the neighborhood of 150,000. For most of the networks (14 of 18), the average for the top 50 MSOs was over a million subscribers, with the average being the highest for ESPN at 1.34 million. The lowest was the SCI-FI Channel, with an average of just over 320,000.[25]

Table 4
One Year Contract Estimates of Negotiation Costs for 18 Networks

Network	Raw Neg. cost estimate	Ad discount Adjustment	Adjusted neg. cost estimate
A&E	199,240	77,737	273,977
CMT	151,980	15,995	167,975
CNBC	132,916	29,179	162,096
CNN/HN	355,022	347,131	702,152
Discovery	209,099	79,283	288,382
E!	60,410	23,493	83,903
ESPN	195,819	304,102	499,921
Family	120,106	28,938	149,045
Lifetime	143,275	115,488	258,763
MTV	302,727	50,064	352,791
Nickelodeon	386,585	48,594	435,179
Sci-Fi	122,178	10,182	133,360
TLC	117,320	17,598	134,918
TNT	165,170	151,406	316,576
TNN	274,750	48,844	323,594
USA	35,362	229,662	265,024
VH1	94,494	18,502	112,997
Weather	85,241	15,300	100,541
Average	175,094	89,361	264,455

[25] We employed this assumption regarding the size of the MSO receiving the maximum off-rate card discount because, without public disclosure of network-MSO contracts, it is impossible to observe the off-card rates received by the largest MSOs that underlie the Kagan data.

Table 5
Three Year Contract Estimates of Negotiation Costs for 18 Networks

Network	Raw Neg. cost estimate	Ad discount Adjustment	Adjusted neg. cost estimate
A&E	597,720	224,210	821,930
CMT	455,940	47,984	503,924
CNBC	398,747	87,540	486,287
CNN/HN	1,065,065	1,041,392	2,106,457
Discovery	627,296	237,850	865,146
E!	181,230	70,478	251,708
ESPN	587,456	912,308	1,499,764
Family	360,318	86,816	447,134
Lifetime	429,825	346,465	776,290
MTV	908,182	150,193	1,058,375
Nickelodeon	1,159,755	145,783	1,305,538
Sci-Fi	366,534	30,545	397,079
TLC	351,960	52,794	404,754
TNT	495,510	454,218	949,728
TNN	824,250	146,533	970,783
USA	106,087	688,985	795,072
VH1	283,483	55,507	338,990
Weather	255,723	45,899	301,622
Average	525,282	268,083	793,366

Table 6
Five Year Contract Estimates of Negotiation Costs for 18 Networks

Network	Raw Neg. cost estimate	Ad discount Adjustment	Adjusted neg. cost estimate
A&E	996,200	373,684	1,369,884
CMT	759,900	79,973	839,873
CNBC	664,578	145,890	810,478
CNN/HN	1,775,108	1,735,653	3,510,761
Discovery	1,045,493	396,416	1,441,910
E!	302,050	117,464	419,524
ESPN	979,093	1,520,513	2,499,606
Family	600,530	144,693	745,223
Lifetime	716,375	577,442	1,293,817
MTV	1,513,637	250,322	1,763,959
Nickelodeon	1,932,925	242,971	2,175,897
Sci-Fi	610,890	50,907	661,798
TLC	586,600	87,990	674,590
TNT	825,850	757,029	1,582,879
TNN	1,373,750	244,222	1,617,972
USA	176,811	1,148,309	1,325,120
VH1	472,472	92,512	564,984
Weather	426,205	76,498	502,703
Average	875,470	446,806	1,322,276

In spite of being biased downward by figures that understate maximum discounts, the size of the negotiation costs required to justify the difference in the per subscriber license fees paid by a small MSO supplying a network with 100,000 subscribers and a MSO assumed large enough to qualify for the maximum discount dwarfs any realistic estimate of negotiation costs for most of these networks, and is beyond credible for all of them. Even if one-year contracts are assumed, the average negotiation cost unadjusted for advertising implicit in the different rates charged small and large MSOs is approximately $175,000. Adjusted for local advertising revenues, the figure rises to over $264,000. This is sufficient for an MSO to hire a small full-time staff just to negotiate contracts, when our contacts have suggested that discussions with network representatives regarding the prices, terms and conditions for the purchase of programming rarely consume a full day's time. If negotiation cost savings were an important factor in network pricing, 1,000 subscriber systems would pay more than 5,000

subscriber systems, which would pay more than 10,000 subscriber systems, and so on. The fact that many networks do not even begin offering discounts on their rate cards until the number of subscribers delivered by a buyer exceeds one hundred thousand is itself persuasive evidence that negotiation costs must be quite low, particularly for small MVPDs who generally do not have the option to negotiate off-card rates.

Because the estimated implicit negotiation cost rises in direct proportion to the number of years network-MSO contracts are assumed to last, implicit negotiation costs become truly astounding when the apparently more common five year contact term is employed. Without the local advertising adjustment, the average implicit negotiation cost is over $875,000. With the advertising adjustment, it is over $1.3 million. At over $1.9 million, Nickelodeon has the highest unadjusted negotiation cost. The highest advertising-adjusted figures are for CNN/HN and ESPN, at over $3.5 million and nearly $2.5 million respectively. Clearly negotiation cost savings cannot explain more than a tiny fraction of the differences in network license fees paid by cable entrants (and small MVPDs generally) and the large incumbents.

B. Other Explanations

We also examined other factors offered by participants in the cable industry and identified by the FCC as price differential justifications in order to determine whether any of these factors could justify the substantial price discounts offered to large incumbents but denied to their smaller MVPD competitors. As explained below, our analysis revealed that none of the factors could justify the large price differences revealed in our study.

For example, some cable operators and programmers have suggested that programmers offer discounts to those MVPDs who have larger numbers of subscribers because they have more sophisticated marketing staffs who can do a better job of generating subscribers and viewers for networks. Consider the viewers' part of this argument first. With the exception of special events, aggregate television viewing is

quite stable. This means that an increase in audience share for one network must come at the expense of viewing for other networks. This being the case, if large MSOs were offered lower license fees for promoting some networks, we would expect other networks to respond to their loss of audience share by raising their fees. In the aggregate this should be a wash, and certainly could not explain the systematically lower license fees offered large MSOs.

The subscriber part of the argument is also flawed. One reason is that it overlooks the fact that subscriptions gained by one heavily promoted network may come at the expense of other networks. A second reason is that networks should value subscribers gained due to MSO promotions no more highly than any other subscribers a MSO may be able to deliver to a network. That is, unless new subscribers are fundamentally different from old subscribers, the effect of additional subscribers on the license fee a network offers a MSO should be the same whether those subscribers are acquired through skillful marketing or through the acquisition of other cable operators.

Finally, this argument ignores the fact that large MSOs' engage in more extensive tiering of basic networks than do smaller MSOs. This limits the number of subscribers available to all networks not on the lowest basic tier, which consists primarily of local broadcast stations plus educational and governmental channels, or on the first expanded basic tier (the lowest basic tier with satellite channels).

The notion sometimes suggested that large MSOs are offered lower license fees because smaller MVPDs take the largest MSOs' choices of networks as evidence of which networks are likely to be most profitable is also fallacious. If large MSOs' choices of networks to carry are biased by otherwise unexplainable low license fees, then their choices can no longer be considered reliable indicators of network quality.

Some operators and even the FCC have suggested that contractual terms, such as contract duration, channel removal restrictions, and rollout commitments, can justify differences in prices among MVPDs. Each of these terms may be a source of either

advantage or disadvantage to the parties involved. As a purely analytical matter, it is simply not clear whether these types of terms would lead to increases or decreases in license fees. More importantly, none of these advantages or disadvantages is linked to the size of the MVPD.

For example, the benefit for an MSO of a longer contract is the increased assurance of a network's greater availability in the future. However, the same MSO may suffer a reduced opportunity for experimenting with new networks. For the network, a longer contract with an MSO secures access to the MSO's subscribers for some time into the future. However, this assurance may entail sacrifice of opportunities such as future license fee increases exceeding those specified in the contract. Consequently, this factor cannot justify the substantial price differentials that exist between large incumbents and their smaller competitors. However, on a per subscriber basis these advantages and disadvantages would be the same for a small MVPD as they would for a large MVPD.

We reach the same conclusion regarding contractual terms such as channel removal restrictions and rollout commitments. Although each of these terms provides benefits to the parties involved, on a per subscriber basis such benefits would be the same for a small MVPD as they would for a large MVPD. Consequently, neither of these factors can justify the tremendous price differentials between large MSOs and small MVPDs.

Similarly, contractual terms regarding the timing of license fee payments and the method of purchase of networks also cannot justify these substantial price differentials. The timing of payment has the same impact on the present value of a dollar paid by a small MVPD as it has on a dollar paid by the largest MSO. Moreover, the value of any subscriber a network might gain from being bundled with other networks generally would be the same for all MVPDs regardless of the size of their subscriber bases. Accordingly, these factors also do not provide plausible justifications for the magnitude of price differentials that exist between large incumbents and small MVPDs.

Nor can the sale of premium services provide a plausible justification for price differentials of this magnitude. Premium services divert viewers from basic services so it is plausible that basic networks might reward operators who set high prices for premium services with lower license fees. But this argument applies to all MVPDs regardless of size. Consequently, there is no reason to expect MSO prices for premium services to generate systematic size related variations in MSO license fees for basic services.

Further, neither channel tiering nor advertising revenues are factors that could justify substantial differences in price favoring large incumbents over small MVPDs. To the contrary, both of these factors warrant the payment of higher, not lower, programming fees by large MSOs. As explained above, tiering reduces the number of subscribers reached for all networks except those on the lowest basic tier. This makes carriage on a system less valuable to the network, which should raise the license fee. As Table 7 demonstrates, almost 50 percent of the systems owned by the largest MSOs offer satellite networks on multiple tiers for additional fees, while only eight percent of smaller MSOs and independents engage in this type of tiering. Thus, the largest MSOs clearly engage in more tiering than do small MVPDs. Since these large MSOs use tiering to generate additional local subscription revenues (for themselves) at the expense of national advertising revenues (a loss to program suppliers), network license fees should be adjusted to reflect the diminished value of carriage to the network. All things being equal, we therefore would expect that programming discounts would be ***lower***, not higher, for large MSOs.

Similarly, advertising cannot provide plausible justification for the tremendous price differentials uncovered by this study. From a national advertiser's perspective, a cable subscriber's value as a potential customer is a function of her demographic characteristics (gender, age, income, etc.) and her purchasing habits – which have nothing to do with the size of the operator serving her. Thus, national advertising cannot be a reason for networks to offer larger discounts to the biggest MSOs. However, larger

MSOs are more likely to benefit from the sale of advertising time to local advertisers than are small MVPDs. Specifically, as Table 7 indicates, over 20 percent of systems owned by larger MSOs are members of regional interconnects, the marketing and technical alliances that facilitate the sale of regional and local advertising. In contrast, less than two percent of small MVPDs are members of such alliances. Moreover, almost 80 percent of large MSOs' systems can insert local advertising into network programming while less than half of the smaller operators have the requisite technology. The upshot of this analysis is that it is the large MSOs that earn the most additional revenues from inserting local advertising in the programs of the major networks.[26] For this extra revenue stream, we would expect the largest MSOs to pay more for networks, not less.

Table 7
Ancillary Revenues and MSO Size[27]

System MSO Affiliation	Average System Size	Percent Interconnect	Percent Ad Insertion	% Multiple Satellite Tiers
MSO Rank 1-10	16,720	20.3%	79.5%	49.6%
MSO Rank 11-20	3,423	11.7	58.8	39.8%
MSO Rank 21-50	3,023	10.8	55.3	20.3%
Independents, Small systems	1,106	1.8	47.8	8.2%

Source: *1998 Television Factbook*, Warren Publications

[26] It is worth noting that Ameritech is not allowed to participate in the advertising interconnects that facilitate local cable ad sales in its service territories.

[27] Table 7 presents data for four categories of systems. For the 10 largest MSOs (ranked by total subscribers), the MSOs ranked from 11 to 20, the remaining MSOs in the top 50, and all other systems, including independents and small MSOs, we tabulated data on the average system size, the percentage of systems that were part of a regional advertising interconnect, the percentage capable of inserting local ads, and the percentage offering networks on an optional expanded basic tier of services. The table's tiering data represents the percentage of systems in each of the four categories with multiple tiers of satellite cable programming. In each case, there are significant differences between categories. For example, the typical individual cable system owned by a large MSO has almost 17,000 subscribers. In stark contrast, the average system size for the independents and small MSOs is just over 1,100 subs.

We assessed the likely significance of these effects econometrically, as reported in Appendix A. As we reported above, local advertising revenues for ESPN and CNN exceed 40 cents per subscriber. These higher revenues are highly correlated with license fees. In fact, operators and network providers end up splitting the additional revenues almost evenly.[28] Thus, 40 cents worth of advertising revenues appears to increase license fees by about 20 cents. Expressed as a fraction of license fee payments, for those networks we examined, one would expect large MSOs to pay a 20 percent premium in comparison with small operators who do not earn advertising revenues.

IV. SUMMARY AND CONCLUSIONS

Our studies of the wholesale prices MVPDs pay for networks and our econometric evaluation of cable system programming pricing demonstrate that small MVPDs, including new entrants, are being charged substantially and unjustifiably higher prices for programming than their large incumbent competitors. Specifically, our study produced the following findings:

- Small MVPDs, including new entrants, pay substantially higher programming prices than their large incumbent competitors.
- These cost advantages of large incumbents do not appear to be due to negotiation cost savings or other efficiencies related to their size.
- The programming cost disadvantages of small MVPDs and new entrants severely limit their ability to compete meaningfully against incumbents in their markets.

[28] This empirical finding is consistent with ESPN's claim that the financial impact on operators of its recently announced rate hike is at least partially offset by an increase in the amount of ad time available for operators to sell. *Cable Fax Daily*, Vol. 10, No. 81, p. 1 (May 3, 1999).

As a result of these unjustifiably large price differentials, competing MVPDs are forced to start with a formidable competitive handicap due to higher input prices that both seriously limit their chances for commercial success and insulate incumbents from the full rigors of competition.