Exhibit No:
Issues: Business Access Services, Line-related services, High Capacity Exchange Access Services and Plexar
Witness: Fernandez
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: Southwestern Bell Telephone Company
Case No: TO-2001-467

SOUTHWESTERN BELL TELEPHONE COMPANY

CASE NO. TO-2001-467

SURREBUTTAL TESTIMONY

OF

Sylvia Acosta Fernandez

San Antonio, Texas
September, 2001

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Investigation of the State of Competition in the Exchanges of Southwestern Bell Telephone Company.	)	Case No. TO-2001-467

AFFIDAVIT OF SYLVIA FERNANDEZ

STATE OF TEXAS	)	
	)	SS
CITY OF SAN ANTONIO	)	

I, Sylvia Fernandez, of lawful age, being duly sworn, depose and state:

1. My name is Sylvia Acosta Fernandez. I am presently Director – Regional Product Marketing - Core Voice for Southwestern Bell Telephone Company.
2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Sylvia Acosta Fernandez

Subscribed and sworn to before this 11th day of September, 2001

Notary Public

My Commission Expires: Jan. 5, 2004

SURREBUTTAL TESTIMONY OF SYLVIA ACOSTA FERNANDEZ

TABLE OF CONTENTS

NP

CASE NO. TO-2001-467
SOUTHWESTERN BELL TELEPHONE COMPANY
SURREBUTTAL TESTIMONY OF SYLVIA ACOSTA FERNANDEZ

NP

INTRODUCTION

Q. Please state your name.

A. My name is Sylvia Acosta Fernandez.

Q. Are you the same Sylvia Acosta Fernandez that filed direct testimony in this case?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my testimony is to respond to issues raised in rebuttal testimony filed by witness William L. Voight on behalf of the Missouri Public Service Commission Staff (Staff).

Q. What are the main points the Commission should understand about your surrebuttal testimony?

A. The following are the main points of my surrebuttal testimony:

a) SWBT has demonstrated that there are alternative providers that are providing services that are substitutable or functionally equivalent to

SWBT's business exchange services throughout SWBT's exchanges in Missouri.

b) While SWBT witness Tom Hughes has presented evidence of the extent of competition on an exchange specific basis, I have attempted to respond to the question of what competitive losses have been realized in Missouri from a retail marketing perspective.

Q. What revenue does SWBT lose when business customers choose another carrier for access line service?

A. While revenue lost with the access lines is significant, that does not tell the whole story. SWBT's access line revenue and unit losses do not reflect:

- the revenues from vertical services, intraLATA toll and other products SWBT can no longer realize because it lost the line;
- the line losses from customer's future demand - when SWBT losses customers, it also loses the future growth in lines that will now be billed revenue for our competition; or
- access line revenues from businesses that have never been SWBT customers.

SWBT'S BUSINESS EXCHANGE SERVICES MEET THE STATUTORY DEFINITION OF EFFECTIVE COMPETITION

Q. Have any parties provided sufficient evidence that would demonstrate SWBT does not face effective competition for its business services?

A. No.

Q. What kind of evidence shows that SWBT's business exchange services face effective competition in all of SWBT's exchanges in Missouri?

A. SWBT, through direct testimony, has shown that Missouri business customers have choices when it comes to buying business exchange services. The choices range from non-traditional providers such as wireless carriers to traditional, regulated providers such as CLECs. All business customers in all exchanges have alternatives available - and effective competition exists.

a. The issue of providers that are certified is not limited strictly to the most densely populated exchanges. As Schedule 2 of my direct testimony shows, there are no less than 40 CLECs with tariffs filed with the Commission to provide business exchange

services in every Missouri exchange. The Commission's web site is the source for this information.

b. As Schedule 3 of my direct testimony shows, there are numerous alternative providers of basic business exchange services that advertise in the Call Guide pages of SWBT's Business White Pages directories in Missouri. In each directory, there are at least three facilities based providers advertising their availability.

These alternative providers have spent a great deal of time, resources and energy obtaining certifications to do business in Missouri to compete for business customers throughout SWBT's exchanges. These competitors have spent untold amounts on advertising in all of SWBT's directories, outdoor advertising, etc. and have done so to actively market their services and make a profit. This is the result and benefit of competition - more choices for Missouri businesses.

Q. Do you agree with Mr. Voight's recommendation to grant a competitive classification for business local telephone service, associated vertical services in the Kansas City and St. Louis metropolitan exchanges?

A. Yes, I appreciate Staff's support for competitive classification for business and related services in the St. Louis and Kansas City exchanges. However, there are alternatives available in all other SWBT exchanges as well and, therefore, SWBT should also receive a competition classification for its other exchanges.

Q. Do you agree with Mr. Voight's opinion that SWBT relies too much on resale to demonstrate effective competition (page 5, lines 20-21)?

A. I disagree. SWBT has presented evidence to show several alternatives exist for business customers statewide.

I do not agree with Mr. Voight's position that resellers and non-traditional providers such as wireless carriers do not provide "effective competition." SWBT has lost and continues to lose access lines to non-traditional alternatives (customer premises equipment, wireless providers, etc.), as well as traditional alternatives such as resellers and facilities based providers. Resellers are a viable alternative for SWBT's business customers. When resellers provide service to a business customer the reseller has the relationship with the customer. The customer may not even know that the reseller is reselling SWBT's service, and the customer likely does not care as long as functionally equivalent services are being provided. Moreover, the reseller has the ability to sell additional services

to the business customer, such as voice mail, customer premises equipment, Internet access, systems management, etc. Resellers also have the opportunity to transition their business customers to facilities based service as well either by purchasing UNEs from SWBT or by using their own facilities.

Q. Mr. Voight states that your direct testimony has an over reliance on non-regulated alternatives such as wireless and that you do not provide an exchange by exchange breakdown of the extent of wireless competition (page 48, lines 4-9). What is your response to that?

A. SWBT may not be able to quantify the impact of wireless providers on line losses but there is no question that cellular use is displacing basic access lines. According to the Wireless/Mobile Services December 2000 Yankee Group study, approximately 2% of cellular users and 4% of PCS users consider their wireless phone their only phone (Schedule 1, Yankee Study, page 4). The study indicates the percentage is higher among PCS users because this technology provides more advanced features than analog cellular service and all-inclusive rate plans. Further, this same study goes on to state that MetroTalk and Boomerang (both subsidiaries of ALLTEL) have launched products to directly compete with landline carriers by offering unlimited local calling for a low flat rate (Schedule 1,

Yankee Study, page 6). There are other studies on wireless migration that also indicate AT&T has advertised wireless service as a replacement to wireline service (Schedule 2, IDC Study, page 1).

Q. How would you respond to Mr. Voight's statement that Staff does not consider resellers of any sort as constituting effective competition, much less prepaid resellers. (p. 46, lines 19-20)?

A. I disagree with Mr. Voight's position on this since resellers are an effective alternative from a business customer's perspective. But even if only facilities based providers were considered, I would refer to Schedule 3 of my direct testimony which shows the alternative providers advertising in the Call Guide section of SWBT's White Pages Directory. Based on information obtained from the Commission's website which shows which providers are facility based, there are at least three facilities based providers advertising in every SWBT White Pages Directory. Limiting "effective competition" to only facilities based providers ignores the evidence SWBT has presented to show alternatives exist for business customers statewide.

LINE LOSSES ARE SHORT SIGHTED EVIDENCE OF COMPETITION

Q. Mr. Voight's rebuttal testimony states that SWBT's supporting evidence is short on demonstrable competition and long on newspaper articles, promotional advertisements and sales brochures as supporting documents (page 8, lines 18-20). What is your response?

A. SWBT has produced a great deal of evidence to demonstrate the alternatives available to Missouri business customers. Mr. Hughes has presented information from a wholesale perspective on the market losses to CLECs. From a retail perspective, I do not have access to that type of data. Instead, the information I have access to includes such information as media articles, advertisements and sales brochures. SWBT considers this type of data in developing its retail strategy and it is appropriate to consider this in this proceeding. Printed news articles about our competitors, advertisements and samples of sales brochures are all evidence of competitive activity.

In order to respond to Mr. Voight's position, I am providing information on an exchange specific basis which demonstrates that SWBT's retail business access lines are declining and an estimate of the competitive disconnects that SWBT is experiencing.

In Schedule 3 (Highly Confidential), I show that SWBT is experiencing a net loss of basic access lines. In Schedule 4 (Highly Confidential), I estimate the number of SWBT retail business access lines that are disconnected for competitive reasons. Mr. Hughes is providing information on CLEC activity in each exchange.

To clarify, in Schedule 3 (Highly Confidential), SWBT's "in service" total is the net of inward units (new orders) and outward units (disconnect orders). At the time a customer disconnects, SWBT's Service Representatives ask the customer for the reason the line is being disconnected. Then, it is classified as "competitive" or "non competitive". Non competitive reasons include business failure, moving out of SWBT's territory, bankruptcy, etc. So "in service" is a function of what is happening with new orders (inwards) as well as disconnects (outwards).

In Missouri, SWBT's total "net" retail business access line losses were as follows:

Study Period	**"Net" BAL units lost**
Jan. - Dec. 1999:	**- _____**
Jan. - Dec. 2000:	** - _____ **
Jan. - July 2001:	** -_____ **

To clarify, in the state of Missouri, when adding the total inward units and outward units, SWBT has lost ** _____ ** retail business access lines this year, more than the total lost in 1999. If the current monthly average line loss continues, SWBT could lose another ** _____ ** retail business access lines throughout the remainder of this year for a total loss of **_____** in 2001. This line loss information would not identify lines gained by CLECs or other non-traditional providers that were lines not previously served by SWBT (e.g., additional lines a business customer purchases from a CLEC).

While factors such as the economy also impact the total number of lines, these results do indicate the extent of competition for business exchange services. The bottom line is that effective competition has reduced the total number of new service orders (inward units) as well as increased the number of disconnected lines (outward units) which results in a net reduction in SWBT's retail access lines.

Schedule 3 (Highly Confidential) of my surrebuttal testimony shows the declining trend in SWBT's Missouri business access lines "in service". This graph reports SWBT's retail basic business access lines from January 1999 through July 2001. While the economic downturn has more recently negatively impacted SWBT's lines in service, there were no signs

of economic downturn in March of 1999 when the rise in outward units began to increase and the decline in service began.

Additionally, Schedule 4 (Highly Confidential) shows SWBT's business access line competitive disconnects for 2001. Rather than include all SWBT exchanges, Schedule 4 focuses on those that have lost 50 or more business access lines this year. As mentioned earlier, SWBT's Service Representatives classify the disconnect type as either "competitive" or "non competitive." Non competitive disconnects have existed for years - they include lines disconnected for economic reasons, bankruptcy, or when a business moves to a location outside of SWBT's territory. As this report clearly shows, competitive losses are not limited to St. Louis and Kansas City but also many other exchanges in the MCAs and outlying areas such as Cape Girardeau, Popular Bluff, Mexico and others. The report reveals the competitive disconnects as a percentage of total disconnects. On average, **___** of all SWBT's disconnects are due to competition.

The total number of business access lines lost to competition supports that effective competition exists for SWBT's business exchange services. And these losses represent not only business access line monthly recurring revenues, but also the associated vertical services features,

intraLATA toll revenues as well as future revenues that would have been realized from future growth.

Q. Did any party provide evidence that SWBT's Plexar/Centrex service should not receive a competitive classification?

A. No. Staff supports a competitive classification for SWBT's Plexar/Centrex service.

CONCLUSION

Q. Please summarize your surrebuttal testimony.

A. The existence of regulated and non-regulated alternative providers ultimately means that SWBT's business customers have alternative providers available to them. These alternative providers offer functionally equivalent or substitutable services. As Schedule 4 (Highly Confidential) shows, SWBT has seen a large number of lines lost to competition not only in the urban areas of St. Louis and Kansas City but throughout the state.

The data I have included estimates that more than ** ____** out of every **__ ** lines SWBT loses in Missouri are lost to competition. Whether it is from a reseller or from a facilities based provider or a wireless provider,

SWBT has lost many business lines and relationships with business customers as well as potential customers. That is the result of effective competition. With a competitive classification for its business exchange services, SWBT will be better able to respond to the changing competitive environment and changing customer demands. The end result will be a more competitive market where the business customer ultimately benefits.

Q. Does this conclude your surrebuttal testimony?

A. Yes.

SCHEDULE 1 - Bricken, Knox, Yankee Group, Vol. 1, No. 18 - December 2000.

SCHEDULE 2 - Pottorf, Callie, and Rietman, Julie, IDC Study: *Landline Replacement: You Win Some, You Lose Some*, 1999.

SCHEDULE 3 - HIGHLY CONFIDENTIAL: SWBT Missouri Business Access Lines In Service, 1999 - July 2001.

SCHEDULE 4 - HIGHLY CONFIDENTIAL: SWBT Missouri Competitive Disconnect Report - January - July 2001.

Schedule 1-1

THE YANKEE GROUP

THE YANKEE GROUP REPORT

Wireless/Mobile Services
REPORT Vol. 1, No. 18—December 2000
by Knox Bricken

The Barriers to Landline Displacement

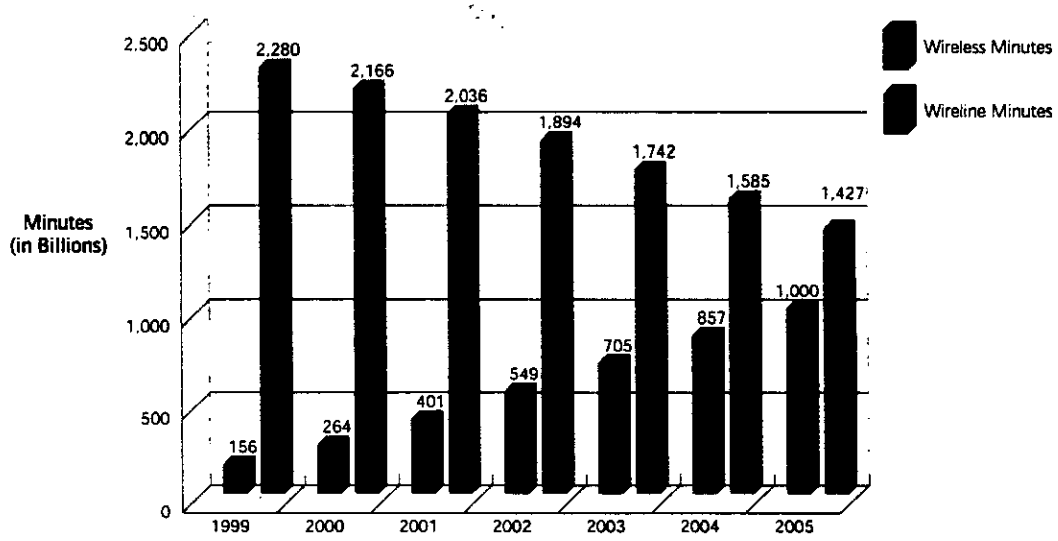
Executive Summary

When cellular phones first debuted in the consumer market in 1994, the notion that wireless devices would someday compete with landline communications was considered extremely far-fetched. Poor network quality, size, cost, and a variety of other factors greatly inhibited high usage rates, and wireless phones were seen as a luxury good—only affordable by a few and not worth the cost to those with scarce amounts of discretionary income.

Almost seven years later, the cellular phone industry has progressed much further than ever imagined. In the United States penetration levels have reached 36%, and in several European countries penetration has exceeded 60%. The rise in digital penetration has improved the clarity and capacity of cellular communications. Increased competition, continual building out of networks, and larger coverage areas have driven down the cost of wireless service while increasing the convenience of using cellular phones. In addition, carriers have begun offering innovative plans and programs to increase consumer usage.

Yet the question remains: Despite the hype and popularity, is wireless usage actually displacing wireline usage? Are people really using their wireless phones as their only phones? Will wireless one day overtake wireline as the communications medium of choice in the United States?

Exhibit 1
Wireless Displacement of Wireline Minutes of Use
Source: the Yankee Group, 2000



In looking at the statistics, contradictions abound that make the answers to these questions even more complex. According to the Yankee Group's 2000 Mobile User Survey, approximately 3.0% of users claim their wireless phone is their only phone, and 0.3% use their wireless phone exactly like a wireline phone. The Yankee Group predicts that the wireless percentage of total conversation minutes of use (MOU) will increase from 6.5% to 41.0% between 1999 and 2005 (see Exhibit 1). Additionally, subscribers predict that they will use their wireless phones more frequently and expect increased displacement of their wireline usage.

Despite these encouraging trends, the number of subscribers that use their wireless phone as their only phone has not increased significantly during the past couple of years. Consumers are still very compelled to maintain wireline access for several reasons, and carriers still have progress to make in many areas before cell phones can become the device of choice by all consumers.

In this Report, the Yankee Group more closely examines the trends in landline displacement. We talk about the progress made in wireless communications during the past couple of years and look at what still needs to be done to make wireless a truly viable form of communication in all situations. Lastly, we discuss what the carriers can do to make customers more comfortable using their wireless phone as their only phone—thus accelerating the process of landline displacement.

Table of Contents

I. What Is Landline Displacement?

A couple of definitions must be addressed when discussing landline displacement. The first is the quintessential definition of landline displacement, which is replacement of minutes of use over the wireline network with minutes over the wireless network. Specifically, landline displacement occurs when a user chooses to use the wireless network for a voice or data transaction that previously would have been made on the wireline network. As seen in Exhibit 1, the Yankee Group expects landline displacement of voice minutes in the United States to grow substantially over the next five years, potentially accounting for 41% of all voice minutes by the year 2005.

The second area we address when discussing landline displacement is actual "landline displacers." These are wireless subscribers that choose to use their wireless phone as their only phone, or at least use their wireless phone to replace either their home or office line, if not both. According to our 2000 Mobile User Survey, approximately 3% of all wireless users use their wireless phone as their only phone. Of those users, around 0.3% use their wireless phone exactly like their wireline phone (which means they leave the wireless phone in their home and use it as they would a normal wireline phone).

What Are Subscribers' Thoughts about Landline Displacement?

The Yankee Group has found several interesting trends related to landline displacement. The first is the current and expected displacement estimated by subscribers. According to our Mobile User Survey, in 1999 subscribers were displacing about 12% of their wireline minutes with wireless and they expected to displace 16.6% of minutes by 2001. In our 2000 survey, customers indicated that they were already displacing 17% of minutes and expect to displace 24% of minutes by 2002 (see Exhibit 2). We see this as a very encouraging sign that subscribers are increasingly open to using their wireless phone as a replacement for wireline in certain instances.

Where Do Customers Use Their Wireless Phone?

The Yankee Group believes that a lot can be deduced about landline displacement by determining where customers will use their phone. We have discovered that the majority of wireless usage currently takes place in a user's car or other mode of transportation (61%), leading us to believe that a good amount of those minutes are still complementary to wireline usage. Subscribers using their phone in a stationary environment are much more likely to be replacing landline minutes. It is important to note that the percentage of use in cars or other modes of transportation has decreased from 70% in 1998 to 61% in 2000, while usage in the home has doubled from 6% in 1998 to 12% in 2000 (see Exhibit 3). As places of wireless phone usage begin to disperse, we believe this is an indication that customers are becoming more comfortable using their phone in varying settings, leading down the path toward landline displacement.

Exhibit 2
Subscriber Actual vs. Expected Displacement
Source: the Yankee Group, 2000

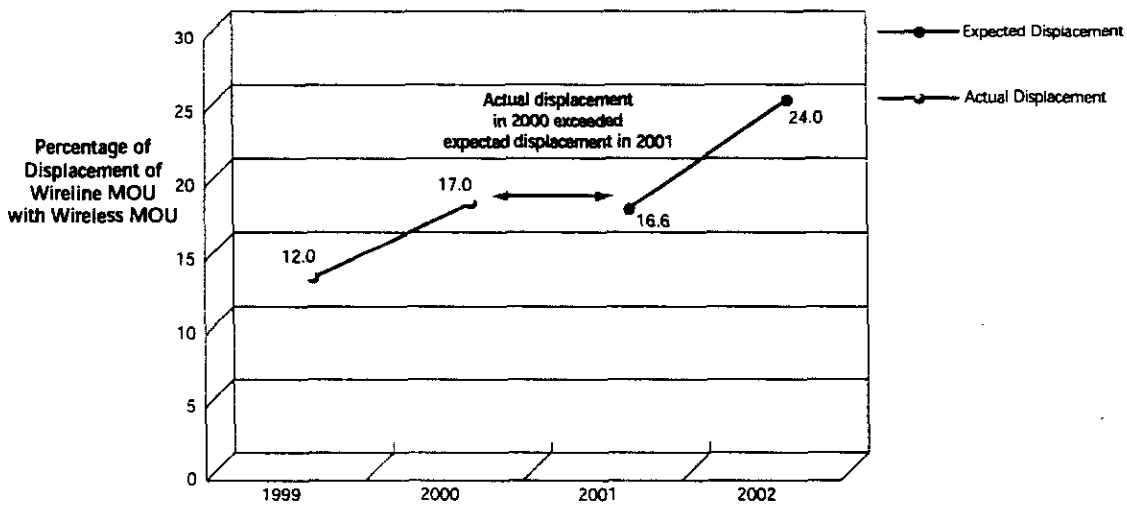
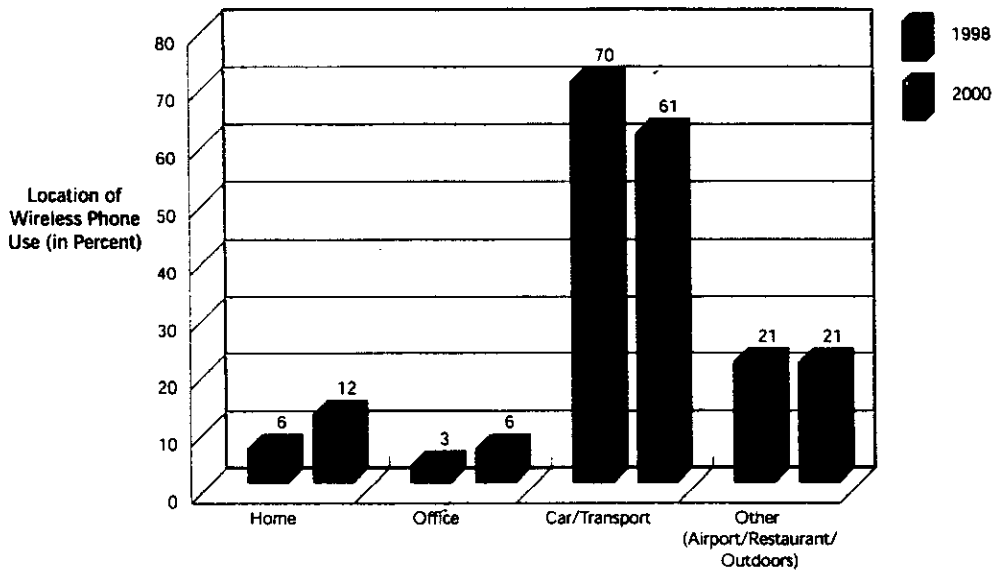


Exhibit 3
Customer Wireless Phone Usage Patterns
Source: the Yankee Group, 2000



Cellular vs. PCS Displacement

A third interesting trend the Yankee Group has discovered is that more displacement occurs among PCS users than cellular: 4% of PCS users and 2% of cellular users consider their wireless phone their only phone (see Exhibit 4). We believe this is because of the large percentage (46%) of cellular users that are still on analog phones and do not have access to advanced features such as text messaging, voice mail, and call waiting that digital phones provide. In addition, PCS users tend to have more advanced handsets and more all-inclusive rate plans.

II. Factors Stimulating Wireline Displacement

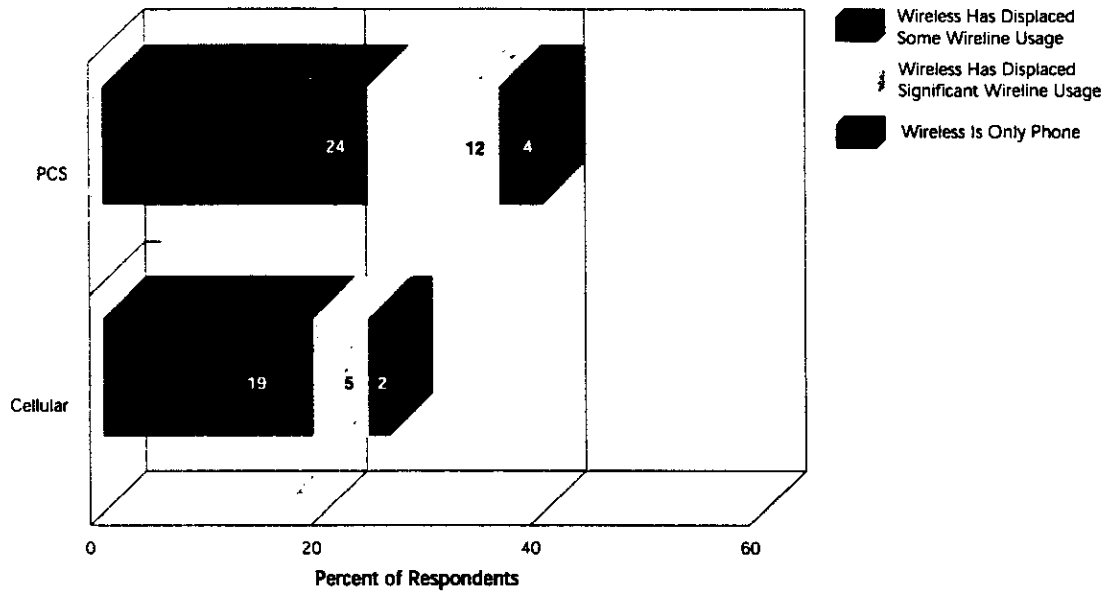
The Yankee Group has identified several factors that are responsible for stimulating wireless growth in the United States. These include:

- **Added Competition**—In a few cites across the nation, as many as seven carriers can be found competing in one market. The Yankee Group believes that the increased competition has been a stimulant to the industry—increasing consumer product awareness and expanding the overall wireless pie.

- **Larger Coverage Areas**—As the industry consolidates and several national players emerge, carriers are leveraging their subscriber bases across greater coverage areas and are continuing to build out national networks. This again has led to greater availability of wireless services in a greater number of markets.

- **One Rate and Family Plans**—Carriers are beginning to aggressively offer a number of plans that encourage increased usage by providing greater service benefits without directly decreasing the cost of wireless service.

Exhibit 4
Cellular and PCS Usage Patterns
Source: the Yankee Group, 2000



- **Creative Marketing and Packaging**—The carriers have come up with several creative marketing initiatives that we believe will encourage increased wireless usage, thus leading the industry closer to landline displacement. These initiatives include:

  — **Rollover Plans**—These plans allow customers to carry unused minutes over to the next month. The plans focus on customer retention since customers are less likely to churn when they will be losing unused minutes.

  — **Family/Group Plans**—These plans allow families or groups to share minutes. The plans increase customer stickiness because churning becomes a group decision, which is more difficult to make.

  — **"One-Number Service" Offerings**—These offerings allow subscribers to use the same phone number for both a home and office line.

  — **One-Stop Shopping**—Certain carriers are bundling local, long-distance, wireless, paging, and Internet services in certain markets.

The above factors have had several effects on the wireless services industry, including:

- **Lower Cost to Carriers**—As the technology continues to improve and becomes more pervasive, carriers have been able to spread their costs over an ever-increasing subscriber base—especially general and administrative expenses and handset subsidies. Thus, the cost incurred by the carriers to provide service has declined.

- **Lower Pricing**—As carriers expand their coverage and capacity and reach a larger subscriber base, they are able to operate at a lower cost per subscriber. The Yankee Group's pricing analysis indicates that the real price per minute for customers has fallen as their usage has risen. In 1998, customers paid $0.31 for a minute of wireless use; today the average user is paying $0.24. Displacement occurs as wireless services become more affordable.

- **Increased Penetration**—Penetration levels in the United States will be approximately 38% by year-end 2000, up from less than 20% at the end of 1997, and are expected to reach 62% by 2005. As cellular phones become more prevalent, the Yankee Group predicts that wireless penetration will reach 72% by 2009.

- **Increased Digital Usage**—Digital prices have fallen 77% between 1998 and this year. At the same time, digital penetration has increased from 21% of subscribers in 1998 to about 52% currently. The Yankee Group believes there is a strong correlation between increased usage and digital penetration. Digital coverage is much clearer than analog and enables features such as call waiting, caller ID, and voice mail, which make wireless phone usage much more preferable and similar to a landline call.

- **Growth of Prepaid**—As wireless penetration increases, carriers have begun exhausting their traditional subscriber bases. They are now looking for alternative market segments, particularly the credit-challenged. Currently, the prepaid market has about 6 million subscribers in the United States, up from 2 million in 1998, and we expect this number to more than double to 14 million by the end of 2002. Prepaid is important when considering landline displacement because it allows carriers to encompass a broader range of customers who may not qualify or desire postpaid plans.

In addition to the above factors, the Yankee Group acknowledges that as wireless phones become more pervasive and an increasingly mainstream item, it is logical to assume they will continue taking away from landline MOU.

Innovative Strategies to Stimulate Landline Displacement

Recently, the Yankee Group has begun witnessing new carriers employing strategies to stimulate landline displacement. For example, Leap Wireless has rolled out an unlimited usage local calling strategy for $30 per month. Leap's service is, in many ways, considered a landline displacement product as most of the company's subscribers are utilizing in excess of 1,200 MOU per month. Other established carriers, such as ALLTEL, are employing this strategy in various markets. ALLTEL has rolled out two products aimed at the local, all-inclusive user: MetroTalk and Boomerang. MetroTalk is sold as a subsidiary of ALLTEL, leveraging its brand name. Boomerang operates as a completely independent subsidiary of ALLTEL. Both products compete with landline carriers by offering unlimited local calling for a low flat rate.

III. Wireline/Wireless Premiums

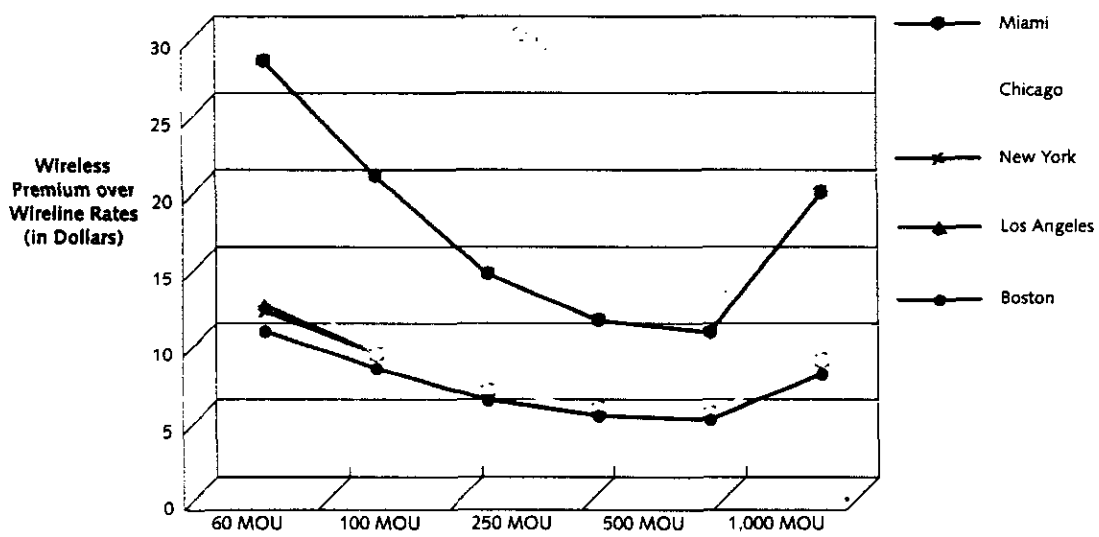
Is there a specific price inflection point at which wireless phones become far more likely to displace landline phones? The Yankee Group does not believe that price is the only factor considered when a subscriber chooses to use a wireless phone over a wireline phone. However, we do believe that in many instances there is a strong correlation between premium price of wireless services over wireline and the potential rate of displacement. We theorize that, in a particular market, if wireless prices are less than three times more expensive than wireline, the region will begin to see aggressive displacement.

Currently, wireless prices in North America are still, on average, four or five times higher than wireline rates; therefore, aggressive displacement in the United States is still a few years off. However, as you can see in Exhibit 5, as customers begin approaching usage levels of 500 and 1,000 wireless minutes per month, the cost barriers to wireline displacement become less significant.

IV. Global Landline Displacement

Internationally, we recognize that there may be other compelling reasons for subscribers to displace their landline phone. For instance, in parts of some countries, wireless phones are the only option for telephone services. Thus, subscribers are willing to pay for any accessible services and wireline premiums are less significant.

Exhibit 5
Wireless Premium over Wireline Rates
Source: the Yankee Group, 2000



In fact, global penetration is growing at a faster clip than U.S. penetration, and the rate of new wireless subscriptions is largely outpacing the rate of new wireline access lines being installed. Globally, there were approximately double the number of landline access lines as wireless subscribers in 1998. The Yankee Group predicts that wireless subscriber numbers will converge with those of land access lines in 2005 and overtake land access lines by 2006 (see Exhibit 6).

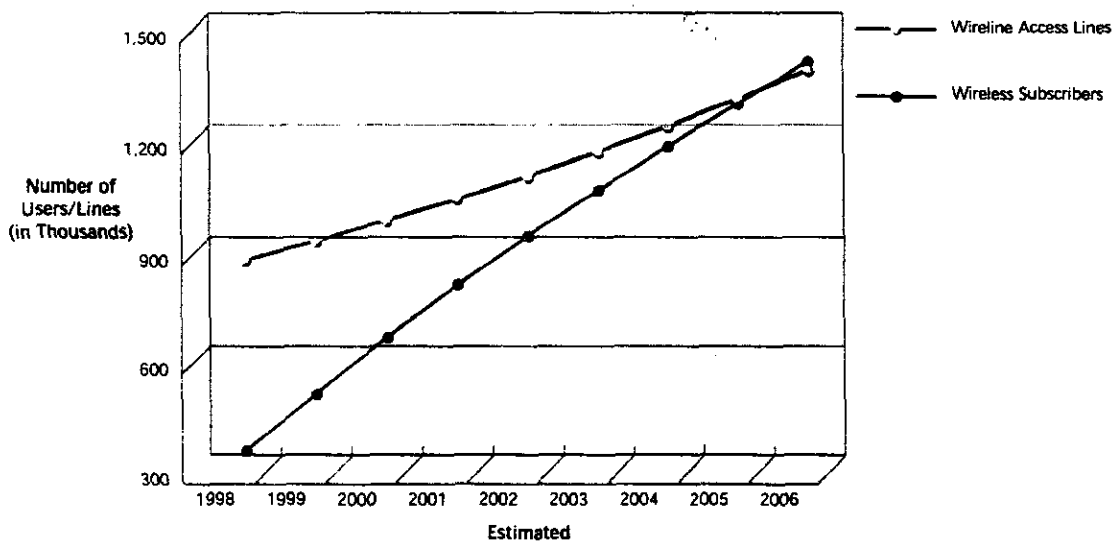
V. Obstacles to Landline Displacement

There are still several obstacles facing landline displacement in the United States, including:

- **The Absence of Calling Party Pays**—Wireless customers in the United States must pay for both incoming and outgoing calls. On the U.S. wireline network and on wireless networks in most other countries, customers don't have to pay for incoming calls. Therefore, cellular phones are not feasible as a customer's only phone because customers are hesitant to give out their wireless phone number. According to the Yankee Group's 1999 Mobile User Survey, 19% of users still do not give out their wireless number. The Yankee Group does not expect the issue of calling party pays to be resolved at any time in the near future.

- **Excellent Wireline Service in the United States**—The United States has an excellent wireline network, which reaches 99% of the U.S. population and has less than a 0.01% dropped call rate. Wireless service cannot compete with these standards, which U.S. customers are accustomed to and expect.

Exhibit 6
Global Wireless Subscribers vs. Global Access Lines
Source: the Yankee Group, 2000



- **Lower Penetration of Prepaid Users**—Carriers have just begun to target the prepaid market. The Yankee Group believes that prepaid would attract a largely untapped user base, specifically the youth market and the credit-challenged.

- **Wireless Network Shortcomings**—Network shortcomings such as dropped calls, network glitches, and rampant busy signals are still a problem on the wireless network. This also ties into the excellent wireline service; U.S. subscribers have high expectations for their phone service, especially in terms of reliability and clarity. As seen in Exhibit 7, subscribers experience these wireless network shortcomings approximately 30% of the time.

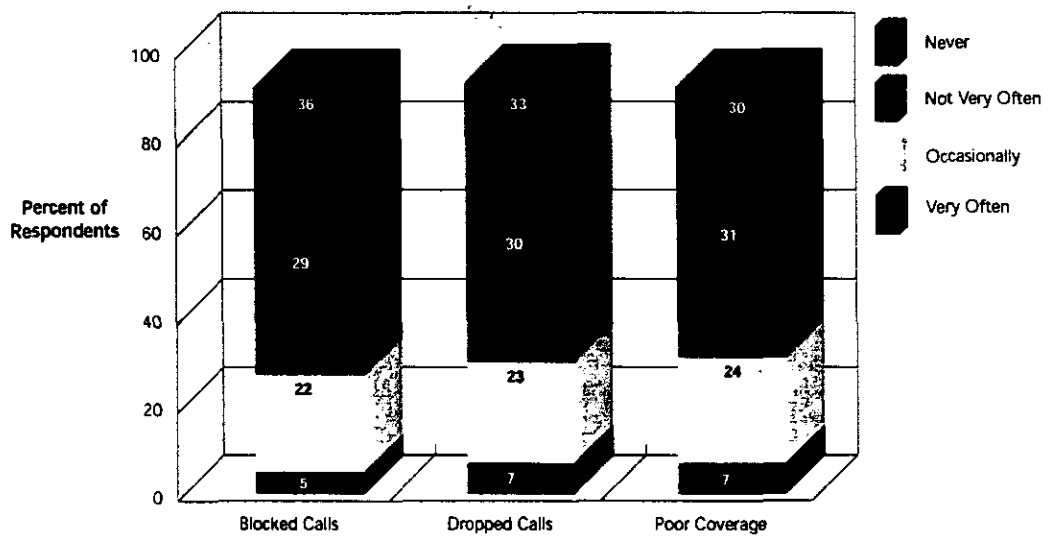
- **Battery Life**—Cellular phone battery life, while improving, is still not at the levels needed for landline displacement. Most phones do not offer more than 6 hours of talk time and 24 hours of standby time.

- **Landline Is Location-Specific; Wireless Is Person-Specific**—Americans are accustomed to associating a phone with a place; for instance, calling an office or a household. For subscribers to use their wireless phone as their only phone, somewhat of a paradigm shift must take place in the way people think about phones—associating phone numbers with a person instead of a place.

- **In-Building Penetration Is Still Not Very Reliable**—Until in-building penetration becomes more reliable, subscribers will typically have no compelling reason to use a wireless phone while inside. Carriers that operate at lower-bandwidth frequencies will have more success in combating this problem.

- **Health Concerns**—Many users consider possible radiation effects a big obstacle when thinking about using their wireless phone 100% of the time.

Exhibit 7
Wireless Network Satisfaction
Source: the Yankee Group, 2000



Note: Totals do not equal 100% due to respondent errors.

In addition to the above concerns, the Yankee Group believes that for the foreseeable future, consumers will most likely maintain at least one landline access line in their home for the following reasons:

- **Internet Access**—Wireless access to the Internet is not nearly at the speeds that wireline dial-up access can achieve. Wireless modems, in most cases, do not achieve more than 14.4 Kbps, whereas dial-up wireline modems can easily achieve at least 56 Kbps. So, for data access, customers will certainly continue using wireline access for the foreseeable future.

- **Emergency Usage**—Customers feel more comfortable relying on a wireline phone for emergency situations. Therefore, households—especially those with children—tend to keep a wireline phone for these reasons.

- **A "Family Number"**—As mentioned earlier, U.S. subscribers are accustomed to the notion that a phone is place-specific as opposed to person-specific. Following that logic, Americans like the idea of having one number that reaches their home as opposed to a specific person within the household. In addition, families with young children maintain a landline phone for their children's use.

- **Directory Assistance**—Wireless phones are not listed in directory assistance, which can make it difficult to reach a user whose wireless phone is their only phone. (On the upside, telemarketers do not have access to cellphone numbers.)

VI. What Can Carriers Do to Accelerate the Landline Displacement Process?

So the real questions remain: What can wireless carriers do to accelerate the process of landline displacement? And, are carriers really willing to take the necessary steps to encourage this trend, when, in many instances, they are risking the cannibalization of their own wireline networks?

The Yankee Group believes that carriers will continue to be interested in driving landline displacement because wireless phones are much more accessible than landline phones, and thus drive higher overall usage rates. However, in order to drive this phenomenon, carriers must become more aggressive. First, wireless carriers can directly target landline usage by continuing to offer aggressive all-inclusive price plans for local, long distance, and roaming. In addition, carriers can offer incentives to increase inbound traffic by restructuring pricing. Offers such as giving the first two incoming minutes free will encourage increased usage by subscribers. Carriers can also continue to enhance their value-added services such as wireless data, short messaging, and personal calendar functions. These value-added services increase a subscriber's dependence on his or her cellular phone; thus, the more tied a subscriber is, the more he or she will use the phone.

On the technology side, carriers can work with handset manufacturers and infrastructure vendors to make cellular phones more practical as an "only phone." Suggestions include improving signal quality, voice quality, and coverage with available technology. Carriers can also operate at lower-bandwidth frequencies in heavily populated urban areas. This will help them provide better in-building penetration to their customers.

Finally, carriers can begin to focus more on those users that have more potential to become landline displacers—specifically, young professionals and teens. Young adults and teens do not possess the emotional ties to their landline phones and are much more technologically savvy. Thus, the Yankee Group thinks these generations will become the true pioneers of wireline displacement.

VII. Conclusion

The Yankee Group believes that it is only a matter of time before wireline phones go the way of the old-fashioned rotaries and wireless phone usage will be ubiquitous. However, this is still several years off. In the meantime, carriers must work to offer a product that is competitive with landline usage and provide compelling incentives for customers to give up their trusty old wireline.

Further Reading

"Will Wireless Carriers Have Success with Generation Y-erless?," *Yankee Group Report, Wireless/Mobile Services*, Vol. 1, No. 15, October 2000.

"Wireless Coverage in the United States: Leaving a Lot to Be Desired," *Yankee Group Report, Wireless/Mobile Services*, Vol. 1, No. 11, July 2000.

Yankee Group Planning Services

Billing & Payment Application Strategies
Brazil Market Strategies
BtoB Commerce & Applications
Canadian Market Strategies
Carrier Convergence Infrastructure
Communications Services for the New E-conomy
Consumer Market Convergence
Convergent Communications Asia-Pacific
Convergent Communications Latin America
Customer Relationship Management Strategies
E-Networks & Broadband Access
Energy Communications
Energy & Internet Strategies
EuroScope Communications
E-Sourcing Strategies
Internet Computing Strategies
Internet Market Strategies
Internet Strategies Asia-Pacific
Internet Strategies Europe
Internet Strategies Latin America
Japan Market Strategies
Media & Entertainment Strategies
Online Retail Strategies
Small and Medium Business Communications
Telecom E-Business
Wireless/Mobile Europe
Wireless/Mobile Asia-Pacific
Wireless/Mobile Latin America
Wireless/Mobile Services
Wireless/Mobile Technologies

For more information on this or other Yankee Group publications please contact:

The Yankee Group in the U.S.:
Headquarters: 31 St. James Avenue, Boston, MA 02116-4114
Phone: (617) 956-5000, Fax: (617) 956-5005
E-mail: info@yankeegroup.com

The Yankee Group in Atlanta:
400 Galleria Parkway, Suite 1500, Atlanta, GA 30339
Phone: (678) 385-5990

The Yankee Group in Austin:
816 Congress Street, Suite 1100, Austin, TX 78701
Phone: (512) 480-2249, Fax: (617) 210-0030

The Yankee Group in Chicago:
Two North Riverside Plaza, Suite 535, Chicago, IL 60606
Phone: (312) 382-1443, Fax: (312) 382-1706

The Yankee Group in Denver:
600 17th Street, Suite 950 South, Denver, CO 80202
Phone: (303) 820-0850

The Yankee Group in Plano:
5700 West Plano Parkway, Suite 1000, Plano, TX 75093
Phone: (972) 381-2765

The Yankee Group in Silicon Valley:
951 Mariner's Island Blvd., Suite 260, San Mateo, CA 94404
Phone: (650) 356-1960, Fax: (650) 356-1966

The Yankee Group in Tampa:
2202 North Westshore Blvd., Suite 200, Tampa, FL 33607
Phone: (813-639-7525

The Yankee Group in Washington, D.C.:
8251 Greensboro Drive, Suite 700, McLean, VA 22102
Phone: (703) 790-7608, Fax: (703) 790-2846

The Yankee Group in Canada:
10 Victoria Ave., P.O. Box 584, Brockville, Ontario, K6V 5V7
Phone: (613) 345-2622, Fax: (613) 345-5681

The Yankee Group in Mexico:
Alfonso Nápoles Gándara, No. 50, Piso No. 4,
Col. Santa Fe, Mexico D.F. 01210
Phone: +52-5-261-8776, Fax: 52-5-261-8699

The Yankee Group in Europe:
Headquarters: 55 Russell Square, London, WC1B 4HP, UK
Phone: +44 20 7307 1050, Fax: +44 20 7323 3747
E-mail: euroinfo@yankeegroup.com

The Yankee Group in Asia-Pacific:
Itochunenryo Bldg., 6F, 1-24-12 Meguro,
Meguro-ku, Tokyo 153-8655, Japan
Phone: +81-3-5740-8081, Fax: +81-3-5436-5057

The Yankee Group in Australia:
GPO Box 5438, Sydney, NSW 2001, Australia
Phone: (61) 2-9279-0990, Fax: (61) 2-9279-0995

The Yankee Group in the Netherlands:
Verdonck, Klooster & Associates, P.O. Box 7360
2701 AJ Zoetermeer, The Netherlands
Phone: +31 79 368 1000, Fax: +31 79 368 1001

The Yankee Group in Spain:
c/o Reuters Espana, S.A.
Paseo de la Castellana, 36-38, 28046 Madrid
Tel: +34 91 585 8294, Fax: +34 91 585 8296

The Yankee Group in Brazil:
Al. Santos, 234-7th floor
01418 000 São Paulo-SP-Brazil
Phone: +55 11 3145 3860, Fax: +55 11 3145 3892

The Yankee Group in Colombia:
Focus, Cra 7 # 71-21 Torre B, Of 1003, Bogota, Colombia
Phone: +571-317-4969, Fax: +571-317-4858

The Yankee Group in Singapore:
Technowledge Asia, 21 Tampines Ave 1, EN22-02-114
Singapore 529757
Phone: 65-544-0010, Fax: 65-544-0020

The Yankee Group in Israel:
Foresight Technology Investment & Consulting Ltd.
Levinstein Tower, 19th Floor, 23 Petach-Tikva Rd.,
Tel-Aviv 66182, Israel
Phone: +972-3-566-6626, Fax: +972-3-566-6630

For More Information . . .

Please call the Yankee Group. Phone: (617) 956-5000, Fax: (617) 956-5005. E-mail: *info@yankeegroup.com.* Web site: *www.yankeegroup.com.*

Yankee Ingenuity®

Landline Replacement: You Win Some, You Lose Some

Analysts: Callie Pottorf and Julie Rietman

Check us out on the World Wide Web!
http://www.idc.com

Schedule 2-1

Table of Contents

SCHEDULE 2-2

List of Tables

SCHEDULE 2-3

List of Figures

SCHEDULE 2-4

Abstract

Landline Replacement: You Win Some, You Lose Some

Many wireless customers in today's market are using their wireless phones in locations where landline phones are available, such as at home, at work, or at other places such as the airport. IDC estimates that over half of today's wireless users are doing some form of landline replacement with wireless: They are using their wireless phones as their primary phone; they have purchased wireless phones instead of additional landlines; or they are simply transferring some of their minutes of use (MOUs) from landline to wireless.

This report discusses these three types of landline replacement and describes the kinds of users that are doing the replacement. It also presents survey data that shows end-user trends in landline replacement. Forecasts are provided of MOUs split by wireless versus landline, voice versus data, and business versus consumer. IDC also forecasts the percentage of wireless subscribers who will replace landline with wireless. Lastly, IDC examines how landline replacement will affect both local landline and long distance carriers.

SCHEDULE 2-5

Executive Summary

According to IDC estimates, approximately 60% to 70% of wireless subscribers are using their wireless phones instead of landline phones.

According to IDC estimates, approximately 60% to 70% of wireless subscribers are using their wireless phones instead of landline phones. There are three types of landline replacers: 1) those who completely replace landline phones with wireless handsets, 2) those who purchase wireless phones instead of additional landlines, and 3) those who migrate some of their landline traffic onto the wireless network.

Today, wireless minutes of use (MOUs) make up less than 2% of total telecom usage (including voice and data minutes). By 2003, wireless voice MOUs will exceed 600 billion, accounting for about 20% of the total voice MOUs. The percentage of total telecom MOUs that are landline voice minutes is decreasing. In 1998, landline voice minutes represented almost 75% of the total telecom MOUs, but by 2003, the percentage will drop to only 45%. Wireless data MOUs will only make up 0.41% of the total data MOUs in 2003 despite strong growth during the forecast period.

Both local and long distance landline carriers will be affected by this transfer of MOUs to wireless networks.

Both local and long distance landline carriers will be affected by this transfer of MOUs to wireless networks. Local landline carriers can expect to see lower profits as fewer customers request additional lines, as households disconnect their landline services, or as potential new customers, such as young people getting their first phone service, do not install landline services at all.

Local carriers that also offer cellular or PCS service can hope to recover some of their losses by offering wireless packages to households that might replace landline with wireless. Also, they can identify households that are likely to need additional phone lines and market additional lines to them.

Long distance carriers that also offer cellular/PCS service have much more to gain from landline replacement than local carriers. Landline replacement can be a way for long distance carriers to enter the local market. Already, AT&T Wireless has run ads that hint at replacing landline with wireless. Other long distance carriers that offer wireless services need to run similar ads. Landline replacers will, at least initially, be higher-end subscribers who are very valuable to carriers due to their higher-than-average monthly airtime usage. For this reason, landline replacement can be an excellent opportunity.

SCHEDULE 2-6

SCHEDULE 2-7

Methodology

To determine the total yearly cellular/PCS MOUs, IDC first calculated the average monthly usage per subscriber using our 1998 and 1999 *Personal Wireless Communications User Surveys*. These surveys were telephone surveys of households using cellular and/or PCS and were conducted at the beginning of 1998 and the beginning of 1999.

According to the surveys, the average monthly household cellular/PCS usage was 89 minutes in 1998 and 155 minutes in 1999. Because these usage levels are for households, IDC next considered the average number of cellular/PCS phones per household. In 1998, this number was 1.41; in 1999, this number was 1.42. IDC then calculated the average monthly usage per subscriber by dividing the total monthly household usage by the number of cellular/PCS phones per household. For 1998 and 1999, this worked out to 63 and 109 minutes per month, or 756 and 1,307 minutes per year, respectively.

Next, IDC's cellular/PCS subscriber forecast was used to determine the total cellular/PCS MOUs. According to the forecast, at the end of 1998, there were more than 64.4 million cellular/PCS subscribers. By the end of 1999, IDC predicts there will be 76.1 million cellular/PCS subscribers. The average number of cellular/PCS subscribers in 1998 was then multiplied by the average yearly cellular/PCS usage. The result was that more than 44 billion wireless minutes were used in 1998. Similar calculations were done for the 1999–2003 period.

Next, the total landline MOUs were calculated and forecast by IDC's landline research group. Using the total landline and total wireless MOUs, IDC determined the total telecom MOUs. Last, wireless and landline MOUs were calculated as a percentage of total telecom MOUs.

This year, IDC also added consumer, business, voice, and data splits to the forecast.

This year, IDC also added consumer, business, voice, and data splits to the forecast. These forecasts were made using the forecasts for the consumer/business and voice/data splits from *U.S. Wireless Services and Devices Market Assessment, 1998–2003* (IDC #18621, April 1999).

For more detail on the landline forecasts, see *U.S. Residential Landline Telecommunications Market Assessment and Forecast, 1997–2002* (IDC #18004, December 1998) and IDC's forthcoming *Business Network Services Landline Telecom Market Assessment.*

Note: All numbers in this report may not be exact due to rounding.

Definitions

- **Minutes of use (MOUs).** This can describe wireless usage, landline usage, or total telecom usage (both landline and wireless usage together).

SCHEDULE 2-8

- **Landline replacers.** This refers to wireless users that replace wireline usage (MOUs) with wireless. There are three types of replacers: those who completely replace a landline phone with wireless and use the wireless as the primary phone (complete landline replacers), those who purchase a wireless phone instead of an additional landline phone, and those who migrate some of their landline MOUs to their wireless phones.

SCHEDULE 2-9

Types of Landline Replacement

Three types of landline replacement are emerging among wireless users.

Three types of landline replacement are emerging among wireless users: first, subscribers who completely replace landline phones with wireless handsets; second, users who purchase wireless phones instead of additional landlines; and third, and most common, users who migrate some of their landline traffic to wireless.

Total Landline Replacement

IDC estimates that approximately 5% of wireless users today, or approximately 3 million people, have completely replaced their landline phones with wireless phones, either at work or at home. This group is not entirely made up of people who canceled their landline phone: It also includes people who never connected a landline phone in the first place.

There are several reasons for complete landline replacement. For example, a college student may decide to purchase a wireless phone instead of a landline phone for his apartment. Or, a company may decide to outfit its employees at a new office with wireless phones instead of connecting new landlines. In another possible scenario, a real estate development company that sets up a temporary model home/sales office until all the homes in the development are sold may select wireless service instead of landline. In this case, the company does not have to pay for landline installation and does not have to change its phone number when it starts the next development and opens a new model home/sales office.

So, Why Doesn't Everyone Ditch Their Landline Phones?

A couple of factors limit the number of subscribers that fall into the complete landline replacement group. First, the subscriber must live in a good coverage area where they are assured of reliable wireless communications. Second, they must not need to access the Internet regularly. Because wireless data speeds are slow compared with landline (and expensive), very little data is traveling over wireless today. Of course, the amount of data traffic is increasing; however, compared with the amount of data sent over landline connections, wireless data is extremely limited. In summary, no wireless data offering today offers unlimited access to the Internet at similar speeds and prices as landline Internet access.

Reasons for Complete Replacement

If potential subscribers live or work in a good coverage area and do not need to access the Internet, they are good candidates for completely replacing their landline phones either at work or at home. Reasons they may choose to replace their landline with wireless are four-fold.

First, they gain mobility and convenience. Wireless enables them to take their means of communication with them wherever they go. If they use the wireless as their only phone, they won't miss calls when

SCHEDULE 2-10

they are not at home or at work. Second, when they move, they can often keep the same phone number and thus do not have to set up service or pay for installation of a new landline phone. Third, they get the added security of having a wireless phone. If an emergency arises, they have their wireless phones with them. Last but not least is price. With certain rate plans and usage patterns, subscribers can get all of the benefits discussed above for a similar price as they would pay for landline service. To explain this, consider the following example.

A single person who uses about 200 minutes of landline long distance per month and is making approximately 10 minutes of local calls per day, or 300 local minutes per month, will spend approximately $65 per month for a total of 500 minutes on the landline network. This assumes that long distance costs 15 cents per minute and the basic monthly service costs $35 for unlimited local calling, caller ID, call waiting, and voice mail.

If this user were to drop the landline service and instead choose Sprint PCS's Free and Clear plan, which includes domestic long distance, she would pay $69.99 per month for 600 minutes (100 more than she is currently using), voice mail, caller ID, call waiting, and three-way calling.

As the example illustrates, single rate plans can give some people who make long distance calls the added mobility and convenience of wireless for slightly more than they would pay for landline service.

Even people who do not make any long distance calls sometimes choose wireless as their primary voice service.

IDC believes the single rate plans especially appeal to people who make long distance calls; however, even people who do not make any long distance calls sometimes choose wireless as their primary voice service. For example, someone who uses 500 local minutes a month, or about 15 minutes per day, can spend approximately $50 to get wireless service that includes 500 minutes. Again, assuming unlimited local calling, voice mail, caller ID, and call waiting costs $35 with a landline service provider, he is, in essence, only paying $15 for the convenience, mobility, and security of a wireless phone. Someone who uses 700 landline minutes per month, or 23 minutes per day, can completely replace landline service with wireless using a rate plan that costs between $60 and $75 per month. This means she is paying only about $40 per month for the added convenience, mobility, and security.

Wireless Instead of an Additional Landline

Their reasons for purchasing wireless phones instead of additional landline phones are the same as those of users who completely replace landline with wireless: mobility, convenience, security, and price.

According to the *Personal Wireless Communications User Survey, 1999* (IDC #19117, May 1999), approximately 14% of wireless users reported purchasing wireless phones instead of additional landlines. Their reasons for doing so are the same as those of users who completely replace landline with wireless: mobility, convenience, security, and price.

IDC believes there are a number of reasons why these respondents did not completely do away with their current landline phones. The first and main reason, in IDC's opinion, is data. People still want their landline phones for access to the Internet because wireless data

SCHEDULE 2-11

offerings are not yet on an equal footing with landline in terms of speed or price. Second, people in this group may keep their landline phones for emergency backup use in case their battery is recharging and they need to make a call. A third reason is to keep one's existing landline phone number; because number portability is not yet available between landline and wireless, if someone wants to completely replace landline service with wireless, he will have to change phone numbers. A fourth reason is coverage area; these subscribers must live in a good coverage area if they are going to give up their landline phones.

A final reason is the presence of more than one person in the household. To completely replace landline with wireless, everyone in the household would likely need their own wireless phone. Carriers usually offer an option for customers to purchase a second phone for a discounted price, with both phones sharing a rate plan for an additional monthly fee, usually about $20 per month. Carriers need to try to outfit the whole family with wireless phones by offering family packs that include two or more phones. These packs should provide larger discounts for larger numbers of phones and should enable subscribers to share one or two rate plans — possibly one plan for the parents and one for the children. By outfitting the whole family with wireless, the household will be more likely to completely do away with landline at home if the house is adequately covered by wireless networks.

Wireless Replacement of Landline MOUs

IDC estimates that 40% of wireless subscribers migrated some MOUs from landline to wireless in 1998.

IDC estimates that 40% of wireless subscribers migrated some MOUs from landline to wireless in 1998. According to the *Personal Wireless Communications User Survey, 1999* (IDC #19117, May 1999), approximately 60% of wireless subscribers make wireless calls from home, work, or another location (not including the car) where landline phones are likely available, for example, a shopping mall, an airport, or someone else's house. Also, IDC assumes that some percentage of calls made in the car would otherwise be made from public pay phones.

Those who migrate MOUs from landline to wireless have the same reasons for not completely doing away with their landline phones as those who purchase wireless instead of additional landlines: coverage area, voice quality, data speeds, emergencies, or the need to outfit the entire household with wireless. However, IDC believes that in the future, more and more people will purchase wireless phones with the intention of migrating MOUs off of landline phones and onto wireless handsets, especially as wireless carriers continue to expand what they consider the "local" calling area.

The most likely reasons for migrating landline MOUs to wireless are convenience and price. With all the single-rate plans available from various carriers, the price for long distance calls on wireless is dropping. Most of the time, a wireless long distance call made from the home calling area will cost a user the same amount or less than it would on a landline phone.

SCHEDULE 2-12

SCHEDULE 2-13

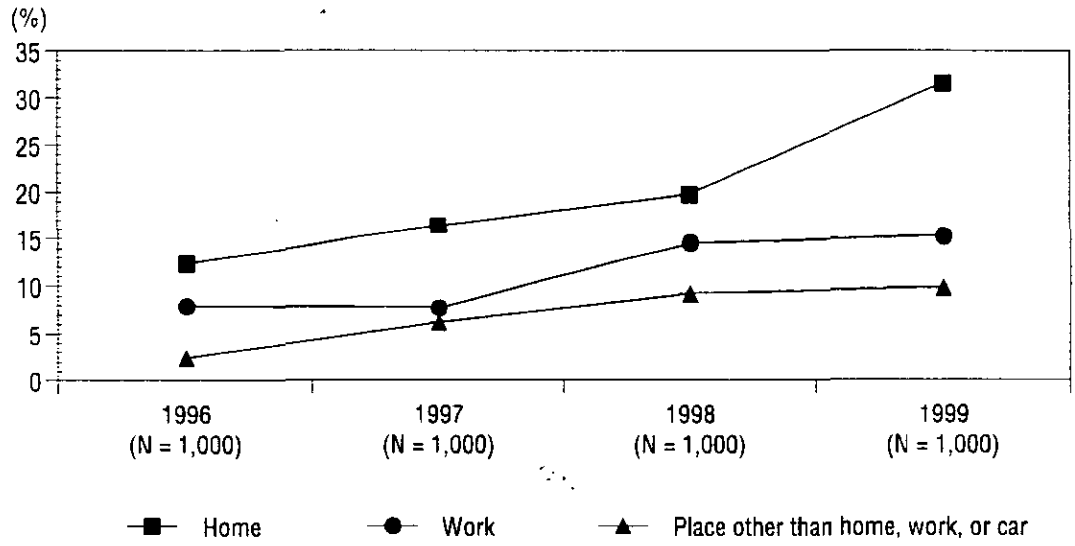
Survey Data and Landline Replacement

According to the *Personal Wireless Communications User Survey, 1999* (IDC #19117, May 1999), of respondents who use their wireless phones primarily for business, 60% reported making wireless calls from work, 29% reported making calls from home, and 16% reported making calls from a place other than work, home, or the car. (Note that the percentage of calls placed from the car are not included in the data presented in this report because such calls are unlikely to be calls replacing landline MOUs.)

Figure 1 shows the percentage of total respondents that reported making calls from home, work, or another place from 1996 through 1999.

Figure 1

Locations from Which Respondents Make Wireless Calls, 1996–1999



Source: IDC's *Personal Wireless Communications User Survey, 1999*

The number of respondents overall making calls from the various locations has doubled since 1996.

As the figure depicts, the number of respondents overall making calls from the various locations has doubled since 1996. The percentage of respondents making calls from home went from 12.4% in 1996 to 31.6% in 1999, while the percentage of respondents who made calls from work went from 8.0% to 15.3% during the same period. Also, the percentage of respondents who made calls from a place other than work, home, or the car went from 2.5% to 9.9% from 1996 to 1999.

SCHEDULE 2-14

Also, according to the 1999 survey data, 14% of respondents purchased their most recent wireless phones instead of an additional landline phone. Although this percentage may seem high at first glance, last year PrimeCo reported that approximately 35% of its subscribers purchased its service instead of an additional landline.

SCHEDULE 2-15

Landline Replacement Forecast

This section details IDC's assessment of wireless and landline usage and of the migration of landline MOUs to wireless networks.

Landline Replacement Forecast

Table 1 shows the average monthly cellular/PCS MOUs per household, the average number of cellular/PCS phones per household, and the average monthly and annual cellular/PCS MOUs per subscriber.

Table 1
U.S. Cellular/PCS Minutes of Use per Household and Subscriber, 1998–2003

	1998	1999	2000	2001	2002	2003	1998–2003 CAGR (%)
Average monthly cellular/PCS MOUs per household	89	155	250	396	588	814	55.7
Average number of cellular/PCS phones per household	1.41	1.42	1.49	1.57	1.67	1.78	4.7
Average monthly cellular/PCS MOUs per subscriber	63	109	168	252	353	458	48.7
Average annual cellular/PCS MOUs per subscriber	756	1,307	2,015	3,022	4,231	5,500	48.7

Key Assumptions:

- Cellular and PCS carriers will continue to attract new subscribers and encourage higher usage levels among existing subscribers.
- Cellular and PCS carriers will continue to expand their target markets for service.

Messages in the Data:

- The average monthly wireless minutes of use per household will increase at a CAGR of 55.7% from 1998 to 2003.
- An increase in the number of cellular/PCS phones per household will account for some of the growth in minutes of use.

Source: International Data Corporation, 1999

Over the forecast period, cellular/PCS household MOUs will increase at a CAGR of 55.7%.

Over the forecast period, cellular/PCS household MOUs will increase at a compound annual growth rate (CAGR) of 55.7% from 89 minutes per month in 1998 to 814 minutes per month in 2003. However, not all of this increase will be from existing subscribers increasing their usage. An increase in the number of cellular/PCS phones per household will account for some of the growth in MOUs. Specifically, the number of cellular/PCS phones per household is expected to grow at a CAGR of 4.7%, from 1.41 in 1998 to 1.78 in 2003. At the same time, cellular/PCS usage by the individual subscriber will increase from 63 minutes per month in 1998 to 458 in 2003.

IDC calculated average yearly wireless MOUs, landline MOUs, and total telecom MOUs. Wireless and landline MOUs were then calculated as a percentage of total telecom MOUs. The results are shown in Table 2.

SCHEDULE 2-16

Table 2
U.S. Annual Wireless and Landline Telecom Minutes of Use, 1998–2003

	1998	1999	2000	2001	2002	2003	1998–2003 CAGR (%)
MOUs (B)							
Wireless	44	92	165	280	435	622	69.5
Landline	2,800	3,143	3,535	3,986	4,505	5,104	12.8
Total	2,845	3,235	3,700	4,266	4,940	5,726	15.0
Share of total telecom MOUs (%)							
Wireless	1.6	2.8	4.5	6.6	8.8	10.9	47.4
Landline	98.4	97.2	95.5	93.4	91.2	89.1	-2.0

Key Assumptions:
- Cellular/PCS carriers will continue to attract new subscribers and encourage higher usage levels among existing subscribers.
- Cellular/PCS carriers will continue to expand their target markets for service.
- Access line growth will continue at approximately 3–4% per year over the forecast period due to population growth, housing growth, and the continuing trend of second-line installations.

Messages in the Data:
- The growth of total wireless minutes of use will be strong, increasing from 44 billion in 1998 to 622 billion in 2003.
- Landline minutes of use will also experience strong growth throughout the forecast period.

Source: International Data Corporation, 1999

The growth of total wireless MOUs will be strong, increasing at a CAGR of 69.5%.

In summary, the growth of total wireless MOUs will be strong, increasing at a CAGR of 69.5% from approximately 44 billion in 1998 to 622 billion in 2003.

On the landline side, growth in MOUs is expected to be more moderate. Landline MOUs should grow at a CAGR of 12.8% from 2.8 trillion in 1998 to 5.1 trillion in 2003.

Overall, total telecom MOUs are forecast to increase from 2.85 trillion in 1998 to 5.73 trillion in 2003. Comparatively, the CAGR for wireless MOUs is considerably stronger than that for landline MOUs: 69.5% versus 12.8%. Therefore, over the forecast period, wireless MOUs as a percentage of total telecom MOUs will increase considerably from 1.6% in 1998 to 10.9% in 2003, while landline MOUs as a percentage of total MOUs will decrease from 98.4% in 1998 to 89.1% in 2003.

Table 3 shows the voice and data MOUs split for both landline and wireless. In 1998, nearly all of the wireless MOUs were voice; less than 1% were data. Wireless data MOUs are expected to increase at a CAGR of 102.4% from 311 million in 1998 to 10.6 billion in 2003. On the landline side, the voice/data split is very different. Data MOUs represented approximately one-quarter of the landline MOUs in 1998. The landline data MOUs are expected to increase from 700 billion minutes in 1998 to 2.6 trillion in 2003, reflecting a CAGR of 29.5%. The split between data and voice landline MOUs shifts from

SCHEDULE 2-17

25/75 in 1998 to 50/50 in 2003. On the wireless side, the split between data and voice shifts from 1/99 to 2/98 during the same period. Overall, wireless data MOUs remain small compared with the total telecom MOUs.

Table 3
U.S. Annual Wireless and Landline Data and Voice Telecom Minutes of Use, 1998–2003 (B)

	1998	1999	2000	2001	2002	2003	1998–2003 CAGR (%)
Wireless							
Voice	44	91	163	276	428	611	69.1
Data	0	1	2	4	7	11	102.4
Landline							
Voice	2,100	2,200	2,298	2,392	2,478	2,552	4.0
Data	700	943	1,237	1,594	2,027	2,552	29.5

Key Assumptions:
- Cellular/PCS carriers will continue to attract new subscribers and encourage higher usage levels among existing subscribers.
- Cellular/PCS carriers will continue to expand their target markets for service.
- Access line growth will continue at approximately 3–4% per year over the forecast period due to population growth, housing growth, and the continuing trend of second-line installations.

Messages in the Data:
- Wireless data minutes of use are expected to increase at a CAGR of 102.4%, from 311 million in 1998 to 11 billion in 2003.
- Wireless voice minutes of use will be about one-fifth of the total telecom voice minutes of use in 2003.

Source: International Data Corporation, 1999

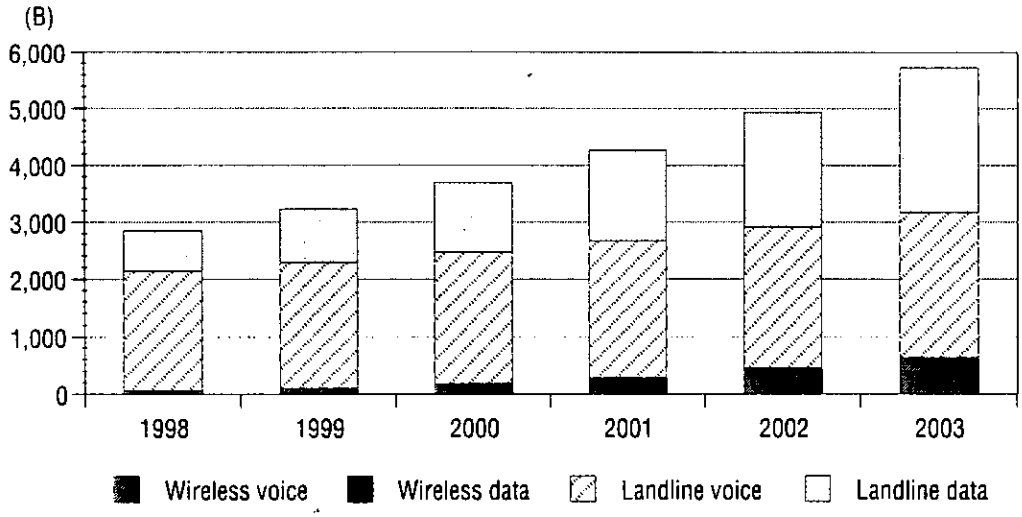
Wireless data, although it is the smallest bar on the graph, is growing at the fastest rate.

Figure 2 shows the wireless/landline and voice/data splits. Wireless data, although it is the smallest bar on the graph, is growing at the fastest rate: at a CAGR of about 100% over the five-year forecast period. This growth is closely followed by the CAGR for the wireless voice MOUs, which is approximately 70%. In 2003, wireless voice MOUs will be equal to one-fifth of the total telecom voice MOUs.

Table 4 shows the split of wireless and landline MOUs by consumer and business. Wireless consumer MOUs will increase at a CAGR of 79.5% from 20 billion minutes in 1998 to 373 billion in 2003. Landline consumer MOUs also will increase over the forecast period, although at a much slower rate of 9.0% per year. In 1998, landline consumers used 1.2 trillion minutes; in 2003, they will use 1.9 trillion minutes (voice and data).

SCHEDULE 2-18

Figure 2
U.S. Annual Wireless and Landline Data and Voice Telecom Minutes of Use, 1998–2003



Source: International Data Corporation, 1999

Table 4
U.S. Annual Wireless and Landline Consumer and Business Telecom Minutes of Use, 1998–2003 (B)

	1998	1999	2000	2001	2002	2003	1998–2003 CAGR (%)
Wireless							
Consumer	20	45	87	157	252	373	79.5
Business	24	47	78	123	183	249	59.0
Landline							
Consumer	1,231	1,350	1,446	1,574	1,726	1,897	9.0
Business	1,570	1,793	2,089	2,412	2,779	3,208	15.4
Total							
Consumer	1,251	1,395	1,534	1,730	1,979	2,270	12.7
Business	1,594	1,840	2,167	2,536	2,961	3,456	16.7

Key Assumptions:

- Cellular/PCS carriers will continue to attract new subscribers and encourage higher usage levels among existing subscribers.
- Cellular/PCS carriers will continue to expand their target markets for service.
- Access line growth will continue at approximately 3–4% per year over the forecast period due to population growth, housing growth, and the continuing trend of second-line installations.

Messages in the Data:

- Wireless consumer minutes of use will increase faster than wireless business, landline consumer, or landline business minutes of use.
- Wireless business minutes of use will increase faster than landline consumer and landline business minutes of use.

Source: International Data Corporation, 1999

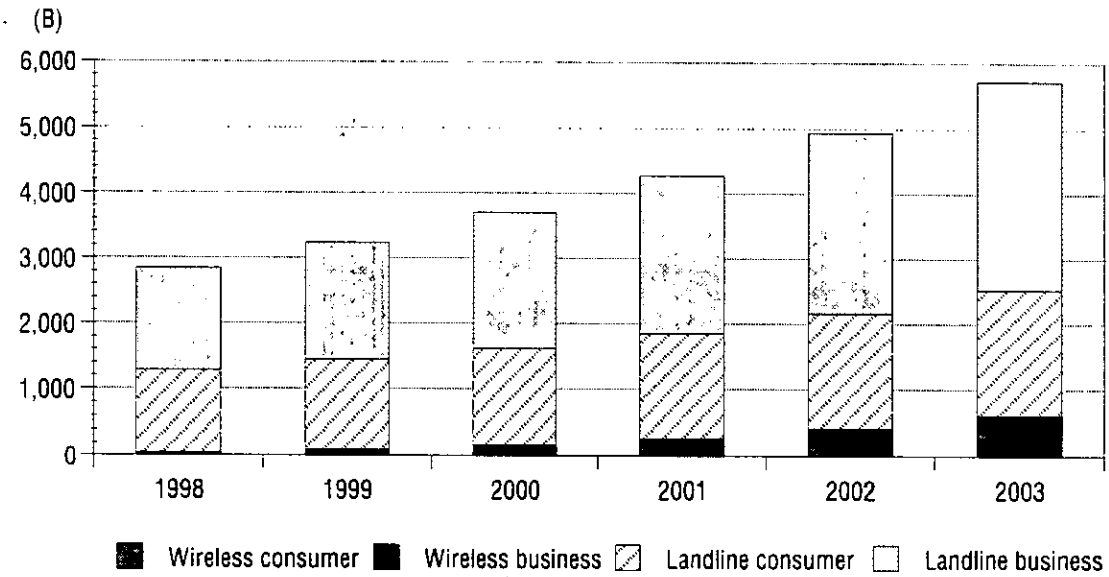
SCHEDULE 2-19

Wireless business MOUs will increase at a CAGR of 59.0%, from 24 billion in 1998 to 249 billion in 2003. Landline business MOUs will increase from 1.6 trillion minutes in 1998 to 3.2 trillion in 2003, reflecting a CAGR of 15.4%. Note that consumer wireless MOUs will exceed business wireless MOUs in 2000.

Figure 3 shows the wireless/landline and business/consumer MOU splits. The group of wireless consumer MOUs is the fastest growing of the segments. In 2000, wireless consumer MOUs will surpass wireless business MOUs. Overall, wireless MOUs are a small part of the total telecom MOUs, but wireless usage is growing quickly.

Figure 3

U.S. Annual Wireless and Landline Consumer and Business Telecom Minutes of Use, 1998–2003



Source: International Data Corporation, 1999

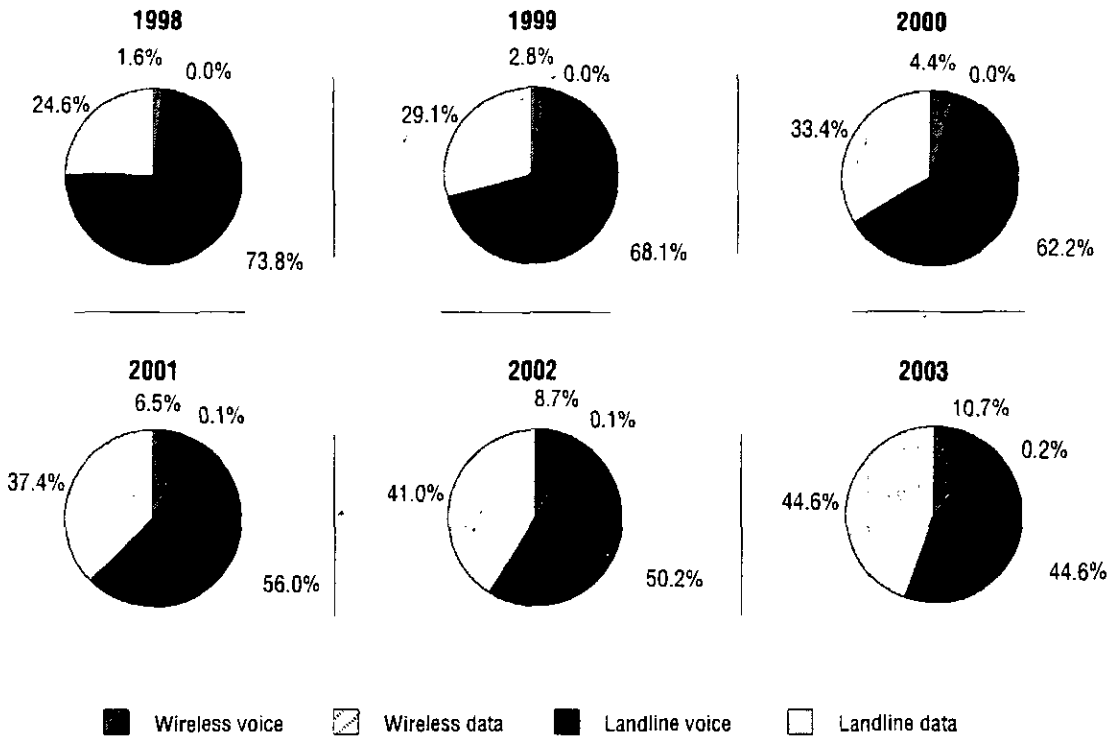
Figure 4 shows the percentages of total telecom MOUs that are wireless voice, wireless data, landline voice, and landline data. As the figure depicts, wireless voice MOUs make up a growing portion of the total telecom MOUs. The share of landline voice MOUs will drop through the forecast period, while the shares of both wireless and landline data will increase.

Table 5 shows the percentage of wireless subscribers who are landline replacers according to the three types of replacement described earlier: those who completely replace landline, those who purchase wireless instead of additional landlines, and those who migrate some landline MOUs with wireless.

SCHEDULE 2-28

Figure 4

U.S. Annual Wireless and Landline Voice and Data Share of Total Telecom Minutes of Use, 1998–2003



Source: International Data Corporation, 1999

Table 5

U.S. Landline Replacement Types, 1998–2003 (%)

	1998	1999	2000	2001	2002	2003	1998–2003 CAGR (%)
Complete landline replacement	5.0	5.5	6.0	6.5	7.0	7.5	8.4
Wireless instead of an additional landline	14.0	15.0	16.0	17.0	18.0	19.0	6.3
Migrate landline MOUs to wireless	40.0	43.7	47.9	52.1	56.0	60.5	8.6
No landline replacement	41.0	35.8	30.1	24.4	19.0	13.0	-20.5

Key Assumptions:

- People will continue to use landlines for data.
- Cellular/PCS carriers will continue to reduce or eliminate roaming and long distance charges.

Messages in the Data:

- In 2003, more than 85% of wireless subscribers will use their wireless phones instead of landlines.
- The largest group of replacers will be those who replace some landline MOUs with wireless.

Source: International Data Corporation, 1999

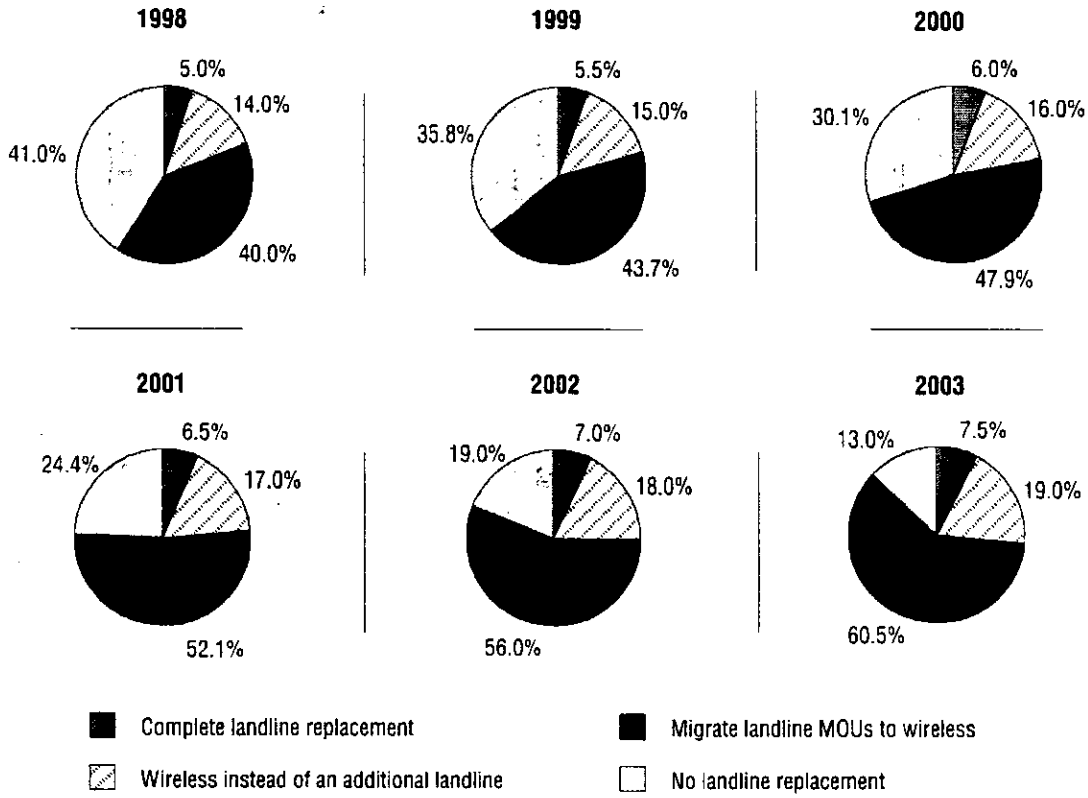
SCHEDULE Z-21

Over 85% of subscribers will, in one way or another, be transferring landline MOUs to wireless by 2003.

The largest group of replacers will be those who migrate some landline MOUs to wireless. In 1998, approximately 40% of wireless subscribers fell into this group. By 2003, over 60% of wireless users will migrate landline MOUs to wireless. The second largest group is the group of subscribers who purchase wireless instead of additional landlines, and the smallest group of replacers is the group who completely replaces landline with wireless. Over 85% of subscribers will, in one way or another, transfer landline MOUs to wireless by 2003.

Figure 5 shows the percentage of wireless subscribers who fall into the different landline replacement categories. It is interesting to note that by 2003, only 13% of wireless users will not be replacing any landline minutes with wireless ones, and over half of users will be migrating some landline minutes to wireless networks.

Figure 5
U.S. Landline Replacement Types, 1998–2003



Source: International Data Corporation, 1999

SCHEDULE 2-22

Major Forecast Assumptions

IDC made the following assumptions for the landline replacement forecast:

- This forecast relies on the forecast and assumptions made in *U.S. Wireless Services and Devices Market Assessment, 1998–2003* (IDC #18621, April 1999), as well as those made in *U.S. Residential Landline Telecommunications Market Assessment and Forecast, 1997–2002* (IDC #18004, December 1998).
- Cellular/PCS carriers will continue to attract new subscribers and encourage higher usage levels among existing subscribers by offering attractive rate plans.
- Cellular/PCS carriers will continue to expand their target markets for service.
- Cellular/PCS carriers will continue to bundle value-added services, such as caller ID and voice mail, as part of their offerings.
- Cellular/PCS carriers will continue to reduce or eliminate roaming and long distance charges.
- Strong economic growth over the forecast period will continue to drive MOU increases.
- Increased competition in the long distance sector will generate additional price reductions, which will translate into strong MOU growth.
- Access line growth will continue at approximately 3–4% per year over the forecast period due to population growth, housing growth, and the continuing trend of second-line installations.
- Growth in toll-free and private-line minutes will be strong as a result of network access integration. As more companies adopt the use of private lines for Internet access, they will also migrate their voice traffic to these dedicated circuits.

SCHEDULE 2-23

Impact on Landline Carriers

Local Landline Carriers

Local landline carriers will be greatly affected and are likely to experience a decline in profits because of landline replacement for three main reasons.

Local landline carriers will be greatly affected and are likely to experience a decline in profits because of landline replacement for three main reasons:

- First, fewer current customers will request installation of additional landline phones. In 1999, approximately 35% of households that reported having more than one landline use the additional line for making personal voice calls. If a growing percentage of households purchase wireless services instead of additional landlines, the local carriers will install fewer additional phone lines. Additional lines are profitable for landline carriers; thus, the installation of fewer additional lines will have a negative impact on profits.
- The second source of profit loss for local landline carriers will come from a smaller percentage of their customers subscribing to CLASS services such as call waiting and caller ID. Landline customers who purchase wireless for voice calls and keep their landlines for Internet access are likely to cancel the CLASS services on the landline phones. These services are highly profitable for landline carriers because customers pay significant monthly fees for them and they cost the carriers little to provision.
- The third source of profit loss will come from wireless subscribers who never sign up for landline phone service or who cancel their landline service completely.

What to Do

Although IDC does not expect local landline carriers to recover all of their profits, they can take some actions to protect their investments:

- First, they can offer a package in which services are billed together and supported by a single customer service line. Of course, since the bundling of wireless and local services is regulated, only soft bundles, or bundles without price breaks, are an option.
- Second, local carriers can identify target households that are likely to need an additional line and advertise to those households specifically. Not only should they promote additional landlines, but, if they offer wireless services in that market, they should also advertise wireless service as an alternative. Landline carriers that offer wireless service in region should offer their landline customers special wireless packages such as family packs of wireless phones. Also, landline carriers need to educate their landline customers about their wireless offerings. This way, if customers decide wireless is what they want, then they will

SCHEDULE Z-24

consider their local carriers to provide these services. The worst case for the landline provider is that the customer moves business to a competitor's wireless service.

Long Distance Landline Carriers

As mentioned earlier, many wireless customers are using their wireless phones to replace only some of their landline MOUs. Many of these calls would be considered long distance if made on landline networks. This means long distance carriers' revenues from landline networks are likely to fall as more customers use wireless in place of landline.

Complete landline replacement represents a good opportunity for long distance carriers that have long awaited entry into local markets.

In addition, long distance carriers are also going to see falling revenues from landline customers as more people completely replace landline with wireless. However, complete landline replacement represents a good opportunity for long distance carriers that have long awaited entry into local markets. As detailed earlier, even people who do not make many long distance calls can completely replace their landline usage with wireless and pay less than $50 for the added convenience and mobility. Long distance carriers have a great opportunity to attract a new kind of customer that they should not overlook.

What to Do

Long distance providers that also offer wireless need to take advantage of the opportunity they have by bundling landline long distance and wireless services.

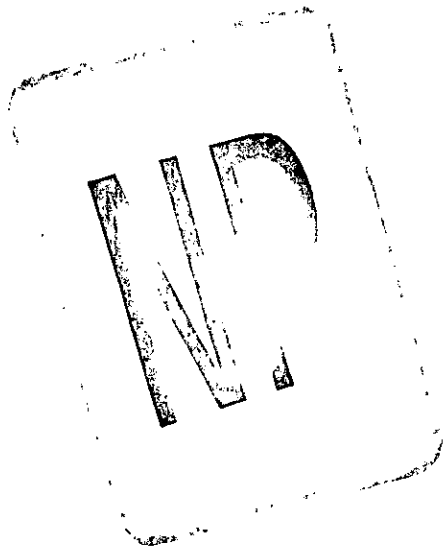
Long distance providers that also offer wireless need to take advantage of the opportunity they have by bundling landline long distance and wireless services. In addition, long distance carriers that offer wireless in their markets need to advertise landline replacement. Already the market has seen AT&T Wireless's ads that say, "This could be your only phone." Ads like these will make people realize that they can depend completely on wireless for their communications needs.

Document #: 19839
Publication Date: August 1999
Published Under Services: Wireless and Mobile Communications

SCHEDULE 2-25

Fernandez Schedule 3

This schedule is Highly Confidential in its entirety.



Fernandez Schedule 4

This schedule is Highly Confidential in its entirety.