Comparing the Performance of the U.S. CMRS Market to Foreign Wireless Markets With CPP

Claiming CPP has produced extraordinarily strong growth in Western European and Latin American wireless markets, proponents suggest similar dramatic increases in subscribership and usage growth rates will accompany widespread implementation of CPP in the U.S. The implication that the U.S. CMRS market lags behind Western European wireless markets is not supported by available market data. Despite having implemented CPP and deployed digital technologies years ago, the performance of most Western European wireless markets has been matched, and in some cases surpassed, by the performance of the U.S. CMRS market over the decade of the 1990s. Assertions that dramatic increases in the number of Latin American wireless subscribers are due to CPP implementation likely significantly overstate the potential effects of CPP on U.S. consumer demand for wireless services. Other factors influencing rapid growth in Latin American wireless markets include procompetitive government policies, deployment of digital technologies, fluctuations in economic conditions, and relatively low quality, poorly developed wireline networks. In fact, wireless usage per subscriber in two Latin American markets declined several years after implementing CPP, with usage dipping below levels achieved prior to CPP's availability in one market. Finally, despite the absence of CPP, wireless prices have declined substantially more steeply in the U.S. than in all but a few European markets. Furthermore, wireless prices relative to local telephone company wireline prices (a measure of wireless services' relative attractiveness as a competitive alternative to telephone company wireline service) in the U.S. are as low as, or lower than, relative prices in most European and Latin American markets. Regulatory intervention in the CMRS market predicated on assertions that CPP dramatically strengthened the performance of European and Latin American wireless markets and similar results can be expected in the U.S. would be misguided. Lacking compelling evidence that the U.S. CMRS market lags behind Western European and Latin American wireless markets, regulatory intervention will not narrow (or close) a gap that does not exist.

Citing claims that CPP has substantially increased the demand for wireless services in several Latin American markets (Peru and Argentina) and predictions that the introduction of CPP will significantly accelerate subscribership growth in several others (Mexico and Chile), the FCC concludes "Experience in countries in which wireless subscribers pay only to place calls suggests that wireless subscribership and usage increases dramatically once CPP is implemented."[49] The Commission's view of the relative effectiveness of CPP apparently also is influenced by assertions that "CPP is definitely a major factor contributing to the higher rates of wireless penetration and use in Europe."[50] While the FCC recognizes the growth in foreign wireless markets might not be attributable solely to CPP, there is no detailed discussion of the potential influence of other factors on consumer demand for wireless services in Western European and Latin American markets.[51] Furthermore, there is little recognition of the potential

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[49] CPP NPRM at paragraph 24.

[50] Comments of Nokia Telecommunications, Inc., CPP NOI (filed December 15, 1997), pp. 2-3. Nokia describes itself as "the leading manufacturer of wireless equipment in Europe."

[51] The Commission cites "the introduction of prepaid service options" as a factor other than CPP that could explain at least some portion of the growth in foreign wireless communications markets. CPP NPRM at paragraph 24.

importance of such other factors in explaining perceived differences in the performance of Western European, Latin American, and U.S. wireless markets.

U.S. CMRS Market Performance Is Comparable To That of Most Western European Markets

Casual observation of market data does not strongly support assertions that the U.S. CMRS market generally lags behind Western European markets, despite the (as yet) relatively limited availability of CPP in the U.S.[52] Over the first half of the decade, the U.S. CMRS market and Western European wireless markets expanded at comparable rates. From 1990 to 1995, the number of mobile telephony subscribers in fourteen Western European nations increased at an annual rate of 47% (Table 2). Over this same period, CMRS subscribership in the U.S. grew at an annual rate of about 45%. Furthermore, with the exception of the Scandinavian countries (Denmark, Norway, and Sweden), by 1995 U.S. CMRS carriers had achieved significantly higher levels of wireless penetration (by several different measures) than most European providers of mobile telecommunications services. The number of mobile telephony subscribers in the group of fourteen Western European countries was equivalent to 14.5% of the households in these nations by the end of 1995 compared to the 33.7% of households represented by the number of U.S. CMRS subscribers (Table 2). Alternatively, CMRS penetration in the U.S. had reached 12.8% of the population by 1995, whereas wireless penetration overall in the group of fourteen Western European nations was only 5.8%. Finally, wireless telephony customers represented 10.6% of total telephone subscribers in the fourteen Western European countries in 1995, while CMRS customers were 17% of total U.S. telephone subscribers.

Since 1995, several Western European wireless markets have experienced extraordinary growth. For example, the number of wireless subscribers in France doubled each year from 1995 to 1999 and subscribership growth approached 100% annually in Belgium and Spain (Table 3). Wireless markets across Western Europe have experienced subscribership annual growth rates exceeding 50% over the past several years (Table 3). Rather than automatically attributing such dramatic growth rates solely, or even primarily, to the availability of CPP in these wireless markets, competitive entry beginning in 1996 must be recognized as a significant factor affecting the demand for mobile telecommunications services across Europe. Carriers providing digital wireless services at prices well below prevailing rates, offering innovative service options (such as prepaid wireless services and bundles of usage), and targeting high usage business subscribers

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The FCC also recognized the importance of relative prices and the potentially poor quality of some foreign nations' wireline networks as factors contributing to strong consumer demand for wireless services in foreign markets. CPP NOI at paragraph 11.

[52] CPP NOI at paragraph 6. LEC CPP offerings to CMRS carriers in sixteen states and Washington, D.C. are identified. The Commission points out: "It is unclear, however, how many mobile carriers offer the CPP service option to their subscribers." [paragraph 6].

TABLE 2

Wireless Telecommunications Markets
Subscriber Growth and Penetration Rates

Western Europe and the U.S.
1990 - 1995

	MOBILE TELEPHONY SUBSCRIBERS				RESIDENCE MAIN TELEPHONE LINES
	GROWTH RATE [1] 1990 - 1995	PER 100 HOUSEHOLDS 1995	PER 100 INHABITANTS 1995	AS A PERCENT OF TOTAL TELEPHONE SUBSCRIBERS [2] 1995	PER 100 HOUSEHOLDS 1995
AUSTRIA	39.1 %	12.2	4.8	9.3 %	90.7 [3]
BELGIUM	40.5	5.8	2.3	4.8	84.2
DENMARK	40.9	34.6	15.7	20.4	103.1
FRANCE	37.2	6.0	2.4	4.1	102.8
GERMANY	68.9	10.2	4.6	8.5	87.3
GREECE	- NA-	7.2	2.6	5.0	87.0
ITALY	70.8	18.3	6.7	13.5	91.1
NETHERLANDS	45.4	7.9	3.3	5.9	94.9
NORWAY	37.9	53.2	22.4	28.7	95.8
PORTUGAL	120.8	10.4	3.4	8.7	85.6
SPAIN	77.6	7.9	2.5	6.0	92.5
SWEDEN	34.4	50.6	22.9	25.2	115.6
SWITZERLAND	29.0	13.6	6.4	9.4	95.0
UNITED KINGDOM	38.8	24.0	9.8	16.3	92.6
TOTAL 14 WESTERN EUROPEAN COUNTRIES	47.0 %	14.5	5.8	10.6 %	93.0
UNITED STATES	44.9 %	33.7	12.8	17.0 %	112.0

[1] Compound annual growth rates.

[2] Calculated as the number of wireless telephony subscribers divided by the sum of total main telephone lines plus the number of wireless subscribers.

[3] Estimated based on the proportion of residence main telephone lines to total main telephone lines in the 13 other Western European countries.

Source : International Telecommunication Union, "World Telecommunication Indicators," *World Telecommunication Development Report 1996 / 97* (Geneva, Switzerland: March 1997), Tables 2, 3, 4, 5, 8.

TABLE 3

Wireless Telecommunications Markets
Subscriber Growth and Penetration Rates

Western Europe and the U.S.
1995 - 1998/99

	MOBILE TELEPHONY SUBSCRIBERS (Thousands)			WIRELESS PENETRATION [2]
	1995	1998/99	GROWTH RATE [1] 1995 - 1998/99	1998/99
DENMARK	822.3	1,902.2	32.3 %	36.0 %
NORWAY	980.8	2,139.4	29.7	48.7
SWEDEN	2,025.0	4,601.5	31.5	52.0
UNITED KINGDOM	5,735.8	14,753.3	37.0	25.0
TOTAL 4 COUNTRIES	9,563.9	23,396.4	34.7 %	30.2 %
AUSTRIA	383.5	2,317.0	82.1 %	28.7 %
BELGIUM	235.0	1,792.0	96.8	17.6
FRANCE	1,379.0	11,722.8	104.1	20.0
GERMANY	3,750.0	14,771.0	57.9	18.0
GREECE	273.0	2,078.8	96.7	19.8
ITALY	3,864.0	20,472.5	74.3	36.0
NETHERLANDS	513.0	3,372.0	87.3	21.6
PORTUGAL	340.8	3,074.6	108.2	30.9
SPAIN	965.7	7,471.6	97.8	19.0
SWITZERLAND	447.2	2,114.9	67.9	23.9
TOTAL 14 WESTERN EUROPEAN COUNTRIES	21,715.1	92,583.4	62.2 %	24.5 %
UNITED STATES	33,785.7	78,859.8	32.7 %	28.8 %

[1] Compound annual growth rates.

[2] The number of wireless telephony subscribers as a percentage of the national population.

Sources : International Telecommunication Union, "World Telecommunication Indicators," *World Telecommunication Development Report 1996 / 97* (Geneva, Switzerland: March 1997), Table 8.
Organization for Economic Cooperation and Development, *OECD in Figures 1999*, available online through <http://www.oecd.org>
The Yankee Group, "Cellular Pricing: Converging with Fixed?" Wireless/Mobile Communications Global Report, vol. 3, no. 24 (July 1999), Exhibit 7, p. 10. [Wireless penetration rates as of February 1999 for Denmark, France, Germany, Italy, Spain, Sweden, and the United Kingdom]
Warburg Dillon Read, *Wireless Market Analysis Report* (March 1999), p. 13. [Wireless penetration rates at year end 1998 for Austria, Belgium, Greece, Netherlands, Norway, Portugal, and Switzerland]
Cellular Telecommunications Industry Association, "Statistics & Surveys," available online through <http://www.wow-com.com>
United States Department of Commerce, U.S. Census Bureau, population data available online through <http://www.census.gov>

introduced the benefits of vigorous competition to consumers in Belgium, France, and Italy.[53] Responding to the introduction of a competitive digital service, the incumbent cellular carrier in Belgium immediately cut its prices by more than 30% at all usage levels, making Brussels (which was one of the five most expensive cities in the world for wireless services at the beginning of 1996) a vigorously competitive urban market area.[54] The entry of two additional wireless carriers have transformed France from one of Europe's most expensive mobile telphony markets to one of the more competitive countries on the continent.[55]

The number of wireless subscribers in four European markets where competition is already relatively well-established (the U. K. and the three Scandinavian countries) grew at about a 35% annual rate between 1995 and 1999 (Table 3). Over the same period, CMRS subscribership increased at about a 33% annual rate in the U.S. Furthermore, despite rapidly accelerating subscribership growth in those European markets experiencing competitive entry for the first time, wireless penetration in the U.S. remains comparable to levels achieved in most Western European nations. Wireless penetration in the U.S. is significantly higher than levels reached in Belgium, France, Germany, and Spain and compares favorably to the overall average wireless penetration rate characterizing the group of fourteen European markets represented by the data in Table 3. In addition, the expected U.S. CMRS subscribership growth of 14% - 15% annually from 1998 to 2002 is comparable to the 17% annual growth rate anticipated for Western Europe.[56] Finally, usage levels attributed to CPP in European wireless markets where competitive digital services are also well-established and widely available are generally comparable to usage levels reported by U.S. digital wireless service providers. Six major U.S. broadband PCS and digital SMR providers report average monthly usage per subscriber between 300 and 390 minutes.[57] The reported average monthly usage per wireless subscriber of 300 - 350 minutes in Italy is comparable to the average monthly usage per digital wireless service subscriber reported by U.S. carriers, while the average usage per subscriber of 250 minutes in the United Kingdom and 150 minutes in Germany are significantly lower than U.S. digital wireless service subscribers' average monthly usage.[58]

The performance of the U.S. CMRS market over the 1995 - 1999 period appears at least comparable to Western European wireless markets (with the exception of the Scandinavian

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[53] For a discussion of competitive entry in Belgium, see The Yankee Group, "Pricing Wireless: A Global Comparative Assessment," Wireless/Mobile Communications North America Report, vol. 4, no. 103 (November 1996), section 3.5.1, p. 40. The effects of competitive entry in France and Italy are explained in The Yankee Group, "Regional Cellular/PCS Market Forecasts," pp. 14-15.

[54] The Yankee Group, "Pricing Wireless: A Global Comparative Assessment," section 3.5.1, p. 40.

[55] The Yankee Group, "Regional Cellular/PCS Market Forecasts,"p. 14.

[56] The U.S. expected growth rate is derived from data in Third CMRS Report, Appendix B, Tables 5A - 5E, pp. B-7 - B-9. See footnote 49. Anticipated growth in Western European wireless markets is from The Yankee Group, "Regional Cellular/PCS Market Forecasts," p. 13.

[57] The Yankee Group, "Year-End 1998 Wireless Industry Update: The Impact of All-Inclusive Rates," Wireless/Mobile Communications Global Report, vol. 2, no. 46 (December 1998), Exhibit 8, p. 11. U.S. PCS subscribers' average monthly usage ranges from the 300 minutes reported by Powertel to the 390 minutes reported by Nextel.

[58] Cellular Telecommunications Industry Association, "The Who, What and Why of 'Calling Party Pays' " (July 4, 1997), p. 9.

countries). Recent subscribership growth in the U.S. CMRS market is comparable to growth rates experienced in those Western European wireless markets in which competition is relatively well-established. Although the U.S. wireless penetration rate remains lower than those in the Scandinavian nations, it is comparable to, or higher than, penetration rates in many other Western European markets. Those Western European wireless markets exhibiting annual growth rates well above 50% since 1995 also have experienced significant competitive entry accompanied by substantial price reductions for wireless services. Thus, the initiation of intense competition in wireless markets across Europe probably contributed significantly to these dramatic growth rates, which almost certainly should not be attributed solely, or even primarily, to CPP implementation. Nevertheless, there is no compelling evidence from Western European wireless telecommunications markets to indicate either that the U.S. CMRS market is sluggish by comparison or that CPP will dramatically accelerate the relatively strong growth rates the U.S. CMRS market has been experiencing recently. The performance of the U.S. CMRS market relative to Western European wireless markets does not suggest regulatory intervention might be required to guide or direct the competitive process which is successfully delivering declining wireless service prices, broader arrays of new service options, and higher quality, technologically advanced network facilities to U.S. consumers.

The current comparable performance of the U.S. CMRS market relative to Western European wireless markets obscures several fundamental differences in the development, recent performance, and expected future direction of these markets. For example, subsidizing the prices of essential equipment, primarily digital handsets, to reduce the overall cost of acquiring wireless services has been "part of the evolution of the European markets."[59] The stimulative effects of such handset subsidies on consumer demand contributes to the overall performance of Western European wireless markets, particularly in the Scandinavian countries which have traditionally been identified as high growth.[60] Although U.S. consumer demand for wireless communications services has not benefited from the types of digital handset subsidies offered by European carriers, the performance of the U.S. CMRS market is comparable, and perhaps superior in some regards, to its Western European counterparts.

Furthermore, European consumers have benefited for over seven years from the cost efficiencies and price competition associated with the widespread deployment of digital technology across the continent in 1992.[61] Virtually every Western European market includes at least two carriers offering digital wireless services, and at least seven countries have issued licenses to provide various digital services to three or four carriers.[62] In contrast, U.S. consumer demand has only recently begun responding to the substantial price reductions and increased level of competition accompanying the widespread deployment of digital wireless technology.

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[59] The Yankee Group, "Regional Cellular/PCS Market Forecasts," p. 13.

[60] The Yankee Group, "Regional Cellular/PCS Market Forecasts," p. 13.

[61] The Yankee Group, "Regional Cellular/PCS Market Forecasts," p. 18.

[62] The Yankee Group, "Regional Cellular/PCS Market Forecasts," Exhibit 15, p. 20. Three carriers are providing digital wireless services in both Sweden and Portugal; four digital wireless providers are operating in Denmark, Finland, France, and the United Kingdom; Ireland, Italy, Netherlands, Norway, Spain, and Switzerland were expected to tender either one or two additional licenses to carriers during 1998, thereby further increasing competition in the provision of digital wireless services in these nations.

Despite well-established, intense competition between digital wireless service providers the overall growth of Western European markets during the 1990s has not been dramatically, if at all, superior to the U.S. CMRS market's performance. Indeed, as competition between U.S. digital service providers becomes increasingly more intense, the growth of U.S. consumer demand for wireless services could accelerate significantly relative to the pace of Western European consumer demand, which already reflects the full effects of digital competition.

Numerous Factors (Not Just CPP) Significantly Influence the Performance of Latin American Wireless Markets

Inferences regarding the potential effects of CPP on the U.S. CMRS market based on the performance of Latin American wireless markets will be substantially more tenuous than claims and assertions based on the European experience. While the U.S. and Western European mobile telephony markets are relatively well-established, Latin American wireless markets can be characterized as emerging.[63] The performance of Latin American wireless communications markets over the first half of the decade reflects the conditions and results expected for markets at, or near, their inception. For example, Bolivia, Columbia, Costa Rica, and Panama reported fewer than 50 wireless subscribers in 1990.[64] Overall, the number of wireless subscribers nearly doubled each year from 1990 to 1995 in a group of eleven Latin American nations (Table 4). Despite wireless subscribership more than tripling in Brazil, more than doubling in Peru and Venezuela, and nearly doubling in Argentina each year from 1990 to 1995, wireless penetration rates in these countries remained extremely low (Table 4). For example, by 1995 the number of wireless subscribers had not reached 2% of the population in any of the eleven Latin America markets and exceeded 1% of the population only in Argentina, Chile, and Venezuela.

These general trends continued through first quarter 1999, with wireless subscribership continuing to double annually in most of the ten Latin American markets represented in Table 5. Wireless penetration rates in these nations remain low, however, approaching 10% of the population in only Venezuela, Chile, and Argentina (Table 5). The continuation of such extraordinarily rapid growth rates coupled with penetration rates remaining at very low levels is

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[63] The nature of Latin American telecommunications markets is revealed by the following observation: "The real sign telecommunications has reached Latin America's masses will be when its street-corner entrepreneurs are no longer a familiar sight renting out their cell phones to passersby." Sally Ruth Bourrie, "Carriers Reach Masses," Wireless Week International (March 15, 1999) available online at <http://www.wirelessweek.com/intl/carri315.htm>.

[64] International Telecommunication Union, "World Telecommunication Indicators," *World Telecommunication Development Report 1996 / 97* (Geneva, Switzerland: March 1997), Table 8.

TABLE 4

Wireless Telecommunications Markets
Subscriber Growth and Penetration Rates

Latin America and the U.S.
1990 - 1995

	MOBILE TELEPHONY SUBSCRIBERS				
	GROWTH RATE [1] 1990 - 1995	PER 100 HOUSEHOLDS 1995	PER 100 INHABITANTS 1995	AS A PERCENT OF TOTAL TELEPHONE SUBSCRIBERS [2] 1995	RESIDENCE MAIN TELEPHONE LINES PER 100 HOUSEHOLDS 1995
ARGENTINA	95.3 %	4.0	1.0	5.8 %	54.0
BOLIVIA	- NA -	0.5	0.1	2.0	11.0
BRAZIL	349.6	3.2	0.8	9.6	20.5
CHILE	70.0	7.3	1.4	9.5	39.1
COLUMBIA	- NA -	3.7	0.7	6.6	36.7
COSTA RICA	- NA -	2.3	0.5	3.2	42.0
DOMINICAN REPUBLIC	59.5	2.8	0.4	5.5	26.1
MEXICO	58.6	3.5	0.7	6.8	33.2
PANAMA	- NA -	0.0	0.0	0.0	34.4
PERU	112.4	1.6	0.3	6.2	10.1
VENEZUELA	122.1	10.0	1.8	14.0	41.8
TOTAL 11 LATIN AMERICAN COUNTRIES	99.8 %	3.6	0.8	8.0 %	28.8
UNITED STATES	44.9 %	33.7	12.8	17.0 %	112.0

[1] Compound annual growth rates.

[2] Calculated as the number of wireless telephony subscribers divided by the sum of total main telephone lines plus the number of wireless subscribers.

Source : International Telecommunication Union, "World Telecommunication Indicators," *World Telecommunication Development Report 1996 / 97* (Geneva, Switzerland: March 1997), Tables 2, 3, 4, 5, 8.

TABLE 5

Wireless Telecommunications Markets
Subscriber Growth and Penetration Rates
Latin America and the U.S.
1995 - 1999

	MOBILE TELEPHONY SUBSCRIBERS (Thousands)			WIRELESS	WIRELINE
	1995	1999	GROWTH RATE [1] 1995 - 1999	PENETRATION [2] 1999	PENETRATION [3] 1999
ARGENTINA	410.6	3,331.6	100.9 %	9.3 %	21.2 %
BOLIVIA	7.2	376.2	273.8	4.6	6.2
BRAZIL	1,437.9	13,066.9	108.7	8.0	15.7
CHILE	201.7	1,428.4	92.0	9.5	22.7
COLOMBIA	248.1	1,872.7	96.2	4.5	17.8
COSTA RICA	18.2	118.5	86.7	3.5	19.5
MEXICO	683.6	5,856.0	104.6	5.9	10.9
PANAMA	0.0	172.7	- NA -	6.1	16.9
PERU	75.2	1,070.3	142.3	4.2	6.5
VENEZUELA	404.8	2,527.0	84.1	10.9	11.3
TOTAL 10 LATIN AMERICAN COUNTRIES	3,487.3	29,820.3	104.1 %	7.1 %	14.5 %
UNITED STATES	33,785.7	78,859.8	32.7 %	28.8 %	

[1] Compound annual growth rates. Growth rate calculations exclude Panama.

[2] The number of wireless telephony subscribers as a percentage of the national population.

[3] Main telephone lines in service as a percentage of the national population.

Sources: Pyramid Research, Inc. and The Economist Intelligence Unit, Wireless Database: Emerging Markets, 1999 2nd Quarter.

Cellular Telecommunications Industry Association online at <http://www.wow-com.com>
United States Department of Commerce, U.S. Census Bureau online at <http://www.census.gov>

consistent with the type of performance results expected from markets in the early stages of development. Other factors, however, likely have strongly influenced the performance of Latin American wireless markets. For example, a general trend toward privatization and deregulation of wireless providers across Latin America should strengthen competition, thereby stimulating consumer demand and contribute toward the maintenance of relatively high subscribership growth. To encourage competitive entry and the deployment of digital technologies, thereby accelerating the introduction of new wireless services (including prepaid services and CPP), the Brazilian Ministry of Communications developed a plan to sell nine cellular carriers to private investors and several Latin American governments (including Argentina, Chile, Mexico, and Venezuela) began auctioning additional cellular and PCS licenses.[65] Such procompetitive policies imply significant structural changes in Latin American wireless markets, with private ownership implying the profit motive replaces social policy objectives in guiding wireless carriers' operating decisions. As rival wireless carriers compete for additional subscribers, prices in the more intensely competitive Latin American markets should be expected to decline sharply. However, average wireless service prices in the more competitive markets, such as Mexico and Argentina, are expected to decline moderately, perhaps 10% to 20%, as additional entry progresses over the near term.[66] In addition, overall subscribership growth in Latin American markets is expected to decelerate to about a 27% annual rate over the period 1999 - 2002, while wireless penetration in the region could rise to about 10% over the next three to four years.[67]

Latin American countries' experiences, however, highlight the inaccuracies that can result from attributing all observed growth in national wireless communications markets to the introduction of CPP. In Peru, for example, the May 1996 implementation of CPP coincided with the introduction of prepaid wireless services and the issuance of a license to an additional wireless carrier.[68] Attributing any subsequent market growth solely, or even primarily, to CPP is clearly inaccurate since the (likely significant) effects of the new prepaid wireless services and additional competitive entry are incorrectly ignored altogether. In addition, the 1999 implementation of CPP in Mexico occurred amidst the heavy promotion of new prepaid wireless service plans and a reduction in the price wireless subscribers pay to receive calls placed to their mobile telephones.[69] Similarly, the 1999 introduction of CPP in Chile will follow closely the appearance of a new competitive entrant offering technologically advanced digital PCS services at prices below those previously available for analog cellular services.[70] Again, attributing subsequent wireless market growth in Chile and Mexico solely, or even primarily, to CPP

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[65] The Yankee Group, "Regional Cellular/PCS Market Forecasts," pp. 6-8.

[66] The Yankee Group, "Worldwide Wireless Pricing, the Sequel," p.20.

[67] The Yankee Group, "Regional Cellular/PCS Market Forecasts," Exhibit 6. Pyramid Research generally supports the Yankee Group's outlook for Latin American wireless markets. The information assembled in Pyramid Research's 2nd quarter 1999 Wireless Database: Emerging Markets implies an overall 24% annual growth rate (substantially lower than the 80% - 200% growth rates these markets are currently experiencing) for wireless subscribership in the group of ten Latin American nations represented in Table 5. Furthermore, Pyramid Research's data indicates wireless penetration in this group of 10 Latin American countries could rise to about 13% by 2002.

[68] Tim Vandenack, "Calling Party Pays Brings Mobile to the Mainstream," Wireless Week International (March 15, 1999) available online at <http://www.wirelessweek.com/intl/cpp315.htm>.

[69] Vandenack, "Calling Party Pays Brings Mobile to the Mainstream."

[70] Vandenack, "Calling Party Pays Brings Mobile to the Mainstream."

implementation is clearly inaccurate. Failure to account for the effects of competitive entry, the availability of new wireless services, price reductions resulting from competitive entry, and declining prices for completed calls terminating at a wireless subscriber's telephone can result in a substantial overstatement of the effects of CPP on consumer demand for wireless communication services.

Columbia's experience is even more difficult to reconcile with claims that dramatic increases in wireless usage can be expected to accompany the introduction of CPP. Following the introduction of CPP in 1994, COMCEL, a wireless carrier operating in Columbia, reported only a slight increase in average usage per subscriber — from 235 to 245 minutes per month during 1995.[71] Not only did wireless usage not increase dramatically following the introduction of CPP in Columbia, but COMCEL estimates average usage per subscriber declined to about 200 minutes per month during 1997.[72] Within three years following the introduction of CPP, average usage per subscriber in Columbia had dipped below levels achieved prior to CPP's availability. Claims that CPP will substantially increase consumer demand for wireless services are not supported by the Columbian experience. The experience of Columbia with CPP underscores the riskiness of basing U.S. telecommunications policy on the presumption that CPP will significantly increase American consumers' demand for wireless services.

The high subscribership growth rates exhibited by Latin American wireless markets are supported by factors other than competition between rival carriers aggressively cutting prices. Latin American markets can be characterized as strongly influenced by pent-up demand generated by potential subscribers seeking access to advanced digital technology wireless networks and services, thereby avoiding long waiting periods for connections to antiquated, relatively unreliable wireline telephone networks. For example, among the shortest waiting times in the Latin American region are the 2 ½ months potential Argentine subscribers must wait for a connection to the wireline telephone network and the 3 ½ month delay confronting consumers attempting to purchase access to the wireline network in Chile.[73] Waiting times for obtaining access to the local wireline telephone network exceed 3 years in Venezuela, 2 years in Columbia, and a year in Bolivia and Panama. Although waiting times as long as a month have been reported for Austria, Italy, and Norway, potential wireline network subscribers in Western Europe and the U.S. typically obtain service within less than 2 ½ weeks.

After enduring waiting times ranging from several months to 3 years, Latin American wireline subscribers generally acquire access to a relatively unreliable network providing poor quality service. A network fault is reported for virtually every main access line in Panama each year.[74] Over 80 faults per 100 main lines are reported annually in Columbia; over 50 faults per 100 main lines are reported annually in Chile, Peru, and Venezuela. Over 40 faults per 100 main

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[71] Gil Simoes, "Calling Party Pays in Caribbean and Latin America," Nortel Research Report (March 1998), pp. 2, 6. This report was submitted by Northern Telecom as an *ex parte* filing in WT Docket No. 97-207, May 11, 1998.

[72] Simoes, "Calling Party Pays in Caribbean and Latin America," p. 6.

[73] Average waiting times for connections to the wireline telephone network are reported in International Telecommunication Union, "World Telecommunication Indicators," Table 3.

[74] Faults per 100 main lines are reported in International Telecommunication Union, "World Telecommunication Indicators," Table 4.

lines are reported annually in Brazil, while Argentina experiences nearly 30 faults per 100 main lines annually. By comparison, 10 or fewer faults per 100 main lines are reported annually in nearly every Western European country.[75] Mexico, experiencing only about 4 faults per 100 main lines per year, is the only Latin American wireline network provider maintaining service quality comparable to Western European networks.

The relatively poor quality of Latin American wireline networks and the difficulty potential subscribers experience in attempting to acquire access to these networks simultaneously increases the demand for technologically advanced digital wireless services and dampens demand for connections to the wireline network. As a result, wireline network development in Latin America is typically far below levels achieved in Western Europe and the U.S., where universal telephone service has been effectively attained. For example, wireline penetration of 20 or fewer residence main access lines per 100 households was reported in 1995 for Brazil, Bolivia, and Peru (Table 4). Only Argentina reports a wireline penetration rate exceeding 50 residence main lines per 100 households. In contrast, Western European nations are typically characterized by wireline penetration rates of about 90 residence main lines (or higher) per 100 households, while the U.S. reported 112 residence main lines per 100 households in 1995.

Thus, several factors influencing, perhaps significantly, the demand for wireless communication services in Latin American markets (i.e., relatively poorly developed wireline networks exhibiting low penetration rates, difficulty obtaining wireline network connections characterized by waiting times typically exceeding 2 months and sometimes as long as 3 years, and poor quality wireline network services likely to experience at least one interruption per year) are generally considered to have little, if any, effect on wireless communication service demand in Western Europe and the U.S. For example, when measured similarly, such as when both concepts are expressed as percentages of the national population, wireless penetration in general is rising toward wireline penetration in several Latin American countries. Wireless penetration in first quarter 1999 is close to surpassing wireline penetration in Bolivia, Peru, and Venezuela (Table 5). The extent to which consumer demand for wireless service in Latin America is influenced by having only a relatively poorly developed, low quality alternative available also might be inferred from the excess demand conditions recently hampering the Venezuelan wireless market.[76] Attempting to satisfy strong excess demand, existing wireless network capacity was strained. Concerned that the two competing carriers' networks were becoming so congested service quality might deteriorate, the Venezuelan government prohibited both carriers from acquiring new subscribers in July 1997 until capacity could be added or consumer demand softened.

The performance of Latin American wireless markets appears to be strongly influenced by consumer demand conditions unfamiliar to the Western European and U.S. mobile telephony markets. The expansion of wireless markets (i.e., increasing numbers of subscribers and rising usage per subscriber) in Western Europe and the U.S. is generally expected to be driven by intense price competition between rival carriers. Latin American wireless subscribership,

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[75] The exceptions are Greece, Ireland, and Portugal, which experience about 40 network faults per 100 main lines annually. International Telecommunication Union, "World Telecommunication Indicators," Table 4.

[76] The Yankee Group, "Regional Cellular/PCS Market Forecasts," p. 8.

however, apparently can increase rapidly even absent fierce competition between carriers struggling to gain a competitive advantage by aggressively cutting prices. Latin American carriers, therefore, might experience strong subscribership growth with only moderate price reductions, or perhaps with no change in prices. As a result the entire increase in subscribership subsequent to the introduction of CPP in Latin American wireless markets can not be attributed solely to the price-reducing effects of CPP. At least that portion of the increase in subscribership that would have occurred even absent the implementation of CPP should be identified and the claimed effects of CPP on the performance of wireless markets reduced accordingly.

Even if claims that the introduction of CPP directly increased the number of wireless subscribers dramatically in some Latin American countries are accepted, basing U.S. telecommunications policy decisions on inferences that similar results would accompany widespread availability of CPP in the U.S. CMRS market risks reestablishing regulatory control over prices and practices that are being effectively and efficiently determined by market forces. Beyond being inconsistent with current U.S. procompetitive policy and legal initiatives, regulatory intervention to guarantee widespread CPP implementation in the U.S. might produce substantially more modest results than those claimed for Latin American wireless markets. For example, Argentina experienced a 200% increase in wireless subscribers during 1997, the same year in which CPP was introduced.[77] However, with U.S. wireless penetration nearing 29% (Table 5), substantially higher than Argentina's 1.9% wireless penetration just prior to its introduction of CPP,[78] and U.S. wireline telephone networks having effectively achieved universal service, compared to Argentina's 54 residence main lines per 100 households (Table 4), the reaction of U.S. consumers to CPP's availability might be significantly more moderate than Argentina's experience.

Price Competition Appears More Intense in the U.S. Than in Most Western European and Latin American Wireless Markets

The effectiveness of competition in the U.S. CMRS market is further highlighted by comparing wireless service average price reductions across U.S., Western European, and Latin American markets. From 1996 to 1998, the overall average price per minute for wireless subscribers purchasing 250 minutes of use per month in U.S. major urban markets fell 45% - 64% (Table 1). Even with 1998 European and Latin American average wireless usage prices reflecting the effects of CPP availability,[79] in only five Western European major urban markets

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[77] The Yankee Group, "Argentina Wireless Market: Will the Introduction of PCS Services Reenergize Growth?" Wireless/Mobile Communications Global Report, vol. 3, no. 6 (February 1999), p. 5.

[78] The Yankee Group, "Argentina Wireless Market: Will the Introduction of PCS Services Reenergize Growth?" p. 1.

[79] The Yankee Group, "Worldwide Wireless Pricing, the Sequel," p. 5.

TABLE 6

Wireless Telecommunications Services
Average Price per Minute *

	250 Minutes of Use			500 Minutes of Use		
	Average Price per Minute 1996	Average Price per Minute 1998	Percent Change	Average Price per Minute 1996	Average Price per Minute 1998	Percent Change
Vienna, Austria	$ .51	$ .39	- 24 %	$ .44	$ .39	- 11 %
Brussels, Belgium	.55	.46	- 16	.43	.36	- 16
Copenhagen, Denmark	.33	.20	- 39	.31	.19	- 39
Paris, France	.69	.30	- 57	.60	.26	- 57
Berlin, Germany	.90	.57	- 37	.80	.51	- 36
Athens, Greece	.66	.34	- 48	.56	.29	- 48
Rome, Italy	.52	.18	- 65	.43	.18	- 58
Amsterdam, Netherlands	.68	.43	- 37	.56	.35	- 38
Oslo, Norway	.45	.33	- 27	.43	.27	- 37
Lisbon, Portugal	.61	.40	- 34	.49	.40	- 18
Madrid, Spain	.51	.39	- 24	.44	.33	- 25
Stockholm, Sweden	.43	.24	- 44	.39	.21	- 46
Zurich, Switzerland	.80	.29	- 64	.68	.29	- 62
London, United Kingdom	.30	.20	- 33	.24	.15	- 38
Buenos Aires, Argentina	$ .37	$ .33	- 11 %	$ .31	$ .30	- 3 %
Sao Paulo, Brazil	.52	.42	- 19	.45	.35	- 22
Bogota, Columbia	.39	.30	- 23	.39	.30	- 23
Mexico City, Mexico	.24	.29	+ 21	.23	.27	+ 17
Panama City, Panama	.61	.45	- 31	.46	.40	- 13

* As calculated by The Yankee Group, the Bundled Price per Minute (BPPM) is based on the least expensive pricing plan (excluding promotional and temporary offers) available for the selected usage level in each market area.

Sources: 1996 average usage prices are from The Yankee Group, "Pricing Wireless: A Global Comparative Assessment," Wireless/Mobile Communications North America Report, vol. 4, no. 103 (November 1996), Exhibits A-3 - A-4.

1998 average usage prices are from The Yankee Group, "Worldwide Wireless Pricing, the Sequel: Driving Penetration and Landline Displacement," Wireless/Mobile Communications Global Report, vol. 2, no. 14 (March 1998), Exhibits 6d - 6e.
A detailed explanation of the BPPM formula and its calculation is presented at pages 4-5 of this Report.

(i.e., Athens, Paris, Rome, Stockholm, and Zurich) did wireless service prices for subscribers purchasing 250 minutes of use per month decline as sharply as U.S. CMRS prices (Table 6). Latin American overall price declines were relatively mild, with the average price per minute for subscribers purchasing 250 wireless minutes of use falling about 30% or less in five major urban markets (Table 6).

U.S. wireless subscribers purchasing 500 minutes of use in major urban market areas benefited from average price reductions of 52% - 68% between 1996 and 1998 (Table 1). Only those Western European wireless subscribers purchasing 500 minutes of use in Paris, Rome, and Zurich experienced similar price reductions (Table 6). Latin American wireless carriers in five major urban market areas cut prices only about half as deeply as U.S. carriers did between 1996 and 1998. Further, during 1998, the overall average price per minute for wireless service in four U.S. major urban market areas at the 500 minutes per month usage level was in the range of 10¢ - 15¢, while Western European wireless subscribers' average price was generally about 20¢ - 25¢ per minute and the average price for Latin American wireless subscribers purchasing 500 minutes was 30¢ - 40¢.[80]

These general relative price trends have continued into 1999. Competition within the U.S. CMRS market has been sufficiently intense to produce steeper overall wireless service price reductions than generally experienced in either Western European or Latin American markets between fourth quarter 1996 and first quarter 1999. Even with foreign wireless prices reflecting the effects of CPP, CMRS market competition has produced deeper price reductions for U.S. consumers than the price declines experienced in most Western European and Latin American wireless markets. Overall average wireless telecommunications service prices are estimated to have dropped -38% in North America, -33% in Europe, and just -19% in Latin America over the period fourth quarter 1996 – first quarter 1999.[81] Over this same period, average wireless service prices calculated for 60 minutes of use per month fell -30% in the U.S. and -32% in Europe. At 100 minutes of use per month average wireless prices dropped -40% in the U.S. and -33% in Europe, while U.S. wireless prices declined -45% and European prices decreased -29% at 250 minutes of use per month. Finally, U.S. wireless providers reduced prices an estimated -52% as European wireless carriers cut prices an estimated -23% for subscribers purchasing 500 minutes of use per month over the fourth quarter 1996 – first quarter 1999 period.[82] Thus, despite the

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[80] While comparing wireless service average prices across countries can provide at least some indication of the relative intensity of competition across national markets, such comparisions should not be over emphasized. Since average prices denominated in different currencies are converted to a common basis (U.S. dollars in this case) using prevailing exchange rates, wireless prices can appear to be influenced by the numerous economic and political factors affecting exchange rate movements. Such price level comparisions, therefore, can potentially reflect changes in factors unrelated to national telecommunications industry and market conditions and government policies intended to influence the performance of national telecommunications markets.

[81] The Yankee Group, "Competitive Wireless Pricing Around the World," Wireless/Mobile Communications Global Report, vol. 3, no. 16 (May 1999), p. 1. The Yankee Group's calculation of North American prices is based on wireless service prices in Toronto, Boston, Chicago, Los Angeles, Miami, and New York City. European prices are based on wireless service prices in Berlin, Copenhagen, Helsinki, London, Madrid, Paris, Prague, Rome, and Stockholm. Latin American prices are based on wireless service prices in Bogota, Buenos Aires, Mexico City, Santiago, and Sao Paulo.

[82] U.S. wireless service price reductions, calculated from price changes in the Boston, Chicago, Los Angeles, Miami, and New York City markets, are reported by The Yankee Group, "Competitive Wireless Pricing Around the World,"

prevalence of CPP across European markets, overall wireless service prices declined more steeply in the U.S. CMRS market at usage levels greater than 60 minutes per month.

U.S. wireless service prices also fell significantly further than prices in Latin American markets over the fourth quarter 1996 – first quarter 1999 period. While recent pro-competitive developments and policy initiatives contributed to overall price reductions of -34% in Bogota and -23% in Mexico City, average wireless service prices have dropped only -12% in Buenos Aires and -8% in Sao Paulo.[83] Furthermore, the April 1997 implementation of CPP appears to have had little effect on prices as the weighted average wireless service price in Argentina has declined just -12% from fourth quarter 1996 to first quarter 1999.[84]

Although widespread availability of CPP might reduce U.S. wireless prices somewhat further, CMRS carriers operating in a vigorously competitive environment will implement CPP offerings without regulatory intervention if such a service option can provide them a competitive advantage. If CPP will deliver significantly higher consumer benefits, a wireless carrier offering this service option will increase its subscriber base rapidly and dramatically at the expense of its rival carriers. The competitive process inherently contains strong incentives for U.S. wireless providers to implement CPP if this service option will attract additional subscribers by increasing the consumer benefits associated with the carriers' service offerings. Regulatory intervention is unnecessary with competitive market forces directing carriers' choices of service options. If a service option will increase consumer benefits, it will also improve the carrier's competitive position in the market. Therefore, if CPP is strongly viewed as increasing consumer benefits, carriers will implement this service option to ensure self-preservation in a vigorously competitive market.

Although competition in the U.S. CMRS market generally has delivered deeper price cuts than Western European and Latin American wireless markets (including the effects of CPP on foreign wireless service prices), the attractiveness of mobile telephone service as a competitive substitute for local telephone company wireline service will depend on the price of wireless service relative to the price for wireline service (among other things).[85] Although consumers might be willing to pay a premium for wireless service to gain the benefits of mobility, the lower that premium relative to the price of access to the local telephone company's wireline network, the more attractive wireless service becomes as a competitive substitute for traditional wireline local service. Aggressive competition between rival carriers in the U.S. CMRS market continues pushing wireless prices downward, thereby substantially enhancing the appeal of wireless communication services relative to traditional wireline local telephone service. The relative price of wireless service, calculated for monthly usage of 500 minutes, declined by more than

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Exhibit 5, p. 7. Wireless service price decreases in Europe were calculated from price changes in the Berlin, Copenhagen, Helsinki, London, Madrid, Paris, Prague, Rome, and Stockholm markets and reported by The Yankee Group, "Cellular Pricing: Converging With Fixed?" Wireless/Mobile Communications Global Report, vol. 3, no. 24 (July 1999), Exhibit 6, p. 9.

[83] The Yankee Group, "Competitive Wireless Pricing Around the World," p. 14.

[84] The Yankee Group, "Competitive Wireless Pricing Around the World," p. 14.

[85] Consumers' perception of wireless service as a viable substitute for wireline service might also be influenced by network reliability, service quality, availability and prices of optional services and features, privacy, security, and other factors.

50% in several U.S. major metropolitan area markets from 1996 to 1997, compared to relative price decreases of about 35% or less in Western European and Latin American large urban market areas (Table 7). Wireless service was generally about five times more expensive than the local telephone company's price for local service in large U.S. cities (i.e., Boston, Chicago, Los Angeles, and New York City) in 1997. In large Western European cities, wireless service (at the 500 minutes per month usage level) generally was five to nine times more expensive than local telephone companies' basic network access prices (the exceptions being Copenhagen, Stockholm, London, — where wireless service was only about three times as expensive as wireline service — and Berlin — where wireless service was eighteen times as expensive as wireline service). In Sao Paulo and Mexico City, large metropolitan market areas in Latin America, wireless service was estimated to be eight to twelve times more expensive than wireline service in 1997.

Although wireless service prices continued declining relative to wireline telephone companies' local service prices throughout North American, European, and Latin American telecommunications markets into early 1999, the U.S. CMRS market maintained its generally strong performance compared to foreign markets. For example, by March 1999, wireless service (at the 500 minutes per month usage level) was 2 - 4 times as expensive as wireline local telephone service in several major metropolitan market areas in Europe with overall average wireless prices across the continent being 3.3 times as expensive as wireline local telephone service (Table 7). Similarly, overall average wireless service prices across Latin American markets had dropped from being roughly 10 times as expensive as wireline service in 1997 to about 6.7 times as expensive as wirline telephone compnies' services by March 1999 (Table 7). Despite the prevalence of CPP in European wireless markets and the implementation of CPP in several Latin American markets, competitive conditions in the U.S. CMRS market pushed the overall average wireless-to-wireline premium below the levels experienced in both European and Latin American markets. Although wireless service had been about 4 - 6 times as expensive as wireline local telephone services (at the 500 minutes per month usage level) in several of the largest U.S. metropolitan area markets in 1997, by March 1997 wireless service prices in general were just slightly more than twice as expensive as wireline services (Table 7). As a further indication of the relative strength of the U.S. CMRS market's performance over the past few years, by March 1999 the overall wireless-to-wireline premium in the U.S. was lower than in European and Latin American wireless markets at usage levels above 60 minutes per month.

Competition in the U.S. CMRS market has substantially enhanced the attractiveness of wireless service as a competitive substitute for local telephone company wireline services. Even with foreign wireless prices incorporating the effects of CPP, the relative price of wireless service in the U.S. is generally below relative prices prevailing across Western European markets and substantially lower than the average relative price of wireless service across Latin American markets. Market forces absent regulatory intervention have generated relative prices in the U.S. that indicate the overall competitive effects of wireless service in local exchange markets should be at least as (and perhaps more) intense in the U.S. as it is perceived to be in Western European and Latin American markets, where CPP is widely available.

TABLE 7

Wireless Telecommunications Service Prices Relative to Local Telephone Company Prices for Wireline Service

Subscribers Purchasing 500 Minutes of Use per Month
70% of Usage at Peak Times

	Wireless-to-Wireline Premium [1]			Percent Change
	1996	1997	1999	1996 - 1997
Boston	9.6	4.4		- 54 %
Chicago	8.9	4.8		- 46
Los Angeles	17.3	5.5		- 68
New York City	13.3	6.1		- 54
Brussels, Belgium	10.1	8.5		- 16 %
Copenhagen, Denmark	3.6	2.4	2.1	- 33
Paris, France	13.7	9.1	3.0	- 34
Berlin, Germany	22.1	18.2	3 - 4	- 18
Rome, Italy	8.9	5.9	4 - 5	- 34
Madrid, Spain	7.3	5.5	2.3	- 25
Stockholm, Sweden	5.4	3.6	4 - 5	- 33
London, United Kingdom	3.2	2.7	3 - 4	- 16
Sao Paulo, Brazil	10.9	8.6		- 21 %
Mexico City, Mexico	13.2	12.0		- 9

Wireless-to-Wireline Premium
1999

	Monthly Minutes of Use				
	60	100	250	500	1,000
North America [2]	6.5	4.7	3.1	2.3	2.1
Europe [3]	6.2	5.2	3.8	3.3	2.9
Latin America [4]	17.3	13.6	8.6	6.7	5.6

[1] The wireless-to-wireline "premium" is calculated by comparing the price of a basket of 500 wireless local calling minutes to 500 wireline minutes. For the wireless basket, the lowest priced (non-promotional) pricing plan at 500 minutes is used.

[2] Wireless-to-wireline premium calculations based on relative prices in Toronto, Boston, Chicago, Los Angeles, Miami, and New York City.

[3] Wireless-to-wireline premium calculations based on relative prices in Berlin, Copenhagen, Helsinki, London, Madrid, Paris, Prague, Rome, and Stockholm.

[4] Wireless-to-wireline premium calculations based on relative prices in Bogota, Buenos Aires, Mexico City, Santiago, and Sao Paulo.

Sources:
The Yankee Group, "Worldwide Pricing, the Sequel: Driving Penetration and Landline Displacement," Wireless/Mobile Communications Global Report, vol. 2, no. 14 (March 1998), Exhibit 11, p. 23.

The Yankee Group, "Cellular Pricing: Converging With Fixed?" Wireless/Mobile Communications Global Report, vol. 3, no. 24 (July 1999), Exhibit 1, p. 1.

The Yankee Group, "Competitive Wireless Pricing Around the World," Wireless/Mobile Communications Global Report, vol. 3, no. 16 (May 1999), Exhibit 12, p. 19.

With digital wireless technology capable of replicating most of the functions and features available with traditional wireline services at relatively low retail wireless service prices (as opposed to analog wireless service prices), U.S. broadband PCS providers are successfully promoting their services, even in rural areas, as attractive alternatives to second (and other additional) lines from the local telephone company.[86] However, if the perception remains that wireless service commands a stronger competitive position in foreign markets than in the U.S., the fundamental reason is likely something other than price, such as differences in the overall basic structure of telecommunications prices or a clear quality difference between competing networks. Nevertheless, regulatory intervention in the U.S. CMRS market to guarantee implementation of CPP as a means to increase local exchange market competition is unwarranted based on observation of the effects of CPP in foreign markets. For example, U.S. regulators might expect CPP implementation to increase the attractiveness of wireless service as a competitive substitute for traditional wireline local service by altering relative prices. However, even recognizing CPP's prevalence in European and Latin American markets, wireless prices relative to local telephone company prices in the U.S. are generally as low as, or lower than, relative wireless prices in Western Europe and Latin America.

With no compelling evidence that regulatory intervention is necessary to stimulate demand for wireless services to ensure the U.S. CMRS market keeps pace with Western European and/or Latin American wireless markets, the rationale for urging the FCC's involvement in implementing CPP is reduced to assertions that CPP will effect U.S. consumer demand for wireless services dramatically. While CPP might ultimately contribute to the continually improving and growing U.S. CMRS market, the independent effects of CPP are unlikely to be as dramatic in the U.S. as the impact proponents attribute to CPP implementation in foreign markets. The more moderate the effects of implementing CPP in the U.S. are likely to be, the more unwarranted regulatory intervention becomes.

U.S. CMRS Market Performance Could Be Only Moderately Effected by CPP

Wireless subscribers are sometimes characterized as reluctant to receive calls and incur airtime charges for answering calls to their mobile telephones. If accurate, this characterization implies most, if not all, current usage results from subscribers originating calls from their wireless telephones. Even if CPP encourages subscribers to spend their entire monthly wireless communication budgets on placing calls from their mobile telephones, usage might increase only moderately, if at all. Furthermore, to the extent that new customers subscribing to wireless services subsequent to CPP implementation might be relatively low volume users, average usage per wireless subscriber is unlikely to rise dramatically. Finally, with U.S. local telephone subscribers generally demonstrating a strong aversion to pricing plans that include separate charges for each local call, it is not certain that CPP will dramatically increase the volume of calls completed to wireless subscribers. Regulatory actions intended to alter the business

[86] CMRS Fourth Report, pp. 12-15.

decisions of carriers operating in an effectively competitive market might be difficult to reconcile with results that could be far less dramatic than CPP proponents claim.

CPP Will Not Necessarily Dramatically Increase U.S. Wireless Subscribers' Usage

The fundamental presumption that U.S. CMRS subscribers turn their cellular telephones on sparingly and closely guard their mobile telephone numbers because of a strong aversion to paying airtime charges for answering calls underlies many of the arguments that CPP will increase both the number of CMRS subscribers and their usage.[87] Proponents contend that by eliminating charges for receiving calls, CPP will encourage subscribers to use their entire wireless communications monthly budget for originating wireless calls. The fundamental presumption about U.S. CMRS customers, however, implies wireless subscribers' current usage is primarily, if not totally, originating calls. Eliminating charges to the CMRS subscriber for receiving calls, therefore, likely will increase wireless subscribers' usage marginally, if at all.

Furthermore, to the extent consumers that quickly adopt new technologies tend to be the heaviest users of the services enabled by technological innovations, any additional new wireless subscribers that might be attracted by CPP might also be relatively low volume users. As a result, as the proportion of relatively lower volume users subscribing to wireless services increases, the overall average monthly usage per subscriber could decline. Thus, it is not entirely certain that CPP will guarantee an increase in the average usage per subscriber in the U.S. mobile telephony market.[88]

U.S. Wireline Customers Are Unlikely to Significantly Increase Calling to Wireless Subscribers With CPP

If CPP is expected to dramatically increase wireless usage per subscriber, then apparently calls received by CMRS subscribers must increase substantially. Presumably, local telephone company wireline subscribers are expected to originate more calls to CMRS subscribers than wireless customers are now willing to receive. Although CMRS subscribers are perceived as steadfastly unwilling to pay for answering calls, paying for placing calls to CMRS subscribers that have chosen a CPP optional service, however, is not expected to dampen wireline subscribers' resolve to originate such calls with increasing frequency. The accuracy of these presumptions and assertions will determine the extent to which CPP will effect the performance of the U.S. CMRS market. Relying on foreign markets' experiences with CPP can be misleading if it is presumed European and Latin American telecommunications consumer behavior can be imposed on U.S. consumers.

The primary reason for expecting European, Latin American, and U.S. consumers to react differently to CPP is the significantly different relative price structures prevailing across the

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[87] For example, CPP NPRM at paragraph 22.

[88] This argument refers to the independent potential effects of CPP on wireless subscribers' usage. Usage prices, the availability of new services, and other factors that effect wireless subscribers' usage are assumed constant — i.e., the only market condition that changes is CPP availability.

telecommunications markets in these countries. While most U.S. consumers are accustomed to paying a flat monthly price for local telephone service which permits unlimited local calling for no additional charges, the FCC determined that only six of the 65 countries surveyed by the International Bureau "use a flat rate tariff plan for local calls similar to that found in the United States."[89] Consumers in most other nations traditionally have paid a monthly subscription fee for access to the local telephone network and additional charges for local usage. Calling a mobile service customer and incurring CPP charges is consistent with consumers' general expectation that usage charges will be associated with each telephone local call they initiate, regardless of the distance the call traverses or whether the dialed number is assigned to a fixed or mobile telephone set. As a result, foreign consumers are unlikely to regard CPP prices for calling wireless customers as an attempt by the telecommunications industry to impose charges on a service that had traditionally been supplied free (as perceived by consumers). Although consumer demand will be influenced by the relative prices for CPP calls, the overall consumer response to CPP implementation in foreign telecommunications markets will likely be unaffected by a general initial expectation that CPP prices should never rise above zero.

Consumer behavior in U.S. telecommunications markets, on the other hand, might be significantly effected by CPP. Attempts to price local telephone usage (similar to the way long distance calls are priced) have not been enthusiastically received by U.S. consumers. Indeed, the FCC notes "measured service may have only limited appeal to consumers."[90] In each of the six states referenced by the FCC, fewer than 7% of local exchange subscribers choose measured service.[91] In view of this general aversion to paying usage charges for local telephone service, it is unlikely U.S. consumers would embrace CPP charges for initiating calls to CMRS subscribers.[92] A further indication of the probable reaction of U.S. consumers to CPP can be

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[89] CPP NOI at paragraph 17, footnote 24.

[90] CPP NOI at paragraph 15, footnote 22.

[91] CPP NOI at paragraph 15, footnote 22.
Perhaps the reason for this low level of interest in local measured service is due to relative prices that favor flat rate service, the attractiveness of flat rate service as a means for controlling and stabilizing monthly bills, or inertia (if monthly local telephone service comprises a small enough share of a household's budget, consumers might not devote the search time required to gather and analyze the information needed to minimize that portion of the monthly telephone bill).

[92] Despite econometric evidence that residence customers' demand for local telephone usage is quite price inelastic, monthly local telephone calls per residence main station generally declined by as much as 12% when GTE converted three of its Illinois exchanges from monthly flat rates for local service to a local measured service rate structure. Residence customers in these exchanges paid between $6.30 and $11.30 per month for access to the network and unlimited local usage. These flat rates were supplanted by tariffs that included monthly charges ranging from $2.50 to $5.70 and charges of 2.5¢ per call and 1¢ per minute. *See* Rolla Edward Park, Bruce M. Wetzel, and Bridger M. Mitchell, "Price Elasticities for Local Telephone Calls," Econometrica, vol. 51, no. 6 (November 1983), pp. 1705, 1724-25.
If the duration of the average local call is 4 minutes, then the average price for placing local calls is 1.625¢ per minute. Since the transition from a flat rate tariff structure to charging about 1.5¢ per minute was accompanied by about a 12% reduction in residence customers' calling, residence subscribers' reaction to substantially higher usage prices might be expected to be significantly stronger. If wireless carriers do not anticipate revenue reductions resulting from CPP billing arrangements, then wireline customers originating calls to CMRS subscribers will likely pay current wireless usage prices. Suppose, for example, the average bundled price of about 20¢ per minute for wireless communications services in North America is imposed on residence customers subscribing to flat rate wireline service for originating calls to CMRS customers. Since the imposition of a 1.5¢ per minute charge was

inferred from the introduction of prices for calls to directory assistance. Directory assistance call volumes declined by 50% to 80% following the imposition of a ten or twenty cent per call charge (prices and percentage call reductions varying across jurisdictions) for a service previously perceived as free by consumers.[93]

Perhaps attempting to address U.S. consumers' general attitude toward the concept of CPP, the FCC points out recent market research results indicating 55% of non-subscribers to wireless service agree that "charging the calling party is a fair way to charge for incoming calls to a wireless phone."[94] However, this view of "fairness" does not necessarily translate into consumer acceptance of CPP. The results of a Yankee Group survey indicate 77% of consumers would be either "not at all willing" or "not very willing" to pay for calls to a wireless phone or pager.[95]

U.S. consumers' apparent general sensitivity to local telephone service usage charges suggests that call volumes and revenues resulting from wireline local service customers calling CMRS subscribers might be significantly lower than anticipated, particularly if expectations are based on proponents' interpretation of CPP implementation in foreign wireless markets. CPP, which would impose a price on local calls placed only to CMRS customers while all other local calls would remain free (as perceived by wireline customers), might appear to violate the general concept of flat rate local telephone service held by many U.S. consumers,. For example, AT&T Wireless Services, Inc. now offers "Caller Pays" at no charge to both its PCS and analog cellular subscribers in Minnesota, but parties calling AT&T "Caller Pays" subscribers are charged 39¢ per minute for completed calls.[96] Consumer demand (as revealed by the number of calls originating from other carriers' networks but completed by AT&T to its wireless "Caller Pays" subscribers) might be significantly influenced by the level of AT&T's "Caller Pays" price relative to consumers' prior expectations. AT&T's 39¢ per minute "Caller Pays" price might appear relatively high to consumers anticipating local calling prices of about 2¢ per minute, based on typical usage rates usually associated with telephone company local measured service offerings.[97] Even though the per minute "Caller Pays" price might be efficiently determined by

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associated with an initial 12% decline in residence local calling, it is unlikely residence calls to CMRS subscribers will exhibit rapidly accelerating growth when prices as high as 20¢ per minute are implemented.
For 1997 average bundled prices per minute for wireless communications services, see The Yankee Group, "Worldwide Wireless Pricing, the Sequel: Driving Penetration and Landline Displacement," Wireless/Mobile Communications Global Report, vol. 2, no. 14 (March 1998).

[93] George Daly and Thomas Mayor, "Estimating the Value of a Missing Market: The Economics of Directory Assistance," The Journal of Law and Economics, vol. XXIII (April 1980), pp. 147-166.

[94] CPP NPRM at paragraph 22.

[95] The Yankee Group, "Sneak Preview of the 1998 Mobile User Survey Results: Focus on Cellular/PCS Services and Devices" (September 3, 1998), p. 17.

[96] Edward Warner, "AT&T Launches New Caller Pays Service," Wireless Week (April 13, 1998) available online through <http://www.wirelessweek.com>.

[97] Based on the cost of a five minute same-zone daytime call as of October 15, 1998 for US West residential measured / message rate service subscribers in Minneapolis as reported in Reference Book of Rates, Price Indices and Expenditures for Telephone Service, Common Carrier Bureau, Federal Communications Commission (June 1999), Table 1.3, p. 5.

the carrier's cost structure and competitive market forces, wireline subscribers' response could be dampened significantly by CPP-type prices well above expected levels.

Such divergent prices apparently are not uncommon in European telecommunications markets. For example, local telephone service usage prices during peak periods are about 3¢ - 4¢ per minute in Denmark, Norway, Sweden, France, Germany, Switzerland, and numerous other European countries.[98] Peak period local telephone service usage prices are only slightly more than 2¢ per minute in Italy and Spain, but can exceed 5¢ per minute in the United Kingdom. If wireline subscribers in these European nations initiate a call to a wireless telephone number during a peak period, however, the effective usage price can be four to ten times higher than the typical 2¢ - 4¢ per minute local calling charges. Usage prices for peak period calls placed by wireline subscribers to mobile telephone customers approach 50¢ per minute in Germany and Switzerland. Usage prices for peak period calls from wireline subscribers to wireless customers are 40¢ - 45¢ per minute in France, Italy, Sweden, and the United Kingdom, and 20¢ - 30¢ per minute in Denmark and Spain. U.S. telecommunications service consumers might expect all local telphone service usage prices to be similar to the 2¢ - 4¢ per minute charges typically associated with traditional wireline telephone company local measured service plans. CPP prices ranging from 30¢ - 50¢ per minute (which appear typical across European markets) are not likely to dramatically increase the number of calls U.S. wireline subscribers make to mobile telephone service customers. Call volumes from wireline customers to wireless subscribers with CPP-type services in the U.S. CMRS market, particularly if prices significantly exceed consumers' prior expectations, could fall well short of the dramatic results proponents attribute to CPP in foreign wireless markets.

Recognizing consumers' general aversion to paying for individual local calls and wireless subscribers' apparent current preference for originating rather than receiving calls, the potential effects of CPP on the U.S. CMRS market might be far less dramatic than proponents claim. Regulatory intervention in the effectively competitive CMRS and billing and collections markets is unwarranted, especially if CPP likely will affect U.S. consumer demand for wireless services only moderately.

Regulatory Intervention in the Billing and Collections Market To Address CPP Issues Is Neither Necessary nor Appropriate

The industry's ability to successfully develop standards ensuring calling parties' billing information can be acquired by CMRS carriers offering CPP without regulatory involvement indicates regulatory intervention regarding wireless carriers' implementation of CPP billing and collection processes is also unnecessary. If competitive market forces are relied upon to produce efficient CMRS carrier marketing, pricing, investment, and research and development decisions, competition and consumer demand will also efficiently guide carriers' assessments of likely success or failure of potential new service offerings. Regulatory intervention regarding the billing and collection aspects of CPP could distort what would otherwise be an efficient

[98] European telecommunications usage prices are reported in Phillips Tarifica Ltd., "Tariff Benchmarks," March 1999 update, Table 1.3.2 and Table 1.3.4.

result of the competitive process. Finally, regulatory intervention regarding one specific component (billing and collection functions) of a particular potential CMRS carrier offering (CPP) would seem inconsistent with a clear reliance on competitive market forces, rather than regulatory judgments, to ensure efficient results in all other aspects of the CMRS market.

With CPP implementation, each calling party becomes a customer of the CMRS provider completing a call to one of its CPP subscribers.[99] As a result, wireless carriers offering CPP arrangements to their subscribers must acquire the data necessary to bill calling parties originating calls to mobile telephone subscribers from other telecommunications providers' (including local telephone companies') networks. The FCC acknowledges that CMRS providers are not requesting regulatory intervention in the billing and collections market to facilitate acquisition of local telephone company subscribers' billing information.[100] Furthermore, the Commission recognizes that the industry is successfully developing technical standards for collecting and transferring the information necessary for wireless carriers to bill calling parties, with "no indication ... that the Commission needs to intervene in this process."[101] If the industry can develop standards for identifying and transferring to CMRS carriers all relevant billing information for CPP calls without regulatory direction, CMRS carriers providing CPP should be capable of implementing any necessary billing and collection processes absent regulatory intervention or assistance.

Every telecommunications provider can be expected to include billing and collection requirements in assessing the viability of each potential new service offering. The competitive process provides strong incentives for carriers to provide all services, including new offerings, as efficiently as possible. Inefficiencies in any carrier's production process will be punished by a more efficient rival offering a lower retail price (reflecting its lower cost structure) for the same or a similar service. Each CMRS carrier deciding to implement CPP, and thereby accept the risks inherent in offering any new service in a competitive market, will have strong incentives to efficiently produce, market, and bill the new offering. As with any other competitively provided service, each carrier should be expected to determine the most effective CPP billing and collection procedures. For example, some CMRS carriers might rely on internal billing and collection systems while others might conclude the calling party billing information acquired from other telecommunications carriers could be most efficiently processed by a firm offering such services at competitive prices (e.g., a CMRS carrier might secure the services of a credit card provider or other clearinghouse-type firm to perform CPP billing and collection functions).

In addition to punishing production and operating inefficiencies, the competitive market process also effectively disciplines CMRS providers' prices and rewards carriers for developing and quickly delivering new services to consumers. Stringent regulatory review and approval of CMRS carriers' business decisions (including marketing strategies, price structures, investment programs, and service innovations) have thus far been considered neither appropriate nor necessary. It would be difficult for regulatory intervention regarding one specific aspect (i.e.,

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[99] CPP NPRM at paragraph 17.

[100] CPP NPRM at paragraph 28, footnote 64.

[101] CPP NPRM at paragraph 26.

billing and collection functions) of a potential CMRS carrier offering (i.e., CPP) to successfully avoid distorting what would otherwise be an efficient result of the competitive market process.

Conclusion

Any general expectation that CPP increases CMRS subscribership and usage (both originating and terminating) and the mechanisms by which such results might be affected (i.e., changes in relative prices) are not inconsistent with fundamental economic theory. However, anticipating

1) extraordinarily large increases in the demand for CMRS,
2) a dramatically higher level of completed calls from LEC wireline customers to wireless telephone numbers, and
3) a general movement of consumers away from local telephone company wireline services toward wireless services

to accompany CPP in the U.S. CMRS market is inconsistent with logical inferences based on the available market data. Claims that CPP availability is solely, or even primarily, responsible for extraordinarily large increases in consumer demand for wireless telecommunications services in foreign markets do not prove CPP will similarly affect the U.S. CMRS market. Relying on such claims and assertions risks significantly overstating the likely effects of CPP on the demand for wireless services in the U.S. Potential (and perhaps extensive) regulatory intervention in CMRS and billing and collection markets presumably to facilitate CPP implementation will be difficult to reconcile with

1) indications that the independent effects of CPP on the U.S. CMRS market are unlikely to be extraordinary,
2) evidence that the Commission's stated policy objectives currently are being met by relying on market forces, and
3) the FCC's current reliance on competitive market forces, rather than regulatory review and approval processes, to produce efficient results in all other aspects of these markets (i.e., the Commission now recognizes the competitive market process as preventing carriers from raising prices above competitive levels, while also ensuring high levels of service quality are maintained and new technologies and services continue to be developed and deployed).

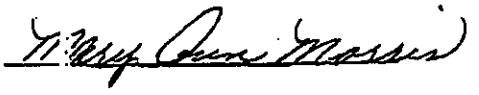
Regulatory intervention in the U.S. CMRS market appears unwarranted to stimulate growth in consumer demand for wireless services, increase competition between CMRS providers, or enhance the attractiveness of wireless communication as a competitive substitute for traditional local telephone company wireline service. Competition in the U.S. CMRS market is sufficiently intense to generate market growth in excess of 30% annually over the past few years, reduce prices for wireless services dramatically (in some cases more than -60%), and significantly increase the feasibility of wireless service as a competitive substitute for local telephone company wireline service (with the relative price of wireless service in highly competitive major metropolitan area markets falling from over 10 times to about only 2½ times as expensive as wireline service).

While CPP might increase demand for wireless services somewhat, there is no compelling evidence from Western European and Latin American experiences to indicate the independent effects of CPP in the U.S. will include dramatically higher CMRS demand and substantially lower (than prevailing) wireless prices. In fact, there are indications from market evidence that the effects of CPP on U.S. CMRS market performance could be much more moderate than the dramatic effects sometimes attributed to CPP implementation in European and Latin American markets. Regulatory intervention in the CMRS market intended to facilitate CPP implementation could be difficult to reconcile with results far less extraordinary than anticipated from proponents' claims and assertions.

Finally, regulatory intervention in the CMRS and billing and collections markets to facilitate wireless carriers' potential implementation of CPP should not be seriously considered if competitive market forces, rather than regulatory judgments, are relied upon to produce efficient results for all other aspects of these markets.

CERTIFICATE OF SERVICE

On this 17th day of September, 1999, I, Mary Ann Morris, hereby certify that the Comments of SBC Communications Inc. in WT Docket No. 97-207, have been served upon the parties listed in the Service List attached to the Comments of SBC Communications Inc.



September 17, 1999

Chairman William E. Kennard
Federal Communications Commission
445 12th Street, SW
Room 8B201H
Washington, DC 20554

Commissioner Gloria Tristani
Federal Communications Commission
445 12th Street, SW
Room 8C302C
Washington, DC 20554

Commissioner Michael Powell
Federal Communications Commission
445 12th Street, SW
Room 8A204C
Washington, DC 20554

Commissioner Harold Furchgott-Roth
Federal Communications Commission
445 12th Street, SW
Room 8A302C
Washington, DC 20554

Commissioner Susan Ness
Federal Communications, Commission
445 12th Street, SW
Room 8B115H
Washington, DC 20554

David Siehl
Policy Division
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Room 3A164
Washington, DC 20554

Thomas J. Sugrue, Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Room 3C252
Washington, DC 20554

Dr. Joseph Levin
Policy Division
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Room 3B135
Washington, DC 20554

David A. Gross
Pamela J. Riley
AirTouch Communications
1818 N Street, NW
Suite 800
Washington, DC 20036

Cathleen A. Massey
Douglas I. Brandon
AT&T Wireless Services, Inc.
1150 Connecticut Avenue, NW
Suite 400
Washington, DC 20036

Albert H. Kramer
Joseph S. Farber
Dickstein Shapiro Morin & Oshinsky LLP
2101 L Street, NW
Washington, DC 20037-1526

Samuel N. Adler
Charles D. Cosson
AirTouch Communications
One California Street
29th Floor
San Francisco, CA 94111

Howard J. Symons
Sara F. Seidman
Mickelle M. Mundt
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo
701 Pennsylvania Avenue, NW
Suite 900
Washington, DC 20004

Michael F. Altschul
Randall S. Coleman
Cellular Telecommunications Industry Association
1250 Connecticut Ave., NW
Suite 200
Washington, DC 20036

Chrisopher W. Savage
Theresa A. Zeterberg
Karlyn D. Stanley
Cole, Raywid & Bravermann, LLP
1919 Pennsylvania Avenue, NW
Suite 200
Washington, DC 20006

James. U. Troup
Aimee M. Cook
Arter & Hadden LLP
1801 K Street, NW
Suite 400K
Washington, DC 20006

Frederick M. Joyce
Joyce & Jacobs, LLP
1019 19th Street, NW
14th Floor - PH2
Washington, DC 20036

Victor L. Jackson
Beeples, Inc.
2377 Seminole Drive
Okemos, MI 48864

Matt Edwards
Freepage Corporation
P.O. Box 5098
Montauk, NY 11954

Andre J. Lachance
1850 M Street, NW
Suite 1200
Washington, DC 20036

Richard Wolf
Illuminet, Inc.
4501 Intelco Loop
P.O. Box 2902
Olympia, WA 98507

Mark J. O'Connor
Teresa S. Werner
Piper & Marbury LLP
1200 19th Street, NW
7th Floor
Washington, DC 20036

Lawrence R. Sidman
Leo R. Fitzsimon
Verner, Liipfert, Bernhard,
McPherson & Hand, Chartered
901 15th Street, NW
Suite 700
Washington, DC 20005

John A. Malloy
William B. Plummer
Nokia Telecommunications, Inc.
1850 K Street, NW
Suite 1175
Washington, DC 20006

Mary McDermott
Linda Kent
Keith Townsend
Hance Haney
Lawrence E. Sarjeant
US Telephone Association
1401 H Street, NW
Suite 600
Washington, DC 20005

James G. Pachulski
Bell Atlantic Network Services, Inc.
1320 North Court House Road
Eighth Floor
Arlington, VA 22201

Linda Oliver
Hogan & Hartson, LLP
555 13th Street, NW
Wahsington, DC 20004

ITS
1231 20th Street, NW
Washington, DC 20036

Raymond G. Bender, Jr.
J.G. Harrington
Laura S. Roecklein
Dow, Lohnes & Albertson, PLLC
1200 New Hampshire Avenue, NW
Suite 800
Washington, DC 20036-6802

Lisa M. Zaina
Stephen Pastorkovich
OPASTCO
21 Dupont Circle, NW
Suite 700
Washington, DC 20036

Laurie J. Bennet
U S West, Inc.
1020 19th Street, NW
Suite 700
Washington, DC 20036

Richard S. Myers
Jay N. Lazrus
Myers Keller Communications Law Group
1522 K Street, NW
Suite 1100
Washington, DC 20005

S. Mark Tuller
Bell Atlantic Mobile, Inc.
180 Washington Valley Road
Bedminister, NJ 07921

Betty D. Montgomery
Steven T. Nouse
Public Utilities Commission of Ohio
Public Utilities Section
180 E. Broad Street
Columbus, OH 43215

Anne Levinson
William R. Gillis
Richard Hemstad
Washington Utilities and Transportation Commission
1300 S. Evergreen Park Drive, SW
P.O. Box 47250
Olympia, WA 98504-7250

Stephen G. Kraskin
Sylvia Lesse
Margaret Nyland
Kraskin, Lesse & Cosson, LLP
2120 L Street, NW
Suite 520
Washington, DC 20037

Caressa D. Bennet
Dorothy E. Cukier
Bennet and Bennet, PLLC
1019 19th Street, NW
Suite 500
Washington, DC 20036

Mary E. Brooner
Motorola, Inc.
1350 I Street, NW
Suite 400
Washington, DC 20005

David L. Hill
Audrey P. Rasmussen
O'Connor & Hannan, LLP
1919 Pennsylvania Avenue, NW
Suite 800
Washington, DC 20006-3438

Jay C. Keithley
1850 M Street, NW
11th Floor
Washington, DC 20036-5807

Jonathan M. Chambers
Roger C. Sherman
Sprint Spectrum, LP
1801 K Street, NW
Suite M-112
Washington, DC 20006

Peter M. Connolly
Koteen & Naftalin
1150 Connecticut Avenue, NW
Washington, DC 20036

Judith St. Ledger-Roty
Peter A. Batacan
Kelley Drye & Warren LLP
1200 19th Street, NW
Suite 500
Washington, DC 20036

Mark J. Golden
Personal Communications Industry Association
500 Montgomery Street
Suite 700
Alexandria, VA 22314-1561

Kurt A. Wimmer
Robert A. Long
Lee J. Tiedrich
Niranjan Arasaratnam
Covington & Burling
1201 Pennsylvania Avenue, NW
Washington, DC 20044

Sandra K. Williams
P.O. Box 11315
Kansas City, MO 64112

Robert S. Foosaner
Lawrence R. Krevor
Laura L. Holloway
Nextel Communications, Inc.
1450 G Street, NW
Suite 425
Washington, DC 20005

Lawrence G. Malone
State of New York
Department of Public Service
Three Empire State Plaza
Albany, NY 12223-1350

Kevin DiLallo
Justin Castillo
Levine, Blaszak, Block & Boothby, LLP
2001 L Street, NW
Suite 900
Washington, DC 20036

William B. Barfield
Jim O. Llewellyn
1155 Peachtree Street, NE
Suite 1800
Atlanta, GA 30309-2641

David G. Frolio
1133 21st Street, NW
Suite 900
Washington, DC 20036

Betty D. Montgomery
Steven T. Nourse
Public Utilities Commission of Ohio
Public Utilities Section
180 E. Broad Street
Columbus, OH 43215

George S. Franke
Assistant Vice President for Technical Services
Lander University
Greenwood, South Carolina 29649

Cynthia B. Miller
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Cheryl Munn-Fremon
Dr. Alan McCord
The University of Michigan
4251 Plymouth Road #2244
Ann Arbor, MI 48105-2785

John P Connors
American Hotel & Motel Association
1201 New York Avenue NW #600
Washington DC 20005-3931

Betty D Montgomery
Steven T Nourse
Public Utilities Section
Public Utilities Commission Of Ohio
180 E Broad St
Columbus OH 43215

Mary McDermott
The Personal Communications Industry Association
500 Montgomery Street
Suite 700
Alexandria VA 22314

DONALD W DOWNES
GLENN ARTHUR
JACK R GOLDBERG
JOHN W KETKOSKI III
LINDA KELLY ARNOLD
CONNECTICUT DEPARTMENT OF PUBLIC
UTILITY CONTROL
10 FRANKLIN SQUARE
NEW BRITAIN CONNECTICUT 06051