The Economics of Satellite Master Antenna Television An Anthology

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THE ECONOMICS OF SATELLITE MASTER ANTENNA TELEVISION (SMATV)
AN ANTHOLOGY

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SMATV: STRATEGIC OPPORTUNITIES IN PRIVATE CABLE

A Research Report

for

The National Association of Broadcasters

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The SMATV Market

Despite the industry's small size and certain legal problems, SMATV leaders expect a bright future for system owners. Estimates vary, but of the 23 million multiple dwelling units thought to exist in the United States, only one-fifth are estimated to be wired. Residents of these buildings, often quite affluent, represent a ready market for premium and other non-broadcast programming. The potential market includes both existing and planned condominium projects and high-rise

inner city apartment complexes which cable has not yet penetrated, as well as other multiple unit housing developments located far beyond the reach of any cable system. Stuart Levin, president of Domesticon Corporation of New Orleans, an SMATV business, sees no shortage of larger-than-300-unit buildings that can use SMATV. Domesticon already had 30 buildings on contract in January 1982.[1] Indeed, MDU's are the fastest developing segment of the housing industry. With millions of potential subscribers, an attractive market clearly exists for private cable systems that can be installed quickly without the usual long delays of franchise hearings or waiting for cable companies to extend their services. In Chicago alone, thousands of residents will receive cable programming through SMATV before franchised cable companies wire the city, which is now studying proposals for CATV franchises.

SMATV Ownership

SMATV ownership has taken several forms up to now. These include operation by owners of apartment buildings themselves, by condominium associations, private entrepreneurs, and joint venture companies involving landlords and experienced cable operators. In some instances, established cable and MDS firms have entered the SMATV field. There are no restrictions prohibiting broadcasters from the activity. Property owners, therefore, have a number of options available for establishing and operating an SMATV system within their premises.

Many of the early entrepreneurs were inadequately prepared to finance SMATV and handle its operational details. Among their ranks were legitimate operators who built technically sound distribution systems, paid copyright fees, and followed the rules. However,

bootleggers also were present, picking up signals illegally and making no effort to compensate programmers for their material. In some cases, property owners added satellite programming to their MATV system as an inducement to tenants, perhaps unaware of their copyright obligations. The result was a highly negative image for SMATV, one that is gradually fading as the industry attracts more sophisticated and better financed participants.

To set up an SMATV system, the entrepreneur first must negotiate a contract with the owner of the building or complex. Usually the operator pays for the right to serve the tenants on an exclusive basis. Then, before selecting and securing program services, the operator usually studies the demographics and interests of the occupants. Service can be started in a 400-unit housing complex, for example, for about $80,000 and can be fully operational in 90 to 120 days.

The technical installation involves an earth station, amplification equipment, and the distribution system. The satellite receiving antenna is mounted on the roof of an apartment building or on the ground adjacent to an apartment complex. With a clear view of the southwestern sky, it picks up signals from a communication satellite. These signals are then amplified and fed by low voltage cable throughout the complex. Each subscriber's television receiver is connected to the cable, using the regular tuner or a special tuner-decoder box.

A second and more advanced type of SMATV installation has developed in a few cities in which signals picked up by a satellite antenna are fed by microwave to other apartment buildings in various locations. Although a license to operate such a cable television relay service (CARS) places the SMATV operator under the FCC's cable rules, significant

economies of scale occur by linking several apartment building installations to one satellite antenna.

SMATV does not need to provide the large number of channels usually necessary for a city-wide franchised cable system. Instead, a small number of appropriate services may be carefully chosen for each building. In addition to local stations, typical SMATV systems provide three to five satellite services, including super stations, cable networks, and pay-TV channels. Many operators divide the programming into a basic service and one or more tiers. Basic subscriptions are usually priced from $5.95 to $19.95 a month, with the full package rarely priced above $30 or $35 a month. Subscribership generally falls into the 30% to 50% range, depending on the number and quality of broadcast signals available.

One of SMATV's major problems has been the reluctance of major movie services to deal with the new medium. This matter is currently under litigation. Assdming the new industry obtains the programming it seeks, satellite master antenna television likely will develop into an important new medium, filling gaps in the cable marketplace and offering attractive investment possibilities. This report will explore those possibilities and the details of building, programming, and marketing the SMATV service.

SMATV ECONOMICS: A FINANCIAL MODEL

In order to analyze the financial feasibility of satellite master antenna television, several economic models have been developed relating investment, costs, and revenues under various assumptions. Given estimates for each of these elements, it is possible to explore the effect of a change for instance, in the cost of the antenna (dish) on the profitability of an SMATV operation. This analysis pertains to the SMATV operator--the entity who provides the equipment and services necessary to provide programming from satellites to consumers in multiple dwelling units. It is strictly confined to the investment, costs, and revenues of establishing and maintaining such a service. Not included are salaries and office expenses for a parent operating firm or assessment of any income taxes. The purpose here is to isolate each of the elements involved in an SMATV investment and carefully scrutinize the range and magnitude of each variable and its possible impact on overall financial results.

The Static Model

The number of living units in the complex (UNI) and the penetration rate (fraction of units who subscribe) to the basic service (PEN) form the basis for the equations and must be provided to the model. The number of subscribers (SUB) is then calculated. This procedure gives greater flexibility and accuracy than a simple assumption about the number of subscribers.

SUB = PEN * UNI

Investment

The first element of the model, investment, represents the initial costs--sink and remaining--and is specified in the following way.

DSH = the cost of the satellite antenna and related electronic equipment needed to receive and distribute the signal

BXS = $A_1 + A_2$ SUB

BXS - initial cost of boxes

A_1, A_2 are constants reflecting the form of the function

A_2 - the cost of one box

ENT = $A_3 + A_4$ UNI

ENT - entry costs such as promotion, startup, etc.

A_3 - a constant

A_4 - per unit entry costs

WIR = $A_5 + A_6$ UNI

A_5 - a constant

A_6 - cost of wiring per unit

Three possibilities exist here depending on whether wiring exists, must be added to an existing building, or will be included during construction of a new building.

CARS = CT + (BUI - 1) * ANT

The cost of purchasing and installing a CARS transmitter which can service a number of ancillary buildings plus the microwave receiver for such buildings.

CT - the cost of the CARS equipment

BUI - the number of buildings receiving the CARS signal

ANT - the cost of the microwave receivers for each building

INC = OSH + BXS + ENT + WIR + CARS

INC represents the total fixed initial investment. Note that a central operating company has overhead and carrying costs of its own which are not reflected here. We consider the incremental effect of the investment in a single SMATV operation. That calculation can be made separately.

Annual Revenue

Annual revenue (ARV) is a function of the number of subscribers, the monthly payments they make for the various tiers of SMATV service, adjusted for both the fees which the operators must pay the owner of the units as a franchise fee and the copyright fee which must be paid to those who provide the programming. In addition, the interest derived from the refundable deposit on the boxes is credited to revenues.

ARV = 12* (SUB * BAS + SB1 * PT1 + SB2 * PT2) * (1- FFS - CPR)
+ DRV

SB1 = SUB * TR1

SB2 = SUB * TR2

BAS - monthly base rate

TR1 - % of subscribers to first extra tier

TR2 - % of subscribers to second extra tier

PT1 - monthly rate for first extra tier

PT2 - monthly rate for second extra tier

FFS - Franchise fee paid to the owner of the units for the right to offer SMATV (a percent of revenue)

CPR - copyright fee paid to the program providers (as a percent of revenue)

DRV = SUB * DRT * PCT

DRT - deposit size. Each subscriber is required to pay a refundable deposit to ensure that the box is returned in good order

PCT - interest rate on deposits

Annual Costs

Annual costs (ANC) has four components. The first covers the costs of providing each tier of programming to the customer as well as promotional charges. Next is the annual cost of servicing these customers--maintenance of the wiring, antenna, and boxes billing and collection costs a charge for depreciation on the boxes and an allowance for turnover in the tenants. The third element of cost is a depreciation rate on all of the initial investment except the boxes. The box depreciation is included in the second part of the cost equation. Finally are other costs--insurance, local, state, and federal fees and licenses; parts inventories, etc.

ANC = 12 * (SUB * BSR + SB1 * RT1 + SB2 * RT2 + PRA) + SUB * D1 + DEP * (INC - BXS) + FIX

RT1 = .5 * PT1

RT2 = .5 * PT2

PRA = $4(PEN)^2$ (.5 SUB + .75 SB1 + 1.00 SB2)

D1 = A_2 * BXC + MNT + BLC + TRN

TRN = TR * SW

ANC - annual costs

BSR - monthly charge from the satellite program feed per subscriber for the basic service

RT1 - monthly charge per subscriber for the first extra tier

RT2 - monthly charge per subscriber for the second extra tier

PRA - monthly promotional costs

BXC - depreciation of boxes (a percentage of box cost)

BXS - the cost of the boxes

MNT - the annual cost of maintenance of boxes, antenna, and wiring per subscriber

BLC - the annual cost of billing and collection costs per subscriber

TRN - the annual per subscriber turnover rate multiplied by the estimated cost of disconnection

TR - the turnover rate

SW - the cost of one disconnect

DEP - depreciation rate on inital cost

FIX - fixed cost (annual); e.g., insurance, fees.

DI - the cost of servicing the subscribers

The Financial Model

The financial model summarizes the results for the SMATV operator. Annual net profits (ANP) are pre income tax and post depreciation.

ANP = ARV - ANC

APR = ANP / INC

ARR - annual rate of return

POP - payout period

A complete list of all definitions used in the model is contained in Appendix A.

Table 2 summarizes the constants and variables (standard parameters)

used in the basic static model. These items will be discussed in the following sections.

TABLE 2

STANDARD PARAMETERS

Parameters	Given	Computed
A_1 = 0	PEN	ANC
A_2 = 85	UNI	ANP
A_3 = 0	BUI	ARR
A_4 = 5		ARV
A_5 = 20409.162		BXS
A_6 = 198.63946		D1
BAS = 9		DRV
BLC = 6		INC
BSR = .7		POP
CPR = 1%		RT1
DEP = 20%		RT2
DSH = 35,000		SB1
DRT = 25		SB2
FFS = 5%		WIR
FIX = 5,000		CARS
MNT = 5		ENT
PT1 = 9		TRN
PT2 = 9		PRA
TR1 = 50%		
TR2 = 25%		
TR = 3%		
SW = 2		

Basic SMATV System Investment

Existing SMATV systems report quite different original investment figures. American Entertainment Network, which plans SMATV operations in Denver, Tucson, Miami, and parts of Texas, "can provide a 200-unit complex with six satellite cable services for a mere $35,000."[2] Dr. Perry Klein of Washington Cable (Skyline City) says that an SMATV installation, exclusive of cabling, costs about $35,000 in equipment, plus labor costs. A Phoenix operator plans to spend approximately $61,000 for installing SMATV in Park Lee Apartments. Equipment for the 520 unit garden apartment complex was budgeted at $39,500 and installation at $21,500.[3] Franklin E. Hershner of Cable Dallas asserts that "the actual headend, TVRO antenna and related electronic equipment will only account for between 25 and 40 percent of your actual total capital required."[4] A final estimate suggests that an average 300 unit system, excluding cabling, might run about $80,000.[5]

Initial SMATV costs rise as the size and sophistication of the installation increase. However, size becomes an advantage if increases in household numbers are converted into commensurate increases in subscribership. Despite cost variations which reflect installation in apartments of various types and sizes and in various regions, it appears that $35,000 is an appropriate assumption for initial earth station equipment. Thus, $35,000 is the figure used in the basic financial model.

For two reasons, Appendix B to this report contains a second model based on a $25,000 headend installation cost. First, equipment at the low end of the pricing scale, including 3.7 meter dishes, can be used even though their performance reliability is less certain. Second, with the advent of the Ku system and its more powerful satellites/smaller

receiving antennas, the lower earth station figure may become warranted.

The financial model demonstrates two situations with respect to selector boxes. If the boxes are assumed to cost $85 each, then two tiers of pay TV are considered. However, if the boxes cost $20 each (basically for modification and installation), no tiers are allowed and TR1 and TR2 are automatically set to zero.

The CARS Microwave System

Thus far, we have focused on "stand alone" SMATV installations in which one receive-only earth station serves a single apartment complex. However, the SMATV enterprise also may serve numerous multiple-dwelling complexes from one satellite antenna, thereby achieving substantial savings in capital outlay per complex. This can be accomplished by linking buildings together with cable or by microwaving the program signals from the master building to other apartment complexes within a range of about 20 miles.

Although cable is less expensive than microwave, SMATV operators usually encounter resistance from municipalities and counties which gain tax revenues from the cable systems to which they grant franchises. Because SMATV operators do not require a license nor pay a franchise fee, some cities have prohibited them from installing cable underground or across rights-of-way. The city of Dallas actually cut an SMATV operator's cable that went across a city street. As a result, Cable Dallas resorted to CARS microwave as a way around the city problem. Thus, CARS microwave is the only safe approach for linking SMATV systems in buildings or complexes which are separated by city rights-of-way. A microwave transmitter is required, and each of the secondary buildings must have

a microwave reception facility. Depending on the number of buildings receiving the signals, the per-complex installation cost may be as much as 50% less than the cost of a stand-alone installation.

To establish a linked, multiple-SMATV installation, a cable television relay service (CARS) microwave license must be obtained from the FCC. Such a license is granted to an SMATV firm only if its operation qualifies as a cable system through service to two or more buildings under different ownership.[6] In turn, a cable-designated SMATV must follow all of the FCC's cable regulations, which will be discussed in the programming section of this report.

Despite certain opposition by municipalities to microwaving by private cable operators, the FCC already has established a precedent by awarding several CARS licenses to SMATV operators.

Costs of a CARS microwave system have been estimated as follows. The basic CARS transmitter costs approximately $22,000. Another $4,000 is required to equip each channel to be transmitted, up to eight channels. Thus, the cost of a five channel CARS system can be calculated in this way:

$$CARS = \$22,000 + 5 * \$4000 = \$42,000.$$

The receiver and antenna for each complex cost between $10,000 and $12,000. Thus, the total cost of the equipment for a five-channel CARS system can be calculated, assuming BUI is the number of buildings, as follows:

$$CARS = \$35,000 + \$42,000 + (BUI - 1) * \$11,000.$$

This system, of course, introduces economies of scale. If five buildings are served, the cost to serve each building is $22,800, as opposed to $35,000 for a stand-alone building. However, if 10 buildings are involved, the cost per complex falls to $17,400.

SATCOM:

Satellite Programming Available to SMATV Operators

SATCOM F-3

CHANNEL	CONDITIONS	COSTS	TYPE
PTL, People That Love	No Restrictions	no charge	24-hour family entertainment
WGN	No Restrictions	.13/sub per month	Independent 24-hour station from Chicago
WTBS	No Restrictions	.10/sub per month	Independent 24-hour station from Atlanta
ESPN	Only Available in non-cable franchised areas off SATCOM F-3	.34/sub per month	24-hour sports station
CBN Cable Network Christian Broadcast Network	No Restrictions	no charge	24-hour family entertainment
CNN Cable News Network	Lesser Rate if carried with WTBS	.20/WTBS .25/alone/ sub/month	24-hour news in a live format
CNN$_2$	No Restrictions	no charge with CNN	Headline News in 30-minute capsule format
ATN Plus	No Restrictions	2.65/sub per month	G, PG movies, family entertainment, travel documentaries
C-SPAN	No Restrictions	.03/sub per month	Educational channel, coverage of U.S. House of Representatives
Reuters Monitor Service	Encoded the text special equipment required	sliding scale	financial text

SATCOM F-4

NCN - National Christian Network	No Restrictions	no charge	family programming
TBN - Trinity Broadcast Network	No Restrictions	no charge	24-hour family programming

WESTAR 4

FNN - Financial News Network	Special Equipment Required	$30/mo. per headend	Financial News
Galavision	No Restrictions	3.75/sliding scale	Premium Spanish Movie Channel
SelectTV *	No Restrictions	approx. 7.00/ mo. per sub	premium movie channel
SROS	No Restrictions	1.00/sub, 750/mo. min.	X-rated movies, weekends only
SPN - Satellite Program Network	No Restrictions	no charge	entertainment network, movies, talk shows, news
WOR	No Restrictions	.10/sub/mo. $100 minimum	24-hours independent from New York

* available to SMATV operators through SPACE

FUTURE

National Satellite Cable Association	Available to Members of Cooperative	$6.00/sub/mo.	ESPN, plus a premium movie channel

Courtesy of Satellite-TV Services, Ltd., Rockville, MD 20852.

Programming Cost Estimates

Program suppliers, generally speaking, are paid on a monthly per subscriber basis. For example, WTBS/CNN's standard charge is about 20 cents per subscriber. Contractors for the super stations usually charge between 10 and 15 cents per subscriber. Some advertising-supported cable networks are free, while others charge modest rates approximating those of the super stations. SMATV operators usually pay between 50 and 75 cents per subscriber per month for the program mix they sell as their basic service.[12] Costs for the pay tiers vary, depending upon volume and programming selected. Typical charges for premium services are between $3.50 and $5.00 per month. Based on these figures, we have assigned for the model a basic program service cost (BSR) of 70 cents, with costs for pay tiers one and two (PT1 and PT2) of $4.50 each.

Marketing the SMATV Service

Despite the importance of technical excellence, success in the SMATV enterprise depends greatly upon a well-conceived marketing strategy. This section will highlight some of the most important aspects of SMATV marketing.

Successful marketing means much more than selling. It begins with researching potential subscribers to give them the services they want. Experienced operators recommend that each building's tenants be analyzed demographically for program choices before choosing the program services. In many cases, apartment complexes house demographically distinct segments of the population--senior citizens, singles, or young families--whose programming preferences lend themselves to the kind of customizing that private cable can accomplish. This initial approach reduces complaints and turnover and establishes a positive relationship for future mutual benefit.

SMATV programming at this point typically consists of a basic package of super stations and cable networks, plus one or two optional pay-TV services. Establishing sound pricing for these services is an essential part of marketing SMATV. Basic rates and services vary considerably, shown by the following examples:

1. Washington Cable's Skyline City provides 12 broadcast channels free, with six additional channels, including two satellite services (CNN and WTBS), for $8 a month.

2. Mehl Cable of Tucson offers CNN, WTBS, WGN, a sports channel, and local stations for $8.50.

3. Private Satellite Television of Charlotte and Atlanta sells its basic package of local signals plus three or four satellite channels for $8.95.

4. Omega Satellite Products of Indianapolis offers one take-it-or-leave-it service for $15.95. Omega provides its subscribers with WTBS, WGN, and Cable News Network.

5. Cablecom Corporation in Chicago prices a four channel package (The Movie Channel, CNN, ESPN, and WTBS) at $19.50 a month.

6. Leader Communications plans to offer an eight channel package in Chicago, Atlanta, and Houston for $25. One pay-TV service will be included.

7. Satellite Television Services, Ltd. supplies 15 program services and all of the must-carry signals to residents of The Promenade, a Bethesda, Maryland, complex of 1,050 apartments and condominiums. The monthly cost is $8.95, with additional tiers priced at $8.95 each. The same company plans to offer the 15,000 tenants of New York's Co-op City a similar service at the same price.

Here are a few examples based upon experiences of SMATV operators:

1. Skyline City gets approximately 20% penetration. Dr. Perry Klein, Washington Cable's vice president, estimates that the rate might go as high as 40% to 50% where fewer free channels are available.

2. Cablecom of Chicago picks up about 30% of 37,000 MATV potential customers who are currently being switched to SMATV. Ultimately 50% are expected to subscribe.

3. Mehl Cable of Tucson reports that 25% to 40% of the occupants of its buildings subscribe to its SMATV service.

RESULTS OF THE STANDARD MODEL

Each SMATV system will be unique depending upon the physical attributes of the buildings to be served, the desires of those providing the SMATV service, the availability of programming, and myriad other factors. However, some feel for the importance of individual parameters can be gained by describing a prototypical building with the model and varying the elements of the model one by one. The standard parameters and constants have already been discussed, and the specific values used for the basic model were summarized in Table 2. Results of solving the "standard" model using these parameters for building sizes ranging from 600 units down to 200 units are given in Table 3.

TABLE 3

STANDARD MODEL

SMATV MODEL CONSTANTS AND INTERMEDIATE VALUES

A1 = 0	PT1 = 9	PCT = .1	BAS = 9
A2 = 85	PT2 = 9	DEP = .05	BSR = .7
A3 = 0	RT1 = 4.5	CPR = .01	MNT = 5
A4 = 5	RT2 = 4.5	FFS = .05	TRN = .1
A5 = 0	TR1 = .5	DRT = 25	BLC = 6
A6 = 0	TR2 = .25	FIX = 5000	D1 = 28.1
DSH = 35000	BXS = 30600	ENT = 3000	WIR = 0
PRA = 5998.4	SB1 = 180	SB2 = 90	DRV = 900
CAR = 0	CT = 0	BUI = 1	PRO = 405

UNITS	PEN	INVESTMENT	REVENUE	COST	PROFIT	RETURN	PAYOUT
600	.6	68600	64857	41618	23239	33	2.99
600	.5	63500	54048	34050	19998	31	3.17
600	.4	58400	43238	27453	15784	27	3.69
600	.3	53300	32428	21634	10793	20	4.93
600	.2	48200	21619	16399	5219	10	9.23
500	.6	63000	54048	35807	18241	28	3.45
500	.5	58750	45040	29500	15540	26	3.78
500	.4	54500	36032	24003	12029	22	4.53
500	.3	50250	27024	19154	7870	15	6.38
500	.2	46000	18016	14791	3224	7	14.26
400	.6	57400	43238	29995	13242	23	4.33
400	.5	54000	36032	24950	11082	20	4.87
400	.4	50600	28825	20552	8273	16	6.11
400	.3	47200	21619	16673	4945	10	9.54
400	.2	43800	14412	13182	1230	2	35.6
300	.6	51800	32428	24184	8244	15	6.28
300	.5	49250	27024	20400	6624	13	7.43
300	.4	46700	21619	17101	4517	9	10.33
300	.3	44150	16214	14192	2021	4	21.83
300	.2	41600	10809	11574	-766	0	0
200	.6	46200	21619	18372	3246	7	14.23
200	.5	44500	18016	15850	2166	4	20.54
200	.4	42800	14412	13651	761	1	56.19
200	.3	41100	10809	11711	-903	0	0
200	.2	39400	7206	9966	-2761	0	0

Varying the Franchise Fee

Each SMATV operation involves a contract with the building owner which specifies the conditions under which the service is to be offered. If the building owner demands a 10% franchise fee instead of the 5% fee which is assumed, what would be the impact on the profitability of the SMATV operation? The investment and cost remain the same, but, as shown in Table 4, the revenues fall from $54,048 to $51,213 at a 50% penetration. The payout period increases to 3.69 years from 3.17 years and the return on investment falls from 31% to 27%.

TABLE 4

TEN PERCENT FRANCHISE FEE

SMATV MODEL CONSTANTS AND INTERMEDIATE VALUES

A1 = 0	PT1 = 9	PCT = .1	BAS = 9
A2 = 85	PT2 = 9	DEP = .05	BSR = .7
A3 = 0	RT1 = 4.5	CPR = .01	MNT = 5
A4 = 5	RT2 = 4.5	FFS = .1	TRN = .1
A5 = 0	TR1 = .5	DRT = 25	BLC = 6
A6 = 0	TR2 = .25	FIX = 5000	D1 = 28.1
DSH = 350000	BXS = 30600	ENT = 3000	WIR = 0
PRA = 6998.4	SB1 = 180	SB2 = 90	DRV = 900
CAR = 0	CT = 0	BUI = 1	PRO = 405

UNITS	PEN	INVESTMENT	REVENUE	COST	PROFIT	RETURN	PAYOUT
600	.6	68600	61435	41618	19837	28	3.45
600	.5	63500	51213	34050	17163	27	3.69
600	.4	58400	40970	27453	13516	23	4.32
600	.3	53300	30727	21634	9092	17	5.86
600	.2	48200	20485	16399	4085	8	11.79
500	.6	63000	51213	35807	15406	24	4.08
500	.5	58750	42677	29500	13177	22	4.45
500	.4	54500	34142	24003	10139	18	5.37
500	.3	50250	25606	19154	6452	12	7.78
500	.2	46000	17071	14791	2279	4	20.17
400	.6	57400	40970	29995	10974	19	5.23
400	.5	54000	34142	24950	9192	17	5.87
400	.4	50600	27313	20552	6761	13	7.48
400	.3	47200	20485	16673	3811	8	12.38
400	.2	43800	13656	13182	474	1	92.4
300	.6	51800	30727	24184	6543	12	7.91
300	.5	49250	25606	20400	5206	10	9.45
300	.4	46700	20485	17101	3383	7	13.8
300	.3	44150	15363	14192	1171	2	37.68
300	.2	41600	10242	11574	-1333	0	0
200	.6	46200	20485	18372	2112	4	21.87
200	.5	44500	17071	15850	1221	2	36.44
200	.4	42800	13656	13651	5	0	0
200	.3	41100	10242	11711	-1470	0	0
200	.2	39400	6828	9966	-3139	0	0

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CONTENTS

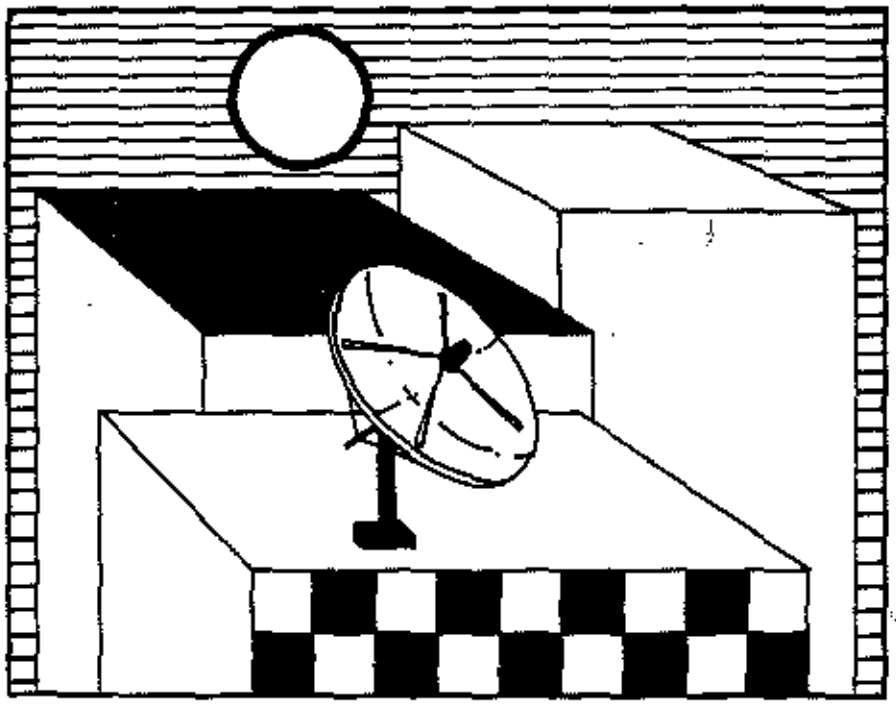
CHAPTER 2

SMATV

Economic Feasibility Factors

Can raising magic mushrooms on your rooftop be fun and profitable?

By Franklin E. Hershner
Warner Amex Cable



Why could a business that on the surface looks so profitable wreak havoc on so many? Because, contrary to belief, SMATV is a business of long-term investments, not short-term gains.

The planning of an SMATV business must reach beyond looking at simple equipment cost. The actual headend, TVRO antenna and related electronic equipment will only amount to between 25 and 40 percent of your actual total capital needed. There are some other, very important areas to examine.

The Basic Cost Factors

Whether you plan an extensive or a small operation, many cost factors are involved. One of the biggest is the monthly general overhead. As in any business, there are basic operating expenses—office facilities, office equipment, telephone expenses and office staff salaries. In SMATV, you must look far beyond these basics.

On most satellite services you offer, there are royalties to be paid. These are based on a per-subscriber, per-month basis and range from 10 cents to $5 per month per subscriber. Services like the superstations usually average from 10 to 20 cents per month per subscriber. Premium movie channels will run from $3.50 to $5.00 per month per subscriber. The actual cost will vary, depending on your volume and the programing selected.

Taxes should be looked into and will depend on the city, county and state within which you operate.

Insurance cost is an absolute necessity to project. You will be doing electrical, concrete, underground and possibly some aerial construction in apartment service and installation. You must carry extremely good liability, workmen's compensation and general insurance. In consideration of the cost for your TVRO and other hardware ($20,000 and up), this equipment should also be insured against all perils of loss. Loss-of-income insurance due to an unforeseen disaster is also worth evaluation.

The same relationship that major MSOs and municipalities have with regard to franchise fees must also be considered. Not all, but many property owners will demand a franchise fee for the right to operate on their property. About 5 percent is average; this is, again, 5 percent of your gross income, and it becomes a cost factor.

A program guide made available to the subscriber is nearly a necessity. Just as in off-air or local channels, the viewers want to know the programing in order to plan their entertainment. There are many ways you can fill this need, but a cost of between 20 cents and 50 cents per subscriber will exist.

The accounting will also become a large cost factor. Beyond the general business accounting is the subscriber accounting. Whether you send monthly statements or use the coupon book billing system, records of payment must be kept. Remember, if the subscribers do not pay their monthly premiums, not only do you lose income, but if they are not disconnected, you will have to pay the royalties on them.

Planning Operating Costs

Operating costs are a big factor, and planning for them is of the utmost importance. All premium and most non-premium channels require proof of reception and theft protection. Unless you happen to be able to bulk-rate the entire SMATV project, subscriber equipment will become necessary. There are vast numbers of converter and scrambler manufacturers. The best type for your operation will depend on the number of channels you will offer and the amount of security required.

The subscriber equipment is costly, but

what about its installation, removal and service? Here, you are looking at your technical staff cost. One chief technician may be sufficient, but a person with the necessary knowledge will be hard to find and will require a good salary. He must build, operate, repair and maintain your TVRO, headend and outside plant. Depending on the size of your system, you may be able to get by with one technician/installer, or you may need several employees to handle all the tasks.

Remember, your service will be utilized more hours per day by each subscriber than any other household equipment. Service is a major part of your retention of subscribers. Whether the service problem is a major system breakdown or an independent problem, 24 hours is the most you can ask people to wait for repairs. Now you are looking at a service technician on-call 24 hours a day, seven days a week.

Due to the inevitability of your service calls and repairs, do not forget to plan for enough spare parts to repair any component failures. There is generally not enough time for in-shop component repairs.

After all of this, do not forget your vehicle cost. Vehicles, fuel and maintenance can become a sizable monthly expense.

Making It Legal

In order to maximize the protection of your investment, make sure your company and your SMATV system are legal on all fronts.

Start out by looking at your state and local laws. Generally, here you are just looking at proper licenses, taxes, etc. Foremost, do not forget to acquire any building permit necessary to place your TVRO.

After planning the programing you will offer, an agreement with each satellite service is required. In most cases, these are not hard to get if your system planning and financial statements are in order. These agreements must be obtained before you begin operation. Federal copyright laws protecting satellite programing can result in severe penalties being levied on your company and its owners.

Although many SMATV operations are not technically "cable TV" systems, many federal requirements still apply. Registering each SMATV system with the Federal Copyright Office is a necessity. Operating two adjacent properties, not under common ownership or control, defines the system as a "cable system" and should be registered with the FCC.

The FCC also has some restricted channels you cannot use without receiving proper waivers. On planning your channel selection, you must either avoid these frequencies or make the proper filings. The frequencies between 108 MHz and 136 MHz and all frequencies above channel 13 through 400 MHz are illegal frequencies without proper FCC waivers. These frequencies include midband channels A, B and C. Possible interference with aeronautical channels can result from operating in these frequencies, and heavy penalties can be levied.

Projecting System Income

The system's income will depend upon two things: the type of services offered and the percentage of penetration you achieve with your market. Although bulk-rating entire properties is the easiest, it is rare. Most property owners do not want the additional overhead. On a pay-per-subscriber basis, you must look at realistic figures. Only with constant marketing can you maintain or exceed a 50 percent penetration figure. If there are very few local channels receivable, the percentages may be better, but project carefully. Ongoing marketing is expensive and requires both excellent service lineups and professional salesmanship.

Ideally, you will want to pick locations where several properties can be serviced

from one headend. This can both increase income and reduce costs.

The clientele within the properties should also be carefully evaluated. Programing for children, senior citizens, sports enthusiasts and many other groups are available. Select carefully so as to give the majority of your customers exactly what they desire.

Different pay levels will also help your income. Separate your premium movie channels from your basic service on a separate pay tier. In this fashion, different subscriber budgets can be accommodated. Most of all, evaluate your pricing carefully. You could overprice or underprice your company out of business. Royalties on most of your premium movie channels have price limits. Going over these limits will both lose a subscriber and increase your royalties.

Getting Major Financing

Even though you may never try to obtain any financial assistance, you should always be prepared. There are many unforeseen situations which may some day require you to seek additional financing.

Proper agreements with the property owners of the projects you serve are a necessity for your company's future. In many states, agreements do not withstand the sale of the property. Make sure proper easements are granted to you and that the agreement contains the property's legal description. This agreement can then be recorded on the Deed of Trust and must be transferred to any new owner.

The term length of your agreement should be at least 10 years, with automatic renewal options. This ensures adequate time for proper return on your investment and is an aid in the acquisition of long-term financing. Most of all, make sure your agreements are legally binding. All signatures should be notarized.

There are many banks that will give long-term loans to SMATV or CATV systems. In most cases, you will have to establish your business and show reasonable stability prior to any loan considerations. Your assets, cash flow, total subscribers, percentage of penetration and your profits and losses will be scrutinized heavily. Major financing is generally used for the expansion of your business—not its creation. You must be able to establish a financially sound SMATV business before long-term loans can be obtained in the majority of cases.

The Future

Looking into the future is an everyday requirement in the SMATV business. Look realistically at the total number of subscribers you need and the total number of units you will have to pass to obtain these. The number of channels you will need to stay competitive in the future is a planning necessity. Be careful to look for competition by other SMATV companies or even major MSOs. If your forecast is large enough, a CARS microwave system may be included, but this, like everything else, requires planning.

A properly planned SMATV business can be both profitable and enjoyable. Always remember that after you start your business, you are a cable TV company. You may even become a small MSO. Think like a cable company and plan accordingly. The world of SMATV or CATV is a highly specialized and lucrative industry. Innovation is a constant in this business. If you do have a reasonable amount of experience, seek reliable planning assistance.

Franklin Hershner has 15 years of experience in the communications field, including work in cable TV, telephone and security systems. He is currently district manager at Warner Amex Cable, where he is in charge of constructing the Qube dual system in 6,000 apartments per month and building a totally underground cable system in the central business district in Dallas.

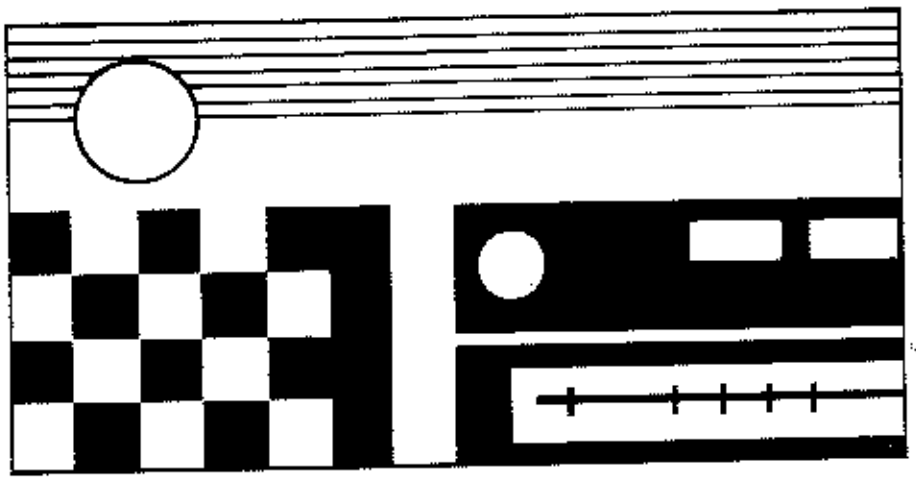
CHAPTER 11

SMATV

Addressability

Specialized intelligence hardware and software created for Domestidyne by ControlCom provides a highly sophisticated addressable system for SMATV.

By Stuart Levin and Tracy Heintein
Domestidyne Corporation



One need not take time to expound on the success of SMATV. But like the varied operational styles of some of the MSOs in the cable industry, the SMATV industry also has a vast difference of operational philosophy between operators.

When analyzing the needs of multi-unit developers and owners for cable services, Domestidyne saw that the demands for service have no geographical boundaries. In order to consider SMATV service on a national scope, the company realized the absolute necessity for complete remote control over service activation. Under the direction of Harry Perlow, a staff of engineers spent over a year in the research and development of its addressable system.

All of Domestidyne's systems are designed and installed fully addressable. From its computer control center in New Orleans, Louisiana, Domestidyne has instant control of each level of its programing service to all of its systems.

With addressability, there is the ability to turn subscribers on and off, providing different levels or tiers of service without sending a technician to the premises. This is not only an innovative engineering tool; it also invites more creative marketing and sales, allowing for future programing, such as pay-per-view of first-run movies and major sporting events. The system also has two-way capability that enables an operator to offer an interactive home security service. Furthermore, the controlling computer software interfaces directly with the billing software. If a bill is not paid, the nonpay is turned off from a computer control center.

Key Segments of Operation

When the key segments of operation are broken down, Domestidyne is dealing with four individually defined areas. The first, known as the central signal processing center, or "headend" facility, consists of the earth station receive antenna (TVRO) and the electronic processing equipment, including receivers, modulators and other related equipment. The second essential area is the distribution network, consisting of coaxial cable (and associated electronic amplifiers) that originates at the headend and is then distributed to different areas or sections of the apartment property. The third area of the system is a cable that extends from the distribution network and delivers the signals into the subscriber's premises by means of a small coaxial cable that is attached to an installed addressable device and from there connected, through a transformer, to the back of the subscriber's television set. The fourth and most vital area is a data processor also located on the property, which interfaces via telephone to the the host computer in its control center.

This addressable system is comprised of three main components:

- **The addressable tap.** This sophisticated piece of electronic hardware is installed in each apartment. As indicated earlier, it allows remote control of all of the services via computer addressability. To date, the tap has a capability of processing up to six different levels of service. The tap may also be designed with anti-tamper devices that alert the processor if signal theft is attempted.
- The remote processor. Located at the

property site, the processor compiles and stores all of the data information for each apartment unit. The processor is constantly "polling" each addressable tap to ensure it always retains the correct status. In the event of a power failure, the processor contains a backup power source that ensures total retention of information.

• **The host computer.** As with most computers, it provides for mass storage, management of information and an interface with field equipment. For SMATV operators, this means the maintenance of subscriber files, remote control of service activation and appropriate billing for those services. Subsequently, both the subscriber and the operator benefit from the time-and-cost-efficiency of computers and addressability.

Selling the Addressable Service

When structuring a multi-housing satellite cable service on a national scope, one of the major factors is accessibility to all property units. Since a very high percentage of apartment residents work, apartment access must be arranged through the property management office. This is time-consuming and a tremendous hassle to the operator and property management personnel. With addressability, this access problem is totally eliminated. The operator is able to connect new subscribers or disconnect "move-outs" or "nonpays" with a push of a button and without the inconvenience of a preset engineering appointment. This is a very strong selling feature to the property owner.

'With addressability, the access problem is totally eliminated.'

The second factor that has always caused concern on the part of a CATV or SMATV operator in serving the apartment market is "churn." A high percentage of residents in apartments move out in a short period of time, requiring connect or disconnect service calls. With addressability, this is a simple computer function.

The following lists some of the selling features an SMATV system offers to a property owner:

1. Satellite television service now.
2. No waiting for franchised cable construction or installation.
3. Owner participation in revenue.
4. Selling amenity of residents' demands.

Addressability enhances the SMATV system for both property owner and system operator by offering:

1. Ease of operation.
2. No access problems.
3. Pay-per-view service to all residents.
4. No theft of service.
5. Total control of revenue.

By maintaining a daily computer printout of all property subscriber penetration, the sales and marketing departments can react instantly to any product, sales or service needs on any property. The demographics of each property will vary greatly; and by analyzing the daily printout data, the sales department can "rifle" in on the

specific sales needs for that particular property—no "shotgun" effect with wasted money, time and personnel.

Sales representatives are assigned to specific properties; they maintain a strong working relationship with the leasing agents. Promotional sales literature is supplied in the management offices. With the aid of the leasing agents, the reps monitor weekly vacancies and avails. With this information, an operator can successfully participate in many of the programers' "blockbuster weekend specials." Flyers are given to the new residents who are non-subscribers, notifying them of upcoming "preview weekends." With addressability, their apartments can easily be activated for specific service.

During the preview weekend, all the non-subscriber has to do is call the toll-free number for continuation of service. At the close of the preview, the computer will list those apartment residents who did not call in for service, thereby triggering the sales department for follow-up work—again, a very smooth and effective manner in rifle marketing and sales.

The addressable service makes for a very efficient and profitable satellite cable operation—one with better control over all facets of system operations, from distribution of services, tiering, nonpays, connects/disconnects, billing and unlimited marketing data. All of this is with relatively low overhead, resulting in greater profits for the operator.

Hotel Addressability

Domestidyne, the first to provide SMATV addressability to the apartment/condo marketplace, successfully tested the first pay-per-day, satellite-delivered, 24-hour total entertainment package to hotels/motels. The package features Showtime, ESPN and CNN services. The guest utilization of this unique, in-room, pay-per-day service far surpasses existing pay-per-view services. It opens a new era in satellite-fed hotel/motel programing and offers a meaningful source of revenue for hotel/motel owners/operators.

Domestidyne's proprietary hotel/motel system offers fully computerized telephone interfaced addressability, thus allowing the guest to order the service by dialing in an authorization code that activates the total program package and provides billing data at the same time. This completely eliminates the need for a control box in the room or utilization of hotel personnel. It also provides the capabilities of teleconferencing and/or pay-per-view for special events, such as fights or concerts. The system's specialized intelligence hardware and software were created by ControlCom Inc., a division of Burnup & Sims.

Mr. Levin has a broad background in the television and entertainment industry. His credits include specials for Showtime and syndication, as well as many other projects and pilots. His association with cable and pay television sparked the formation of Domestidyne Corporation. Utilizing the basic Satellite Master Antenna Television "concept," he created Domestidyne's multi-systems operation that delivers pay television by satellite-fed cable to subscribers in multiple states, utilizing state-of-the-art addressable technology.

Ms. Heinlein began her career with Viacom Cablevision. She joined CBS-affiliate KIRO-TV Seattle as a floor director. Eighteen months later, having received her FCC first class license, she began working with ABC-News in Washington, D.C., as a studio engineer for Good Morning, America, World News Tonight *and other major news programs. Two years later, she transferred to ABC-Hollywood as a studio engineer. After eighteen months, she relocated to New Orleans and became a co-founder of Domestidyne Corporation. As vice president, Ms. Heinlein oversees and coordinates operations, administrative and personnel functions.*

AN ANALYSIS OF THE TELEVISION PROGRAMMING MARKET

- Prepared for -

American Broadcasting Companies, Inc.

- Prepared by -

Browne, Bortz & Coddington
155 South Madison Street, Suite 230
Denver, Colorado 80209

January 1983

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of 47 CFR § 73.658(j); the Syndication and Financial Interest Rule	)	BC Docket No. 82-345

To: The Commission

COMMENTS OF CBS INC.

VOLUME I

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January 26, 1983

TABLE 8-6. PROJECTED OVER-THE-AIR PAY TELEVISION HOUSEHOLDS
1981-82 THROUGH 1989-90
(HOUSEHOLD FIGURES IN THOUSANDS)

	U.S.	STV		MDS		OBS		Other--Non-Scheduled(5)		SMATV		LPTV		Total Over-the-Air Pay Television	
Year	TV Households(1)	House-holds(2)	Pene-tration	House-holds(3)	Pene-tration	House-holds(4)	Pene-tration	House-holds	Pene-tration	House-holds(6)	Penetration	House-holds(7)	Pene-tration	House-holds	Pene-tration
1981-82	81,937	1,319	1.6%	530	.6%	--	--	--	--	50	.06%	--	--	1,899	2.3%
1982-83	83,739	1,400	1.7	570	.7	--	--	--	--	100	.1	5	.01	2,075	2.5%
1983-84	85,200	1,600	1.9	870	1.0	170	.2%	80	.1%	300	.4	20	.02	3,040	3.6
1984-85	86,700	1,700	2.0	1,170	1.3	900	1.0	310	.4	400	.5	50	.1	4,530	5.2
1985-86	88,200	1,800	2.0	1,400	1.6	1,200	1.4	690	.8	500	.6	100	.1	5,690	6.5
1986-87	89,800	1,700	1.9	1,700	1.9	1,700	1.9	1,100	1.2	500	.6	200	.2	6,900	7.7
1987-88	91,400	1,600	1.8	2,000	2.2	2,500	2.7	1,400	1.5	500	.5	300	.3	8,300	9.1
1988-89	93,000	1,400	1.5	2,200	2.4	3,700	4.0	1,650	1.8	500	.5	600	.6	10,050	10.8
1989-90	94,700	1,200	1.3	2,300	2.4	5,400	5.7	1,850	2.0	500	.5	1,000	1.1	12,250	12.9

Sources:

(1) U.S. TV households for 1981-82 and 1982-83 are from A.C. Nielsen, U.S. Television Household Estimates, various issues. Projected TV households for 1984-85 and 1989-90 are A.C. Nielsen projections as of January 1. Remaining years are BBC estimates based on a constant percentage increase per year.

(2)(3)(4)(6)(7) STV households for 1981-82 and 1982-83 are from Paul Kagan & Associates, Pay TV Newsletter, April and October 1982 respectively. MDS television households for 1981-82 and 1982-83 are from Paul Kagan & Associates, MDS Data Book, October 1982. OBS, SMATV and LPTV television households are BBC estimates.

(5) These are "equivalent households" used for methodological purposes. Total households using these modes could be many times higher. However, given the ability of the household to self-schedule this programming, the expected impact on network viewing will likely be much less than in pay TV households. In addition, many VCR and disc users will also take a pay television service. To avoid double counting and to account for the different patterns of uses, BBC used an "equivalent" figure substantially below the total number of households using cassettes and discs.

TABLE 12

Media Activities of Selected Participants in Video Marketplace

Company	Cable System Ownership	Broadcast TV Ownership	Theatrical Film Production/ Distribution	Cable Network Service Ownership	Original Broadcast/ Cable Program Production	Broadcast Syndication	Video Cassettes/ Discs	MDS/STV/ SMATV/ Teletext
American Express Co.	x			x	x			x
Coca-Cola Co. (Columbia Pictures)			x		x	x	x	
Cox Communications	x	x		x	x			x
Dow Jones and Co.	x			x	x			x
Embassy Communications	x	x	x		x	x	x	x
Getty Oil Co.				x	x			
Gulf & Western Industries, Inc. (Paramount Pictures)			x	x	x	x	x	
Hearst Corp.		x		x	x	x		
Lorimar			x		x	x		
MCA, Inc.			x	x	x	x	x	
Metromedia, Inc.		x			x	x		
MGM/UA			x		x	x	x	
Multimedia, Inc.	x	x			x	x		
S.I. Newhouse & Sons	x			x				x
Oak Industries Inc.	x		x	x	x	x		x

TABLE 12 (Continued)

Media Activities of Selected Participants in Video Marketplace

Company	Cable System Ownership	Broadcast TV Ownership	Theatrical Film Production/ Distribution	Cable Network Service Ownership	Original Broadcast/ Cable Program Production	Broadcast Syndication	Video Cassettes/ Discs	MDS/STV/ SHATV/ Teletext
Orion Pictures, Inc.			x		x	x		
Reeves Communications Corp.			x		x	x		x
Storer Communications, Inc.	x	x		x				x
Taft Broadcasting Co.	x	x	x	x	x	x		x
Tele-Communications, Inc.	x			x				
Telepictures Corp.			x		x	x		
Time Inc.	x	x		x	x			x
Times Mirror Co.	x	x		x				x
Tribune Co.	x	x			x			
Turner Broadcasting System, Inc.		x		x	x	x		
Twentieth Century-Fox Film Corp.			x		x	x	x	
Viacom International Inc.	x	x		x	x	x		x
Walt Disney Productions			x	x	x	x	x	
Warner Communications Inc.	x		x	x	x	x	x	x
Westinghouse	x	x		x	x	x		

Sources: Advertising Age, June 28, 1982, at M-43, M-52 (for Hearst and S.I. Newhouse); Annual Reports and Forms 10-K (for remaining listed companies)

TABLE 13

Gross Revenues for Selected Companies Engaged in Video Distribution Market, Fiscal Year Ending in 1981 ($000s)

American Express Co.	7,211,000	
Coca-Cola Co. (Columbia Pictures)	5,889,000	
Cox Communications	403,497	
Dow Jones and Co.	641,024	
Embassy Communications	NA	
Getty Oil Co.	13,251,560	
Gulf & Western Industries, Inc. (Paramount Pictures)	5,477,741	
Hearst Corp.	NA	
Lorimar	169,504	(7/31/82)
MCA, Inc.	1,328,988	
Metromedia, Inc.	461,781	
MGM/UA	299,404	
Multimedia, Inc.	195,276	
S.I. Newhouse & Sons	1,400,000	
Oak Industries Inc.	507,119	
Orion Pictures, Inc.	102,694	
Pioneer Electronic Corp.	1,433,755	
Reeves Communications Corp.	231,149	(6/30/82)
Storer Communications, Inc.	276,437	
Taft Broadcasting Co.	358,196*	(3/31/82)
Tele-Communications, Inc.	181,426	(6/30/82)
Telepictures Corp.	36,932	(1/1-9/30/82)
Time Inc.	3,296,382	
Times Mirror Co.	2,155,970	
Tribune Co.	1,406,320	
Turner Broadcasting System, Inc.	95,047	
Twentieth Century-Fox Film Corp.	567,462	(8/28/82)
Viacom International Inc.	210,436	
Walt Disney Productions	1,005,040	
Warner Communications Inc.	3,237,153	
Westinghouse	9,367,500	
CBS	4,125,954	
ABC	2,443,713	
RCA	8,004,800	

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* Net Revenues

NA = Not Available

Sources: Advertising Age, June 28, 1982, at M-43, M-52 (for Hearst and S.I. Newhouse); Annual Reports and Forms 10-K (for remaining listed companies)

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of 47 CFR §73.658(j): the Financial Interest and Syndication Rules	)	BC Docket No. 82-345

COMMENTS OF
NATIONAL BROADCASTING COMPANY, INC.

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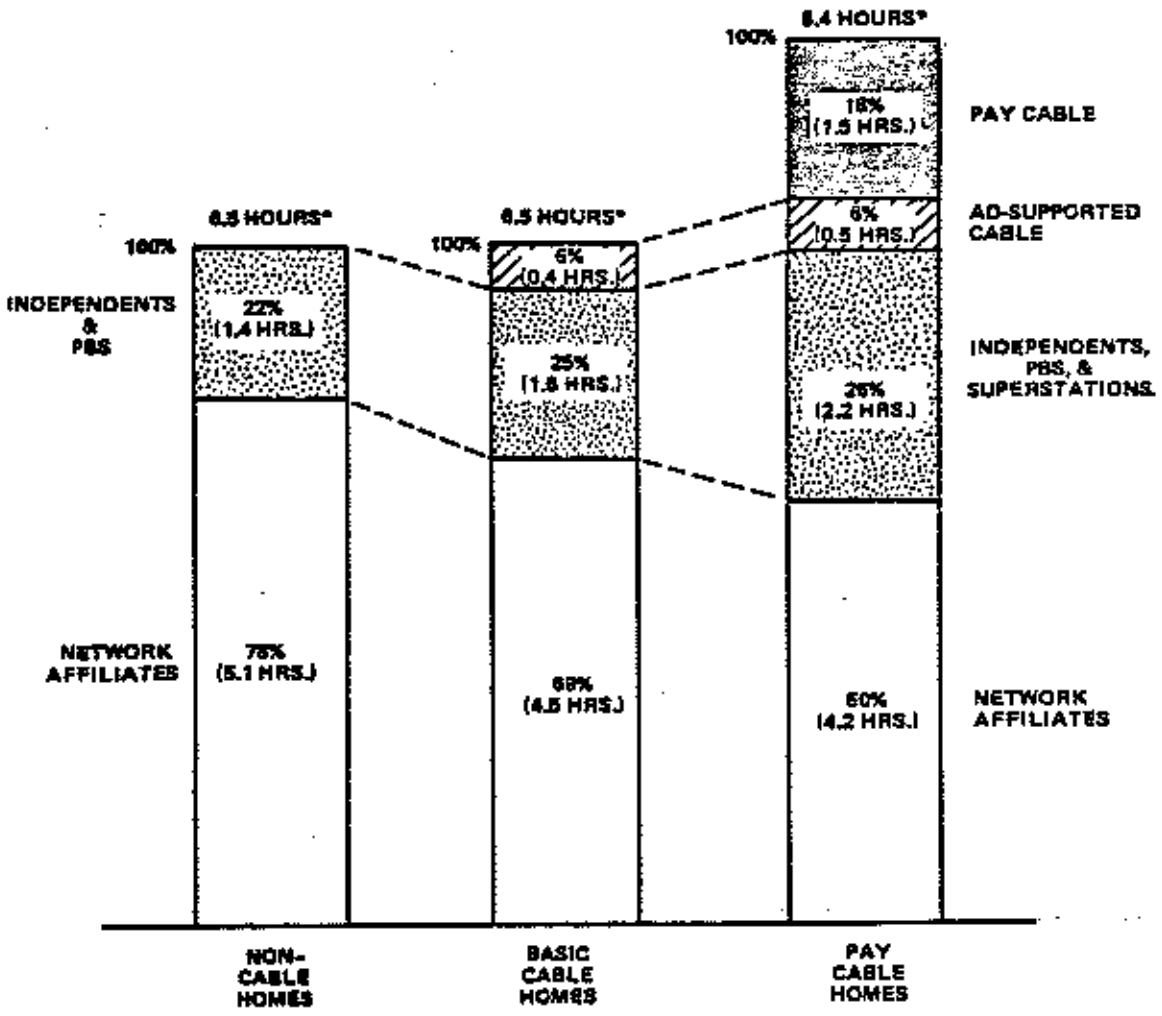
January 26, 1983.

EXAMPLES OF STRONG MARKET
DEMAND FOR PAY PER VIEW

Event	Date	Total Revenues
Leonard-Hearns fight	9/81	$ 8 million
The Rolling Stones Concert	12/81	$ 2 million
Holmes-Cooney fight	6/82	$ 9 million
Star Wars	9/82	$10 million
Sophisticated Ladies	11/82	$ 1 million
Hearns-Benitez fight	12/82	$ 4 million
The Who concert	12/82	$ 1 million

Sources: Variety, Sept. 23, 1981, p. 42 (Leonard-Hearns); Satellite News, Jan. 4, 1982, p. 7 (The Rolling Stones); Advertising Age, Electronic Media Edition, June 4, 1982, p. 12 (Holmes-Cooney); CableVision, Nov. 22, 1982, p. 51 (Star Wars); The New York Times, Nov. 20, 1982, p. 49 (Sophisticated Ladies); Multichannel News, Dec. 13, 1982, p. 1 (Hearns-Benitez); Paul Kagan Associates, Pay TV Newsletter, Jan. 10, 1983, p. 6 (The Who).

FRAGMENTATION OF TELEVISION VIEWING AUDIENCE



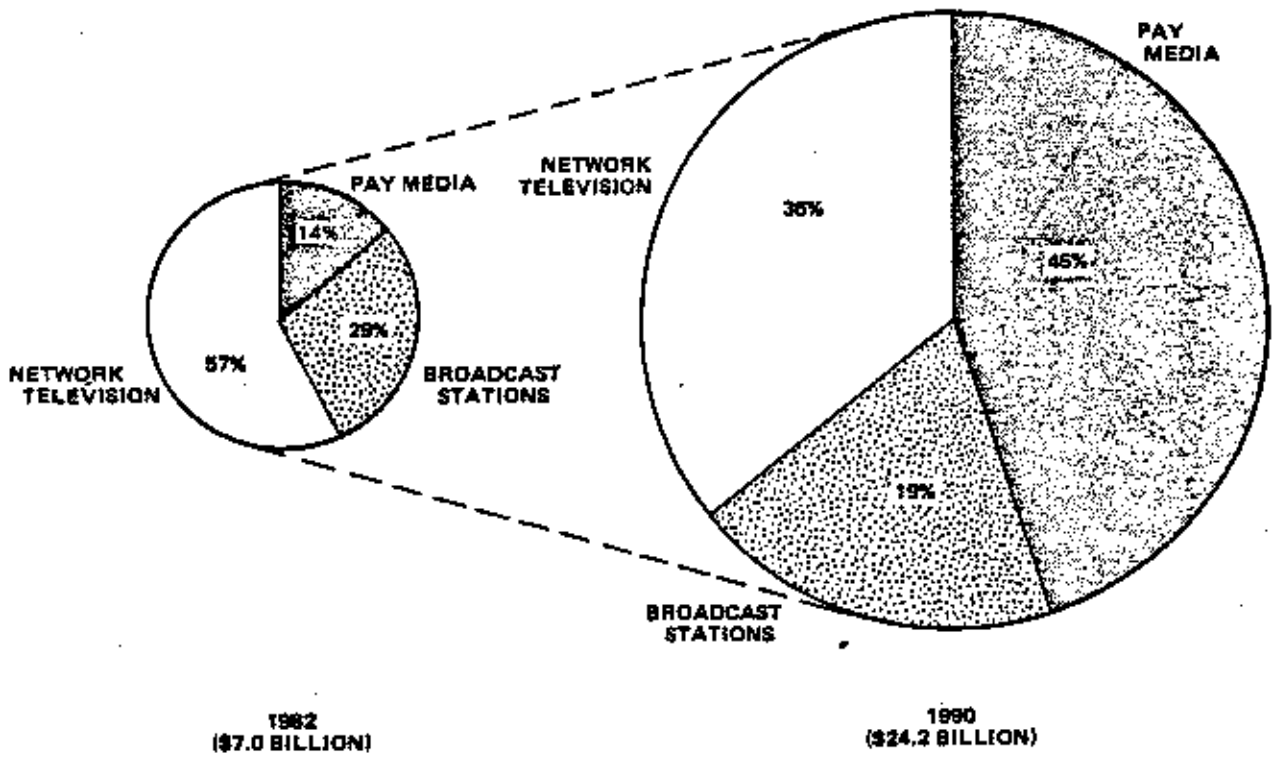
*Average number of hours watched daily.

Source: Nielsen Television Index, Cable TV Status Reports, Nov. 1981, Feb. 1982, May 1982, July 1982.

THE GROWTH OF PAY MEDIA PROGRAMMING EXPENDITURES

SEGMENTATION OF TOTAL HOME VIDEO PROGRAMMING EXPENDITURES

Percent Change 1982-1990	
Pay media programming expenditures	980%



Source: Booz, Allen & Hamilton Inc. estimates, expressed in current dollars.

NON-CABLE PAY TV SERVICE

March 1983

Report #543

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SMATV economics fall into three stages of development:

1. The early stages of the business, characterized by low capital investment for quick returns, and low percentage-of-revenue compensation paid to naive landlords.
2. More recently, a willingness to invest in sophisticated addressable systems, rewiring, and computerized subscriber management. Landlords are now requiring a higher percentage of revenue, 7-10 percent rather than the 3-5 percent fees of early days.
3. In the future, multichannel MDS and direct broadcast satellite (DBS) services will allow SMATV operators to invest very low amounts in capital equipment to receive the signals. DBS feeds, for example, could be set up to provide four to five channels of supplemental programming at a cost of $600 to $800 for the TVRO and related electronics, compared to $20,000-$25,000 for the same equipment today. It is likely, however, that both DBS and MDS suppliers will give preference to large, well-managed SMATV operators who have invested in sound computerized subscriber management systems.

In the sections that follow, we consider the current economics of SMATV. Although costs and scale vary widely in this industry, we provide typical values for revenues and costs, as supplied by SMATV operators. We cover the following areas:

-- Capital costs

-- Revenues, operating costs and profitability

-- Comparison of key subscriber variables for pay television economics: multiunit dwellings vs. single family houses.

Capital Costs: The four principal capital investments an SMATV operator makes are:

-- The cost of purchasing and installing the satellite receive antenna and related electronics. This can range from as low as $18,000 to as high as $35,000, with installation. For 1983, we have estimated $21,000 for a good 4-meter dish aimed at Satcom III-R (which carries most pay TV programming), and $4,000 for installation (see Exhibit 6-5).

Exhibit 6-5

SMATV Capital Costs: System not Addressable

MDS Programming Signal Receive Equipment

Satellite receive antenna and electronics	$21,000
Installation	4,000
	$25,000

Investment per Subscriber

Decoder	$50
Installation	30
	$80

-- The cost of wiring from the earth station to the individual subscriber's apartment. Home-run (direct) wiring costs

Exhibit 6-6

SMATV Capital Costs: Addressable System with Computerized Subscriber Management

(1982)

Investment per Subscriber	
Addressable Wall Unit*	$ 73
Decoder	25
Installation	45
	$143
Headend Addressable Subscriber Management Equipment	
Subscriber Management Software and Microcomputer	$10,000
Auto-Dialer	2,000
Data Power Supply	500
Auto-Answer	2,000
	$14,500
Programming Receive Equipment at Multidwelling Unit	
Satellite Receive Antenna and Electronics	$21,000
Installation	4,000
	$25,000

* For example, Delta Benco Cascade's IT-1-3SM which allows for 3-tier service.

Exhibit 6-8

Pro Forma Income Statement for 1,000-Unit SMATV Building

	Year 1	Year 2	Year 3	Year 4
Beginning units	0	450	550	580
Ending units	450	550	580	600
Average penetration	45%	55%	58%	60%
Average units	360	500	565	590
Average rate, annual	$ 264	$ 290	$ 319	$ 351
Revenue				
Subscriber service revenues	95,040	145,000	180,235	207,090
Installation revenue	9,000	2,000	600	400
Total Revenues	104,040	147,000	180,835	207,490
Expenses				
Programming fee	29,664	45,320	56,333	64,708
Owner's fee	5,206	7,118	8,715	10,247
Sales commission	4,500	1,000	300	200
Guide	1,512	2,100	2,373	2,47
Billing and collection	3,240	4,500	5,085	5,310
Customer service	3,780	5,250	5,933	6,195
Maintenance	4,320	6,000	6,780	7,080
Bad debt	1,901	2,900	3,605	4,142
Total Expenses	54,123	74,188	89,124	100,360
Operating Cash Flow	49,917	72,812	91,711	107,130
Depreciation expense	16,983	19,443	20,585	21,024
Income before interest, fees/and taxes	32,934	53,369	71,126	86,106
Interest expense	13,694	16,004	17,184	17,758
Management fees*	14,904	15,700	18,384	20,949
Net income before taxes	4,336	21,665	35,558	47,399
Income taxes	2,168	10,833	17,779	23,700
Net profit	2,168	10,832	17,779	23,699

* Administrative fee: 10% gross revenues; construction management fee $10 per unit installed.

Exhibit 6-9

Pay TV Economic Characteristics of Households

Multiunit Dwellings vs. Single Family Households

	Single Family Houses (Cable TV's Natural Market)	Multiunit Dwellings (SMATV's Natural Market)
Stolen Box	100 Index	183
Bad Debt Loss	100	166
Bounced Check	100	160
Nonpay Disconnects ("Hard Discos")	100	119
Sales Orders Cancelled Before Installation ("Erosion")	100	126
Service Call Required	100	119
Voluntary Disconnects	100	112

Sources: CableVision, Communications Studies and Planning International.

Exhibit 6-10

Higher Cost of Pay Television Business in Multiunit Dwelling Setting*

(Note: Not an Addressable Environment)

	Marginal Cost for 100 Multiunit HHs vs. 100 Single Family Houses Per Year ($)	Percent Higher Incidence Multiunit HH vs. Single Family House
Nonpay Disconnect	140	19%
Voluntary Disconnects	89	12%
Service Call Required	36	19%
Sales Orders Cancelled	33	26%
Bad Debt Loss	26	66%
Bounced Check	21	60%
Stolen Box	4	83%

* Average frequency for multiunit dwellings (SMATV) compared to average frequency for single family households, times cost per incident per year, times 100 households.

Source: Dallas-based cable operations in single family households compared to Dallas-based multiunit pay TV operation.

PROGRAMMING SERVICES

Basic programming services

Programming Service	Satellite/ transponder	Start-up date	Affiliates (as of 4/83)	Subscribers (as of 4/83)	Price per subscriber	Programming hours
AP Cable News	Satcom III/R/6 and VBI on Westar III/1	8/85	445	4,700,000	$8.00	24 hours
ACSN-The Learning Channel	Satcom III R/16	10/79	396	3,057,842	5¢	M-F 4/day 12½/wkend
ARTS (Hearst/ABC)	Satcom III R/1 Westar V/12X	4/81	1,825	9,500,000	free	7/day
Black Entertainment Television	Westar V/12X	1/79	180	3,700,000	1¢	6/day 7 days/wk
Cable Health Network	Satcom III R/17	6/82	1,028	10,282,777	free	24/day
Cable News Network	Satcom III R/14	6/80	3,287	19,159,000	20¢, 15¢ w/WTBS	24/day
CNN Headline News	Satcom III R/15	1/82	476	3,516,617	3¢ w/CNN	24/day
CBN Cable Network	Satcom III R/8	4/77	3,830	26,770,000	10¢,20¢	24/day
Cable Satellite Public Affairs Network	Satcom III R/19	3/79	1,000	13,000,000	3¢	24/day
Daytime (Hearst/ABC)	Satcom III R/22 Westar V/12X	1/82	671	9,200,000	free	4/day 8/day
Dow Jones Cable News	Satcom III R/6	4/81	110	1,115,000	1¢ or less	24/day
Entertainment and Sports Programming Network	Satcom III R/7	9/79	5,733	22,238,479	10¢/real sub	24/day
Electronic Program Guide	Satcom III R/3	1/82	75	1,109,464	$125/wk and $4/ channel/wk over 14 channels	24/day
Eternal Word Television Network	Satcom III R/18	8/81	72	1,124,000	free	4/day
Financial News Network	Satcom IV/2	11/81	758	7,704,527	free	M-F 7/day
Modern Satellite Network	Satcom III R/22	1/79	459	7,805,020		
Music Television	Satcom III R/11	8/81	1,500	12,000,000	free	24/day
The Nashville Network	Westar V/9D	3/83	725	7,500,000	na	24/day
National Christian Network	Satcom IV/7	6/80	92	1,421,847	free	12/day
National Jewish Television	Satcom III R/18	5/81	114	2,446,735	free	3/wk
Nickelodeon	Satcom III R/1	4/79	2,450	11,400,000	15¢	15/day
PTL Satellite Network	Satcom III R/2	4/78	725	7,500,000	free	24/day
Reuters Monitors Service	Satcom III R/18	1974	15	5,000	na	24/day
Reuters News View	Satcom III R/6	1969	375	3,500,000	na	24/day
Satellite News Channel	Westar V/4X,8X,9X 6D,8D	6/21/82	557	5,700,000	free	24/day
Satellite Program Network	Westar IV/11X	1/79	375	5,600,000	free	24/day
SIN National Spanish Television Network	Satcom IV/1	9/76	215	Total: 25,713,600 Spanish: 3,199,100	10¢ per Spanish Sub	24/day

Source: ICR, Cable Information Service

Trinity Broadcast Network	Satcom IV/17	5/78	245	2,674,000	free	24/day
UPI News Cable	Satcom III-R/6	1974	485	na	na	24/day
USA Network	Satcom III R/9	9/80	3,400	17,000,000	11¢	24/day
The Weather Channel	Satcom III R/21	5/82	840	8,300,000	free	24/day
WGN-TV (United Video)	Satcom III R/3	11/78	3,978	11,084,753	10¢	24/day
WOR-TV (Eastern Microwave)	Westar V/2D	4/79	796	4,703,757	10¢	24/day
WTBS	Satcom III R/6	12/76	5,214	25,823,000	10¢	24/day

Pay programming services

Programming Service	Satellite/ transponder	Start-up date	Affiliates (as of 4/83)	Subscribers (as of 4/83)	Price per subscriber	Programming hours
Bravo	Satcom IV/6	12/80	70	100,000	na	10/day
Cinemax	Satcom III-R/ 20 (east) 23 (west)	6/80	1,600	2,000,000	$3.50 approx.	24/day
The Disney Channel	Westar V/5X,6X	4/83	425	100,000	na	24/day
ERGS	Satcom IV/5	5/82	22	200,000	$1.00 approx.	12/week
GalaVision	Westar IV/23 Satcom	10/79	180	125,000	na	M-F, 12/day 24 wkend
Home Box Office	Satcom III-R 13 (west) 24 (east)	9/75	4,500	11,500,000	$4.00 approx.	24/day
Home Theater Network Plus	Satcom III R/16	7/77	325	170,000	$2.95	12/day
The Movie Channel	Satcom III-R/5	1/80	2,350	2,350,000	$4.50 maximum	24/day
ON TV	Comstar/D4	4/77	3	452,995	na	24/day
Playboy Channel	Satcom IV/7	12/80	240	420,000	na	10/day
SelecTV	Westar V/11X	6/81	35	215,000	$6.75-$7.45	24/day
Showtime	Satcom III-R/ 10 (west) 12 (east)	7/76	2,400	4,000,000	na	24/day
Spotlight	Satcom III R/4	5/81	231	750,000	na	24/day

Basic audio services

Programming Service	Satellite/ transponder	Start-up date	Affiliates (as of 4/83)	Subscribers (as of 4/83)	Price per subscriber	Programming hours
KKGO-FM	Satcom IV/17	4/83	3	100,000	na	24/week
Lifestyle (United Video)	Satcom III-R/3	3/81	127	1,068,400	1¢ $40 minimum $100 maximum	24 hours
Moody Bible Institute (United Video)	Satcom III-R/3	5/82	23	316,723	free	24 hours
Satellite Radio Network	Satcom II-R/2	na	40	na	na	na
SCAN (SSS)	Satcom IV/3 Satcom III/6	11/82	6	100,000	2¢	24/day
Sunshine Entertainment Network	Satcom III-R/2	na	3	21,000	na	24/day
WFMT Chicago (United Video)	Satcom III-R/3	6/79	168	812,997	2¢	24/day

Source: ICR, Cable Information Service