Testimony of

Mr. Robert Sachs

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TESTIMONY OF ROBERT SACHS
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NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION
on
COMPETITION AND OVERBUILDS IN THE VIDEO MARKET
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Mr. Chairman, Senator Kohl, and members of the committee, my name is Robert Sachs and I am President & CEO of the National Cable & Telecommunications Association. NCTA is the principal trade association of the cable television industry in the United States. It represents cable operators serving more than 90% of the nation's 73.4 million cable television households and more than 200 cable program networks, as well as equipment suppliers and providers of other services to the cable industry. Thank you for providing us with the opportunity to testify this morning.

Introduction

In assessing the subject of this hearing - namely, the competitive effect of wireline overbuilders on incumbent cable operators - it is appropriate at the outset to establish the context. There are more than 9,000 cable systems serving 33,000 communities in the United States. As is documented by the Federal Communications Commission's recent ten-year review of the status of competition in the video marketplace, virtually all those systems face vigorous competition from two wellestablished national Direct Broadcast Satellite (DBS) providers who together serve more than 21% of the multichannel video programming market. And, as the General Accounting Office has pointed out, this competition has resulted in an explosive growth of new video and non-video services, as well as slightly lower prices for cable subscribers.

While fierce competition from DBS is ubiquitous, competition between wireline cable operators is scarce - and often precarious. Only about 400 of the 33,485 cable

communities nationwide have two competing franchised wireline providers. Many of these franchised overbuilders, however, have either never deployed and launched their services, launched and failed, or are in danger of bankruptcy.

GAO's most recent study of cable overbuilds is based on a tiny percentage of these rare communities. GAO examined only six overbuild communities, and compared

them with six other communities that appeared to share certain characteristics with the overbuild communities but had only a single cable operator. The half dozen overbuilds exemplified many of the difficulties faced by overbuilders, and GAO identified the reasons for these problems.

A major reason was that overbuilders simply underestimated the extent to which the marketplace they chose to enter was already fiercely competitive. Overbuilders may have assumed that they could easily and profitably capture customers from incumbent providers with lower prices. But sustainable competition from DBS, which enjoys nationwide economies of scale, had already ensured that cable operators were providing the services that best met consumer demand, at competitive prices. So, overbuilders were caught in an economic bind. To entice customers away from the incumbent, they might have to charge lower prices than the incumbent. But those lower prices were insufficient to cover their costs and investment risk and were economically unsustainable for more than an introductory period.

Moreover, the vast majority of overbuilders only came into existence in the last few years. As rare as overbuilds are now, they were even less prevalent during the first

four decades of cable's existence. Cable television is an extremely capital-intensive business. To serve a community, cable operators typically must deploy facilities that pass and extend to all households in the community, whether or not particular households choose to purchase their service.

The viability of such an investment required that a substantial portion of the homes passed by the system did choose to purchase the system. Competing builders, such as in the well known example of Allentown, Pennsylvania, who constructed systems simultaneously in an area where off-air reception was poor, had the best chance of being viable. But for many years, the prospect that multiple cable operators could build such facilities and each capture a sufficient number of subscribers to support their investment was, in most cases, implausible. Therefore, few overbuilds were deployed.

But several developments in the last decade of the twentieth century encouraged new overbuild ventures. For example, the technological ability to provide voice, video and data services over shared broadband facilities - and the emergence of the Internet as a new source of data services for consumers - altered the economics of overbuilds. Existing telephone companies, whose narrowband facilities were not particularly well suited to the provision of video and Internet broadband services, made significant investments in new stand-alone broadband facilities so that they could offer video (and cable modem) service along with the telephone and DSL Internet services provided over their existing facilities. Meanwhile, the Telecommunications Act of 1996 encouraged the emergence of new "competitive local exchange carriers." With new broadband facilities, these new companies saw opportunities to offer competing cable television service and cable Internet service along with telephone service.

In short, the bundling of video, Internet and telephone services over shared facilities was expected to make it possible to provide an economically viable competing wireline cable service. But just as they may have underestimated the competitive effects of DBS, overbuilders also faced more competition and less demand for their non-video services than they anticipated.

The boom in wireless telephony (and the increasing availability of telephone service from incumbent cable operators and other competitive local exchange carriers) reduced potential revenues from telephone service. Similarly, vigorous competition between cable operators' cable modem service and telephone companies' DSL reduced the ability of overbuilders to subsidize their video prices with revenues from high-speed Internet service. And in this competitive environment, overbuilders have had serious

difficulty obtaining the capital they anticipated and need to deploy and build out their systems.

What all this suggests is that the prices and service offerings of overbuilders at any recent point in time can hardly be viewed as representative of a "competitive" standard that all cable operators would meet if only they faced effective competition. To the contrary, cable operators do face effective competition in all the services that they provide. It's the prices and services offered across the nation by cable operators that face strong competition from DBS, DSL and competing telephony providers that provide the best indication of a competitive marketplace at work. There is no basis for looking to the prices offered by an anomalous handful of unprofitable overbuild systems as an

appropriate benchmark for video prices.

Why Overbuild Prices Are Artificially or Uneconomically Low

With the foregoing in mind, it may still be useful to take a closer look at the small number of overbuild systems that have come into (and out of) existence in order to see why some recent studies - including GAO's most recent reports - have found that a snapshot of average prices of overbuilders tend to be lower than the prices charged by cable operators in areas without overbuilds. NCTA has done such an analysis.

Unlike GAO's most recent study, which looked at only six overbuild communities, we examined all of the 433 communities with identifiable overbuild systems for which information was obtainable. We confirmed that most of them did, in fact, display anomalous characteristics that explain why their prices (and the prices of competing cable operators in those communities) may, at least temporarily, be lower than prices in other communities. As analyzed more fully by Steven S. Wildman, Professor of

Telecommunication Studies at Michigan State University, in a white paper attached to this testimony, those anomalous characteristics show that lower rates do not indicate that those overbuild markets are more "competitive" than other markets. To the contrary, as Professor Wildman concludes, "[a] close look at overbuilders and the communities they serve shows that it would be imprudent to use prices in these communities as benchmarks for evaluating prices in other cable communities."1

1. Overbuild prices are often unsustainable. First of all, the vast majority of overbuilds have only been in existence for a very short time. 388 of the 433 overbuilds did not exist before 1996 - and 92 of them did not exist before 2001. This means that it's impossible to view a snapshot of prices at any given point in time as representative of the stable prices of long-term, established competitors. (Typically, cable franchises are awarded for 15 years and then are eligible for successive renewal periods of 10 years.) A "moment in time" snapshot does not show whether the reported prices were sustainable for even an initial franchise term. It does not show how many overbuilders failed to survive with such prices. Nor does it show whether such prices were merely temporary and soon rose to higher levels.

In fact, 83 of the overbuilds that we identified either have failed and are no longer operational or are not yet operating to any meaningful extent. In a competitive market, companies are expected to charge prices sufficient to cover their costs and to earn a fair, risk-adjusted return on their investment over time. The prices of companies that have failed or are failing obviously cannot be viewed as benchmarks for what competitive systems should charge.

1 S. Wildman, "Assessing the Policy Implications of Overbuild Competition," February 9, 2004, at 27.

The overbuild landscape is populated with such failed or failing companies.

Some, like Altrio, Everest Connections, TOTALink, and WINfirst briefly got started operating overbuild systems before they went bankrupt and/or stopped further construction. Other well-financed companies like Ameritech and GTE constructed and operated systems only to sell them for a small fraction of their original cost.

In addition, a large number of overbuilders never even built their systems and launched their services. For example:

? American Broadband

American Broadband announced that it would overbuild cable systems in major cities in Rhode Island as well as Baltimore, Buffalo, Jacksonville and other medium size markets on the East Coast. When it initially filed in January 2000 with the Rhode Island PSC, American Broadband told the PSC that it would cost $170 million to build systems in 20 markets serving 80% of the state's households in the towns of Barrington, Bristol, Central Falls, Coventry, Cranston, Cumberland, East Greenwich, East Providence, Johnston, Lincoln, North Providence, North Smithfield, Pawtucket, Providence, Scituate, Smithfield, Warren, Warwick, West Warwick and Woonsocket.

American Broadband initially received a commitment for $50 million in equity capital from Great Hill, and expected to receive another $120 million in equity and debt for the Rhode Island project. Great Hill Partners and venture capital companies pulled back on their initial commitment. CIBC World Markets that in 2000 committed to provide the company up to $150 million in senior debt financing opted not to make the loan. In addition, $50 million in equity promised by Great Hill Partners, a Boston venture capital firm was placed on hold. Great Hill owned 83 percent of ABI.

Unable to attract other financing, American Broadband decided not to go into business in January 2001.

? Carolina Broadband

Carolina Broadband was formed in 2001 and targeted major markets in North and South Carolina including: Charlotte (pop. 540,828), Raleigh/Durham (pop. 276,093 and 187,035 respectively), Winston-Salem

(pop. 185,776), Greenville/Spartanburg (pop. 56,002 and 39,673 respectively), and Columbia, SC (pop. 116,278).

In 2001, the company received $402 million from Charlotte's Carousel Capital and the venture capital arms of banks such as Bank of America Corp. and First Union Corp. Other investors included M/C Ventures, Spectrum, Chase, JH Whitney, Haborvest and Providence.

After raising $402 million in equity, Carolina Broadband was unable to obtain another $400 million in debt financing. The investors did not want to commit all of the money until the company received additional loans needed to fully fund its construction projects.

Carolina Broadband spent about $40 million before the company folded without significant construction.

? DeCom

DeCom was a Midland Park, NJ-based firm headed by a veteran cable operator. In mid-2000, DeCom announced that it hoped to be OVS provider in Charlotte, NC (pop. 540,828). The company never moved forward with its plans to provide service.

? Digital Access Corporation

Digital Access announced plans to overbuild cable systems in

Indianapolis, IN (pop. 781,870), Kansas City, MO (pop. 441,545), Milwaukee, WI (pop. 596,974), and Nashville, TN (pop. 1,270,520) in 1999. The company's major investors included Bachow & Associates, CALPERS, Cornerstone Equity, First Union Capital, Goldman Sachs, M/C Venture Partners, Norwest Equity, Providence Equity, M/C Venture Partners, Navis Partners (formerly Fleet Equity Partners) and Spectrum Equity Investors. Digital Access was able to raise $450 million in equity but unsuccessfully sought $850 million in debt financing. Digital Access went out of business in early 2001 after trying for two years to obtain debt financing.

? Digital Union

During mid-2000, Digital Union (affiliated with a Local Utility) announced that it was going to overbuild the incumbent cable system in Austin, TX (pop. 656,562). After a few months, Digital Union abandoned its plan to provide service.

? LyncStar

LyncStar was a private company that planned to overbuild the cable system serving Little Rock, AR (pop. 183,133). The company never moved forward with its plans to compete in this market.

? Quality Entertainment

Quality Entertainment was a private company with plans to provide service in Poteau, OK (pop. 7,939). The Company never proceeded with these plans.

What seems apparent is that the investment community has not been persuaded that the overbuild business model, which is built on capturing market share with low prices, is an economically sound and sustainable model. As Professor Wildman points out, "[t]he fact that only a tiny fraction of a percent of cable communities attract overbuilder entry in any given year in itself suggests that most knowledgeable potential investors see little prospects for profit in the overbuilder strategy."2 And the recent failures of existing overbuilders confirms that this is the case. Thus, as Altrio stated two months ago when informing the City of Los Angeles of the company's decision to shut down the company, "the capital markets are not friendly to early stage telecommunication companies today. After six months of effort, we have been unable to raise the necessary capital to continue operations."3

Even some of the more established and recognizable overbuild companies have been on or over the brink of bankruptcy. For example, Knology, which has 127,500 subscribers, went through bankruptcy in 2002. On September 18, 2002, Knology filed for Chapter 11 bankruptcy protection with debts that exceeded $473 million. On November 7, 2002, Knology announced that the bankruptcy allowed it to exchange $444

2 Wildman at 28.

million in bonds for $193.5 million in newer bonds and a 19.3% equity ownership in the company. In total, the bankruptcy reduced Knology's debt by $250 million.

Meanwhile, RCN, the largest and most established overbuilder, is reportedly in serious economic peril and "skating on thin ice."4 Its stock has not bounced back even as

the telecommunications sector has begun to recover. RCN's stock plummeted from a high of $72 per share in February 2000 to 68 cents per share as of December 31, 2003. On January 15, 2004, RCN missed a $10.3 million payment on senior debt. According to one trade publication report, RCN's cash supply is rapidly disappearing: "Its most recent available results show in Q3 it lost $110.5 mil[lion]. RCN in Oct. 2001 had $1 bil[lion] in cash. It now holds $289.5 mil[lion] in cash, and is burning through its onceformidable fund at a clip of about $70 mil[lion] per quarter."5

Moreover, just two weeks ago, regional power company Pepco Holdings Inc., RCN's partner in Washington, DC area overbuilder Starpower Communications LLC, announced that it was that it was "getting out of the telecommunications and cable TV business by selling its 50 percent stake in" the venture.6

As mentioned, even some of the large, established telephone companies that promised to compete with incumbent cable operators in their telephone service areas have ultimately backed away from those plans and have emphasized the marketing of DBS services instead.7 As the FCC recently noted,

3 Letter from David G. Rozzelle and Stephen R. Ross to Ms. Liza Lowery, Chief Information Officer,
City of Los Angeles, Dec. 10, 2003.

4 "RCN Skating on Thin Ice," Broadband Technology, Jan. 21, 2004, p. 10.

5 Id.

6 "Pepco to Sell Starpower; Shedding Cable Stake Will Come at a Loss," Washington Post, Jan. 30, 2004,
p. E1.

7 See "Bells Fight Cable War with Satellite-TV Deals," Wall Street Journal, February 9, 2004, p. B1.

> The 1996 Act amended Section 651 of the Communications Act in order to permit telephone companies to provide video services in their telephone service areas. . . .As a result the presence of LECs in the MVPD market grew. By 1998 the Commission indicated that "LECs are already or are becoming significant regional competitors." Ameritech (later acquired by SBC) was a significant overbuilder in the Midwest, BellSouth was an overbuilder and MMDS operator in the southeast, . . . and Bell Atlantic (now Verizon) and SBC were selling, marketing and installing DirectTV DBS video service. Additionally, LECs briefly owned and operated two joint programming and packaging ventures, but by 1998 both of these efforts were ended or scaled back, and today no longer exist. Today facilities-based cable franchise services provided by the large, former "baby bells" are much less prominent . . ., with only BellSouth and Qwest offering such services. Some LECs have come full circle, however, and are marketing DBS service as they did in 1998.8

There have also been many reported examples of overbuilders entering markets with very low prices but, before long, implementing substantial price increases. As Professor Wildman points out,

> It is not uncommon for firms entering a market to offer their products or services at prices too low to cover their costs over the long term. They do

this to rapidly build their customer base to a level large enough to ensure profitability once prices return to sustainable levels. Incumbents often respond to such tactics with lower prices of their own. Because market prices frequently rebound to higher levels once entrants' initial pricecutting strategies have run their course, it is important that prices in markets with recent entry not be used as competitive benchmarks for prices in other markets.9

One example is RCN's system in Boston. Since entering the market there in 1997 RCN's price for the expanded basic tier has nearly doubled

2. Overbuilders often targeted communities where cable operators had not yet rebuilt their systems. While cable operators nationwide have been rapidly

8 Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming,
Tenth Annual Report, MB Docket No. 03-172, ¶¶ 113-115 (released January 28, 2004).

9 Wildman at 11.

rebuilding and upgrading their facilities to provide more channels and advanced broadband services, at least 107 of the overbuilders targeted communities where the incumbent operator had not yet rebuilt its system. In those markets, overbuilders might have expected to be able to lure customers away from the incumbent to a more advanced system with artificially low prices and advanced services that the incumbent was not (yet) able to offer. But it does not follow that either the rates or the overbuild itself would be sustainable after the incumbent rebuilt its system. And, as the FCC's recently released Tenth Annual Report on video competition shows, communities with non-rebuilt systems are quickly disappearing. Just between 2001 and 2002, the percentage of systems with at least 750 MHz leapt from approximately 64% to approximately 73%,10 and the percentage continues to grow.11 This is, in other words, a strategy available only in a rapidly dwindling number of communities and only for a very limited period of time.

3. Many overbuild systems were purchased at a substantial discount from failing companies. In many cases, overbuilders faced costs significantly lower than those of incumbent cable operators for artificial reasons that had nothing to do with competitive efficiency. For example, in 77 communities - almost 20% of the cases - the systems were purchased from failed or failing overbuild companies at pennies on the dollar.

These cases include the sale of systems and assets owned by the bankrupt Western Integrated Networks ("WIN"). While WIN had announced plans for building all-fiber networks in many southwestern and western cities, it only built and began operating a system in Sacramento. WIN sold its Sacramento assets to SureWest

10 Id., ¶ 25, Table 3.

11 Id., ¶ 25 n.58.

Communications for less than 15% of what it had invested in the system - and a much smaller percentage of what the assets were worth at the time of sale. WIN's assets in Sacramento were worth $200 million; they were sold to SureWest for $12 million. Similarly, in December 2001, SBC sold the assets of the stand-alone cable systems that Ameritech had built in the 1990's. WideOpenWest acquired those mid-western systems

at fire-sale prices far below the costs of building them. Likewise, in December 2003, Verizon Media Ventures Inc., a subsidiary of Verizon Communications Inc., sold off its cable television systems in Pinellas County, Florida and Cerritos, California to Knology for a price dramatically below the value of the assets. When companies purchase systems for much less than what it cost to build them, they, of course, can charge prices that reflect this discount. But there is no reason to view such prices as in any way indicative of what an economically efficient incumbent or new cable operator facing marketplace competition would or should charge. They are, in effect, subsidized by the initial overbuilder who mistakenly invested in a system that should never have been built in the first place, given the real costs of construction and operation.

4. Franchising authorities often impose fewer requirements on overbuilders. Many overbuilders faced significantly less extensive and costly franchise requirements than those imposed on incumbent cable operators. Although NCTA has not been able to review all the franchises in overbuild communities, we have identified 96 communities in which the overbuilder does not have the same requirements as the incumbent. It may be possible for local governments to create a price differential between overbuild and nonoverbuild communities simply by creating a cost differential between overbuilders and incumbent cable systems. But where this is the case, there is no reason to suppose that

the lower prices in overbuild communities are any more "competitive" than the prices of incumbents in non-overbuild communities.

5. Overbuilders often target high-density areas. We found 103 instances in which the overbuilder was not required to build out and serve the entire franchise area. In Montgomery County, Maryland, for instance, Starpower was not required to extend service to lower density areas of the county despite the fact that the incumbent's franchise requires universal service. Not surprisingly, given this green light to cream skim, we found 175 instances where the overbuilder targeted high density areas to provide service. By picking and choosing areas that are less costly to serve on a per-household basis because density is greater overall, overbuilders can charge rates that are lower than if they, like virtually all incumbent cable operators, were required to serve all areas of a community.

6. Some overbuilders operate on a not-for-profit basis. In some cases, overbuilders' prices may be artificially low because the overbuilder is a not-for-profit entity that has no need even to project, much less recover, a profit. For example, we identified 31 municipally-owned overbuilders and ten overbuilders owned by cooperatives.

7. Many overbuilders are owned by utilities or telecommunications companies. In 20 cases, the overbuilder is owned by a utility. And in 91 cases, the overbuilder is affiliated with a local telecommunications company. These operations present unique cost advantages of shared facilities for similar, plant-intensive businesses. They also present cross-marketing advantages that accompany such utility ownership.

And the rates of such overbuilders may be artificially low to the extent that they can be cross-subsidized by the ratepayers of the regulated utility service.

8. Most overbuilders bundle video services with other services. Finally, a large number of overbuilders entered the market offering bundled video, Internet and

telephone services. More than ¾ of them - 310 - offer high-speed Internet service. And 179 offer all three services. When multiple services are offered over the same shared facilities, prices for the service offerings will be based on projected demand for all the bundled services. The shared cost of common plant may make the attributable costs for video lower, assuming that buy rates for the Internet and telephone services are sufficient to contribute to support of the system's costs. But if overbuilders' projections regarding their telecommunications and Internet offerings were unduly optimistic (as may well have been the case during the recent years when most overbuilds were initiated), then the prices for their video programming services may have been lower than necessary to cover costs - i.e., lower than economically competitive levels.

As the foregoing discussion shows, there are a number of clearly identifiable circumstances in which the prices of overbuild systems may be artificially and uneconomically low - and these circumstances apply in a large number of overbuild communities. The chart below illustrates how the vast majority of observations in the Overbuild sample involve anomalous situations.

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Breakdown of Overbuild Communities

N= 433

425

8

0

50

100

150

200

250

300

350

400

450

Anomalous Communities Non- Anomalous Communities

* Anomalous Communities: Includes Failed/Failing, Purchased assets below value, targeted non-rebuilds, targeted high density,

unique ownership issues (telco, utility, co-op, municipal), different franchise or buildout requirements, or offers bundled services.

In fact, according to Professor Wildman, "it is striking how few communities remain in the comparison sample [of overbuild communities] when all identifiable sources of potential bias are eliminated."12

GAO's Survey of Six Overbuilders Is Not a Useful Indicator of Competitive Rates

Even if there were no such multiple explanations for the price differentials between overbuild and non-overbuild communities, it would still be necessary to take any price comparisons in GAO's most recent study with a large grain of salt. That study only examined six overbuild communities - only about 1.5% of all overbuild communities, and a very small fraction of one percent of all cable communities - and compared their

12 Wildman at 19 (emphasis in original).

prices with the prices of six superficially similar cable systems in non-overbuild communities. It's hard to see how the differentials between the overbuild and nonoverbuild systems in such a minuscule number of cases could possibly be deemed to have any statistical significance.

In any event, not surprisingly, the six overbuilders in GAO's study - like most of the overbuilders nationwide - appear to share one or more of the identifiable characteristics, described above, that are likely to result in artificially and anomalously low prices.

For example, Everest Connections is, first of all, owned by an energy utility company (Aquila, Inc.). In addition, it is a company facing serious economic difficulties. Everest, which was formed in 2000, initially planned overbuilds in Amarillo, Lubbock and several smaller Texas communities. It also was granted franchises in the Kansas City and Minneapolis-St. Paul regions and had applied for more than a dozen franchises in the Grand Rapids, Michigan area. But it has never expanded beyond its two systems in Lenexa and Mission, Kansas.

During the first half of 2003, Everest's energy company parent restructured Everest and terminated 160 of its employees. It recently told the FCC that it had stopped funding Everest because of the company's poor long-term prospects. And Everest has told the Federal Communications Commission that it will "soon cease all construction in Kansas City due to lack of funding."

Grande, the overbuilder in Waco, Texas, offers bundled video, Internet and telephony services. It acquired its system from a financially impaired company, ClearSource, two years ago. Although the sale price was not reported, it is reasonable to

assume that the assets were purchased at a substantial discount, reducing Grande's costs - and potentially supporting prices - substantially below what would have been sustainable if the company had to cover the true costs of the system.

Seren Innovations is another utility-owned and funded overbuilder. It was founded in April 1996 as a subsidiary of Northern States Power Co. and is now owned by Xcel Energy, Inc., which was formed by the merger of NSP and New Century Energy of Colorado.

PrairieWave is an investment company formed in 2002, which is affiliated with local telephone companies. It was formed to purchase the assets and operations of McLeodUSA Incorporated, a financially impaired operator of incumbent telephone systems in South Dakota and competitive telephone, cable and Internet services in South Dakota, southwestern Minnesota, and northwestern Iowa. Again, it is likely that the cable systems were acquired at a substantial discount to their initial cost.

The two remaining overbuild companies in the GAO study are Knology and RCN - both of which have already been described above in the discussion of companies that have gone through bankruptcy (Knology) or are in economic distress (RCN). Both systems offer bundled video, Internet and telephony services. And RCN, as noted above, has been around long enough to demonstrate - with rate increase after rate increase - that the low rates charged by overbuilders when they enter a market are far from sustainable.

Conclusion

The bottom line is that overbuilders are the results of anomalous circumstances in

nearly all cases and often exist, if at all, in financial distress or as the aftermath of financial distress - unless they are tied to a utility or not-for-profit cooperative. In the

rare circumstances where they exist, incumbent cable operators cannot afford to ignore such wireline competition. But they already face vigorous competition from DBS in virtually every community that they serve. And the services they offer and the prices they charge are already dictated and driven by such competition - whether or not they face an additional wireline competitor.

Overbuilders may enter the market with prices that are lower than these competitive prices. And incumbent cable operators may have no choice but to reduce their prices to such levels. But, as we have shown, these lower prices are either not economically sustainable by the overbuilders or are sustainable only because of anomalous artificial cost advantages and subsidies that are not available to incumbent operators. Whether or not overbuilders ever figure out a sustainable business model, their current model cannot serve as a benchmark for assessing the prices and conduct of cable operators in today's highly competitive video marketplace.

1

Assessing the Policy Implications of Overbuild Competition

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February 9, 2004

I. Introduction

Unlike the situation prior to the emergence of the national direct broadcast satellite (DBS) television services in the mid-1990's, it is indisputable that cable operators face direct competition in the provision of their primary service, multichannel television. Today the local cable operator competes directly with two highly successful DBS services who, nationwide, have captured approximately 22 percent of all multichannel television service customers.1 Most operators also now offer a high speed Internet service for which they face competition from the incumbent local telephone company and frequently a number of other suppliers of high speed data services as well. And a small but growing fraction of cable operators offer voice telephony in competition with at least one, and increasingly, several telephone companies. The question now is whether this multifaceted competition, and especially the competition between the cable and DBS providers of multichannel video services, is intense enough to provide consumers with the benefits of lower prices and better services policymakers expect competition to provide.

1 Federal Communications Commission, Annual Assessment of the Status of Video Competition in the Market for the Delivery of Video Programming, Tenth Annual Report, MB Docket No. 03-172, Released January 28, 2004, Appendix B, Table B-1.

2

In a tiny fraction (less than two percent) of the communities they serve, incumbent cable operators also compete with newer wireline providers of multichannel video service, commonly known as "overbuilders." Although it is not always the case, a few empirical studies have suggested that on average prices are lower in markets with overbuild competition than in markets where the incumbent is the only wireline provider of multichannel video service.2 These studies have not systematically controlled for short

run factors, such as low introductory prices charged by recent entrants and the presence of competitors who are not viable long-term, that might drive prices below their competitive equilibrium levels. Nevertheless, their findings have been offered as evidence that prices charged by cable operators in non-overbuild communities are too high.

Unfortunately, the world is more complex than this simple argument would imply and the evidence offered is not, by itself, sufficient to support the claim that is made. While the claim that lower prices in overbuilt communities are an indicator that prices in other cable communities are too high might be true, it may also be false. Because there are situations in which market prices may fall below the efficient market standard

2 The most recent published study is an article by J. A. Karikari, S. M. Brown and A. D. Abramowitz, "Subscriptions for direct broadcast satellite and cable television in the US: an empirical analysis," Information Economics and Policy, vol. 15 (2003), pp. 1-15. Karikari, Brown and Abramowitz estimate that overbuild competition produces an approximately 10 percent reduction in cable prices. Their coefficient estimate is similar in magnitude to that found in an empirical study using earlier data by Dertouzos and Wildman, but the price effect in the Dertouzos and Wildman study was not statistically distinguishable from zero by commonly applied criteria for statistical significance. See, J. N. Dertouzos and S. S. Wildman, "Regulatory Standards: The Effect of Broadcast Signals on Cable Television," in R. Noll and M. Price, eds., A Communications Cornucopia, Brookings Institution, 1998. In its October 2003 Report, "Issues Related to Competition and Subscriber Rates in the Cable Television Industry," the GAO reports finding that overbuild competition reduced cable TV rates by about 15 percent.

associated with a competitive equilibrium, policymakers must take care to determine that the lower prices are in fact the efficient competitive prices and that the market structures generating those prices are sustainable in the long term. While consumers may benefit if supracompetitive prices are lowered, they may also be hurt by deteriorating quality and the exit of service providers if companies are forced to set prices below their competitive levels.

To convincingly demonstrate that lower prices in overbuild markets show that prices in non-overbuild markets are too high it would be necessary to provide: (1) evidence that cable prices charged in overbuild communities might reasonably be interpreted as competitive equilibrium prices, and (2) empirical support for the proposition that the prices (and numbers of competitors) observed in these markets would also be sustainable long-term in communities currently not served by overbuilders. Until evidence supporting the existence of both of these relationships is provided, the argument that lower prices in overbuild markets show that prices in other cable markets are too high must be considered empirically unsubstantiated. On the other hand, this argument would be empirically refuted by a demonstration that either of these relationships does not hold.

To this end, I have reviewed data on overbuild competitors and the communities they serve compiled from a NCTA-commissioned study by Kagan World Media3 and data descriptive of cable communities and markets from trade data sources. My review of this evidence suggests that it is highly likely that prices in overbuild communities are below long-run competitive levels and that, unless recent and/or new technological

3 Kagan World Media, "Survey of Incumbent Cable Operators in Overbuild Communities," January 2003. See Attachment A.

developments substantially change the economics of competition in multichannel video services, the overbuilders in these communities are not equilibrium features of the markets they serve. Furthermore, based on the US experience with overbuild competition to date, it would be dangerous to assume that overbuilders could profitably enter and offer services in the typical community in which a single cable company currently competes with the two satellite services.

The analysis that lead me to these conclusions is presented in the remainder of this report, which is organized as follows. Section II briefly describes the properties of a competitive equilibrium and identifies factors unrelated to differences in competitiveness that may lead to departures from a competitive equilibrium. Indicators of when such factors may be influencing overbuild markets are then discussed. Section III uses the framework presented in Section II to classify overbuilders and assess the long-term viability of overbuilders in current overbuild communities. The implications of this exercise for the interpretation of earlier studies comparing cable prices in communities with and without overbuild systems is then discussed. Section IV builds on the findings presented in Section III to examine the usefulness of the experience with overbuild services in the United States for assessing how close prices for cable services in communities without overbuilders come to their competitive equilibrium values. The findings of the study are summarized in Section V.

II. Competitive Prices and the Competitive Market Standard

A. Using the competitive market standard to judge market performance

The competitive price standard commonly employed in policy analyses is the long-run equilibrium price of the textbook model of a perfectly competitive market. In a perfectly competitive market in equilibrium, each buyer pays no more than the cost of the output purchased and sellers' revenues are just sufficient to cover their costs. Because price paid is a measure of value delivered to the buyer, this equation of cost with value at the margin indicates that the market is providing the maximum value possible with the resources at hand. The market output associated with this desirable state is the competitive equilibrium output or supply. Departures from equilibrium values for prices and outputs may rightly be interpreted as evidence that the societal resources employed to serve a market are not delivering the value they should. 4

Policy intervention may be warranted if departures from equilibrium are not naturally corrected by market forces. Thus, for example, if output was held below its competitive equilibrium value for an extended period of time, the increase in price attendant on the reduction in supply would be a measure of how much the added value to consumers from increasing output might exceed the cost of doing so. Similarly, if supply exceeded its competitive equilibrium value, price would fall to less than the cost of delivering the market's product or service, and the excess of cost over price could be

4 For a straightforward presentation of the basic argument for the efficiency advantages of competitive equilibrium prices and quantities, see F. M. Scherer, Industrial Market Structure and Economic Performance, Second Edition, Rand McNally Publishing Company: Chicago, 1980, Chapter 2.

interpreted as a measure of how much more value the resources employed could contribute to society if used to create other goods and services.

Because observed prices may be above or below their competitive market values, the simple observation that the price for a product or service is lower in one market than in another is not sufficient to determine which, if either, is closest to the competitive equilibrium price. For this reason, policy-driven comparisons of prices in different markets must be sensitive to the implications of factors that may cause prices (and numbers of competitors) to depart from their equilibrium values. Analysts must also be sensitive to the possibility that differences in underlying demand and/or cost conditions may lead to differences among markets in equilibrium prices and numbers of competitors, which is considered in Section IV. The remainder of this section focuses on factors that may cause prices and numbers of competitors to differ from equilibrium values and how these might be incorporated in a study of competition in the supply of multichannel subscription television services.

Four types of factors other than deficiencies in the competitive process may cause prices and numbers of competitors to depart from their competitive equilibrium values. These are: (1) Errors in judgment by entrants, potential entrants and incumbents, which may include bets on new technologies, (2) Changes in market conditions, (3) Low, but unsustainable, introductory prices, and (4) Government policies. Each of these four types of factors should be considered in constructing a sample of communities with overbuilders, which I will call a comparison sample, to be compared with communities not served by overbuilders to assess the competitive performance of the latter.

B. Errors in judgment by entrants, potential entrants, and incumbents

The ideal of a competitive equilibrium that has become a touchstone of competition policy analysis is an analytical abstraction, the properties of which rest on a set of assumptions that are at best only approximated in real world markets. Critical among these assumptions is that market participants be completely informed about cost and demand conditions and about the strategies employed by their competitors. The reality, of course, is that market participants are never perfectly informed and are constantly scouring the market and the larger economic and political environment for bits of information that might help them better align their strategies with the true states of the markets they serve. Because they must work with incomplete information, the decision to commit resources to provide service in a market always entails some risk of loss as well as the possibility of gain. 5 This is true for firms already serving a market as well as for firms contemplating entry.

Entry in competitive markets is always an uncertain prospect because entrants must predict on the basis of incomplete information the reception their products will receive once they are introduced and the costs they will incur in supplying them. Potential entrants may err by both underestimating the profits they might earn if they enter and by overestimating their post-entry profits. Both types of mistakes will be corrected by the market in the long run, but the short term impacts will be quite different. The first type of mistake will be corrected either through the entry of other firms who more accurately assess their prospects, or as high prices and high profits earned by

5 For a recent treatment of how uncertainty about demand conditions influences firms'

entry strategies, see G. Pacheco-de-Ameida and P. Zemsky, "The Effect of Time-to-Build on Strategic Investment Under Uncertainty," RAND Journal of Economics, Vol. 34 (2003), pp. 166-182,

8

incumbents cause initially unenthusiastic potential entrants to change their minds. The short-term consequences of potential entrants' failures to take advantage of opportunities for profitable entry will thus be prices that exceed their competitive equilibrium values. It is important to note, however, that prices that exceed competitive equilibrium levels are not evidence that markets that are less than competitive if there is nothing to prevent the entry of new competitors to bring about the efficient competitive outcome in the long term.

The price-effects of entry spurred by overly-optimistic predictions of post-entry profits are just the opposite of those for overly pessimistic forecasts that delay entry in markets where entrants could prosper. When the number of firms in a market exceeds the number the market can realistically support, the competition to determine who remains in the market will often drive prices to levels that are too low to cover the costs of investments and ongoing operations in the long term. Visible signs of failed investments of this type would include business closures, reorganizations under the protection of bankruptcy, and the sale of assets at less than their original cost. However, not all failed investments will be publicly revealed because owners with sufficient resources may choose to keep open business that cover their operating costs even if they don't fully recover their sunk investments.

Just as entrants may misjudge market circumstances or their own capabilities and enter when it is inefficient to do so, so may incumbents invest in new services or capacity that fail to generate revenues commensurate with their costs. Depending on their magnitude, incumbent mistakes of this type may lead to the same financial consequences just described for failed entrants.

9

Incumbents may also make mistakes that encourage entry in situations in which it would not normally occur. For example, an incumbent cable operator, whether through inattentiveness, lack of capital, or a wrong bet on the direction and implications of technological change, may fail to upgrade its plant in a timely manner, leaving it unable to supply the quality, breadth and variety of services a more up-to-date operator could profitably provide. Because a market served by such an operator is in effect underserved, an opening may be created for profitable entry that would not have arisen had the incumbent been on its toes. The consequences of entry of this type are good for consumers, and, because the threat of entry by suppliers using more advanced technology gives incumbents an incentive to continually improve their services, beneficial to society at large.

Nevertheless, as long as entry in response to incumbent inefficiency remains the exception rather than the rule, it would be inappropriate to regard prices in markets where this occurs as reliable benchmarks for evaluating cable prices generally. The competitive equilibrium standard assumes a market served by efficient competitors and in the long run it must be expected that inefficient cable operators will exit the markets they currently serve. Evidence that entrants were responding to opportunities created by inefficient incumbents would include entry concentrated in markets where incumbents

failed to keep up with the rest of the industry in upgrading their services and facilities.

C. Changes in market conditions

Equilibrium prices and the number of firms a competitive market can support may both change with changes in market demand and changes in the costs firms incur in supplying the market. Increased demand is typically associated with a larger number of firms in equilibrium while increases in costs tend to increase equilibrium prices and may reduce the number of viable competitors. Of course the opposite is true when demand and costs fall. Because entry and exit are both time consuming processes, new equilibria may lag considerably the changes that produced them and prices during the transition may differ considerably from their values in either the original or the new equilibrium.

New technologies are important agents of market change. 6 Advances in technology may lower costs or make possible delivery of combinations of services that were not feasible with earlier generations of technology. New firms can be expected to adopt these technologies from their inception, while incumbents may find it more prudent to adopt them more slowly over time as they replace or enhance existing facilities. Anticipated cost savings and the possibility of selling different mixes of services may stimulate entry in markets where entry otherwise would not have occurred. Optimism based on the allure of new technologies often turns out to be unfounded, however, and ventures built on them may fail, as we recently witnessed with the implosion of so may of the early dotcom businesses. But even when the investments supporting technologydriven entry are proved wise in hindsight, it is inappropriate to view post entry prices as

6 For example, D. Clark shows how evolution in the local loop technology underlying Internet access may change the nature of competition to provide Internet access to consumers. D. Clark, "Implications of Local Loop Technology for Industry Structure," in S. E. Gillett and I. Vogelsang, eds., Competition, Regulation, and Convergence: Current Trends in Telecommunications Policy Research, Lawrence Erlbaum Associates, Publishers: Mahwah, NJ, 1999, pp. 283-296.

evidence of what competitive prices would have been pre-entry with the older technology. Instead, costs and prices are likely to depend on the technology employed. Furthermore, entrants employing new technologies should not be counted as permanent features of their markets until they have demonstrated the viability of their business plans.

D. Low, but unsustainable, introductory prices

It is not uncommon for firms entering a market to offer their products or services at prices too low to cover their costs over the long term. They do this to rapidly build their customer base to a level large enough to ensure profitability once prices return to sustainable levels. Incumbents often respond to such tactics with lower prices of their own. Because market prices frequently rebound to higher levels once entrants' initial price-cutting strategies have run their course, it is important that prices in markets with recent entry not be used as competitive benchmarks for prices in other markets.

E. Government policies.

Due to their powers of taxation and regulation, decisions made by governments at all levels may significantly affect the costs of doing business and the prices charged by firms serving local markets. As a result, differences in local government policies may

lead to substantial differences in local prices and the numbers of firms serving local markets

Privately-owned cable operators must acquire franchises to provide service from local regulatory authorities, and franchises are typically awarded contingent on the operator meeting obligations specified by the local authority. Such obligations may

substantially increase the cost to an operator of providing service in a local community. Variation in franchise obligations is one reason cable prices may differ among communities. Because franchise obligations influence costs, they also affect the prospects for entry by new cable providers. Results of the survey described in more detail later in this report suggest that in a number of communities franchise authorities have favored entrants with less onerous, and thus less costly, franchise obligations than those of the incumbent operators already serving these markets. While the cost advantages of more favorable regulatory treatment may be a powerful inducement to entry in some markets, and prices may fall when entry occurs, it clearly would be a mistake to attribute either entry or any subsequent reductions in prices to the workings of competitive forces when the entry occurs in response to a regulatory advantage.

In a number of overbuild communities, the competition to a privately-owned incumbent operator comes from a government-owned system. Because a cable system operated as a government service serves both political and economic goals, and especially because the economic constraint of earning a market-return on capital investments cannot be assumed to apply to government-owned enterprises, it would be inappropriate to use prices in markets with government-owned systems as benchmarks for competitive prices.

III. Overbuilder Viability and the Questionable Value of Price Comparisons

The discussion of Section II makes clear that a number of factors might cause the prices and numbers of competitors in a market to depart from their long-run competitive values. For this reason, if comparisons of overbuild markets to markets without overbuilders are employed to inform a policy analysis, it is important that the overbuild

markets employed be ones for which the likelihood is small that prices and numbers of competitors differ substantially from the competitive equilibrium values for these markets. While it is not possible in practice to guarantee that prices and the number of competitors observed in any given market are at their long-run equilibrium values, it is possible with the framework developed in Section II to identify markets mostly likely to be tainted by factors known to be potential sources of bias and exclude them from any comparison samples.

This section reports the results of such an exercise using data for a sample of 433 communities with an overbuilder presence7 (the overbuild data set), based on a study of overbuilders by Kagan World Media commissioned by NCTA,8 which was supplemented with additional information from trade data sources compiled by NCTA. The analysis presented in this report is a secondary analysis of this data. The sample and the methodology employed in constructing it are described in Section III.A. A set of potential comparison samples constructed using the framework developed in Section II is described in Section III.B. The implications of this exercise in classification and comparison sample construction for policy interpretations of comparisons of prices in

cable communities with and without overbuild services are discussed in Section III.C.
7 Some of the overbuild franchises awarded were not built out or never offered service. The data set includes these communities along with those built out that offered service as communities with an overbuilder presence.
8 Kagan World Media, "Survey of Incumbent Cable Operators in Overbuild Communities," January 2003.

A. The overbuild data set
NCTA retained veteran cable industry analyst John Mansell of Kagan World Media to conduct and supervise the data collection regarding overbuilds from the incumbent cable operator in each overbuild market with the goal of identifying and gathering information on all of the wireline systems that compete with incumbent cable television systems in the United States. NCTA used Kagan World Media data from the 2003 Broadband Cable Financial Databook9 to identify 465 "Cable TV competitive franchises," which Kagan considers a near-comprehensive listing of existing overbuild franchises as of mid-2003 when the data in the Databook was compiled. The Kagan data lists the City and State and name of each Overbuilder. NCTA used a Nielsen Media Research database (FOCUS) to identify the incumbent cable system operators in each of these communities. NCTA then developed a survey instrument to collect information about the challenger in each market. Specifically, the survey included questions addressing the following overbuilder characteristics:
1. Name of current overbuilder.
2. The year in which overbuild commenced service.
3. Capacity of overbuilder (in MHz)
4. List of services offered by overbuilder .
5. Ownership Information. Is the overbuild owned by local government (town, city or county), a utility company (gas, electric), a local telephone company, a co-op, or privately owned.
6. Name of incumbent at the time of overbuild.
7. Similarity of build-out requirements.
8. Demographics of neighborhoods where overbuild currently offers service.
9. The population density of the markets targeted.
9 Kagan World Media, 2003 Broadband Cable Financial Databook, pp.81-84.

10. Sales/acquisition information. Whether current owner is the original owner and sales price if not.
11. Similarity of franchising requirements to those of incumbent.
The survey of incumbent cable operators was conducted between October 21, 2003 and January 2, 2004. Each MSO (or individual system if not affiliated with the Top 10 MSOs) was provided an electronic copy of the questionnaire and a list of communities where their companies faced a wireline competitor according to the Kagan data. In some cases, the MSOs collected the data directly from their cable systems and forwarded their results on to John Mansell and in other cases the data was collected by Mansell at the system level. Since a few overbuilders have exited the business in recent years, public information about these companies was used to collect data for these observations. All data gathered from the questionnaires and public sources were tabulated electronically by

Mansell to create the spreadsheet attached to this report.

In total, information on 433 communities was collected and compiled. Because survey respondents identified several overbuilders that had entered their communities in late 2003 or early 2004 after Kagan stopped collecting information for the 2003 Databook, the final tally was 470 identified communities with an overbuilder presence. Survey respondents did not provide information for 39 of the 114 former Ameritech New Media franchises sold by SBC to WideOpenWest, which is two more than the difference between the 470 communities identified and the 433 in the sample for which information was collected. This suggests that two of the former Ameritech New Media franchises

may have been missed in the Kagan census of cable communities, or, perhaps shut down since their sale to WideOpenWest.10

B. Constructing comparison samples

Of the 433 overbuild communities identified by the survey, 62 had overbuilders that had already failed,11 six were identified as failing,12 and 15 had not yet begun to build out their franchises or were not yet offering service at the time of the survey. Clearly failed and failing franchises do not belong in a comparison sample, and systems that are not operating provide no performance measures. Therefore all 83 communities with failed, failing and not built systems were eliminated from the comparison sample. These deletions reduced the sample to 350.

While not classified as failed or failing systems because they are still in business and offering service, an additional 76 communities were served by overbuilders who purchased their plant from previous owners at a small fraction of the original construction cost. (Systems serving 77 communities were sold for less than cost, but one of them also failed.) The fact that the original owners of these systems were forced to sell them for substantial discounts relative to their investments in them shows that that the markets they served did not generate revenues sufficient to both cover their operating costs and provide a fair return on upfront investments. There are numerous potential buyers capable of operating these systems. Therefore, the ability of the actual buyers to pick up

10 All 114 of the former Ameritech New Media systems are assumed to still be providing service in their franchise communities in various calculations reported below.

11 This includes operators who failed after offering services, which is the majority of this category, and operators who experienced financial failure before commencing service.

12 These operators were either in the process of filing for bankruptcy or in negotiations with creditors.

them up at pennies on the dollar shows that they would not have been willing to pay the full costs of building these systems if that were the price of entry. Systems in these communities are properly classified as the types of investor mistakes that will be eliminated from competitive markets in the long run. Subtracting the 76 systems purchased for less than original construction costs leaves 274 systems in the comparison sample.

31 of the communities with overbuilders were served by municipally-owned systems, but one is one of the failed systems eliminated above. Because such systems are likely to be operated to address political as well as economic goals, and because access to public funding is likely to be reflected in both build and pricing decisions, these systems

must also be eliminated from the comparison sample, leaving a total of 244.
244 is the absolute maximum number of overbuild communities that might retained in the comparison sample. Call this sample CS1. There are several reasons to believe that the number of communities served by overbuilders where two cable services might plausibly be viable in a competitive equilibrium is substantially smaller than the 244 communities in CS1. One reason is the 107 communities identified by survey participants where the overbuilder came in with new plant to compete against an incumbent who had fallen behind industry standards in upgrading its facilities. As explained in Section II, an inefficient incumbent may create an attractive opportunity for a more efficient entrant, but the competitive equilibrium used as a standard for policymaking is one in which efficient firms compete against each other. To ensure that the comparison sample is not tainted by the inclusion of communities whose overbuilders entered in response to incumbent incompetence, overbuild communities where the

incumbent operates outdated plant should be eliminated from the comparison sample as well.
Overbuilders in eight of the 107 overbuild communities with incumbents operating outdated systems were municipally owned, 52 were purchased at a fraction of construction cost, four had failed or failing systems, and one had a failed/failing system purchased at a fraction of its buildout cost. As all of these communities were already excluded from CS1, we are left with an additional 42 overbuild communities served by inefficient incumbents that probably should be subtracted from CS1 to ensure that inefficient incumbents do not bias the sample. Call the resulting sample CS2. CS2 has 202 cable communities.
A second reason to believe that that CS1 includes many communities where overbuild competition is not likely to be sustained in a competitive equilibrium is that the 76 communities served by overbuilders who purchased prior operators' assets for less than construction cost were identified through publicly-available documents. These are all the communities for which system cost and purchase price was found. An additional 39 communities served by systems operated by second or subsequent owners were identified by survey respondents. Given the numbers of failed and failing systems and the fact that systems for which information on construction cost and sales price was found were sold at less than cost, it seems likely that many, if not most, of the resold systems for which construction cost and purchase price were not available were also sold at a loss. At any rate, the strong possibility that they were sold for less than cost suggests that they should be eliminated from the comparison sample. In six of the communities served by these second (or subsequent) owner systems, the incumbent was operating outdated plant

and thus was already eliminated from the comparison sample. If we subtract the remaining 33 communities from CS2 to completely eliminate the possibility that failed systems are included in the comparison sample, we are left with 169 communities. Call this sample CS3.
The possibility that local politics played a role in entry decisions must be also be considered in situations in which overbuilders' franchise authority-imposed conditions for operation differ from those required of the incumbent. This is a third reason to believe that CS1, as well as CS2 and CS3, includes communities in which overbuilders

would not be viable in a true competitive equilibrium. While cost advantages based on regulatory favoritism may be a reason for entry, entry in such cases cannot be considered the outcome of a competitive process. Respondents to the survey identified a total of 96 communities for which the overbuilder did not have the same franchise requirements as the incumbent and 103 communities where the overbuilder was not required to serve the entire franchise area. To eliminate the possibility that the overbuilder's entry decision was based on favorable regulatory treatment, communities where the overbuilder and the incumbent have different franchise and build-out requirements should also be eliminated from the comparison sample. Subtracting these communities from CS1, CS2 and CS3 would produce the most restricted, but methodologically purest, comparison samples. Call these purer samples CS1P, CS2P and CS3P. CS1P has 131 communities, CS2P has 109 communities, and CS3P has 94 communities. It is striking how few communities remain in the comparison sample when all identifiable sources of potential bias are eliminated.

20

Table 1

Eliminating Sources of Bias from Comparison Samples

Complete Sample	CS1	CS2	CS3	CS1P	CS2P	CS3P
433	244	202	169	131	109	94

A fourth reason to believe that all the comparison samples just described, including the last three, include communities served by systems that are not long-term viable is that the vast majority of systems for which no financial information was available were assumed to be viable. That is, if some of the systems for which no financial data was available were failing, they would have been misclassified as viable. If overbuilders for which financial data is not available experience financial difficulties and failure at the same rate as those for which data is available, then most of these systems have been misclassified. In addition, the newness of many of the overbuilders in the sample also introduces a bias against a failed or failing classification because the process of failure has not yet had time to work itself out, which is a fifth reason to believe that the comparison samples include communities served by systems that in the long run will be proved nonviable.

C. The questionable relevance of overbuild price studies for cable policy

The question of whether overbuild competition lowers cable prices is relevant for policymaking only if the overbuilders in the overbuild communities examined are realizing market returns on their infrastructure investments. The results of the study of

21

overbuilder viability reported in Section III.B show that it would be incautious to assume long-term viability for more than a small fraction of existing overbuilders. For the remaining systems, any effects they might have on prices in the markets they serve should be considered departures from equilibrium prices. Because studies of the price effects of overbuild competition reported to date did not control for viability with anything close to the rigor applied in the study reported in Section III.B, the odds are high that many, and perhaps most, of the overbuilders included in these studies were the products of failed investments. This being the case, it would be inappropriate to rely on

the findings of these studies to assess the competitiveness of cable prices in communities without overbuilders.

IV. The Real Lessons from the US Experience with Overbuild Competition

The statistics on indicators of overbuilder viability presented in Section II.B provide strong reasons to suspect that most of the current crop of overbuild services likely are not viable participants in the markets they serve in the long term. The 365 communities currently served by privately-owned overbuilders constitute just 1.1% of the approximately 33,000 cable-served communities in the United States.13 The fact that overbuilders are offering services in such a small fraction of US cable communities suggests that in general potential investors in such services view their prospects as poor. The trend of overbuilder entry over time tells the same story. Table 2 presents data on the number of communities in the entire Kagan sample entered by privately-owned overbuilders for two-year intervals from 1995 through the present.

13 365 is calculated as 433 communities in the sample minus a total of 77 that either never offered service or failed minus 30 operating municipally-owned systems plus 39 former Ameritech New Media franchises not in the sample but assumed to still be operating. This count includes a handful of co-operatives that may be non-profit.

Table 2
Overbuilder Entry Over Time
(built-out commercial systems)

Pre-1995	1995-1996	1997-1998	1999-2000	2001-2002	2003-2004	No Entry Date
33	46	66	77	70	17	42

The Cable Act of 199214 eliminated any statutory authority local franchise authorities may once have had to restrict franchise awards to incumbent providers and the Telecommunications Act of 199615 (Telecom Act) provided further encouragement to entry in local markets for communications services, including cable. The pace of overbuilder entry did increase beginning in 1997, but this also coincided with increased adoption of new technologies that would allow the provision of high speed data and telephone services over cable plant throughout the cable industry, so it is difficult to know to what extent the Telecom Act, as opposed to the lure of new technologies, influenced the pace of overbuilder entry.

Missing data on entry dates for some communities make it impossible to determine exactly how much entry occurred in each of the periods listed in Table 2, but we can determine reasonable upper bounds on the rate of entry. The 17 startups identified for 2003-2004 represent Kagan observations for a little more than the first half of 2003 plus a few additional entrants identified by survey respondents after that time. If

14 47 USC § 541 (a) (1).

15 47 USC §§ 251et seq.

we assume all 17 started up in the first half of 2003, this would reflect a two-year entry rate of 68, which is close to the pace of entry for the prior three two-year periods. Entry date is provided for 74 of the 75 former Ameritech New Media communities in the sample, and all were from 1996 to 2001. If we assign the remaining 39 Ameritech New Media franchises to the six years from 1977 through 2002, total private entry would have

been 252, or 42 per year. This pace amounts to entry into just under thirteen onehundredths of one percent (0.0013) of US cable communities annually.

Data on the technology deployed in communities with overbuilders presented later in Table 3 shows that a higher percentage of the 42 communities for which date of overbuilder entry was not provided are served by overbuild systems utilizing last generation technology with no advanced features than is indicated for the pre-1995 communities in the built-out sample. If we assume instead that entry in all of these communities occurred from 1997 through 2002, total entry during the period would have been 294, the average annual rate of entry would have been 49, and the average fraction of cable communities entered annually would have been fifteen one-hundredths of one percent (0.0015).

These figures on the pace of overbuilder entry may be interpreted in either of two ways. If, counter to the evidence developed in Section III, overbuilders are assumed viable in all of the communities they serve, the failure of the overbuild strategy to catch on elsewhere suggests that potential investors in overbuild systems have serious doubts that they can be profitable in other cable communities. That is, the capital market response to the experience with overbuild operations accumulated in the US to date

suggests that there is little confidence a second cable system can be viable in a typical cable community.

The second interpretation of the data on entry presented above is more consistent with the evidence on overbuilder viability presented in Section III.B. That is that the capital market has seen overbuild operations fail repeatedly and has concluded that in general overbuild systems are not good business opportunities. By both interpretations of the entry data, it seems clear that investors have concluded that in general competitive markets that include two satellite services will not support a second cable provider of multichannel video services, at least with the technologies currently available.

If there are exceptions to this general conclusion, the best bets would seem to be overbuilds operated by telephone companies and co-operatives in small rural communities. Of the 382 communities in the sample with built out systems, a total of 244 survived the various elimination criteria to be included in CS1, for a survival rate of 64 percent.16 Yet of the 89 communities with built out systems currently operated by telephone companies, 86 are in CS1. These communities are predominantly small and rural. Community population is available for 76 of the 86 communities in CS1 served by telco-owned systems. Nearly 59 percent have fewer than 15,000 residents, 47 percent are communities with fewer than 10,000 residents, and approximately 36 percent are communities with fewer than 5,000 residents. Over six percent of these telco-served communities have fewer than 1,500 residents. All ten built-out communities served by

16 The 39 former Ameritech New Media systems not included in the larger sample would not have been in CS1 in any case because Ameritech New Media sold its systems to WideOpenWest for substantially less than the cost of building them.

cable co-operatives are in CS1.17 Nine of these communities had fewer than 10,000 residents, six had fewer than 5,000. (Population was not listed for one of the co-op communities.)

It is not clear why rural telephone companies and co-operatives may be more

successful than other types of owners as operators of overbuild systems. One possibility is that closer relationships with customers in smaller communities make it easier for rural telephone companies to sell new services, and perhaps the co-operative organizational form may have advantages in small, close-knit communities. It may also be the case that with convergence the natural long-run market structure in small communities is one with a single wireline provider of video, high speed data and voice services and what we are witnessing is a necessary step toward that future if the local telephone company is to be the surviving wireline competitor. Whatever the reason, the character of these rural settings likely is not replicable in the more typical urban cable communities.

A closer look at the data collected in the Kagan study suggests that most of the more recent overbuild experiments were inspired by the capabilities of relatively recent technological advances that make it possible to use cable plant to provide telephony and high speed Internet service in addition to more traditional video services. Table 3 adds to the entry data reported in Table 2 numbers and percentages of entrants offering the combination of video, high-speed Internet and telephony (the three bundled services) and the numbers of entrants offering either the three bundled services or the two services of video plus high speed Internet service.

17 Systems serving two of the overbuild communities operated by telephone co-operatives were counted as co-op operated rather than telephone company operated.

Table 3
New Technology and Overbuild Entry Decisions
(built-out commercial systems)

Pre-1995	1995-1996	1997-1998	1999-2000	2001-2002	2003-2004	No Entry Date
Number of Communities	33	46	66	77	70	17	42
# 3 Bundled Services	7	15	30	61	38	14	3
% 3 Bundled Services	21.2%	32.6%	45.5%	79.2%	54.3%	82.4%	7.1%

HSD or 3
Bundled
Services
23 40 61 70 63 15 12
% HSD or 3
Bundled
Services
69.7% 87.0% 92.4% 90.9% 90.0% 88.2% 28.6%

Table 3 shows a heavy reliance on high-speed data or high-speed data and telephony technology strategies by overbuilders, including those who entered prior to the Telecom Act, and that reliance on multi-service platforms has in general been increasing over time. Notable is the growing percentage of overbuilders offering video services, high speed Internet service, and telephony, which has averaged well over 50 percent from 1999 on.

As was discussed in Section II, new entrants into established markets are often inspired by the potential they perceive in new technologies. It is also frequently the case
27
that pre-entry optimism is shown unwarranted by the post-entry market responses to the entrants' products and services. At least at this point, capital markets appear to have concluded that the overbuilder strategy is not one that can profitably be applied in most cable markets, even when it is supported by advanced distribution technology and triple play service offerings. However, even if this were not the case and we restricted our attention to overbuilders with the most technologically advanced systems, it would still be inappropriate to assume that prices observed in overbuild communities are the prices that should prevail in communities without overbuild systems. If the future is one in which all wireline competitors offer multi-service bundles, we are still early in the transition to that future. Because the new technologies imply different cost structures and, with multi-service offerings, new strategies for exploiting demand, there is no way to know how competitive prices with the new technologies will compare to competitive prices with the old technologies, or how prices might move during a period of transition.

V. Conclusions

A close look at overbuilders and the communities they serve shows that it would be imprudent to use prices in these communities as benchmarks for evaluating prices in other cable communities. The competitive price standard employed for policy analysis assumes competition among firms able to cover their investment and operating costs from the revenues they generate. The evidence reviewed in this report suggests that this likely is not the case for many, and perhaps most, of the overbuilders operating in the United States today. To the contrary, the evidence for a high rate of financial failure is compelling and it would be analytically inappropriate to view the effects on price of
28
systems that can't recover their own investment costs as evidence of how competitive multichannel video markets should behave.

The fact that only a tiny fraction of a percent of cable communities attract overbuilder entry in any given year in itself suggests that most knowledgeable potential investors see little prospects for profit in the overbuilder strategy. Empirical studies of the price effects of overbuild competition have not controlled for overbuilder viability or

for the possibility that new overbuilders may be charging low introductory prices to rapidly build market share. For this reason, these studies shed no light on what competitive cable service prices might be. Even if this was not the case, the failure of capital markets to support a broad rollout of overbuild systems suggests that the conditions under which overbuild operations can thrive are quite different from those in the typical cable community.

Survey of Incumbent Cable Operators in Overbuild Communities Attachment A

CITY	ST	CHALLENGER	Population	Began Offering Service	Not Orginial Owner	Offers High-Speed Internet	Offers Bundled Services (Voice, Video, Data)	New Firm that purchased assets for small fraction of orginal costs
20 cities	RI	ABI						
La Crescent	MN	ACE Comm.	4,239	2003				
Camarillo	CA	Adelphia	57,077					
Encinitas	CA	Adelphia	58,014	1991				
Malibu	CA	Adelphia	12,575	1996				
Oxnard	CA	Adelphia	170,358					
Port Hueneme	CA	Adelphia	21,845	1998				
San Marcos	CA	Adelphia	54,977	1991				
Ventura	CA	Adelphia	100,916					
Flora	IL	Advance Technologies	5,086	2002				
Alameda	CA	Alameda Power	72,259	2002				
Algona	IA	Algona Municipal Util.	5,741	2002				
Evanston	WY	All West Comm.	11,507	2001				
Alta	IA	Altatec	1,865	2000				
Arcadia	CA	Altrio	53,054	2001				
Monrovia	CA	Altrio	36,949	2002				
San Gabriel Valley	CA	Altrio	39,084	2001				
Sierra Madre	CA	Altrio	10,578	2004				
Ann Arbor	MI	American Broadband	114,024					
E. Lansing	MI	American Broadband	46,525					
Lansing	MI	American Broadband	119,128					
St. Joseph Twp.	MN	Astound Broadband	4,681	2001				
Pultney	OH	Bellaire Cable TV	4,892	1978				

Bartlett TN BellSouth
South Dade County FL BellSouth 2,253,362 1999
Winder GA BellSouth 10,201
Cherokee County GA BellSouth Entertainment 141,903 1996
Cobb County GA BellSouth Entertainment 607,751 1996
Duluth GA BellSouth Entertainment 22,122 1996
Gwinnett County GA BellSouth Entertainment 588,448 1996
Roswell GA BellSouth Entertainment 79,334 1996
Woodstock GA BellSouth Entertainment 10,050 1996
Chamblee GA BellSouth Interactive 9,552
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 1
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
DeKalb GA BellSouth Interactive 665,865
St. John's County FL BellSouth Interactive 1999
Fallowfield PA Bentleyville Cable 2,502 1998
Albany NY Berkshire Tel 1,275 1995
Rapid City SD Black Hills GLA 59,607 2001
Skagit County WA Black Rock Cable 102,979
Snohomish County WA Black Rock Cable 606,024
Whatcom County WA Black Rock Cable 166,814
Braintree MA Braintree Elec. Light 33,828 2001
Elizabethtown/Hardi KY Brandenburg Telecom 22,542 2001
Ocala FL BrightHouse 45,943 1979
Abington VA Bristol Virginia Utilities 7,780 2003
Glade Spring VA Bristol Virginia Utilities 1,374 2003
Horton Twp. PA Brockway TV 1997
Kane PA Brockway TV 4,126 1997
Bryan OH Bryan Municipal Cable 1,833 1999
Waterville OH Buckeye Cable 4,828 1999

Maryland Hts MO Cable America 25,756 1991
Mesa AZ Cable America 396,375 1988
Sacramento CA Cable America 407,018 1990
Cameron LA Cameron Tel. 1,965 2003
Hackberry LA Cameron Tel. 1,699 2003
Charlotte NC Carolina Broadband 540,828
Columbia SC Carolina Broadband 116,278
Durham NC Carolina Broadband 187,035
Greensboro NC Carolina Broadband 223,891
Greenville SC Carolina Broadband 56,002
Raleigh NC Carolina Broadband 276,093
Spartanburg SC Carolina Broadband 39,673
Winston Salem NC Carolina Broadband 185,776
Cedar Falls IA Cedar Falls Utilities 36,145 1996
Clearview WV Centre TV 590 1979
Ohio County WV Centre TV 47,427 1979
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 2
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Warwood WV Centre TV 1979
Urbana OH Champaign County Tel 11,613 2001
Denver CO Champion Broadband 554,636 2000
Lakewood CO Champion Broadband 144,126 2000
Kanawha County WV Charter 200,073 1985
Terre Haute IN Charter 59,614 1992
Danville VA Chatmoss Tel. 48,411 1991
Hayward MN Chequamegon Coop 249 2001
Barron WI Chibardun Coop 3,248 1998
Camron WI Chibardun Coop 1,546 1998
Chetek WI Chibardun Coop 2,180 1998

Unity Twp. PA Citizens Cable 1997
Daleville AL City Cablevision 4,653 1994
Bridgeport CT City of Bridgeport 139,529
Galesburg IL City of Galesburg
Lebanon OH City of Lebanon 16,962 1999
Negaunee MI City of Negaunee 4,576 1985
Clear Lake IA CL Tel 8,161 2002
Lake County FL Clear Link 210,528 2001
Bellmead TX ClearSource (Grande)
Lacy-Lakeview TX ClearSource (Grande)
Monroe LA CMA Cablevision 53,107 1985
Coldwater MI Coldwater BPU 12,697 1998
Columbus Grove OH Columbus Grove Tel. 1997
Dothan AL Comcast 57,737 1981
Monroe MI Comcast 22,076 1995
Parkersburg WV Community Antenna 33,099 1998
Ashtabula VA Conneaut Tel. 20,962 2001
Painesville OH Conneaut Tel. 17,503 2001
Big Lake MN Connections 6,063 2001
Barrington RI Cox 16,819 2002
Bristol RI Cox 22,469 2002
Central FL Cox 2001
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 3
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Central FL Cox 2003
Claremore OK Cox 15,873 1998
Spotsylvania VA Cox 1991
Warren RI Cox 11,360 2002
Arma KS Craw-Kan Tel. Coop 1,529 2002

Franklin KS Craw-Kan Tel. Coop 2002
State College PA D&E Comm. 1997
Britton MI D&P Cable 699 2002
Morenci OH D&P Cable 2,398 1998
Darien GA Darien Cable 1,719 2003
Middleburg NJ DeCom
Charlotte NC DeCom Corp 540,828
Blissfield MI Deerfield Farmers Tel 3,223 1996
Delhi NY Delhi Tel. 2,583 2001
Indianapolis IN Digital Access 781,870
Kansas City MO Digital Access 441,545
Milwaukee WI Digital Access 596,974
Nashville TN Digital Access 1,270,520
Austin TX Digital Union 656,562
Chippewa Twp. OH Doylestown Comm. 1997
Doylestown Village OH Doylestown Comm. 2,799 1997
Elberton GA Elberton Utilities 4,743 2001
Willmar MN En-Tel 18,351 2000
Eden Prairie MN Everest
Edina MN Everest
Hopkins MN Everest
Minnetonka MN Everest
Lenexa KS Everest Connections 40,238 2001
Mission KS Everest Connections 9,727 2001
Mission KS Everest Connections
St. Charles County MO Everest Connections
O'Fallon MO Everest/WideOpenWest
Fairburn GA Fairburn Utilities 5,464 1997
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 4
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction

of orginal costs
Bridgeport CT FiberVision 139,529
Hartford CT FiberVision 121,578
New Haven CT FiberVision 123,626
Elk Grove CA Frontier 59,984 2004
Laurens IA Future Net 1,476 1998
Blackwell OK Get LLC 7,688 1998
Dothan AL Graceba 57,737 1999
Dothan AL Graceba 57,737 2000
Alamo Heights TX Grande Comm. 7,319 2000
Austin TX Grande Comm. 656,562 2003
Balcones Heights TX Grande Comm. 3,016 2000
Castle Hilles TX Grande Comm. 4,202 2000
Cibolo TX Grande Comm. 3,035 2000
Corpus Christi TX Grande Comm. 277,454 2000
Houston TX Grande Comm. 1,953,631 new
Kirby TX Grande Comm. 8,673 2000
Leon Valley TX Grande Comm. 9,239 2000
Live Oak TX Grande Comm. 9,156 2000
Midland TX Grande Comm. 94,996 2000
Odessa TX Grande Comm. 90,943 2000
Olmos Park TX Grande Comm. 2,343 2000
San Antonio TX Grande Comm. 1,144,646 2000
San Marcos TX Grande Comm. 34,733 2003
Schetz TX Grande Comm. 18,694 2000
Selma TX Grande Comm. 788 2000
Terrell Hills TX Grande Comm. 5,019 2000
Waco TX Grande Comm. 113,726 1999
Windcrest TX Grande Comm. 5,105 2000
Greenville TX Greenville Elec. Util. 23,960 1999
Grundy Center IA Grundy Center Munic. 2,596 1998
Savannah GA Hargray Comm. 33,862 2001
Harlan IA Harlan Municipal Util. 5,282 1996
Hartwell GA Hart Cable 4,188 2002
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 5
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services

(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Winona MN Hiawatha Broadband 27,069 1999
Hawarden IA HiTec Municipal 2,478 1997
Mason County WA Hood Canal Cable 49,905 1993
Shelton WA Hood Canal Cable 8,422 1993
Chillicothe OH Horizon Telecom 21,796 2000
Conway SC Horry Tel. Coop 11,788 1999
Georgetown SC Horry Tel. Coop 8,950 2001
Horry County SC Horry Tel. Coop 196,629 1980
N. Myrtle Beach SC Horry Tel. Coop 10,974 2001
Cecil PA HTC Comm. 9,756 1996
Houston PA HTC Comm. 1,314 1996
Mt. Pleasant PA HTC Comm. 4,728 1996
Independence IA Indep. Light & Power 6,014 2000
Kenmore NY Intertech Private Cable
Kenton-Boone City KY Kenton Boone City
Augusta GA Knology 195,182 1998
Charleston SC Knology 173,890 2000
Huntsville AL Knology 158,216 1993
Knoxville TN Knology 173890 2000
Louisville KY Knology 96,650 1998
Nashville (Mid. TN) TN Knology 704,431
Panama City FL Knology 36,417 1993
Summerville/Dorches. SC Knology 27,752 2000
Durand MI Lennon Tel. Co. 3,933 1998
Lexington NC LexCom
Davidson County NC Lexicom Cable Ser. 147,246 1997
Fallsburg KY Lycom 2,018
Little Rock AR Lyncstar 183,133
Sauk Centre MN Mainstreet Comm. 3,930 1999
Milledgeville GA Mallard Cablevision 18,575 1996
Naples FL Marco Island Cable 14,879 1990
Cedar Rapids IA McLeod 120,573 1998
Memphis TN Memphis Networx
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities,
Oct 2003 - Jan 2004; public information and company data. 6
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner

Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Shelby County TN Memphis Networx
Albany NY Midtel Cable TV 1,398 1995
Anne Arundel Cnty MD Millennium 489,656 1999
Social Circle GA Monroe Utilities 3,379 1996
Walton County GA Monroe Utilities 11,407 1979
Morristown NJ Morristown Util. System 18,544
Dodgeville WI Mount Horeb Telecom 4,220 2002
Murray KY Murray Electric 2,400 2001
Minster OH New Knoxville Tel. 2,794 1995
Moulton OH New Knoxville Tel. 2001
Bakersfield CA Newhouse 247,057
Coweta County GA Newman Utilities 89,215 1996
Tyrone GA Newman Utilities 3,196 2001
Iron Mountian MI Northside Cable TV 8,154 2000
Norwood MA Norwood Elec. Light 28,578 2002
New Ulm MN NuTel 13,594 2001
Ft. Worth TX One Source 13,594 1997
Osage IA Osage Municipal Util. 3,451 2002
Livingston TN Overton County Cable 3,498 1986
Auburn ME Oxford Networks 23,203 2004
Lewiston ME Oxford Networks 35,690 2004
Bemidji MN Paul Bunyan Tel 11,917 2000
Lower Burrell PA PCOM Comm. 12,608 2003
Pembroke WV Pembroke Tel 1991
Houston TX Phonoscope 1,953,631 1986
Colman SD Prairie Wave 2001
Flandreau SD Prairie Wave 2,376 2001
Gayville SD Prairie Wave 2001
Luverne MN Prairie Wave 4,617 2000
Marshall MN Prairie Wave 12,735 1999
Pipestone MN Prairie Wave 4,280 1999
Slayton MN Prairie Wave 2,072 2000
Storm Lake IA Prairie Wave 10,076 2000

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 7
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Tracy MN Prairie Wave 2,268 1999
Worthington IA Prairie Wave 2000
Yankton SD Prairie Wave 13,528 2000
Albany NY Princetown Cable 61,821 1990
Rupert ID Project Mutual Tel Coop 5,645 1995
Provo UT Provo Cable/Provo 105,166 1993
Poteau OK Quality Entertainment 7,939
Boulder CO Qwest 94,673 1999
Chandler AZ Qwest 176,581 1999
Douglas County CO Qwest 175,776 1999
Gilbert AZ Qwest 109,697 1999
Glendale AZ Qwest 218,812 1999
Maricopa County AZ Qwest 3,072,149 1999
Omaha NE Qwest 390,007 1995
Paradise Valley AZ Qwest 13,664 1999
Peoria AZ Qwest 108,364 1999
Phoenix AZ Qwest 1,321,043 1999
Scottsdale AZ Qwest 202,705 1999
Eatonville WA Ranier Group 2,012 1995
Pierce County WA Ranier Group 700,820 1995
Arlington MA RCN 42,389 1997
Bayonne NJ RCN 61,842
Beverly Hills CA RCN 33,784
Boston MA RCN 589,141 1997
Brookline MA RCN 57,107 1997
Burlingame CA RCN 28,158 2000
Burlington MA RCN 22,876 1997

Carson CA RCN 89,730 2001
Chicago IL RCN 2,896,016 1999
Daly City CA RCN 103,621 1999
Dedham MA RCN 23,464 1997
Delaware County PA RCN 550,864 2000
Framingham MA RCN 66,910 1997
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 8
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Gardena CA RCN 57,746 2001
Hermosa Beach CA RCN 18,566
Hoboken NJ RCN 38,577
Lexington MA RCN 30,355 1997
Marlborough MA RCN 36,255 2001
Milton MA RCN 26,062 2000
Natick MA RCN 32,170 1997
Needham MA RCN 28,911 1997
New York NY RCN 8,008,278 1999
Newton MA RCN 83,829 1997
Quincy MA RCN 88,025 1999
Randolph MA RCN 30,963 2000
Redwood City CA RCN 75,402 2003
S. San Francisco CA RCN 776,733 1999
San Carlos CA RCN 27,718 2000
San Mateo CA RCN 92,482 2001
Saugus MA RCN 26,078 2001
Somerville MA RCN 77,478 1997
Stoneham MA RCN 22,219 2000
Stoneham MA RCN 22,219 1997
Wakefield MA RCN 24,804 1997

Waltham MA RCN 59,226 1997
Watertown MA RCN 32,986 1997
Weymouth MA RCN 53,988 2001
Winchester MA RCN 20,810 2000
Woburn MA RCN 37,258 1997
Falls Church VA RCN Starpower 10,377 1999
Fredricksburg VA RCN Starpower 19,279 1999
Reinbeck IA Reinbeck Tel. & Util.
St. John the Baptist LA Reserve Telecom 43,044 2000
Archbold OH Ridgeville Tel 4,290 2001
Colby KS S&T Comm. 5,450 2003
Cave City KY S.Central Rural Tel. 1,880 2002
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 9
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Hiseville KY S.Central Rural Tel. 222 2002
Horse Cave KY S.Central Rural Tel. 2,252 2002
Concord CA Seren Innovations 121,780 2001
St. Cloud MN Seren Innovations 59,107 1998
Walnut Creek CA Seren Innovations 64,296 2002
Plaquemine LA Service One 7,064 1993
Newburgh IN Sigecom 3,088 2000
Spanish Fork UT Spanish Fork Com. Net 20,246 2001
Spencer IA Spencer Munic. Util. 11,317 2000
Arlington VA Starpower 189,453 2000
Montgomery Cnty MD Starpower 873,341 1999
Prince George's Cnty MD Starpower 801,515
Washington DC Starpower 572,059 2000
Sacramento CA Strategic Technologies 407,018 1996
Houston County GA SunTel 110,765

Sacramento CA Sure West 407,018 2003
Pierce County WA Tacoma Power 7,000,820 1998
St. Marys OH Telephone Service Co. 8,324 2003
Wapakoneta OH Telephone Service Co. 9,474 1999
Dothan AL Time Warner 57,737
Louisville KY TotalLink (Utilicom/Vectren)
Houston TX TV Max 1,953,631 1989
Cincinnati (N. Ohio) OH TWC 331,285 1999
Citrus County FL TWC 118,085
Leander TX TWC 7,596
Mount Airy NC TWC 8,484 1996
Orlando FL TWC 185,951
Pflugerville TX TWC 16,335
Poway CA TWC 48,044 1961
San Diego CA TWC 1,223,400 1961
Tampa FL TWC 303,447
Chula Vista CA Ultronics 173,556 1987
National City CA Ultronics 54,260 1987
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 10
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers
Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
Cobb County GA United Telesystems 607,751 2001
Park Rapids MN Unitel (W.Central Tel.) 3,276 1998
Salem IL US Sonet 7,909 2003
Centerville GA Watson Cable 4,278
Lake Wildwood GA Watson Cable 1991
Macon GA Watson Cable 97,255
Warner Robins GA Watson Cable 48,804
Berea OH WideOpenWest 18,970 1996
Berkley MI WideOpenWest 15,531 2001

Bexley OH WideOpenWest 13,203 1996
Brentwood MO WideOpenWest
Brook Park OH WideOpenWest 21,218 1998
Brooklyn OH WideOpenWest 11,586 1998
Canton MI WideOpenWest 76,366 1996
Centerline MI WideOpenWest 8,531 2001
Chicago IL WideOpenWest 2,896,016 1998
Chicago Heights IL WideOpenWest 32,776 1998
Clawson MI WideOpenWest 12,732 2001
Clinton MI WideOpenWest 95,648 2001
Clinton Twp OH WideOpenWest 1,337 1996
Colorado Springs CO WideOpenWest
Columbus OH WideOpenWest 711,470 1996
Crestwood IL WideOpenWest 11,251 1998
Creve Coeur MO WideOpenWest
Des Plaines IL WideOpenWest 58720 1998
Dublin OH WideOpenWest 31,392 1996
Eastpointe MI WideOpenWest 34,077 2001
Elgin IL WideOpenWest 94,487 1998
Fairview Park OH WideOpenWest 17,572 1997
Ferndale MI WideOpenWest 22,105 2001
Fraser MI WideOpenWest 15,297 2001
Gahanna OH WideOpenWest 32,636 1996
Garfield Heights OH WideOpenWest 30,734 1999
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 11
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began Not Orginial Owner Offers High-Speed Internet Offers Bundled Services (Voice, Video, Data) New Firm that purchased assets for small fraction of orginal costs
Glen Ellyn IL WideOpenWest 2,699 1998
Glenview IL WideOpenWest 41,847 1998
Grandview Heights OH WideOpenWest 6,695 1996

Hammond IN WideOpenWest 83,048 1998
Harrison Twp MI WideOpenWest 24,461 2001
Harvey IL WideOpenWest 30,000 1998
Hilliard OH WideOpenWest 24,230 1996
Jackson Twp. OH WideOpenWest 6,184 1996
Kirkwood MO WideOpenWest
Lakeville MN WideOpenWest
Macomb MI WideOpenWest 50,478
Madison Hts MI WideOpenWest 31,101 2001
Manchester MO WideOpenWest
Maple Heights OH WideOpenWest 26,156 1999
Maplewood MO WideOpenWest
Marble Cliff OH WideOpenWest 646 1996
Middleburg Heights OH WideOpenWest 15,542 1997
Mifflin Twp. OH WideOpenWest 705 1996
Minerva Park OH WideOpenWest 1,288 1996
Mount Clemens MI WideOpenWest 17,312 2001
Mount Prospect IL WideOpenWest 56,265 1998
Naperville IL WideOpenWest 128,358 1998
New Rome OH WideOpenWest 60 1996
North Olmsted OH WideOpenWest 34,113 1996
North Royalton OH WideOpenWest 28,648 1997
Northville MI WideOpenWest 6,459 1996
Oak Forest IL WideOpenWest 28,051 1998
Obetz OH WideOpenWest 3,977 1996
Orland Park IL WideOpenWest 51,077 1998
Palos Park IL WideOpenWest 4,689 1998
Palos Park IL WideOpenWest 4,689 1998
Perry Twp. OH WideOpenWest 1,195 1996
Plymouth MI WideOpenWest 9,022 1996
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 12
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began Not Orginial Owner Offers High-Speed Internet Offers Bundled Services (Voice, Video, Data) New Firm that purchased

assets for
small fraction
of orginal costs
Prospect Park IL WideOpenWest 17,081 1998
Riverlea OH WideOpenWest 499 1996
Robbins IL WideOpenWest 6,635 1998
Rochester MI WideOpenWest 10,467 2001
Rochester Hills MI WideOpenWest 68,825 2001
Royal Oak MI WideOpenWest 60,062 2001
Schaumburg IL WideOpenWest 75,386 1998
Shaker Heights OH WideOpenWest 29,405 1999
Sharon Twp. OH WideOpenWest 1996
South Holland IL WideOpenWest 22,147 1998
St. Ann MO WideOpenWest
St. Clair Shores MI WideOpenWest 63,096 2001
St. Louis MO WideOpenWest
St. Peters MO WideOpenWest
Sterling Hts. MI WideOpenWest 124,471 2001
Streamwood Village IL WideOpenWest 36,407 1998
Strongsville OH WideOpenWest 43,858 1998
Troy MI WideOpenWest 80,959 2001
University City MO WideOpenWest
Upper Arlington OH WideOpenWest 33,686 1996
Utica MI WideOpenWest 4,577 2001
Valley View OH WideOpenWest 2,179 2001
Vernon Hills IL WideOpenWest 20,120 1998
Warren MI WideOpenWest 138,247 2001
Westlake OH WideOpenWest 31,719 1997
Wheeling IL WideOpenWest 34,496 1998
Worthington OH WideOpenWest 14,125 1996
Minneapolis MN WideOpenWest/Everest
Richfield MN WideOpenWest/Everest
Austin TX WIN 656,562
Houston TX WIN 1,953,631
Phoenix AZ WIN 1,321,045
San Diego CA WIN 1,223,400
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 13
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER Population Began
Not Orginial
Owner
Offers High-
Speed
Internet
Offers

Bundled
Services
(Voice,
Video, Data)
New Firm that
purchased
assets for
small fraction
of orginal costs
San Francisco CA WIN 776,733
Las Vegas NV WIN 478,434
Seattle WA WIN/RCN 563,374
Texline TX XIT Comm. 7,237 2001
Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 14
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
20 cities RI ABI
La Crescent MN ACE Comm.
Camarillo CA Adelphia
Encinitas CA Adelphia
Malibu CA Adelphia
Oxnard CA Adelphia
Port Hueneme CA Adelphia
San Marcos CA Adelphia
Ventura CA Adelphia
Flora IL Advance Technologies
Alameda CA Alameda Power
Algona IA Algona Municipal Util.
Evanston WY All West Comm.
Alta IA Altatec
Arcadia CA Altrio
Monrovia CA Altrio
San Gabriel Valley CA Altrio
Sierra Madre CA Altrio
Ann Arbor MI American Broadband
E. Lansing MI American Broadband
Lansing MI American Broadband
St. Joseph Twp. MN Astound Broadband
Pultney OH Bellaire Cable TV
Bartlett TN BellSouth
South Dade County FL BellSouth
Winder GA BellSouth
Cherokee County GA BellSouth Entertainment
Cobb County GA BellSouth Entertainment
Duluth GA BellSouth Entertainment

Gwinnett County GA BellSouth Entertainment
Roswell GA BellSouth Entertainment
Woodstock GA BellSouth Entertainment
Chamblee GA BellSouth Interactive
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 15
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
DeKalb GA BellSouth Interactive
St. John's County FL BellSouth Interactive
Fallowfield PA Bentleyville Cable
Albany NY Berkshire Tel
Rapid City SD Black Hills GLA
Skagit County WA Black Rock Cable
Snohomish County WA Black Rock Cable
Whatcom County WA Black Rock Cable
Braintree MA Braintree Elec. Light
Elizabethtown/Hardi KY Brandenburg Telecom
Ocala FL BrightHouse

Abington VA Bristol Virginia Utilities
Glade Spring VA Bristol Virginia Utilities
Horton Twp. PA Brockway TV
Kane PA Brockway TV
Bryan OH Bryan Municipal Cable
Waterville OH Buckeye Cable
Maryland Hts MO Cable America
Mesa AZ Cable America
Sacramento CA Cable America
Cameron LA Cameron Tel.
Hackberry LA Cameron Tel.
Charlotte NC Carolina Broadband
Columbia SC Carolina Broadband
Durham NC Carolina Broadband
Greensboro NC Carolina Broadband
Greenville SC Carolina Broadband
Raleigh NC Carolina Broadband
Spartanburg SC Carolina Broadband
Winston Salem NC Carolina Broadband
Cedar Falls IA Cedar Falls Utilities
Clearview WV Centre TV
Ohio County WV Centre TV
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 16
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER

Warwood WV Centre TV
Urbana OH Champaign County Tel
Denver CO Champion Broadband
Lakewood CO Champion Broadband
Kanawha County WV Charter
Terre Haute IN Charter
Danville VA Chatmoss Tel.
Hayward MN Chequamegon Coop
Barron WI Chibardun Coop
Camron WI Chibardun Coop
Chetek WI Chibardun Coop
Unity Twp. PA Citizens Cable
Daleville AL City Cablevision
Bridgeport CT City of Bridgeport
Galesburg IL City of Galesburg
Lebanon OH City of Lebanon
Negaunee MI City of Negaunee
Clear Lake IA CL Tel
Lake County FL Clear Link
Bellmead TX ClearSource (Grande)
Lacy-Lakeview TX ClearSource (Grande)
Monroe LA CMA Cablevision
Coldwater MI Coldwater BPU
Columbus Grove OH Columbus Grove Tel.
Dothan AL Comcast
Monroe MI Comcast
Parkersburg WV Community Antenna
Ashtabula VA Conneaut Tel.
Painesville OH Conneaut Tel.
Big Lake MN Connections
Barrington RI Cox
Bristol RI Cox
Central FL Cox
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a

Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 17
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Central FL Cox
Claremore OK Cox
Spotsylvania VA Cox
Warren RI Cox
Arma KS Craw-Kan Tel. Coop
Franklin KS Craw-Kan Tel. Coop
State College PA D&E Comm.
Britton MI D&P Cable
Morenci OH D&P Cable
Darien GA Darien Cable
Middleburg NJ DeCom
Charlotte NC DeCom Corp
Blissfield MI Deerfield Farmers Tel
Delhi NY Delhi Tel.
Indianapolis IN Digital Access
Kansas City MO Digital Access
Milwaukee WI Digital Access
Nashville TN Digital Access
Austin TX Digital Union
Chippewa Twp. OH Doylestown Comm.
Doylestown Village OH Doylestown Comm.
Elberton GA Elberton Utilities
Willmar MN En-Tel
Eden Prairie MN Everest
Edina MN Everest
Hopkins MN Everest
Minnetonka MN Everest
Lenexa KS Everest Connections
Mission KS Everest Connections
Mission KS Everest Connections
St. Charles County MO Everest Connections
O'Fallon MO Everest/WideOpenWest
Fairburn GA Fairburn Utilities
Failed
Overbuild

Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 18
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Bridgeport CT FiberVision
Hartford CT FiberVision
New Haven CT FiberVision
Elk Grove CA Frontier
Laurens IA Future Net
Blackwell OK Get LLC
Dothan AL Graceba
Dothan AL Graceba
Alamo Heights TX Grande Comm.
Austin TX Grande Comm.
Balcones Heights TX Grande Comm.
Castle Hilles TX Grande Comm.
Cibolo TX Grande Comm.
Corpus Christi TX Grande Comm.
Houston TX Grande Comm.
Kirby TX Grande Comm.
Leon Valley TX Grande Comm.
Live Oak TX Grande Comm.

Midland TX Grande Comm.
Odessa TX Grande Comm.
Olmos Park TX Grande Comm.
San Antonio TX Grande Comm.
San Marcos TX Grande Comm.
Schetz TX Grande Comm.
Selma TX Grande Comm.
Terrell Hills TX Grande Comm.
Waco TX Grande Comm.
Windcrest TX Grande Comm.
Greenville TX Greenville Elec. Util.
Grundy Center IA Grundy Center Munic.
Savannah GA Hargray Comm.
Harlan IA Harlan Municipal Util.
Hartwell GA Hart Cable
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 19
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Winona MN Hiawatha Broadband
Hawarden IA HiTec Municipal
Mason County WA Hood Canal Cable
Shelton WA Hood Canal Cable
Chillicothe OH Horizon Telecom
Conway SC Horry Tel. Coop
Georgetown SC Horry Tel. Coop

Horry County SC Horry Tel. Coop
N. Myrtle Beach SC Horry Tel. Coop
Cecil PA HTC Comm.
Houston PA HTC Comm.
Mt. Pleasant PA HTC Comm.
Independence IA Indep. Light & Power
Kenmore NY Intertech Private Cable
Kenton-Boone City KY Kenton Boone City
Augusta GA Knology
Charleston SC Knology
Huntsville AL Knology
Knoxville TN Knology
Louisville KY Knology
Nashville (Mid. TN) TN Knology
Panama City FL Knology
Summerville/Dorches. SC Knology
Durand MI Lennon Tel. Co.
Lexington NC LexCom
Davidson County NC Lexicom Cable Ser.
Fallsburg KY Lycom
Little Rock AR Lyncstar
Sauk Centre MN Mainstreet Comm.
Milledgeville GA Mallard Cablevision
Naples FL Marco Island Cable
Cedar Rapids IA McLeod
Memphis TN Memphis Networx
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 20
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Shelby County TN Memphis Networx
Albany NY Midtel Cable TV
Anne Arundel Cnty MD Millennium
Social Circle GA Monroe Utilities
Walton County GA Monroe Utilities
Morristown NJ Morristown Util. System
Dodgeville WI Mount Horeb Telecom
Murray KY Murray Electric
Minster OH New Knoxville Tel.
Moulton OH New Knoxville Tel.
Bakersfield CA Newhouse
Coweta County GA Newman Utilities
Tyrone GA Newman Utilities
Iron Mountian MI Northside Cable TV
Norwood MA Norwood Elec. Light
New Ulm MN NuTel
Ft. Worth TX One Source
Osage IA Osage Municipal Util.
Livingston TN Overton County Cable
Auburn ME Oxford Networks
Lewiston ME Oxford Networks
Bemidji MN Paul Bunyan Tel
Lower Burrell PA PCOM Comm.
Pembroke WV Pembroke Tel
Houston TX Phonoscope
Colman SD Prairie Wave
Flandreau SD Prairie Wave
Gayville SD Prairie Wave
Luverne MN Prairie Wave
Marshall MN Prairie Wave
Pipestone MN Prairie Wave
Slayton MN Prairie Wave
Storm Lake IA Prairie Wave
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet

to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 21
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Tracy MN Prairie Wave
Worthington IA Prairie Wave
Yankton SD Prairie Wave
Albany NY Princetown Cable
Rupert ID Project Mutual Tel Coop
Provo UT Provo Cable/Provo
Poteau OK Quality Entertainment
Boulder CO Qwest
Chandler AZ Qwest
Douglas County CO Qwest
Gilbert AZ Qwest
Glendale AZ Qwest
Maricopa County AZ Qwest
Omaha NE Qwest
Paradise Valley AZ Qwest
Peoria AZ Qwest
Phoenix AZ Qwest
Scottsdale AZ Qwest
Eatonville WA Ranier Group
Pierce County WA Ranier Group
Arlington MA RCN

Bayonne NJ RCN
Beverly Hills CA RCN
Boston MA RCN
Brookline MA RCN
Burlingame CA RCN
Burlington MA RCN
Carson CA RCN
Chicago IL RCN
Daly City CA RCN
Dedham MA RCN
Delaware County PA RCN
Framingham MA RCN
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 22
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Gardena CA RCN
Hermosa Beach CA RCN
Hoboken NJ RCN
Lexington MA RCN
Marlborough MA RCN
Milton MA RCN
Natick MA RCN
Needham MA RCN
New York NY RCN

Newton MA RCN
Quincy MA RCN
Randolph MA RCN
Redwood City CA RCN
S. San Francisco CA RCN
San Carlos CA RCN
San Mateo CA RCN
Saugus MA RCN
Somerville MA RCN
Stoneham MA RCN
Stoneham MA RCN
Wakefield MA RCN
Waltham MA RCN
Watertown MA RCN
Weymouth MA RCN
Winchester MA RCN
Woburn MA RCN
Falls Church VA RCN Starpower
Fredricksburg VA RCN Starpower
Reinbeck IA Reinbeck Tel. & Util.
St. John the Baptist LA Reserve Telecom
Archbold OH Ridgeville Tel
Colby KS S&T Comm.
Cave City KY S.Central Rural Tel.
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities,

Oct 2003 - Jan 2004; public information and company data. 23
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Hiseville KY S.Central Rural Tel.
Horse Cave KY S.Central Rural Tel.
Concord CA Seren Innovations
St. Cloud MN Seren Innovations
Walnut Creek CA Seren Innovations
Plaquemine LA Service One
Newburgh IN Sigecom
Spanish Fork UT Spanish Fork Com. Net
Spencer IA Spencer Munic. Util.
Arlington VA Starpower
Montgomery Cnty MD Starpower
Prince George's Cnty MD Starpower
Washington DC Starpower
Sacramento CA Strategic Technologies
Houston County GA SunTel
Sacramento CA Sure West
Pierce County WA Tacoma Power
St. Marys OH Telephone Service Co.
Wapakoneta OH Telephone Service Co.
Dothan AL Time Warner
Louisville KY TotalLink (Utilicom/Vectren)
Houston TX TV Max
Cincinnati (N. Ohio) OH TWC
Citrus County FL TWC
Leander TX TWC
Mount Airy NC TWC
Orlando FL TWC
Pflugerville TX TWC
Poway CA TWC
San Diego CA TWC
Tampa FL TWC
Chula Vista CA Ultronics
National City CA Ultronics
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities

Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 24
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Cobb County GA United Telesystems
Park Rapids MN Unitel (W.Central Tel.)
Salem IL US Sonet
Centerville GA Watson Cable
Lake Wildwood GA Watson Cable
Macon GA Watson Cable
Warner Robins GA Watson Cable
Berea OH WideOpenWest
Berkley MI WideOpenWest
Bexley OH WideOpenWest
Brentwood MO WideOpenWest
Brook Park OH WideOpenWest
Brooklyn OH WideOpenWest
Canton MI WideOpenWest
Centerline MI WideOpenWest
Chicago IL WideOpenWest
Chicago Heights IL WideOpenWest
Clawson MI WideOpenWest
Clinton MI WideOpenWest
Clinton Twp OH WideOpenWest
Colorado Springs CO WideOpenWest

Columbus OH WideOpenWest
Crestwood IL WideOpenWest
Creve Coeur MO WideOpenWest
Des Plaines IL WideOpenWest
Dublin OH WideOpenWest
Eastpointe MI WideOpenWest
Elgin IL WideOpenWest
Fairview Park OH WideOpenWest
Ferndale MI WideOpenWest
Fraser MI WideOpenWest
Gahanna OH WideOpenWest
Garfield Heights OH WideOpenWest
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 25
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Glen Ellyn IL WideOpenWest
Glenview IL WideOpenWest
Grandview Heights OH WideOpenWest
Hammond IN WideOpenWest
Harrison Twp MI WideOpenWest
Harvey IL WideOpenWest
Hilliard OH WideOpenWest
Jackson Twp. OH WideOpenWest

Kirkwood MO WideOpenWest
Lakeville MN WideOpenWest
Macomb MI WideOpenWest
Madison Hts MI WideOpenWest
Manchester MO WideOpenWest
Maple Heights OH WideOpenWest
Maplewood MO WideOpenWest
Marble Cliff OH WideOpenWest
Middleburg Heights OH WideOpenWest
Mifflin Twp. OH WideOpenWest
Minerva Park OH WideOpenWest
Mount Clemens MI WideOpenWest
Mount Prospect IL WideOpenWest
Naperville IL WideOpenWest
New Rome OH WideOpenWest
North Olmsted OH WideOpenWest
North Royalton OH WideOpenWest
Northville MI WideOpenWest
Oak Forest IL WideOpenWest
Obetz OH WideOpenWest
Orland Park IL WideOpenWest
Palos Park IL WideOpenWest
Palos Park IL WideOpenWest
Perry Twp. OH WideOpenWest
Plymouth MI WideOpenWest
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 26
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Prospect Park IL WideOpenWest
Riverlea OH WideOpenWest
Robbins IL WideOpenWest
Rochester MI WideOpenWest
Rochester Hills MI WideOpenWest
Royal Oak MI WideOpenWest
Schaumburg IL WideOpenWest
Shaker Heights OH WideOpenWest
Sharon Twp. OH WideOpenWest
South Holland IL WideOpenWest
St. Ann MO WideOpenWest
St. Clair Shores MI WideOpenWest
St. Louis MO WideOpenWest
St. Peters MO WideOpenWest
Sterling Hts. MI WideOpenWest
Streamwood Village IL WideOpenWest
Strongsville OH WideOpenWest
Troy MI WideOpenWest
University City MO WideOpenWest
Upper Arlington OH WideOpenWest
Utica MI WideOpenWest
Valley View OH WideOpenWest
Vernon Hills IL WideOpenWest
Warren MI WideOpenWest
Westlake OH WideOpenWest
Wheeling IL WideOpenWest
Worthington OH WideOpenWest
Minneapolis MN WideOpenWest/Everest
Richfield MN WideOpenWest/Everest
Austin TX WIN
Houston TX WIN
Phoenix AZ WIN
San Diego CA WIN
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built

Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 27
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
San Francisco CA WIN
Las Vegas NV WIN
Seattle WA WIN/RCN
Texline TX XIT Comm.
Failed
Overbuild
Failing
Overbuild
Overbuilds
which have yet
to be built
Overbuild
targeted nonrebuilt
communities
Overbuild
is affiliated
with a
Utility
Overbuilder is
owned by Coop

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 28
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A

CITY ST CHALLENGER
20 cities RI ABI
La Crescent MN ACE Comm.
Camarillo CA Adelphia
Encinitas CA Adelphia
Malibu CA Adelphia
Oxnard CA Adelphia
Port Hueneme CA Adelphia
San Marcos CA Adelphia
Ventura CA Adelphia
Flora IL Advance Technologies
Alameda CA Alameda Power
Algona IA Algona Municipal Util.
Evanston WY All West Comm.
Alta IA Altatec
Arcadia CA Altrio
Monrovia CA Altrio
San Gabriel Valley CA Altrio
Sierra Madre CA Altrio
Ann Arbor MI American Broadband
E. Lansing MI American Broadband
Lansing MI American Broadband
St. Joseph Twp. MN Astound Broadband
Pultney OH Bellaire Cable TV
Bartlett TN BellSouth
South Dade County FL BellSouth
Winder GA BellSouth
Cherokee County GA BellSouth Entertainment
Cobb County GA BellSouth Entertainment
Duluth GA BellSouth Entertainment
Gwinnett County GA BellSouth Entertainment
Roswell GA BellSouth Entertainment
Woodstock GA BellSouth Entertainment
Chamblee GA BellSouth Interactive
Overbuild is
municipally
owned
Overbuild is
affiliated
with a
telecom
Overbuilder not
required to build
out the entire
franchise
Overbuilder

has different
franchse
requirements
Overbuilder
targeted high
density
communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 29
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
DeKalb GA BellSouth Interactive
St. John's County FL BellSouth Interactive
Fallowfield PA Bentleyville Cable
Albany NY Berkshire Tel
Rapid City SD Black Hills GLA
Skagit County WA Black Rock Cable
Snohomish County WA Black Rock Cable
Whatcom County WA Black Rock Cable
Braintree MA Braintree Elec. Light
Elizabethtown/Hardi KY Brandenburg Telecom
Ocala FL BrightHouse
Abington VA Bristol Virginia Utilities

Glade Spring VA Bristol Virginia Utilities
Horton Twp. PA Brockway TV
Kane PA Brockway TV
Bryan OH Bryan Municipal Cable
Waterville OH Buckeye Cable
Maryland Hts MO Cable America
Mesa AZ Cable America
Sacramento CA Cable America
Cameron LA Cameron Tel.
Hackberry LA Cameron Tel.
Charlotte NC Carolina Broadband
Columbia SC Carolina Broadband
Durham NC Carolina Broadband
Greensboro NC Carolina Broadband
Greenville SC Carolina Broadband
Raleigh NC Carolina Broadband
Spartanburg SC Carolina Broadband
Winston Salem NC Carolina Broadband
Cedar Falls IA Cedar Falls Utilities
Clearview WV Centre TV
Ohio County WV Centre TV
Overbuild is
municipally
owned
Overbuild is
affiliated
with a
telecom
Overbuilder not
required to build
out the entire
franchise
Overbuilder
has different
franchse
requirements
Overbuilder
targeted high
density
communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 30
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Warwood WV Centre TV
Urbana OH Champaign County Tel
Denver CO Champion Broadband
Lakewood CO Champion Broadband
Kanawha County WV Charter
Terre Haute IN Charter
Danville VA Chatmoss Tel.
Hayward MN Chequamegon Coop
Barron WI Chibardun Coop
Camron WI Chibardun Coop
Chetek WI Chibardun Coop
Unity Twp. PA Citizens Cable
Daleville AL City Cablevision
Bridgeport CT City of Bridgeport
Galesburg IL City of Galesburg
Lebanon OH City of Lebanon
Negaunee MI City of Negaunee
Clear Lake IA CL Tel
Lake County FL Clear Link
Bellmead TX ClearSource (Grande)
Lacy-Lakeview TX ClearSource (Grande)
Monroe LA CMA Cablevision
Coldwater MI Coldwater BPU
Columbus Grove OH Columbus Grove Tel.
Dothan AL Comcast
Monroe MI Comcast
Parkersburg WV Community Antenna
Ashtabula VA Conneaut Tel.
Painesville OH Conneaut Tel.
Big Lake MN Connections
Barrington RI Cox
Bristol RI Cox
Central FL Cox
Overbuild is
municipally

owned
Overbuild is
affiliated
with a
telecom
Overbuilder not
required to build
out the entire
franchise
Overbuilder
has different
franchse
requirements
Overbuilder
targeted high
density
communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 31
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Central FL Cox
Claremore OK Cox
Spotsylvania VA Cox
Warren RI Cox
Arma KS Craw-Kan Tel. Coop

Franklin KS Craw-Kan Tel. Coop
State College PA D&E Comm.
Britton MI D&P Cable
Morenci OH D&P Cable
Darien GA Darien Cable
Middleburg NJ DeCom
Charlotte NC DeCom Corp
Blissfield MI Deerfield Farmers Tel
Delhi NY Delhi Tel.
Indianapolis IN Digital Access
Kansas City MO Digital Access
Milwaukee WI Digital Access
Nashville TN Digital Access
Austin TX Digital Union
Chippewa Twp. OH Doylestown Comm.
Doylestown Village OH Doylestown Comm.
Elberton GA Elberton Utilities
Willmar MN En-Tel
Eden Prairie MN Everest
Edina MN Everest
Hopkins MN Everest
Minnetonka MN Everest
Lenexa KS Everest Connections
Mission KS Everest Connections
Mission KS Everest Connections
St. Charles County MO Everest Connections
O'Fallon MO Everest/WideOpenWest
Fairburn GA Fairburn Utilities
Overbuild is
municipally
owned
Overbuild is
affiliated
with a
telecom
Overbuilder not
required to build
out the entire
franchise
Overbuilder
has different
franchse
requirements
Overbuilder
targeted high
density

communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 32
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Bridgeport CT FiberVision
Hartford CT FiberVision
New Haven CT FiberVision
Elk Grove CA Frontier
Laurens IA Future Net
Blackwell OK Get LLC
Dothan AL Graceba
Dothan AL Graceba
Alamo Heights TX Grande Comm.
Austin TX Grande Comm.
Balcones Heights TX Grande Comm.
Castle Hilles TX Grande Comm.
Cibolo TX Grande Comm.
Corpus Christi TX Grande Comm.
Houston TX Grande Comm.
Kirby TX Grande Comm.
Leon Valley TX Grande Comm.
Live Oak TX Grande Comm.
Midland TX Grande Comm.
Odessa TX Grande Comm.
Olmos Park TX Grande Comm.
San Antonio TX Grande Comm.
San Marcos TX Grande Comm.
Schetz TX Grande Comm.
Selma TX Grande Comm.
Terrell Hills TX Grande Comm.
Waco TX Grande Comm.
Windcrest TX Grande Comm.

Greenville TX Greenville Elec. Util.
Grundy Center IA Grundy Center Munic.
Savannah GA Hargray Comm.
Harlan IA Harlan Municipal Util.
Hartwell GA Hart Cable
Overbuild is municipally owned
Overbuild is affiliated with a telecom
Overbuilder not required to build out the entire franchise
Overbuilder has different franchse requirements
Overbuilder targeted high density communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 33
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Winona MN Hiawatha Broadband
Hawarden IA HiTec Municipal
Mason County WA Hood Canal Cable
Shelton WA Hood Canal Cable

Chillicothe OH Horizon Telecom
Conway SC Horry Tel. Coop
Georgetown SC Horry Tel. Coop
Horry County SC Horry Tel. Coop
N. Myrtle Beach SC Horry Tel. Coop
Cecil PA HTC Comm.
Houston PA HTC Comm.
Mt. Pleasant PA HTC Comm.
Independence IA Indep. Light & Power
Kenmore NY Intertech Private Cable
Kenton-Boone City KY Kenton Boone City
Augusta GA Knology
Charleston SC Knology
Huntsville AL Knology
Knoxville TN Knology
Louisville KY Knology
Nashville (Mid. TN) TN Knology
Panama City FL Knology
Summerville/Dorches. SC Knology
Durand MI Lennon Tel. Co.
Lexington NC LexCom
Davidson County NC Lexicom Cable Ser.
Fallsburg KY Lycom
Little Rock AR Lyncstar
Sauk Centre MN Mainstreet Comm.
Milledgeville GA Mallard Cablevision
Naples FL Marco Island Cable
Cedar Rapids IA McLeod
Memphis TN Memphis Networx
Overbuild is
municipally
owned
Overbuild is
affiliated
with a
telecom
Overbuilder not
required to build
out the entire
franchise
Overbuilder
has different
franchse
requirements
Overbuilder
targeted high

density
communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 34
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Shelby County TN Memphis Networx
Albany NY Midtel Cable TV
Anne Arundel Cnty MD Millennium
Social Circle GA Monroe Utilities
Walton County GA Monroe Utilities
Morristown NJ Morristown Util. System
Dodgeville WI Mount Horeb Telecom
Murray KY Murray Electric
Minster OH New Knoxville Tel.
Moulton OH New Knoxville Tel.
Bakersfield CA Newhouse
Coweta County GA Newman Utilities
Tyrone GA Newman Utilities
Iron Mountian MI Northside Cable TV
Norwood MA Norwood Elec. Light
New Ulm MN NuTel
Ft. Worth TX One Source

Osage IA Osage Municipal Util.
Livingston TN Overton County Cable
Auburn ME Oxford Networks
Lewiston ME Oxford Networks
Bemidji MN Paul Bunyan Tel
Lower Burrell PA PCOM Comm.
Pembroke WV Pembroke Tel
Houston TX Phonoscope
Colman SD Prairie Wave
Flandreau SD Prairie Wave
Gayville SD Prairie Wave
Luverne MN Prairie Wave
Marshall MN Prairie Wave
Pipestone MN Prairie Wave
Slayton MN Prairie Wave
Storm Lake IA Prairie Wave
Overbuild is municipally owned
Overbuild is affiliated with a telecom
Overbuilder not required to build out the entire franchise
Overbuilder has different franchse requirements
Overbuilder targeted high density communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 35
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Tracy MN Prairie Wave
Worthington IA Prairie Wave
Yankton SD Prairie Wave
Albany NY Princetown Cable
Rupert ID Project Mutual Tel Coop
Provo UT Provo Cable/Provo
Poteau OK Quality Entertainment
Boulder CO Qwest
Chandler AZ Qwest
Douglas County CO Qwest
Gilbert AZ Qwest
Glendale AZ Qwest
Maricopa County AZ Qwest
Omaha NE Qwest
Paradise Valley AZ Qwest
Peoria AZ Qwest
Phoenix AZ Qwest
Scottsdale AZ Qwest
Eatonville WA Ranier Group
Pierce County WA Ranier Group
Arlington MA RCN
Bayonne NJ RCN
Beverly Hills CA RCN
Boston MA RCN
Brookline MA RCN
Burlingame CA RCN
Burlington MA RCN
Carson CA RCN
Chicago IL RCN
Daly City CA RCN
Dedham MA RCN
Delaware County PA RCN
Framingham MA RCN
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Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities,

Oct 2003 - Jan 2004; public information and company data. 36
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A

CITY	ST	CHALLENGER	Overbuild is municipally owned	Overbuild is affiliated with a telecom	Overbuilder not required to build out the entire
Gardena	CA	RCN			
Hermosa Beach	CA	RCN			
Hoboken	NJ	RCN			
Lexington	MA	RCN			
Marlborough	MA	RCN			
Milton	MA	RCN			
Natick	MA	RCN			
Needham	MA	RCN			
New York	NY	RCN			
Newton	MA	RCN			
Quincy	MA	RCN			
Randolph	MA	RCN			
Redwood City	CA	RCN			
S. San Francisco	CA	RCN			
San Carlos	CA	RCN			
San Mateo	CA	RCN			
Saugus	MA	RCN			
Somerville	MA	RCN			
Stoneham	MA	RCN			
Stoneham	MA	RCN			
Wakefield	MA	RCN			
Waltham	MA	RCN			
Watertown	MA	RCN			
Weymouth	MA	RCN			
Winchester	MA	RCN			
Woburn	MA	RCN			
Falls Church	VA	RCN Starpower			
Fredricksburg	VA	RCN Starpower			
Reinbeck	IA	Reinbeck Tel. & Util.			
St. John the Baptist	LA	Reserve Telecom			
Archbold	OH	Ridgeville Tel			
Colby	KS	S&T Comm.			
Cave City	KY	S.Central Rural Tel.			

franchise
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Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 37
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Hiseville KY S.Central Rural Tel.
Horse Cave KY S.Central Rural Tel.
Concord CA Seren Innovations
St. Cloud MN Seren Innovations
Walnut Creek CA Seren Innovations
Plaquemine LA Service One
Newburgh IN Sigecom
Spanish Fork UT Spanish Fork Com. Net
Spencer IA Spencer Munic. Util.
Arlington VA Starpower
Montgomery Cnty MD Starpower
Prince George's Cnty MD Starpower
Washington DC Starpower
Sacramento CA Strategic Technologies
Houston County GA SunTel
Sacramento CA Sure West
Pierce County WA Tacoma Power
St. Marys OH Telephone Service Co.
Wapakoneta OH Telephone Service Co.

Dothan AL Time Warner
Louisville KY TotalLink (Utilicom/Vectren)
Houston TX TV Max
Cincinnati (N. Ohio) OH TWC
Citrus County FL TWC
Leander TX TWC
Mount Airy NC TWC
Orlando FL TWC
Pflugerville TX TWC
Poway CA TWC
San Diego CA TWC
Tampa FL TWC
Chula Vista CA Ultronics
National City CA Ultronics
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Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 38
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Cobb County GA United Telesystems
Park Rapids MN Unitel (W.Central Tel.)
Salem IL US Sonet
Centerville GA Watson Cable
Lake Wildwood GA Watson Cable
Macon GA Watson Cable
Warner Robins GA Watson Cable
Berea OH WideOpenWest
Berkley MI WideOpenWest
Bexley OH WideOpenWest
Brentwood MO WideOpenWest
Brook Park OH WideOpenWest
Brooklyn OH WideOpenWest
Canton MI WideOpenWest
Centerline MI WideOpenWest
Chicago IL WideOpenWest
Chicago Heights IL WideOpenWest
Clawson MI WideOpenWest
Clinton MI WideOpenWest
Clinton Twp OH WideOpenWest
Colorado Springs CO WideOpenWest
Columbus OH WideOpenWest
Crestwood IL WideOpenWest
Creve Coeur MO WideOpenWest
Des Plaines IL WideOpenWest
Dublin OH WideOpenWest
Eastpointe MI WideOpenWest
Elgin IL WideOpenWest
Fairview Park OH WideOpenWest
Ferndale MI WideOpenWest
Fraser MI WideOpenWest
Gahanna OH WideOpenWest
Garfield Heights OH WideOpenWest

Overbuild is municipally owned
Overbuild is affiliated with a telecom
Overbuilder not required to build out the entire franchise
Overbuilder has different franchse requirements
Overbuilder targeted high density communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 39
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Glen Ellyn IL WideOpenWest
Glenview IL WideOpenWest
Grandview Heights OH WideOpenWest
Hammond IN WideOpenWest
Harrison Twp MI WideOpenWest
Harvey IL WideOpenWest

Hilliard OH WideOpenWest
Jackson Twp. OH WideOpenWest
Kirkwood MO WideOpenWest
Lakeville MN WideOpenWest
Macomb MI WideOpenWest
Madison Hts MI WideOpenWest
Manchester MO WideOpenWest
Maple Heights OH WideOpenWest
Maplewood MO WideOpenWest
Marble Cliff OH WideOpenWest
Middleburg Heights OH WideOpenWest
Mifflin Twp. OH WideOpenWest
Minerva Park OH WideOpenWest
Mount Clemens MI WideOpenWest
Mount Prospect IL WideOpenWest
Naperville IL WideOpenWest
New Rome OH WideOpenWest
North Olmsted OH WideOpenWest
North Royalton OH WideOpenWest
Northville MI WideOpenWest
Oak Forest IL WideOpenWest
Obetz OH WideOpenWest
Orland Park IL WideOpenWest
Palos Park IL WideOpenWest
Palos Park IL WideOpenWest
Perry Twp. OH WideOpenWest
Plymouth MI WideOpenWest
Overbuild is
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Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 40
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
Prospect Park IL WideOpenWest
Riverlea OH WideOpenWest
Robbins IL WideOpenWest
Rochester MI WideOpenWest
Rochester Hills MI WideOpenWest
Royal Oak MI WideOpenWest
Schaumburg IL WideOpenWest
Shaker Heights OH WideOpenWest
Sharon Twp. OH WideOpenWest
South Holland IL WideOpenWest
St. Ann MO WideOpenWest
St. Clair Shores MI WideOpenWest
St. Louis MO WideOpenWest
St. Peters MO WideOpenWest
Sterling Hts. MI WideOpenWest
Streamwood Village IL WideOpenWest
Strongsville OH WideOpenWest
Troy MI WideOpenWest
University City MO WideOpenWest
Upper Arlington OH WideOpenWest
Utica MI WideOpenWest
Valley View OH WideOpenWest
Vernon Hills IL WideOpenWest
Warren MI WideOpenWest
Westlake OH WideOpenWest
Wheeling IL WideOpenWest
Worthington OH WideOpenWest
Minneapolis MN WideOpenWest/Everest
Richfield MN WideOpenWest/Everest
Austin TX WIN
Houston TX WIN
Phoenix AZ WIN

San Diego CA WIN
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Overbuilder
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communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 41
Survey of Incumbent Cable Operators in Overbuild Communities Attachment A
CITY ST CHALLENGER
San Francisco CA WIN
Las Vegas NV WIN
Seattle WA WIN/RCN
Texline TX XIT Comm.
Overbuild is
municipally
owned
Overbuild is

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telecom
Overbuilder not
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Overbuilder
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franchse
requirements
Overbuilder
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density
communities

Source: Kagan World Media, Survey of Incumbent Cable Operators in Overbuild Communities, Oct 2003 - Jan 2004; public information and company data. 42

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B.A., WABASH COLLEGE, Economics, 1971.

PRESENT POSITIONS
MICHIGAN STATE UNIVERSITY, Department of Telecommunication.
James H. Quello Professor of Telecommunication Studies
MICHIGAN STATE UNIVERSITY, Quello Center for Telecommunication Management & Law.
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ACADEMIC AND PROFESSIONAL EXPERIENCE
Northwestern University, Department of Communication Studies, 1988-1999.
Associate Professor
Northwestern University, Program in Telecommunications Science, Management & Policy, 1990-
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ECONOMISTS INCORPORATED, 1983 - 1988.
Senior Economist
UNIVERSITY OF CALIFORNIA, Los Angeles, Department of Economics, 1979 - 1983.
Assistant Professor

RAND CORPORATION, 1981 - 1983.
Consultant
FELLOWSHIPS AND AWARDS
Van Zelst Research Professor of Communication, Northwestern University, 1996-1997
McGannon Award for Social and Ethical Relevance in Communication Policy Research for 1992.

Ameritech Research Fellow, Northwestern University, 1990 - 1991.
Ameritech Research Professorship, Northwestern University, 1989 - 1990.
National Science Foundation Fellowship, 1974 - 1977
PUBLICATIONS
Books
International Trade in Films and Television Programs, with Stephen E. Siwek, Ballinger, 1988.1
Video Economics, with Bruce M. Owen, Harvard University Press, 1992.2
Electronic Services Networks: A Business and Public Policy Challenge, co-edited with Margaret E.
Guerin-Calvert, Praeger Publishers, 1991.2
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no. 2. 1998.
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1 Senior author.
2 Equal joint author.

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Role of the US Constitution in Telecommunications Regulation in the United States," with Barbara
A. Cherry, Telecommunications Policy, vol. 23, no. 9 (1999).2
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Television Policy," with Karla Robinson, Journal of Media Economics, Vol. 8, No. 2 (1995).1
"Trade Liberalization and Policy for Media Industries," Canadian Journal of Communication, Vol.
20 (1995).
"Network Competition and the Provision of Universal Service," with John C. Panzar, Industrial and
Corporate Change, Vol. 4, No. 4 (1995).2
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part in Taking Sides: Clashing Views on Controversial Issues in Mass Media and Society, A. Alexander and J. Hanson (eds.), The Duskin Publishing Group, Inc., 1993.
"Selecting Advanced Television Standards for the United States: Implications for Trade in Programs and Motion Pictures," Journal of Broadcasting and Electronic Media, Spring 1991.
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"Conditional Expectations Communication and the Impact of Biotechnology," in S. Braman (ed.),
Biotechnology and Communication: The Meta-Technologies of Information, Lawrence Earlbaum Associates, Publishers, forthcoming.

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"Conceptualizing Universal Service Policy: Definitions, Context, Social Process, and Politics," with Barbara A. Cherry. In B. Cherry, S. Wildman and A. Hammond IV (eds.), Making Universal Service Policy: Enhancing the Process Through Multidisciplinary Evaluation, Lawrence Erlbaum Associates, Publishers, 1999.2

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Process Through Multidisciplinary Evaluation, Lawrence Erlbaum Associates, Publishers, 1999.2

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"Regulatory Standards: The Effect of Broadcast Signals on Cable Television," with James N. Dertouzos, in A Communications Cornucopia: Markle Foundation Essays on Information Policy, R. Noll and M. Price (eds.), Brookings Institution, 1998.2

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Bruce L. Egan, in the 1992 Annual Review of the Institute for Information Studies.2
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"Program Competition and Advertising Strategies in the Age of Digital Television," in The Future
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"Controlling Occupational Radiation: Alternatives to Regulation," with L.A. Sagan and R. Squitieri, presented at the International Symposium on Occupational Radiation Exposure in Nuclear
Fuel Cycle Facilities, Los Angeles, CA, June 18-22. Published in proceedings of same conference.2
"Economic Issues in Mass Communication Industries," with J. N. Rosse, J. N. Dertouzos and M. Robinson, presented at the FTC Symposium on Media Concentration, Washington, D.C., December
14-15, 1978. Published in the proceedings of same conference.3
"Vertical Integration in Broadcasting: A Study of Network Owned-and-Operated TV Stations," S.I.E. No. 97, Department of Economics, Stanford University, also published in the Proceedings of
the FTC Symposium on Media Concentration, Washington, D.C., December 14-15, 1978.
3 Joint author credited as a "with."

Other Publications and Working Papers
Review of The Telecommunications Act of 1996: The "Costs" of Manged Competition, by Dale E.
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Goals," with Barbara A. Cherry. Presented at the Twenty-Third Annual Telecommunications Policy Research Conference, Solomons, Maryland, October 2, 1995.
"Monopolistic Competition with Two-Part Tariffs," with Nicholas Economedes, August 1995.2
Review of Television in Europe, by Eli Noam, Journal of Economic Literature, December 1993.
"Competition in the Local Exchange: Appropriate Policies to Maintain Universal Service in Rural
Areas," with John C. Panzar, September 1993.
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"An Empirical Study of Broadcast Competition to Cable," with James N. Dertouzos, July 1990.2
"A Model of Supply and Demand for Information in a Competitive Market," October 1989.
"ATV Standards and Trade in Recorded Video Entertainment," paper presented at the Sixteenth Annual Telecommunications Policy Research Conference, October 30-November 1, 1988, Airlie, VA, revised April 1989.
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"Program Choice in a Broadband Environment," with Nancy Y. Lee, Working Paper, Center for Telecommunications and Information Studies, Columbia University, May 1989.1
"Trade in Films and Television Programming," with Stephen E. Siwek, presented at Trade in Services and Uruguay Round Negotiations, London, England, July 8, 1987, and Geneva, Switzerland, July 18, 1987.1
Review of Oligopoly Theory, by James Friedman, Journal of Economic Literature, March 1985.
"Recruiter Incentives: Effects on Performance," Rand Cooperation Working Draft, April 1983.
"Anticipated Preemption and the Determination of Initial Structure in a Growing Market," UCLA
Working Paper No. 267, September 1982.
"A Spatial Model of Entry Deterrence," S.I.E. No. 103, Department of Economics, Stanford University, November 1978, revised December 1980.

"Advertising, Consumer Learning and Competitive Strategies," Dissertation filed January 1980. Also published as S.I.E. paper No. 110 by Department of Economics, Stanford University, December 1979.
"A Study of Economic Issues in the Recording Industry," with James N. Dertouzos. 2 Study commissioned by the National Association of Broadcasters.

OTHER PROFESSIONAL ACTIVITIES

Co-convener, conference on telecommunications free trade zones, Northwestern University, March
30, 1992. Sponsored by the Annenberg Washington Program of Northwestern University and the

Illinois Commerce Commission.
Convener, half-day conference on electronic services networks at Northwestern University, April 9,
1990.
Co-convener, day-long Washington, D.C. conference on electronic services networks sponsored by
the Annenberg Washington Program, February 23, 1990.
Member, Editorial Board, Journal of Media Economics.
Member of Organizing Committee for the Nineteenth and Twentieth Annual Telecommunications
Policy Research Conference, Solomon Island, MD.
Member, Executive Committee, Consortium for Research in Telecommunications.
Organizer, 1996 Conference on Telecommunications Policy and Strategy of the Consortium for Research in Telecommunications Policy, Evanston, IL, May 10,11, 1996
Co-organizer, Telecommunication Policy and Law Symposium: "Preventing Flawed Communication Policies by addressing Constitutuinoal Principles", Washington, D.C., April 18, 2000.
Member, National Research Council Broadband Last Mile Committee, Fall 1999-present.

REFEREEING AND REVIEWING

American Economic Review, referee
Communication Law and Policy, referee
Communication Research, referee
Communication Theory, referee
Journal of Economics and Busines, referee
Information, Economics and Policy, referee
Information Systems Research, referee
International Journal of the Economics of Business, referee
International Journal of Industrial Organization, referee
International Journal on Media Management, Associated Reviewer and referee,
Journal of Broadcasting and Electronic Media, referee
Journal of Communication, book reviewer
Journal of Information, Economics and Policy, referee
Journal of International Economics, referee
Journal of Economic Literature, book reviewer

Journal of Industrial Economics, referee
Journal of Media Economics, editorial board, referee
National Science Foundation, proposal reviewer
The Rand Journal of Economics, referee