

**DECLARATION OF DR. MICHAEL L. KATZ
AND DAVID W. MAJERUS**

**AN ASSESSMENT OF ILEC MARKET POWER IN
CPP BILLING AND COLLECTION**

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I. INTRODUCTION: QUALIFICATIONS AND OVERVIEW

1. My name is Michael L. Katz and I declare as follows. I am the Edward J. and Mollie Arnold Professor of Business Administration at the University of California at Berkeley. I hold a joint appointment in the Haas School of Business Administration and the Department of Economics. I serve as the Director of the Center for Telecommunications and Digital Convergence at the University of California at Berkeley. I have also served on the faculty of the Department of Economics at Princeton University. I received my A.B. from Harvard University *summa cum laude* and my doctorate from Oxford University. Both degrees are in Economics.

2. I specialize in the economics of industrial organization, which includes the study of antitrust and regulatory policies. I regularly teach courses on microeconomics, business strategy, and telecommunications policy. I am the author of a microeconomics textbook, and I have published numerous articles in academic journals and books. I have written articles on a number of issues, including network effects, antitrust policy enforcement, and telecommunications policy. Exhibit 1 lists all publications that I have authored or co-authored, with the exception of a few letters to the editor on telecommunications policy. I am a coeditor of the *Journal of Economics and Management Strategy*, and serve on the editorial board of the *California Management Review*.

3. In addition to my academic experience, I have consulted on the application of economic analysis to issues of antitrust and regulatory policy. I have served as a consultant to both the U.S. Department of Justice and the Federal Communications Commission (“Commission”) on issues of antitrust and regulatory policy in telecommunications markets. I have served as an expert witness before state and federal courts, and I have provided expert testimony before a state

regulatory commission as well as Congress. In 1994 and 1995, I served as Chief Economist of the Commission. Since leaving the Commission, I have appeared before it at several public forums.

4. My name is David W. Majerus and I declare as follows. I am a Principal with Charles River Associates, Inc. Prior to that, I was a Senior Economist at The Tilden Group, LLC for approximately one year. I was previously employed for seven years at the U. S. Department of Justice. I received my B. A. from Carleton College in Chemistry and my M. A. in Economics from The Johns Hopkins University.

5. I specialize in the economics of industrial organization, which includes the study of antitrust and regulatory policies. While at the Department of Justice, I assisted in the Department's evaluation of numerous mergers in a variety of industries. I worked on several mergers in the telecommunications industry. I have continued this area of analysis during my employment at Charles River Associates and The Tilden Group. A copy of my curriculum vitae is attached to this declaration as Exhibit 2.

6. It is widely understood that local competition has not developed as Congress had hoped it would when passing the Telecommunications Act of 1996. Economic logic indicates that the deployment of Calling Party Pays (CPP) allows wireless services to compete more effectively with wireline local services. First, because wireless subscribers no longer pay for airtime on incoming calls, they are more willing to leave their handsets on at all times to receive incoming calls. Second, when wireless carriers have an additional revenue stream, competition can be expected to push down the prices paid by wireless subscribers for all calls.

7. In order to provide an economically viable CPP service, a wireless carrier must have billing and collection functions performed at a sufficiently low cost. We have been asked by counsel for Vodafone AirTouch Plc (“AirTouch”) to assess the state of competition in the provision of these billing and collection services.

8. Drawing on our training and experience as economists, and our review of the relevant facts available to us, we find:

- CPP billing and collection services constitute a distinct relevant market for antitrust analysis;
- ILECs possess significant market power in the provision of CPP billing and collection services in their respective service regions; and
- The unconstrained exercise of this ILEC market power can threaten the development of efficient CPP services.

II. CALLING PARTY PAYS BILLING AND COLLECTION SERVICES CONSTITUTE A RELEVANT MARKET FOR PUBLIC INTEREST ANALYSIS

A. CPP Billing and Collection Services Constitute a Relevant Product Market

9. In assessing whether a carrier has market power, it is useful to define relevant markets. A relevant market is defined along two dimensions: (1) the scope of the products or services included in the market; and (2) the geographic scope of the market. In each case, the fundamental principle by which economists define the scope of a market is to include two goods or services in the same market if consumers view them as sufficiently good substitutes, and not include them in the same relevant market if consumers do not view them as such.¹

¹ See, for example, *In the Applications of NYNEX Corporation Transferor, and Bell Atlantic Corporation Transferee, For Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries*, Memorandum

10. One way to approach the problem of market definition is to identify a specific product in which one is interested and then determine to which (if any) products consumers of this product would switch if the specific product were priced at a small but significant amount above the competitive level. In the present instance, the initial product in question is billing and collection services for CPP.

11. The entity providing billing and collection services receives a data file from the wireless carrier (or its designated clearinghouse²) with formatted records containing callers' telephone numbers as well as the amounts to be billed to those numbers.³ The billing and collection services provider takes that file, matches the invoice amounts with the callers' billing names and addresses, computes appropriate local taxes, and generates physical bills which are printed, placed in envelopes, and mailed to the billing addresses. The billing and collection services provider then accepts customer deposits and collects payments.

12. There are no substitutes for billing and collection services. If a wireless carrier is to offer its customers a CPP plan, that carrier must obtain billing and collection services. Consequently, if the price charged for billing and collection services were to increase, the purchasers of the billing and collection services would have to pay the higher price or else cease offering CPP entirely. Therefore, billing and collection services for CPP constitute a relevant product market.

Opinion and Order, released August 14, 1997, ¶ 50. See also U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, April 2, 1992 (revised April 8, 1997), §1.11.

² A "clearinghouse" is a third party provider of billing-related services such as customer care or formatting billing data files to conform with the requirements a bill-rendering system.

³ We are not addressing the Advanced Intelligent Network systems that make CPP call processing and billing record generation feasible. These systems are part of a distinct relevant market that we do not analyze in this declaration.

With regard to the geographic scope of this market, there are no geographic limitations on where a firm offering these services can locate its billing and collection facilities (*e.g.*, databases and calling centers). In practice, only the local ILEC will have the customer relationships necessary to provide the CPP billing and collection services economically in a given area.

B. Key Characteristics of CPP Transactions

13. In order to understand the nature of competition in this market, it is helpful to recognize two distinguishing characteristics of CPP services: (1) the transactions generally are low in value in comparison with the fixed costs of issuing a bill and collecting the billed amounts; and (2) there typically is a lack of an ongoing commercial relationship between the billed party and the CPP service provider.

i. Low-Value Transactions

14. The size of a typical CPP bill is small compared with, say, a monthly bill for local exchange service or a typical bill for presubscribed interexchange service. For example, data for U S West local subscribers placing calls to AirTouch wireless subscribers with CPP service indicate that the charge to the calling party on a typical call is between \$0.60 and \$1.00. These data also indicate that, of those U S West subscribers placing at least one CPP call in a given month, the average number of CPP calls placed that month is 2.5. Therefore, for a consumer receiving a bill for CPP calls, the average monthly bill tends to be less than \$3.00 and often is under a dollar. It is our understanding that AirTouch expects over 80 percent of the CPP bills to be less than \$5.00 per month in the future.

15. The low value of CPP transactions is important because billing and collection is characterized by strong economies of scale at the individual bill level. These economies of scale

arise because there are fixed costs associated with each individual bill that are large relative to the incremental cost of placing an additional record on a bill. It is helpful to consider the fixed costs of a bill and incremental costs of a call record separately.

16. AirTouch calculates that it would incur costs of approximately one dollar to generate a single bill for a CPP customer.⁴ These costs are consistent with a recent estimate that it generally costs merchants about \$3 to print and mail a paper bill.⁵ Similarly, MCI estimated that its cost of generating and sending a bill for casual long-distance calling would be \$3.47.⁶ The size of the fixed costs of billing are also illustrated by interexchange carriers' imposition of minimum monthly charges for each of their long distance customers.⁷ For example, AT&T has imposed a \$3 monthly minimum charge on low-volume customers.⁸ While most customers apparently are willing to pay \$3 per month or more to have the ability to make long distance calls, clearly it would not be commercially viable to impose, say, a \$2 minimum on CPP bills. Doing so could lead to the absurd situation in which a calling party would be billed \$2 for a single 20-second local call.

⁴ These are the costs of obtaining the name and address associated with a phone number, printing a bill, and mailing it to the customer. It does not include the costs AirTouch would have to incur in changing their billing software and systems to perform CPP billing and collection services. Nor does it include any collection and customer inquiry costs. A preliminary AirTouch study estimates that, if AirTouch processed 2.4 million CPP bills per year in its Sierra Pacific region, these full costs would amount to roughly \$9 per bill.

⁵ Bob Tedeschi, "Interest in Online Bill Payment Grows," *The New York Times on the Web*, <http://nytimes.com/library/tech/99/05/cyber/commerce/17commerce.html>, May 17, 1999.

⁶ *In the Matter of MCI Telecommunications Corporation Billing and Collection Services Provided By Local Exchange Carriers for Non-Subscribed Interexchange Services*, Petition for Rulemaking, filed May 19, 1997, at 7.

⁷ It should be noted that there are other fixed costs associated with long distance customers that also are reflected in these minimum charges.

⁸ "Bell Atlantic Sees Complaints over New AT&T Charges," *Telecom A.M.*, August 25, 1999.

17. While the fixed costs of preparing a bill are large relative to the value of a typical CPP transaction, the incremental billing costs of adding charges to a bill already being sent out are relatively low. For example, an AirTouch contract with Ameritech sets a rate of \$0.06 per CPP-billed call.⁹ Similarly, the Pacific Bell tariff rate for Billing and Collection Services for Telecommunications Related Services¹⁰ are \$0.19 per bill and \$0.031 per transaction (in this case, a completed call).¹¹ Finally, for casual calling, ILECs charge “roughly 12 to 13 cents per invoiced call.”¹² Presumably the ILEC’s are charging above cost for providing these services, so these per-call charges are an upper bound on the incremental costs of generating an additional item on a bill.

ii. Lack of an Existing Commercial Relationship between the Caller and the Wireless Carrier

18. The problem of collection costs exceeding the amount to be collected is exacerbated by the fact that, in most cases, the calling party being billed for a CPP call will not have an ongoing commercial relationship with the wireless provider to whom money is owed for the call. The lack of an ongoing relationship can be expected to decrease the likelihood that a consumer pays a particular bill. When faced with a bill from a company with whom the consumer has no ongoing relationship, the consumer is not influenced by the cost of terminating a relationship in

⁹ “Agreement for the Provision of Calling Party Pays-Cellular Services and Billing and Collection Services,” December 15, 1996, Exhibit C.

¹⁰ These services are technically comparable to billing and collection services for CPP. See, for example, the services described in Pacific Bell’s tariff for Billing and Collection Services for Telecommunications Related Services (CAL P.U.C. Tariff NO. 175-T, Section 8.5.1).

¹¹ CAL P.U.C. Tariff NO. 175-T, Section 8.5.9.

¹² *In the Matter of MCI Telecommunications Corporation Billing and Collection Services Provided By Local Exchange Carriers for Non-Subscribed Interexchange Services*, Petition for Rulemaking, filed May 19, 1997 at 5.

calculating whether or not to pay the bill. Therefore, if a phone user receives a bill from an unfamiliar company for a small number of calls, for a small amount of money, that user is unlikely to pay the bill.¹³

III. ILECS POSSESS SIGNIFICANT MARKET POWER IN THE PROVISION OF CPP BILLING AND COLLECTION SERVICES

A. ILECs can Readily Provide CPP Billing and Collection Services

19. Ameritech, Cincinnati Bell Telephone, and U S West all provide billing and collection services for CPP to AirTouch. In addition, all ILECs currently offer services essentially identical to those required for the billing and collecting services for CPP. For example, the billing and collection services that ILECs offer to companies offering casual calling are almost identical to the services needed for CPP.

20. ILECs are particularly well suited to provide CPP billing and collection services. First, because an ILEC has a billing name and address (BNA) database, it is likely to be at least as good at using these data as is any other company. In fact, the BNA database itself is recognized as a bottleneck facility and is regulated as such.¹⁴ Second, because the ILEC calculates local taxes on all of its own billed calls, the tax tables are already part of its bill-generating software and these calculations impose no additional system development costs. Third, because the ILEC is already

¹³ This conclusion is supported by an OAN analysis of casual calling billing and collection. OAN stated that the collection rate for casual calling is approximately 50 percent when done directly by a clearinghouse but is approximately 90 percent when done by an ILEC. (*Public Forum On Local Exchange Carrier Billing For Other Businesses* held by the Federal Communications Commission on June 24, 1997 (“Forum Transcript”) at 46-7.)

¹⁴ 6 FCC Record 3506, May 24, 1991. See also the Telecommunications Act of 1996 (47 U.S.C. § 151 et seq.), Section 251c.

sending a bill to its customer, there are minimal incremental costs associated with printing a few extra lines on the bill and no additional costs for the envelope or postage. Fourth, the ILEC already has all of the infrastructure for collecting the payments, so there are no significant additional costs that it must incur to carry out this activity. Furthermore, because consumers often believe that they will lose their local phone service if they do not pay the entire amount on their local bill, the rate at which these bills are paid is higher than for bills sent by others.¹⁵

B. There are No Good Substitutes for ILEC-Provided Billing and Collection Services

21. AirTouch personnel have indicated that even if the prices charged by Ameritech, Cincinnati Bell Telephone, or U S West for CPP billing and collection services were to rise by 20 percent, AirTouch would not switch to alternative suppliers of billing and collection services. Indeed, AirTouch has been willing to provide the CPP service only in areas in which it can obtain billing and collection services from the local ILEC.¹⁶ These statements and actions indicate that AirTouch does not believe there are any good substitutes for ILEC-provided CPP billing and collection services.

22. Assuming AirTouch is representative of wireless service providers, it follows that, if the prices charged by ILEC's for CPP billing and collection services were to increase, there would be insufficient substitution to other suppliers of these billing and collection services to make these

¹⁵ AirTouch has found that it has a lower percentage of bad debt on its CPP calls billed by U S West than AirTouch has for its own wireless customers whom it bills itself.

¹⁶ It is our understanding that the sole barrier to AirTouch's conducting a CPP trial in California is its inability to obtain billing and collection services from Pacific Bell. At the time it evaluated whether to run a CPP trial in California, AirTouch determined that GTE's coverage was not sufficient to support a successful trial.

price increases unprofitable.¹⁷ In other words, ILECs have significant market power in the provision of CPP billing and collection services. In the remainder of this section, we examine a variety of potential suppliers of billing and collection services, and we demonstrate that none of these alternative suppliers can supply CPP billing and collection services on terms that would effectively constrain the exercise of ILEC market power.

i. Self-supply or Reliance on Third-parties who do not have Pre-Existing Commercial Relationships with Callers

23. A CPP service provider, or a clearinghouse acting on its behalf, would not be able to provide the associated billing and collection services on a commercially viable basis. Because of the low value of the billing transaction relative to the cost of generating a stand-alone bill, only a company that currently sends a bill to a customer can economically provide the CPP billing services. The cost of generating and sending a stand-alone bill to a person is too great to justify billing amounts this small. Even once a bill is generated and sent to a consumer, there still remain significant costs associated with trying to collect this bill. Given the likely size of bills sent out for CPP, if the collection were done on a stand-alone basis its costs would swamp any revenues collected.

24. The relationship between billing costs and billed amounts explains why AirTouch cellular operations in its Western region do not send out bills for amounts less than \$5—the billing costs are too great. Instead, if for some reason a customer’s bill is less than \$5 in a given month, the customer is not billed until the following month, when his or her aggregate bill is over the \$5

¹⁷ As to how representative AirTouch is, AirTouch personnel have indicated that they are unaware of any CPP provider in the United States that does not significantly rely on ILECs as suppliers of CPP billing and

threshold.¹⁸ This billing strategy is viable for a cellular company because a bill for less than \$5 is unusual and the situation of a bill less than \$5 is unlikely to last more than a month. Such would not be the case for CPP bills.

25. Another problem with self-supply or the use of a clearinghouse is that bills would typically be sent to consumers who were not customers of the wireless carrier. This fact, coupled with the small amount being billed, would likely lead to an extremely low payment rate.¹⁹ As a result of these problems, when AirTouch analyzed the possibility of using a clearinghouse for CPP billing and collection, it determined that, if the clearinghouse could not use the ILEC for providing some of these billing and collection services, then the use of the clearinghouse was not an economically viable option.

ii. Interexchange Carriers

26. While IXC's provide their own billing and collection for some of their presubscribed interexchange services, they do not represent a viable provider of CPP billing and collection services. For residential customers, most IXC's still bill through ILEC's.²⁰ Thus, this avenue does not get around the ILEC bottleneck.

collection services.

¹⁸ If this low level of a bill persists for several months in a row, eventually a bill is sent out.

¹⁹ As noted above, a clearinghouse providing the billing and collection services for casual calling experienced collection rates around 50 percent.

²⁰ For example, in the Commission's Billing Forum, a representative for AT&T stated that industry wide approximately 90 percent of consumer Inter-LATA bills were generated by ILEC's (Forum Transcript at 11).

iii. Credit Card Issuers

27. It might appear that credit card issuers could provide CPP billing and collection services based on billing records provided by the wireless service provider. For instance, credit card issuers have ongoing commercial relationships with their card holders and already send bills to them. For several reasons, however, credit card issuers cannot compete in the market for CPP billing and collection services. First, there is no current database that correlates phone numbers with credit card holders, so such a database would have to be constructed.²¹ Moreover, to the extent particular consumers do not have credit cards, these consumers could not be billed for their CPP calls.

28. Further, because CPP calling would not entail real-time authorization of the charges, problems with the availability of credit on particular cards could arise. Also, there could well be a high incidence of contested bills because consumers would not specifically approve the use of a given card at the time of calling. The expense to AirTouch of a significant level of customer complaints would exceed the expected revenues from the CPP product, making this an uneconomic method of billing and collection. A final problem is that credit card companies do not currently have software for calculating the local taxes associated with wireless phone calls.

²¹ In theory, a database could be created using the BNA information as well as the credit card companies' customer information. It is our understanding, however, that companies making BNA queries for casual calling cannot obtain the BNA database to use for constructing their own databases. Moreover, when a name is obtained from a particular billing query, this name is to be used only for generating a single bill and is not supposed to be used for creating a new database. Thus, it is not possible to construct such a database given the current restrictions on the use of BNA information. Cross-issuer coordination problems would arise as well; these problems would need to be dealt with to ensure that any given phone number was billed to only one credit card.

29. An alternative approach would be for the calling party to provide credit card information at the time that the call is placed, similar to the approach used when making some long distance telephone calls. This approach, too, has several severe shortcomings that limit its value as a means of supporting CPP. The principal disadvantage is that a caller making a local call to a CPP subscriber is likely to find it very inconvenient to have to go through the time and trouble of billing the call to a credit card.²² This inconvenience is particularly problematic for a wireless service provider like AirTouch, which markets itself as an easy-to-use telecommunications provider. Moreover, people who do not have credit cards would not be able to use this system. Lastly, the cost to AirTouch of using an ILEC for CPP billing and collection services is approximately one-sixth the cost of using a credit card for obtaining such services. For all of these reasons, AirTouch does not consider using payment by credit cards as the sole method of billing the CPP service to be a viable alternative to ILEC-provided CPP billing and collection services.²³

iv. Cable Companies and Electric Utilities

30. Cable companies and electric utilities might also seem to be potential suppliers of billing and collection services. They have ongoing commercial relationships with their subscribers, which would increase collection rates and reduce the incremental billing costs. For several

²² An additional problem is that, as noted above, the credit card companies do not have the capability of calculating the telecommunications taxes owed from such a call.

²³ Credit card payment is the method AirTouch envisions using for CPP calls made from phones that are not billable. It is our understanding that this use of credit cards for payment is viable only when a fraction of total CPP calls entail the use of a credit card.

reasons, however, cable companies and electric utilities do not provide effective limits on the exercise of ILEC market power in CPP billing and collection services.

31. The bills that a cable company or electric utility currently sends out typically are not designed to handle individual transactions such as phone calls. And these entities generally do not have the current capability to calculate the local taxes (some of which are telecommunications-specific) applicable to the CPP calls. Moreover, when the billed name for a telephone differs from the billed name on the corresponding cable or electric bill, there will be difficulty in matching the different billing databases.²⁴ Further, because consumers generally are not used to having phone calls billed in their cable and electric bills, there might be high initial levels of customer inquiries, which would make the billing service expensive.

32. There are additional problems specific to the use of a cable company. Typical cable penetration rates run about 65 percent for households and are considerably lower for businesses. Thus, a CPP service provider would have to find additional sources of billing and collection services in order to avoid “leakage rates” that would otherwise make the CPP service commercially unviable. Another problem with using cable companies arises when trying to determine if a particular call is placed from a billable phone. Currently, AirTouch can perform a real-time query to determine whether or not a particular phone number is billable using ILEC billing and collection services. Such a query would not be possible if the billability were based on whether the telephone number belonged to a person who purchased cable television.

²⁴ In fact, when AirTouch approached Pacific Gas & Electric to inquire about their willingness to provide CPP billing and collection services, PG&E stated that it was unable to provide these services with its current systems and was unwilling to make the investments necessary to obtain these capabilities.

C. Competition from Non-CPP Alternatives will not Protect Consumers from the Exercise of ILEC Market Power in the Provision of CPP Billing and Collection Services.

33. While there are no companies close to being able to rival ILECs in the provision of the CPP billing and collection services at a competitive price, there is another possible constraint on the ability of an ILEC to exercise market power over CPP billing and collection services that must be considered. If the provision of CPP itself were to have close substitutes, then an ILEC's refusal to provide CPP billing and collection services would not harm competition from wireless service providers. In theory, there might be several substitutes for CPP. In practice, none of these substitutes is sufficiently close to CPP to block the exercise of substantial ILEC market power in the provision of CPP billing and collection services.

i. First-Minute Free and Large-Bucket Calling Plans are Poor Substitutes for CPP

34. First-minute free is a service offered by some wireless carriers in which the wireless customer is not separately charged for the first minute of any call he or she receives. Therefore, at the margin, any incoming call of less than one minute in duration is free. In theory, the wireless customer could screen out low-value calls by hanging-up on anyone to whom it was not sufficiently valuable for the wireless subscriber to continue talking. While this product does tend to increase the willingness of a wireless subscriber to accept incoming calls, it is not a close substitute to CPP. First, this product does not send price signals to wireline customers to discourage calls whose value is less than their cost. Further, in a competitive marketplace, wireless service providers will recover the costs of these "free" incoming calls through other charges to their subscribers. Hence, CPP's potential to lower wireless service prices will be lost, and the potential for wireless services to compete with wireline local loop will be weakened.

Moreover, to the extent consumers recognize the relationship between first-minute free and other charges, consumers will recognize these minutes are not, in fact, free.

35. Experience indicates that first-minute free is a poor substitute for CPP. A measure of the ability of first-minute free to provide an avenue for wireless to become a competitor for local wireline service is to measure the balance of traffic for wireless service. In the U.S., wireless subscribers have typically paid for incoming (as well as outgoing) calls, and calling patterns show a strong imbalance toward outgoing calls relative to incoming calls. In comments filed with the Commission, both United States Corporation and Sprint Spectrum state that first-minute free and caller ID result in a more balanced traffic, but to get the traffic to the same balance as in Europe requires CPP.²⁵

36. Calling plans with large buckets of minutes for fixed prices might also appear to be close substitutes for CPP. The rationale would be that consumers purchasing large numbers of minutes could be expected to leave their phones on, allowing a greater number of people to call them. As with first-minute free, however, the called party still pays for incoming calls under these plans. If a subscriber refuses to accept incoming calls, he or she can thereby purchase a smaller—and cheaper—bucket of minutes. Moreover, large buckets do not address the issue of sending price signals to wireline customers to discourage calls that have a value less than their cost. In short, large-bucket plans have none of the price-incentive benefits of CPP.

²⁵ “CPP, when implemented in the United States, has the potential to eliminate the remaining traffic imbalance, as it has done overseas.” *In the Matter of Calling Party Pays Service Option in the Commercial Mobile Radio Services*, WT Docket No. 97-207, Comments of Sprint Spectrum, filed December 16, 1997, at 4. “We believe CPP will, under the right conditions, serve to equalize this ratio [the ratio of inbound to outbound calls] and thus serve the public interest.” *In the Matter of Calling Party Pays Service Option in*

ii. Caller ID and Collect Calling are Poor Substitutes for CPP

37. Services that identify callers could, in theory, be close substitutes for CPP. With caller ID, a wireless user can identify the phone number from which a call is placed and determine whether or not to accept the call. A fundamental problem with this approach is that there is no necessary correlation between the value of a call and the familiarity the called party has with the originating number. For example, a call from a hospital emergency room would likely be an unrecognized call, and thus it could well be a call not answered even though the called party would place a high value on such a call. Similarly, the value a subscriber places on calls made from a familiar number can vary widely from call to call.

38. Collect calling, in which the caller identifies him or herself avoids some of these problems. The called party is better able to identify high-value calls and hence accept a larger portion of them. But this is still an inexact screen; the value a subscriber places on a call from a familiar caller can vary widely. Furthermore, neither collect calling nor caller ID allows callers who highly value reaching a particular person to do so if the called party does not accept the charges. As with first-minute free and large buckets, neither caller ID nor collect calling send price signals to potential callers to discourage calls whose values are less than their costs. Finally, these products do nothing to share the costs of calling between the two parties, limiting wireless' ability to compete with wireline service.

the Commercial Mobile Radio Services, WT Docket No. 97-207, Comments of United States Corporation, filed December 16, 1997 at 4-5.

iii. Reciprocal Compensation is Currently a Poor Substitute for CPP

39. Another possibility might seem to be for a wireless provider to rely on receiving reciprocal compensation to cover the costs of completing wireline to wireless calls. If cost-based reciprocal compensation schemes could be agreed to between wireless and wireline operators, and these costs were directly passed on to consumers, then this could provide a reasonable substitute to CPP. As long as the ILEC maintains market power over the wireline end-user and as long as the ILEC holds substantial bargaining power over the wireless service provider, it is unlikely that this will result in a workable solution.

40. In the light of the ILECs' continuing market power, if ILECs have the ability to set the retail charges paid by a subscriber making a wireline-to-wireless call, they can be expected to charge monopoly prices. Indeed, they might even charge supra-monopoly prices intended to disadvantage wireless competitors by reducing wireline-to-wireless calling and thus making wireless services less attractive. Thus, some form of rate regulation of ILEC-set retail prices would almost certainly be needed. In contrast, if wireless carriers set retail CPP prices, then market forces (in the form of competition among wireless providers) could drive that price setting. Finally, ILECs could be expected to exercise their market power to obtain levels of reciprocal compensation that are not cost based.

D. The Existence of ILEC Market Power in the Provision of CPP Billing and Collection Services is Not Contradicted by the Commission’s Finding that ILECs Lack Significant Market Power in the Provision of Billing and Collection for Presubscribed Interexchange Services

41. The Commission has detariffed billing and collection services provided by LECs on behalf of interexchange carriers.²⁶ It did so based on the finding that “there is sufficient competition to allow market forces to respond to excessive rates or unreasonable billing and collection practices on the part of exchange carriers.”²⁷ It is important to recognize that interexchange carriers have billing needs that are very different from those of CPP. In particular, interexchange carriers to which consumers presubscribe have customer relationships that increase the likelihood that the bills will be paid. Moreover, the size of the average long distance bill is much higher than the likely average CPP bill, so bill-specific economies of scale are less of an issue.

IV. SUMMARY AND CONCLUSION

42. The data and analysis presented above demonstrate two fundamental points: (a) CPP billing and collection services constitute a relevant market for antitrust purposes; and (b) ILECs have substantial market power in this market. Thus, an ILEC’s refusal to provide billing and collection services in support of CPP is a threat to the efficient deployment of CPP.

43. In the absence of regulatory constraints, a profit-maximizing ILEC with market power in the provision of CPP billing and collection services will seek inefficient terms for the provision of

²⁶ *In the Matter of Detariffing of Billing and Collection Services*, CC Docket No. 85-88, released January 29, 1986 (“Billing and Collection Order”). 102 F.C.C. 2d 1150.

²⁷ Billing and Collection Order, ¶37.

these services for two reasons. First, the ILEC has incentives to exercise market power to earn supra-competitive profits from its billing and collection services. An ILEC can thus be expected to elevate its charges for these services above costs to the extent that regulators and the elasticity of demand allowed it to do so profitably. Second, the ILEC may seek inefficient, non-competitive terms for the provision of services to other carriers in order to raise rivals' costs.²⁸ To the extent that the ILEC competes with the carriers purchasing billing and collection services from it—or expects to compete with those carriers in the near future—the ILEC has incentives to raise the price and/or deny, delay or degrade the provision of these services to its competitors as a means of disadvantaging them. Doing so allows the ILEC to achieve, enhance, or maintain market power in the markets in which it competes with these disadvantaged rivals.

44. Clearly, wireless service providers are harmed when an ILEC exercises market power by setting inefficient terms for the provision of CPP billing and collection services. Public policy concerns arise because of the broader adverse effects that are triggered. The economy suffers efficiency losses because the incentives to invest in complementary R&D and physical infrastructure are reduced. Moreover, increasing the costs of CPP services results in raised prices to consumers, which lowers consumer welfare, and reduces economic efficiency by leading to inefficiently low levels of CPP use.

45. As CPP is rolled out on a broader scale, the Commission should monitor developments closely. To date AirTouch has been able to obtain CPP billing and collection services from some

²⁸ See, for example, S. Salop and D. Scheffman, "Raising Rivals' Costs," *American Economic Review Papers and Proceedings* **73** (May 1983): 267-271 and S. Salop and T. Krattenmaker, "Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price," *Yale Law Journal* **96** (December 1986): 209-293.

ILECs on reasonable terms. Yet AirTouch also has been unable to obtain these services on any terms from other ILECs. If some ILECs continue to refuse to provide CPP billing and collection services on reasonable terms, regulatory intervention may be needed.

V. EXHIBIT 1: CURRICULUM VITAE OF MICHAEL L. KATZ

EMPLOYMENT

July 1987 **Arnold Professor of Business Administration**

present **Director, Center for Telecommunications and Digital Convergence
University of California at Berkeley**

Joint appointment in the Economics Department and School of Business. Initial appointment as an associate professor July 1987. Promoted to full professor July 1989. Granted an endowed chair July 1995. Research on competitive strategy in systems markets, strategic standard setting, vertical integration, strategic alliances, and cooperative research and development. Chaired Strategic Planning Committee, Policy and Planning Committee, and the Economic Analysis and Policy Group. Teach MBA courses in business strategy and microeconomics, and doctoral courses in accounting and microeconomics. Author of economics textbook.

January 1994 to **Chief Economist**

January 1996 **Federal Communications Commission**

Responsible for integrating economic analysis into all aspects of Commission policy making. Reported directly to the Chairman of the Commission. Formulated and implemented regulatory policies for all industries under Commission jurisdiction, including cable and broadcast television, and local, long distance, and wireless telephony. Managed teams of lawyers and economists to design regulatory policies and procedures. Significantly strengthened Commission's ability to gather industry data and conduct empirical studies. Extensive public speaking to specialist and general audiences in the United States and abroad.

July 1981 to **Assistant Professor of Economics**

June 1987 **Princeton University**

Research on sophisticated pricing, standards development, cooperative R&D, and intellectual property licensing. Served as Assistant Director of Graduate Studies. Taught courses in microeconomics, industrial organization, and antitrust and regulation to undergraduate and doctoral students.

EDUCATION

D.Phil. 1982

Oxford University

Doctorate in Economics. Thesis on market segmentation and sophisticated pricing strategies.

A.B. *summa cum laude* 1978

Harvard University

As an undergraduate, completed all courses and general examinations for doctorate in economics.

AWARDS AND HONORS

Chairman's Special Achievement Award, Federal Communications Commission, 1996.

The Earl F. Cheit Outstanding Teaching Award, Berkeley, 1992-1993 and 1988-1989. Honorable Mention, 1996-1997.

Alfred P. Sloan Research Fellow, 1985-1988.

National Science Foundation Graduate Fellow, 1978-1981.

John H. Williams Prize (awarded to the Harvard College student graduating in Economics with the best overall record), 1978.

National Merit Scholar, 1975-1976.

GRANTS

Berkeley Committee on Research Grant, 1996-1997.

Berkeley Program in Finance Research Grant, 1990.

Researcher, Pew Foundation grant: "Integrating Economics and National Security," 1987-1990.

Principal Investigator, National Science Foundation grants:

"A More Complete View of Incomplete Contracts," joint with Benjamin E. Hermalin, 1991-1993.

"Game-Playing Agents and the Use of Contracts as Precommitments," 1988-1989.

"The Analysis of Intermediate Goods Markets: Self-Supply and Demand Interdependence," 1985-1986.

"Imperfectly Competitive Models of Screening and Product Compatibility," 1983-1984.

"Screening and Imperfect Competition Among Multiproduct Firms," 1982.

PROFESSIONAL ACTIVITY

Member of editorial boards of *California Management Review* and *Journal of Economics and Management Strategy*.

PUBLICATIONS

"Multiplant Monopoly in a Spatial Market," *Bell Journal of Economics* Vol. 11, No. 2 (Autumn 1980).

"Non-uniform Pricing, Output and Welfare Under Monopoly," *Review of Economic Studies* Vol. L, No. 160 (January 1983).

"A General Analysis of the Averch-Johnson Effect," *Economic Letters* Vol. 11, No. 3 (1983).

"The Socialization of Commodities," co-authored with L.S. Wilson, *Journal of Public Economics* Vol. 20, No. 3 (April 1983).

"The Case for Freeing AT&T," co-authored with Robert D. Willig, *Regulation* (July/August 1983) and "Reply to Tobin and Wohlstetter," *Regulation* (November/December 1983).

"Plea Bargaining and Social Welfare," co-authored with Gene M. Grossman, *American Economic Review* Vol. 73, No. 4 (September 1983).

"Firm-Specific Differentiation and Competition Among Multiproduct Firms," *Journal of Business* Vol. 57, No. 1, Part 2 (January 1984).

"Nonuniform Pricing with Unobservable Numbers of Purchases," *Review of Economic Studies* Vol. LI (July 1984).

"Price Discrimination and Monopolistic Competition," *Econometrica* Vol. 52, No. 6 (November 1984).

"Tax Analysis in an Oligopoly Model," co-authored with Harvey S. Rosen, *Public Finance Quarterly* Vol. 13, No. 1 (January 1985).

"Network Externalities, Competition, and Compatibility," co-authored with Carl Shapiro, *American Economic Review* Vol. 75, No. 3 (June 1985).

"On the Licensing of Innovations," co-authored with Carl Shapiro, *Rand Journal of Economics* Vol. 16, No. 4 (Winter 1985).

"Consumer Shopping Behavior in the Retail Coffee Market," co-authored with Carl Shapiro, in *Empirical Approaches to Consumer Protection* (1986).

PUBLICATIONS continued

- "Technology Adoption in the Presence of Network Externalities," co-authored with Carl Shapiro, *Journal of Political Economy* Vol. 94, No. 4 (August 1986).
- "How to License Intangible Property," co-authored with Carl Shapiro, *Quarterly Journal of Economics* Vol. CI (August 1986).
- "An Analysis of Cooperative Research and Development," *Rand Journal of Economics* Vol. 17, No. 4 (Winter 1986).
- "Product Compatibility Choice in a Market with Technological Progress," co-authored with Carl Shapiro, *Oxford Economic Papers: Special Issue on Industrial Organization* (November 1986).
- "The Welfare Effects of Third-Degree Price Discrimination in Intermediate Goods Markets," *American Economic Review* Vol. 77, No. 2 (March 1987).
- "R&D Rivalry with Licensing or Imitation," co-authored with Carl Shapiro, *American Economic Review* Vol. 77, No. 3 (June 1987).
- "Pricing Publicly Provided Goods and Services," in *The Theory of Taxation for Developing Countries*, D.M. Newbery and N.H. Stern (eds.), Washington, D.C.: World Bank (1987).
- "Vertical Contractual Relationships," in *The Handbook of Industrial Organization*, R. Schmalensee and R.D. Willig (eds.), Amsterdam: North Holland Publishing (1989).
- "R&D Cooperation and Competition," co-authored with Janusz A. Ordover, *Brookings Papers on Economic Activity: Microeconomics* (1990).
- Intermediate Microeconomics*, co-authored with Harvey S. Rosen, Burr Ridge, IL: Richard D. Irwin (1st ed. 1991, 2nd ed. 1994, 3rd ed. 1997).
- "Game-Playing Agents: Unobservable Contracts as Precommitments," *Rand Journal of Economics* Vol. 22, No. 3 (Autumn 1991).
- "Moral Hazard and Verifiability: The Effects of Renegotiation in Agency," co-authored with Benjamin E. Hermalin, *Econometrica* Vol. 59, No. 6 (November 1991).
- "Product Introduction with Network Externalities," co-authored with Carl Shapiro, *Journal of Industrial Economics* Vol. XL, No. 1 (March 1992).

PUBLICATIONS continued

- "Defense Procurement with Unverifiable Performance," co-authored with Benjamin E. Hermalin, in *Incentives in Procurement Contracting*, J. Leitzel and J. Tirole (eds.), Boulder, Colorado: Westview Press (1993).
- "Judicial Modification of Contracts Between Sophisticated Parties: A More Complete View of Incomplete Contracts and Their Breach," co-authored with Benjamin E. Hermalin, *Journal of Law, Economics, & Organization* Vol. 9, No. 2 (1993).
- "Systems Competition and Network Effects," co-authored with Carl Shapiro, *Journal of Economic Perspectives* Vol. 8, No. 2 (Spring 1994).
- "Joint Ventures as a Means of Assembling Complementary Inputs," *Group Decision and Negotiation* Vol. 4, No. 5 (September 1995). Also printed in *International Joint Ventures: Economic and Organizational Perspectives*.
- "Interconnecting Interoperable Systems: The Regulator's Perspective," co-authored with Gregory Rosston and Jeffrey Anspacher, *Information, Infrastructure and Policy*, Vol. 4, No. 4 (1995).
- "Interview with an Umpire," in *The Emerging World of Wireless Communications*, Annual Review of the Institute for Information Studies (1996).
- "An Analysis of Out-of-Wedlock Childbearing in the United States," co-authored with George Akerlof and Janet Yellen, *Quarterly Journal of Economics*, Vol. 111, No. 2 (May 1996).
- "Remarks on the Economic Implications of Convergence" *Industrial and Corporate Change*, Vol. 5, No. 4 (1996).
- "Regulation to Promote Competition: A first look at the FCC's implementation of the local competition provisions of the telecommunications act of 1996," co-authored with Gerald W. Brock, *Information Economics and Policy*, Vol. 9, No. 2 (1997).
- "Ongoing Reform of U.S. Telecommunications Policy," *European Economic Review*, Vol. 41 (1997).
- "Economic Efficiency, Public Policy, and the Pricing of Network Interconnection Under the Telecommunications Act of 1996," in *Interconnection and the Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference*, G. Rosston and D. Waterman (eds.), Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers (1997).

PUBLICATIONS continued

“Introduction: Convergence, Competition, and Regulation,” co-authored with Glenn A. Woroch, *Industrial and Corporate Change*, Vol. 6, No. 4 (1997).

“Public Policy and Private Investment in Advanced Telecommunications Infrastructure,” co-authored with Joseph Farrell, *IEEE Communications Magazine* (July 1998).

“The Effects of Antitrust and Intellectual Property Law on Compatibility and Innovation,” co-authored with Joseph Farrell, *The Antitrust Bulletin* Vol. 43, No. 3/4 (Fall/Winter 1998).

“Antitrust in Software Markets,” co-authored with Carl Shapiro, in *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*, J.A. Eisenach and Thomas Lenard (eds.), Boston: Kluwer Academic Publishers (1999).

“Regulation: The Next 1000 Years” in *Six Degrees of Competition: Correlating Regulation with the Telecommunications Marketplace*, Aspen Institute, forthcoming.

VI. EXHIBIT 2: CURRICULUM VITAE OF DAVID W. MAJERUS

ADDRESS

Charles River Associates, Inc.
5335 College Avenue
Oakland, CA 94618

Education	Johns Hopkins University , Baltimore, MD abd Ph.D. in Economics, 1992 M.A. in Economics, 1990 Carleton College , Northfield, MN B.A. in Chemistry, 1982
Awards	1987-90 The John Hopkins University Fellowship 1987 Patricia and Eugenia Castillo Award in Economics 1985-6 T. Rowe Price Fellowship 1982 Graduated with honors in chemistry and cum laude
Current Position	Principal, Charles River Associates December 1998 – present Economic analysis to support antitrust litigation. Particular industries analyzed include wireless telecommunications services, computer equipment, beer distribution, pharmaceuticals, and health care.
Professional Experience	Senior Economist, The Tilden Group January 1998 - December 1998 Economic analysis to support antitrust litigation in high technology and communications industries. Particular industries analyzed include both wireless and wireline telecommunications services, computer equipment, beer distribution, and health care. Provided economic expert services in a hospital merger investigation for the State of California.

Economist, **Department of Justice, Economic Analysis Group,**

1990 – 1997

Performed competitive analysis of proposed mergers as well as economic analysis of various economic arrangements that come before the antitrust division. Industries studied include the health care industry (including two litigated hospital merger cases), telecommunications (including the first two RBOC mergers), computer software, transportation, and several durable goods industries. Prepared to testify in several merger cases, none of which went to trial. Assisted in the preparation of the economic experts in two litigated hospital merger trial and one computer industry merger trial. Assisted in the lawyer's presentation of the government's case in three litigated merger cases, one civil price fixing case, and one criminal price fixing case. Also, prepared an affidavit as an economic expert in determining the appropriate methodology for calculating damages in a criminal price fixing case.

Research Assistant, **Foster Associates,**

1982 – 1984

Assisted in collecting and managing several small data bases of natural gas and oil production and used statistics on IBM PC's.

**Research
Papers**

Majerus, David W. "Durable Goods Monopoly with a Finite But Uncertain Number of Consumers," Economic Analysis Group Discussion Paper 92-3, 1992.

Majerus, David W. "Price vs. Quantity Competition in Oligopoly Supergames," *Economic Letters*, Vol 27, 1988, pp. 293-297.

Tollefsen, D. M., Majerus, D. W. and Blank, M. K. "Heprin Cofactor-II Purification and Properties of a Heprin-Dependent Inhibitor of Thrombin in Human Plasma," *Journal of Biological Chemistry*, Vol 257, 1982, pp. 2162-9.

Miletich, J. P., Majerus, D. W. and Majerus, P. W. "Patients with Congenital Factor V Deficiency Have Decreased Factor X-a Binding Sites on Their Platelets," *Journal of Clinical Investigation*, Vol 62, 1978, pp. 824-31.