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

In the Matter of	)	
	)	
Unbundled Access to Network Elements	)	WC Docket No. 04-313
	)	
Review of the Section 251 Unbundling Obligations	)	CC Docket No. 01-338
Of Incumbent Local Exchange Carriers	)	

COMMENTS OF THE PACE COALITION, BROADVIEW NETWORKS, GRANDE COMMUNICATIONS, AND TALK AMERICA INC.

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News Release

The Pace Coalition, et al.
October 4, 2004
Exhibit 1

FOR RELEASE WEDNESDAY, JUNE 23, 2004

AT&T To Stop Competing In The Residential Local and Long-Distance Market In Seven States

MORRISTOWN, N.J. -- AT&T today announced that it will stop competing for local and long-distance residential customers in Ohio, Missouri, Washington, Tennessee, Louisiana, Arkansas and New Hampshire -- states comprising a population of nearly 38 million Americans.

This action is a result of a June 9 decision by the Administration and the FCC not to appeal a recent Federal court decision that overturned FCC wholesale rules put in place to introduce competition in local markets. The reversal of local competition policy by the Administration will permit the Bell companies to raise wholesale rates as early as November. This increase in wholesale rates means that AT&T will likely be unable to economically serve customers with the competitive bundles currently available.

The Administration's decision two weeks ago effectively eliminated pro-competition rules adopted by the FCC nearly 18 months ago. Without these rules, AT&T has been forced to reassess its ability to serve residential consumers in the other 39 states in which it provides local and long-distance service.

Today's announcement to stop competing in seven states for residential customers is a result of that reassessment. AT&T will make further announcements as it continues its review.

"We foresee a future with less choice for consumers," said David Dorman, chairman and CEO of AT&T. "Competitive alternatives are simply not available today for most Americans," he added, "because as AT&T loses the ability to provide them with an alternative to the Bell companies, they will have virtually no choice of telecommunications provider."

Dorman noted that for the consumer market, the ability of a competitor to bundle a variety of services -- particularly local and long-distance service -- has essentially been eradicated by the June 9 decision. Without an effective local product in its service bundle, AT&T foresees that it will not be able to effectively provide customers with a complete package of telecommunications services.

Since the passage of the Telecom Act in 1996, almost 30 million lines, representing more than 20 million consumers and small businesses, are receiving local phone service from a non-Bell service provider. Studies have shown that all purchasers of local phone service save over $11 billion a year because competition brings better pricing and improved service offers.

The company stressed that it will continue to serve its existing residential customers in the affected states, and that its announcement today does not affect its enterprise, government and other small- and medium-sized business customers. It will also not affect customers with DSL and cable modem offerings who subscribe to the company's Voice over IP offering, AT&T CallVantage^{SM} Service.

About AT&T

For more than 125 years, AT&T (NYSE "T") has been known for unparalleled quality and reliability in communications. Backed by the research and development capabilities of AT&T Labs, the company is a global

leader in local, long distance, Internet and transaction-based voice and data services.

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Exhibit I

AT&T 'Safe Harbor'

The foregoing contains "forward-looking statements" which are based on management's beliefs as well as on a number of assumptions concerning future events made by and information currently available to management. Readers are cautioned not to put undue reliance on such forward-looking statements, which are not a guarantee of performance and are subject to a number of uncertainties and other factors, many of which are outside AT&T's control, that could cause actual results to differ materially from such statements. These risk factors include the impact of increasing competition, continued capacity oversupply, regulatory uncertainty and the effects of technological substitution, among other risks. For a more detailed description of the factors that could cause such a difference, please see AT&T's 10-K, 10-Q, 8-K and other filings with the Securities and Exchange Commission. AT&T disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. This information is presented solely to provide additional information to further understand the results of AT&T.

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EXHIBIT 2

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Business Week

October 27, 2003

SECTION: INFORMATION TECHNOLOGY; Telecom; Number 3855; Pg. 110

LENGTH: 1848 words

HEADLINE: A Wireless World

BYLINE: By Steve Rosenbush in New York, with Roger O. Crockett in Chicago, Christopher Palmeri in Los Angeles, and Peter Burrows in San Mateo, Calif.

HIGHLIGHT:
In a few years, mobile phones will dominate U.S. communications

BODY:

THE DAYS WHEN THE CELL phone was a luxury for business executives and Hollywood power brokers are long gone. More than half of all U.S. consumers already have one, and many families have a slew of them. Robert Steffen, 53, a letter carrier for the U.S. Postal Service, pays for four — for himself, his wife, and his two daughters. And why not? He's forking over only about $105 a month for all of the minutes his family needs. ''Cell phones are everywhere. I would estimate that 75% or 80% of the people at the post office have one,'' says the 32-year postal veteran from his perch in the cab of his truck in Manhattan's Hell's Kitchen.

Rain, snow, heat, and gloom of night won't stop the inevitable: In a few years, wireless will become the dominant form of communications service in the U.S. Already, there are about 147 million cell phones in the country, compared with 187 million traditional phone lines, according to the latest figures from the Federal Communications Commission. The 20-year-old wireless business is growing at such a speedy clip that it's on track to overtake the regular phone business in about two years. ''Wireless is redefining telecom,'' says Verizon Communications (<ticker symbol="VZ"/>) CEO Ivan G. Seidenberg.

The shift is shaking telecom's Establishment to its foundations. The big local phone companies, which had been the steadiest performers during the turmoil of the past few years, are suffering a dangerous erosion in their core businesses. For the first time ever, local phone revenues began shrinking in 2001 and have slid steadily since. That has driven down profit margins for the Bells from around 39% to an expected average of 35% by yearend. Even Verizon, which has a strong wireless business, must cut costs as its core local business declines.

For companies without a solid wireless position, the challenges are more severe. Qwest Communications (<ticker symbol="Q"/>), for example, doesn't have a wireless business of its own, and its local phone lines, which now total 16.5 million, are dropping by about 5% per year. The squeeze may mean it won't be able to survive as an independent company. ''Resolving that migration from traditional to wireless service is a huge issue,'' Qwest Chief Executive Richard C. Notebaert told investors last month. However, a spokesman says the company believes it can remain independent by bundling its telephone and Internet services with wireless service that it will buy wholesale from other telecom players.

''NO GUARANTEES'' TELECOM-EQUIPMENT companies are feeling the heat, too. As phone companies such as Verizon and SBC Communications Inc. (<ticker symbol="SBC"/>), cut costs, they have less money to purchase equipment from suppliers such as Lucent Technologies and Nortel Networks. Both companies have seen severe revenue declines in recent years: At Lucent, sales dropped from $27 billion in 1999 to an expected $9 billion this year. That pressure will probably lead to consolidation among telecom-equipment players over the next year or two.

The implications for communications policy are no less far-reaching. During the 20th century, federal and state regulators strictly controlled everything from pricing to reliability in the U.S. telecom industry. In much of the rest of the world, phone service was a government-run monopoly, like the post office or national defense. Now, the transition to wireless means that governments everywhere risk losing their tight grip. "Wireless is shaking up the system. You are moving from universal service and monopoly to a system where service is a private contract between the company and the customer, and there are no guarantees," says analyst Rudy Baca of Legg Mason. Congress held a hearing on Sept. 24 to review the public-policy challenges. Regulators in California, Utah, and Virginia are concerned enough that they're considering trying to step up their own regulation of wireless-phone prices and service by the end of this year.

While the wireless future is fraught with risks for many, customers are seeing huge benefits. All the competition means choices aplenty, tumbling prices, and innovation on the rise. As cell phones become more sophisticated, consumers are ending up with what is essentially a small computer in their pocket, opening up all sorts of new possibilities for services and entertainment. This month, State College (Penn.)-based Accuweather Inc. launched a service that beams animated radar images of weather patterns to mobile phones and other devices. FunMail Inc., in Pleasanton, Calif., can zap the latest Dilbert cartoons to a cell phone. And Candide Media Works has pioneered a cell-phone-guided walking tour of the Lower East Side of New York, with narration by actor Jerry Stiller and a soundtrack by composer John Zorn. "There's no getting away from it. The technology has unending possibility," says Stiller, 76.

At the extreme edge of the mobile revolution are people like Lena Tatar, 34, who has completely cut the cord. Such people, although still small in number, represent the future of telecom. Late this summer, Tatar and her husband decided to shut off the regular phone at their Manhattan apartment and replace it with two wireless phones. The transition has gone relatively smoothly. When people dial her old number, the call is automatically forwarded to her new cell phone. The couple pays about $50 a month for a plan that provides 600 anytime minutes and 5,000 night-or-weekend minutes. The phone is generally reliable, although Tatar has some trouble picking up her voice-mail in the city and getting service at her father's house. "Overall, I'm glad I made the change," says the New Yorker, who owns a T-shirt business and attends Hunter College.

RELIABILITY GAP AN INCREASING number of consumers are comfortable cutting the cord. About 5% of callers have ditched their regular phones, including many students and younger people. As many as 50% of consumers would like to go completely wireless, but only after differences in cost and reliability are eliminated, according to a study by Ernst & Young. Depending on features and usage, the price differential has disappeared for many people. But the reliability gap is still substantial, and some veterans of telecom think it will never close. "It's not going to displace the wire-line network," said Edward E. Whitacre Jr., chief executive of SBC Communications Inc., which jointly owns wireless player Cingular Wireless with BellSouth Corp. (<ticker symbol="BLS"/>) "It's certainly going to be a big product, but it's never going to be the substitute. Reliability is one reason."

Even if customers keep their traditional phone service, they're spending more and more of their telecom dollars on wireless. Just look at the numbers. With most of telecom stuck in reverse, revenue for the six national wireless carriers will rise an estimated 10% this year, to $77 billion, according to Legg Mason. And wireless profit margins are rising, from 31% in 2002 to 33% in 2003.

That has phone companies racing to diversify their revenues, adding more wireless to the mix. Wireless is likely to drive another wave of telecom consolidation over the next 18 to 24 months, according to investment bankers. It's possible that SBC, which gets just 17% of its revenue from wireless, will have to do something to catch up with Verizon, which gets 30% of its revenue from wireless. SBC has a range of options, beyond continuing to run Cingular jointly with BellSouth. Many analysts expect Cingular will eventually wind up under the full control of either BellSouth or SBC. That would leave the other partner free to acquire another carrier, such as AT&T (<ticker symbol="T"/>) Wireless or T-Mobile International (<ticker symbol="DT"/>).. SBC declined comment. BellSouth says it's happy with the current structure of Cingular. In addition, Sprint (<ticker symbol="PCS"/>), which created a separate tracking stock for its wireless business, says that it is considering folding the Sprint PCS unit back in with the rest of its business in the near future.

A GREAT CONVERGENCE? AS WIRELESS BECOMES ever more important, it is transforming the fundamental design of all other communications networks. BellSouth recently introduced a cell phone that operates as a cordless

phone when the user is at home. Upstart ICG Communications Inc. (<ticker symbol="ICGX"/>) is offering telephone service that's simply an application on a laptop equipped with a wireless Internet connection. With microphones attached to their laptops, workers will be able to make calls and check their voice mail from the road, just as they would read or send e-mail. "What we will see is that networks will converge. All the different devices will be processed off one network," says Frank A. Dunn, CEO of equipment maker Nortel Networks (<ticker symbol="NT"/>). And someday soon, all of those devices will be mobile.

Wireless Tipping Point

Mobile phone service is taking over. Half of U.S. consumers have a cell phone, and the number of mobile devices may soon exceed regular phones. Here's what the transition will mean:

PHONE COMPANIES

As traffic shifts to wireless, traditional carriers such as Verizon and SBC will see profit margins fall from 39% in 2001 to an average of 35% this year.

EQUIPMENT MAKERS

Prices for wireless gear are falling fast because penny-pinching phone companies are putting the squeeze on gear makers. Consolidation looms.

REGULATORS

The move from regulated phones to unregulated wireless means sweeping changes. Governments everywhere will have less influence in telecom.

CONSUMERS

Lower prices, better gadgets, and a wave of innovative new services such as gambling and multimedia messaging will make consumers the clear winners in the wireless world.

BUSINESSES

Mobile Net access is transforming industries. Productivity, for example, gets a boost since sales-people are able to spend more time with customers.

Gadgets in The Groove

Color screens and stereo ring tones were just the beginning. In the past few months, the cell-phone market has been flooded with various new gadgets, services, and accessories. Here are some of the best:

AQUAPAC

Phone falls in your coffee? No prob if it's wearing a waterproof case from Aquapac International. Ideal for boaters, even yammering backstrokers. List price: $25.

NOKIA 3650

Trendsetting phone has it all: calendar, contact manager, global roaming, even a camera for 15-second video clips. List price at T-Mobile is $300, but rebates can be big.

HANDSPRING TREO 600

A phone-computer combo with calendar, contact list, full keyboard, MP3, and camera. Available with Sprint PCS--and others are coming. List price: about $500.

LG VX6000

Verizon's first camera-phone lets users take a photo and transmit it via e-mail with just four clicks. List price is $200, or $150 for customers who sign a two-year service contract.

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Exhibit 2

Business Week, October 27, 2003

URL: http://www.businessweek.com/index.html

GRAPHIC: Photograph: UNPLUGGED IN MANHATTAN Tatar is all-cellular PHOTOGRAPH BY MINDY JONES

LOAD-DATE: October 23, 2003

EXHIBIT 3

The Pace Coalition, *et al.*
October 4, 2004
Exhibit 3

Home Computers and Internet Use in the United States: August 2000

Issued September 2001

Special Studies

P23-207

Defining computer and Internet access

All individuals living in a household in which the respondent answered "Yes" to the question, "Is there a personal computer or laptop in this household?" are considered to have "access" to that computer.

Households with 'Internet access' are those which have at least one member using the Internet at home.

The rapid adoption of computer and Internet technology by the U.S. population has raised many questions: Which households have computers, and which have Internet access? Do children have the access to computer technology that they need to prepare them for jobs in a human capital economy? Do some children have access while others do not? Who uses the Internet? Among both children and adults? How might this use change society? This report uses Current Population Survey (CPS) data to address some of the primary questions raised by the nation's changing technological base.

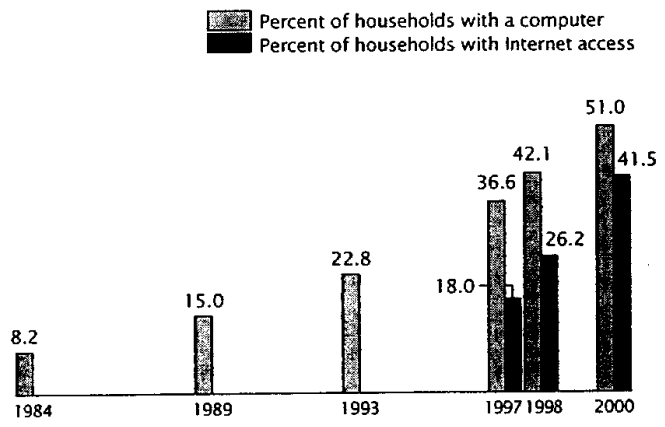
HOME COMPUTERS AND INTERNET USE[1]

More than half of households have computers.

In August 2000, 54 million households, or 51 percent, had one or more computers, up from 42 percent in December 1998 (Figure 1). Since 1984, the first year in which

[1] The estimates in this report are based on responses from a sample of the population. As with all surveys, estimates may vary from the actual values for the entire population because of sampling variation or other factors. All statements made in this report have undergone statistical testing and meet Census Bureau standards for statistical accuracy.

Figure 1.
Computers and Internet Access in the Home: 1984 to 2000
(Civilian noninstitutional population)



Note: Data on Internet access were not collected before 1997.
Source: U.S. Census Bureau, Current Population Survey, various years.

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U.S. CENSUS BUREAU

which the Census Bureau collected data on computer ownership and use, the country has experienced more than a fivefold increase in the proportion of households with computers.

More than 2 in 5 households have Internet access.

Forty-four million households, or 42 percent, had at least one member who used the Internet at home in 2000. This proportion was up from 26 percent in 1998, and more than double the proportion of households with Internet access in 1997 (18 percent), the first year in which the Census Bureau collected data on Internet use.[2] In households which have computers, Internet use has rapidly become so common as to make computer availability and Internet access nearly synonymous. In 1997, less than half of households with computers had someone using the Internet. In 2000, more than 4 in 5 households with a computer had at least one member using the Internet at home.

High-income households are more likely to have computers or Internet access.

Among family households with incomes of $75,000 or more during the 12 months prior to the survey, 88 percent had at least one computer, and 79 percent had at least one household member who used the Internet at home in 2000. Among family households with incomes below $25,000, only 28 percent had a computer, and 19 percent had Internet access (Table A).

One-person households were the least likely to have a computer or Internet access. While 58 percent of households with two to four people had a computer, only 30 percent of one-person households had a computer. Forty-seven percent of two-to-four-person households had Internet access compared with 24 percent of one-person households.

Similarly, married-couple households were the most likely to have a computer or Internet access. Sixty-four percent of married-couple households had a computer, and 53 percent had Internet access. Fewer than half of all other households combined had a computer, and less than one-third had Internet access.

The presence of a child also influences whether a household has a computer or Internet access. Two-thirds of households with a school-age child (6 to 17 years) had a computer, and 53 percent had Internet access. In comparison, only 45 percent of households without a school-age child had a computer, and only 37 percent had Internet access.

Household computer presence and Internet access varied among the four regions of the country. For example, households in the West were the most likely to have computers or Internet access (57 percent and 47 percent, respectively). Those in the South were least likely (47 percent and 38 percent, respectively).

Households situated in metropolitan areas, but outside central cities, were most likely to have a computer (58 percent) or Internet access (48 percent). Only 46 percent of households in central cities had a computer, and just 38 percent had Internet access. Nonmetropolitan households were least likely to have a computer or Internet access (42 percent and 32 percent, respectively).

About 94 million people use the Internet at home.

Among people 3 years old or over, 36 percent used the Internet at home in 2000, including 18 million children 3 to 17 years, and 75 million adults 18 years old and over.[3] In 1998, only 57 million people, or 22 percent of those 3 years and over, used the Internet.

CHILDREN'S ACCESS TO COMPUTERS AND THE INTERNET

More children have access to a computer or use the Internet at home than ever before.

Nearly two-thirds (65 percent) of all children 3 to 17 years lived in a household with a computer in 2000, up from 55 percent in 1998. Thirty percent of all children used the Internet at home in 2000 (Table B), compared with just 19 percent in 1998.

Although girls were as likely as boys to use the Internet at home, children's Internet use varied with age. Only 7 percent of the youngest children, those 3 to 5 years, used the Internet at home. Among children 6 to 11 years, 25 percent used the Internet at home, and 48 percent, nearly half, of children 12 to 17 years used the Internet at home.

White non-Hispanic children are more likely to have home computer access or use the Internet than are Black or Hispanic children.

Among children 3 to 17 years, 77 percent of White non-Hispanics and 72 percent of Asians and Pacific Islanders lived in households with computers, while only 43 percent of Black children and 37 percent of Hispanic children did so.[4]

[2]Data for 1997 include only those accessing the Internet through a computer. Data for 1998 and 2000 include those accessing the Internet through all types of Internet devices.

[3]Some estimates may not add up to the total population because of rounding.

[4]Based on the August 2000 Current Population Survey sample, 3 percent of Black children 3 to 17 years and 3 percent of Asians and Pacific Islanders 3 to 17 years are also of Hispanic origin. Hispanics may be of any race.

Data for the American Indian and Alaska Native population are not shown in this report because of the small sample size in the August 2000 Current Population Survey.

Table A.
Households With Computers and Internet Access by Selected Characteristics: August 2000

(Numbers in thousands. Civilian noninstitutional population)

Characteristic	Total households	Computer in household			Home Internet access		
	Number	Number	Percent	90 percent C.I. (+ –)[1]	Number	Percent	90 percent C.I. (+ –)[1]
TOTAL HOUSEHOLDS	**105,247**	**53,716**	**51.0**	**0.4**	**43,639**	**41.5**	**0.4**
AGE OF HOUSEHOLDER							
Under 25 years	6,104	2,675	43.8	1.5	2,179	35.7	1.5
25 to 44 years	42,545	25,944	61.0	0.6	21,353	50.2	0.6
45 to 64 years	34,800	19,800	56.9	0.6	16,251	46.7	0.6
65 years and over	21,798	5,297	24.3	0.7	3,856	17.7	0.6
RACE AND HISPANIC ORIGIN OF HOUSEHOLDER							
White	87,746	46,846	53.4	0.4	38,380	43.7	0.4
White non-Hispanic	78,719	43,829	55.7	0.4	36,260	46.1	0.4
Black	13,171	4,317	32.8	0.9	3,111	23.6	0.8
Asian and Pacific Islander	3,457	2,250	65.1	1.8	1,944	56.2	1.9
Hispanic (of any race)	9,565	3,224	33.7	1.4	2,255	23.6	1.3
HOUSEHOLDER'S EDUCATIONAL ATTAINMENT							
Less than high school diploma	17,402	3,162	18.2	0.7	2,032	11.7	0.6
High school diploma/GED	32,278	12,783	39.6	0.6	9,666	29.9	0.6
Some college	27,883	16,807	60.3	0.7	13,661	49.0	0.7
Bachelors degree or more	27,684	20,963	75.7	0.6	18,279	66.0	0.7
SIZE OF HOUSEHOLD							
One person	27,167	8,165	30.1	0.7	6,533	24.0	0.6
Two to four people	67,461	38,853	57.6	0.5	31,829	47.2	0.5
Five or more people	10,619	6,697	63.1	1.1	5,277	49.7	1.1
HOUSEHOLD TYPE							
Family households	72,044	42,238	58.6	0.4	34,315	47.6	0.4
Married-couple household	54,830	34,875	63.6	0.5	28,872	52.7	0.5
Male householder	4,179	1,879	45.0	1.8	1,455	34.8	1.7
Female householder	13,035	5,484	42.1	1.0	3,988	30.6	1.0
Nonfamily household	33,203	11,478	34.6	0.6	9,323	28.1	0.6
PRESENCE OF SCHOOL-AGE CHILDREN IN HOUSEHOLD							
Without children 6 to 17 years	76,558	34,537	45.1	0.4	28,360	37.0	0.4
With children 6 to 17 years	28,689	19,179	66.8	0.7	15,279	53.3	0.7
REGION							
Northeast	20,051	10,283	51.3	0.8	8,620	43.0	0.8
Midwest	24,276	12,442	51.3	0.8	9,929	40.9	0.8
South	38,009	17,891	47.1	0.6	14,404	37.9	0.6
West	22,912	13,099	57.2	0.8	10,685	46.6	0.8
METROPOLITAN STATUS							
Metropolitan	84,646	45,110	53.3	0.4	37,124	43.9	0.4
Inside central city	31,806	14,727	46.3	0.7	11,987	37.7	0.6
Outside central city	52,840	30,382	57.5	0.5	25,137	47.6	0.5
Nonmetropolitan	20,601	8,606	41.8	1.0	6,515	31.6	0.9
FAMILY INCOME							
TOTAL FAMILIES	**72,044**	**42,238**	**58.6**	**0.5**	**34,315**	**47.6**	**0.5**
Under $15,000	7,458	1,747	23.4	1.2	1,068	14.3	1.0
15,000-19,999	3,298	1,021	30.9	2.0	674	20.4	1.7
20,000-24,999	4,173	1,437	34.4	1.8	1,040	24.9	1.6
25,000-34,999	8,553	4,031	47.1	1.3	2,982	34.9	1.3
35,000-49,999	9,918	6,131	61.8	1.2	4,766	48.1	1.2
50,000-74,999	12,555	9,424	75.1	1.0	7,825	62.3	1.1
75,000+	15,040	13,198	87.8	0.7	11,886	79.0	0.8
Not reported	11,050	5,249	47.5	1.2	4,074	36.9	1.1

[1]This figure added to or subtracted from the estimate provides the 90-percent confidence interval.

Source: U.S. Census Bureau, Current Population Survey, August 2000.

Table B.
Access to a Home Computer and Use of the Internet at Home by Children 3 to 17 Years: August 2000

(Numbers in thousands. Civilian noninstitutional population)

Characteristic	Children 3 to 17 years old	Home computer access		Use Internet at home	
	Number	Number	Percent	Number	Percent
TOTAL	**60,635**	**39,430**	**65.0**	**18,437**	**30.4**
AGE					
3 to 5 years	11,915	6,905	58.0	864	7.3
6 to 11 years	24,837	15,924	64.1	6,135	24.7
12 to 17 years	23,884	16,600	69.5	11,439	47.9
SEX					
Male	31,055	20,273	65.3	9,392	30.2
Female	29,580	19,156	64.8	9,045	30.6
RACE AND HISPANIC ORIGIN					
White	47,433	33,062	69.7	15,940	33.6
White non-Hispanic	38,438	29,731	77.3	14,773	38.4
Black	9,779	4,161	42.5	1,441	14.7
Asian and Pacific Islander	2,581	1,855	71.9	909	35.2
Hispanic (of any race)	9,568	3,546	37.1	1,229	12.8
HOUSEHOLDER'S EDUCATIONAL ATTAINMENT					
Less than high school diploma	10,159	3,060	30.1	1,126	11.1
High school diploma/GED	18,915	10,559	55.8	4,600	24.3
Some college	16,994	12,712	74.8	5,926	34.9
Bachelors degree or more	14,567	13,098	89.9	6,786	46.6
HOUSEHOLD TYPE					
Family households	60,012	39,119	65.2	18,284	30.5
Married-couple household	42,936	31,593	73.6	15,050	35.1
Male householder	3,092	1,508	48.8	740	23.9
Female householder	13,984	6,017	43.0	2,493	17.8
Nonfamily household	620	310	50.0	154	24.8
REGION					
Northeast	10,794	7,576	70.2	3,832	35.5
Midwest	14,302	9,816	68.6	4,591	32.1
South	20,870	12,711	60.9	5,756	27.6
West	14,668	9,327	63.6	4,258	29.0
METROPOLITAN STATUS					
Metropolitan	49,316	32,513	65.9	15,187	30.8
Inside central city	17,478	9,341	53.4	4,149	23.7
Outside central city	31,839	23,171	72.8	11,038	34.7
Nonmetropolitan	11,319	6,917	61.1	3,250	28.7
FAMILY INCOME					
TOTAL 3 TO 17 YEARS IN FAMILIES	**59,288**	**38,729**	**65.3**	**18,139**	**30.6**
Under $15,000	7,480	2,041	27.3	578	7.7
15,000-19,999	2,896	1,044	36.0	373	12.9
20,000-24,999	3,596	1,507	41.9	547	15.2
25,000-34,999	6,967	3,755	53.9	1,463	21.0
35,000-49,999	8,463	6,044	71.4	2,694	31.8
50,000-74,999	10,374	8,574	82.6	4,142	39.9
75,000+	12,115	11,294	93.2	6,263	51.7
Not reported	7,395	4,470	60.4	2,079	28.1

Source: U.S. Census Bureau, Current Population Survey, August 2000.

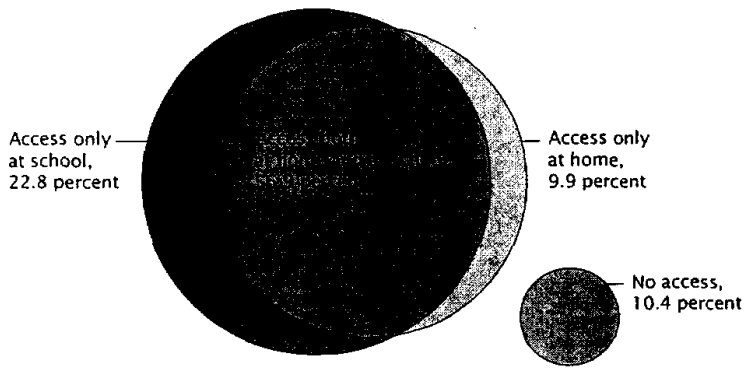
While 38 percent of White non-Hispanic children and 35 percent of Asian and Pacific Islander children used the Internet at home, just 15 percent of Black children and 13 percent of Hispanic children did.[5]

More school-age children use computers at school than have access to them at home.

School is a major influence on children's access to computers. Among children of school age (6 to 17 years), 2 in 3 had access to a computer at home in 2000. However, 4 in 5 actually used a computer at school.

More than half of school-age children had access to computers both in school and at home (57 percent). However, many children had access in only one location or the other. Of them, far more had access in school than had access at home. Twenty-three percent of school-age children had access to a computer only at school, compared with just 10 percent who had access only at home. Adding all three groups together, 9 in 10 school-age children had access to a computer somewhere, leaving just 10 percent of children who had no access to a computer in any locale (Figure 2).

Figure 2.
Access to Computers Among School-Age Children: August 2000
(Civilian noninstitutional population)



Source: U.S. Census Bureau, Current Population Survey, August 2000.

Schools level the playing field by giving computer access to children who have none at home.

For children 6 to 17 years old, computer use at school was more nearly equal across different income, race, or ethnic groups than computer access at home (Figure 3).

School-age children in family households with incomes of $75,000 or more had the highest rates of home computer access, at 94 percent, compared with those with incomes below $25,000, at 35 percent (a difference of about 60 percentage points). But at school, while 87 percent of those with the highest incomes used a computer, 72 percent of those with the lowest incomes did so, a difference of only 15 percentage points.

Figure 3 illustrates a similar equalizing effect observed among children of different racial or ethnic groups. At home, access varied from high to low by 41 percentage points. However, at school the range was much smaller, just 14 percentage points.

The net result of the effect schools have in giving computer access across income, racial, and ethnic groups is a leveling of the computer access that children of different groups have compared to what they would have had if home were the only place available for them to use computers. The absolute percentage-point gap in total computer access between children from family households with the highest and lowest incomes was only about one-third as large as the gap in home access between these two groups. Similarly, the overall computer access gap between White non-Hispanic school-age children and Black or Hispanic school-age children was just over one-third the size of the gap between these groups in home computer access.[6]

ADULT ACCESS TO COMPUTERS AND THE INTERNET

More adults have computers and use the Internet at home than ever before.

More than half of all adults 18 years old and over, 55 percent, lived in a household with at least one computer in 2000, compared with only 46 percent in 1998. Thirty-seven percent of all adults used the Internet at home, compared with just 23 percent in 1998 (Table C).

The oldest adults had the lowest rates of home Internet use. Only 13 percent of those 65 years old or over used the Internet at home.

[5]The proportions of home Internet users among Asian and Pacific Islander and White non-Hispanic children were not significantly different. The proportions of home Internet users among Black and Hispanic children were also not significantly different.

[6]The proportions of overall computer access among Black and Hispanic school-age children were not significantly different.

Among those 55 to 64 years, 31 percent used the Internet at home.

Interestingly, among adults less than 55 years old, the proportion using the Internet at home showed little variation by age group. Only about 4 percentage points separated the groups with the lowest and highest proportions of Internet users: 42 percent for 18 to 24 years and 46 percent for 35 to 44 years.

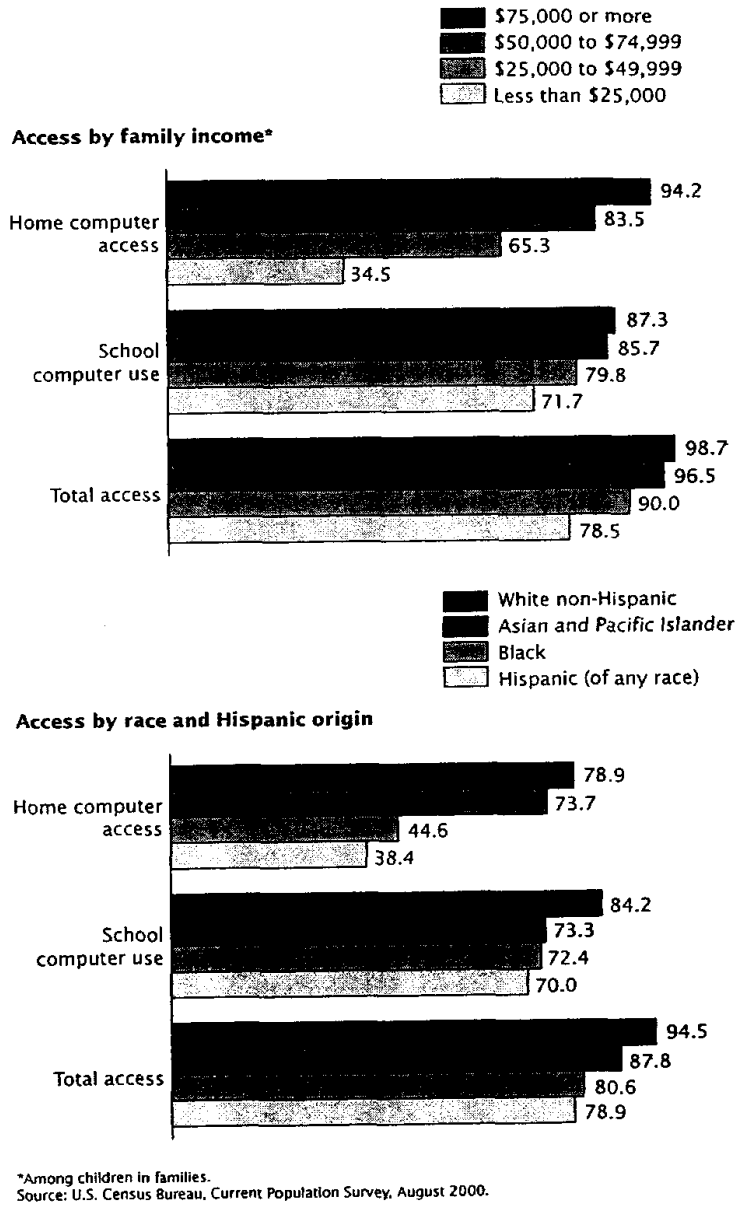
A small difference existed between the proportions of men and women who used the Internet at home (39 percent of men compared with 36 percent of women). However, this difference was due to the higher proportion of women 55 years old and over — an age group with lower rates of Internet use regardless of sex.

More affluent and more highly educated adults are more likely to have computers or use the Internet.

Eighty-seven percent of related adults living in family households with incomes of $75,000 or more had a computer, compared with 28 percent of adults living in family households with incomes less than $25,000. Two-thirds (67 percent) of related adults living in the wealthiest family households used the Internet at home, compared with 14 percent of those living in households with the lowest family incomes.

The most highly educated adults were the most likely to have a computer or use the Internet at home. Seventy-eight percent of adults with a bachelor's degree or more had access to a computer at home, compared with 46 percent of those holding only a high school diploma.

Figure 3.
Computer Access at Home and School Among Children 6 to 17 Years Old by Family Income, Race, and Hispanic Origin: August 2000
(Percent of civilian noninstitutional population)



*Among children in families.
Source: U.S. Census Bureau, Current Population Survey, August 2000.

Table C.
Access to a Home Computer and Use of the Internet at Home by Adults 18 Years and Over: August 2000

(Numbers in thousands. Civilian noninstitutional population)

Characteristic	Total 18 years and over	Home computer access		Use Internet at home	
	Number	Number	Percent	Number	Percent
TOTAL	**201,985**	**111,935**	**55.4**	**75,322**	**37.3**
AGE					
18 to 24 years	26,458	15,256	57.7	10,984	41.5
25 to 34 years	37,394	22,004	58.8	16,406	43.9
35 to 44 years	44,665	29,294	65.6	20,306	45.5
45 to 54 years	37,007	24,003	64.9	16,196	43.8
55 to 64 years	23,710	12,062	50.9	7,240	30.5
65 years and over	32,751	9,316	28.4	4,190	12.8
SEX					
Men	96,789	55,023	56.8	37,243	38.5
Women	105,196	56,912	54.1	38,079	36.2
RACE AND HISPANIC ORIGIN					
White	168,293	97,094	57.7	66,488	39.5
White non-Hispanic	148,001	89,958	60.8	62,942	42.5
Black	23,998	8,890	37.0	4,927	20.5
Asian and Pacific Islander	7,993	5,277	66.0	3,491	43.7
Hispanic (of any race)	21,350	7,530	35.3	3,740	17.5
EDUCATIONAL ATTAINMENT					
Less than high school diploma	33,055	7,687	23.3	2,792	8.4
High school diploma/GED	66,401	30,635	46.1	17,182	25.9
Some college	54,376	35,876	66.0	25,284	46.5
Bachelor's degree or more	48,153	37,737	78.4	30,065	62.4
LABOR FORCE STATUS					
Employed	132,772	84,382	63.6	59,020	44.5
Unemployed	5,346	2,626	49.1	1,808	33.8
Not in labor force	63,866	24,928	39.0	14,494	22.7
SIZE OF HOUSEHOLD					
One person	27,237	8,195	30.1	6,354	23.3
Two to four people	143,968	84,757	58.9	57,596	40.0
Five or more people	30,779	18,983	61.7	11,373	37.0
REGION					
Northeast	38,771	22,043	56.9	14,833	38.3
Midwest	46,383	26,236	56.6	17,551	37.8
South	71,688	36,601	51.1	24,569	34.3
West	45,143	27,055	59.9	18,369	40.7
METROPOLITAN STATUS					
Metropolitan	163,441	93,773	57.4	64,066	39.2
Inside central city	58,521	29,042	49.6	19,721	33.7
Outside central city	104,920	64,731	61.7	44,344	42.3
Nonmetropolitan	38,544	18,162	47.1	11,256	29.2
FAMILY INCOME					
TOTAL ADULTS IN FAMILIES	**157,897**	**94,911**	**60.1**	**62,671**	**39.7**
Under $15,000	13,604	3,237	23.8	1,531	11.3
15,000-19,999	6,470	1,982	30.6	954	14.7
20,000-24,999	8,390	2,866	34.2	1,515	18.1
25,000-34,999	18,102	8,392	46.4	4,700	26.0
35,000-49,999	21,738	13,309	61.2	8,136	37.4
50,000-74,999	28,526	21,242	74.5	14,529	50.9
75,000+	36,398	31,812	87.4	24,199	66.5
Not reported	24,668	12,071	48.9	7,107	28.8

Source: U.S. Census Bureau, Current Population Survey, August 2000.

Among adults with at least a bachelor's degree, 62 percent used the Internet at home, compared with only 26 percent of adults with only a high school diploma.

Asian and Pacific Islander adults are the most likely to have computers at home.

Among Asians and Pacific Islanders 18 years old and over, 66 percent lived in a household with a computer, the highest of any race or ethnic group. In turn, 61 percent of White non-Hispanic adults lived in households with a computer, significantly more than Black or Hispanic adults (37 and 35 percent, respectively).[7]

The proportion of Asian and Pacific Islander and White non-Hispanic adults using the Internet at home was more than double that of Black adults (44 percent, 43 percent, and 21 percent, respectively).[8] Hispanic adults had the lowest home Internet use (18 percent).

USES OF THE INTERNET

E-mail is the most common use of the Internet at home.

More home Internet users, both adults and children, sent or received e-mail in 2000 than did any other online activity. Among children, 73 percent of those who used the Internet at home used e-mail, compared with 68 percent who used the Internet to do research for school or to take courses online, the next most common use (Table D). Eighty-eight percent of adult Internet users sent or received e-mail, far more than performed information searches (64 percent), the next most common adult use.

Table D.
Specific Uses of the Internet at Home by Adults and Children: August 2000

(Numbers in thousands. Civilian noninstitutional population)

Specific use	People using the Internet at home			
	Children 3 to 17 years		Adults 18 years and over	
	Number	Percent	Number	Percent
Any Internet use	**18,437**	**100.0**	**75,322**	**100.0**
E-mail	13,438	72.9	66,046	87.7
School research or courses	12,560	68.1	18,080	24.0
Check news, weather, sports	3,658	19.8	39,528	52.5
Make phone calls	630	3.4	4,831	6.4
Information search	6,079	33.0	48,358	64.2
Job search	418	2.3	14,930	19.8
Job-related tasks	272	1.5	25,347	33.7
Shop or pay bills	1,467	8.0	30,014	39.8
Play games, entertainment, fun	1,981	10.7	3,655	4.9
Other	1,099	6.0	7,051	9.4

Source: U.S. Census Bureau, Current Population Survey, August 2000.

Internet use is influencing how society manages information.

Although the online activities of Internet users show how people with the technology use it, the total proportion of people in the population performing certain tasks online demonstrates how the technology might impact society.

The Internet has become a major venue for the dissemination of news (Figure 4). Among adults, nearly 1 in 5 used the Internet at home to check on news, weather, or sports. Nearly 1 in 4 adults used the Internet for other sorts of information searches, such as information about businesses, health practices, or government services.

The Internet also affects interpersonal communication. About 1 in 3 adults used e-mail from home. More than 1 in 5 children (22 percent) used home e-mail.

Finally, the Internet acts as a venue for work and school to enter the home. One adult in eight used the Internet to perform job-related tasks using a home Internet connection. Twenty-one percent of children used the Internet to perform school-related tasks, such as research for assignments or taking courses online.

SOURCE OF THE DATA

Most estimates in this report come from data obtained in August 2000 from the Current Population Survey (CPS). Some estimates are based on data obtained from the CPS in earlier years or other months. The U.S. Census Bureau conducts the Current Population Survey every month, although this report uses only data from months during which a Computer Use or Internet supplement were administered for its estimates.

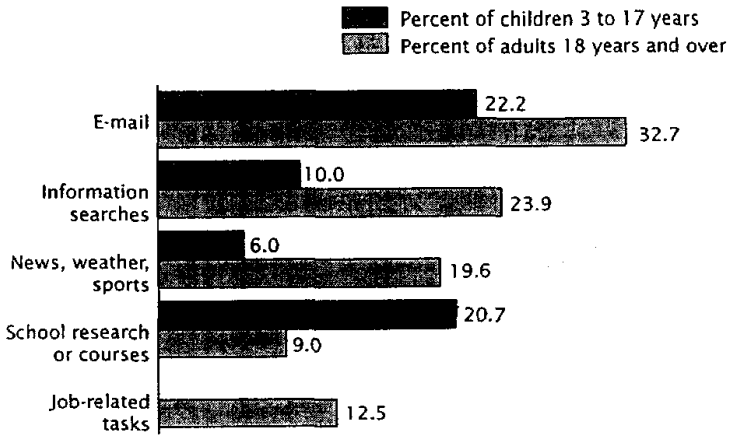
ACCURACY AND RELIABILITY OF THE DATA

Statistics from sample surveys are subject to sampling and nonsampling error. All comparisons presented in this report have taken sampling error into account and meet the Census Bureau's standards for statistical significance. Nonsampling errors in surveys may be attributed

[7]The proportions of Black or Hispanic adults with a computer at home were not significantly different. Based on the August 2000 Current Population Survey sample, 2 percent of Black adults 18 years old or over and 2 percent of Asians and Pacific Islanders over 18 years are also of Hispanic origin. Hispanics may be of any race.

[8]The proportions of Asians and Pacific Islanders and White non-Hispanic adults who were home Internet users were not significantly different.

Figure 4.
Adults and Children Using the Internet for a Specific Task: August 2000
(Percent of civilian noninstitutional population)



Note: While some older children used the Internet to work at home, the proportion was too small to be shown.
Source: U.S. Census Bureau, Current Population Survey, August 2000.

to a variety of sources, such as how the survey was designed, how respondents interpret questions, how able and willing respondents are to provide correct answers, and how accurately answers are coded and classified. The Census Bureau employs quality control procedures throughout the production process — including the overall design of surveys, testing the wording of questions, review of the work of interviewers and coders, and statistical review of reports.

The CPS employs ratio estimation, whereby sample estimates are adjusted to independent estimates of the national population by age, race, sex, and Hispanic origin. This weighting partially corrects for bias due to undercoverage, but how it affects different variables in the survey is not precisely known. Moreover, biases may also be present when people who are missed in the survey differ from those interviewed in ways other than the categories used in weighting (age, race, sex, and Hispanic origin). All of these considerations affect comparisons across different surveys or data sources. Please contact the Demographic Statistical Methods Division via Internet e-mail at dsmd_s&a@census.gov for information on the source of the data, the accuracy of the estimates, the use of standard errors, and the computation of standard errors.

MORE INFORMATION

The electronic version of this report is available on the Internet, at the Census Bureau's World Wide Web site (*www.census.gov*). Once on the site, click on "C" under the "Subjects A-Z" heading, and then "Computer Use and Ownership."

CONTACTS

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USER COMMENTS

The Census Bureau welcomes the comments and advice of data and report users. If you have any suggestions or comments, please write to:

Chief, Population Division
U.S. Census Bureau
Washington, DC 20233

or send e-mail to: pop@census.gov

EXHIBIT 4

PHOENIX FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES
CENTER
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PHOENIX CENTER POLICY BULLETIN NO. 10

31 March 2004

FIXED-MOBILE "INTERMODAL" COMPETITION IN TELECOMMUNICATIONS: FACT OR FICTION?

Abstract: The purpose of this POLICY BULLETIN is to determine whether wireline and wireless telephone services are close enough substitutes to be effective intermodal competitors. Using the standard tools of antitrust economics, this POLICY BULLETIN presents evidence indicating that wireless is not an effective intermodal competitor to wireline telephone service – at least to the extent that wireless offers a meaningful constraint on the market power of a wireline monopoly. The lack of effective intermodal competition between fixed and wireless telephony suggests that efforts to promote *intramodal* competition (*e.g.*, unbundling mandates) remain necessary because consumer savings in wireline telephony since the passage of the Telecommunications Act of 1996 - which are estimated to exceed $10 billion annually - are likely the result of intramodal competition between wireline carriers.

I. Introduction

One of the most prolific arguments set forth to justify the elimination of the market-opening provisions of the Telecommunications Act of 1996 – under which the Bell Operating Companies ("BOCS") must make available to competitors unbundled elements of their local networks at just and reasonable wholesale prices in exchange for being allowed to re-enter the long-distance segment of the market[1] – is that unbundling is no longer necessary to stimulate local competition, because the Bells' market power is constrained by "intermodal" competition from

[1] 47 U.S.C. § 251 *et seq.*

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wireless telephony.[2] To determine the validity of this argument, we turn to the natural empirical question of whether or not competition from wireless telephony is sufficient to prohibit a small but significant and nontransitory increase in price by a wireline monopoly. That is to say, *the correct inquiry is not whether two different products can do a similar task for some consumers some of the time, but rather whether the use of one product will restrain adequately the exercise of market power for the other.*[3] This question is the only one with relevance for communications policy.

Our straightforward antitrust market definition analysis leads to a rejection of the hypothesis that that wireless and wireline telephony are effective "intermodal competitors" – at least to the extent that wireless offers an effective constraint on the market power of a wireline monopoly. Consequently, *even though there may be exceptions, consumers generally do not consider the two services as sufficiently good substitutes such that a small but significant and nontransitory price increase for wireline service is unprofitable.* We arrive at this result in spite of performing a test that is very conservative and more likely to find effective intermodal competition even when it does not exist. The lack of significant intermodal competition suggests that efforts to promote *intramodal* competition (*e.g.*, unbundling mandates) remain necessary because consumer savings in wireline telephony since the passage of the 1996 Act – which are estimated to exceed $10

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[2] Mark Wigfield, *FCC's Abernathy: Court Won't Affect Phone Service Pricing*, DOW JONES NEWSWIRE (18 March 2004) (According to FCC Commissioner Kathleen Abernathy, "What really drives [fixed-line] pricing is the competition from wireless"). Another popular argument is that unbundling of circuit switching can be eliminated because competitors can deploy and use their own switching. This argument has been discredited, oddly enough, by the BOCs' own studies. For a summary, *see* G. S. Ford and T. M. Koutsky, *The UNE-Platform, Impairment and Natural Monpoly: Bell Company Estimates of Cost Disparities and Their Consequences* (January 2003) (www.telepolicy.com). *See also* R. W. Crandall and H. J. Singer, *An Accurate Scorecard of the Telecommunications Act of 1996: Rejoinder to the Phoenix Center Study No. 7* (January 2004) (describing the combination of unbundled loops and self-supplied switching as "a non-sustainable business plan") (http://www.phoenix-center.org/critiques/CrandallSinger.pdf) and the response by the Phoenix Center, *In Response: A Response to Drs. Crandall and Singer*, (January 2004)(http://www.phoenix-center.org/critiques/CrandallResponse.pdf); Larry F. Darby, Jeffrey A. Eisenach and Joseph S. Kraemer, *The CLEC Experiment: Anatomy of a Meltdown*, PROGRESS ON POINT 9.23, (September 2002)("of the approximately 300 "facilities based" CLECs in operation three years ago, only about 70 remained as of early 2002").

[3] As an illustrative example, take the bus versus airplane analogy. Both provide transit over between cities, but few would argue that the competition between the two would be sufficient to constrain (or allow through merger) an airline monopoly. *But c.f.*, Barry M. Aarons, IPI POLICY REPORT # 175, *Don't Call – Just Send Me an E-mail: The New Competition for Traditional Telecom* (January 27, 2003) (providing anecdotal evidence to argue that because voice, instant messaging and e-mail provide "like" services", they are *a fortiori* close substitutes and are sufficient to mitigate the Bells' market power).

billion annually – are due to the more traditional *intramodal* competition between wireline carriers.[4]

II. A Test for Inter-Modal Competition

Because regulation and antitrust, by design, serve as a constraint on profit maximization, regulated firms are obviously motivated to eliminate or change the rules.[5] A common strategy to weaken the case for regulation or antitrust is to exaggerate the presence of competition in relevant markets. In antitrust, this strategy commonly takes the form of a broadly defined antitrust market by including a wide variety of firms and product/services that allegedly compete directly with the merging entities and their products/services. This particular tact makes the merging parties' market share (and the consequent Hirshman-Herfindahl index or "HHI") seem relatively small.[6] The concept of "intermodal competition" in local exchange telecommunications markets is one approach to expand the market's boundaries in order to reduce (artificially?) industry concentration and the expectation of market power.[7]

Intermodal competition, while fresh parlance, is nothing new to the economic analysis of industry structure and competition. Whether or not two products are intermodal competitors is no different than the age-old question of whether or not two products are in the same market. The science of placing boundaries around particular product or geographic markets is well

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[4] PHOENIX CENTER POLICY BULLETIN No 8, *The $10 Billion Benefit of Unbundling: Consumer Surplus Gains from Competitive Pricing Innovations* (27 January 2004) available at http://www.phoenix-center.org/PolicyBulletin/PCPB8Final.pdf; *see also* CompTel/Ascent March 15, 2004 Press Release: *Consumers Spent $11 Billion Less in 2003 Than Before Competition: Data Shows 23 Percent Decline in Home Phone Bills* (available at http://www.comptelascent.org/news/recent-news/031504.html).

[5] Regulation is defined generally, and includes price/quality regulation, competition policy, and antitrust. We recognize that many economists believe the role of regulation is to create and maintain market power. *See, e.g.*, S. Peltzman, POLITICAL PARTICIPATION AND GOVERNMENT REGULATION (1998); R. B. Ekelund Jr., THE FOUNDATIONS OF REGULATORY ECONOMICS (1998); C. Rowley, R. Tollison, and G. Tullock, THE POLITICAL ECONOMY OF RENT-SEEKING (1988).

[6] The science of market definition – that is which products, firms, or locations should or should not be included in a competitive analysis – is sufficiently inexact that industry statistics can produce a variety of (somewhat) defensible claims regarding the identity and number of participants in the relevant market. *See* D. L. Kaserman and J. W. Mayo, GOVERNMENT SND BUSINESS (1995).

[7] *See, e.g.*, Remarks of Michael K. Powell, Chairman Federal Communications Commission at the National Association of Regulatory Commissioners' General Assembly, Washington D.C. (March 10, 2004)("We are turning a corner on the digital migration. Innovative entrepreneurs are replacing yesterday's slow, limited networks with many different types of high-speed, full-service digital networks, like BPL, WIFI, FTTH, Cable Modem and DSL. *** Competition among these facilities-based networks ... has begun to introduce the transformative forces" into the "last mile"); Remarks of FCC Commissioner Abernathy, *supra* n. 2.