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April 15, 2008

Ms. Ann Cole
Office of the Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

080000

Re: Verizon Florida's Response to the 2008 Incumbent Local Exchange Carrier (ILEC) Local Competition Data Request

Dear Ms. Cole:

Attached is a copy of Verizon Florida's response to the Commission's annual ILEC data request. Verizon welcomes the opportunity to assist the Commission in evaluating the status of competition in Florida. This filing includes a separate envelope containing a confidential CD with data table responses and FCC Form 477.

Verizon considers this information to be confidential as it contains proprietary information that could be used by competitors to gain an unfair competitive advantage. Therefore, this filing is made under a Claim of Confidentiality pursuant to F.S. 364.183(1) and Rule 25-22.006(5). Verizon understands the information must be kept confidential until returned to Verizon.

If you have any questions or concerns, please feel free to contact me or Demetria Clark at (850) 222-5479.

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Sincerely,

David M. Christian
Vice President – Regulatory Affairs

This claim of confidentiality was filed by or on behalf of a "telco" for Confidential DN 02961-08. The document is in locked storage pending advice on handling. To access the material, your name must be on the CASR. If undocketed, your division director must provide written permission before you can access it.

Attachment B

March 2008

Intermodal Competition in Florida Telecommunications

Prepared for: AT&T Florida., Embarq Florida, Inc., TDS Telecom, Verizon Florida LLC, Windstream Florida, Inc.

By

William E. Taylor
Senior Vice President

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Contents

I. Summary

In 2006, we reported on the fundamental transformation taking place in the communications industry that was bringing competitive choices for voice and broadband consumers throughout Florida.[1] In this report, we analyze more recent data and demonstrate that the trends we identified in 2006 have continued and that competition for communications services in Florida has intensified.[2] These continuing trends make even more clear that asymmetrical regulation of communications providers in Florida harms both competition and consumers, and that the need for updating and streamlining Florida's regulation of wireline telephone services is now urgent.

Until recently, different networks were constructed to provide different services: telephone networks carried switched voice traffic and private line services; coaxial cable transmitted television signals; and cell towers relayed wireless voice calls. All of this has changed since the long-awaited "network convergence" has provided the technological catalyst for facilities-based "intermodal competition" throughout the country including, of course, Florida. Convergence has brought at least three formerly disparate industry sectors into direct competition with each other by allowing each of their different network platforms to provide similar bundles of communications services. For example, cable companies now provide video, broadband Internet and other data services, ***and*** voice; mobile wireless networks provide voice, data, short text messaging, ***and*** video services; and wireline services platforms provide voice, DSL, Internet, instant messaging, VoIP, ***and*** now video.

Several platform providers have been competing with the traditional wireline carriers to serve Florida consumers. Cable companies such as Comcast, Bright House Networks and Cox have deployed broadband and telephony services to large portions of the State, and have experienced great success in attracting customers to their bundled products. Wireless service is ubiquitous in Florida and many residents are replacing wireline service with wireless, both through line substitution and usage substitution. Since we completed our 2006 report, these platforms have become even more widespread and have captured ever larger numbers of customers. The spread of broadband throughout Florida enables residents to receive service from numerous independent VoIP providers such as Vonage and Skype. Moreover, emerging services such as Wi-Fi, WiMAX and broadband over power lines (BPL) promise to intensify the competition.

The Florida Public Service Commission in 2006 recognized the need to consider these intermodal alternatives to wireline service when assessing the state of competition, noting that "[w]ireless, VoIP, and broadband services are fulfilling the expectations of competition and represent a significant portion of today's communications market in Florida."[3] The Commission went on to state:

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[1] NERA, *Intermodal Competition in Florida Telecommunications*, July 2006 ["*NERA 2006 Report*"].

[2] Some of these results were reported in *Intermodal Competition and Telecommunications Deregulation in Florida* at the 34th Annual PURC Conference, University of Florida, February 16, 2007.

[3] *Florida PSC 2006 Competition Report*, p. 2.

> Wireless and, to a lesser extent, VoIP services have become a significant portion of the voice communications market ... [E]vidence suggests that these intermodal competitors are successfully providing competitive alternatives to both residential and business subscribers ... [Both residential and business] customers may obtain functionally equivalent services via wireline telephony, wireless telephony, VoIP, or cable telephony.[4]

Accordingly, our analysis does not rely upon market share measures because these measures are severely limited given their static, backward-looking nature, and because it is nearly impossible to gather complete and accurate share data. Rather, the paper examines the dynamics of the highly competitive communications market and how the market now extends beyond the traditional wireline companies to encompass a host of intermodal competitors.

As discussed in detail below, FCC data for Florida[5] show that intermodal competitors have made substantial progress since our last report:

- At year-end 2000, there were about 3.4 million more mass market (residence and small business) wireline access lines than total wireless subscribers and mass market high-speed broadband lines.
- Only four years later, at year end 2004, there were 6.9 million *fewer* mass market wireline lines than total wireless subscribers and mass market broadband lines.
- By year end 2006, there were about 8.5 million fewer combined ILEC and CLEC residential lines than combined residential wireless and residential broadband lines.[6]
- After a period of rapid growth, interstate switched access minutes of use for the major Florida carriers declined 29 percent from 2000 to 2006; over the same period, local usage fell about 34 percent, from 3,200 calls per line per year to only 2,100.

The impact of intermodal competition is even more pronounced than these data alone suggest: wireline access lines would have been growing under historical competitive conditions because the Florida population has continued to grow at least as fast as it did historically. Thus, factoring in this growth, we estimate that Florida local exchange companies served about 3.56

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[4] *Id.* at 66.

[5] Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *Local Telephone Competition: Status as of December 31, 2000-2006* ("FCC December 2000-December 2006 Local Competition Reports") and Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *High Speed Services for Internet Access: Status as of December 31, 2000-2006* ("FCC December 2000-December 2006 High-Speed Internet Reports"). More detailed data are provided below.

[6] Beginning in 2005 the FCC changed how it reports switched voice lines and broadband lines. It started reporting residential lines alone instead of mass market (residential and small business lines). From June 2005 forward the FCC grouped small business lines with those of larger business customers. Thus, to assess mass market trends we separate our analysis of certain FCC data into two segments—data through December 2004 and data for June, 2005 through December 2006. Other reporting changes occurred during 2005 and 2006. See Section III.A below.

million fewer residential wireline access lines than expected at year end 2006 based on population growth. This implies a shortfall of more than three times the observed decline of about 1 million lines. We find a similar but even more dramatic discrepancy between expected and observed local usage trends. These shortfalls are also much larger than those shown in our prior report based on data through year end 2005.

Intermodal competition is strong and growing in all parts of the State, including rural areas. For example, our analysis shows that:

- Every Zip Code area in the state has at least three broadband providers with lines in service and, 99 percent of Zip Codes have four or more such providers.

- Cable companies' networks pass 94% of households in the state and can provide broadband service to virtually all (99.8%) of the homes passed.

- Cable telephony is available to about 86 percent of cable homes passed and about 81 percent of total households in the state. These figures are substantially higher than the corresponding figures we reported in our 2006 report.

- At least two wireless carriers are available to 99 percent of households in the state, and 99.9 percent of households have at least one wireless carrier available.

- Intermodal competition is having a major impact on the communications market. While Florida cable providers are experiencing great success in attracting voice and broadband customers nationally and in Florida, a significant and increasing number of people are substituting wireless for wireline services in Florida.

- Multiple competitive alternatives are available in areas of Florida served by each of the major incumbent wireline carriers in the state, with each incumbent experiencing heavy line losses and lost usage as a result.

The significance of these developments is underscored by an MIT Communications Futures Program working paper that found, if intermodal competition is strong—as we have shown in Florida—then "[i]n adopting a 'go slow' approach to telecom deregulation, policymakers risk repeating the mistakes of the past."[7] As the report states:

> The costs of late, slow, or piecemeal deregulation can be quite high. Obsolete regulations ....can decrease consumer welfare substantially. These losses ... are paid not only by consumers in lower quantity and quality..., foregone innovations, [less] choice, [and] often by taxpayers ... as the government may end up bailing out failing incumbents ... and their ... workforces. Ultimately,

[7] Professors Charles H. Fine and John M. de Figueiredo, *Can We Avoid Repeating the Mistakes of the Past in Telecommunications Regulatory Reform?*, Working Paper 2005-001, MIT Communications Futures Program, Massachusetts Institute of Technology, March 21, 2005, p 5.

> deregulation that is too late can drive the incumbent(s) into bankruptcy, and bestow monopoly power on the newly dominant former entrant(s).[8]

More specifically, the MIT paper shows that the costs of delaying regulatory reform in industries experiencing intermodal competition have been extremely high. For example, although the railroads were facing substantial intermodal competition from trucking by the mid-1950s, they were saddled with outdated subsidy requirements and pricing restrictions. Thus, "the railroads were unable to sustain investment and attract investors. Over time, the railroads' collapse reduced social welfare and cost taxpayers billions in repeated bailouts."[9] By the 1970s, every major Northeast railroad had gone bankrupt and the number of operating track miles dropped dramatically. Delayed banking deregulation in the face of entry and intermodal competition by money market funds generated similarly deleterious effects in that industry.[10]

In discussing the application of their findings to telecommunications, the authors of the MIT paper conclude:

> [T]he history of trucking and railroads has the potential to become an apt analogy for the communications sector today. The results of severely delayed regulatory relief were felt by hundreds of thousands of rail workers, communities ... denied competitive alternatives, and shippers.... The failure of Government to respond to change and foster rail deregulation proved a "lose-lose" situation for railroads, their industrial customers, and consumer welfare generally.[11]
>
> ... [W]hen unconstrained entrants have been able to leverage their advantaged regulatory position to drive incumbent(s) into decline, then deregulation can arrive "too late" for welfare maximization, but is appropriate "as soon as possible" to minimize additional welfare losses.[12]
>
> ***This pattern is consistent with what seems to be unfolding in today's telecommunications marketplace. Consumers are confronted with an increasingly wide array of communications options from wireless providers,***

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[8] *Id.*, p. 10.

[9] *Id.*, p. 14.

[10] *See Id.*, p. 19 in which the authors explain that

> Similar to what we saw in the railroad industry, in banking an economic shock (rampant inflation) also created a new competitor: money market mutual funds (MMMF's). MMMF's had many of the same properties as simple savings and checking accounts offered by banks and S&L's, but offered higher interest rates to depositors compared with what the S&L's were allowed to pay. The primary response of policy makers to the resulting distress to the banks was NOT to allow banks to respond directly to the competitive threat from the MMMF's and pay higher interest rates to depositors.
>
> Rather, policy makers tinkered around the edges of regulation and allowed more risky loan practices that contributed to the massive and costly savings and loan failures and bailouts that "cost taxpayers hundreds of billions of dollars." Again the message is that markets work more effectively than regulation.

[11] *Id.*, pp. 27-28.

[12] *Id.*, p. 10.

from cable TV operators, and from new entrants offering low-cost (or free!) VoIP service. [13]

Finally, they make it clear that policy makers must act promptly:

> Further, since ... the telecommunications industry today operate[s] at much faster clockspeeds than ... the rail industry fifty years ago, the window of opportunity for timely ("in the zone") deregulation in telecommunications is likely to be short compared to that for railroads. Although 1996 may have been "too early" for such deregulation, when the conditions are right, deregulation should be comprehensive and quick. Delaying regulation beyond this zone could well prove to be "too late," resulting in severe and unnecessary losses in social welfare, causing the incumbent telephone carriers to go the way of the railroads.[14]

> When entrants have established themselves to be economically viable and have ***begun*** to take market power and share from incumbents, the industry is 'in the zone' for timely deregulation.[15]

Policy makers should reduce the asymmetric regulation faced by the ILECs in light of the changes wrought by convergence and intermodal competition. These changes have eliminated historical market boundaries, brought formerly distinct industry sectors into direct competition with each other, and thus undermined the historical rationales for regulation.

The discussion that follows supports the need for updated and streamlined regulation by examining the forces behind intermodal competition in Florida and demonstrating that its sustained growth will continue for the foreseeable future.

II. Technological Forces Are Driving Network Convergence and Intermodal Competition

Historically, different networks were designed and deployed to carry different types of traffic. The wireline public switched telephone network and mobile telephone networks were optimized to transport basic voice communications, while cable networks were optimized to transport video, and the Internet was designed to transport packet-based data traffic. Today, these technologies are "converging" so that providers can offer multiple types of services over a single network. Thus, with convergence, the same services are provided over various types of networks such as traditional cable systems, traditional "telephone" networks and mobile wireless networks. In short, convergence refers to the provisioning of similar bundles of voice,

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[13] *Id.* p. 10. The authors add that "Unlike many of these competitors, incumbent telephone companies must often seek state regulatory approval and sometimes engage in protracted tariff proceedings if they wish to respond to the price changes of unregulated rivals. That is, the incumbent's natural competitive pricing and product portfolio response to entrants can be delayed because of these regulatory proceedings;" emphasis added.

[14] *Id.*, p. 28.

[15] *Id.* pp. 9-10; emphasis added.

data, Internet access, TV, and other communications and entertainment services by different types of network providers.

Three fundamental factors have driven convergence: (1) technological change (such as the advent of two-way, digital, broadband networks and IP technology) that has allowed all kinds of wired and wireless networks to be used for any kind of service; (2) consumer demand for bundled services; and (3) competition among providers seeking gains from improved efficiency, through economies of scale and scope, and the promise of increased revenues and lower churn rates.

Because convergence enables different types of platforms to provide increasingly similar bundles of services, traditional wireline carriers must now compete with: (1) Internet and broadband service providers; (2) cable companies that have made substantial investments in their networks to provide video, data and voice services; (3) wireless services providers; (4) VoIP providers; and (5) other providers using emerging technologies. These industry developments have resulted in dramatic line losses to wireline local exchange carriers in Florida.

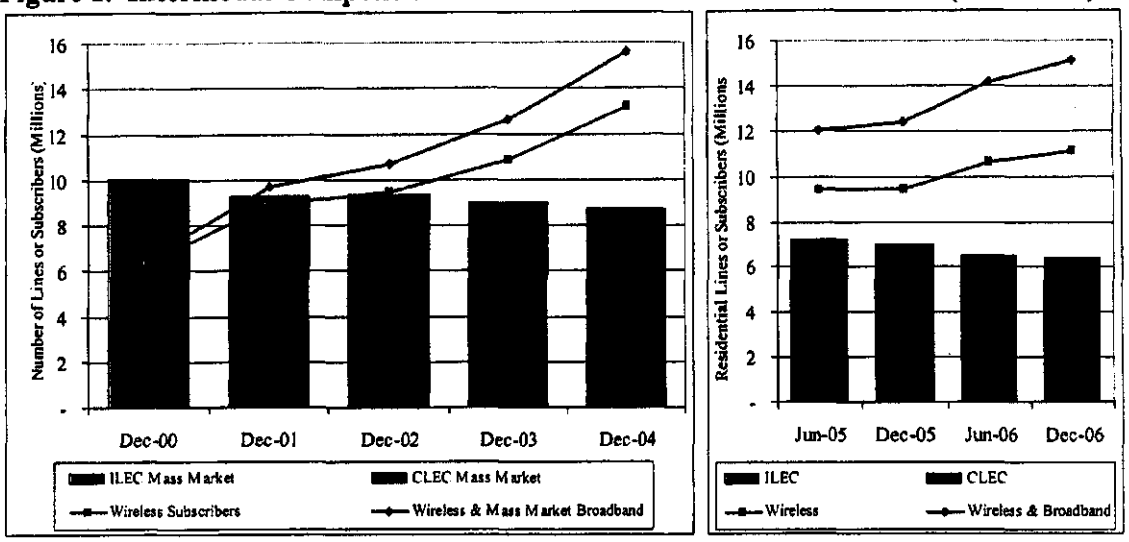
III. Intermodal Competition Has Dramatically Affected Florida's Wireline Carriers

Evidence that intermodal services are substitutes for and compete with LEC services includes data showing that: (1) the growth of wireless, broadband and cable telephony services has been associated with reductions in the number of wireline access lines; and (2) the growth rate of CLEC wireline services has been smaller than it was prior to 2000, before intermodal competition began its acceleration. In this section we explore these general trends. In Section IV we look more deeply at the factors underlying the growth of intermodal alternatives to LEC services.

A. Gains by Wireless and Broadband Have Been Associated with Wireline Losses

Intermodal competition from cable companies, wireless providers, broadband services providers and VoIP providers has caused local exchange carriers to experience losses in access lines and usage. At the same time, wireless subscribers and broadband lines have grown so dramatically that they now far exceed the number of traditional switched access lines. Figure 1 below depicts just how dramatic these trends have been in Florida.

Figure 1. Intermodal Competition for Mass Market Customers in Florida (2000-2006)



Note: Starting in June 2005, Residential Broadband data exclude Small Business lines. Starting in 2005, Wireless Subscribers data is for Residential customers only (75% of total subscribers).

Source: FCC December 2000 - December 2006 Local Competition and High-Speed Internet Reports.

As illustrated in Figure 1, FCC data show that Florida is experiencing widespread and growing intermodal competition, from year end 2000 through year end 2004, when the FCC reported data for mass market (residential and small business) LEC lines:

- Residence and small business conventional wireline (*i.e.*, ILEC + CLEC) access lines in the state declined by almost 1.3 million lines, or about 13 percent, from December 31, 2000 to December 31, 2004, when they would have been expected to grow because of the growth in state population.[16]

- In contrast, over the same interval:

  - The number of wireless subscribers increased by over 100 percent or 6.8 million new subscribers;

  - The number of residential and small business broadband lines increased by about 2.2 million lines or almost ten-fold; and

  - By December 31, 2004, the total of wireless subscribers and mass market broadband lines reached 15.6 million (or about 80 percent higher than the total number of mass market ILEC and CLEC lines)

[16] As discussed below, not only population, but other possible determinants of line growth, such as employment and Gross State Product, increased over this period as well.

- The FCC changed its approach to reporting LEC lines and broadband lines in 2005, when it started reporting residential lines alone instead of mass market residential and small business lines.[17] Nevertheless, it is clear from the chart on the right side of Figure 1 that the growth in intermodal options—here measured by estimated residential wireless subscribers and reported broadband high speed lines—and the corresponding decline in residential LEC lines shows that intermodal alternatives continue to grow and replace conventional wired lines. More specifically, according to FCC data for Florida ***in only 18 months*** from June 2005 through December 2006: Total LEC residential lines fell by almost 940,000 or 13 percent[18];

- Residential broadband lines increased by over 1.4 million or 55 percent;

- Residential wireless subscribers increased by over 1.6 million or 17 percent[19];

- Thus, by year end 2006 we estimate that total residential wireless subscribers and broadband lines reached about 15.1 million compared to only 6.3 million total LEC residential lines.

Note that Figure 1 actually ***understates*** the impacts of intermodal competition because the FCC data on which it is based group cable company coaxial telephone lines with other CLEC provided lines. For example, although state-specific data are not available, FCC data show that "CLEC" coaxial cable telephone lines grew nationally from 308,000 at year-end 1999 to 3.7 million lines at year-end 2004, to almost 6.8 million lines in December 2006, only 2 years later, when other CLEC lines declined from 29.2 million to 21.9 million lines.[20] Thus, had we included the coaxial cable lines with other forms of intermodal competition, we would have seen a larger reduction in traditional wireline access lines. Moreover, as shown by the National Cable & Telecommunications Association ("NCTA") data discussed below the FCC data underreport the number of cable telephone lines.

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[17] Additionally, wireless subscribers data starting in 2005 are not directly comparable with earlier data because the newer data allocate subscribers to states based on NPA (area) codes, whereas the older data were assigned to states based on billing address.

[18] We examine changes in total LEC lines because FCC reporting changes that moved MCI and AT&T lines from the CLEC to ILEC category to account for the AT&T/SBC and AT&T/BellSouth mergers and the Verizon/MCI merger imply that changes in the relative numbers of CLEC and ILEC lines over the period covered here are misleading. See footnote 5 of the December 2006 FCC Local Competition Report; thus, we do not report the change in ILEC lines.

[19] The FCC reports total wireless subscribers in the Local competition reports. We estimate the number of residential subscribers based on the following finding reported by the FCC: "25 percent of wireless users were business customers, with the remaining 75 percent being ordinary consumers." Federal Communications Commission, *Annual Report and analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Twelfth Report* ("Twelfth CMRS Report"), FCC 08-28, released February 4, 2008 report at footnote 633, citing: *10-Year Wireless Projections*, KAGAN WIRELESS TELECOM INVESTOR, June 6, 2005, at 2.

20 *See* FCC December 2006 Local Competition Report, Table 5, "Competitive Local Exchange Carrier Lines by Type of Technology."

B. Florida Switched Access Lines and Network Usage Are Well Below Expected Levels Based on Historical Trends

The *Florida PSC 2004 and 2006 Competition Reports* show that total residential switched access lines have been declining in the state since 2001.[21] According to these data, from 2001 to 2006, ILEC residential lines fell by almost 1.7 million lines while CLEC residential lines increased by about 86,000 lines. Thus, total residential switched access lines fell by 1.6 million lines, from about 8.3 million to about 6.7 million. During this same time, Florida's population increased by 12.4 percent.[22] Thus, this decline has resulted in a level of lines well below what one would expect based on the continued population growth in Florida.

By statistically estimating the historical (1991 to 2001) relationship between residential lines and population, we can forecast what the number of lines would have been in subsequent years in the absence of intermodal competition. As can be seen in Figure 2, growth in the number of lines was closely correlated with population growth from 1991 to 2001, but although population growth continued to be at least as strong from 2001 to 2006, the number of lines fell well below what we would have expected based on this population increase. By 2006, the shortfall amounted to 35 percent below the expected level, or 3.56 million residential access lines.[23]

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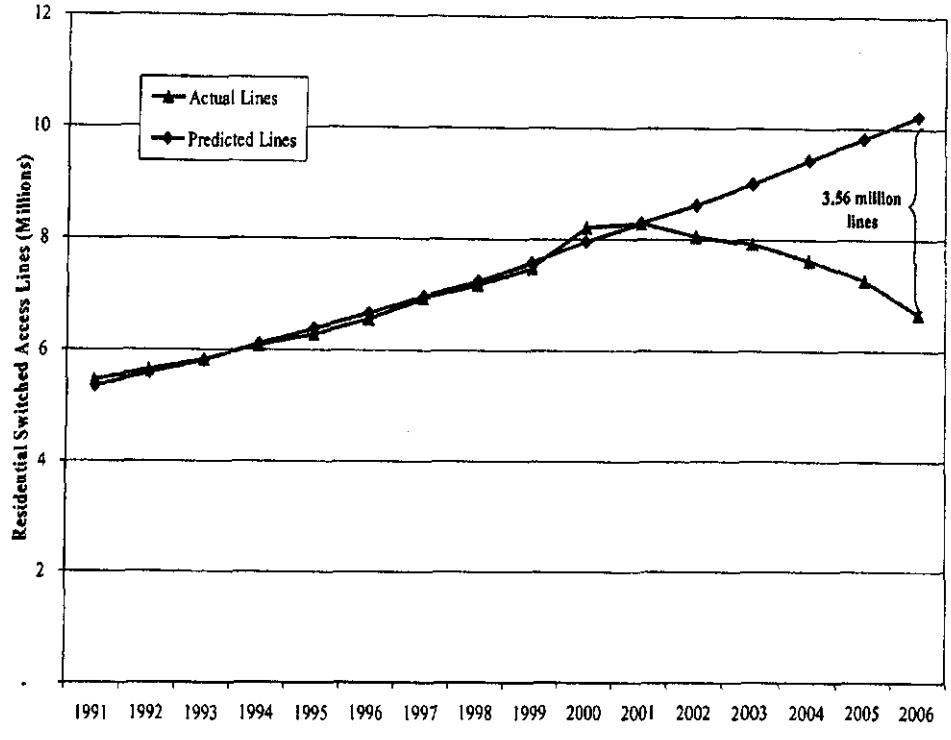
[21] *See* Table 1 in the 2004 report and Table 2 in the 2006 report

[22] Other possible determinants of line growth increased over this period as well. Employment in the State increased from about 7.6 million to about 8.7 million and Florida Gross State Product grew from $497.4 billion to $714 billion (in current dollars). Population data from Office of Economic & Demographic Research, The Florida Legislature, Demographic Estimating Conference Database, updated July 2005, available at http://edr.state.fl.us/population/web10.xls; Employment data from the Florida Agency for Workforce Innovation, Labor Market Statistic, available at http://www.labormarketinfo.com/library/laus/historical/histsa.xls; and Gross State Product data from Bureau of Economic Analysis, U.S. Department of Commerce, available at http://www.bea.gov/bea/regional/gsp/.

[23] Total residential switched access lines for 1997-2006 are from the *Florida PSC Competition Reports 1997-2006*. We obtained data on ILEC residential lines (including AT&T Florida, Verizon and Embarq) from ARMIS, FCC Report 43-08, *The ARMIS Operating Data Report*, Table III, "Access Lines in Service by Customer," and trended the Florida PSC data back to 1991 using the ARMIS data. Since Embarq only began reporting to ARMIS in 1997, we obtained a series of residential lines for 1991-1996 from Embarq, which we added to the ARMIS data. A linear specification is used to estimate lines. The resulting equation is $y = 0.9577x - 7343653.5$, with an R^2 of .9879, where x = population and y = estimated access lines.

Figure 2. Actual and Predicted Florida Residential Switched Access Lines. (1991-2006)

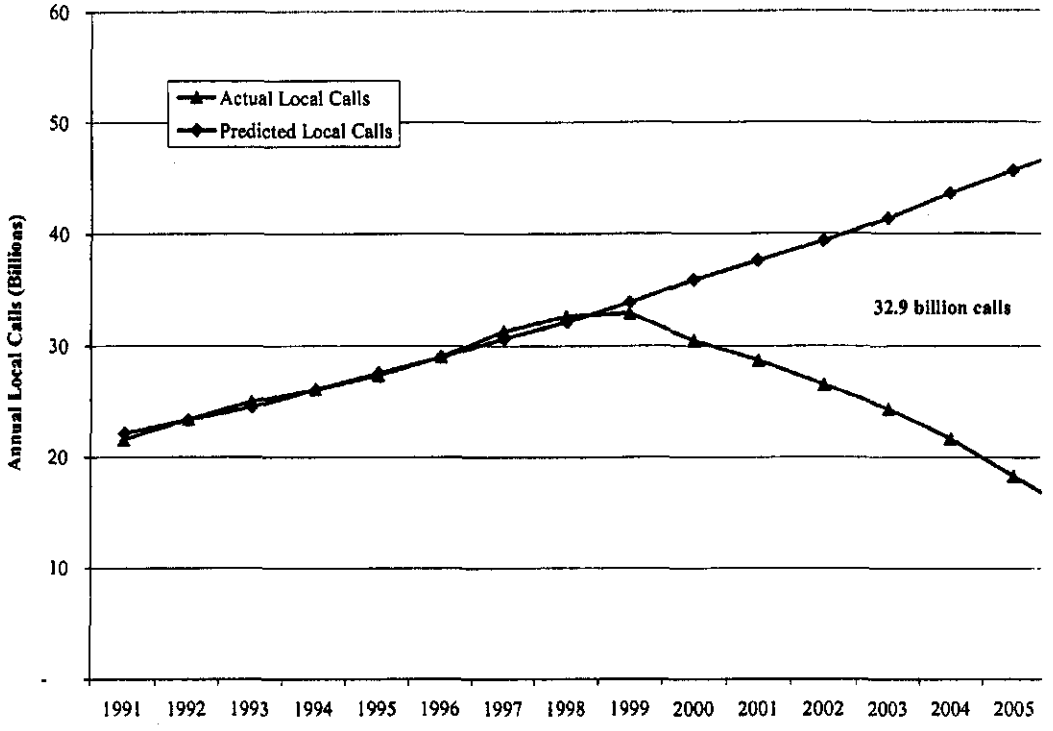


Similarly, intermodal competition has had a substantial impact on local network usage. According to FCC ARMIS data concerning AT&T Florida and Verizon, the number of local calls per year has been declining in Florida since 1999. Through 2006, annual local calls had fallen from 32.9 billion to 14.9 billion, or 55 percent. As with access lines, this dramatic decline places the level of local calling well below what one would expect based on population growth. Estimating usage trends based on population trends, we find that local calling volumes closely tracked population growth from 1991 to 1999.[24] Beginning in 2000, however, actual and predicted annual local calls diverge, with the predicted level increasing with the population, while the observed level instead declines substantially. By 2006, the difference amounts to 69 percent, representing 32.9 billion calls per year.[25] These trends are depicted in Figure 3 below.

[24] Not surprisingly, the data suggest that call substitution preceded line substitution.

[25] Local calls are from ARMIS, FCC Report 43-08, *The ARMIS Operating Data Report*, Table IV, "Telephone Calls" and include AT&T Florida and Verizon. A linear specification is used to estimate calls. The resulting equation is $y = 5.03499695x - 44593536$, with an R^2 of .9829.

Figure 3. Actual and Predicted Florida RBOC Annual Local Calls. (1991-2006)



C. Intermodal Competition Is Occurring Throughout the State

The trends in intermodal competition demonstrated statewide in Figures 1-3 are not geographically isolated. As shown in Tables 1 and 2 as well as Figures 4 and 5 below, intermodal competitors are present in the service areas of each of the five major incumbent carriers and have had a significant impact on those carriers' lines and network usage:

- In areas served by AT&T Florida: cable telephony is available to about 84 percent of cable homes passed,[26] cable modem service (and therefore, VoIP service provided by independent providers such as Vonage or Skype) is available to almost 100 percent of cable homes passed and wireless service is available (from three or more carriers) to virtually all households. Since 2001 as these options expanded, AT&T Florida residential access lines have declined by over 1.3 million lines (or 30 percent), from 4.4

[26] This number is likely to be understated because, according to a Comcast customer service representative contacted by an AT&T researcher on March 12, Comcast had deployed service to several areas not yet indicated on its web site. Since our data are based on 2007 data from the Warren Cable Fact Book, and information from company web sites, we did not pick up this recent development. The rapid pace of cable telephone deployment means more generally that our data are likely to understate the true availability of that service.

million to 3.1 million, and AT&T Florida's network usage has experienced a similar decline.

- In areas served by Verizon: cable telephony is available to over 93 percent of cable homes passed, cable modem service is available to 100 percent of cable homes passed and wireless service (from three or more carriers) is available to virtually all households. As these options have expanded since 2001, Verizon residential access lines have declined by about 616,000 lines (or 36.5 percent), from 1.69 million to 1.07 million, and Verizon's network usage has similarly experienced a decline.

- In areas served by Embarq: cable telephony is available to about 86 percent of cable homes passed, cable modem service is available to 99 percent of cable homes passed and wireless is available from three or more carriers to virtually all households. Since 2001, Embarq residential access lines have declined by about 400,000 lines (or 26 percent), from 1.53 million to 1.13 million, and Embarq's network usage has experienced a similar decline.

- In areas served by Windstream: cable telephony is available to a growing percentage of cable homes passed, and, more importantly, cable modem service is available to 89 percent of cable homes passed (a figure that has also been growing since our 2006 report) and wireless is available to virtually all households. In contrast, since 2001, Windstream residential access lines have declined by about 6,800 lines (or 9 percent), from about 74,600 to about 67,900, and its network usage, while not in actual decline, has experienced a substantial reduction in its growth rate since 2000, compared to that seen in the 1995-to-2000 period.

- In areas served by TDS Telecom (TDS), cable modem service is available to about 100 percent of households passed and wireless service is available from three or more carriers to nearly 100 percent of households. TDS's residential access lines have declined by about 1,500 (or 14 percent) since 2001. Although TDS did not see a decline in usage over the period from 2000 to 2006, its growth rate has dropped dramatically compared to what it experienced from 1995 to 2000.

Tables 1 and 2 summarize the availability of cable and wireless services, respectively, in the incumbent carriers' territories. As discussed in Section IV below, cable advanced services are now being deployed in areas of the state that have heretofore had low availability. The data in Table 1 contain a snapshot of deployments as of 2007, but that snapshot does not capture ongoing deployments of services. For example, the largest cable provider in Windstream's service area is Comcast, which has announced its intentions to make telephony service available to the vast majority of its systems nationwide.

Table 1
Advanced Cable Services Are Widely Available in Each Incumbent's Service Territory in Florida

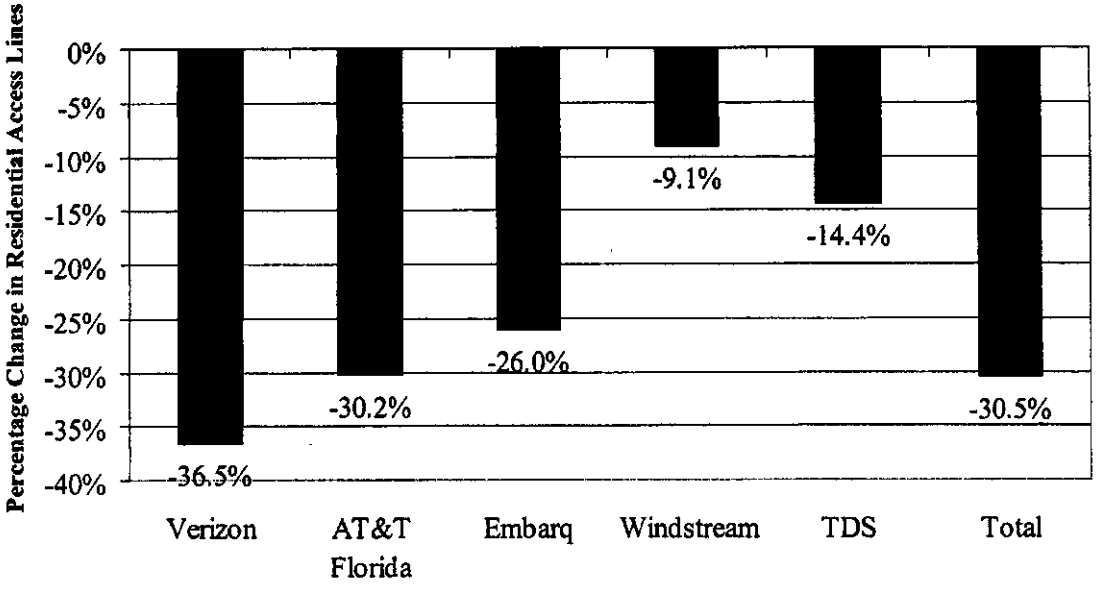
	Homes Passed			Percent of Homes Passed	
Incumbent	**Total**	**Broadband Ready**	**Telephony Ready**	**Broadband Ready**	**Telephony Ready**
AT&T Florida	3,816,765	3,815,960	3,191,304	100.0%	83.6%
Verizon	1,493,241	1,493,241	1,395,986	100.0%	93.5%
Embarq	1,289,880	1,280,518	1,112,371	99.3%	86.2%
Windstream	32,458	28,975	4,961	89.3%	15.3%
TDS	8,826	8,822	2,567	100.0%	29.1%
Other	32,667	31,157	28,139	95.4%	86.1%
Total	6,673,837	6,658,673	5,735,328	99.8%	85.9%

Source: Warren Communications News, *Cable Fact Book*, GIS Format, and company web sites.

Table 2 Wireless Service is Widely Available in Each Incumbent's Service Territory in Florida					
Incumbent	Total Households	Households With 2 or more Carriers Available	Households With 3 or more Carriers Available	Percent of Households with 2 or More Carriers Available	Percent of Households with 3 or More Carriers Available
AT&T Florida	4,035,889	4,026,984	4,003,775	99.8%	99.2%
Verizon	1,538,180	1,537,804	1,536,859	100.0%	99.9%
Embarq	1,390,884	1,389,644	1,373,901	99.9%	98.8%
Windstream	71,852	70,924	59,075	98.7%	82.2%
TDS	9,969	9,969	9,892	100.0%	99.2%
Other	43,482	42,130	33,667	96.9%	77.4%
Total	7,090,256	7,077,455	7,017,169	99.8%	99.0%
Source: Provider websites (service coverage maps) and Census block group information.					

As discussed above, each of the major incumbent carriers in the state has experienced line and usage losses (or at least a significant decrease in the growth of usage) in conjunction with the spread of intermodal competition. Figure 4 depicts the percentage change in residential access lines for each of the four large incumbents since 2001. As displayed in the Figure, the decline in residential lines ranges from about 9 percent for Windstream to over 36.5 percent for Verizon.

Figure 4. Percentage Change in Residential Access Lines. (2001 to 2007)

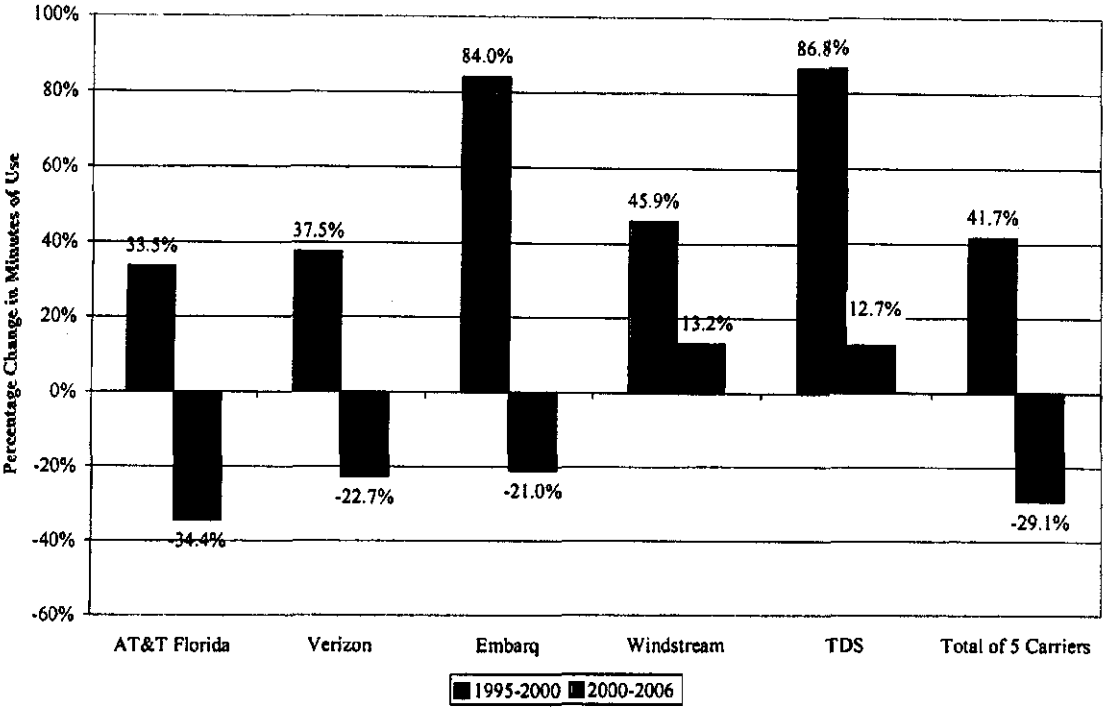


Note: Percent change from May 2001 to year-end 2007.
Source: Data provided by individual companies.

Figure 5 below depicts the trends in interstate switched access minutes of use for the five major Florida incumbents as reported by the National Exchange Carrier Association. Following large percentage increases for each carrier from 1995 to 2000 (ranging from 34 percent to 87 percent), AT&T Florida, Verizon and Embarq minutes of use declined between 21 percent and 34 percent through 2006 and the growth in Windstream and TDS minutes of use declined, from 46 and 87 percent in the early period to about 13 percent each, respectively, in the later period.[27]

[27] In the 2000-2005 period, AT&T Florida saw declines in each year, while Verizon and Embarq each saw a slight increase in 2004 before continuing declines in 2005. The one year increase for these two companies may be due to retroactive true-ups from the prior year or to changes in accounting for CLEC minutes, and thus does not appear to show a reversal of the ongoing trend in reduced wireline usage.

Figure 5. Cumulative Percentage Changes in Switched Access Minutes of Use. (1995 to 2000 and 2000 to 2006)



Source: FCC, National Exchange Carrier Association, Network Usage Data.

D. Intermodal Competition Affects Wireline Prices

As described above, intermodal competitors have already taken a significant fraction of output from Florida wireline carriers. The relevant question in assessing competition is: how much substitution to intermodal providers is enough for the market to control the price of wireline telecommunications services?

Wireline telecommunications technology has a large proportion of fixed and sunk network costs that do not vary with the number of customers. Firms with high fixed or sunk costs must charge prices that are in excess of their marginal costs to earn normal profits. Therefore, when such a firm loses customers to competition, its revenues erode much faster than the costs that it can avoid. If the firm attempted to increase prices, the lost profits (revenue minus avoided cost) from even a small decrease in customers can easily exceed the extra revenue obtained from the price increases paid by the customers that remain.

Starting with a hypothetical small but significant and nontransitory price increase (*e.g.*, five percent) that economists routinely assume in assessing market power, Professor J. Hausman[28] poses the following question: What fraction of volume must a firm lose to make such

[28] Hausman, Jerry A., "Regulated Costs and Prices in Telecommunications," in Gary Madden (ed.), *International Handbook of Telecommunications Economics*, Volume 2: Emerging Telecommunications Networks, 2003, p.

a price increase unprofitable? For a five percent price increase, the answer is given by the formula:

$$\text{Critical fraction} = \frac{0.05}{\left(1.05 - \frac{mc}{p}\right)}$$

where p is the current price and mc denotes marginal cost. Professor Hausman suggests that for wireline companies, marginal cost is about 20 percent of price (with the remainder accounting for the mark-up required to recover fixed or sunk costs). In this example, the critical fraction produced by the equation would be about 6 percent. In other words, under the conditions considered by Professor Hausman, if a wireline provider were to raise price and lose six percent or more of its volume to facilities-based alternatives such as wireless and VoIP providers, even a modest five percent price increase would be unprofitable.

The implications of recognizing that wireline telecommunications departs widely from the textbook model of perfect competition are profound. When fixed and sunk costs are low, a competing product or service has to be a very close substitute to discipline the incumbent's prices, which means that a small price increase has to produce a disproportionately large loss in volume to be unprofitable, because when such a firm loses volume, the revenue loss is almost completely offset by a reduction in costs. In contrast, firms such as facilities-based wireline carriers cannot sustain large volume losses, because the lost revenue greatly exceeds the costs savings — because such a large portion of costs are fixed or sunk. That is, competing telecommunications products do not necessarily need to be very close substitutes for wireline services in order for attempts at supra-competitive pricing to be thwarted.

IV. Intermodal Competitors Are Present and Growing Throughout Florida

A. Broadband

1. Broadband Competition and the Development of a Single Converged Communications Market

The spread of broadband services provides a key indicator of effective intermodal competition from cable providers and VoIP providers. As shown below, cable companies have typically deployed advanced digital two-way hybrid fiber coaxial technology, used that to offer broadband Internet access and then progressed to offer "cable telephony" services. This strategy has enabled them to capture a significant share of demand for high-speed Internet access and, more recently, has enabled the provision of low-cost cable company Internet-protocol (IP)

226 and Hausman, Jerry, "From 2-G to 3-G: Wireless Competition for Internet-Related Services," in Robert W. Crandall and James H. Alleman, eds., *Broadband: Should We Regulate High-Speed Internet Access*, Washington D.C.: AEI-Brookings Joint Center for Regulatory Studies, 2002, pp. 126-127.

telephone services, and independent VoIP provider telephony services. The strategy has also enabled the cable companies' popular "triple play" bundle of video, broadband and voice services. This has, in turn, led the phone companies to accelerate their own network upgrades—first to DSL, and more recently, to video services. Competition for broadband has lowered prices and increased the speed and quality of Internet access. The competition will become even more intense because the two formerly distinct communications sectors are now part of a single, more dynamic market.

2. Broadband Competition Is Flourishing in Florida

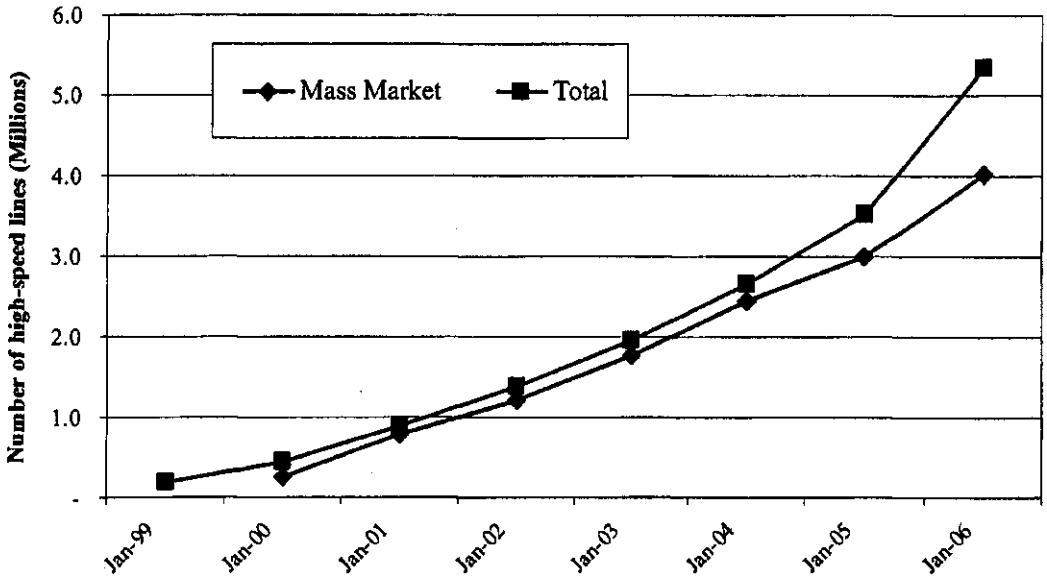
High-speed Internet service is now available throughout Florida. By the end of 2005, 24 percent of Zip Codes in Florida had 2 to 6 high-speed Internet service providers, 18 percent had 7 to 9 providers and the remainder had 10 or more. More recent FCC data for year end 2006 show even more wide-spread availability of broadband services in Florida. FCC data reveal that every Zip Code in the state has three or more high speed providers with lines in service and that 99 percent of all Zip Codes have four or more such providers.[29] DSL and cable broadband are both widespread. The FCC recently reported that high-speed DSL connections were available to 89 percent of the Florida households where ILECs can provide local telephone service, while high-speed cable modem service was available to 97 percent of the households where cable system operators can provide cable TV service.[30] The most recent available data for October 2007 show that almost 100 percent of homes passed by cable have high-speed cable modem service available. (See Table 1 above.)

[29] *See FCC December 2006 High-Speed Internet Report,* Table 17.

[30] *FCC December 2006 High-Speed Internet Report*, Table 14. As discussed below, another source shows that 98 percent of homes passed by cable have access to cable broadband.

Florida High-Speed Providers by Zip Code (As of year end 2005). As displayed in Figure 6 below, Florida has seen tremendous growth of both mass market and total high-speed Internet lines, with high-speed lines increasing almost thirty-fold from December 1999 through December 2006. A recent Florida PSC survey found that by the end of 2006, broadband penetration as a percent of the population had reached 53 percent in Florida, [31] above the national average of 47 percent.[32]

Figure 6. Florida Broadband Line Growth (1999-2006)



Note: Mass Market defined as residential & small business from 12/31/00 through 12/31/2004 (not available before then), and residential-only after 12/31/04.

The number of separate entities offering high-speed Internet services in the state has grown dramatically as well—from 16 providers in mid-2000 to 60 at the end of 2006.[33] As of the end of 2006, there were 22 ADSL providers (mostly wireline carriers), 10 coaxial cable providers, 10 optical fiber Internet service providers, 10 fixed wireless Internet service providers and 8 providers using other technologies.[34]

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[31] Florida Public Service Commission, *Consumer Survey Results, January-December 2006* ("*Florida PSC 2006 Survey*"), p. 6.

[32] Horrigan, John & Smith, Aaron (June 2007). Data Memo: Home Broadband Adoption 2007 (Pew Internet & American Life Project), page 1. Retrieved February 22, 2008, from http://www.pewinternet.org/pdfs/PIP_Broadband%202007.pdf

[33] *See FCC June 2000 and December 2006 High-Speed Internet Reports*, Tables 4 and 8, respectively.

[34] *See FCC December 2006 High-Speed Internet Report*, Table 8.

The growth in broadband availability and subscribership is not limited to urban areas. Although the Florida Public Service Commission found broadband penetration to be lower in rural areas than urban (71 percent vs. 48 percent in the second half of 2006), rural areas displayed growth of 21 percentage points in penetration since the second half of 2004.[35] As the Commission noted, "the increase of broadband users is present across all age levels and income groups and for both urban and rural respondents."[36] Moreover, the evidence shows that broadband services are readily available to rural consumers. As shown above, the FCC found that no Zip Code in Florida had fewer than 3 broadband providers with lines in service. Of Florida consumers using dial-up connections at the time of the *Florida PSC 2005 Survey*, only 5 percent cited inability to obtain the desired type of broadband as the reason for not upgrading their connection.[37]

Cable modem service continues to be the major source of broadband in Florida. As of December 2006, cable accounted for about 41 percent and ADSL accounted for about 35 percent of the over five million high-speed lines serving Florida.[38]

The data indicate that Florida consumers are substituting broadband connections for switched access lines. About 25 percent of survey respondents who disconnected a second telephone line cited broadband replacement as the reason. For the additional 20 percent who cited "no longer wanted or needed" as the reason for disconnecting a second line, it seems likely that new technologies such as broadband and wireless played a role in making their second telephone line obsolete.[39]

As shown by households that have shifted to cable's triple play or cable telephony, or who have "cut the cord" in Florida, primary lines also have been dramatically affected by intermodal competition.

3. Messaging Services Enabled by Broadband (and Dial-Up) Lines and Wireless Devices Have Caused Significant Displacement of Wireline Usage

As people increasingly communicate via the Internet – such as through e-mail and instant messaging ("IM") – their use of wireline services is declining. Internet communication has proliferated in the last several years, particularly since broadband services have become more widely available. One survey found that the average American Internet user spends three hours a day online, with much of that time devoted to work and more than half of it to communications.[40] A recent Pew survey found that: "internet users have high regard for the

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[35] *Florida PSC 2006 Survey*, Figure 19.

[36] *Id.* at 31.

[37] Note that total Internet penetration rate (including dial-up) has reached 63 percent in rural areas. *Id.*, Figure 9.

[38] The remaining 24 percent is served by other types of technology. *See FCC December 2006 High-Speed Internet Report*, Table 9.

[39] *Florida PSC 2005 Survey*, Figure 39.

[40] San Jose Mercury News, *Survey Details U.S. Internet Use*, December 30, 2004.

internet as a tool of communication; 85% of both men and women say they consider the internet to be a good way to interact or communicate with others in their everyday lives."[41] Pew also reports that about 90 percent of Internet users communicate via email and over 80 percent use the Internet to communicate with friends and family. Over 40 percent of Internet users send IMs, greetings and invites; over 30 percent use text messaging; and over 20 percent participate in chats or discussions.[42]

The use of Internet communications is sizable and still growing. For example, one source estimates that there are about nine billion e-mails per day in the United States alone.[43] Other sources report that 80 million people use IM in the United States; about seven billion IMs are sent each day worldwide;[44] and worldwide IMs will grow over four-fold from 2004 to 2008, while IM users will increase from 320 million to 592 million over the same period.[45]

Although it is difficult to determine exactly how much voice traffic has been displaced by these Internet communications, it is clear that they substitute for a substantial number of wireline phone calls. Consumers who would once pick up the phone to communicate now often find it more convenient and less expensive to communicate via the Internet. J.D. Power found that "among high-speed Internet users, instant messaging displaced 20 percent of local calls and email displaced 24 percent of such calls. Among dial-up Internet users, instant messaging displaced 18% of local calls, and email displaced 23% of local calls."[46] According to a recent Frost & Sullivan report:

> [I]it is worth noting that some indirect substitution of switched voice traffic is also occurring from data services delivered over both wireless and IP platforms. Email has been the dominant IP application, which has had an adverse impact on...voice calling. Instant Messaging (IM) is another application that has gained in popularity as a result of free versions available from mass providers such as Yahoo, Microsoft and AOL. Text messaging or SMS has been the application on the wireless side, which has impacted both wireline as well as wireless voice calling, and hence had some substitution impact on switched wireline (and wireless) traffic.[47]

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[41] Pew Internet & American Life Project, *How Women and Men Use the Internet*, December 28, 2005, p. 17.

[42] *Id.*

[43] Legal Tech Newsletter, *E-Mail and Records Management in the Legal Environment*, November 14, 2003, cited in UNE Fact Report 2004, Oct. 2004, p. I-6.

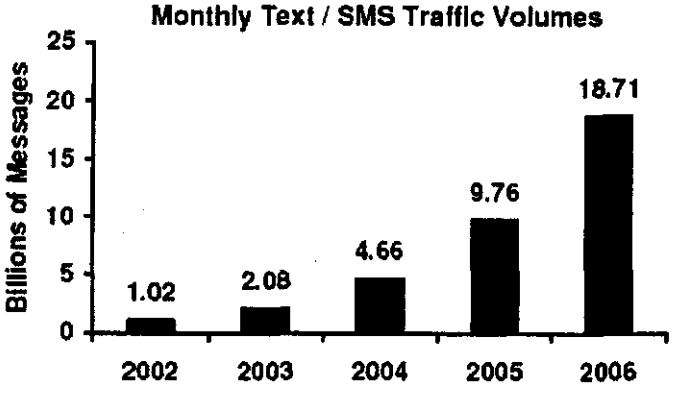
[44] WEBPRONEWS, *AOL Announces That Instant Messaging Is More Popular Than Ever*, August 2004, available at http://www.webpronews.com/news/ebusinessnews/wpn-45-20040824AOLAnnouncesthatInstantMessagingisMorePopularthanEver.html.

[45] *See* F. Esker, *Employers finding business applications for instant messaging*, New Orleans CityBusiness, May 29, 2006.

[46] *See Florida 2004 Competition Report*, p. 10. (citing J.D. Power & Associates, *2003 Residential Internet Service Provider Study*, August 2003).

[47] Frost & Sullivan, *Trends in Wireline Substitution – North American Markets*, 2005, p. 1-6.

E-mails and IMs are not limited to wireline broadband networks. Apart from the fact that these types of communications can be (and are) made using dial-up connections over a common wireline, an increasing number of wireless devices enable these forms of communication. BlackBerries, "smartphones," text messaging on mobile phones, and the newly arriving "3G" (and "4G") wireless services are blurring the boundaries between mobile voice and data services. Recent data show that about 39 percent of U.S. mobile subscribers have used text messaging and about 6.3 percent, have used mobile IM.[48] According to the FCC, and as shown in the following chart reproduced from their most recent report on mobile communications: "...monthly text messaging traffic grew to 18.7 billion messages during December 2006, up from 9.8 billion messages during December 2005 and the 4.7 billion messages during December 2004."[49]



B. Cable Telephony

1. Recent Developments Have Stimulated Entry and Expansion by Cable Companies and Have Brought Advanced Two-Way Cable Services to the Vast Majority of Households

Cable providers have made substantial investments to upgrade their infrastructure to provide two-way digital services. Recent National Cable & Telecommunications Association ("NCTA") reports reveal the substantial size and the dramatic competitive effects of these investments in network upgrades:

> Cable operators invested another $12.4 billion in 2006 capital expenditures to upgrade their infrastructure, bringing the industry-wide total to more than $110 billion spent since Congress passed the 1996 Telecommunications Act. Cable's high-speed, interactive, hybrid fiber-coaxial network provides the backbone for an expanding array of services that include broadband Internet access, burgeoning

[48] Twelfth CMRS report, at pp. 94 and 95.

[49] Twelfth CMRS report, at p. 7.

> programming lineups — including more children's and family tiers — interactive video on demand (VOD), and powerful facilities-based and wireless telephone services. These offerings are being packaged into consumer-friendly bundles, saving U.S. households billions of dollars.[50]
>
> Homes passed by cable's high-speed internet service reached 119 million in 2006, according to estimates by Kagan Research, representing 94 percent of all U.S. homes.[51]
>
> A quarter century after the initial breakup of the original AT&T telephone monopoly, true competition has come to the market for phone service, thanks to cable's facilities-based offering. Gaining both powerful features and cost efficiency by utilizing digital Voice over Internet Protocol (VoIP) technology on the same hybrid fiber-coaxial network that carries video and Internet data signals, cable telephone service is high in both quality and affordability.[52]

As the NCTA accurately observed, cable network upgrades are significant because they allow cable companies to "deliver an extensive array of advanced services through a single connection to the home... over a two-way network.... [including] high-speed Internet access, High-Definition Television (HDTV), digital cable, Video-on-Demand (VOD) and digital voice service."[53] Increased expenditure in network upgrades has translated into substantial growth in cable voice subscribers. As **Figure 7** shows, the number of residential cable voice customers has grown rapidly in recent years, increasing from 1.3 million in the second quarter of 2001 almost ten-fold to 12.1 million by the middle of 2007. Moreover, the NCTA reported that three months later, in September 2007, cable companies were serving 13.7 million residential voice customers.[54]

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[50] National Cable & Telecommunications Association, *2007 Industry Overview*, April 24, 2007, p. 7.

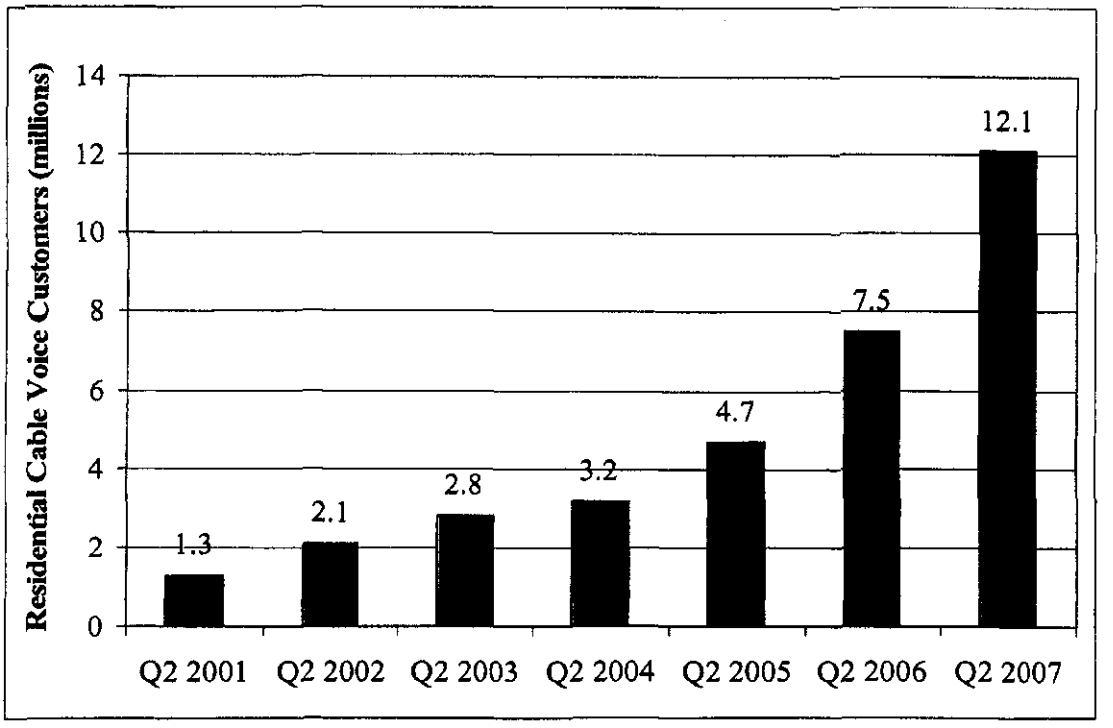
[51] *Id*, p. 11.

[52] *Id*, p. 13.

[53] National Cable & Telecommunications Association, *2005 Mid-Year Industry Overview*, p. 8.

[54] http://www.ncta.com/Statistic/Statistic/Statistics.aspx, accessed February 28, 2008.

Figure 7. Residential Cable Voice Customers



Source: National Cable and Telecommunications Association Web Site

Besides spending billions to upgrade to two-way digital networks, cable companies have embraced a number of technological developments to enter and expand into two-way communications, including the deployment of softswitch technology, which allows them to offer packet-switched telephony or VoIP.[55] Because of these technological developments, cable telephony costs have fallen dramatically—first with reductions in the costs to cable companies of circuit-switched telephony and, more recently, with the introduction of less costly IP-based technologies. These cost reductions have greatly facilitated cable entry and expansion in voice telephony. As a December 2005 In-Stat report noted:

> [T]he provisioning of both VoIP and circuit-switched cable telephony gets cheaper every year.... [A] current circuit-switched cable telephony customer costs a cable MSO, like Comcast or Cox, approximately $375 to activate. This cost has dropped considerably over the past few years, from $600 in 2000....
>
> [T]he estimated cost for a premise powered VoIP-based cable telephony solution is approximately $280 per subscriber.[56]

[55] *See, e.g.*, A. Breznick, *Cox Accelerates Switch to IP Telephony Service,* Cable Digital News, April 1, 2005, available at http://www.cabledatacomnews.com/apr05/apr05-3.html.

[56] M. Paxton, *Cable Telephony Service: VoIP Drives Subscriber Growth*, In-Stat, December 2005, p. 28.

Bernstein Research observed that

> [T]he so-called "Halo Effect" [of VoIP] owes to the marginal economics of bundling. Cable operators can offer voice and data services over a pre-existing video infrastructure. As a result, the incremental cost of each service is extremely low. Cable operators can therefore offer consumers a very attractive bundled "triple play" price, while still earning compelling, and indeed accretive, margins and returns on investment.[57]

In light of these economic factors, cable companies have expanded IP-based technology to compete for substantial and increasing numbers of voice subscribers. As noted by the Florida Public Service Commission:

> A major trend in the VoIP world is the accelerating growth of voice services, particularly VoIP services, provided by traditional cable television companies. Cable providers have taken advantage of their broadband platforms to launch VoIP services to compete with traditional ILEC providers. VoIP services began to appear as an adjunct to cable broadband offerings in the second half of 2005, and the push intensified in 2006 as more cable franchise areas began to offer voice communications. Comcast, Time Warner Cable, and Cablevision lead the way nationally. Comcast, Bright House Networks, Cox Communications, Knology, and Time Warner Cable are cable providers deploying VoIP in Florida. The cable industry has pushed to bundle voice, data, and video services together in a single offering for consumers in anticipation of traditional telecommunications providers entering video markets. At this stage, cable providers have made greater gains in the communications market nationwide than the traditional telecommunications companies have made in entering the video service markets. [58]

Bernstein Research expects continued cable VoIP growth. For example in April 2007, it forecasts that about "25% of the country will be VoIP enabled for the *first time* in 2007," which means that cable VoIP availability would grow from 70 million homes passed nationwide in 2006 to 92.3 million in 2007.[59] It also pointed out in early 2007 that:

> The center of gravity in the VoIP market has shifted away from the start-up providers (most notably Vonage) towards the cable operators (most notably Comcast)....We're no longer in the realm of "innovators" and "early adopters;" VoIP has gone mainstream.
>
> Given the inevitable time lags between availability and full-scale marketing, the total impact is likely to be significantly greater, as a large percentage of homes

[57] C. Moffet, *et al., Cable and Satellite: ~40% of Cable VoIP Customers "New" to Broadband,* Bernstein Research, July 6, 2006, p. 2.

[58] *Florida PSC 2006 Competition Report*, p. 14 (footnotes omitted). As noted in the *Report*, Comcast has acquired Time Warner Cable's Florida operations.

[59] *See* Bernstein Research, *VoIP: The End of the Beginning*, April 3, 2007, p. 1, and Exhibit 3, p. 4; emphasis added.

ostensibly passed in 2006 will experience their first real marketing pressure in 2007.

> What is perhaps most surprising, however, is that cable is, as an industry, only a little more than half finished with its roll-out, suggesting that – for cable, at least – the best is yet to come. Although reported coverage for operators like Comcast points to coverage in the 60-70% range, the marketing time-lag before the triple play is actively marketed suggests an effective coverage rate of just 50% or so for the industry as a whole. Among the majors, only Cablevision and Cox have completed deployment; others – like Comcast ... and Bright House [the second largest cable provider in Florida] – have a long way to go before they call their deployments complete. As an industry, cable is still in its early roll-out phase.[60]

Given the pace with which the cable companies have been expanding their advanced offerings in Florida, described in the next section below, it is clear that cable broadband and VoIP will have a major impact on the competitive landscape of the state.

2. Cable Telephony and Broadband Are Available Throughout Florida

Cable companies present a potent competitive challenge to wireline companies in Florida today because: (1) they cover almost the entire population of the state (94 percent of households are passed by cable systems);[61] (2) with a penetration rate of 81 percent of homes passed (above the national average of 71 percent), they have already garnered a large customer base to which they can sell their voice and Internet services as well;[62] and (3) they have already deployed broadband services to 99.8 percent of the homes they pass and deployed telephony services to 86 percent of their homes passed (see Table 1, above), which implies that 94 percent and 81 percent of total homes in the state have access to these two services, respectively.

Almost 100 percent of homes passed by cable in Florida have been upgraded to provide cable broadband service; and almost 97 percent of the homes passed by cable outside of MSAs were upgraded to provide cable broadband service. The widespread availability of cable broadband is extremely significant because it means that: (1) even the minority of Florida households not yet passed by cable telephone service could be upgraded to have that service available at relatively low incremental costs; and (2) as previously discussed, once cable companies have upgraded their systems to provide broadband, VoIP providers such as Vonage can serve these homes.

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[60] *Id*, pp. 1-2.

[61] Warren Communications News, *Cable Fact Book*, GIS Format and Census block group information. *See* Tables 1 and 2.

[62] *See* Warren Communications News, *Television & Cable Factbook 2008*, p. F-3, "U.S. Cable Penetration State by State."

3. Florida Cable Providers are Experiencing Great Success with Their Telephony Services

Florida cable providers have experienced great success in attracting voice customers. For example, Bright House, which deployed cable telephony in June and October 2004 in its Tampa Bay and Central Florida systems, had nearly 500,000 Digital Phone subscribers in about three and a half years in its "Florida footprint,"[63] a penetration rate of close to 25 percent of homes passed in October 2006.[64] In response to the success of Digital Phone, Bright House introduced a new calling plan, Florida Unlimited that provides customers with anytime calling throughout Florida for as low as $28.95 per month.[65]

Published national data show that Florida's cable companies have been making dramatic inroads into the telephony business in those areas where they have made the service available. For example:

- During its recent 4th Quarter 2007 earnings call Comcast reported that:

  > [O]ver the past three years we've been able to grow our CDV [Comcast Digital Voice] business very significantly. Today, we are the fourth largest residential phone company in the country with 4.4 million customers or about 10% of the available homes.
  >
  > Almost 28% of our video customers currently take a phone from Comcast. We added 2.5 million Comcast digital voice customers in 2007, which is 61% more than we added in 2006.
  >
  > [A]nd we've been adding approximately 600,000 new customers for each of the last four quarters. We expect to be able to add as many CDV customers in 2008, as we did in 2007.
  >
  > We grew total phone revenue to $1.8 billion, an $815 million increase in 2007, as we expanded the ability of our service by nine million homes to 42 million homes or 86% of our footprint. We're seeing the benefits of our scale in the cost side of this business as well....we are seeing real operating efficiencies and it will only get better.
  >
  > Our direct cost-per-subscriber declined 40% in 2007, due to lower per unit rates for long distance in internet connection cost and improved network reliability, which resulted in lower customer contact rates. . . .

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[63] *See* St. Petersburg Times, "Bay area assists Verizon FiOS boom," January 29, 2008. By mid 2006 Bright House passed about 2,048,000 homes in its Florida footprint.

[64] We estimate a penetration rate of 14.8 percent based on data on homes passed from Table 3 of our 2006 report.

[65] Bright House Networks Press Release, *More than 225,000 Florida Families Switch to Bright House Networks Digital Phone: Now Announcing a Florida Unlimited Calling Plan*, May 2, 2006. The price was still available on March 5, 2008 according to their web site.

> We continue to see strong growth in our CDV service, and see no reason why we can't double our business and achieve 20% to 25% penetration over the next couple of years. CDV is the cornerstone of our bundling efforts, and we believe we are still in the very early innings. At the end of the fourth quarter, about 16% of our total video customers had three services, and that's up from just 6% a year ago, in all 54% of our customers taking two or more services compared to 45% in 2006.
>
> In addition to seeing continued success with our unlimited local and long distance service, we began introducing more service choices like an unlimited local offer, which includes per minute long distance ... in order to address a wider potential customer base. We are also very excited about rolling out CDV product enhancements in the second half of 2008 that will be first in the marketplace, which will take advantage of our totally IP infrastructure.[66]

- Comcast Chairman and CEO, Brian Roberts points to Cox, another large Florida provider, as a barometer of Comcast's future penetration rates: "As I look to Cox ...which has been in the Internet telephony business for a lot longer than Comcast...they have some markets that have reached 50%."[67] In July 2006, Cox reported telephone penetration of 33 percent of total cable customers and 24 percent of homes passed.[68] More recently, Cox, which describes itself as the "pioneer of the three-product bundle of digital telephone, video and Internet services," stated that it ended the fourth quarter of 2007 with 62 percent of its residential subscribers taking two or more services; reached 2.38 million telephone subscribers; and "focused on phone in 2007; employees answered the call by delivering 357,000 additional residential phone customers."[69]

- Mediacom ended the first quarter of 2006 with 46,000 voice subscribers, virtually all attained in the preceding two quarters. This represents penetration of VoIP-capable homes of 2.9 percent in only six months.[70] By the end of 2007, the company reported that:

> Telephone revenues rose 71.4%, primarily due to a 76.2% year-over-year increase in phone customers. Phone customers grew by 20,000, as compared to a gain of 22,000 in the prior year period, ending the year with 185,000 customers, or 7.3% penetration of estimated marketable phone

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[66] See Comcast Corporation Q4 4007 Earnings Call Transcript, available at http://seekingalpha.com/article/64684-comcast-corporation-q4-2007-earnings-call-transcript?source=homepage_transcripts_sidebar&page=4, accessed March 2, 2008.

[67] *See* E. Savitz, *At Last, a Bright Cable Picture*, Barron's, May 15, 2006.

[68] *See* Cox Communications Press Release, *Cox Digital Telephone to be Available in all Cox Markets by End of Year*, July 13, 2006.

[69] *See* Cox Communications Press Release, *Greater Than 62% of Cox Customers Now Bundling Services*, February 13, 2008.

[70] *See* Pike & Fischer, Broadband Advisory Services, *VoIP Deployment & Strategies Update: Cable Operators*, July 2006, p. 9.

homes. As of December 31, 2007, Mediacom Phone was marketed to nearly 90% of the Company's 2.84 million estimated homes passed.[71]

- Smaller, more regional providers with a Florida presence are achieving similar results. For instance, Knology prior to its PrairieWave acquisition, ended the third quarter of 2006 with over 160,000 voice subscribers, representing penetration of 21 percent of homes passed.[72]

4. Competition from Advanced (Telephone and Broadband) Cable Services Will Continue to Increase

The availability of cable telephony in Florida will undoubtedly increase over the next several years. As shown in Table 1 above, Florida cable providers have completed upgrading virtually 100 percent of their systems to provide high speed Internet access, which means that they have made this service available to almost 100 percent of the households passed by their networks. Once this step is completed it is relatively easy to add telephone service. When Comcast makes Digital Voice available throughout its Florida systems, 98 percent of homes passed by cable in the state will have cable company-provided voice service available.

Although we were not able to find state-specific forecasts of cable telephony penetration, the available data imply that penetration will increase in Florida. First, the NCTA and FCC data we presented above show strong growth of cable telephone services. For example, the NCTA data show that the number of residential subscribers grew from 1.3 million in the second quarter of 2001 to 13.7 million residential telephone subscribers by September 2007, with most of that growth coming in the last two years.

Second, since we completed our report in 2006, cable telephone service availability in Florida has grown by over 23 percent. Moreover, the cable companies have achieved substantial penetration gains over time in those areas where they have made telephone services available. See discussion of major Florida cable companies above. See also Figure 7 of our 2006 report that shows cable providers that have offered voice services for a longer duration have achieved significant penetration rates, although even some relatively new entrants have already achieved substantial penetration rates.

Third, market research reports and company releases forecast continued rapid growth in cable telephony subscribers. Pike & Fisher estimated in the first quarter 2006 that "with practically every major MSO now deploying IP telephony service, cable operators are now adding about 250,000 customers each month."[73] Leichtman Research estimated third quarter 2007 growth of 380,000 net additions per month. At an investor conference in September 2007, Comcast announced its goal of raising its telephone service penetration from 8 percent in the

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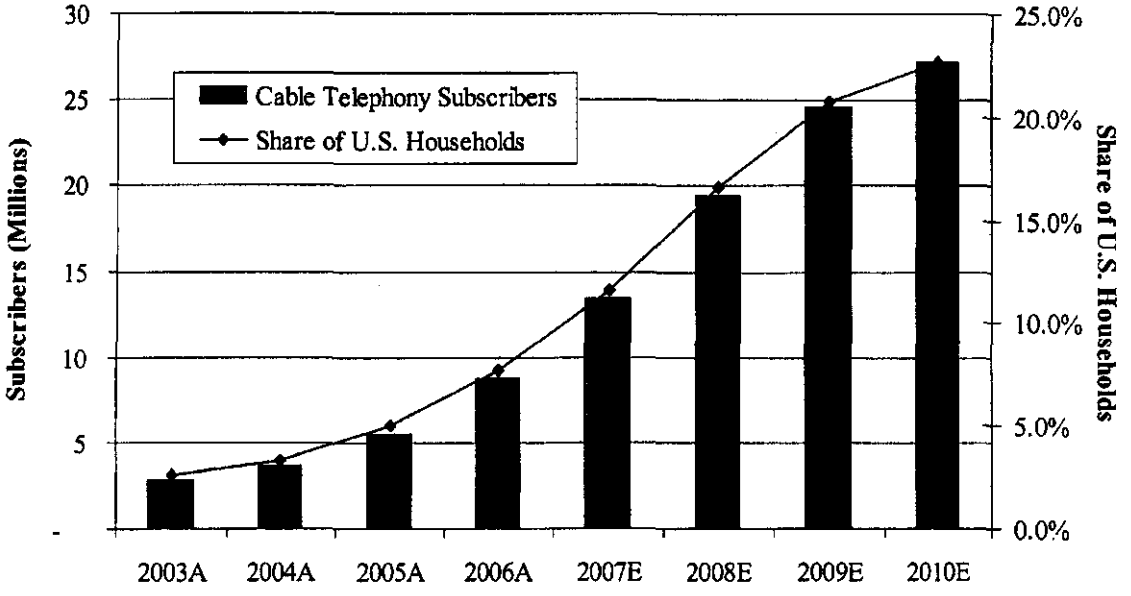
[71] "Mediacom Communications Reports Results for Fourth Quarter and Full Year 2007," http://phx.corporate-ir.net/phoenix.zhtml?c=98270&p=irol-newsArticle&ID=1112378&highlight=, accessed March 2, 2008.

[72] *See* Knology Inc. SEC, Form 8-K, January 8, 2007, p. 8.

[73] *VoIP Deployment & Strategies Update: Cable Operators*, Broadband Advisory Services, Pike & Fischer, April 2006, p. 3.

second quarter 2007 to 20-25 percent by year-end 2009."[74] Bernstein Research estimates that cable telephony subscribers will grow to over 27 million cable telephony subscribers (or 22.7 percent of U.S. households) by year-end 2010. These predicted growth trends are illustrated in Figure 8 below.

Figure 8
Cable Telephony Subscribers
2003 - 2010



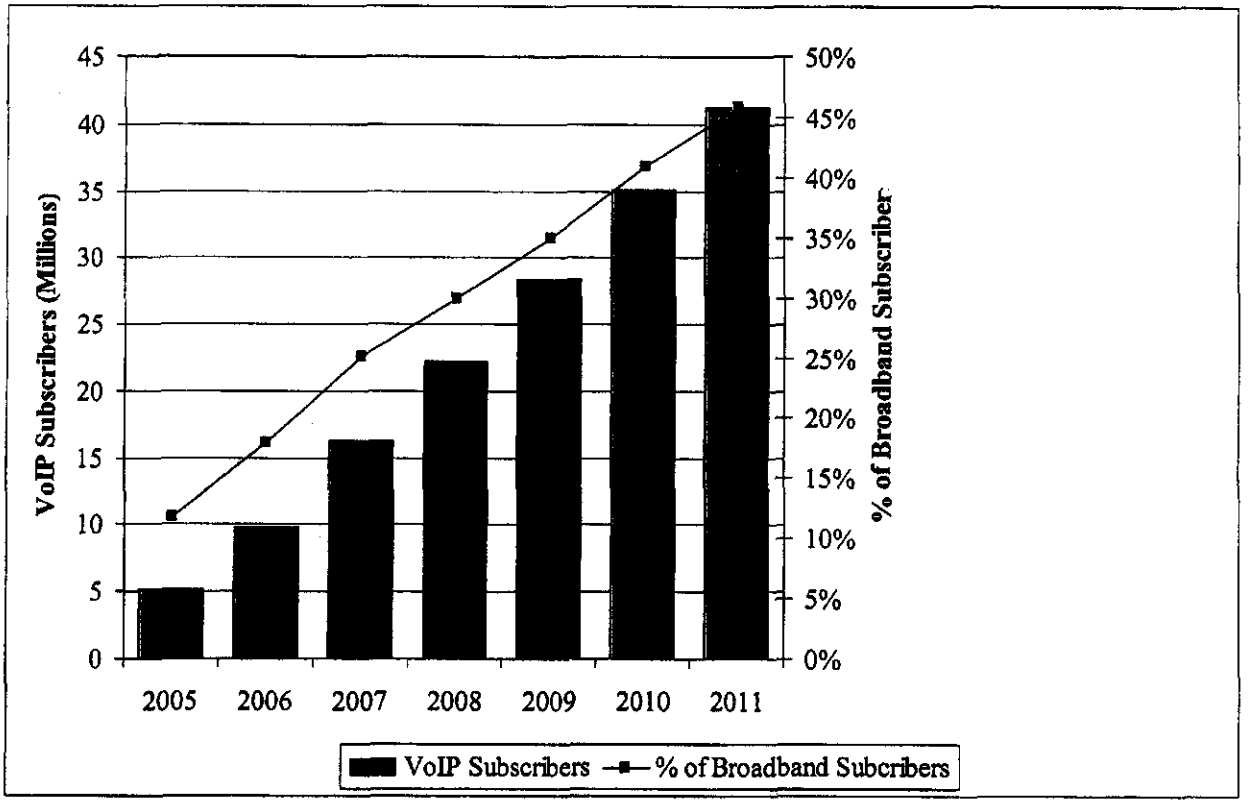
Source: C. Moffett, *et al.* ,Bernstein Research, *VoIP: The End of the Beginning,* April 3, 2007, Exhibit 8.

Similarly the spread of broadband has stimulated and is expected to continue to stimulate the growth of VoIP—especially as provided by cable MSOs. Figure 9 below provides a forecast of VoIP over broadband. According to the forecast, cable MSOs make up and will continue to account for the majority of total (cable plus "over the top") VoIP subscribers.[75]

[74] Comcast expected to be the fourth largest residential phone company by the end of 2007. *See* Comcast, *Merrill Lynch Media and Entertainment Conference,* September 17, 2007, p. 15.

[75] Source: eMarketer, April 2007. http://www.emarketer.com/Article.aspx?id=1004829

Figure 9: US Residential VoIP Subscribers



5. Competition From Cable Providers Is Affecting Wireline Carriers.

Analysts' reports show that the gains by cable companies have come at the expense of traditional wireline companies. Bernstein characterizes each of the lines gained by cable providers as a line lost by a traditional carrier, stating "not surprisingly, VoIP's gain has come at the telcos' expense."[76]

Losing a voice customer to cable is especially damaging in today's marketplace, in which competition takes place for the consumer, or the bundle, rather than for one type of service, because the loss of a voice customer likely entails the loss of a DSL (or dial-up customer) and a potential (or even existing) video customer.[77] For example, Bernstein Research recently found that approximately 40 percent of cable VoIP subscribers are new cable modem subscribers.[78]

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[76] *Id.*, p. 7 and Exhibits 11 and 13.

[77] Additional reasons why losses to cable telephony are particularly painful to wireline carriers include (1) the wireline carrier receives no offsetting wholesale revenue as it would if it lost the customer to a UNE or resale-based CLEC, and (2) a large proportion of wireline costs are fixed with respect to the number of customers, so when a wireline customer switches to cable, the reduction in revenue is not offset by a reduction in costs.

[78] C. Moffet, *et al., Cable and Satellite: ~40% of Cable VoIP Customers "New" to Broadband,* Bernstein Research, July 6, 2006.

Additionally, as discussed below, research shows that customers who cut the cord are more likely to obtain broadband service from the cable company than from the telephone company.

Florida cable companies are offering competitive bundles to consumers today. A sampling of the cable companies' "triple play" bundles is depicted in Table 3.

Table 3
Voice, Internet and Video "Triple Play" Bundled Service Offerings for Residential Customers in Florida

Provider	Comcast	Cox	Cox	Bright House
Plan	Cable, High Speed Internet and Digital Voice	Cox Bundle	Standard Cable, High Speed Internet Preferred Tier & Digital Telephone Unlimited	Digital Combo Plus
Price per month	$99.00	$89.85	$125.64	$99.95
Voice service features:				
Local Minutes	Unlimited	Unlimited	Unlimited	Unlimited
Long Distance Minutes				
Number of features	12	14	14	17+
Internet service features:				
Number of features	3	4+	4+	4+

Note: Comcast's Triple Play is at a promotional rate of $99.00/month for 12 months.
Bright House's Digital Combo Plus is at a promotional rate of $99.95 for 12 months.
Cox Bundle is at a promotional rate of $89.85 for six months.
Source: Provider websites.

LEC customer losses have led to price competition in the provision of both Internet and telephony services, competition that is expected to continue (and expand into video services). For example, Bernstein Research observed that "the Bells appear to be responding to the VoIP threat with price cuts" on their calling plans as cable companies have begun to achieve significant market share in part due to their "aggressive pricing."[79] Competition between the telephone companies and the cable companies extends to their broadband offerings: "The battle for broadband subscribers heated up in 2005, as phone companies began offering lower-priced services to attract consumers who may be less tech-savvy."[80]

[79] J. Halpern, *et. al., Quarterly VoIP Monitor: The "Real" Price Gap for VoIP Driving Rapid Subscriber Growth*, Bernstein Research, July 22, 2005, pp. 3 and 5.

[80] M. Reardon, *BellSouth cuts DSL pricing*, Cnet News.com, January 9, 2006, available at http://news.com.com/BellSouth+cuts+DSL+pricing/2100-1034_3-6024736.html.

As the telephone companies expand their video offerings in the state, cable companies will likely compete even more aggressively. According to a March 2008 story on *PalmBeachPost.com*:

> The war for TV, Internet and telephone customers is escalating this year as phone companies push deeper into cable's territory and cable firms prepare a high-tech counterattack, promising new video features and greater online speeds.
>
> The ultimate winner will be consumers benefiting from more competition, analysts say. People should expect a marketing frenzy this year, with promotions for speedier Internet connections and broader offerings of high-definition TV programming.
>
> "It's turning into a customer-oriented marketplace, and both sides see it as an all-or-nothing game now," said Jeff Kagan, an industry analyst based in Atlanta. . . .
>
> Cox spokesman David Grabert....said Verizon has "pulled out all the stops" and is spending heavily to get each new customer."
>
> "We're definitely holding our own," Grabert said. "It's expensive for them to overcome that inertia the cable companies already have. It's really them that has [sic] the challenge of keeping up with us."[81]

In the face of price competition and LEC entry into video, cable companies are expanding their offerings into the wireless services area, through strategic alliances and exploration of new technologies and by offering higher speed broadband and enhanced video services. In late 2005, for example, cable providers Time Warner Cable, Comcast, Cox and Advance/Newhouse (parent of Bright House Networks), in conjunction with Sprint Nextel, announced a joint venture enabling them to offer the "quadruple play" of video, voice, Internet and wireless services. The venture has rolled out the service in 33 markets, including Bright House's Central Florida division. Although expansion to other markets seems to be frozen for now because of the complexities of the current joint provisioning process, the cable companies remain interested in offering wireless services.[82]

Cable providers are also investigating new technologies to deliver traditional services. For example, Cable Digital News reports that "CableLabs is exploring an industry-wide initiative tentatively titled 'CableRoam' to deliver data and voice services to customers over Wi-Fi, WiMAX, home Wi-Fi and other wireless broadband technologies."[83]

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[81] David Ho, "TV, Internet, phone service fight grows," Palm Beach Post-Cox News Service, March 02, 2008,

[82] Sprint announced in November 2007 that it was halting the introduction of the service into additional markets. *See*, Mutlichannel News, *Taking the Time to Pivot,* June 23, 2007 and *Sprint Freezes Pivot* , November 5, 2007.

[83] *See* A. Breznick, *Cable Weighs Wireless Broadband Push to Fight Telcos*, Cable Digital News, April 1, 2006, available at http:/www.cabledatacomnews.com/apr06/apr06-2.html.

These developments are significant for at least two reasons. First, they are compelling evidence that cable companies compete with the LECs today. Second, they exemplify how technological developments are stimulating further competition: as the LECs deploy more advanced services and networks of their own, they will continue to spur the cable companies to compete even more vigorously. For example, in describing AT&T's efforts to market its DSL IP video offering, The Wall Street Journal pointed out that "cable companies aren't waiting for the parade.... [C]ompanies like Comcast and Time Warner are pushing to add a wide range of new features and content to their cable services...."[84] As the PalmBeachPost.com story points out:

> Comcast also is spearheading the counterattack in the Internet speed contest with a new technology to squeeze more bandwidth from existing cable networks. Dubbing it "wideband" technology, Comcast says it will deliver download speeds of up 100 megabits per second to customers over the next two years with the potential to get even faster.
>
> Comcast says some customers should start seeing that technology this year, though the company has not announced details for residential plans.
>
> No. 2 Time Warner Cable Inc. and No. 3 Cox Communications are testing the technology, which is called Docsis 3.0.[85]

C. Mobile Wireless

1. Overview

Major technological advances and cost reductions have enabled wireless carriers to improve service quality, diversify their service offerings, and make them competitive with wireline services. All wireless providers now typically offer free long distance, large bundles (or "buckets") of usage (particularly free night and weekend minutes), and large local calling areas, along with low per minute rates for additional usage, and a number of free vertical features such as call waiting and voice mail. New "family" plans are proving to be very popular.[86] Wireless carriers have also introduced "basic" or "regional" plans, which provide fewer anytime minutes, for as low as $30 per month. And some providers now offer free "in-network" calling.[87] Taken together, inherent mobility, low per minute prices, "free minute" allowances, flat rated pricing, no long distance or roaming charges, and nationwide coverage have positioned wireless carriers

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[84] D. Searcey and P. Grant, *Selling TV Like Tupperware*, The Wall Street Journal, June 29, 2006, B1.

[85] David Ho, "TV, Internet, phone service fight grows," Palm Beach Post-Cox News Service, March 02, 2008,

[86] *See, e.g.*, PR Newswire, *Family Wireless Plans Prove Popular with Two in Five U.S. Adult Cell Phone Users Participating, According to New Harris Interactive Survey; Only three percent of those in a family plan have a family member who opted out of their plan*, March 30, 2006.

[87] One carrier recently introduced a feature allowing its customers spending $60 per month or more to make free calls to 10 phone numbers of their choice, anywhere in the U.S., wireline or wireless, 24 hours a day. *See, e.g.*, K. Fitchard, *Alltel unveils mother of all free calling plans*, Online Exclusive – Telephony, April 21, 2006.

to capture a significant portion of demand that was traditionally met by wireline service providers.[88]

The FCC reports that the national wireless penetration rate has reached 80 percent of the overall population and ***"virtually everyone between the ages of 15 and 69 has a wireless phone."***[89] According to one analyst (cited by the Florida PSC), by 2004, 40 percent of total market minutes were wireless, a figure expected to pass 50 percent in 2005.[90] From 2000 to 2006, the monthly minutes of use ("MOUs") per mobile subscriber increased from 255 to 714.[91] The FCC notes that "increasing MOUs are a result of the demand-stimulating effect of falling prices and the wider acceptance of and reliance upon wireless service," and cites one analyst as attributing the growth in MOUs to "increasing adoption of the wireless handset as the primary means of voice communications."[92]

According to the Pew Internet Project's December 2007 survey:

> Accompanying [the] changing nature of access – no longer slow and stationary, but now fast and mobile – has been a transformation in how people value their media access tools. When asked how hard it would be to give up a specific technology, ***respondents are now most likely to say the cell phone would be most difficult to do without, followed by the internet, TV, and landline telephone. This represents a sharp reversal in how people viewed these technologies in 2002.***[93]

The data reported by the Pew study show how traditional communications technologies—especially landline phones have been eclipsed by wireless services.

- At year end 2007 only 40 percent of respondents with a landline phone said it would be very hard to give it up, down dramatically from 63 percent in 2002.
- The reverse is true for wireless—in 2007 51 percent said they would find it very hard to give up their cell phone compared to 38 percent who said it would be very hard to give up in 2002

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[88] Tables 7, 8 and 9 below contain examples of the various types of plans that are available to Florida customers.

[89] Federal Communications Commission, *Annual Report and analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Twelfth Report* ("Twelfth CMRS Report"), FCC 08-28, released February 4, 2008, ¶ 244.

[90] *See Florida PSC 2005 Competition Report,* p. 38 (citing Horan et al., "Transfer of Coverage: We Favor Wireless and Cable Over Wireline," CIBC World Markets, May 3, 2005, p. 21).

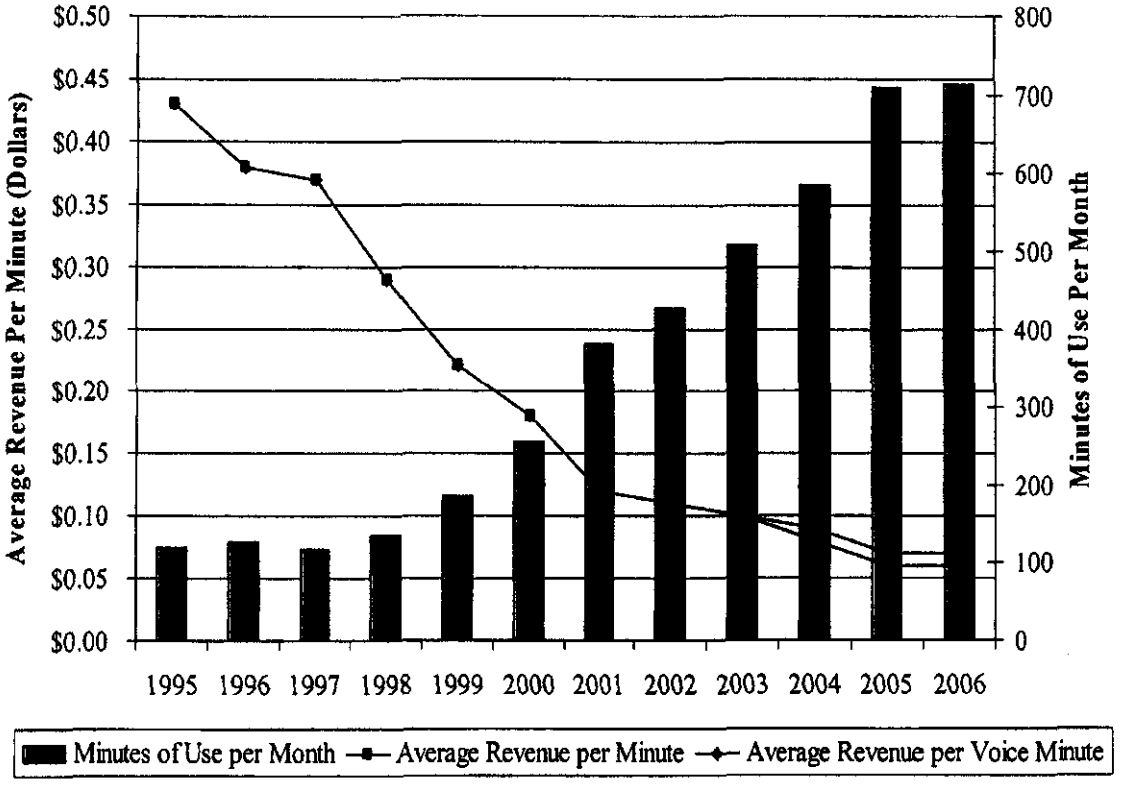
[91] *Twelfth CMRS Report*, Table 14.

[92] *Id.*, ¶ 169.

[93] Data Memo by Pew Internet and American Live Project, Associate Director John Horrigan, RE: MOBILE ACCESS TO DATA AND INFORMATION, March 2008; emphasis added. www.pewinternet.org/pdfs/PIP_Mobile.Data.Access.pdf.

Figure 10 below illustrates the growth in MOUs per wireless subscriber that has resulted from and contributed to the declining average charges for wireless usage.[94]

Figure 10. Wireless Minutes of Use per Month and Average Revenue per Minute



Source: FCC, 12th Annual CMRS Competition Report, Table 14.

Wireless services also have become more attractive as providers have modified their networks and manufacturers have improved customer equipment to incorporate features such as enhanced data capability, text messaging, color screens, PDAs, greater availability of push-to-talk capability, voice activated speed dialing, speaker phones and cameras. The competitive advantages that these features and other attributes confer on wireless services are demonstrated by the differences in growth between wireless and wireline services. For example, from

[94] Note that the Bureau of Labor Statistics wireless services price index decreased significantly from the late 1990s through 2001 and continued to fall, although at a slower rate, through the end of 2005; the price index for wireline services, however, stayed relatively constant over this period as declines in toll service prices offset local price increases. Thus, wireless prices have declined by an even greater amount relative to prices for wireline services. Price indexes are from http://www.bls.gov/, Series ID CUUR0000SEED03 and CUUR0000SEED.

December 31, 2000 to December 31, 2006 mobile subscribership in Florida grew by an average of about 15 percent per year, while the number of access lines in the state fell by an average of about 2.6 percent per year.[95]

In 2005, the Florida Public Service Commission noted:

> Whether an intermodal competitor's service is seen as a substitute or a complement to traditional wireline service depends on how consumers view ... factors such as quality..., availability, price, and convenience. What is undeniable is that the number of wireline access lines in service continues to decline, while the number of wireless and VoIP subscribers is steadily increasing.[96]

In 2006, the Commission recognized correctly that:

> [A] factor most likely to contribute to weakened [LEC] residential market performance is the increasing acceptance of intermodal competitors, especially wireless and Voice over Internet Protocol (VoIP) service providers, as adequate substitutes for wireline telecommunications service by the consuming public.[97]

As shown below, this pattern does, in fact, reflect the displacement of wireline services by wireless services.

2. Wireless Service is Available Throughout Florida

Wireless services are available throughout Florida. About 99 percent of households in the state have access to at least three wireless service providers, 97 percent have access to four or more such providers (as shown in Table 4 below).

The areas served by wireless carriers are not restricted to high density urban areas. For example, Table 4 shows that at least 99.5 percent of households in every MSA in the state have at least two wireless alternatives available to them and that 99 percent of households in the rural (non-MSA) areas in Florida have access to 2 or more wireless providers. The ubiquity of wireless service in Florida is confirmed by the *Florida PSC 2005 Survey*, which found that 31 percent of urban respondents were considering switching to wireless-only service, compared to 28 percent of rural respondents.[98] Clearly, wireless is a viable alternative for rural customers in Florida.

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[95] *See FCC December 2006 Local Competition Report*, Tables 9, 10, and 14.

[96] *Florida PSC 2005 Competition Report*, p. 62.

[97] *Florida PSC 2006 Competition Report*, p. 2.

[98] *Florida PSC 2005 Survey*, Figure 26.

Table 4 Wireless Services Are Widely Available in Florida			
MSA	**Percent of Households Served by:**		
	2 or More Carriers	**3 or More Carriers**	**4 or More Carriers**
Cape Coral-Fort Myers	100.0%	100.0%	99.9%
Deltona-Daytona Beach-Ormond Beach	99.7%	98.7%	97.5%
Fort Walton Beach-Crestview-Destin	100.0%	100.0%	99.7%
Gainesville	100.0%	99.2%	94.2%
Jacksonville	99.5%	97.8%	95.2%
Lakeland-Winter Haven	100.0%	99.7%	98.7%
Miami-Fort Lauderdale-Miami Beach	99.8%	99.6%	99.4%
Naples-Marco Island	100.0%	99.8%	97.4%
Ocala	100.0%	95.0%	87.9%
Orlando	99.9%	99.2%	97.9%
Palm Bay-Melbourne-Titusville	99.9%	99.7%	98.5%
Panama City-Lynn Haven	100.0%	100.0%	98.7%
Pensacola-Ferry Pass-Brent	100.0%	100.0%	99.5%
Port St. Lucie-Fort Pierce	99.5%	99.4%	99.2%
Punta Gorda	100.0%	99.8%	99.2%
Sarasota-Bradenton-Venice	100.0%	99.9%	99.5%
Tallahassee	100.0%	98.9%	94.4%
Tampa-St. Petersburg-Clearwater	100.0%	99.9%	99.9%
Vero Beach	99.9%	99.4%	98.9%
Non-MSA Area	99.0%	92.1%	75.0%
Total	99.8%	99.0%	97.1%
Source: Provider websites (service coverage maps) and Census block group information.			

National data confirm that wireless carriers' footprints now cover extensive stretches of rural areas as well. The FCC recently found that rural areas were served by an average of 3.6 mobile carriers.[99] According to a 2002 survey of Rural Cellular Association ("RCA") members, there are: (1) an "average of 5.1 wireless competitors in survey participants' markets, having increased steadily from 3.0 competitors in the 1998 *RCA Survey*;" (2) "robust and effective

[99] For this purpose, the FCC defined "rural" as counties with 100 persons or fewer per square mile. *See Twelfth CMRS Report*, ¶ 105.

competition, increasing year-to-year, in the markets served by RCA members;" and (3) "evidence of increasing customer usage and declining per-minute pricing in rural areas, similar to trends that [have been] seen nationally."[100] Based on this and other evidence, the FCC concludes "that CMRS providers are competing effectively in rural areas."[101]

Wireless providers in Florida are offering a wide variety of packages and services to consumers, including individual, "local," and "family" plans. Florida consumers consider wireless service to be competitively priced and convenient to use. In the *Florida PSC 2005 Survey*, about 70 percent of respondents considering the switch to wireless-only service cited price and almost 50 percent cited convenience as reasons they were considering dropping their wireline phone.[102] A sampling of the wireless offerings available to Florida residents is provided in Tables 5, 6 and 7.

The plans in Table 5 show that consumers can purchase plans with up to 400 minutes included per month for $30 or less. These include several low-cost prepaid plans. The popularity of these plans has been growing rapidly and the plans promise to stimulate continued growth of mobile wireless. Although Florida specific data are not available, by the end of 2006, prepaid accounted for roughly 15 percent of major U.S operators' subscribers,[103] a figure that is expected to increase to over 50 million in 2010 (or 18 percent of total U.S. wireless lines). A recent article observes that prepaid subscribers generate lower monthly average revenue per user ("ARPU") – only about $14 to $37 depending on plan and provider, and the Yankee Group estimates average monthly ARPU of about $21, showing that prepaid plans provide a low cost means of obtaining telephone service.[104]

[100] *Ninth CMRS Report*, ¶ 110.

[101] *Twelfth CMRS Report*, ¶ 110.

[102] *Florida PSC 2005 Survey*, Figure 23.

[103] *Twelfth CMRS Report*, ¶ 117.

[104] The article noted: "As the U.S. wireless market becomes increasingly saturated, many analysts expect that carriers will continue incremental growth by turning to prepaid customers that they might have scorned in the past. Alltel Corp. is getting back in the prepaid game; Cingular Wireless L.L.C. showed a huge increase in Tracfone prepaid subscribers in the fourth quarter of 2005, contributing heavily to the 1.8 million net additional customers that the carrier gained. T-Mobile USA Inc. scored 1.4 million net adds in the fourth quarter, about one-third of which were prepaid." *See* Yankee Group, *North America Mobile Market Forecast, 2Q06*, June 2006 and K. Hill, *Prepaid vs. family plan debate hinges on ARPU,* RCR Wireless News, April 3, 2006.

Table 5: Wireless Plans for Residential Customers in Florida for $30.00 or Less					
Provider	Consumer Cellular	Consumer Cellular	Consumer Cellular	T-Mobile	Nextel
Plan	Anywhere Casual	Anywhere 100	Anywhere 400	Individual Basic	Sprint Basic Plan
Price per month	$10.00	$20.00	$30.00	$29.99	$29.99
Anytime minutes	0	100	400	300	200
Price per additional minute	$0.25	$0.25	$0.25	$0.40	$0.45
No Extra Charge for Long Distance	x	X	X	X	x
Night/Weekend minutes	0	0	0	Unlimited weekends	Unlimited
Call forwarding	x	X	X	x	x
Call waiting	x	X	X	x	X
Caller ID	x	X	X	x	X
Conference Calling	x	X	X	x	X
Voicemail	x	X	X	x	X
Other					Unlimited mobile to mobile for $5
Note: Not all information available for all plans. Used zip code 33609 for feature information. Source: Provider websites, accessed 3/5/2008.					

Table 6 shows a number of other plans that provide from 450 to 1000 any time minutes and greater off peak usage somewhat for about $40 per month. Wireless pricing plans are competitive with current wireline service charges in Florida. As a basis of comparison, bundled plans (which are preferred by the majority of Floridians) offered by AT&T Florida and Verizon range from about $35 to over $50 for the voice packages. For a la carte customers, the FCC reports that in 2006, the monthly residential telephone rate for local service in three Florida cities, Miami, Tampa and West Palm Beach, ranged from about $22 to $25.55. Assuming even $10 in toll spending (and no vertical features) implies that a la carte Floridians spend over $30 for wireline phone service.[105]

[105] Federal Communications Commission, Industry Analysis & Technology Division, Wireline Competition Bureau, *Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service, 2007,* Table 1.3. The *Florida PSC 2005 Survey* reports that most respondents prefer bundled packages and that only 28 percent of respondents do not subscriber to additional services other than basic telecommunications services (p. 2). Other estimates of average monthly household telephone spending are higher than those discussed. For example, the FCC reports that Bureau of Labor Statistics surveys found monthly household telephone expenditures to be about $97 in 2005. (See FCC *Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service, 2006,*at iv.) TNS Telecoms survey data for the first quarter of 2006 show that the average household spent about $37 on local service and $13 on long distance, for a total monthly spend of $50. See. TNS Telecoms Press Release, *Wired Line Phone Considered Most Important Household Communication Product*, June 22, 2006, available at http://www.tnstelecoms.com/press-6-22-06.html. AT&T Florida and Verizon bundled prices from respective websites.

Table 6: Wireless "Individual" Plans for Residential Customers in Florida					
Provider	T-Mobile	Alltel	Nextel	Verizon	AT&T
Plan	Individual Plus	Greater Freedom	Sprint Power Pack 450	Nationwide Basic 450	Talk 450 with Rollover
Price per month	$39.99	$39.99	$39.99	$39.99	$39.99
Anytime minutes	1000	700	450	450	450
Price per additional minute	$0.40	$0.40	$0.45	$0.45	$0.45
No Extra Charge for Long Distance	X	X	X	x	X
Night/Weekend minutes	Unlimited	Unlimited	Unlimited	Unlimited	5000
Access to 411	X		X	x	
Call forwarding	X	X	X		X
Call waiting	X	X	X		X
Caller ID	X	X	X	x	X
Conference Calling	X	X	X	x	X
Voicemail	X	X	X	x	X
Other		Unlimited mobile to mobile	Unlimited mobile to mobile for $5	Unlimited in-network calling	Unlimited mobile to mobile

Note: Not all information available for all plans. Used zip code 33609 for feature information.
T-Mobile's Individual Plus $39.99 offer is promotional.
Source: Provider websites, accessed 3/5/2008.

Table 7 provides a sample of family share plans that include from 550 to 900 anytime minutes for about $60 to $70 per month for two wireless users.

Table 7: Wireless "Family" Plans for Residential Customers in Florida

Provider	Alltel	T-Mobile	AT&T	Nextel	Verizon
Plan	National Freedom Family	FamilyTime Basic	FamilyTalk 550 w/Rollover	Sprint Power Pack Family Plan	Nationwide Basic Family SharePlan
Price per month	$59.99	$59.99	$59.99	$59.99	$69.99
Anytime minutes	900	700	550	550	700
Price per additional minute	$0.40	$0.40	$0.45	$0.45	$0.45
Night/Weekend minutes	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Access to 411	X	X		x	x
Call forwarding	X	X	X	x	
Call waiting	X	X	X	x	
Caller ID	X	X	X	x	x
Conference Calling	X	X	X	x	x
Voicemail	X	X	X	x	x
Other	Add up to 3 more lines. Unlimited mobile to mobile calling	Up to 3 additional lines	Maximum 3 lines. Unlimited mobile to mobile calling	Add up to 3 more lines	Add up to 3 more lines. Unlimited in-network calling

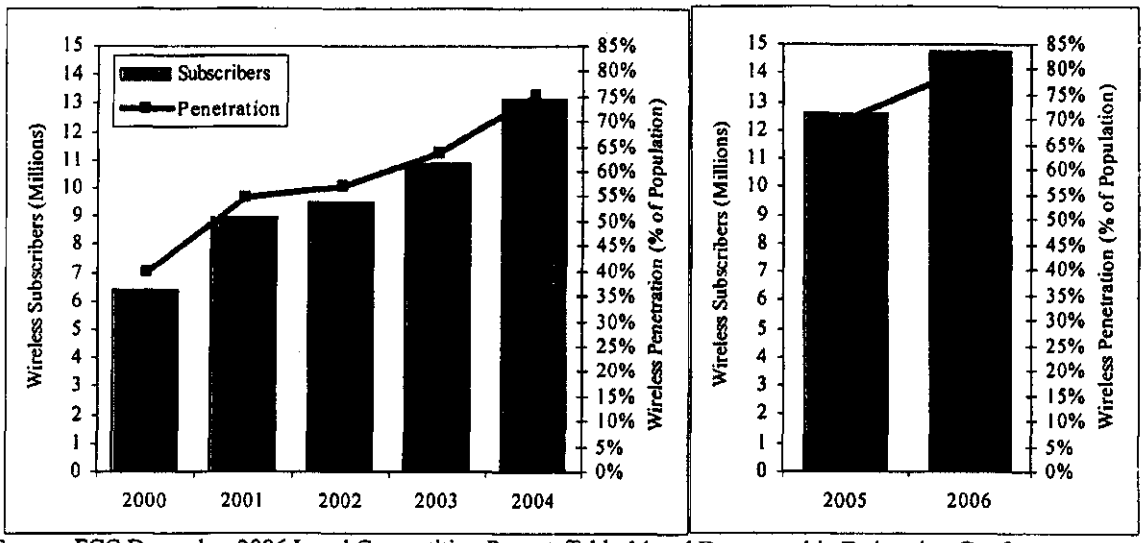
Note: Plans include two lines. Additional lines are $9.99 per month each.
Not all information available for all plans
Source: Provider websites, accessed 3/5/2008.

3. Wireless Subscribership Is Burgeoning in Florida

The number of wireless subscribers in Florida has grown dramatically, from 6.4 million in 2000 to 14.8 million in 2006. By 2006, wireless penetration in Florida had reached 80 percent and wireless subscribers exceeded traditional lines by about 4.7 million.[106] These trends are illustrated in Figure 11 below.

[106] *See FCC December 2006 Local Competition Report*, Tables 9, 10 and 14.

Figure 11. Wireless Subscribers and Penetration in Florida. [107]



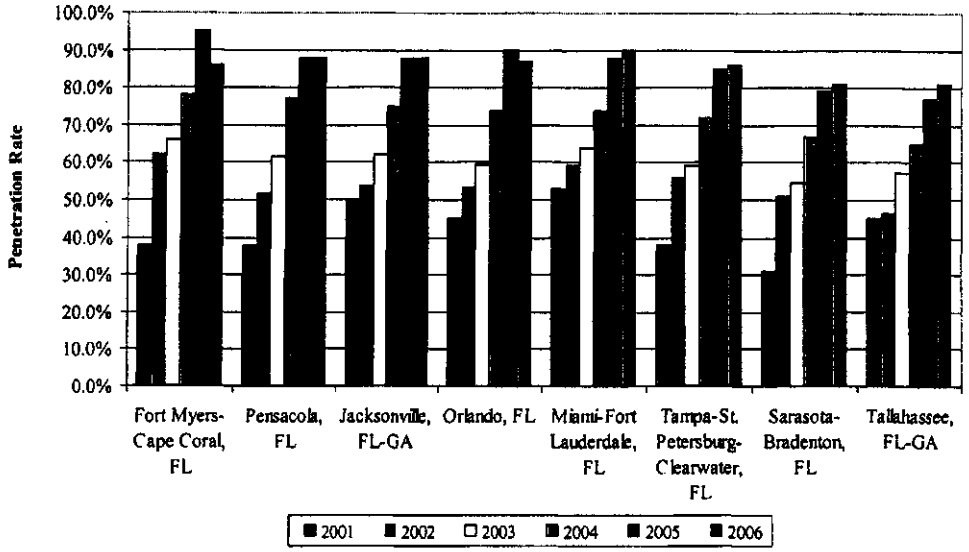
Source: FCC December 2006 Local Competition Report, Table 14 and Demographic Estimating Conference Database, updated July 2005.

The growth in wireless subscribers is occurring throughout Florida. Figure 12 depicts growth in wireless penetration in the Economic Areas in the state.[108] As shown in the Figure, by 2006, no area had penetration of less than 80 percent.

[107] The two periods are shown separately because of the change in FCC reporting practices starting in 2005. However, the upward trend starting in 2005 is consistent with that of the 2000-2004 period.

[108] Economic areas are defined by the Bureau of Economic Analysis. "Each economic area consists of one or more economic nodes–metropolitan areas or similar areas that serve as centers of economic activity–and the surrounding counties that are economically related to the nodes. The main factor used in determining the economic relationships among counties is commuting patterns, so each economic area includes, as far as possible, the place of work and the place of residence of its labor force." *See, e.g., Redefinition of the BEA Economic Areas,* available at http://www.bea.gov/bea/regional/articles/0295rea/.

Figure 12. Wireless Penetration in Florida Economic Areas.



Source: *Seventh-Twelwth CMRS Reports*.

Note that the FCC based its 2006 penetration rates on 2006 Census population data, whereas it based the earlier 2001 to 2005 penetration rates on 2000 Census data. Thus, the 2006 penetration data are not comparable with the prior years' penetration data.[109] The reporting change explains why Fort Myers – Cape Coral shows a (misleading) decline in penetration in 2006. That area was affected dramatically because it experienced a population growth rate of 29 percent from 2000 to 2006, which placed it among the 10 fastest growing metro areas in the US.[110]

4. Wireless Services Are Being Used As Alternatives to Wireline

Gains in mobile subscribers and usage have come at the expense of wireline carriers. There are three principal ways in which customers can use wireless services in lieu of fixed wireline services: (1) "cutting the cord" (by discontinuing fixed line service and using only mobile phone service); (2) shifting voice traffic (or usage) from fixed to mobile networks; or (3) shifting from using wireline to wireless as one's "primary" line. All three types of wireline displacement are occurring at a substantial rate.

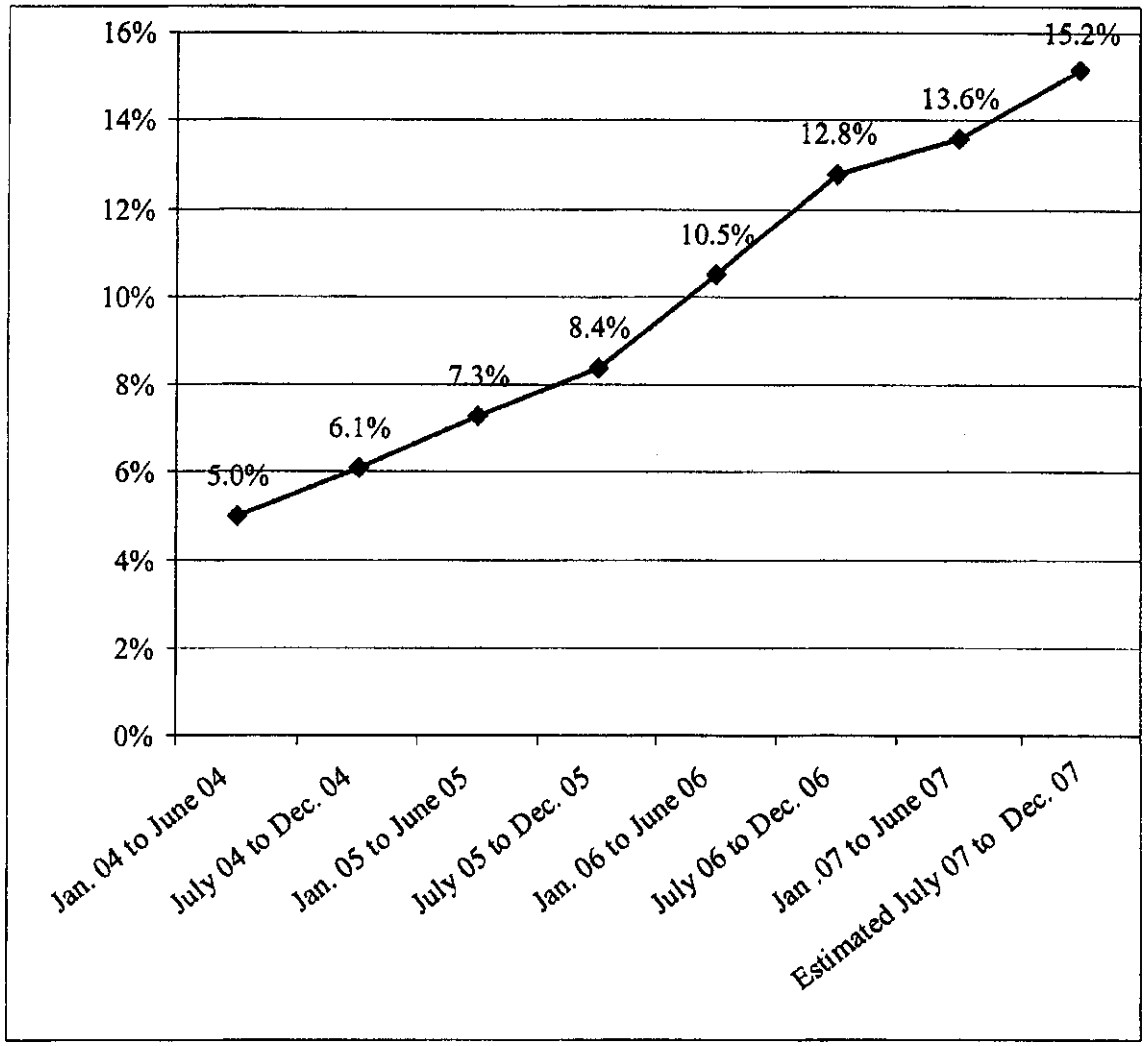
A substantial and growing number of wireline customers have already abandoned their wireline phones altogether. Data from the National Health Interview Survey show that by the

[109] See FCC Twelfth CMRS report at p. 131, which states: "EA penetration rates are not directly comparable with previous year reports since, in previous years, EA populations were based on Census 2000."

[110] See US Census Bureau News Release: "50 Fastest-Growing Metro Areas Concentrated in West and South," April 5, 2007. http://www.census.gov/Press-Release/www/releases/archives/population/009865.html

first half of 2007, about 13.6 percent of households had only wireless phones. As Figure 13 shows, the percentage of households with only wireless services has been growing over time; and if the trend shown since 2004 continues, more than 15 percent of households may now have only wireless phones.

Figure 13. Percentage of Household with Only Wireless Telephone Service



Source: Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, January – June 2007 by Stephen J. Blumberg, Ph.D., and Julian V. Luke, Division of Health Interview Statistics, National Center for Health Statistics.
Note: We used trend extrapolation to estimate the July 07 to Dec. 07 percentage.

Note also that a 2005 survey found that about 42 percent of respondents reported having a wireline phone, but characterized their mobile phone as their primary phone and only 43

percent reported that their wireline phone is still their primary phone.[111] In view of the Pew Center finding that the percent of landline phone subscribers who said it would be "very hard" to give up their wireline phone ***declined*** to 40 percent at year end 2007; whereas the percent of wireless subscribers who said it would be very hard to give up their wireless phone ***increased*** to 51 percent, it is likely that even more people now view their wireless phone as their primary phone. This implies that an even larger number of consumers than reported above could shift all of their calling to wireless if LECs attempted to raise prices above competitive levels.

As with LEC customer losses to cable providers, wireless substitution is especially damaging to wireline carriers in today's market, in which providers are competing to serve the customer, or supply the communications bundle, rather than simply provide an access line. A recent Forrester study found that households that disconnect their wireline phone are four times more likely to buy broadband service from cable operators than from phone companies. As stated by Charles Golvin, a Forrester analyst: "The possibility that phone companies can win these customers back is pretty low. Cord cutting and cable modems are a killer for them."[112]

Although Florida-specific data on wireless usage growth are not available, usage in Florida likely mirrors national usage trends. These data are highly informative, particularly when seen in light of the declines in usage in wireline networks. According to the Yankee Group, by 2005, 42 percent of local calls in households with cellular phones were made on wireless phones.[113] This trend in wireless calling is displayed in Figure 14 below. An earlier version of the same study shows that by 2004, 60 percent of long distance calls in such households were made on wireless phones.[114]

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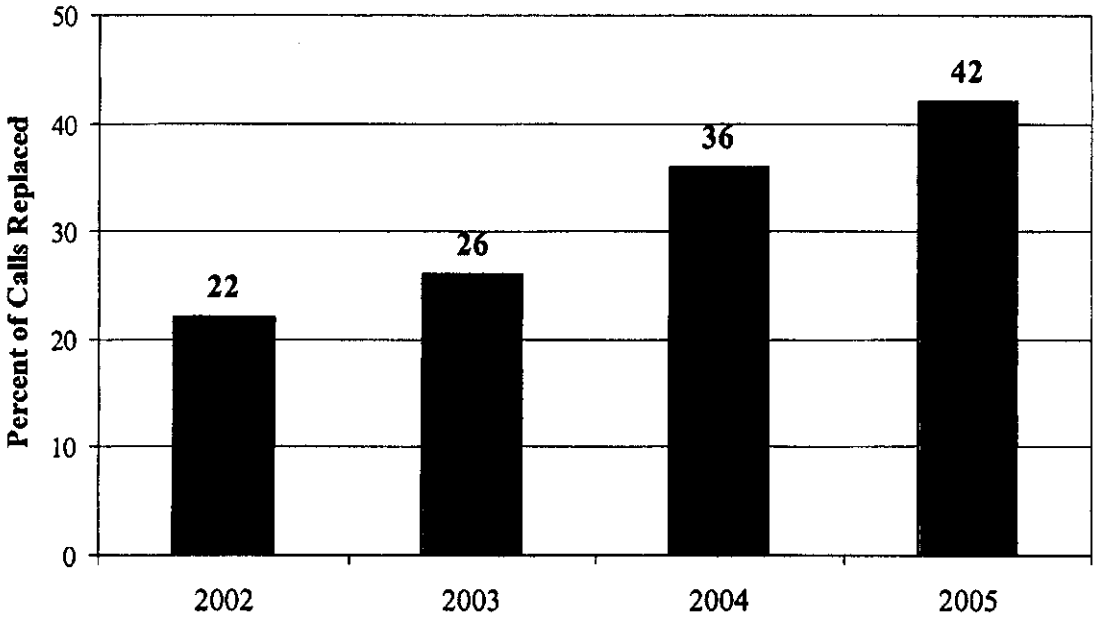
[111] *See* L. Yuan, *More U.S. Households Are Ditching Landline Phones for Wireless*, The Wall Street Journal, March 31, 2006.

[112] *See* L. Yuan, *More U.S. Households Are Ditching Landline Phones for Wireless*, The Wall Street Journal, March 31, 2006.

[113] P. Marshall, *Rationalizing Fixed-Mobile Convergence*, Yankee Group, May 2006, Exhibit 2.

[114] *See* K. Griffin, *et al., The Success of Wireline/Wireless Strategies Hinges on Delivering Consumer Value*, October 2004, Exhibit 4.

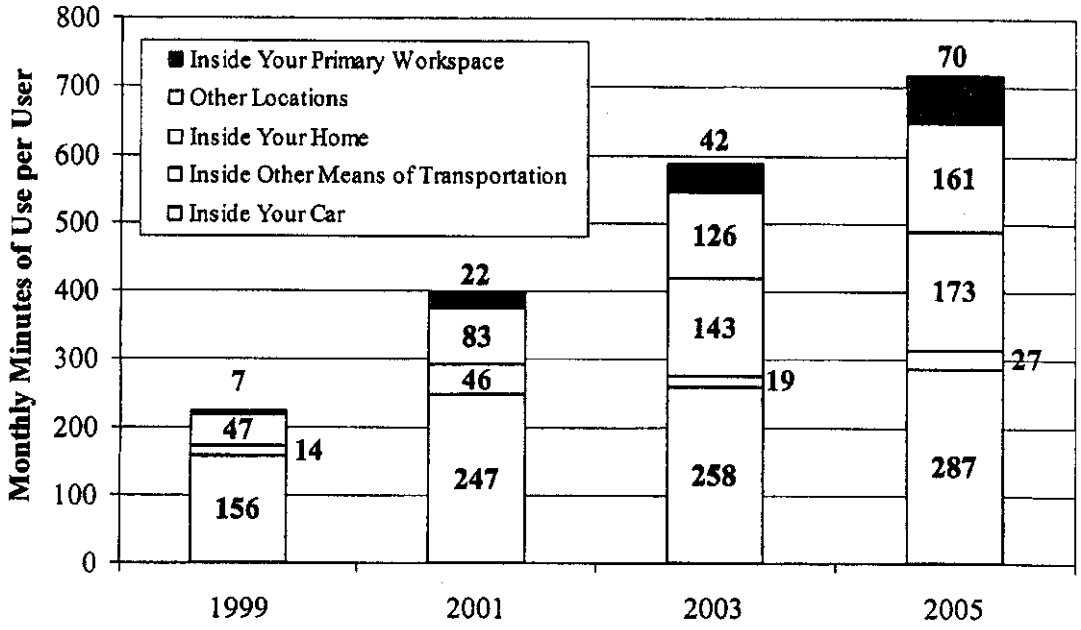
Figure 14
What Portion of Your Local Calls Has Your Wireless Phone Replaced?



Source: P. Marshall, *Rationalizing Fixed-Mobile Convergence*, Yankee Group, May 2006, Exhibit 2.

In addition, the Yankee Group reports that the volume of wireless calls made at home has increased dramatically in the last several years (as displayed in Figure 15 below). Moreover, the growth in calls from other locations, as displayed in this figure, may partly result from consumers shifting calls, *i.e.*, making calls from other locations that they would have made at home absent wireless availability. Thus, some portion of these calls would be displacing wireline calls.

Figure 15
Where Do You Use Your Wireless Phone?

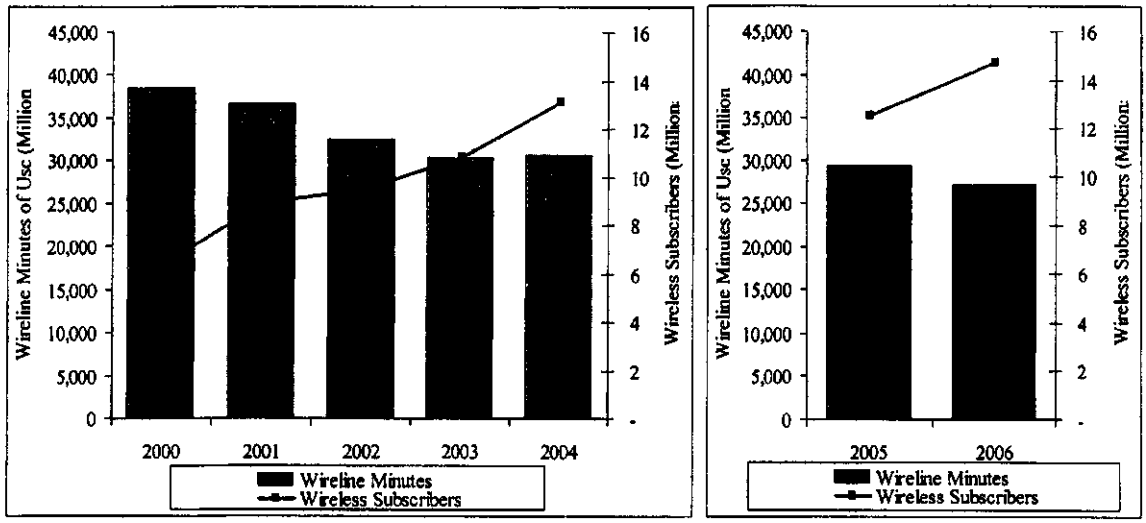


Note: Prior to 2003, Inside Your Car included all means of transportation.
Source: P. Marshall, *Rationalizing Fixed-Mobile Convergence*, Yankee Group, May 2006, Exhibit 2.

Figures 16 and 17 below depict the dramatic impact that this displacement has had on wireline usage in Florida. As Figure 16 illustrates, between 2000 and 2006, wireless subscribers increased by over 130 percent, while wireline minutes of use declined by about 29 percent.[115] As noted above, wireless usage is not available for individual states; however, Figure 17 shows how wireline usage has declined as wireless subscribers have grown in Florida.

[115] As mentioned above, due to changes in the method by which carriers allocate subscribers to states, a consistent count of wireless subscribers is not available for June 2005. During 2005, the trend in wireline minutes of use continued, declining by about 5 percent.

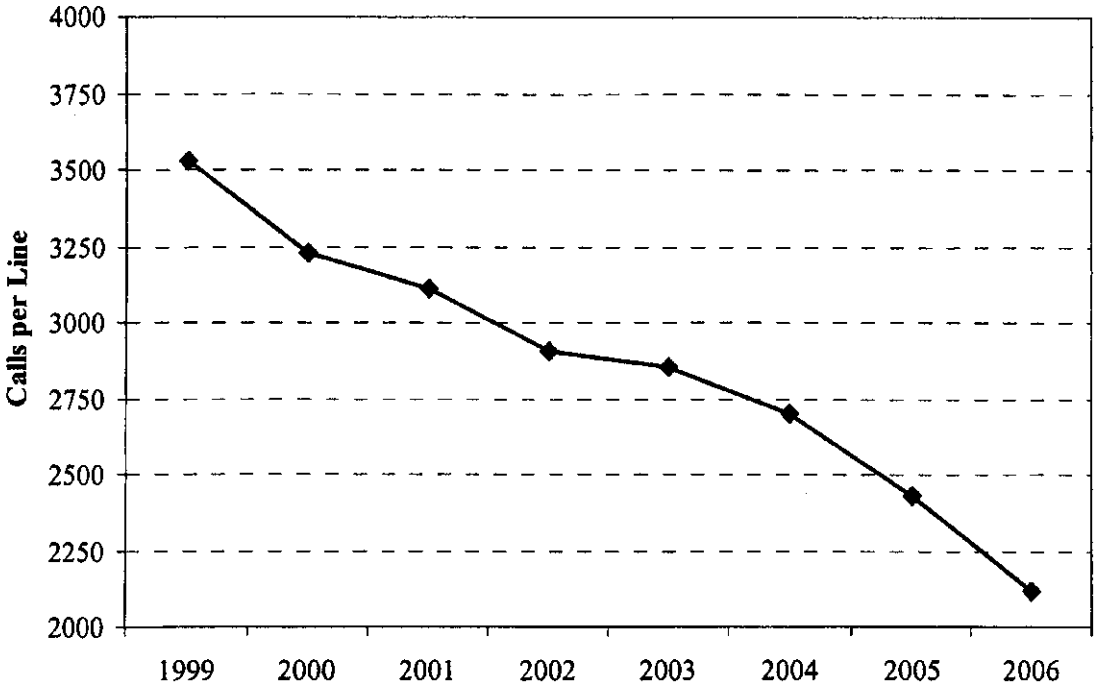
Figure 16. Florida Wireless Subscribers and Wireline Minutes of Use



Note: Minutes of use are interstate switched access minutes for Windstream, AT&T Florida, Embarq and Verizon.
Source: FCC, National Exchange Carrier Association, Quarterly Minutes of Use Data; FCC December 2006 Local Competition Report, Table 13.

As wireless usage has increased, Florida LEC wireline usage as measured by number of calls has declined steeply over the past four years. In particular, between 1999 and 2006, local calls per ILEC line fell from about 3,500 to about 2,100 per year, as shown in Figure 17 below:

Figure 17. Local Calls per ILEC Wireline per Year in Florida



Note: Total lines are total switched access lines from ARMIS. Data include AT&T Florida, Verizon and Embarq.
Source: ARMIS, Report 43-08, Tables III & IV

The FCC has concluded in several reports on wireless competition that much of the decline in the wireline sector is due to increased competition from wireless providers. For example it stated in its Ninth and Tenth CMRS Reports:

> [The] effects of mobile telephone service on the operational and financial results of companies that offer wireline services....a decrease in the number of residential access lines, a drop in long distance revenues, and a decline in payphone profits.... continued [in 2003], with the four largest LECs losing 4 percent of their access lines, and wireline long distance voice revenues declining further. One analyst stated, "wireless cannibalization remains a key driver of access line erosion."[116]

[116] *Ninth CMRS Report*, ¶ 213.

> ...the pressures that wireless growth is placing on companies which offer wireline services continued in 2004.... These trends appear to be due to the relatively low cost, widespread availability, and increased use of wireless service.[117]

And in its most recent CMRS report, the FCC again explains that the trends in wireless replacement of wireline phones:

> ... appear to be due to the relatively low cost, widespread availability, and increased use of wireless service. As we discussed in past reports, a number of analysts have argued that wireless service is competitive or cheaper than wireline, particularly if one is making a long-distance call or when traveling. As one analyst wrote, "At currently effective yields, we continue to believe wireless pricing is competitive with traditional wireline pricing. Lower yields, combined with the convenience of mobility, should continue to drive wireline displacement."[118]

Wireless replacement of wireline service thus places substantial competitive pressure on traditional landline providers.

5. Wireless Service Will Become an Even More Potent Competitor in the Future

Wireless displacement of wireline service is expected to continue to increase for at least three compelling reasons: (1) the proliferation of wireless services has expanded substantially in every one of the last 20 years and shows no sign of abating; (2) a growing number of young people, especially those on college campuses, are using wireless phones in preference to wireline phones, and are likely to continue using them after graduation;[119] and (3) as more consumers become accustomed to the characteristics of wireless services such as slightly lower voice quality offset by greater convenience, portability and more features — they will become even more willing to give up wireline.[120]

Analysts are predicting continued growth in wireless displacement of wireline and resulting declines in wireline access lines. For example, JPMorgan estimates that wireless substitution will: (1) reach 20.3 million primary lines, or 18 percent of telephony households, by 2010, and (2) claim 8.5 million non-primary access lines, which in conjunction with broadband substitution, will precipitate non-primary access line losses of 11.7 percent per year. Thus, by 2010 wireless lines will have replaced about 29 million landlines, representing line substitution

[117] *Tenth CMRS Report*, ¶ 197-198.

[118] FCC Twelfth CMRS report, ¶ 250.

[119] *See, e.g.*, Frost & Sullivan, *Trends in Wireline Substitution – North American Markets*, 2005, p. 1-9.

[120] *See, e.g., Id.*, pp. 1-11 and 1-12.

of 23 percent. [121] In-Stat/MDR forecasts that by 2009, between 23 and 37 percent of wireless subscribers will use their mobile phone as their primary phone, with 30 percent being their "most likely" estimate.[122]

These expectations are supported by recent surveys, which report that many current wireline users are considering cutting the cord. For example, a recent In-Stat survey found that close to 20 percent of respondents that have wireless service plan to drop wireline service.[123] A Harris Interactive survey conducted for the National Consumers League released in mid-2005 found that 39 percent of current wireline customers are likely to go completely wireless in the next two years.[124] The *Florida PSC 2005 Survey* (Figure 26) reported that close to 31 percent of Floridians are considering switching to wireless only. Although the Florida 2006 Survey did not report data on this issue, it found that "Floridians continue to value the convenience and portability of wireless services." It also reported that the percentage of residential wireline customers with wireless phones grew from about 62 percent in 2003 to about 75 percent in 2006.[125] Thus, the potential for wireline customers to switch by simply dropping their wireline phone, or by expanding their usage plan or upgrading to a family share plan has been growing in the state.

Moreover, new pricing plans and service options imply that more consumers will cut the cord. **First**, in late February 2008, the four major cellular carriers Verizon Wireless, AT&T, T-Mobile and Sprint Nextel introduced "all-you-can-eat" pricing. Verizon announced first with a flat rate wireless plan that includes unlimited local and domestic toll usage for $99.99 per month, and:

> Verizon's major competitors reacted in a flash: Within hours, AT&T essentially matched the Verizon deal ....T-Mobile, generally the cheapest of the major firms, went even further -- its $99.99 monthly plan includes unlimited calling and unlimited text messaging....[126]

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[121] J. Chaplin, *et al.*, *Telecom Services / Wireline, State of the Industry: Consumer*, JPMorgan, January 13, 2006, p. 4 and Tables 57 and 75.

[122] R. Luhr and D. Chamberlain, *Cutting the Cord: Consumer Profiles and Carrier Strategies for Wireless Substitution*, In-Stat/MDR, October 2005, p. 3.

[123] *See* Business Wire, *In-Stat Survey Shows That Wireline Erosion Will Accelerate; 20% of Households Plan to Cancel or Not Use Wireline Services*, February 6, 2006.

[124] *See* National Consumers League Press Release, *National Consumers League Releases Comprehensive Survey about Consumers and Communications Services*, July 21, 2005, available at http://www.nclnet.org/news/2005/comm_survey_07212005.htm.

[125] Florida Public Service Commission, Division of Competitive Markets & Enforcement Consumer Survey Results: January - December 2006, May 2007, p. 11.

[126] See: "Phoning Home All-you-can-eat mobile service is the best thing to happen to business travelers in years. *By Joe Brancatell* Portfolio.com: Business Travel, Tuesday, March 4, 2008; 12:17 PM; WashingtonPost.Com. http://www.washingtonpost.com/wp-dyn/content/article/2008/03/04/AR2008030401225.html . The story also points out that: with T-Mobile's "You must extend your existing contract to qualify. Verizon and AT&T allow existing customers to switch to all-you-can-eat pricing without adding time to their current contracts."

> Sprint [offered a] new option the Simply Everything plan [that] gives subscribers unlimited voice calls, and also includes unlimited data, e-mail and Web surfing for $99.99 per month. Sprint will also offer a plan for $89.99 a month that includes unlimited voice and text messaging, undercutting prices on the basic unlimited plans offered by its rivals.[127]

Industry analysts pointed out that these developments could ignite a price war and that such flat-rate pricing plans will appeal to customers considering dropping their wireline phone service, but who may have been worried about possible extra charges for going over their monthly calling allowances.[128]

Second, new options such as T-Mobile's plans, which allow customers to use dual-mode phones to connect to WiFi networks at home or in other locations with no per-minute charges for an extra wireless charge of $10 per phone per month. Thus, they provide unlimited calling at home for an extra charge of only $10 per month via a DSL or cable broadband connection. This not only lowers the price of replacing a wireline phone, but it promises to solve mobile wireless service quality problems.

D. VoIP

Although cable VoIP now accounts for most VoIP subscribers in the US, stand-alone VoIP service over existing broadband connections is available to residential and small business customers throughout Florida. Companies such as Vonage, Packet8 and Skype (now owned by eBay) provide VoIP via the cable broadband or DSL connections currently available to households and businesses throughout the state. VoIP is significant for two reasons: First, it greatly facilitates entry by a range of competitors, including:

- Firms specializing in VoIP over broadband that can locate their switches almost anywhere and still compete in Florida;
- Major Internet firms, such as Google, Microsoft and Yahoo, provide free or almost free VoIP messaging services over broadband via software applications, again without having to have their own facilities in the state; and
- Cable companies who can add VoIP to their broadband networks at low incremental costs, as we have described above.

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[127] Pacific Business News, "Losing $29B, Sprint unveils new 'unlimited' plan." February 28, 2008. http://www.bizjournals.com/pacific/stories/2008/02/25/daily40.html .

[128] See for example: Olga Kharif, BusinessWeek "Say Hello to Unlimited Minutes: Verizon Wireless offers unlimited calls for $100 a month, others follow suit, and Wall Street shudders at the prospect of a price war, http://www.businessweek.com/technology/content/feb2008/tc20080220_751279.htm?chan=technology_technology+index+page_telecom; and, "Cutting the cord for all-you-can-eat wireless plans" Posted by Marguerite Reardon, March 4, 2008 4:00 AM PST http://www.news.com/8301-10784_3-9884689-7.html . Why is this footnote in bold???

Moreover, as discussed below, new firms provide small businesses with VoIP based telephone services that can be used in place of more expensive multi-line phone systems. The services use software applications at remote servers connected to low cost phones at customers' locations.[129]

Second, these developments will keep downward pressure on prices for conventional voice services. As described in a 2006 *New York Times* article entitled "Online Calling Heralds an Era of Lower Costs":

> Competition in the phone business, intensifying this year as Internet-based calling has taken root, has reached the point where many industry experts are anticipating an era of remarkably cheap and even free calls...
>
> Online services like Skype that offer free calls from computer to computer for users with headsets have attracted the tech-savvy and are trying to push into the mainstream. In the process, they are dragging down everyone else's prices and pointing the way toward a time when it will be harder and harder for companies to charge anything for a basic home phone line on its own.[130]

Similarly, an article in *The Economist*, entitled "How the Internet Killed the Phone Business," highlighted the significance of VoIP, and the enormous threat it poses to incumbent telecom operators.

> Skype is merely the most visible manifestation of a dramatic shift in the telecom industry, as voice calling becomes just another data service delivered via high-speed internet connections. Skype, which has over 54m users, has received the most attention, but other firms routing calls partially or entirely over the internet have also signed up millions of customers.
>
> The ability to make free or almost-free calls over a fast internet connection fatally undermines the existing pricing model for telephony....as the marginal price of making phone calls heads inexorably downwards.[131]

Since all Florida Zip Codes have at least three broadband providers already present, VoIP can be provided to the vast majority of Florida customers right now. Table 8 lists some VoIP providers and their package offerings for residential and small business customers in Florida. All provide some sort of unlimited local and long distance calling plan with monthly prices ranging from $19.95 to $29.99, excluding the cost of broadband connection.

---

[129] See: Rebecca Buckman, "Internet Phone Service Gets Plush: Small Businesses Sign Up for Professional Features on the Cheap," Wall Street Journal, March 4, 2008, p. B3. http://online.wsj.com/article/SB120459705656609395.html?mod=googlenews_wsj

[130] M. Richtel and K. Belson, *Online Calling Heralds an Era of Lower Costs,* New York Times, July 3, 2006, available at http://www.nytimes.com/2006/07/03/technology/03phone.html?th&emc=th.

[131] The Economist, *How the Internet Killed the Phone Business*, September 17, 2005.

Of course, the millions of Florida customers that already subscribe to broadband for Internet access would incur these charges only incrementally. Even when we include the cost of the broadband connection, these plans are competitive with household expenditures for wireline local and toll services in Florida—which can range to above $50 per month, depending on type of calling plan and calling volumes.

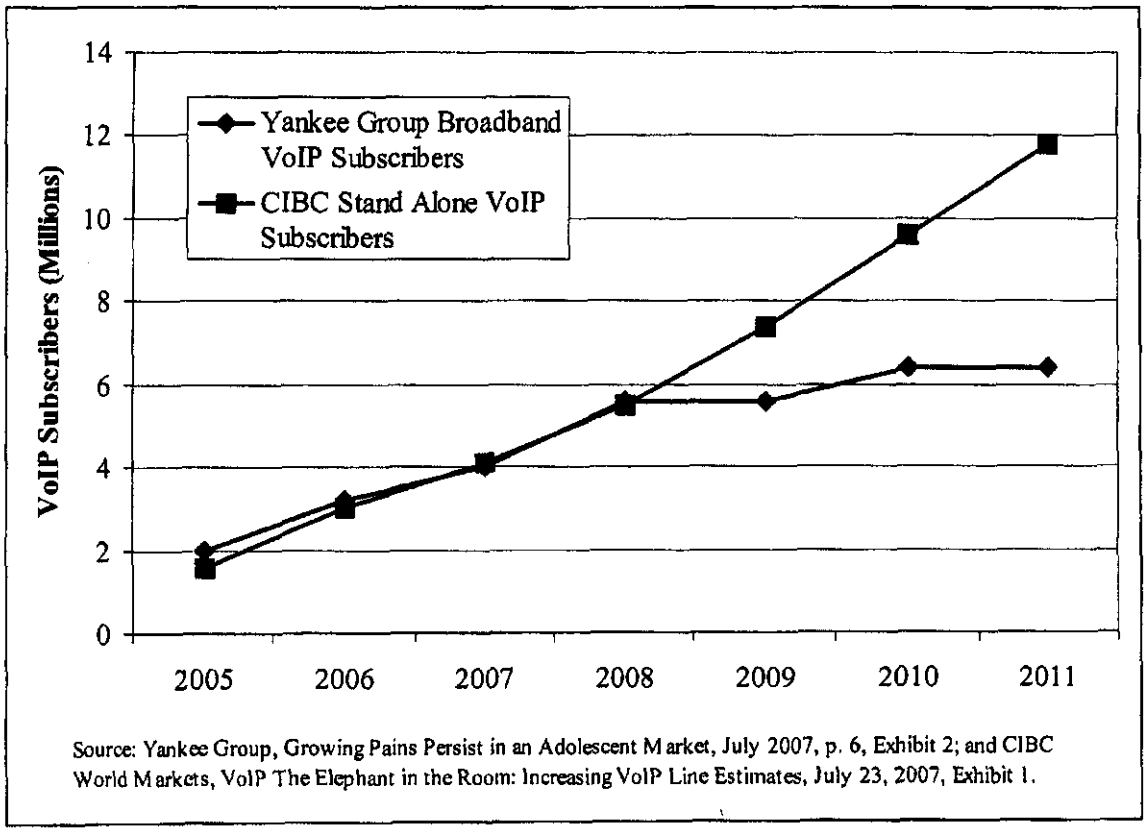
Table 8
Florida VoIP Plans

Provider	Plan	Area Codes or Counties Offered	Monthly Price	Anytime Minutes	Additional Minutes	Long Distance
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Vonage	Residential Premium Unlimited	239, 321, 352, 386, 561, 727, 772, 786, 813, 850, 863, 904, 941, 954	$24.99	Unlimited	N/A	Included
	Residential Basic 500		$14.99	500	$0.04	Included
	Small Business Premium Unlimited		$49.99	Unlimited	N/A	Included
	Small Business Basic 1500		$39.99	1500	$0.04	Included
AT&T	CallVantage Service	Anyone meeting the technical requirements for AT&T Callvantage Service, regardless of their geographic location, can sign up for the service.	$24.99	Unlimited	N/A	Included
	CallVantage 2-Line		$49.99	Unlimited (1 line)[1]	N/A	Included
	CallVantage Local		$19.99	Unlimited Local	N/A	$0.04
Lingo	Link	Broward, Dade, Indian River, Leon, Manatee, Martin, Monroe, Palm Beach, Pinellas, Polk, Sarasota, St Johns	$7.95	Unlimited in-Network		
	Small Talk		$14.95	500	$0.03	Included
	Chatter Box		$21.95	Unlimited	N/A	Included
	Global Gabber		$34.95	Unlimited	N/A	Included (+300 Int'l minutes)
Net2Phone	U.S./Canada Unlimited	239, 305, 321, 352, 386, 407, 561, 727, 772, 786, 813, 850, 863, 904, 941, 954	$29.99	Unlimited	N/A	Included
	U.S./Canada 500		$14.99	500	$0.04	Included
	VoiceLine Basic[2]		$8.99	Unlimited Inbound	N/A	$0.05
Packet 8	Freedom Choice 500	Anywhere in FL w/ high-speed connection	$14.99	500	$0.04	Included
	Freedom Unlimited		$24.99	Unlimited	N/A	Included
	Freedom Unlimited Global[3]		$29.99	Unlimited	N/A	Included
myphone company.com	Unlimited Local Home Calling	239, 305, 321, 352, 386, 407, 561, 727, 772, 786, 813, 850, 863, 904, 941, 954	$19.99	Unlimited	N/A	$0.03
	Unlimited Home US & Canada		$24.99	Unlimited	N/A	Unlimited
	Unlimited US & Canada + International		$34.99	Unlimited	N/A	Unlimited

Source: Provider websites.
Notes:
[1] CallVantage 2-line second line includes 500 long distance minutes.
[2] Net2Phone VoiceLine Basic: Unlimited inbound calls & pay-as-you-go outbound calls.
[3] Unlimited global plan includes unlimited calling to select countries in addition to local and long distance.

VoIP growth has been vigorous. For example by early 2008, Vonage was providing service to 2.5 million lines.[132] Smaller, relatively less well-known VoIP companies are also having success in attracting customers. Thus, recent market research studies estimated that the number of stand-alone (or VoIP over broadband) subscribers would grow from about 4 million in 2007 to 5.5 million in the US in 2008. Their forecasts diverge at that point, as the Yankee Group expects that cable VoIP will capture almost all of the growth in VoIP, while CIBC forecasts stand alone VoIP will reach almost 12 million subscribers by 2011. The forecasts are depicted below in Figure 18.

Figure 18 Stand Alone VoIP/Broadband VoIP Subscribers



Source: Yankee Group, Growing Pains Persist in an Adolescent Market, July 2007, p. 6, Exhibit 2; and CIBC World Markets, VoIP The Elephant in the Room: Increasing VoIP Line Estimates, July 23, 2007, Exhibit 1.

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The low incremental cost of VoIP usage promotes competition among VoIP providers as shown by competition between Skype and Yahoo's Phone Out. Skype allowed customers to make ***free*** computer-to-computer "telephone" calls and recently announced free calls to all landlines and cellular phones in the U.S and Canada for all U.S. and Canadian customers for the duration of 2006, in order to increase its U.S. presence. "The move [by Skype] undercuts Yahoo's rival Phone Out service linked to its instant messenger program. Yahoo itself [had

[132] *See* http://www.vonage.com/corporate/index.php?lid=footer_corporate.

previously] undercut Skype when it announced Phone Out for the US in March, which allowed users to call within the US and to more than 30 countries for 2 cents a minute or less."[133]

As industry experts correctly predicted, the other Internet companies are entering and attempting to become major influences in the telecommunications market. Such entrants include Google, which offers Google Talk, an application that allows users of Google's email service to talk and IM for free.[134] Microsoft has entered the VoIP space in several ways: for example, by teaming with telecommunications vendors to develop IP phones for use with Microsoft's unified communications offerings, and by purchasing Teleo, an acquisition that has allowed Microsoft to provide voice capability to MSN IM users.[135]

Many customers view VoIP service as a replacement for their telephone line. Approximately 50 percent of Vonage customers maintain their old phone number when they switch to Vonage.[136] This substitution is driven in large measure by price. Analysts report that third-party VoIP providers offer service "at rates significantly below comparable RBOC prices" and "significant pricing degradation is becoming evident."[137] The LECs and, in particular, the RBOCs, have been forced to respond to the competitive threat presented by VoIP providers. As reported in the *New York Times*:

> To stem the tide [of defections to VoIP providers], the traditional Bell operating companies have been moving into new businesses like television and strategically dropping the price of traditional phone service. In New York, Verizon recently sent letters to customers offering a calling plan that includes unlimited phone service for $35 a month, instead of $60, a 42 percent cut. For people signing up for service through its Web site, AT&T now offers unlimited local and long distance service for $40, down from $50 a year ago.
>
> The average user of Internet voice calling, known as ... VoIP, pays $25 a month for unlimited calling....International calls are most often not included in the flat rate, but those prices are also coming down.[138]

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[133] C. Nuttall, *Skype in US free calls scheme*, Financial Times, May 15, 2006.

[134] *See* Google Press Release, *Google Launches Open, Instant Communications Service*, August 24, 2005, available at http://www.google.com/press/pressrel/talk.html.

[135] *See* Microsoft Press Release, *Global Telecommunications Providers to Build Innovative Business IP Phones on Microsoft's Unified Communications Platform*, June 25, 2006 and M. Nakamoto, *et al., The internet's next big talking point: why VoIP telephony is quickly coming of age*, Financial Times, September 9, 2005.

[136] *See* J. Hodulik, *et al., The Vonage Story: The Who, What, Where, and How*, November 24, 2003, UBS Investment Research p. 5 and A. Quinton, *et al., US VoIP Update: Competitive, Regulatory, and Other Issues*, Merrill Lynch, November 25, 2003 p. 9.

[137] J. Halpern, *et. al., Quarterly VoIP Monitor: The "Real" Price Gap for VoIP Driving Rapid Subscriber Growth*, Bernstein Research, July 15, 2005, pp. 5-6 & Exh. 5 and V. Shvets & A. Kieley, *VoIP: State of Play*, Deutsche Bank, June 22, 2005, p. 7.

[138] M. Richtel and K. Belson, *Online Calling Heralds an Era of Lower Costs*, New York Times, July 3, 2006, available at http://www.nytimes.com/2006/07/03/technology/03phone.html?th&emc=th.

VoIP telephone services also provide substantial advantages to small business. For example:

> ...RingCentral Inc....backed by investment firms including Sequoia Capital and Khosla Ventures, has amassed more than 50,000 customers...usually those with fewer than 10 employees -- who want a full-featured phone system but typically can't afford one.
>
> [It] offers features like multiple extensions and dial-by-name directories because it delivers those services over the Internet, instead of through pricey phone hardware that must be installed and maintained by information-technology professionals.
>
> RingCentral is one of several Internet-phone companies offering such services and undercutting the prices of more traditional business-phone providers. Among the other upstarts is **8x8** Inc. ...that offers a similar low-cost service for small businesses called Packet 8; and, M5 Networks Inc. of New York [which] targets small to midsize companies, though it requires customers to sign up for a dedicated Internet line, which usually costs $400 to $1,000 a month.
>
> ...The companies are racking up new users because most traditional office phone systems are just "too expensive for a really small customer," says David Lemelin, a senior analyst at research firm In-Stat.
>
> Installing a traditional system can cost thousands of dollars, or even tens of thousands of dollars, depending on company size and other factors. RingCentral offers a monthly plan for as little as $9.99 a month, with no upfront costs and almost-instant activation. Its most popular service plan costs $29.99 a month, though unlimited outbound calls cost an extra $24.99 a month.
>
> According to In-Stat, revenue from "hosted" Internet-phone services for businesses -- or those that don't require any on-premise equipment besides actual phones -- are expected to top $2.1 billion by 2010, up from $476 million last year.[139]

[139] See: Rebecca Buckman, "Internet Phone Service Gets Plush: Small Businesses Sign Up for Professional Features on the Cheap," Wall Street Journal, March 4, 2008, p. B3. http://online.wsj.com/article/SB120459705656609395.html?mod=googlenews_wsj

E. Emerging Technologies Will Intensify Intermodal Competition

1. Wi-Fi

a. Overview

Wi-Fi, short for wireless fidelity, is a wireless broadband network technology that allows users within range of the network to connect to the Internet via a wireless device such as a laptop. A single Wi-Fi network, or hot spot, has a range of up to 1,000 feet in an optimal open environment and speeds of up to 11 Mbps. Wi-Fi hot spots give travellers in numerous public places such as coffee shops and McDonald's restaurants, hotels and airport lounges access to broadband services, including VoIP.[140]

Wi-Fi is also used in homes to connect multiple family computers to each other and to broadband Internet modems, and in businesses to connect employees in different departments and buildings across campuses. Such private network usage is significant because it tends to make the technology more widely available, and greater diffusion drives down costs. Furthermore, as computer makers add Wi-Fi capabilities to laptops, it will likely stimulate further proliferation of Wi-Fi hot spots.

As a result, Wi-Fi is emerging as another potent form of intermodal competition that extends beyond connecting laptops to the Internet at hot spots. For example, both cellular providers and VoIP providers are taking advantage of Wi-Fi to expand their reach and compete more effectively. They do so by employing mobile wireless or portable phones that use Wi-Fi technology and VoIP to route telephone calls for mobile users over the Internet.[141] A recent In-Stat/MDR report noted, "In 2007 and 2008, the phone segment will noticeably emerge, driven by embedded Wi-Fi in cellular phones."[142] The service also provides business travellers with the ability to make and receive phone calls from a laptop computer or PDA device, or specialized cordless VoIP phones. We describe the trends in Wi-Fi competition in more detail below.

[140] *See* the Wi-Fi Alliance at http://www.Wi-Fi.org.

[141] *See* D. Biercks, *Demand for Wireless VoIP Applications and Services in the Business Environment*, In-Stat, January 2005 ("In-Stat Wireless Voip"), p. 6.

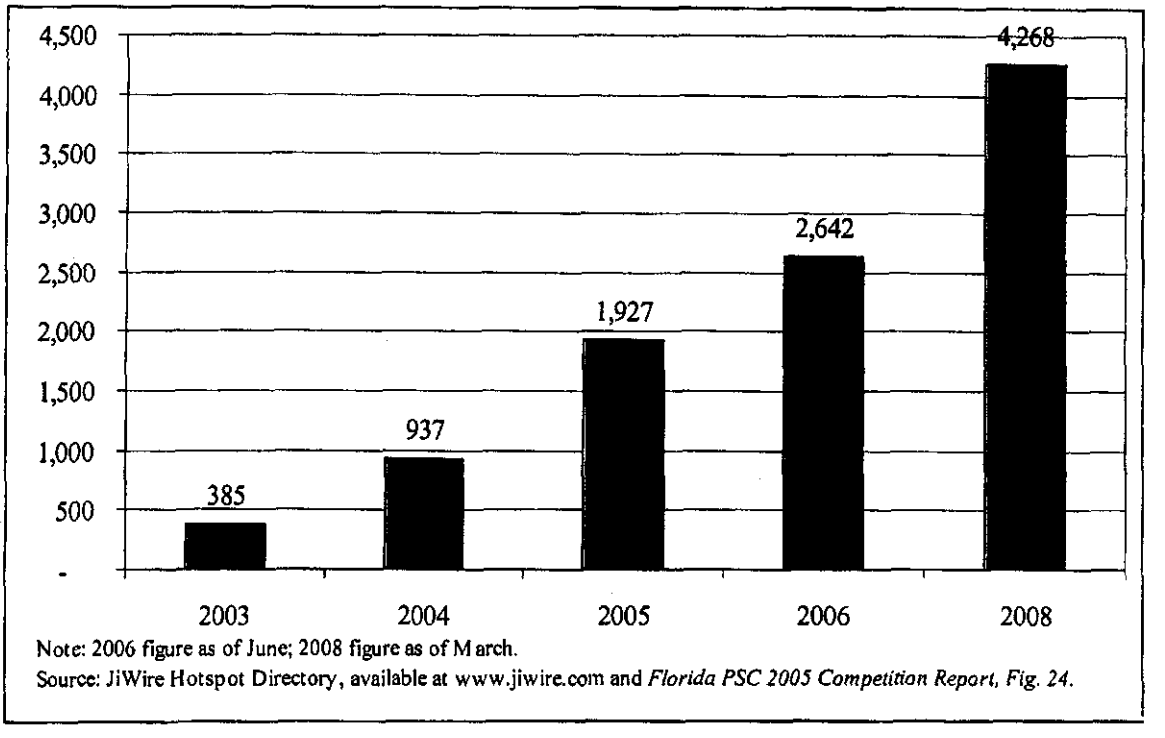
[142] In-Stat Press Release, *Wi-Fi Chipset Market Continues Impressive Growth*, February 28, 2006, available at http://www.instat.com/press.asp?ID=1598&sku=IN0501813NT.

b. Wi-Fi Is Widely Available in Florida

As illustrated in Figure 19 below, there were over 2,600 Wi-Fi hotspots in Florida by mid 2006 and the number increased to 4,268 by March 2008. .

Figure 19

Florida Wi-Fi Hotspots



Note: 2006 figure as of June; 2008 figure as of March.

Source: JiWire Hotspot Directory, available at www.jiwire.com and *Florida PSC 2005 Competition Report, Fig. 24.*

Several municipalities have deployed, or are in the process of setting up, wireless networks. For example, St. Cloud, a suburb of Orlando, was the first municipality in the U.S. to set up a free, citywide, high-speed wireless network.[143] St. Cloud's "Cyber Spot" has been available in the ? rest of this sentence missing?

As a recent article notes, "In the not-too-distant future, South Florida could be covered in a wireless Internet blanket under which laptop users could check e-mail and surf the Web from sidewalk cafés, parks, libraries and even from their homes." The article discusses several Wi-Fi networks in South Florida. For example, Broward County recently deployed a free network across downtown Fort Lauderdale. Built mostly for use by hundreds of county employees, it is now available for use in many parks and public places for anyone with a wireless-equipped laptop. If the Fort Lauderdale system is successful, Broward County may consider deploying the

[143] *See* City of St. Cloud, Florida, at http://www.stcloud.org/index.asp?NID=402.

network countywide. Miami-Dade County is planning a wireless network to serve all residents in the County. Miami Beach recently announced that it is also testing a free citywide network.[144]

In an undertaking similar in scale to that of a municipal deployment, Florida State University in Tallahassee is deploying Wi-Fi throughout its campus. By May 2005, it had made Wi-Fi available in 75 percent of the outdoor areas on campus and in 90 percent of the library. In May 2005, the network had 132 access points and supported 3,000 total users, 1,500 on a daily basis. The number of users was climbing and could reach as high as 40,000 daily users.[145]

In addition to these free and low-cost hot spots and networks, private enterprises, too, are offering Wi-Fi service for a fee. Many hotel chains offer access in their lobbies, and many coffee shops offer Internet access with your coffee. For example, among large chains, Panera Bread is enabling their stores for Wi-Fi access. In 2006, they had over 150 such locations in Florida.[146] McDonalds offers Wi-Fi at numerous locations throughout the state. For example, their web site shows 155 McDonalds hot spots within 55 miles of Tampa, FL.[147]

Map 1 below depicts just some of the hotspots throughout Florida, as of 2004.[148] The number is undoubtedly higher since then.

[144] *See* E. Bolstad, *South Florida could go wireless*, The Miami Herald, February 20, 2006.

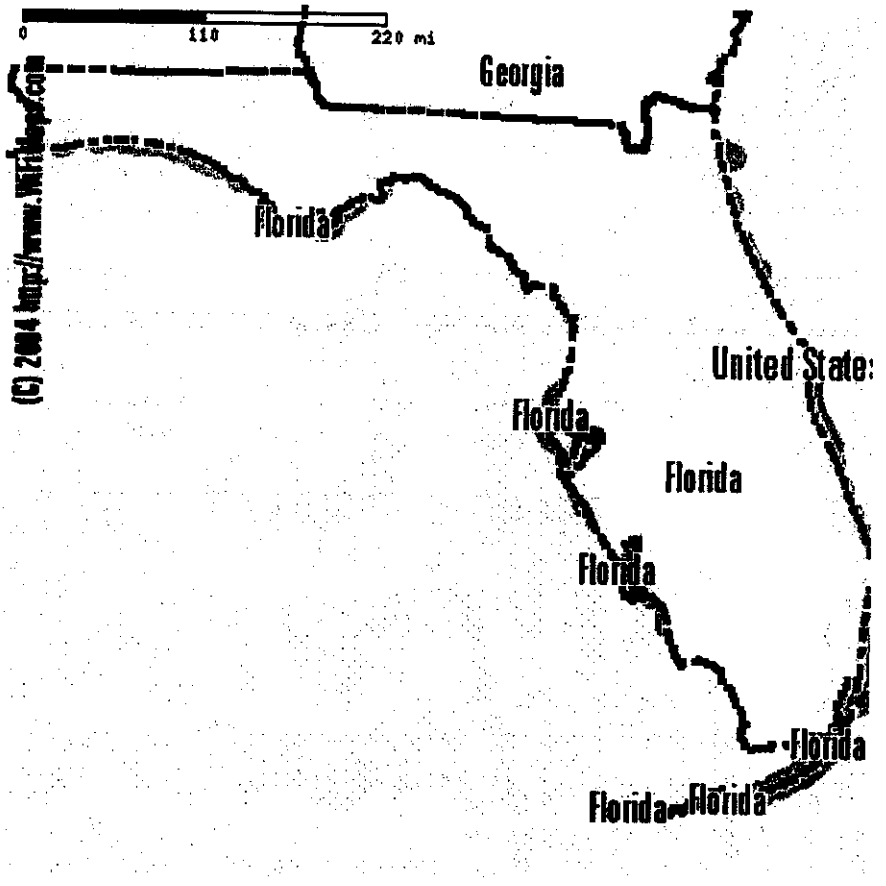
[145] *See* America's Network, *Florida State commits to Wi-Fi deployment: four-year effort expands to campus classrooms*, May 2005.

[146] *See e.g.*, http://www.palmbeachpost.com/photo/content/news/photos/wifi/hotspots.html and Wi-Fi @ Panera Bread at http://www.panerabread.com/wifi.aspx; http://www.wififreespot.com/fl.html.

[147] *See* http://www.mcdonalds.com/wireless.html, visited March 10, 2008.

[148] *See* http://www.wifimaps.com/.

Map 1
Florida Wi-Fi Hotspots



c. Trends in Wi-Fi Will Enhance Competition for Voice Services

In this section, we explain some of the trends in Wi-Fi that are likely to enhance intermodal competition for voice services. First, dual mode devices allow mobile wireless users to access both their wireless networks and Wi-Fi networks.[149] Users of these dual mode devices can conserve their mobile minutes by using a Wi-Fi connection to place VoIP calls. Dual mode phones also enhance coverage by allowing the user to stay connected in more locations—*e.g.*, in certain buildings in which mobile wireless coverage may be limited. The *Wall Street Journal* describes how Wi-Fi is increasing competition:

[149] Examples of dual phones include the HP iPAQ h6315 with T-Mobile service, T-Mobile's MDA III and MDA IV, O2 XDA IIs, Vodafone VPA III, and Orange SVP M2000.

> All players are moving ahead [with plans to offer a service with the ability to make Internet calls using a cell phone] despite the risks [to their existing businesses]: T-Mobile and Sprint, both pure cellular carriers, see the new technology as an opportunity to steal customers from landline companies and their bigger wireless competitors, people in the industry say. Switching calls over to the Internet will also allow carriers to expand their coverage inside homes and office buildings, where signals are weak, and to free up capacity on their cellular networks. [150]

According to the FCC's most recent CMRS report mobile wireless providers are operating thousands of WiFi hot spots and are offering dual mode mobile phones to provide high-speed Internet access and VoIP over broadband capability:

> Several mobile telephone providers have entered the hot spot operation business through acquisitions, partnerships, or independent deployments....T-Mobile offers Wi-Fi access at nearly 8,500 HotSpot-branded locations in the United States, while Sprint Nextel's Wi-Fi network includes more than 8,000 hot spot locations across North America. AT&T offers Wi-Fi connectivity at almost 15,000 hot spot locations in the United States....
>
> To augment their wide-area data service offerings, mobile telephone providers have typically offered WLAN services for high-speed, in-building data access. Certain providers – including T-Mobile, Sprint Nextel, and AT&T – offer at least one dual-mode handset that operates on both cellular and Wi-Fi networks. For example, T-Mobile's Dash™ and Wing™ devices can connect to the company's GPRS/EDGE network and are also Wi-Fi-enabled for high-speed data access. Sprint Nextel's Mogul™ device, introduced in June 2007, offers access to both Sprint Nextel's EV-DO network and Wi-Fi access points.
>
> The iPhone launched by Apple and AT&T in June 2007 runs on AT&T's EDGE network and can connect to any Wi-Fi hot spot for Internet access service. The iPhone can seamlessly switch from an EDGE to a Wi-Fi connection, and will automatically display a list of new Wi-Fi networks in range as the user moves to a new location.
>
> In addition to using Wi-Fi as a means of data access, over the past year certain mobile operators have begun to use WLANs to augment their CMRS-based voice services with voice connections at Wi-Fi hot spots. For example, in June 2007, T-Mobile and Cincinnati Bell introduced new services – "HotSpot@Home" and

[150] A. Sharma and L. Yuan, *AT&T Deal Could Speed Move to Wireless Internet Calling, The Wall Street Journal*, March 6, 2006.

> "Home Run," respectively – featuring dual-mode handsets that offer seamless voice connections on both Wi-Fi and the operators' GSM cellular networks.[151]

As we explained above, these latter options are designed to compete directly with wireline phone service by offering unlimited calling from users' homes for low incremental charges.

Other hybrid "smart phones" with dual mode capabilities will become more widely available as Wi-Fi becomes more widely deployed.[152] Both Vonage and Net2Phone have developed wireless VoIP phones that allow users to make calls at home or anywhere a wireless Wi-Fi broadband connection is available. Net2Phone's VoiceLine XJ100 Wi-Fi Handset automatically and intelligently scans and connects to available access points, so users can make a call over any open Wi-Fi hot spot.[153] Vonage, in conjunction with UTStarcom, launched its F1000 portable Wi-Fi phone in December 2005. The handset is configured with Vonage's standard call features, including three-way calling, call waiting, repeat dial on busy, voicemail and caller ID. Bill Huang, chief technology officer and senior vice president of engineering at UTStarcom commented:

> We believe the affordable price point and extensive features of the UTStarcom F1000 offered through Vonage will be a disruptive force in the telecommunications service marketplace. Consumers with Wi-Fi access in their home can replace their traditional home phone with the F1000 and start reaping the benefits of wireless VoIP phone service right away.[154]

According to a recent survey by In-Stat, 23 percent of decision-makers in medium-sized companies and large enterprises said that they had already deployed wireless VoIP in some manner and another 30 percent said they were planning or evaluating the implementation of the technology within the next six to twelve months.[155] In-Stat forecasts that by 2008, there will be close to 40,000,000 cellular voice devices w/WLAN subscribers, with non-business consumers beginning to dominate the subscriber market.[156]

As can be seen from the data for Florida, Wi-Fi is growing rapidly. Market research companies have forecast that the growth will continue. For example, In-Stat forecast rapid growth of WiFi chipsets for PCs and mobile phones,[157] and estimated that the number of public hot spot locations would double from 2005 to 2009.[158]

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[151] FCC Twelfth CMRS Report, at paragraphs 254 -257.

[152] *See* Parks Associates, *Residential Voice-over-IP: Analysis and Forecasts (Second Edition)*, 1Q 2005, at 12.

[153] *See* Net2Phone Press Release, *Net2Phone Launches Enhanced Wi-Fi Offer*, March 8, 2005.

[154] *See* Vonage Press Release, *Vonage® And UTStarcom Liberate Consumers From Their Traditional Phone Lines With Launch Of Portable Wi-Fi Phone*, December 13, 2005.

[155] *In-Stat Wireless VoIP*, p 1.

[156] *In-Stat Wireless VoIP*, p. 25, Table 5 and p. 1.

[157] In-Stat Press Release, *Wi-Fi Chipset Market Continues Impressive Growth*, February 28, 2006, available at http://www.instat.com/press.asp?ID=1598&sku=IN0501813NT and Wi-Fi Planet, *Wi-Fi Still Booming*, November 29, 2005, available at http://www.Wi-Fiplanet.com/news/print.php/3566911.

2. WiMAX

a. Overview of WiMAX Technology

WiMAX, like Wi-Fi, provides wireless broadband connections, but has a much wider range, up to 30 miles from the central base station, and has much higher speeds, of up to 75 Mbps.[159] Thus, a single WiMAX network or hot-zone, can provide broadband access to an entire city. WiMAX can extend service to rural and remote areas.

WiMAX can complement Wi-Fi. The combination of Wi-Fi and WiMAX technologies may allow broadband connections almost anywhere. According to a WiMAX analyst,

> Early Wi-Max deployments will start by connecting fixed or stationary subscriber stations, but then will evolve to support nomadic/portable applications and eventually completely mobile services and devices. Wi-Max will also enable the "access anywhere" triple play revolution: high-speed wireless delivery of data, voice and video applications at home, in the office and on the go.[160]

As the use of WiMAX spreads, it could grow to challenge established wireline DSL and cable modem services. In-Stat discusses some of the benefits of WiMAX to consumers:

> WiMAX will offer consumer and business subscribers a range of technology and service level choices from broadband operators. Fixed and mobile broadband prices will decline, and there will be DSL-like services that offer portability. DSL "blackspots" and "installation" fees will be eliminated. Service providers will have a cost-effective way to offer new, high-value, real-time, multi-media services like wireless picture mail, video mail, and video streaming.
>
> Subscribers will enjoy "anytime, anywhere connectivity." No more driving around looking for a WiFi hotspot. Dial-up will be a distant memory. As

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According to In-Stat and the Wi-Fi Alliance, over 140 million Wi-Fi chipsets shipped in 2005, representing an average annual growth rate of 64 percent since 2000. In-Stat is forecasting that the rapid growth will continue, with sales reaching 430 million units in 2009. It is estimated that over 90 percent of all notebook computers shipped today are Wi-Fi enabled. Wi-Fi is also moving beyond core PC applications and into consumer electronics and mobile phones, further increasing the potential for growth in sales in the future.

[158] In-Stat Press Release, *Wireless Data Hotspot Services to Reach $3.46 Billion in 2009*, September 20, 2005, available at http://www.in-stat.com/press.asp?ID=1447&sku=IN0502196MU. It estimated that the number of public hot spots will grow from 100,000 locations in 2005 to almost 200,000 locations in 2009, largely driven by branded deployments in the café market (including coffee shops, fast food and full service restaurants). Over the same period, associated revenue will increase from $969 million to $3.46 billion.

[159] *See, e.g.*, Shim, Richard. *WiMAX in the Wings*, CNET News.com, June 25, 2004, available at http://news.com.com/Wi-Max+in+the+wings/2100-1039_3-5247984.html.

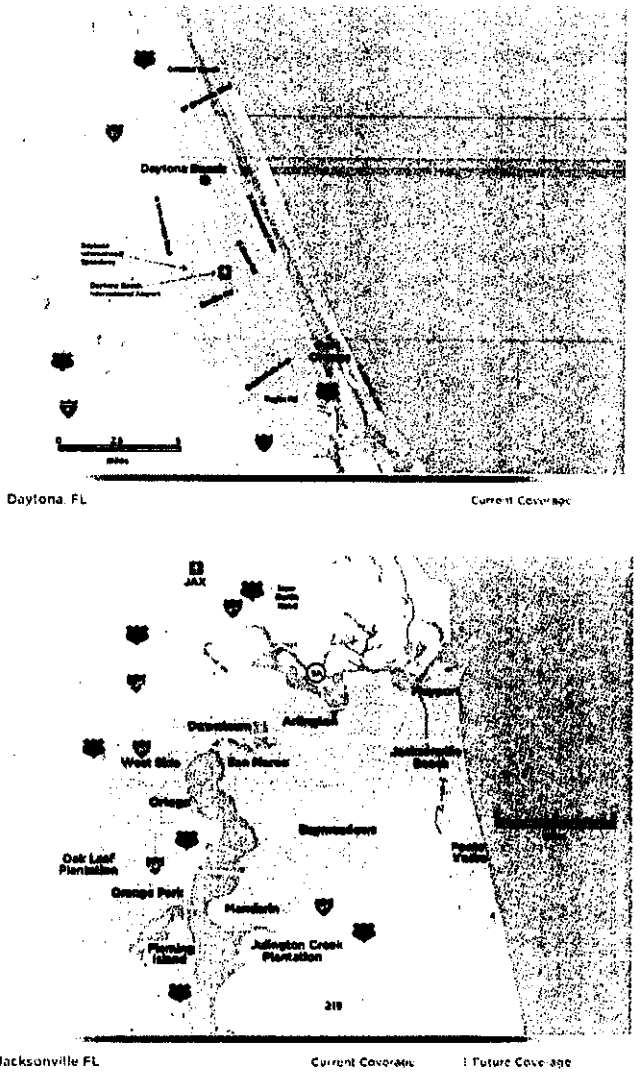
[160] *See* Antonello, Gordon. *Just the Wi-Max Facts, Ma'am*, Electronic News, March 16, 2005.

broadband connectivity becomes more ubiquitous, subscribers will use their devices more and leave them on, integrating them more into their lifestyles.[161]

b. WiMAX Deployment in Florida

In our 2006 report, we described WiMAX deployments by Clearwire in Jacksonville and Daytona Beach.[162] The following maps of Clearwire's two Florida service areas illustrate how WiMAX can be used to cover large geographic areas.[163]

Map 2 Clearwire's Florida Service Areas



[161] K. Lundgren and N. Bogen, *WiMAX: Challenging the Status Quo,* In-Stat, December 2005, p. 9.

[162] *See* NERA, *Intermodal Competition in Florida Telecommunications*, July 2006, p. 67; and Clearwire *Wireless Broadband*, available at http://www.clearwire.com.

[163] *See* http://www.clearwire.com/store/service_areas.php.

We also reported that Clearwire was deploying voice service throughout its service areas.[164] Although, Clearwire has not yet deployed additional systems in Florida, it has continued to expand its operations and to add customers. According to a March 2008 article in *RCRWireless News*: Clearwire doubled its customer base "from 206,000 subscribers at the end of 2006 to 394,000 at the end of last year"; its average revenue per customer (i.e., the average charge per customer) was only about $36.09 in 2007; its quarterly revenues reached $45 million in Q4 of 2007, although its losses increased substantially during 2007 the "company attributed the increase to expenses related to launching 14 new markets during the year": and Clearwire "echoed earlier comments from Sprint Nextel executives that the two companies were in discussions regarding a partnership to deploy a nationwide mobile WiMAX network."[165]

Two other WiMAX providers recently announced that they have deployed or would deploy the technology in Florida. Towerstream provides the service in Miami.[166] And, NextPhase President Robert Ford stated that they have the spectrum to serve Miami: "Combined with the recently announced Local Multipoint Distribution Service spectrum that we've acquired in certain key markets (Atlanta; Los Angeles; Miami; Philadelphia; Wilmington, Del.; and Trenton, N.J.) we now have all of the elements in place to deliver a comprehensive portfolio of business-grade broadband speeds."[167]

c. WiMAX Development Will Enhance Competition

As we explained in our 2006 report, the availability of WiMAX is likely to increase because of major funding from companies like Motorola and Intel. According to a September 2007 press account, additional companies such as Samsung are investing in the technology:

> Sprint Nextel and Clearwire, along with their infrastructure vendors, are investing untold amounts of money to realize the promise of WiMAX. That makes investments in devices, particularly for first-to-market vendors, a reasonable bet, according to Samsung's Skarzynski.
>
> WiMAX is coming on as the U.S. market, for instance, is reaching maturation and saturation, Skarzynski said. With penetration reaching 80%, U.S. consumers will continue to upgrade their handsets and that often means spending a little more for

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[164] *See* Clearwire Press Release, *Clearwire Becomes First International Wireless Broadband Company to Offer Simple, Reliable Internet Phone Service*, April 10, 2006 and *Clearwire News Releases*, available at http://www.clearwire.com/company/news/releases.php .

[165] Dan Meyer, "Clearwire stock gyrates on results, speculation," RCRWirelessNews, March 4, 2008

[166] According to Peter Svensson, "Speedy WiMax May Be The Future Of Wireless Internet Links," The Associated Press, "Towerstream now sells service Miami, Los Angeles, Chicago, Seattle, San Francisco, Providence, R.I., and Boston," and in New York. November 18, 2007.

[167] See: Matt Kapko, "WiMAX rolls ahead without Sprint Nextel; TDS, NextPhase boast of deployment plans, RCR Wireless News, January 22, 2008;
http://www.rcrnews.com/apps/pbcs.dll/article?AID=/20080122/FREE/348119820/0/http:&template=printart.

the next device. Smartphones today account for perhaps 10% of the U.S.'s annual purchase of about 160 million units, a slice that will grow to 15% to 20% of sales as Americans buy better handsets in an upgrade cycle.[168]

WiMAX will complement VoIP by providing wireless broadband internet access anywhere in a metropolitan area. In-Stat discusses some of the potential applications of WiMAX:

> 802.16-2004, the fixed variant of WiMAX, is designed to accommodate any application currently served by cable or DSL, including the triple play of data, voice and video. A single WiMAX base station...can backhaul traffic from cell sites and WiFi hotspots and provide last mile broadband access to homes and enterprises.
>
> ...a key differentiator of 802.16-2004 will be its Nomadic mode, which supports wireless broadband communication within a given area while the end user or device is either stationary or moving slowly at "pedestrian" speeds through the area. This means that a user can connect to a WiMAX network at home, take his WiMAX-enabled device (PDA, laptop, modem, and handset) to work or play, and connect to a WiMAX network at those locations as well. In addition, the user can maintain his broadband connection as he moves around within the WiMAX network coverage area...[169]

Recent articles continue to show that WiMAX is likely to have a major effect on the communications market it both urban and rural areas. First, as noted above, at least two WiMAX companies are serving cities in Florida; a third has announced it has spectrum to serve Miami; and Sprint Nextel has resumed talks with Clearwire to jointly deploy a nationwide mobile WiMAX network. Second, forecasts of WiMAX growth are still robust. For example a January 2008 article reported:

> The market for WiMAX chipsets will reach almost $500 million by 2012, driven mainly by embedded mobile WiMAX in mobile personal computers, according to new research from high-tech research firm In-Stat.
>
> The market will also benefit from demand for WiMAX customer premises equipment, external clients and dual-mode cellular/WiMAX handsets, said In-Stat.
>
> "The total WiMAX user terminal chipset market will reach almost $500 million in 2012, growing from $27 million in 2007," said Gemma Tedesco, In-Stat analyst.

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[168] Phil Carson, "WiMAX devices due to hit U.S. market in '08: Evangelism now, a slew of mobile devices soon," *RCRWireless News*, September 26, 2007.

[169] K. Lundgren and N. Bogen, *WiMAX: Challenging the Status Quo,* In-Stat, December 2005, p. 10.

"Furthermore, WiMAX base station semiconductor revenues are expected to be approximately $1.4 billion in 2012, compared to $130 million in 2007."[170]

In September of last year RCRWireless News reported that Samsung which is developing new WiMAX handsets sees WiMAX:

"...as having a large growth potential," Skarzynski said. "Samsung has a great capability to deliver parts of the home network to deliver content directly from the providers. The technology is there to enable different content providers to reach consumers. Samsung is looking to stake its claim to this market."[171]

3. BPL

Broadband Over Powerline, or BPL, has been developed to allow transmission of broadband signals over existing power line facilities. Because it uses the existing utility infrastructure, BPL provides electric utilities a low cost means of entry into the communications markets and allows them to take advantage of economies of scope. Retired FCC Commissioner Abernathy explained the significance of BPL this way:

Access BPL may play an important role as a new competitor in offering broadband access to homes and businesses because power lines are available in almost every community. This means that the traditional providers of broadband communications, DSL and cable modem services, will face a new competitor. In addition, Access BPL may serve as a broadband solution in geographic areas where DSL and cable modem services are not yet offered.[172]

The deployment of BPL facilitates competition for voice services, in addition to broadband. This occurs in two ways. First, the broadband line allows the customer to purchase service from any of the numerous independent VoIP providers or a VoIP offering from the BPL service provider. Second, the BPL service provider may offer VoIP even if the customer does not purchase broadband service.[173]

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[170] WiMAX chips to generate $500M by 2012 RCRWireless News, January 21, 2008, http://www.rcrnews.com/apps/pbcs.dll/article?AID=/20080121/SUB/5378299/1008/FREE&template=printart

[171] Phil Carson, "WiMAX devices due to hit U.S. market in '08: Evangelism now, a slew of mobile devices soon," *RCRWireless News*, September 26, 2007.

[172] FCC Commissioner Kathleen Q. Abernathy, *Broadband Over Power Line*, Focus on Consumer Concerns, Vol. 4, Number 1, May-June 2004.

[173] For example, Current Communications is offering a residential broadband and VoIP package to its BPL service area for $49.90 per month. Residential customers may also purchase phone service only for $34.95. Current is currently deploying BPL to over 2 million homes and business in the Dallas-Ft. Worth area, in conjunction with TXU Electric Delivery. *See* http://www.current.net/ServiceAndPricing/Residential/Voice/PricingAndBenefits/, http://www.current.net/ServiceAndPricing/Promotions/ and Current Communications Press Release, *TXU and*

Although certain obstacles have caused a slow commercial deployment of BPL, a 2006 Report of the Broadband Over Power Lines Task Force, the National Association of Regulatory Utility Commissioners noted:

> The year 2005 marked an interesting, albeit mixed, year for BPL. The year's highlights saw encouraging signs that BPL may enhance broadband competition and electric utility functionality on a more widespread basis. BPL supporters could point to such developments as commitments to BPL by major media and technology companies, new trial start-ups, new full-scale commercial deployments, and realization of benefits from application of Smart Grid principles.[174]

It is also worth noting that in May 2006, Current Communications attracted $130 million in equity investments from new and existing investors to accelerate the deployment of BPL. New equity investors are General Electric; EarthLink, which will serve as a retail provider of Current's broadband services; TXU Corp.; and Sensus Metering Systems, which provides meter-reading products. Existing equity investors include Duke Energy; EnerTech Capital Partners; Goldman, Sachs & Co.; Google; Hearst; and Liberty Associated Partners LP, an investment partnership between Liberty Media and the Berkman family.[175] Clearly, the market has recognized the potential of BPL.

As noted in the *Florida PSC 2006 Competition Report*, several utilities with a presence in Florida have been exploring BPL. These include Progress Energy (test in North Carolina), Florida Power & Light (announced that it was testing the technology), and Southern Company (BPL demonstration in Georgia). The Commission also noted Jacksonville Electric Authority's (JEA) partnership with Nemours Children's Clinic to deliver pediatric remote home monitoring services via BPL for asthmatic children in the Springfield community of Jacksonville, Florida. In July 2005, The National Rural Telecommunications Cooperative reported that:

> ElectroLinks, one of two broadband over power line (BPL) equipment companies participating in a performance pilot of BPL technology in low-population rural settings, has completed the first stage of its equipment installation at NRTC member West Florida Electric Cooperative (WFEC) in Graceville, FL.

CURRENT Communications to Create Nation's First Multipurpose Smart Grid, December 19, 2005, available at http://www.current.net/OurCompany/PressReleases/PressReleasesDetails/?pressid=15.

[174] The National Association of Regulatory Utility Commissioners, *Report of the Broadband Over Power Lines Task Force*, February 2006, p. 2. The Report also mentioned that 2005 saw:

> news that several BPL trials ended unsuccessfully. BPL detractors continued to question the long-term sustainability of the technology, especially when confronted with the faster deployment and superior funding of its two largest broadband competitors, cable television's cable modem service and telecommunications providers' DSL service. Those who contend that BPL interferes with ham radio and other radio applications also maintained their opposition to deployments of certain BPL technologies.

[175] *See* B. Santo, *BPL Specialist Current Raises $130 M*, CED Magazine, May 4, 2006, available at http://www.cedmagazine.com/article/ca6331733.html?text=bpl+specialist+current+raises.

> "The demonstration was especially significant since [Electrolinks and WFEC] used WildBlue [Satellite broadband], BPL, Wi-Fi and [voice over Internet protocol], and it was all plug and play," said Steve Collier, NRTC's vice president, Emerging Technologies. [176]

Going forward, BPL deployment may increase as industry-wide standards are developed by the IEEE,[177] and as the imperatives of energy efficiency and environmental concerns stimulate utilities to continue to develop and deploy the smart technology to improve their operational efficiency. In March 2008, Xcel Energy announced its plan to spend up to $100 million on its "Smart Grid" for Boulder Colorado. In doing so, it stated: "The advanced, smart grid system – when fully implemented over the next few years – will provide customers with a portfolio of smart grid technologies designed to provide environmental, financial and operational benefits."[178] The company earlier revealed that:

> A number of technologies will be offered within Smart Grid City, including:
>
> Transformation of existing metering infrastructure to a robust, dynamic communications network, providing real time, ***high-speed, two-way communication throughout the distribution grid.***
>
> Conversion of substations to "smart" substations capable of remote monitoring, near real-time data and optimized performance.
>
> Installation of thousands of in-home control devices and the necessary systems to fully automate home energy use.[179]

BPL equipment provider Current Group, which provides sensing, monitoring and other communications technologies over power lines, is a participant in the plan. As noted above, Liberty Media is one of the investors in that BPL vendor.

Thus, although BPL is in its infancy in Florida, utility providers represent potential competitors to telephone and cable companies in the provision of broadband, and therefore the provision of voice services, even in rural areas.

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[176] *See NRTC Update*, Volume 3, Number 14, July 6, 2005, available at http://www.nrtc.coop/us/main/nrtc_update/Update2005/NRTCU_070605.pdf.

[177] See: Sean Michael, Kerner, "Broadband Over Power Adversaries Unite on Standard," *internetnews.com*, October 1, 2007, http://www.internetnews.com/bus-news/article.php/3702646

[178] See: "Xcel Energy announces first Smart Grid City in the nation: Boulder, Colo., to be fully integrated smart electricity city," March 12, 2008.

[179] See Xcel News Release "Xcel Energy announces Smart Grid Consortium partners, intent to bring Smart Grid City to life," 01/16/2008; emphasis added, http://www.xcelenergy.com/XLWEB/CDA/0,3080,1-1-1_15531_46991-44146-0_0_0-0,00.html.

V. CONCLUSION

Intermodal competition is a major force in Florida today. It has already had a tremendous effect on the state's telecommunications market, and it will only intensify in the years to come. Legislators and regulators should reevaluate old assumptions that may have applied decades ago during the monopoly era, but that no longer holds true. To ensure that Florida takes a leadership role in technology and communications, continuing to attract investment to the state, telecommunications regulation must take into account the dynamic competition that has emerged and that is here to stay.

More specifically, the intermodal competition that has developed in the last six years clearly implies that policymakers must allow market forces to play an even larger role than they already do in order to yield economically efficient outcomes. As described above, technological change, notably convergence, and intermodal competition, has essentially eliminated the natural monopoly justification for regulating ILECs. LEC (ILEC and CLEC) networks face formidable and increasing competition from advanced technologies such as digital cable and wireless for the "last mile" connection. The emergence of intermodal competition has so broadened telecommunications markets beyond the traditional wireline sector that all communications firms have to adapt much more rapidly than at any time in the past. In this new environment, existing modes of economic regulation are only likely to retard the evolution of the telecommunications market and pose barriers, rather than solutions.

Perhaps the most urgent task facing Florida policy makers is a reassessment of the current asymmetrical regulatory scheme. Most telecommunications regulations now on the books were put in place long before the advent of intermodal competition and thus were not designed with today's competitive environment in mind. Because of the costs and unintended consequences that such outdated regulations impose, updating and streamlining those regulations should be a top priority. Failure to address this problem now would harm the communications market, the state's economy and ultimately all Floridians.

About the Authors

The authors are: Drs. William E. Taylor, Senior Vice President, and Harold Ware, Vice President, at NERA Economic Consulting (NERA).

Dr. Taylor heads the Communications Practice and the Boston office. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, quantitative analysis of state and federal price regulation proposals, competitive effects of mergers among major telecommunications firms, analyses of vertical integration and interconnection among telecommunications networks, and antitrust litigation in telecommunications markets. He has testified on telecommunications economics before numerous state regulatory authorities, the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, the New Zealand Commerce Commission, the Comisión Federal de Telecomunicaciones de México, federal and state congressional committees and courts. He has appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

He has published extensively in the areas of telecommunications policy and in theoretical and applied econometrics. His articles have appeared in telecommunications industry publications as well as the *American Economic Review*, *Econometrica*, the *Antitrust Law Journal*, the *Yale Journal on Regulation*, the *Review of Industrial Organization*, the *International Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, and *The Encyclopedia of Statistical Sciences*. He has been an Associate Editor of the *Journal of Econometrics*.

Dr. Taylor received a B.A. *magna cum laude* in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a post doctoral Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium. He has performed and published research on economics, econometrics and telecommunications policy at Bell Communications Research, Inc. and the Economics Research Center at Bell Laboratories.

Dr. Ware has studied telecommunications regulation and competition issues for over 30 years. At NERA, he has directed and written international comparisons of telecommunications regulation and competition policies for submission to the US Federal Communications Commission (FCC) and to New Zealand's Ministerial Inquiry into Telecommunications.

Dr. Ware's recent work has focused on convergence and intermodal competition among wireless, cable, Internet, and wireline companies, including analyses of:

- Intermodal competition for directory assistance, local, long distance, Centrex/PBX, and other services;
- Convergence of wireline, wireless, cable, and Internet communications technologies;
- Network interconnection costs;

- Costs, pricing and entry policy, and universal service issues associated with the transition to competition;
- Analyses of the competitive effects of mergers involving wireline and/or wireless communications companies; and
- Carrier access pricing, cross-subsidization, and other pricing and costing issues.

Dr. Ware also has substantial experience with analyses of demand and the economics of network deployment. In particular, he has:

- Directed studies of demand for residential and small business regional telephone services, as well as for high capacity business private line services, telephone switching services, and local telephone services; and
- Testified on the planning and deployment of new technology in telecommunications networks.

He has testified or filed affidavit testimony before the US Postal Rate Commission, state regulatory commissions, the FCC, and the US Department of Justice. Dr. Ware is co-author of three chapters of *Communications for a Mobile Society: An Assessment of New Technology* and has published articles in *Public Utilities Fortnightly, The Journal of Regulatory Economics, IEEE Communications*, and proceedings of the *Fifth and Seventeenth Annual Telecommunication Policy Research Conferences*. His paper, "Competition and Rate Restructuring for Postal Services" appears in *Managing Change in the Postal and Delivery Industries* (Kluwer Academic Publishers, 1997).

Dr. Ware received his doctorate degree in economics from Cornell University, where he taught courses in economics and industrial organization and did research on cellular mobile communications in the Technology Assessment Project of the Program on Science, Technology and Society.

NERA Economic Consulting is an international firm of economists who understand how markets work. Our clients include corporations, governments, law firms, regulatory agencies, trade associations and international agencies. Our global team of 500 professionals operates in 16 offices across North and South America, Europe, Asia and Australia. Founded in 1961 as National Economic Research Associates, our more than 40 years of practical experience creating strategies, studies, reports, expert testimony and policy recommendations reflects our specialization in industrial and financial economics.

NERA is a key participant in the important regulatory, legislative and competition issues facing firms and policy makers around the world. We advise companies on regulatory and competitive issues, and assist firms seeking more freedom to enter and compete in markets. NERA often develops models of demand and costs and prepares demand forecasts for its consulting assignments. We describe our results in testimony, reports and oral presentations, to regulators, courts, competition authorities and legislative bodies.

As new technologies and new forms of competition transform markets, firms face expanding challenges and opportunities. Issues of entry into new markets and shifting market boundaries have joined decades-old matters of costs, demand and rates. The tools and insights of microeconomics and statistics are critical in addressing these issues. NERA experts apply detailed industry knowledge, microeconomic principles and quantitative analysis to assess competition.

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ACKNOWLEDGEMENT

DATE: April 15, 2008

TO: David M. Christian, VP – Regulatory Affairs/Verizon

FROM: Marguerite H. McLean, Office of Commission Clerk

RE: Acknowledgement of Receipt of Confidential Filing

This will acknowledge receipt of a CONFIDENTIAL DOCUMENT filed in Docket Number undocketed [DN 02961-08] **or, if filed in an undocketed matter, concerning** response to staff's 2008 ILEC data request on local competition; includes CD, **and filed on behalf of** Verizon Florida LLC. **The document will be maintained in locked storage.**

If you have any questions regarding this document, please contact Marguerite Lockard, Deputy Clerk, at (850) 413-6770.