Chapter 5

More Spectrum Must Be Provided To Serve Wireless Consumers' Needs

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Abstract: Trends in wireless use justify more spectrum. Conversion to digital technology has already squeezed more minutes into the same amount of spectrum – 456 billion minutes in 2001, over five times as many as in 1998.[1] More people are relying more heavily on wireless today – and millions more will rely on wireless for voice and data service in the near future. The deployment of digital makes possible data services, but dedicating capacity to data services also reduces the capacity available for voice users.

1. INTRODUCTION

Wireless has become an alternative service, not an ancillary service. In 1998, 80 percent of Americans lived in markets served by three or more carriers, over 50 percent living in markets served by five or more carriers. Since then the number of Americans having a choice of three or more

[1] Per CTIA Semi-Annual Wireless Industry Survey, year-end 2001 results. *See* "Wireless Industry Survey: Americans Use More Minutes in Last Half of 2001 Than All of 2000," CTIA Press Release issued May 20, 2002, at http://www.wow-com.com/news/press/body.cfm?record_id=1098.

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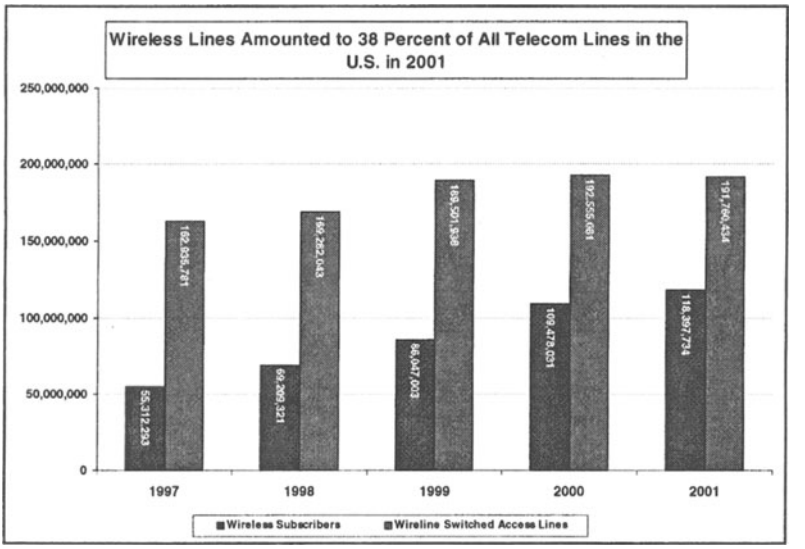
carriers has soared to 92.4 percent, with 71 percent having a choice of five or more carriers.[2]

Look at the facts about the growth of wireless service – and people's reliance on wireless: In 2001 wireless amounted to 38 percent of all end user lines in the U.S., equal to 62 percent of all wireline subscribers.[3]



Sources: CTIA and FCC IATD

More than that:

- 18 percent of wireless consumers consider their wireless phone their primary phone;[4]
- 10 million wireline access lines have already been replaced with wireless;[5]

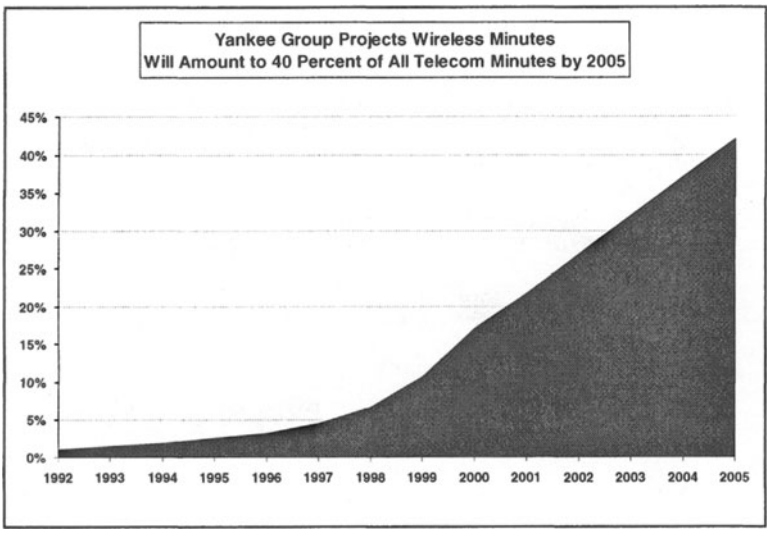
[2] *CTIA's Wireless Industry Indices Report, A Comprehensive report from CTIA, January 1985 – June 2001* (CTIA, December 2001) at page 10.

[3] *Id.* at pages 204 and 227. *See also* CTIA Semi-Annual Wireless Industry Survey, year-end 2001 results and the FCC Industry Analysis and Technology Division (IATD) report "Local Telephone Competition: Status as of June 30, 2001" (FCC, February 2002) at page 8, Table 1.

[4] *See* Michelle Kessler, "18% see cell phones as their main phones," USA TODAY, January 1, 2002, at http://www.usatoday.com/life/cyber/tech/2002/02/01/cell-phone.htm.

[5] *See* Scott Ellison, "Wireless Displacement of Wireline, Forecast and Analysis, 2001-2005," (IDC, December 2001).

- 10 million more wireline access lines will be replaced by 2005;[6]
- 17 percent of all telecommunications industry minutes in 2001 were wireless minutes of use, according to recent estimates;[7]
- Wireless MOUs are expected to amount to more than 40 percent of all telecommunications industry minutes by 2005, according to The Yankee Group.[8]



Sources: CTIA and Yankee Group

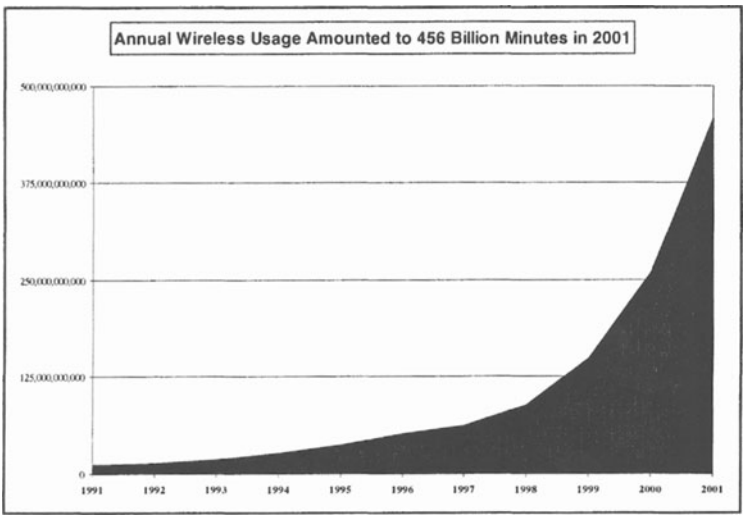
By 2005, it's been projected that consumers will use over one trillion minutes – more than double the wireless minutes in 2001 – as individual users double their own usage. In fact, DB Alex Brown has projected total minutes will grow 32 percent annually through 2007, "driven by increasing subscribers and usage and by the introduction of next generation wireless services."[9]

[6] *Ibid.*
[7] Source: CTIA Research.
[8] *Cited* in K.F. Bachman, "Telkelc, Inc. (ABN AMRO Bank N.V. USA, February 20, 2002).
[9] *See* N. Sarma, *et al.* "Tower Signals: Mixed News from CTIA," (Deutsche Bank Alex Brown, March 21, 2002), at page 4.

2. WIRELESS TODAY IS EFFICIENT, RESPONSIBLE, AND RESPONDING TO CONSUMERS' NEEDS

With 85 percent of wireless subscribers using digital devices (and digital channels making up 96 percent of the nation's wireless network), the wireless industry is using its spectrum efficiently.[10] Wireless carriers' use is far more efficient than, for instance, the public safety community, which still relies heavily on analog systems. And compare the wireless industry'successful conversion to digital compared to the broadcast TV industry's slow pace.

At the end of 1995, when a third carrier was just entering service in many markets, there were just over half a million wireless consumers using digital technology – less than two percent of reported subscribers. By the end of 1998, when cellular, PCS, and ESMR companies were competing in the expanded wireless market, there were just over 18 million digital subscribers, about 27.8 percent of all reported subscribers. In 1995, wireless consumers used 37.7 billion minutes. In 1998, wireless consumers used 89 billion minutes. Last year, with over 101 million digital subscribers, wireless consumers used over 456 billion minutes – over five times as many as in 1998.[11]



Source: CTIA

[10] CTIA Semi-Annual Wireless Industry Survey, year-end 2001 results.

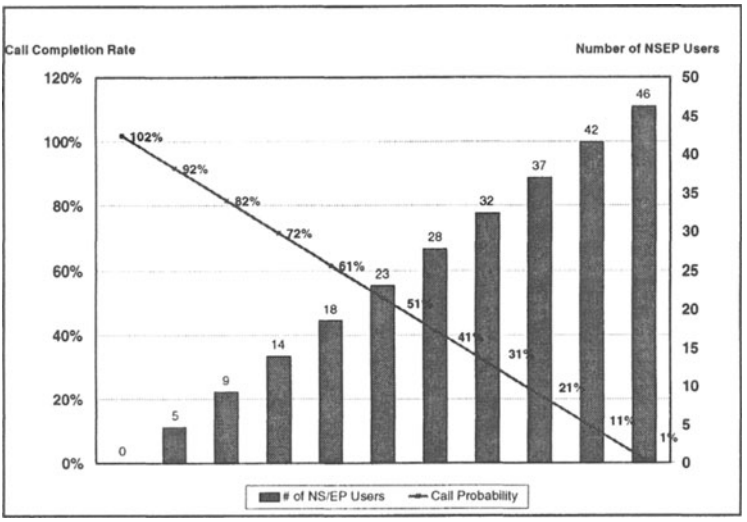
[11] *CTIA's Wireless Industry Indices Report, op cit.*at page 10, and CTIA Semi-Annual Wireless Industry Survey, year-end 2001 results.

With the growth in the availability of wireless service, *and* the number of wireless consumers *and* the volume of wireless traffic, it is no wonder that it can be a challenge placing a call in major markets at key times. This is becoming an increasing concern of consumers, and will become even more serious as consumers demand more services and consume more spectrum. *Absent more spectrum for wireless service, the government itself will be responsible for an increase in consumer complaints.*

3. WIRELESS HAS MANY DEMANDS, AND FIXED CAPACITY

The government and the people of the U.S. turn to wireless every day to solve their problems, to help them communicate in emergencies and in everyday situations. Now the government is asking the wireless industry to provide priority access in emergencies – proposing a system that will eat up to 25 percent of the available capacity with no offset available to help consumers communicate in a time of crisis.

In fact, in an emergency situation, priority access service can effectively eliminate the ability of individual citizens to communicate at all via wireless – something which neither carriers nor their customers would want. Ironically, the government's need to communicate is threatening the interest of individual citizens in communicating in those same situations.



Source: CTIA

4. WIRELESS – THE "OTHER BROADBAND SOLUTION"

The government is also looking at all kinds of special programs and subsidies to solve the "broadband crisis" – to make it possible for consumers to have more communications capacity in order to enjoy more capabilities. The only thing the government *isn't* doing is looking to the wireless industry to make available the least cost, highest efficiency solution. By failing to do this the government is creating a Hobson's Choice for America: will the wireless industry be able to continue to provide competition, improve voice service and deliver new high-speed and high-capacity broadband services to people in rural and urban areas or will the government limit the ability of wireless systems to provide more than voice services because there just won't be enough commercial wireless spectrum?

This situation cannot last. Wireless carriers must have more capacity to meet the growing demands placed on their networks by the growing number of wireless users, the growing number of wireless applications, and the growing number of minutes used by every wireless consumer – public and private.

5. WIRELESS ON THE CUTTING EDGE

The wireless industry has taken to new heights – the technology growing from carphones to cellphones to wirelessly-connected PDAs and laptops. Wireless has always done more than anyone believed possible – from the number of wireless users (once expected to top out at 900,000) to the sheer number of wireless applications – not only voice service, but a host of wireless data applications including telemedicine, telemetry, wireless banking, and more.[12]

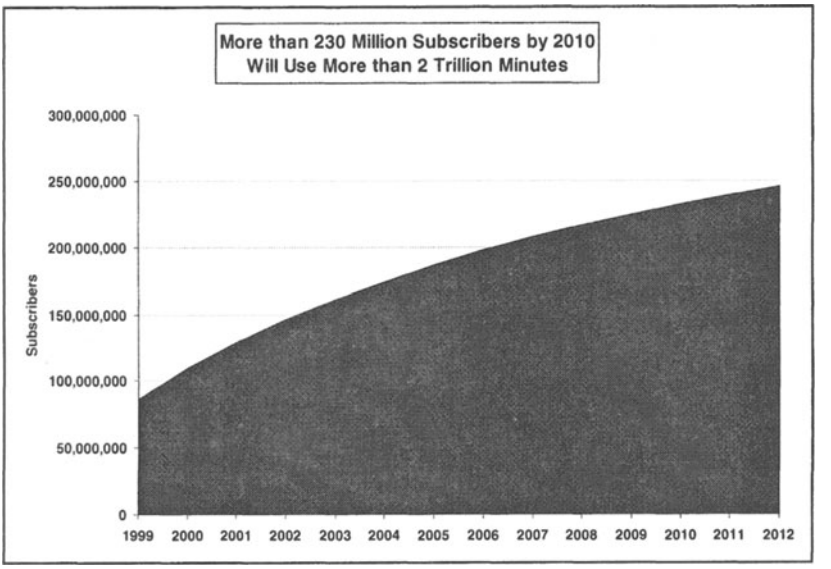
Over 203,000 people are directly employed by wireless carriers in the U.S., with over a million relatedjobs.[13] It's been estimated that two-thirds of American workers will use wireless devices as part of their jobs by 2004, with as many as 137 million wireless data users in North America by 2005.[14] By then, it's expected there will be over 186 million subscribers, growing to over 230 million by 2010 – when they may use five times the volume of wireless service as in 2001.[15] But the benefits which wireless will provide to individual users, the government, and the economy will depend on the resources that wireless carriers have available to them. Without more spectrum, those contributions will be jeopardized.

[12] *See e.g., Bringing Information to People, Celebrating the Wireless Decade* (CTIA, 1993) at page 45; *see also* multiple applications discussed in reports at http://wowdev.wow-com.com/market_research/market_research_category.cfm?research_typeID=96.

[13] *See* CTIA Semi-Annual Wireless Industry Survey, year-end 2001 results; *see also* "The Economic Impact of Third-Generation Wireless Technology,"(Council of Economic Advisors, October 2000) at page 3.

[14] *See* "Gartner Dataquest Says There Will Be 137 Million Wireless Data Users in North America by 2005," June 6, 2001, at http://www4.gartner.com/5_about/press_room/pr20010606a.html.

[15] *See e.g.,* Cynthia Motz, *et al.*, "Wireless 2002: Throwing the Babies Out with the Bath Water?" (Credit Suisse First Boston, January 2002) at page 27. *See also* Colette Fleming, *et al.,* "Wireless Services Model Book," (April 16, 2002) at page 4; Todd Rethmeier, "Wireless Services: Investors Assuming Worst Case," (Bear Stearns, January 23, 2002), at page 6. The average ending subscriber figure for financial analysts' projected subscribership for 2005 was 186 million. The average ending subscriber figure for financial analysts' projected subscribership for 2010 was 230 million.



Sources: CTIA and Multiple Analysts

The government is turning what had been a potential "win-win" into a guaranteed "lose-lose" – consumers' ability to rely on wireless for voice is hurt and their ability to use data is hurt. Indeed, the ability of government agencies to use commercial wireless services to meet their voice and data needs is hurt. The solution is to provide more spectrum for commercial mobile radio services – and the right spectrum at that.