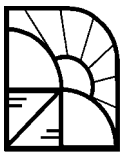

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PHOENIX CENTER POLICY BULLETIN NO. 13

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"IN DELAY THERE IS NO PLENTY":*
THE CONSUMER WELFARE COST OF FRANCHISE REFORM DELAY

"You may delay, but time will not, and lost time is never found again."

Benjamin Franklin, *Poor Richard's Almanac* (1748)

Abstract: Traditional phone carriers have announced ambitious multi-billion dollar plans to bulk up their networks with fiber in order to deliver a range of new services, including multi-channel video in competition with video incumbents. This competition promises to benefit consumers through lower prices, enhanced services and expanded choices from both incumbents and new entrants. Actual market entry, however, faces a significant barrier in the form of local franchise requirements that are delaying entry and could postpone competition for a substantial period of time. For that reason, public policymakers are being urged to speed the delivery of new services to consumers by reforming the franchise process.

This POLICY PAPER seeks to assist policymakers by measuring the impact of delayed entry on consumers. Drawing on existing data that shows cable prices are about 15 percent lower in the face of wireline video competition, we find that a one-year delay in entry because of franchise requirements would cost American consumers $8.2 billion. The toll on consumers cumulates as reform is deferred so that four years of delay would cost consumers almost $30 billion in unrecoverable losses. These estimated losses may be understated, as we assume a 15 percent price decline, which is consistent with GAO analysis. A recent survey by Bank of America found substantially greater price declines, on the order of 28-42 percent, as the result of new wireline video competition from traditional telecommunications carriers.

* William Shakespeare, *Twelfth Night*.

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I. Introduction

American consumers stand at the cusp of significant savings from increased competition for video program distribution. Incumbent local telephone companies like AT&T and Verizon, as well as smaller telephone companies in more-rural markets, have announced plans to upgrade their networks to fiber-rich, broadband platforms that will support a number of services, including multichannel video services. If successful, this broadband network deployment promises to deliver innovative services while saving American households billions of dollars in cable rates.

Because video competition and entry will increase consumer surplus, any factor that *delays* that entry will cause a significant loss of consumer welfare. We have shown in other research that the local franchising process raises the costs of entry and causes considerable delay in the construction of these new, multi-service broadband networks. As the FCC has noted, the local franchise process is perhaps "the most important policy relevant barrier to competitive entry in local cable markets."[1]

This POLICY BULLETIN estimates that delaying video entry by one year would cost American consumers $8.2 billion in consumer welfare from video services alone, and these losses increase with each year of delay. As discussed below, since we do not consider the consumer welfare of improvements and price reductions for jointly provided broadband and telephone services,[2] our estimate is conservative.

As we demonstrated in PHOENIX CENTER POLICY BULLETIN NO. 12,[3] there is little doubt that when consumers have a choice of multiple wireline providers of video services, prices drop rapidly and significantly. Study after study – from a variety of sources including the FCC, the

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1 *In re Implementation of Section 19 of the Cable Television Consumer Protection and Competition Act of 1992, Annual Assessment of the Status of Competition in the Market for Delivery of Video Programming*, 9 FCC Rcd 7442, Appendix H at ¶ 375 (1994) (hereinafter "Appendix H")(emphasis supplied).

2 PHOENIX CENTER PUBLIC POLICY PAPER NO. 23 discusses the important link between the availability of video services is crucial to the business case for constructing a broadband network in low-income areas. Delay in video entry will cause significant delay in broadband services in low-income areas, and the consumer welfare loss of that situation is likely to be significant. George S. Ford, Thomas M. Koutsky and Lawrence J. Spiwak, *The Impact of Video Service Regulation on the Construction of Broadband Networks to Low-Income Households*, PHOENIX CENTER POLICY PAPER NO. 23 (September 2005) (available at: http://www.phoenix-center.org/pcpp/PCPP23Final.pdf).

3 George S. Ford and Thomas M. Koutsky, *Franchise Fee Revenues After Video Competition: The "Competition Dividend" for Local Governments*, PHOENIX CENTER POLICY BULLETIN NO. 12 (November 2005) (available at: http://www.phoenix-center.org/PolicyBulletin/PCPB12Final.pdf).

Government Accountability Office,[4] academics,[5] and even the incumbent cable industry itself[6] – has shown that price decreases of 15% or more are common in markets with direct, head-to-head cable competition.[7] Recent colloquial evidence confirms this trend, and also shows that price-cutting by incumbents is often limited to areas where this wireline video competition is present, while prices remain high in adjacent areas.[8] A recent survey by Bank of America revealed that in areas where Verizon was rolling out its fiber-to-the-home FiOS service with a multichannel video offering, incumbent cable companies have responded with "not actively advertised" video service price cuts of 28-42% that are offered only in areas where FiOS video service is available.[9]

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[4] *See Direct Broadcast Satellite Subscribership Has Grown Rapidly, but Varies across Different Types of Markets, Report to the Subcommittee on Antitrust, Competition Policy and Consumer Rights,* Committee on the Judiciary, U.S. Senate, US Government Accountability Office, GAO-05-257 (2005).

[5] *See*, *e.g.*, J. Merline, *How to Get Better TV at Lower Prices*. CONSUMERS RESEARCH 10-17 (1990); S. Levin and J. Meisel, *Cable Television and Competition: Theory, Evidence, and Policy*, 15 TELECOMMUNICATIONS POLICY 519-528 (1991); T. W. Hazlett, *Competition vs. Franchise Monopoly in Cable Television,* 4 CONTEMPORARY POLICY ISSUES 80-97 (1986); W. H. Emmons and R. A. Prager, *The Effects of Market Structure and Ownership on Prices and Service offerings in the U.S. Cable Television Industry*, 28 RAND JOURNAL OF ECONOMICS 732-50 (1997); R. O. Beil, P. Dazzio, R. Ekelund, and J. Jackson, *Competition and the Pricing of Cable Television Services*, 5 JOURNAL OF REGULATORY ECONOMICS 401-415 (1993); R. Beard, G. Ford, R. C. Hill, and R. Saba, *Fragmented Duopoly: A Conceptual and Empirical Investigation*, 78 JOURNAL OF BUSINESS 2377-2396 (2005).

[6] *See* Kagan World Media, *Survey of Incumbent Cable Operators in Overbuild Communities* (January 2003), attached to Reply Comments of NCTA in FCC Docket No. 04-227 (August 8, 2004). In its comments before the FCC in Docket No. 04-227, the NCTA acknowledged that it had commissioned this Kagan study, but the NCTA downplayed the results, noting that while the Kagan survey found lower prices in areas with two wireline cable systems, "overbuilds were rare in any event . . . In the rare circumstances in which exist, incumbent cable operators cannot afford to ignore such wireline competition." NCTA Reply Comments in FCC Docket No. MB 04-27 (August 8, 2004) at 10.

[7] In our estimation methodology, we measure "price" as average revenue per customer.

[8] In Kutztown, Pennsylvania, the incumbent cable provider, Service Electric, in 2004 dropped its prices over 25% where it faced wireline competition from a new fiber network. But that price cut only applied where the new network was built – a newspaper reported that the price for the same service rose from $25.60/month to $36.05/month only three blocks away, where service from the new fiber entrant was unavailable. Jeanne Bonner, *Kutztown Cable Price War Pits Borough vs. Company*, THE (KUTZTOWN, PA) MORNING CALL (March 28, 2004) at AA1-AA2; *see also* Jerri Stroud, *Verizon Fires First Shot in battle with Charter for TV customers,*" ST. LOUIS POST-DISPATCH (Sept. 24, 2005) (noting break-out of price competition in Keller, Texas after telephone company video entry).

[9] Bank of America Equity Research, *Battle for the Bundle: Consumer Wireline Services Pricing,* (January 23, 2006) at 10 (surveying prices in Herndon, VA, Keller, TX, and Temple Terrace, FL). Bank of America states that "such pricing is not actively advertised. Without specifically calling and mentioning FiOS, a consumer would be unaware this pricing existed." Incumbent cable firms also offer discounts of 21-29% for "triple play" bundles of voice, video and broadband services in the three FiOS video areas.

Several bills pending before Congress would eliminate or reform this process and would take other pro-competitive actions that will foster video entry, such as needed improvements in program access rules. Unfortunately, given the various constituencies opposed to franchise reform, efforts to bog down the reform process are well underway.[10] As our analysis shows, policymakers must resist such procrastination efforts, because any such delay or failure to reform the local franchise process would cost American consumers billions of dollars – some $8.2 billion for one year alone. Moreover, this consumer welfare loss can never be recovered. New video entrants are already beginning to face pressure and concerns from investors regarding their ability to enter the video market quickly enough to succeed.[11] Policymakers need to keep the cost of delay – and the risk of failure – in mind in deciding whether video franchise reform should be a priority in the current debate over rewriting the Telecommunications Act of 1996.

II. Analytical Framework

There is no question that the local franchise process and other barriers delay video entry and raise costs. The local franchise process forces new entrants to negotiate contracts with thousands of local authorities, meet certain rigorous (and sometimes unreasonable) "build-out" requirements or construction schedules, and contribute support to institutional networks and governmental cable channels.[12] Moreover, the ability of vertically-integrated cable companies to lock-up access to key programming, such as regional sports networks, also stands in the way of competitive video entry.[13]

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[10] *See, e.g.,* Jonathan Make and Anne Veigle, *Franchise Rule Delay Seen,* COMMUNICATIONS DAILY (December 9, 2005).

[11] *See, e.g., S&P Cuts Verizon Credit Rating,* WALL STREET JOURNAL ONLINE NEWS ROUNDUP (January 13, 2006) at page A6.

[12] *See* George S. Ford, Thomas M. Koutsky and Lawrence J. Spiwak, *The Consumer Welfare Cost of Cable "Build-out" Rules,* PHOENIX CENTER POLICY PAPER NO. 22 (Addendum, July 2005) (available at: http://www.phoenix-center.org/pcpp/PCPP22Final.pdf) and to be reprinted as *The Economics of Build-out Rules in Cable Television,* HASTINGS COMMUNICATIONS AND ENTERTAINMENT (COMM/ENT) LAW JOURNAL (forthcoming Winter 2006). These requirements can sometimes border on the absurd. For example, Verizon has applied for a cable franchise in Sudbury, Massachusetts, a town of only 5504 households. After reviewing the franchise application for several months, it was recently reported that the town intends to ask Verizon to pay approximately $100,000 per year directly to the city – on top of franchise fee taxes – for the privilege of offering competitive video services. This amounts to a tithe of $45 per customer subscribing household customer each and every year (assuming symmetric duopoly with 80% aggregate penetration). *See* Stacey Hart, *Verizon Close to Cable Deal: Draft License Agreement Would Give Sudbury Extra $100K, Local Programs*, METROWEST DAILY NEWS (January 22, 2006).

[13] *See, e.g.,* James W. Olson and Lawrence J. Spiwak, *Can Short-Term Limits on Strategic Vertical Restraints Improve Long-Term Cable Industry Market Performance?* 13 CARDOZO ARTS & ENT. L.J. 283 (1995) (available at:

(Footnote Continued….)

We can estimate the losses in consumer surplus from a delay in enacting meaningful franchise reform by comparing the consumer surplus that one would reasonably expect if entry occurs now versus the consumer surplus one would expect if entry occurs at some point in the future. We can then apply a discount factor to these two flows of consumer surplus gains from price competition and the difference between the two flows will measure the harm to consumers from delay. This estimation method is illustrated in Figure 1.

Figure 1. Loss Calculation

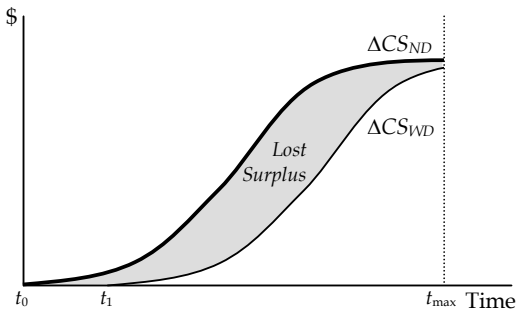

Figure 1 assumes that a new entrant is ready, willing and able to enter the market at t_0 (time zero), but construction occurs over time. For our purposes, if no franchising barrier existed, then the entrant would immediately begin construction of its network and providing services over time (the horizontal axis) as the network were constructed. Consumers would benefit from this entry through lower prices, and this benefit is measured on the vertical axis. The result is a change in consumer surplus S-curve – over time, consumer welfare increases the larger the network becomes.[14] Figure 1 demonstrates graphically what is intuitive – when a new

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http://www.phoenix-enter.org/library/prog_access.doc). Indeed, as noted in PHOENIX CENTER POLICY PAPER NO. 21, in some cases, blocking an entrant's access to programming is product differentiation through sabotage. Impeding access to existing programming does not increase the amount of programming available to consumers and thus has no effect on absolute quality. Rather, the restriction merely alters the relative qualities of the incumbent and entrant in favor of the incumbent. George S. Ford, Thomas M. Koutsky and Lawrence J. Spiwak, *Competition After Unbundling: Entry, Industry Structure and Convergence,* PHOENIX CENTER POLICY PAPER NO. 21 (July 2005) at n. 68 (available at: http://www.phoenix-center.org/pcpp/PCPP21Final.pdf).

[14] The S-Curve (or Gompertz curve) is the most common methodology to model the diffusion of new products and the growth of new firms (and other phenomena of interest). *See, e.g.*, J. P. Martino, TECHNOLOGICAL FORECASTING FOR DECISION MAKING, 2 ed. (1983); J.J. Van Duijin, THE LONG WAVE IN ECONOMIC LIFE (1983); D. Miller, THE ICARUS PARADOX (1990); H. B. Stewart, RECOLLECTING THE FUTURE (1989); R. Foster and S. Kaplan, CREATIVE DESTRUCTION (2001).

provider begins construction, the consumer welfare benefits from that entry (from lower prices and better services) increases as that network is built over time. A delay in entry pushes these consumer welfare benefits into the future and, given the time value of money, a delay in entry adversely affects consumer welfare.

Of course, the rate in which a network is built is affected by the franchising process. ΔCS_{ND} represents the change in consumer surplus that would apply if the entrant faced no delay (no delay, or "ND") in entering. ΔCS_{WD} (with delay, or "WD") is the change in consumer welfare that applies if entry is delayed until a particular period of time (t_1). We assume that once entry is open, entry occurs at the same rate in the "delay" as in the "no delay" scenario. In other words, ΔCS_{WD} is simply ΔCS_{ND} shifted to the right by the number of years of delay.[15] In the figure, we see that the two curves become close together at $t_{\max}$, since at $t_{\max}$ nearly every house is passed under either the delay or no delay scenarios. How close the two curves are depends on the length of delay and $t_{\max}$.

This temporal reduction in consumer surplus caused by the delay is the difference between the areas under the two curves, which is the lightly shaded region between ΔCS_{ND} and ΔCS_{WD}, labeled "Lost Surplus". Importantly, the lost surplus from delay is lost forever and cannot be "made up for" in the future. As founding father Benjamin Franklin observed: "You may delay, but time will not, and lost time is never found again."[16]

For example, if a household pays $120 more for cable service in 2007 than it would have paid if new wireline video entry had occurred that year instead of in 2008, that household will never get that $120 back, even if it enjoys lower prices in 2008 (and beyond). As a result, even if ΔCS_{ND} and ΔCS_{WD} approach convergence (which never happens), the area labeled "Lost Surplus" never disappears, and the size of that area represents the lost consumer surplus from delay.

In this BULLETIN, we attempt to compute the size of this area. In so doing, we assume a linear demand curve. As price falls due to increased competition, aggregate video penetration rises as inferred by an elasticity assumption. Consumer surplus is

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[15] Indeed, if today is a uniquely propitious time to begin competitive video deployment (say, because customers are choosing their "triple play" provider), then delay to market may yield an entry rate that progresses much more sluggishly from its take-off point than undelayed entry. Many claim that we are at just such a moment in time in the communications industry. An analysis of the impact delay would have on the prospects of success would require a separate analysis. In this BULLETIN, we conservatively focus solely on delay, with no effect on the rate of entry after the delay has ended.

[16] POOR RICHARD'S ALMANAC (1748).

$$\Delta CS_t = \Delta P\left(Q_{0,t} + \Delta Q_t / 2\right) \quad (1)$$

where ΔCS_t is the change in consumer surplus in period t, ΔP is the change in price, $Q_{0,t}$ is the quantity without entry in period t, and ΔQ_t is the change in quantity in period t resulting from competitive entry (computed using the assumed elasticity). Eq. (1) is the standard formulation of consumer surplus changes from a price changes with linear demand.[17] Note that all consumer surplus changes are based on price decreases alone. We do not take into account quality or service improvements, thereby leading to conservative estimates of the consumer welfare loss.

In computing Eq. (1), we assume that there is no uniform pricing constraint, an assumption consistent with federal law.[18] In other words, prices are lower in the segments where wireline video competition exists and, consequently, consumer surplus increases only for consumers in the overbuild segments of cable markets. This assumption is also consistent with the colloquial evidence cited above about incumbent cable company price responses to new entry.[19] Since lower prices only occur in the overbuild areas, we need to estimate the percentage of homes in these overbuild areas over time. The formula we use is:

$$h_t / H_t = Le^{-be^{kt}} \quad (2)$$

where h is homes-passed by the entrant, H is total homes, L is the terminal penetration rate, e is the base of natural logarithms, b and k are parameters, and t is time. Eq. (2) gives us the S-shaped curve. We select parameter values b = 4.3 and k = -0.27 since these values produce the familiar S-shape curve and because they imply a 33% build-out of the terminal penetration L by the fifth year and 75% by the tenth year (regardless of L). These values seem sensible, and we provide sensitivity analysis on these assumptions.[20]

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17 *See, e.g.*, R. B. Ekelund Jr. and R. D. Tollison, ECONOMICS 4th (1994), at Ch. 5.

18 Cable systems subject to effective competition in a geographic area specifically exempted from the uniform geographic rate requirement of Section 623(d) of the Communications Act and can lower rates only in areas where competition is present. 47 U.S. § 623(d).

19 *Supra* nn. 8 & 9.

20 Sanford C. Berstein & Co. telecom analyst Craig Moffett predicts "by 2010, close to 40% of U.S. households might be able to get TV service from their local phone companies." P. Grant, *Getting Your MTV From the Phone Company*, WALL STREET JOURNAL (September 21, 2005) at D1. Our assumption is only 33% of households, so we this parameterization is probably conservative. Further, the deployment schedule in Equation (2) is for the nation. Obviously, some companies will have a more aggressive rollout schedule.

Once we have the ability to calculate consumer surplus at any point in time, the aggregate consumer surplus represented by the "Lost Surplus" area is simply the present value of the flow of these consumer surpluses over the time horizon. Without a delay of entry, consumer surplus increases in the first year (t_0). With delay to t_1, the consumer surplus gains do not occur until year t_1. Specifically, the computations are

$$\Delta CS_{ND} = \int_{t_0}^{t_{\max}} \Delta CS(t) \cdot f(t) dt \tag{3}$$

$$\Delta CS_{WD} = \int_{t_1}^{t_{\max}} \Delta CS(t) \cdot f(t) dt \tag{4}$$

where $\Delta CS(t)$ is computed as in Eq. (1), $f(t)$ is the discount factor for time t, and $t_{\max}$ is identical for both. Lost consumer surplus is simply $\Delta CS_{WD} - \Delta CS_{ND}$.

III. Estimation Details

The framework above allows us to estimate the lost consumer surplus over virtually any time horizon with a variety of network deployment schedules or price competition. To make a particular estimate, we need to make a number of assumptions. We employ a 25-year horizon ($t_{\max}$) with a discount rate of 5.25% (used to compute f).[21] In t_0, which represents the present, we utilize current cable industry estimates of 110 million television households, of which 90% subscribe to multichannel video service.[22] We assume exogenous household growth (*e.g.*, population growth) of 1.7% annually.[23]

For the benchmark case, we assume that terrestrial overbuilding eventually occurs for 90% of television homes (at the end of the 25-year horizon). The own-price elasticity of the linear demand curve is 1.5 (in absolute value), which is at the lower end of published estimates of

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[21] The discount rate is the government recommended discount rate for social projects. *See* OMB Circular No. A-94, APPENDIX C (Revised January 2006) (http://www.whitehouse.gov/OMB/circulars/a094/a94_appx-c.html) (average of the 20 and 30 recommended rates). The rate is a nominal rate. If a real discount rate is used, the lost surplus would increase. We use the nominal rate so that our estimates are conservative. Sensitivity analysis indicates that every one percentage point reduction in the discount rate increase the consumer surplus loss by about 10%.

[22] Industry Overview, Statistics & Resources, www.ncta.com.

[23] Based on the average annual growth rate of U.S. Households from *USA Statistics in Brief, Households and Housing*, www.census.gov (years 2000 through 2004).

demand elasticities for cable service.[24] We make this assumption so that our estimates are conservative, since a larger elasticity of demand would increase the lost surplus. Most of the consumer surplus gains are from infra-marginal consumers (not new customers), however, so the elasticity assumption does not have a sizeable influence on the estimated surplus changes.[25] We assume average monthly revenue per household of $50, and a price cut from competition of 15%.[26]

IV. Results

With our framework and benchmark assumptions in hand, we can estimate the lost consumer surplus from a delay in franchise reform. We find that the present value of this consumer welfare loss is quite significant – $8.2 billion dollars for one year of delay, or nearly $75 dollars for each American household. Four years of delay would cost consumers nearly $30 billion, or about $270 dollars per household. Moreover, a rigorous sensitivity analysis suggests that our findings are robust to a wide range of assumptions. Policy makers must consider this significant cost of delay in deciding whether it should act on pro-entry video policies, such as franchise reform and program access policies.

To calculate this estimate, we need to make a number of "benchmark" assumptions. Table 1 summarizes the results of the estimation methodology under the benchmark assumptions. We have calculated the lost surplus for a number of different "delay" scenarios. To calculate these

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[24] Economic theory indicates the profit maximizing markup is $(p - c)/p = 1/e$, where e is the own-price elasticity of demand. In the cable industry, markups over programming costs, which represent the vast majority of the incremental cost of a subscriber, are around 0.65, implying an own-price elasticity of about 1.54. *See, e.g.,* Comcast 2004 Form 10-K (Video Revenue (12096), Programming Costs (3909), Price-Cost Margin = 0.67, Implied Elasticity 1.48) and Charter/Renaissance 2004 Form 10-K (Video Revenue (83934), Programming Costs (30874), Price-Cost Margin = 0.63, Implied Elasticity = 1.58). Programming costs are not the only incremental cost, however, so the 1.5 elasticity implied by these calculations is a lower bound.

[25] For example, in the benchmark simulation results in Table 1, *infra*, the one-year consumer welfare loss falls from $8.2 billion to $7.3 billion if the elasticity is set at zero.

[26] Price is based on reported average revenue per video subscriber by Comcast (2004 Form 10-K) and Charter/Renaissance (1004 Form 10-K). For the competitive price cut, *see Direct Broadcast Satellite Subscribership Has Grown Rapidly, but Varies across Different Types of Markets, Report to the Subcommittee on Antitrust, Competition Policy and Consumer Rights,* Committee on the Judiciary, U.S. Senate, US Government Accountability Office, GAO-05-257 (2005) ("GAO 2005 Study") at Appendix III, Table 3. The coefficient on a terrestrial overbuild is -0.1694, and the percentage change in price is measured as exp(-0.1694) – 1 = 15.6%.

estimates, we made a number of "benchmark" assumptions that we discuss in more detail below.[27]

Table 1. Consumer Surplus Reduction from Delayed Entry

Benchmark Assumptions

Years Delay	Consumer Surplus with No Delay	Consumer Surplus With Delay	Lost Surplus
1	$93.2B	$85.0B	$8.2B
2	$93.2B	$77.3B	$15.9B
3	$93.2B	$70.1B	$23.1B
4	$93.2B	$63.3B	$29.9B
5	$93.2B	$56.9B	$36.3B

As shown in Table 1, surplus losses are substantial. Just one year of delay reduces the present value of consumer surplus by $8.2 billion dollars, whereas three years of delay increases that loss to $23.1 billion. A five-year stall on video entry reduces consumer surplus by $36.3 billion.

Moreover, these losses are *unrecoverable*. If a household pays more for video service in 2007 because policymakers have delayed franchise reform for one year, then that money is *lost forever*, even if policymakers finally remove the barrier to entry and entry occurs in 2008.

Calculating these estimates requires us to make a number of assumptions regarding video penetration levels, price responses and new-entrant network construction. In the following paragraphs, we describe and analyze the sensitivity of these calculations to changes in these assumptions (for example, lower penetration levels, lower price responses, *etc*.).[28] This sensitivity analysis underscores and reinforces the robustness of our finding – under a number of scenarios, consumers will lose billions of dollars from even one year's delay in entry.

A. *Video and Satellite Penetration*

In our benchmark case, we assumed that 90% of households subscribed to video service, either cable or satellite. We based this assumption on statistics provided by the National Cable Television Association ("NCTA"). We note that this 90% includes both cable and satellite video

[27] We assume: (a) 110 million households; (b) 1.7% annual growth rate in households; (c) 90% video penetration rate; (d) for the overlap S-Curve, $L = 0.90$, $b = 4.3$ and $k = -0.27$; (e) $50 average revenue per month; (f) 15% price cut; (g) 1.5 demand elasticity; and (h) 5.25% discount rate.

[28] We do not provide sensitivity analysis for those assumptions based on census and industry statistics such as household growth, the discount rate, and so forth.

services, but there is good evidence that price competition between wireline and satellite video providers is not as intense as that between two wireline providers.[29] We can estimate a lower bound to the surplus gains by assuming that wireline providers do not compete at all with satellite providers. This assumption is an extreme and unrealistic one, but is useful in providing an absolute lower bound to the consumer surplus loss (as it relates to video penetration). To evaluate the consumer surplus effects under the assumption that terrestrial entry competes only with wireline video customers (and not satellite operators), we can adjust the 90% assumption down to 66.3% (essentially subtracting DBS subscriber levels from the "market"). Adjusting this video penetration assumption has approximately a 26% reducing effect on the estimates of lost surplus. Thus, there is about a 1.1% change in surplus loss for every percentage point change in the video penetration rate (26% reduction in loss for a 23.7 percentage point reduction in penetration). Of course, the assumption that wireline competition has no effect on satellite video industry is unrealistic and contradicts empirical evidence showing that competition among terrestrial video providers substantially reduces the market share of satellite providers.[30] Nevertheless, even if the impact of satellite services is ignored completely, the estimated surplus loss is significant – over $6 billion for one year's delay.

B. *Extent of New Network Construction (Overlap)*

We assume that new entrants will ultimately build to 90% of cable households – in other words, we estimate that 90% of homes have access to two terrestrial multichannel video operators. Of course, reaching that level of network construction by a new entrant takes time.[31] The percentage effect of changes in the overlap rate is approximately symmetric. Increasing overlap to 100% increases the surplus loss by about 10%, and decreasing overlap to 80% decreases surplus loss by about 10%. Thus, for every percentage point change in the overlap rate, consumer surplus loss changes by about 1% (in the same direction).

C. *Price Competition*

Reducing the competitive price cut following entry reduces surplus loss. We assumed a 15% price cut based on the (*ceteris paribus*) econometric estimates by the GAO in the most recent study of wireline video competition. There is every reason to expect similar, near-immediate price cuts from telephone company entry, as the 2005 GAO Study looked at 113 markets in

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29 GAO 2005 Study, *supra* 26.

30 *Id*.

31 Equation (2) can be used to determine the level of "overbuild overlap" for any year *t*.

which cable faces wireline video competition to arrive at its estimate of a 15% price cut.[32] This benchmark assumption may well be conservative – a January 2006 Bank of America survey of three areas where Verizon has rolled out FiOS video service revealed video service price cuts by incumbent cable operators Cox, Charter and BrightHouse of 42.8%, 28.6%, and 37.8%, respectively. By altering the assumed price cut, we find that a one-percentage point change in the assumed price cut changes the surplus loss from the benchmark case by about 7%.

D. *Rate of Network Construction*

Equation (2) determines the rate at the new network is constructed. The formula has two parameters, *b* and *k*, which we assumed had values of 4.3 and -0.27, respectively. These values produced the familiar S-shape curve with 33% build-out of the terminal penetration by the fifth year and 75% by the tenth year, which is more conservative than some analysts' predictions.[33]

Interestingly, if we slow the growth rate of deployment by the new entrant (*e.g.*, "flattening" the S-curve in Figure 1), then the loss in consumer welfare from delay does not decrease significantly. Instead of 33% in five years and 75% in ten years, if we assume that the new entrant builds out to 20% at five years and 66% at 10 years, the consumer welfare loss is only reduced by about 5%. Alternately, if the deployment rates are 50% in five years and 90% in 10 years, the consumer surplus loss increases by 9% relative to the benchmark assumptions.

This finding has important implications for policymakers. Within reasonable bounds, the extent of consumer welfare loss caused by a delay in franchise reform *is not significantly impacted by the rate of network construction that the new video entrant chooses to undertake*.[34] Consumers will lose from any delay in reform, even in areas in which telephone company entry is not on the immediate horizon.

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[32] Many of the econometric studies of overbuild competition were conducted during periods where uniform pricing rules were common. Thus, the competitive price cuts from these studies are tempered relative to a world without uniform pricing rules, since overlap of rival systems was rarely complete. As shown in Beard *et al.* (2005), *supra* n. 5, if system overlap is taken into account, then the price cuts for 100% overlaps (which would be equivalent to the absence of a uniform pricing rule) are much larger than 15 percent.

[33] P. Grant, *supra* n. 20.

[34] It is primarily discounting that creates the sensitivity to the growth assumption. Slower growth pushes gains out into the future. If the discount rate were 0, there would be very little difference in the estimated loss based on this variation in the growth assumption.

E. *Time Horizon*

We sum the discounted lost consumer surplus over 25 years. This long period is necessary to avoid, as much as possible, large differences between ΔCS_{ND} and ΔCS_{WD} in the final year of the simulation.[35] Note, however, that as the number of years increases where entry is delayed, the difference between the two measures of consumer surplus rises. As a result, *the longer entry is delayed by policy decisions, the longer it takes for consumers to enjoy the full benefits of competitive entry.* If the horizon is reduced to 20 years, then the surplus loss falls by about 5%. Alternately, if we increase the horizon to 30 years, then the surplus loss increases by about 4%.

V. Conclusion

There is no question that cable rates decrease considerably in locations where consumers enjoy direct, wireline video competition. Local telephone companies are beginning to invest significant capital into new, fiber-rich broadband networks capable of providing new video competition and lower rates. But there is a growing recognition that the local franchise process is, at best, delaying that new entry, and at worse, frustrating entry altogether. The delay costs consumers money – but how much?

In this BULLETIN, we estimate that the consumer welfare cost of delaying video competition is significant – $8.2 billion for one year of delay and $29.9 billion for four years of delay. This estimate is conservative because it does not take into account potential consumer welfare gains that would result from increased availability of broadband networks that more liberal video entry policies would promote. These consumer welfare losses comprise an important cost of the current regulatory framework, which permits local governments to dictate the pace of deployment of new, next-generation interstate broadband networks.

The rewrite of the Telecommunications Act of 1996 involves a number of complicated policy issues that might lead to calls for further consideration or delay. But policymakers considering video franchise reform need to understand the impact that delayed reform will have on their constituents. Every day of delay is another day of higher cable rates. In making decisions about whether video franchise reform should be a priority, policymakers need to take into account that cost of delay.

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[35] With large differences at the end of the time horizon, computing a terminal value is an appropriate remedy. We do not compute a terminal value, so our estimates are conservative in this regard.