ATTACHMENT 2

DECLARATION OF ROBERT W. CRANDALL AND HAL J. SINGER

REDACTED – FOR PUBLIC INSPECTION

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

In the Matter of	)	
	)	
Verizon Communications Inc. and	)	
MCI, Inc.	)	WC Docket No. 05-75
Applications for Approval of	)	
Transfer of Control	)	

DECLARATION OF ROBERT W. CRANDALL AND HAL J. SINGER

INTRODUCTION AND SUMMARY OF CONCLUSIONS

1. My name is Robert W. Crandall. I am the chairman of Criterion Economics and Senior Fellow in Economic Studies at the Brookings Institution in Washington.

2. My name is Hal J. Singer. I am co-founder and President of Criterion Economics.

3. We file this declaration in our individual capacities and not on behalf of the Brookings Institution, which does not take institutional positions with respect to specific legislation, litigation, or regulatory proceedings. Our curriculum vitas are provided in Exhibits 1 & 2.

4. We have been asked to analyze the competitive effects of the proposed transaction between Verizon and MCI in the relevant antitrust product markets. Among its many services, MCI has principally offered local and long-distance services to mass-market customers, and voice and data service to large enterprise and medium-sized business customers. As we document below, however, due to a variety of marketplace, technological, and regulatory developments, MCI has become a far less active participant in the provision of local and long-distance voice and data services to mass-market customers.

5. The proposed transaction between Verizon and MCI will not have adverse competitive effects in either the provision of voice and data services for large enterprise and medium-sized business customers or the provision of voice and data services for mass-market customers. The communications business has undergone, and is rapidly continuing to undergo, fundamental changes. While it may have once made sense to make distinctions between categories such as local and long distance and voice and data, those distinctions are disappearing. Today, numerous firms using different technologies are competing with each other in the

communications industry. They include not only wireline telephone companies, but also cable companies, wireless carriers, Voice over Internet Protocol (VoIP) providers, e-mail and instant messaging providers, and other technology companies. In many cases, competitors now offer integrated service packages; in other cases, they offer individual services.

6. In view of these developments, a properly defined product market for mass-market customers is not limited to wireline telephony, let alone more discrete segments such as local and long distance. Instead, cable switched telephony and VoIP offerings are part of the same product market as wireline voice service. In addition, wireless services have become a replacement for traditional landline service, particularly for long distance. A growing number of consumers are abandoning traditional wireline services completely and using wireless technology instead. And services such as VoIP, e-mail, and instant messaging also are displacing increasing amounts of wireline voice traffic. As we explain further below, even though these products are not all perfectly fungible for all consumers, a sufficient number of mass-market customers perceive these to be viable alternatives such that they constrain the pricing of one another. Accordingly, a proper analysis of competitive harms with respect to mass-market customers must account for the availability of these competitive alternatives, which will be unaffected by this transaction.

7. This transaction also will not harm competition for telecommunications services delivered to large enterprise and medium-sized business customers. This business is highly competitive and decentralized, involving traditional carriers, carriers using different platforms (such as wireless and Internet), and other entities such as system integrators. Verizon had less than 10 percent of total enterprise voice and data revenues as of the end of 2003, and even less

for Fortune 1000 firms. Small (and declining) margins combined with low levels of concentration in the enterprise market further show that the market is highly competitive.

8. We conclude that the proposed transaction between Verizon and MCI will not have significant price or output effects in either the mass-market for voice and data services or the large enterprise and medium-sized business market for voice and data services.

I. THE PROPOSED TRANSACTION WOULD NOT ADVERSELY AFFECT COMPETITION IN THE MASS MARKET

9. Mass-market customers are increasingly using multiple platforms to communicate. Wireless phones, phones operated over cable systems, VoIP applications, email and instant messaging, along with devices such as Blackberries provide users anytime-anywhere access to connect with each other for business or personal use. While some of these devices are better replacements for wireline telephones than others, they all should be considered part of the mass market for voice services. The key question is whether enough consumers regard the new products as alternatives such that they constrain the pricing of the traditional mass-market voice product. As we discuss below, it is clear that consumers increasingly view wireless, cable telephony, and VoIP as viable alternatives to wireline service, and that applications such as e-mail and instant messaging also displace significant amounts of wireline traffic. Those alternatives therefore all have a price constraining effect on wireline service. Indeed, the February 2005 *Economic Report of the President* acknowledges these powerful trends:

> Over the past two decades, however, the wireline (land line) telephone monopoly has yielded to encroaching competition from the entry of alternative suppliers of long-distance service in the 1980s, the explosive growth in mobile wireless telephone service over the past decade, and the recent introduction of voice communications over the

> Internet. Such proliferating competition has posed challenges to the economic regulation of telephone services.[1]

The confluence of these events has forever altered the environment in which Verizon and MCI compete. In the following sections, we demonstrate that mass-market customers perceive wireless, cable telephony, and VoIP as viable alternatives to the ILECs' voice services.

A. Wireless Telephony Is a Viable Alternative for a Large Share of Mass-Market Customers

10. The wireless revolution rapidly accelerated with the FCC's spectrum auctions in the mid-1990s, and continues to influence our daily professional and personal routines with the introduction of new devices such as Blackberry email devices and wireless picture phones.[2] Competition among several nationwide service providers has resulted in a sharp decline in wireless prices and a rapid increase in wireless minutes since 1999. The migration toward wireless telephony is occurring most rapidly among the college generation, with nine of 10 incoming students owning a cell phone, compared to one in three in 2000.[3] But the shift to wireless for long-distance and local calling is universal.

1. The Decline in Wireless Average Revenue Per Minute Compared to Local and Long Distance Rates

11. A common indicator of wireless pricing is average revenue per minute (ARPM). ARPM is determined by dividing average revenue per unit (ARPU) by minutes of use (MOU). Figure 1 shows the ARPU and ARPM earned by wireless carriers since 1987.

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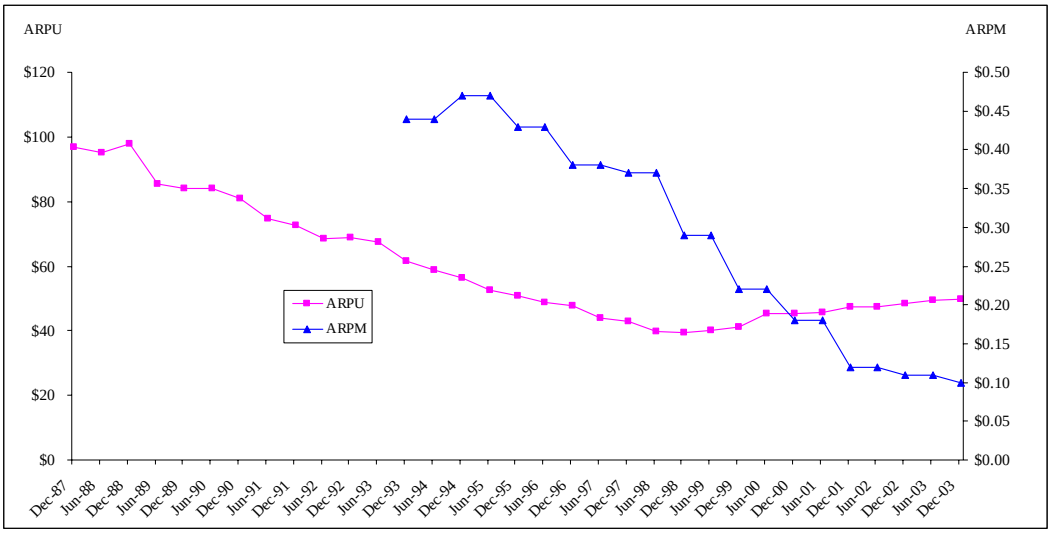
1. ECONOMIC REPORT OF THE PRESIDENT, Transmitted to the Congress February 2005 together with The Annual Report of the Council of Economic Advisers 146 (U.S. Government Printing Office 2005).
2. *See, e.g.*, Yuki Noguchi, *No Escape from E-Mail*, WASH. POST, Sept. 29, 2004, at A8.
3. Susan Kinzie, *Colleges' Land Lines Nearing Silent End—Cells Force Review Of Dorm Options,* WASH. POST, Feb. 12, 2005, at A1 (citing Student Monitor survey).

FIGURE 1: AVERAGE REVENUE PER UNIT AND AVERAGE REVENUE PER MINUTE (1987-2003)



Source: *FCC's Ninth CMRS Report* at Tables 1, 9.

As Figure 1 shows, ARPM decreased rapidly from $0.37 per minute in 1997 to a low of $0.10 per minute in 2003—a decrease of nearly 73 percent in five years.

2. The Increase in Wireless Minutes Since 1999

12. The decrease in wireless prices has induced a large increase in the quantity of wireless minutes consumed. Table 1 shows the number of billed wireless minutes consumed by year since 1993.

TABLE 1: BILLED WIRELESS MINUTES (1993-2003)

Year (mid-year)	*(1) Average Subscribers (millions)*	*(2) Average Minutes per Subscriber per Month*[2]	*Total Wireless Minutes (million/yr.)**
1993	13.52	140	22,714
1994	20.07	119	28,660
1995	28.95	119	41,341
1996	34.09	125	51,135
1997	49.68	117	69,751
1998	62.26	136	101,608
1999	77.63	185	172,339
2000	97.76	255	299,146
2001	118.93	380	542,321
2002	134.57	427	689,537
2003	148.07	507	900,858

Sources: (1) CTIA's Semi-Annual Wireless Industry Survey; (2) FCC's Ninth Annual CMRS Report.
Note: * Equal to 12 times the product of average subscribers and average minutes per subscriber per month.

As Table 1 shows, by 2003, wireless minutes of use had risen to 900.8 billion, an increase of 30.6 percent from 2002 and more than 200 percent since 2000. Average minutes of use per subscriber have doubled since 2000. Where are all these minutes coming from?

13. Many of these wireless minutes come at the expense of wireline minutes. Wireless-wireline displacement can occur in two ways. First, calls that otherwise would be placed on a wireline network are being placed on a wireless network, particularly because they can often be more affordable on a wireless network. Below, we provide some original analysis on the migration of long distance traffic in particular from the fixed to the wireless network. Second, wireless phones are displacing primary or secondary landline connections or both.[4]

4. The FCC itself has chronicled the displacement of wireline services by wireless services in each of its annual *CMRS Competition Reports*. *See, e.g.*, *Ninth CMRS Report* at 63; *Eighth CMRS Report* at 49; *Seventh CMRS Report* at 33; *Sixth CMRS Report* at 32.

3. The Displacement of Traffic from Wireline to Wireless

14. The first route for wireless service to displace landline service is by changing the way consumers make calls. An increasing amount of both local and long distance traffic is migrating from wireline to wireless networks in response to the offering of national calling plans under which consumers pay a monthly fee for a bucket of minutes.[5] This diversion of traffic from wireline to wireless networks is particularly evident in the context of long distance minutes because such minutes are specifically tracked for both wireline and wireless providers. As we show below, by 2002, the actual number of long distance switched access minutes was more than *400 billion* below what would be expected based on previous trends and other relevant variables. At the same time, the number of interstate wireless minutes grew dramatically. A significant portion of the unexpected gap in long distance wireline minutes was lost to wireless. Not surprisingly, as is evident from the development of new pricing plans for wireline service similar

5. *See*, *e.g.*, C. Cosentino, Standard & Poor's, FCC Data Supports Standard & Poor's View of Local Telephony Competition, Feb. 4, 2005, at 1-2 ("There also appears to be some traction developing for the wireless substitution model. According to FCC data, wireless subscribers grew by 10 million during the first half of 2004 and totaled 167 million as of mid-2004, up about 7% from the year-end 2003 level. Given that incumbent local exchange carrier (ILEC) lines declined by about 5.2 million during this time frame and CLEC lines only increased by 2.2 million, about 3.0 million lines (30% of wireless subscriber additions for the first six months of 2004) may actually represent users that have completely severed the wireline cord. Extrapolating from these statistics, wireless substitution could represent at least 5 million of the wireless subscriber additions for 2005, assuming 10% growth in wireless penetration."); M. Crakes, et al., Merrill Lynch, AT&T vs. MCI: Moving to Overweight on MCI '09s; Still Favor AT&T Overall, Jan. 19, 2005, at 2 ("Competition from wireless substitution and other technologies has reduced AT&T's average long-distance subscriber's usage by 60% in just nine years."); S. Flannery, et al., Morgan Stanley, MCI, Inc.: The Long Road Back, July 23, 2004, at 7 ("Substitution from wireless and VoIP increasingly impact long distance call volumes. As wireless minutes of use grow, we see wireline long distance minutes decline, reflecting bucket price plans offered to wireless customers compared to distance- and usage-based charges in long distance."); S. Flannery, et al., Morgan Stanley, MCI, Inc.: The Long Road Back, July 23, 2004, at 7 ("While VoIP still has relatively low penetration, to the extent that mainstream long distance customers adopt it, VoIP minutes will likely become a direct substitute for higher price circuit-switched long distance, further pressuring industry call volumes.").

to the national calling plans described above for wireless, this displacement of minutes from wireline to wireless networks constrains the prices for wireline voice service.

15. Until the last five years—about the time that wireless carriers began introducing national calling plans—total long distance minutes carried over the nation's fixed-wireline network grew rapidly as long distance rates fell after 1984. The best measure of this growth is the increase in interstate switched access minutes reported by the National Exchange Carriers Association to the FCC.[6] Total interstate switched access minutes grew at an average annual rate of 8.0 percent between 1985 and 1999, propelled by a 9.8 percent annual decline in the average inflation-adjusted revenue per minute for interstate calls. Despite the fact that interstate rates continued to decline after 1999, interstate switched access minute growth slowed and then began to decline rapidly after 2000, as seen in Figure 2. Between 2000 and 2003, interstate switched access minutes declined by more than 8 percent per year.

16. This decline in interstate switched access minutes has resulted in a total number of minutes well below what one would forecast based on changes in real interstate revenues per minute, real gross domestic product, and a time trend that captures a steady shift of originating access to "special access."[7] Such a forecast tracks actual switched access minutes very closely between 1985 and 1996, as Figure 2 shows.

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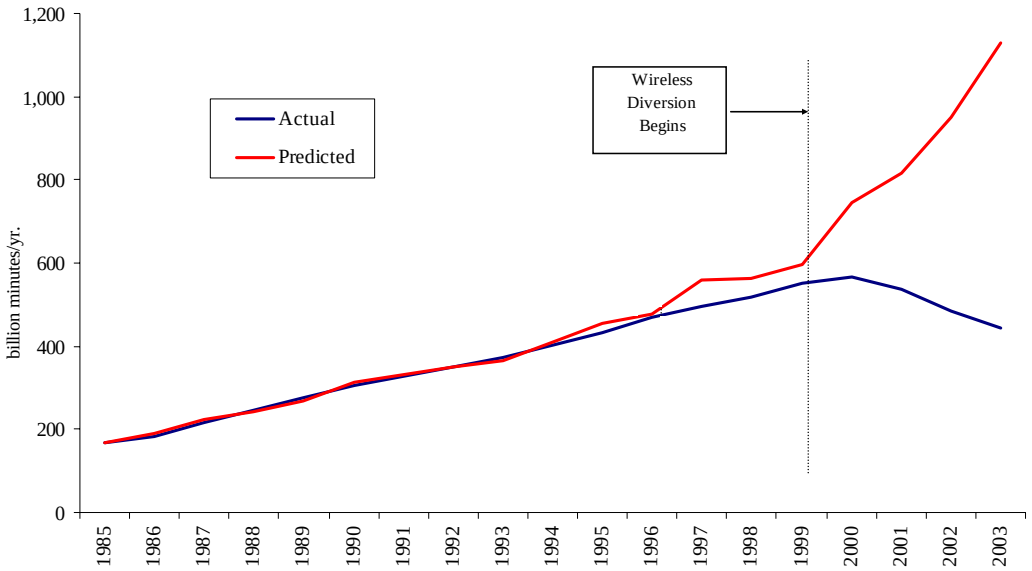
6. These data are reported by the FCC's Industry Analysis Division in *Trends in Telephone Service*, May 2004, Table 10-1.

7. The equation used to predict switched access minutes is log linear. Revenue per minute is from the FCC's Industry Analysis division and it is deflated by the overall Consumer Price Index for Urban Consumers. Real GDP is obtained from the Bureau of Economic Analysis. The coefficient of the deflated revenue per minute is -0.75; the coefficient on real GDP is 1.0, and the time trend has a coefficient of -0.1.

FIGURE 2: ACTUAL VERSUS PREDICTED TOTAL INTERSTATE SWITCHED ACCESS MINUTES



A large gap opens up after 1999, when the growth in switched access minutes begins to fall and the predicted number soars due to sharply declining interstate rates. By 2002, the gap is almost 50 percent (465.3 billion minutes), and by 2003—using an estimate for the average revenue per minute[8]—the gap grows to 60 percent, or 50 percent more than the gap that existed between 1997 and 1999.

17. During the same period that the number of long distance wireline minutes was falling well below expectations, the number of wireless minutes grew rapidly. Although, as Table 1 demonstrates, there was no growth in the average number of minutes used by wireless subscribers between 1993 and 1998, beginning in 1999, the average minutes per wireless subscriber began to rise very rapidly. Had CTIA's estimated 134.57 million subscribers in 2002

8. The FCC's Industry Analysis Division has not yet published its estimate for average revenue per interstate conversation minute for 2003.

used their cell phones at 1998 levels, when wireless long-distance calls were much more expensive, they would have amassed 469.9 billion fewer minutes (equal to 689.5 billion minutes less 134.57 million subscribers x 136 minutes per month x 12).

18. A very large share of this increase in wireless minutes is undoubtedly attributable to long distance calls. According to the FCC's *Trends Report*, the number of interstate minutes on wireless networks increased from 16 percent to 26 percent of the total from 2000 through 2002.[9] Using the total wireless minutes of use from Table 1, the number of interstate minutes on wireless networks increased from 47.8 billion in 2000 to 179.3 billion in 2002. Hence, a significant share of the unexplained decrease in interstate switched access minutes over fixed networks was lost to wireless networks. The remainder of the unexplained decrease in interstate minutes over the fixed network is likely attributable to other factors, such as email, instant messaging, and Internet-based long distance calling.[10] According to various research firms, U.S. users dispatch approximately 9 billion emails per day.[11] If only 5 percent of these replace a 90-second voice call, this data traffic has displaced more than 10 percent of the voice traffic that

9. FCC Trends in Telephone Service, May 2004, at tbl. 11.4 (citing survey data from TNS Telecoms ReQuest Market Monitor).

10. *See*, *e.g.*, R. Talbot, *et al.*, RBC Capital Markets, *Telecommunications Services: 2003 in Review and 2004 Preview- North* America, Jan. 12, 2004, at 2 ("Accelerating substitution of Wireline services by Email, Instant messaging, high speed internet (DSL and Cable Modem) and Wireless but partially offset by increased demand for DSL connections and wireless.").

11. *See* K. Thies, *E-mails and Records Management in the Legal Environment*, LEGAL TECH NEWSLETTER, Nov. 14, 2003 ("Almost 9 billion e-mails are sent every day in the United States."); *see also* B. Silverman, *IM Viruses Are Latest Threat to the Networks*, NEW YORK POST, June 13, 2004 ("Almost 80 million Americans use instant-messaging services at home or work, according to an April 2004 Nielsen/NetRatings survey."); E. Stein, *Will IM Pay?*, CFO MAGAZINE, May 2004 ("Radicati Group, a technology market research specialist, reckons there are already 60 million business IM accounts. IM could have as many as 182 million business users by 2007, claims Ferris Research.").

would otherwise have been handled by the incumbents' networks.[12] Competition for these marginal minutes constrains the pricing for *all* wireline long-distance minutes, including inframarginal minutes that are not competed away to alternative platforms.

4. Primary and Secondary Line Displacement

19. Wireless-wireline displacement is also occurring at the expense of primary and particularly secondary fixed access lines. In its *Seventh Annual CMRS Report*, the FCC reported that by the end of 2001, wireless connection "had displaced 10 million access lines, primarily by consumers choosing wireless over installing additional access lines."[13] In its *Sixth Annual CRMS Report*, the FCC reported that in January 2000 12 percent of respondents to an IDC survey said they purchased a wireless phone instead of installing an additional wireline phone.[14]

20. In its annual *Trends in Telephone Service* report, the FCC compares the number of residential local loops with the number of households with telephone service.[15] The difference between these series is considered a proxy for the number of additional—that is, second, third, or fourth—residential access lines. Figure 3 plots the decrease in switched access lines over time (both total residential lines and additional residential lines) against the increase in wireless subscriptions.

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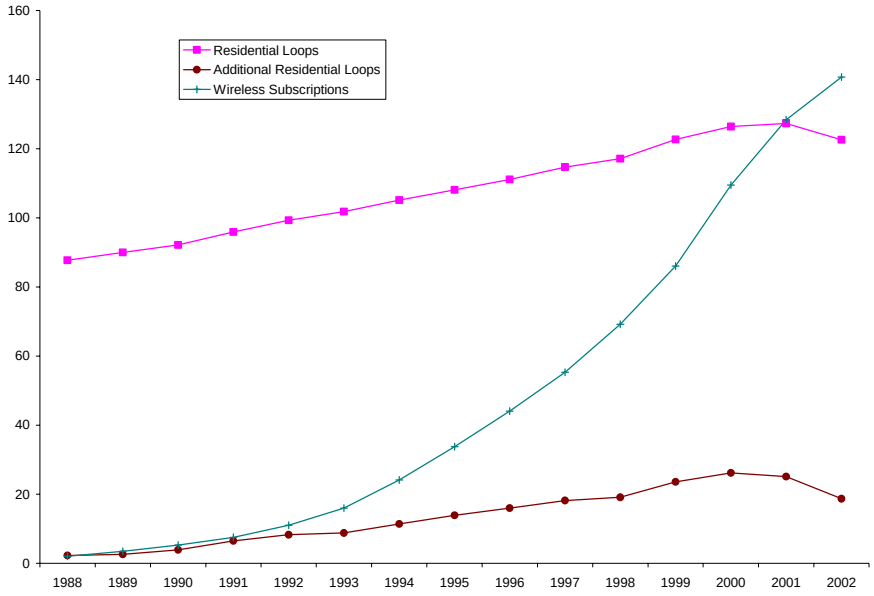
12. Wireline Competition Bureau, FCC, *Trends in Telephone Service*, Aug. 2003, tbl. 10.1 (Total 2001 Dial Equipment Minutes of 4.8 trillion divided by 2 yields 2.4 trillion annual conversation minutes; 5 percent of 9 billion emails per day is 450 million emails per day multiplied by 365 days per year yields 164 billion emails per year multiplied by 1.5 minutes yields 246 billion displaced conversation minutes annually; 246 billion displaced minutes divided by 2.4 trillion conversation minutes equals 10.3 percent).

13. *Seventh CMRS Report* at 33 (citing *It's a Wireless Boom as More People Cut the Cord*, News Release, IDC, Jan. 8, 2002).

14. *Sixth CMRS Report* at 33 (citing Callie Nelson, *Replacing Landline with Wireless: How Far Can It Go?*, IDC, Dec. 2000).

15. *Trends in Telephone Service*, May 2004, tbl. 7.4.

FIGURE 3: DECLINING RESIDENTIAL LOOPS AND ADDITIONAL RESIDENTIAL LOOPS VERSUS RISING WIRELESS SUBSCRIPTIONS



Source: FCC Trends in Telephone Service, May 2004, at Table 7.4.

Fixed lines have recently begun to decline as wireless continues to grow; the growth rate in wireless subscriptions has averaged 21.5 percent per year since 1997. As Figure 3 shows, total wireless subscriptions overtook residential loops in 2001. The FCC estimates that additional fixed lines peaked at 26.2 million in 2000 and subsequently declined by 7.5 million lines over the next two years. In fact, because the number of second lines had been growing until 2000, the actual decline in the number of second lines from where they would have been if that growth had continued is even greater than the 7.5 million. One explanation for this decline is that wireless subscriptions began to displace second fixed lines. In the next subsection, we review some econometric evidence that concludes that the cross-price elasticity of demand for second fixed lines is roughly 0.24. Using this estimate, the demand for second fixed lines decreased by 9.9 percent (which represents 35 percent of the total decline in second lines) in response to the 41

percent decrease in the real price of wireless service from 2000 to 2002.[16] The remaining 65 percent of the decline in second lines (equal to 4.9 million) was largely due to the adoption of broadband technologies such as cable modem service and DSL, which do not require a second fixed line.

21. Data on wireless displacement of primary lines also shows increasing replacement by wireless. In its *Seventh Annual CMRS Report*, the FCC suggested that in November 2001, 3 to 5 percent of wireless customers used their wireless phones as their only phone.[17] More recently, in February 2004, the Current Population Survey of the Census Bureau included a special supplement that addressed the topic of wireless phone usage. From this survey, the Census Bureau estimated that about 6 percent of all *households* rely on wireless phones as their only telephone service, a substantial increase from its previous estimate in November 2001 of slightly over 1 percent.[18] And the rate at which wireless phones are displacing wireline phones appears to be increasing.[19] For households headed by someone under 24 years of age, 18.0 percent had a cellular telephone only; 9.6 percent of households headed by someone between 25 and 34 years of age had cellular telephones only.[20] The fact that this tendency is negatively correlated with age suggests that the percentage of homes with only cellular telephones is likely to increase over

16. *Ninth CMRS Report*, tbls. 1, 9.

17. *Seventh CMRS Report* at 33 (citing *Carriers Said to Need New Tactics to Combat LD Substitution*, COMM. DAILY, Mar. 15, 2002).

18. The survey was administered to roughly 32,000 households during February 2004. The survey asked about purchases and bills including spending on cellular phone and landline. In particular, the surveys asked whether (1) the household had a bill for local or long distance calls in the past three months and (2) the household had a bill for a cellular phone in the past three months. *See* Clyde Tucker, Brian Meekins, J. Michael Brick, & David Morganstein, Household Telephone Service and Usage Patterns in the United States in 2004, presented at the 2004 Annual Meeting of the American Association for Public Opinion Research.

19. C. Cosentino, *supra*, at 1-2.

20. Household Telephone Service and Usage Patterns in the United States at 23.

time. Other analysts estimate the percentage of U.S. households that have "cut the cord" to be even higher.[21]

5. Academic Studies of the Cross-Price Elasticities of Demand for Mobile and Fixed Services

22. In a 2003 article in *Telecommunications Policy*, Mark Rodini, Michael R. Ward and Glenn A. Woroch estimated the own- and cross-price elasticities of demand for fixed and mobile telecommunications services using a U.S. household survey conducted over the period 2000 to 2001.[22] Specifically, Rodini, Ward and Woroch (RWW) model the demand for a second fixed line and a mobile line as a function of their own price, the prices of alternatives and complements, household income, and attributes of the household and the characteristics of the various alternatives. The principal source of their data is the Bill Harvesting data from TNS Telecom's ReQuest Market Monitor, a quarterly survey of U.S. household expenditures on various telecommunications services.[23] They specified a household's decision to subscribe to a

21. *See*, *e.g.*, Adam Quinton, Managing Director & First VP, Co-Head of Global Telecom Services Research, Merrill Lynch, prepared witness testimony before the Subcommittee on Telecommunications and the Internet of the House Energy and Commerce Committee, Washington, DC, Feb. 4, 2004 ("indeed an estimated 7% of telephone users only have a cell phone"); Michael Balhoff, Managing Director, Telecommunications Group, Legg Mason, prepared witness testimony before the Subcommittee on Telecommunications and the Internet of the House Energy and Commerce Committee, Washington, DC, Feb. 4, 2004 ("while it is clear that there is substitution whereby wireless-only customers may be 8% of the total consumer market today, it is admittedly difficult to calculate precise figures"); B. Bath, Lehman Brothers, Consumer VoIP Threat Overdone, July 1, 2004, at Fig. 2 (estimating that wireless displacement accounts for approximately 8 percent of consumer telephony lines).

22. Mark Rodini, Michael R. Ward & Glenn A. Woroch, *Going Mobile: Substitutability Between Fixed and Mobile Access*, 27 TELECOMMUNICATIONS POLICY 457-76 (2003).

23. Rather than using actual prices from customers' bills, the authors estimated wireless and fixed prices using the empirical relationship between fixed and mobile bills and the observed usage levels of each service. For wireless prices, they specified a random coefficients regression to estimate a representative two-part tariff for each geographic region, where fixed-line prices vary by state and mobile prices vary by cellular franchise area. To address the endogeneity of prices in a demand model, the authors predicted prices using variables that were correlated with prices but were uncorrelated with household-level demand determinants

second fixed line or to mobile service using a binary logit model, which was estimated separately for each service.

23. RWW calculated several price elasticities that indicate that customers view fixed wireline service and wireless service as alternatives to one another. First, they found that the likelihood of a household subscribing to mobile service is decreasing with respect to the "mobile access price" (measured by the recurring *monthly* charge for the mobile subscription). Second, they concluded that the likelihood of a household subscribing to mobile service increases with respect to the "fixed access price" (measured by the recurring *monthly* charge for the second fixed line). In particular, the cross-price elasticity of the "fixed access price" on mobile demand was positive and statistically significant at the 1 percent level: 0.18 for 2000 and 0.13 for 2001. Third, they found own-price elasticities of mobile demand with respect to the "mobile usage price" (measured by the *per minute* charge for additional usage-sensitive charges for long distance and international service and when the user is "roaming" outside her home calling area) of –0.43 for 2000 and 2001, estimates which were statistically significant at the 1 percent level. Finally, they also found a positive cross-price elasticity of second lines with respect to the "mobile access price" of 0.15 in 2000 and 0.25 in 2001, but these coefficients were not statistically significant at the usual levels of confidence. Although the cross-price elasticity parameter in 2001 is not *statistically* significant, the size of that coefficient is *economically* significant—a one percent decrease in the price of mobile service results in a 0.25 percent decrease in the demand for a second fixed line. Based on their estimated cross-price elasticities, RWW concluded that second fixed lines and mobile services are viewed as alternatives for one another. In particular, they found a significant response in mobile subscription to fixed line rates.

24. In a December 2004 paper in *Information Economics and Policy*, Gary Madden and Grant Coble-Neal (MC-N) examined the interchangeability between fixed-line and mobile telephony using a global telecommunications panel dataset comprised of 58 countries from 1995 to 2000.[24] MC-N hypothesized that network effects, which arise from being able to call to a larger wireless subscriber base, are likely to stimulate mobile network growth, irrespective of the original cause of growth. Hence, obtaining an accurate measure of the impact of a change in relative subscription prices between fixed and mobile services requires controlling for network effects.

25. Their regression model posited that the change in the number of mobile subscribers in a given country is a function of the price of fixed services, the price of mobile services, income, the number of mobile subscribers in the prior time period, and the number of fixed subscribers. The data were taken from the International Telecommunications Union's *World Telecommunications Indicators Database*. MC-N resolved the problem of lagged dependent variables through instrumental variable estimation. Results of a likelihood ratio test support the pooling of all countries contained in the sample except for the Republic of The Sudan and Togo. The ultimate model was therefore estimated with dynamic random effects estimations on the remaining 56 countries. With the exception of income, each of the explanatory variables was estimated with statistical significance at the 5 percent level (income was significant at the 10 percent level).

24. Gary Madden & Grant Coble-Neal, *Economic Determinants of Global Mobile Telephony Growth* 16 INFORMATION ECONOMICS AND POLICY 519-34 (2004).

26. MC-N concluded that mobile and fixed-line telephone subscription are competitive alternatives, with a one percent increase in the fixed price yielding a 0.12 percent mobile subscription growth increase. They also found that "a small decline in Mobile Price has an immediate 0.05 percent increase in [mobile] subscription growth."[25] They concluded that the "greatest effect of government intervention is likely from direct influences, such as stimulating price competition" and that "the imposition of local loop price controls may slow mobile network growth."[26]

27. Finally, Réka Horváth and Dan Maldoom analyzed survey data on over 7,000 British telephone users to measure the relationship between mobile phone ownership and fixed telephone usage.[27] The authors used an endogenous switching model to control for self-selection effects that might otherwise result in observing higher fixed usage among owners of mobile phones because of taste effects, regardless of whether fixed and mobile telephony are replacements or complements. Controlling for such self-selection effects, Horváth and Maldoom found that using a mobile phone significantly depresses the use of fixed lines, which strongly supports the notion that fixed and mobile phones are replacements for one another. Using 2001 survey data, they compute the predicted spending of mobile users on fixed service if they did not have a mobile phone as well as the predicted expenditure of non-mobile users if they decided to use a mobile phone. They find that for both groups the effect of (actual or potential) mobile phone ownership is a similar reduction in the size of the fixed bill—the expected reduction in the

25. *Id.*
26. *Id.* at 13.
27. Réka Horváth & Dan Maldoom, Fixed-mobile substitution: a simultaneous equation model with qualitative and limited dependent variables, DotEcon Discussion Paper, Aug. 2002.

fixed bill as a result of getting a mobile for the whole sample is around £74 per quarter as of the third quarter 2001.[28]

B. Cable Telephony and VoIP Are Alternatives for a Sufficient Share of Mass Market Voice Customers to Constrain the Pricing of Wireline Operators

28. Cable telephony and VoIP also provide consumers with alternatives for copper-wire telephone service. Although cable systems and other VoIP providers provide voice services over a different platform, the calling experience and quality of calls are nearly identical to those delivered over the copper-wire platform. If anything, cable's platform—which has greater transmission capacity than the traditional copper wire network—is potentially superior to the ILECs' predominant platform.[29] Cable operators already consider themselves to be in direct competition with ILECs for voice service customers.[30] According to the FCC, more than 3.338 million U.S. households subscribed to cable telephone service in June 2004.[31] Competition from cable operators is strong in many regions. One industry source notes that Cox is "already an experienced provider of telephone service" using circuit-switched technology.[32]

29. Verizon thus faces significant competition from cable operators throughout their service areas. Indeed, analysts note that aggressive pricing of cable telephony services is most

28. *Id*. at 16.

29. CITIGROUP SMITH BARNEY, TELECOMMUNICATIONS SERVICES—WIRELINE: THE BATTLE OF THE BUNDLE INTENSIFIES DURING 2Q, July 28, 2003, at 7 [hereinafter CITIGROUP SMITH BARNEY].

30. *See, e.g.*, COX COMMUNICATIONS, 2003 SEC FORM 10-K, Feb. 27, 2004, at 11-12.

31. INDUSTRY ANALYSIS AND TECHNOLOGY DIVISION, FCC, LOCAL TELEPHONE COMPETITION: STATUS AS OF JUNE 30, 2004, at 2 (2004).

32. *Cox Jumps Into the Market for Internet Phone Calls*, TOTAL TELECOM, Dec. 16, 2003.

pronounced in Verizon's territories,[33] and project that Verizon stands to lose the largest share of its access lines to cable operators of any major ILEC.[34]

30. Circuit-switched cable telephony has been eclipsed in importance as cable providers transition to offering voice service using Voice over Internet Protocol (VoIP)—a form of telephony that employs packet-switched technology. Whereas a circuit-switched network maintains a constant connection between two parties for the duration of a telephone call, a packet-switched network handles a call as digital data, thereby minimizing the connection time between two parties during a call and making less extensive use of network capacity.[35] VoIP systems thus can lower the provisioning cost of local and long-distance service relative to traditional telephone networks. They also can accommodate a greater array of advanced features as a result of their digital format.[36] VoIP providers typically offer consumers unlimited local and long-distance calling plans that are commonly $15 per month less than similar unlimited plans offered by fixed-wire firms such as Verizon.[37] Cable companies have deployed VoIP services in Verizon's service area, and plan to expand those offerings to more customers in the near future.

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33. *See* Jonathan Atkin, David Coleman & Brian Hyun, RBC Capital Markets, *Broadcasting & Cable TV: Cable/RBOC/DBS: Telephony, Data, and Video Pricing Comparisons*, Feb. 3, 2004, at 1.

34. *See* Bernstein Research, U.S. Telecom and Cable: Faster Rollout of Cable Telephony Means More Risk for RBOCs, Faster Growth for Cable, Jan. 9, 2004, at 1-3.

35. Whereas a circuit-switched network maintains a constant connection between two parties for the duration of a telephone call, a packet-switched network minimizes the connection time between two parties during a call, thereby making less extensive use of network capacity. *See* Jeff Tyson, *How IP Telephony Works*, HOWSTUFFWORKS.COM, available at http://computer.howstuffworks.com/ip-telephony1.htm.

36. *See, e.g.*, Peter J. Howe, *Comcast Launches Phone Plan*, BOSTON GLOBE, Dec. 15, 2003. Time Warner Cable calculates that VoIP is 50 percent less expensive to provision than traditional circuit-switched architecture. TIME WARNER CABLE, UBS WARBURG MEDIA WEEK CONFERENCE, Dec. 11, 2003.

37. *See* Reinhardt Krause, *Internet Phone Calls Could Squeeze Prices*, INVESTOR'S BUSINESS DAILY, Dec. 12, 2003.

The following is a brief synopsis of the telephony activities of some of the cable operators in Verizon's service area:

- **Comcast:** In December 2003, Comcast began offering "Comcast Connections Any Distance," an almost unlimited (5000 minutes) local and long-distance calling plan, to 1.5 million New England households.[38] The bundled offering from Comcast costs $49, but consumers pay only $45 if they purchase telephone service as part of a larger bundle that includes either broadband access or cable television.[39] Comcast reports a penetration rate of nearly 13 percent of homes where telephone service is available as of June 2004.[40] Comcast—whose network passes 40.3 million homes nationwide—has launched VoIP service in Philadelphia, Springfield, MA, and Indianapolis. Comcast states that it will make 15 million of all homes in its service areas VoIP ready by year-end 2005 and all its homes passed by the end of 2006.[41]

- **Cox:** Cox has more than 1.3 million phone customers nationwide, and its Digital Telephone service is available in 22 markets covering 70 percent of Cox's total footprint.[42] Cox's penetration rate of homes passed now averages 21 percent and rises as high as 40 percent in some markets.[43]

- **Cablevision:** Using VoIP, Cablevision offers unlimited local and long-distance calling to all 4.4 million homes passed by its network in the greater New York City area (the vast majority of whom live in Verizon territory) for $34.95, inclusive of taxes and surcharges.[44] Cablevision also offers cable telephony together with high-speed cable modem service for $79.90, an amount that is $10 less than the cost Verizon's Veriations Freedom + DSL package. Cablevision makes this comparison explicitly in its report, noting that "Cablevision consumers will save at least $10 per month / $120 per year vs.

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38. *See* Peter J. Howe, *Comcast Launches Phone Plan*, BOSTON GLOBE, Dec. 15, 2003. Comcast also offers the Comcast Connections Any Distance plan to selected areas in California, Colorado, Connecticut, Georgia, Illinois, Maryland, Michigan, Minnesota, New Hampshire, Ohio, Oregon, Pennsylvania, Texas, Utah, Virginia, and Washington. See Comcast state tariffs, available at http://www.comcast.com/Products/Telephony/Tariffs.ash?id=27.

39. *Id*.

40. *See* Comcast Press Release, *Comcast Reports Second Quarter 2004 Results*, July 28, 2004, at Table 5.

41. *See* Comcast, presentation at the Bear Stearns 18th Annual Media, Entertainment & Information Conference, Mar. 2, 2005, at 10-11.

42. Cox News Release, *Cox Brings Telephone to Five New Markets in '05* (Mar. 8, 2005).

43. *Id.*; C. Moffett, *et al.*, BERNSTEIN RESEARCH CALL, *Cable and Telecom: Bernstein Study Finds Consumers Ready and Willing To Switch to Cable Telephony*, Dec. 9, 2003 (in Cox's most mature circuit-switched markets, share is now approaching 35 percent of homes passed); Matt Richtel, *Time Warner To Use Cable Lines To Add Phone to Internet Service*, N.Y. TIMES, Dec. 9, 2003 ("In Omaha, 45 percent of Cox's cable customers now subscribe to its telephone service, and in Orange County, Calif., that figure is 55 percent.").

44. *See* Cablevision Press Release, *Direct-Dial International Calling Now Available with Cablevision's Optimum Voice*, Sept. 13, 2004; Optimum Voice, *Pricing*, available at http://www.optimumvoice.com/index.jhtml?pageType=pricing (downloaded Oct. 12, 2004).

Veriations Freedom + DSL, the most comparable Verizon service bundle."[45] In June 2004, Cablevision rolled out a bundled offering that includes cable telephony, cable modem service, and digital cable for $89.85[46]—approximately the same amount that many customers already pay for digital cable and cable modem service alone. As a result, Cablevision says that customers "are essentially receiving their voice service for free."[47] Cablevision has been adding VoIP subscribers at a rate of 1,000 per week,[48] and has signed up 273,000 subscribers within the first 14 months of making the service available across its service area.[49]

- **Time Warner:** Using VoIP, Time Warner offers unlimited monthly local and long-distance calling in several Verizon markets including New York City, Bergen, and Hudson Counties in New Jersey, Albany, Binghamton, Syracuse, and Portland, ME for $49.95 on an *a-la-carte* basis, but charges only $39.95 if the customer also subscribes to Time Warner for television service.[50] Time Warner passes 19 million homes nationwide and has launched VoIP in all of its 31 markets.[51] Furthermore, Time Warner is adding 11,000 new VoIP customers per week.[52] Time Warner's VoIP service has seen great success in Portland, ME, where 40 percent of its cable modem customers also subscribe to VoIP service.[53] Time Warner has approximately 220,000 customers even though it only launched in the latter part of 2004.[54]

Many of the cable telephony plans offered by cable operators—both circuit-switched and VoIP—are integrated offerings that include long distance, local calling, and other features. Time

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45. CABLEVISION, UBS WARBURG MEDIA CONFERENCE, Dec. 11, 2003, at 39. Cablevision's bundle of voice and high-speed data is nearly identical to Verizon's. The only differences are that Cablevision offers 3 Mbps broadband service compared to 1.5 Mbps for Verizon, and two of the five calling features offered by each company differ. *Id*.

46. *See Cablevision Promotional Offer for New Customers Features Digital Video, High-Speed Internet and Voice Services for the Monthly Price of $29.95 Each for First 12 Months If Taken Together*, PR NEWSWIRE, June 21, 2004.

47. *Cablevision To Offer Internet Phone-Call Bundle*, WALL ST. J., June 21, 2004, at B5 (quoting Cablevision senior vice president, consumer product management and marketing, Patricia Gottesman).

48. R. Black, Blaylock & Partners, *4Q04 Wireline Preview – The Telecom Landscape Is Evolving, Tread Carefully*, Jan. 20, 2005, at 2.

49. Cablevision News Release, *Cablevision Systems Corporation Reports Fourth Quarter and Full Year 2004 Results 2005 Outlook Provided*, Feb. 23, 2005.

50. Time Warner Cable, *Plan Details*, available at: http://www.twcdigitalphone.com.

51. Thomson StreetEvents, *TWX – Q4 2004 Time Warner Inc. Earnings Conference Call*, Conference Call Transcript, Feb. 4, 2005, at 6 (Time Warner Inc. CFO Wayne Pace: "Our newest service, digital phone, as we promised at the beginning of the year, is now commercially available in all 31 of our divisions, and we ended the year with about 220,000 subscribers.").

52. N. Gupta, *et al.*, Citigroup Smith Barney, *CMCSK: Potential Adelphia Win a Positive*, Feb. 1, 2005, at 3.

53. *See* Matt Stump, *Technology's Creative Master*, MULTICHANNEL NEWS, Sept. 27, 2004.

54. Thomson StreetEvents, *TWX – Q4 2004 Time Warner Inc. Earnings Conference Call*, Conference Call Transcript, Feb. 4, 2005, at 6.

Warner's plan, for example, is technically an integrated package, as it includes unlimited local calling, long-distance calling, and vertical calling features. The price of Time Warner's plan ($39.95) is sufficiently low to discipline Verizon's prices for a comparable offering.

31. Once cable operators upgrade their networks for cable telephony, cable providers quickly acquire a substantial share of the market for telephony services. As of December 2003, Comcast had acquired 30 percent of primary lines in certain markets.[55] In Portland, Maine, Time Warner "got to 10% [penetration] pretty quickly" (within 10 months of introduction),[56] and now serves 14 percent of homes with access to its voice service—a penetration rate of 40 percent of cable modem subscribers.[57] Indeed, on January 9, 2004, Bernstein Research raised its cable telephony subscriber forecasts to account for "cable operators' accelerated telephony rollout plans."[58] Figure 4 shows the projected growth of cable telephony (both circuit-switched and VoIP) according to Bernstein's December 7, 2004 report.

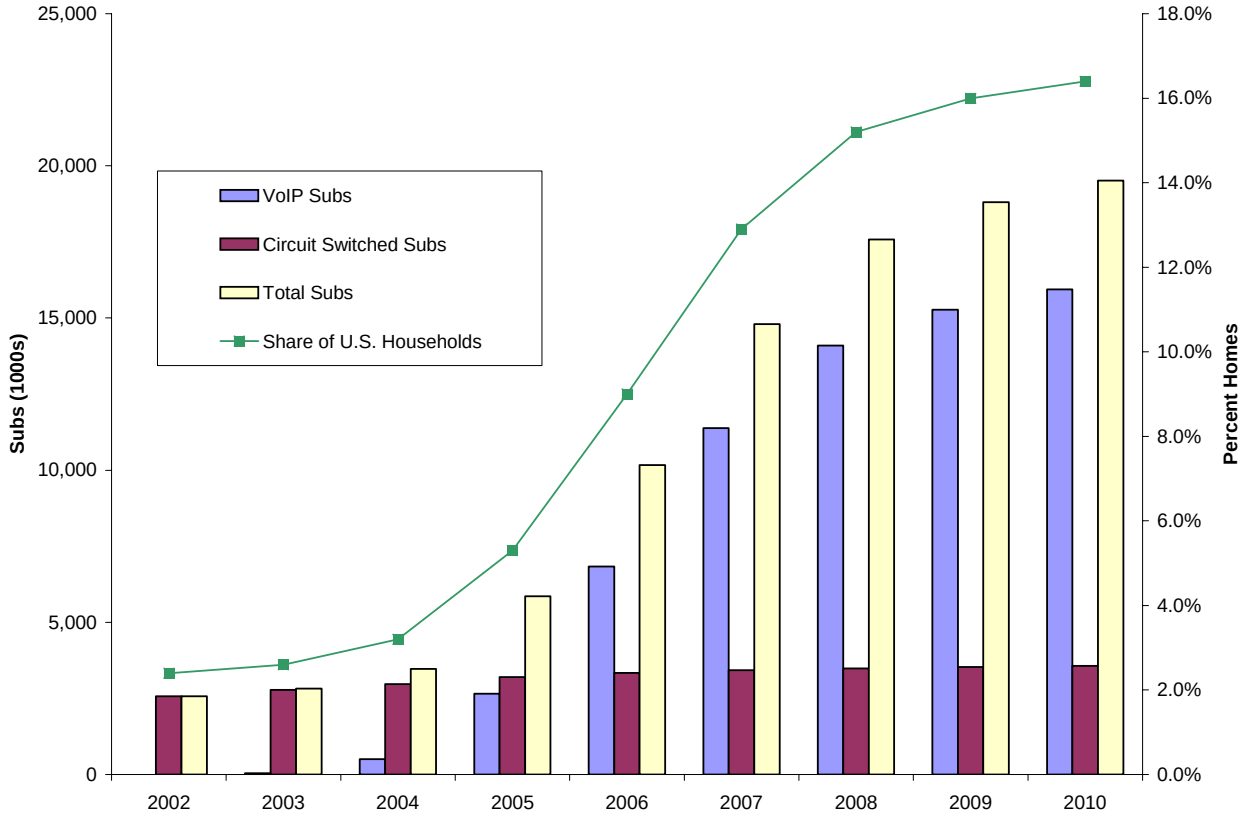
55. *See* Bernstein Research, U.S. Telecom and Cable: Faster Rollout of Cable Telephony Means More Risk for RBOCs, Faster Growth for Cable, Dec. 17, 2003, at 5.

56. Matt Stump, *Technology's Creative Master*, MULTICHANNEL NEWS, Sept. 27, 2004 (quoting Time Warner Cable chief technology officer Mike LaJoie).

57. Glenn Britt, Chairman and CEO, Time Warner Cable, presentation at the Merrill Lynch Media & Entertainment Conference, Sept. 28, 2004; Matt Stump, *Technology's Creative Master*, MULTICHANNEL NEWS, Sept. 27, 2004.

58. Bernstein Research, U.S. Telecom and Cable: Faster Rollout of Cable Telephony Means More Risk for RBOCs, Faster Growth for Cable, Dec. 17, 2003, at 1-3.

FIGURE 4: PROJECTED GROWTH OF CABLE TELEPHONY/VOIP THROUGH 2010



Source: Craig Moffett, *et al.*, Bernstein Research Call, *Cable and Telecom: VoIP Deployment and Share Gains Accelerating; Will Re-Shape Competitive Landscape in 2005* at Exhibit 5 (Dec. 7, 2004).
Note: Share of U.S. households is equal to total subscribers divided by total U.S. households.

As Figure 4 shows, cable-company VoIP subscribers (shown in blue) are projected to overtake their circuit switched subscribers (shown in red) in 2006. Bernstein projects that cable voice services will reach 16.4 percent penetration of total U.S. households by 2010 (equal to roughly 18 percent of addressable homes)[59], with 19.5 million cable telephony subscribers by 2010

59. *Id.* at Exhibit 1 (projecting that 92 percent of total U.S. households will be passed by either VoIP or circuit-switched systems by 2010).

(including both circuit-switched and IP-based lines), from a base of only 2.8 million at the end of 2003 (nearly all circuit-switched).[60]

32. The recent emergence of VoIP adds to the competitive pressure on the ILECs' voice services not only by increasing the capabilities of cable companies, but also by allowing new providers to offer telephony over other companies' broadband facilities. Verizon faces VoIP competition from not only cable companies, but also non-cable competitors, including both new ventures and traditional wireline carriers.

- **Vonage:** VoIP startup Vonage offers a "Residential Basic Plan," which provides a 500-minute bundle of local, toll, and long-distance to the U.S. and Canada for $14.99, and an unlimited bundled plan for $24.99.[61] With a subscription to any broadband service, Vonage subscribers can make and receive telephone calls the same way they always have by simply plugging their phone into an analogue telephone adapter (ATI) and then into their broadband connection.[62] Vonage also offers certain novel features, such as the ability to make and receive calls from the same telephone number around the world.[63] As of October 2004, Vonage had completed co-marketing agreements with numerous new broadband cable companies and had raised a total of at least $208 million in capital. It is now adding 15,000 new lines a week to its network.[64] Vonage expects to have 1 million subscribers by the end of 2005.[65]

- **Skype:** Skype, a free peer-to-peer VoIP telephone service, launched in September 2003, and reports that 9.5 million users have downloaded its software and utilized more than 1.2 billion minutes of free calls within its first year of operation.[66]

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60. Craig Moffett, *et al.*, Bernstein Research Call, *Cable and Telecom: VoIP Deployment and Share Gains Accelerating; Will Re-Shape Competitive Landscape in 2005*, at 2 (Dec. 7, 2004).

61. *See* Vonage Press Release, *Vonage Upgrades Local Unlimited Calling Plan to Premium Unlimited Plan*, October 1, 2004.

62. *Between a Rock and a Hard Place*, ECONOMIST, Oct. 9, 2003.

63. *Id*.

64. Vonage Press Release, *Vonage Completes $105 Million Series D Financing Round Led by NEA, 3i and Meritech*, Aug. 25, 2004; Vonage Press Release, *Vonage Becomes First Broadband Telephony Provider To Activate over 500,000 Lines*, Mar. 7, 2005.

65. *Vonage Targets BT's Customers with UK Marketing Campaign*, NewMediaAge, Jan. 13, 2005, available at http://www.vonage.com/corporate/press_news.php?PR=2005_01_13_3.

66. Skype.com, available at http://www.skype.com; David S. Bennahum, Can You Hear Verizon Now, Slate.com, Oct. 21, 2003, available at http://slate.msn.com/id/2090130/; Skype News Release, *Skype Celebrates 1 Year Anniversary*, Aug. 29, 2004.

- **AT&T:** AT&T launched CallVantage, its VoIP offering, in March 2004.[67] By August 2004, AT&T had expanded the offering to 121 major markets in 39 states, "demonstrat[ing] [AT&T's] commitment to get IP technology into the hands of consumers just as fast as possible."[68] In October 2004, AT&T introduced a new CallVantage plan offering unlimited local service for $19.99 per month, with local toll and long-distance calling to the United States and Canada billed at $0.04 per minute.[69]

- **Cavalier Telephone:** Cavalier Telephone began offering Phonom, its VoIP service, in January 2004, and currently offers local telephone numbers in Virginia, Maryland, Delaware, eastern Pennsylvania, and southern New Jersey.[70] Phonom packages include a plan with unlimited local and 500 long-distance minutes for a 6-month promotional rate of $20.99 (regularly $27.99), and an unlimited local and long-distance calling plan for a 6-month promotional rate of $24.99 (regularly $34.99).[71]

- **ISPs:** In October 2004, EarthLink began offering free VoIP service to all 1.2 million EarthLink high-speed Internet access subscribers.[72] AOL is reportedly testing a VoIP service with plans to launch in 2005.[73]

- **Other VoIP-Based Providers:** Many new companies that do not offer traditional circuit-switched voice service at all have begun providing VoIP service. While Vonage is the largest of these new providers, other companies that offer unlimited local and long-distance calling plans include: VoicePulse and Net2Phone (for $34.99);[74] FuturaVoice (for $29.99);[75] eGlobalPhone and VoIP.Net (for $29.95);[76] and Packet8, Lingo,

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67. AT&T News Release, *AT&T Ushers in New Era in Communication with Launch of AT&T CallVantage Service – New Jersey*, Mar. 29, 2004.

68. AT&T News Release, *AT&T CallVantage Expands to 21 New Markets in Seven States in Nationwide Deployment*, Aug. 19, 2004 (quoting AT&T senior vice president for Internet Telephony, Cathy Martine).

69. *See* AT&T News Release, *AT&T Introduces New Residential VoIP Plan*, Oct. 14, 2004.

70. Phonom Press Release, *Phonom Is First-to-Market with Complete Residential Digital IP Telephony to Virginia, Maryland, S. New Jersey, Delaware, and Philadelphia*, Jan. 12, 2004.

71. *See* Cavalier Telephone, *Phonom Voice over Broadband Phone Service*, available at http://www.cavtel.com/homeservice/voip/index.shtml (downloaded on Oct. 12, 2004).

72. EarthLink Press Release, *EarthLink Launches Free VoIP Service*, Oct. 5, 2004.

73. *See* Jim Hu and Ben Charny, *AOL Testing Net Phone Service*, CNET NEWS.COM, Aug. 30, 2004, available at http://news.com.com/AOL+testing+Net+phone+service/2100-7352_3-5330183.html.

74. VoicePulse, *How Much Does VoicePulse Cost?*, downloaded on Oct. 12, 2004, available at http://www.voicepulse.com/plans/default.aspx; Net2Phone, *VoiceLine Broadband Phone Service*, available at http://web.net2phone.com/consumer/voiceline/.

75. FuturaTechnologies, *Futura Voice Business and Residential Plans*, available at https://www.futuravoice.com/nuviovoice.php.

76. EGlobalPhone, available at http://www.eglobalphone.com; VoIP.Net, *Residential Plus Plan*, available at http://www.voip.net/bd_3resiplusplan.aspx.

BroadVoice, and BroadVox Direct (for $19.95).[77] Many of these companies offer promotional rates and smaller, metered packages.

Many in the investment community note the strong influence that VoIP will have in the coming years.[78] John Hodulik, an analyst for UBS Investment Services, explains that VoIP is a "deflationary factor" that "is going to put substantial pressure on pricing [for phone services] over the next five years."[79] In September 2004, for example, AT&T lowered the price of VoIP service—its second reduction in four months—from $35 to $30.[80] Vonage lowered the price of its unlimited plan from $35 to $30 in May 2004,[81] then again to $25 in reaction to an AT&T price cut.[82] As noted above, in October 2004, AT&T introduced a new CallVantage plan offering unlimited local service for $19.99 per month, with local toll and long-distance calling to the U.S. and Canada billed at $0.04 per minute.[83]

C. Neither MCI Nor AT&T Wireline Offerings Would Have Constrained Verizon's Prices to Mass-Market Customers

33. In December 2004, the FCC voted to eliminate the ability of competitive local exchange carriers (CLECs) such as MCI and AT&T to lease an incumbent's network entire

77. Packet8, *Service Plans*, available at http://www.packet8.net/about/residential.asp; Lingo, *Home Plans*, available at https://www.lingo.com/guWeb/; BroadVoice, *Rate Plans*, available at http://www.broadvoice.com/rateplans.html; BroadVox Direct, available at http://www.broadvoxdirect.com/.

78. Reinhardt Krause, *Internet Phone Calls Could Squeeze Prices*, INVESTOR'S BUSINESS DAILY, Dec. 12, 2003, at 2 (projecting that by 2008 to 2010, the Bell companies will have lost 20 to 30 percent of their current share of voice consumers); Legg Mason, Three Trends and a Train Wreck: Consolidation, Broadband/VoIP, and Bundling are Driving Market But on Collision Course with Telecom and Media Regulation System, Nov. 17, 2003, at 9.

79. Reinhardt Krause, *Internet Phone Calls Could Squeeze Prices*, INVESTOR'S BUSINESS DAILY, Dec. 12, 2003 (quoting John Hodulik).

80. AT&T News Release, *AT&T Lowers Price of Its Residential VoIP Service*, Sept. 30, 2004; AT&T News Release, *AT&T CallVantage Service Expands To Serve 10 Major Markets in Florida*, June 14, 2004.

81. Vonage Press Release, *Vonage Drops Residential Premium Unlimited Plan by $5 to $29.99*, May 17, 2004.

82. *See* Justin Hyde, *AT&T, Vonage Cut Prices on Internet Calling*, Reuters, Sept. 30, 2004; Vonage Press Release, *Vonage Upgrades Local Unlimited Calling Plan to Premium Unlimited Plan*, Oct. 1, 2004.

83. *See* AT&T News Release, *AT&T Introduces New Residential VoIP Plan*, Oct. 14, 2004.

platform at regulated TELRIC prices.[84] Under the new rules, incumbent carriers are no longer legally compelled to lease switches (and therefore the UNE-Platform) to competitors for signing up new customers, but existing UNE-P customers are grandfathered until early 2006. Combined with the loss of customers to wireless and other intermodal competitors and other factors, the elimination of UNE-P caused MCI[85] (as well as AT&T[86]) to scale back its mass-market operations substantially. Because MCI's wireline mass-market operation is small and declining, the Verizon-MCI transaction would not eliminate a significant competitor for mass-market voice service.

34. MCI is similarly not a significant competitor with respect to broadband Internet access service. MCI has a very small consumer DSL customer base consisting of fewer than **[BEGIN PROPRIETARY]** _____ **[END PROPRIETARY]** customers.[87] MCI's ability to lure new DSL customers is also hampered by its decision to begin assessing a one-time $99 fee at signup to cover costs of customer premises equipment, a charge that most major consumer DSL providers do not assess.[88] In view of these facts, the Verizon-MCI transaction also will not eliminate a significant competitor for mass-market, broadband Internet access service.

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84. Order on Remand, In the Matter of Unbundled Access to Network Elements and Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers. WC Docket No. 04-313, CC Docket No. 01-338 (adopted Dec. 15, 2004).

85. *See* Declaration of Wayne Huyard at 3 ¶ 4, 5-6 ¶¶ 10, 11.

86. *See, e.g., AT&T Cuts Back Sharply in 7 States—Decision to Stop Expanding Comes as U.S. Backs Bells; Revenue Forecast Is Slashed*, WALL ST. J., June 24, 2004.

87. *See* Declaration of Wayne Huyard at ¶ 19.

88. *Id.*

II. THE PROPOSED TRANSACTION WOULD NOT ADVERSELY AFFECT COMPETITION FOR LARGE ENTERPRISE AND MEDIUM-SIZED BUSINESS CUSTOMERS

35. In this section, we analyze the competitive effect of the proposed transaction on the provision of voice and data services to large enterprise and medium-sized business customers, including government entities and other public institutions. This business is decentralized and highly competitive and has attracted competitive entry from a wide range of companies. In addition to traditional carriers, system integrators have entered and captured significant accounts. Moreover, business users are increasingly depending on wireless devices, including Blackberries, to communicate both at and away from the office. As we demonstrate below, competition for services to large enterprise and medium-sized businesses would not be adversely affected by the proposed transaction between Verizon and MCI.

36. An analysis of the revenue shares of the enterprise services business demonstrates that competition for business services is robust.[89]

89. Richtel & Belson, *supra*, at 1.

TABLE 2: REVENUE SHARES OF THE ENTERPRISE SERVICES BUSINESS

Carrier	Pre-Transaction Share (%)	Post-Transaction Share (%)
AT&T	15.8	15.8
SBC	13.1	13.1
MCI	11.8	0
Verizon	9.8	0
Sprint	6	6
Qwest	5.6	5.6
BellSouth	5.5	5.5
Level 3	1.1	1.1
XO Communications	0.8	0.8
Others	30.5	30.5
Verizon/MCI	0	21.6
Total	100	100

Sources: Lehman Brothers Equity Research, Enterprise Telecom Services: A Comeback Begins, Nov. 11, 2003, at Figure 12.

As Table 2 shows, Verizon had less than 10 percent of all enterprise revenues (and even less for Fortune 1000 firms) as of the end of 2003,[90] and the combined company would control slightly less than 22 percent of all enterprise revenues. Large enterprise customers demand private LAN-to-WAN services (with more real-time provisioning and service), dedicated high-capacity circuits, public IP access and security, and voice services. To the extent that these large customers dictate the nature of services that all businesses will demand, and therefore the nature of competition for all businesses, it is clear that but for Verizon's transaction with MCI, Verizon would not be a significant competitor in the enterprise market.

37. Another important datum in Table 2 is the size of the "Others" category, which accounts for roughly 30 percent of total enterprise service revenues. This category contains several significant classes of firms, including large international operators such as Equant,

90. Lehman Brothers Equity Research, Enterprise Telecom Services: A Comeback Begins, Nov. 11, 2003, at 15 Figure 13 (showing Verizon's share of Fortune 1000 telecommunications expenditures to be less than 1 percent).

British Telecom, and Deutsche Telekom. Another class of firms included in this category is system integrators. As the communications industry moves from a concentration on sale of hardware to a focus on business solutions, companies like IBM,[91] Accenture,[92] EDS,[93] and Cap Gemini Ernst & Young[94] compete directly with traditional communications companies to address large enterprise, medium-sized business, and government communications needs.[95] Finally, several CLECs, including US LEC, Allegiance, Time Warner Telecom, and XO Communications, belong to the "other" category. These firms own IP networks and private line networks, which provide connectivity between major metropolitan areas across the United States.[96] CLECs provide an extensive array of voice, data, Internet access, security solutions, and integrated and managed services to Fortune 500 companies.[97]

38. A final reason not to be concerned about the effects of the proposed transaction on competition for the enterprise business is that the margins earned on business customers are decreasing rapidly, as wireless and broadband competition place downward pressure on prices:

> Revenues are shrinking about 10% a year. Profit margins are getting squeezed by stepped-up competition and the advent of Internet technology. In the enterprise market as

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91. IBM Global Services Press Release, *IBM To Acquire Corio*, Jan. 25, 2005.

92. Accenture, *Company Description*, http://www.accenture.com/xd/xd.asp?it=enweb&xd=aboutus\company\co_company.xml.

93. *See, e.g.*, Press Release, Jan. 16, 2003, available http://www.eds.com/news/news.aspx?news_id=1527 (announcing that French company Air Liquide had awarded contract to EDS to create for the company a single converged network); Press Release, Nov. 19, 2002, available at http://www.eds.com/news/news.aspx?news_id=1491 (announcing contract with Belk, the largest privately held department store in the U.S.).

94. *AT&T Wireless Forms Systems Integrator Program To Design and Implement End-to-End Mobile Solutions For U.S. Corporations; Initial members include Cap Gemini Ernst & Young, Deloitte Consulting, Fujitsu Consulting,* and HP, available at http://www.attwireless.com/press/releases/2003_releases/031803_si.jhtml;dsessionid=3N3RI5UWANH5TB4R0G1SFEY.

95. For a detailed review of system integrators, see Declaration of Eric Bruno & Shelley Murphy at ¶¶ 18-19.

96. *See, e.g.*, XO Network Maps, available at http://www.xo.com/about/network/maps.html.

97. *See, e.g.*, XO Products and Programs, available at http://www.xo.com/products/.

> a whole, operating margins before income, taxes, and depreciation are expected to hit just 22% in 2005, down from 24% in 2004 and 26% in 2003 according to Muayyad Al-Chalabi, a managing director at market analyst RHK Inc. Compare that with the 40% margins sported in wireless and broadband.[98]

Given the recent innovations in wireless technology and optical networking, competition among carriers for business customers is expected to intensify even further. For example, corporate traffic is expected to migrate to alternative platforms such as 3G and WiMax.[99]

CONCLUSION

39. Marketplace evidence demonstrates that consumers view wireless, cable switched telephony, and VoIP as viable competitive alternatives to wireline voice service. As a result, the Verizon-MCI transaction should not generate price effects in the mass market for communications services. Similarly, the robust competition in the provision of services to large enterprise and medium-sized business customers ensures that the proposed transaction will not harm competition in that segment.

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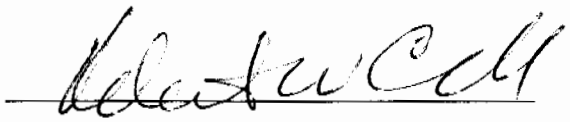
98. Steve Rosenbush, *Telecom: To Buy or To Build? Why the industry is deeply divided over the best path to growth*, BUSINESSWEEK, Feb. 21, 2005, at 38; *see also* R.D. Lynch, *et al.*, Lehman Brothers, *Commercial Price Declines Still Dominate*, Mar. 9, 2004, at 4 ("The problem with commercial telecom has primarily been one of overcapacity and price declines, not one of volume growth.); J. Halpern, Bernstein, *U.S. Telecom: Superior Growth Prospects Make Enterprise Market a Key Battleground for U.S. Service Providers*, Jan. 6, 2005, at 12 ("Over the past year, we have been informally monitoring pricing trends in the enterprise market, looking for signs that price pressure is starting to subside. Unfortunately, we have found few such signs. . . . Unit price declines for both IP and non-IP (e.g., frame relay, ATM, private line, etc.) data accelerated slightly to over 20% in 2003, following several years of steady easing. In 2004, we believe prices again declined at close to a 20% rate.").

99. *Id.*

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on March 9, 2005



Robert W. Crandall

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on March 9, 2005

Hal J. Singer

DECLARATION OF ROBERT W. CRANDALL AND HAL J. SINGER

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Books:

Broadband: Should We Regulate High-Speed Internet Access? (edited with James Alleman), AEI Brookings Joint Center for Regulatory Studies, 2002, forthcoming.

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AUTHORED BOOKS

Broadband in Europe: How Brussels Can Wire the Information Society, co-authored with Dan Maldoom, Richard Marsden, and J. Gregory Sidak (forthcoming Kluwer/Springer Press 2005).

JOURNAL ARTICLES

Uberregulation without Economics: The World Trade Organization's Decision in the U.S.-Mexico Arbitration on Telecommunications Services, 57 FEDERAL COMMUNICATIONS LAW JOURNAL 1, co-authored with J. Gregory Sidak.

The Secondary Market for Life Insurance Policies: Uncovering Life Insurance's "Hidden" Value, 6 MARQUETTE ELDER'S ADVISOR 95 (2004), co-authored with Neil A. Doherty and Brian A. O'Dea.

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