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Subject Company: AT&T Corp.

Commission File No.: 1-01105

DECLARATION OF JAMES S. KAHAN

Senior Executive Vice President for Corporate Development

SBC Communications Inc.

In connection with the proposed transaction, SBC intends to file a registration statement, including a proxy statement of AT&T Corp., and other materials with the Securities and Exchange Commission (the SEC). Investors are urged to read the registration statement and other materials when they are available because they contain important information. Investors will be able to obtain free copies of the registration statement and proxy statement, when they become available, as well as other filings containing information about SBC and AT&T Corp., without charge, at the SEC s Internet site (www.sec.gov). These documents may also be obtained for free from SBC s Investor Relations web site (www.sbc.com/investor_relations) or by directing a request to SBC Communications Inc., Stockholder Services, 175 E. Houston, San Antonio, Texas 78205. Free copies of AT&T Corp. s filings may be accessed and downloaded for free at the AT&T Investor Relations Web Site (www.att.com/ir/sec) or by directing a request to AT&T Corp., Investor Relations, One AT&T Way, Bedminster, New Jersey 07921.

SBC, AT&T Corp. and their respective directors and executive officers and other members of management and employees may be deemed to be participants in the solicitation of proxies from AT&T shareholders in respect of the proposed transaction. Information regarding SBC s directors and executive officers is available in SBC s proxy statement for its 2004 annual meeting of stockholders, dated March 11, 2004, and information regarding AT&T Corp. s directors and executive officers is available in AT&T Corp. s proxy statement for its 2004 annual meeting of shareholders, dated March 25, 2004. Additional information regarding the interests of such potential participants will be included in the registration and proxy statement and the other relevant documents filed with the SEC when they become available.

Certain matters discussed in this statement, including the appendices attached, are forward-looking statements that involve risks and uncertainties. Forward-looking

statements include, without limitation, the information concerning possible or assumed future revenues and results of operations of SBC and AT&T, projected benefits of the proposed SBC/AT&T merger and possible or assumed developments in the telecommunications industry. Readers are cautioned that the following important factors, in addition to those discussed in this statement and elsewhere in the proxy statement/prospectus to be filed by SBC with the Securities and Exchange Commission, and in the documents incorporated by reference in such proxy statement/prospectus, could affect the future results of SBC and AT&T or the prospects for the merger: (1) the ability to obtain governmental approvals of the merger on the proposed terms and schedule; (2) the failure of AT&T shareholders to approve the merger; (3) the risks that the businesses of SBC and AT&T will not be integrated successfully; (4) the risks that the cost savings and any other synergies from the merger may not be fully realized or may take longer to realize than expected; (5) disruption from the merger making it more difficult to maintain relationships with customers, employees or suppliers; (6) competition and its effect on pricing, costs, spending, third-party relationships and revenues; (7) the risk that Cingular Wireless LLC could fail to achieve, in the amount and within the timeframe expected, the synergies and other benefits expected from its acquisition of AT&T Wireless; (8) final outcomes of various state and federal regulatory proceedings and changes in existing state, federal or foreign laws and regulations and/or enactment of additional regulatory laws and regulations; (9) risks inherent in international operations, including exposure to fluctuations in foreign currency exchange rates and political risk; (10) the impact of new technologies; (11) changes in general economic and market conditions; and (12) changes in the regulatory environment in which SBC and AT&T operate.

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DECLARATION OF JAMES S. KAHAN

Senior Executive Vice President for Corporate Development

SBC Communications Inc.

I, James S. Kahan, hereby declare the following:

Position and Qualifications

1. My name is James S. Kahan. I am the Senior Executive Vice President for Corporate Development of SBC Communications Inc. (SBC). I received a Bachelor s degree in Electrical Engineering from Purdue University and a Master s degree in Business Administration from the University of North Carolina. I began my professional career as an engineer with Western Electric in 1967. Prior to joining Southwestern Bell Telephone (SWBT) in 1983 I was transferred from Western Electric to Bell Laboratories, South Central Bell and AT&T. In 1984, I moved to SBC s Corporate Development Organization where I worked on the acquisition of Metromedia s cellular and paging systems and various other acquisitions. In 1988 I became Managing Director-Corporate Development and I was responsible for SBC s mergers and acquisitions activities and international business development. During this time I was involved in negotiating SBC s participation in a consortium which purchased an interest in Telefonos de Mexico (Telmex). I was appointed Senior Vice President for Corporate Development and became an Officer of SBC in 1992.

2. From 1993 through the present, I have been principally responsible for all of SBC s mergers and acquisitions activities and have participated in development of the company s long-term growth strategies.I have been actively involved in and responsible for the negotiation of SBC s acquisitions of Pacific Telesis Group, Southern New

England Telecommunications Corporation, Ameritech Corporation, and AT&T. I also was responsible for the negotiation of Cingular s acquisition of AT&T Wireless.

3. I have been directly involved in SBC s consideration of its strategic options to remain competitive in the rapidly transforming telecommunications industry. I am intimately familiar with the strategic imperatives that drove SBC to enter into the negotiations to acquire AT&T as well as with the analyses conducted in connection with our decision to undertake the merger.

Purpose of Declaration

4. In this Declaration I will:

Discuss the rapid transformation that the telecommunications industry has experienced;

Describe the effects of that transformation on legacy providers such as SBC and AT&T;

Explain why the combination of SBC and AT&T will create a stronger competitor with the resources necessary to respond to the forces that are reshaping the telecommunications industry; and

Describe the benefits of the acquisition for all consumers.

The Technological Transformation of the Telecommunications Industry

5. In the eight years since enactment of the Telecommunications Act of 1996 the telecommunications industry has been radically transformed. The Act created the conditions that stimulated unprecedented new competitive entrants and nurtured the development and enhancement of new technologies that have advanced at a breakneck pace to compete with and displace traditional telecommunications services. At the local level, a host of new providers have entered the market, using a variety of technologies to provide competition for traditional providers of local voice and data services.

6. During this time period, mobile wireless communication has exploded, driven by more efficient technologies, added spectrum and intense competition. The price for wireless communications dropped dramatically as providers offered large bundles of anytime minutes and nationwide calling, which was met with a corresponding surge in usage.

These developments have triggered a massive migration of traffic from local and long distance wireline networks onto wireless networks. Total wireless industry service revenues exceeded $97 billion in 2003, far surpassing wireline long distance revenues of $74 billion for the same period, and continue to take an increasing larger share of the total telecom marketplace.(1)

(1) US Telecom Data Book 3Q 04, Deutsche Bank Securities Inc., November 2004

7. In 2005, the number of wireless subscribers is projected to outnumber wireline access lines for the first time(2). In addition to shifting traffic from wireline to wireless networks, consumers are increasingly replacing both primary and second wireline access lines with wireless phones.

8. The increasing number of online households and use of applications like e-mail has also played an important role in the decline of long distance voice traffic. The number of households with internet access reached 64 million in 2003 and is expected to surpass 80 million by 2008(3).

9. Cable television operators have taken advantage of their extensive reach into American homes, and their very successful high-speed internet offerings, to offer voice telephony, both circuit switched and, as discussed below, using Voice over Internet Protocol (VoIP) technology.

10. The dramatic shift to broadband internet access over the past few years, through both cable modem and DSL, has vastly expanded the content and services available to customers. Broadband internet connections have increased from about 6 million in 2000(4) to 27 million in 2003(5). Now, new broadband internet technology is fueling the next transformational event in telephony. This new development, VoIP, is rapidly expanding as an alternative to local wireline and long distance calling from traditional operators. VoIP is offered by a wide range of companies, including multi-

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(2) Trend implied from FCC; Local Telephone Competition; Status as of June 30, 2004 ; December 22, 2004

(3) US Telecom Data Book 3Q 04, Deutsche Bank Securities Inc., November 2004

(4) Telecom Services 2001, JP Morgan; November 2, 2001

(5) US Telecom Data Book 3Q 04, Deutsche Bank Securities Inc., November 2004

system cable operators, and numerous other firms that did not exist a few years ago, such as Vonage, 8 x 8, and Broadvoice. As an example, Comcast (the nation s largest multi-system cable operator representing approximately 37% of homes passed) has announced that it will make VoIP available in twenty of its markets comprising 15 million households during 2005 and the remainder of its 40 million households by the end of 2006(6). Comcast projects 20% penetration of its households over five years, resulting in about 8 million consumer VoIP subscribers for that company alone(7). Industry analysts predict that two-thirds of American homes will have cable telephony either VoIP or circuit-switched available to them by the end of 2005. (8)

11. The developments described above have dramatically reduced the volumes of wireline long distance traffic and corresponding revenues. In 1998, the average household used 144 minutes per month for long distance calls; by 2002, this number was down to an average of 90 minutes per month.(9)

12. The consequences of this technological transformation are the increased commoditization of voice telecommunications services and a declining demand for traditional wireline local and long distance services as competitors continue to enter the telecommunications industry.

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(6) Comcast presentation at the 15th Annual Smith Barney Citigroup Entertainment, Media and Telecommunications Conference, January 10, 2005.

(7) Ibid.

(8) Bernstein Research, Cable and Telecom: VoIP Will Reshape Competitive Landscape in 2005, Dec. 17, 2004, at 2 and Exh. 1.

(9) FCC; Statistics of the Long Distance Telecommunications Industry Report ; May 14, 2003.

Effect of the Telecommunications Transformation on Legacy Providers

13. The vast technological changes of the past decade not only have changed customer demands and expectations, they also have had a significant effect on the legacy providers of telecommunications services. New advances in technologies, such as Internet Protocol (IP) and improvement in fiber optic transmission (e.g. wavelength division multiplexing), along with an influx of new competitive entrants in the late 1990s spurred a massive increase in telecommunications investment. After years of relative stability, capital spending across the industry surged to more than $120 billion in 2000, more than three times the amount spent in 1996.(10)

14. Today, there remains significant excess transport capacity. That excess capacity has led to low prices for customers, but also to reduced returns on investment for market participants. Some previously strong and respected companies no longer exist, or are only a shadow of their former selves.

15. Following this cycle of over-expansion, the industry began to experience a slowdown in spending by businesses on new telecommunications and information systems. During this time period, the industry was also struck with news of large scale fraud by certain participants. The combination of these developments, combined with severe price deflation for many core legacy telecommunications services, ultimately led to financial reversals for many telecom firms and an unprecedented shakeout in the industry.

(10) The industry spent 36% of its total revenues on capital investments in 2000, up from 18 percent in 1996. J.P. Morgan, Telecom Revenue and Capex Trends; May 29, 2002.

16. The resulting business failures led to the elimination of hundreds of thousands of jobs, and the loss of more than $2 trillion in market value. Since 2000, the capital markets have recognized the increased business risks inherent in the telecommunications industry and consequently constrained access to capital. They continue to view industry fundamentals harshly and even established, traditional firms have experienced increased costs of capital. At the same time, emerging competitors that do not carry the baggage of legacy systems and outmoded regulation have gained access to capital because their business models and strategies are designed for the new telecommunications technologies.

The Merger of SBC and AT&T Is A Necessary and Prudent Response To Rapidly Changing Industry Conditions.

17. SBC and AT&T have complementary strengths and product sets, and are focused on sales to different groups of customers.

18. SBC is a provider of voice, data, broadband and related services to consumers, businesses and wholesale customers, primarily on a local and regional basis in its 13 state region. SBC holds a 60% ownership interest in the largest U.S. wireless company, Cingular Wireless, and is one of the leading providers of residential broadband DSL services. At present, SBC is making a $4 billion investment to implement its initial roll-out of next-generation video and other IP-based voice and data services to 18 million households within three years.

19. AT&T provides a broad array of voice, data and IP-based services to customers on its global and national IP-based networks. It has a presence in more than 50 countries, allowing it to compete for the business of the largest global enterprises.

AT&T has been a leader in the development of innovative products through its AT&T Labs.

20. As described in the Declarations of Thomas Horton and John Polumbo, in 2004 AT&T refocused its business strategy away from trying to provide all communications services to all customers, and determined instead to concentrate on providing complex communications solutions to large enterprise customers. As Mr. Polumbo details, AT&T made an irreversible decision to cease actively competing for mass market customers and to scale back its operations to retain only the infrastructure necessary to continue serving its rapidly declining base of mass market customers.

21. The combined SBC and AT&T will be a stronger and more enduring U.S.-based global competitor than either company could be alone, capable of delivering the advanced network technologies necessary to offer integrated, innovative high quality and competitively priced telecommunications services to meet the national and global needs of all classes of customers worldwide. The combined company will have the resources, expertise and incentive to adapt the sophisticated products that AT&T has developed for its enterprise customers to the needs of small and medium businesses and consumers, and the marketing expertise and infrastructure to reach those customers.

The Merged Firm Will Be A Stronger Competitor.

22. SBC s experience is that larger business customers demand unique and more customized telecommunications systems. These customers have more knowledgeable staff (and many use consultants) to prepare rigorous bid requirements, analyze proposals, use advanced bid procedures (including online or electronic bidding designed to encourage competitors both to undercut each other s prices and to out-deal

each other by offering more advanced bid responses), and negotiate terms. Among larger customers, these bids tend to be extensively tailored to the specific requirements of the business. These customers are often willing to combine or separate components of their systems and award them to different suppliers in order to tailor the most cost and performance effective solutions. Indeed, SBC processed about 30,000 custom pricing quotations for business customers during 2004, including custom bids for large enterprise customers. SBC s definition of an Enterprise customer is a business that generally purchases more than $48,000 in telecommunications services annually from SBC. Many of these customers require complex telecommunications products and services.

23. SBC has sought since the late 1990s to become a significant provider to enterprise customers at the national level. In support of that objective, SBC began in 1999 to make substantial investments to expand its geographic reach and the scope of its products and services to appeal to large national enterprise customers. Despite the commitment of significant resources and investment to execute the National-Local strategy we envisioned at the time of the Ameritech acquisition, the results so far have fallen short of our expectations. We have come to realize that acquisition of a firm that has the strengths and resources we lack is far more prudent than incurring the massive investment and time that, without a substantial likelihood of return in a reasonable period of time, would be required to develop them independently.

24. The National-Local strategy was our organic attempt to achieve in a reasonable time frame the critical mass of customers needed to achieve the scale and scope economies required to compete successfully in the large business segment. It involved the initial expansion to 30 out-of-region cities with an interconnecting backbone

network. We have so far spent in excess of $1 billion over five years comprising facilities, start-up sales and marketing costs, and introduction of SBC s products. Still, we find it very difficult to win a prime supplier role for large enterprise customers for reasons explained below.

25. To attempt to address its limited geographic presence out of region, SBC has formed strategic and commercial relationships to use third party networks for transport and local access in areas where we lacked our own network facilities. The most significant of these has been with Wiltel. Large business customers are, however, often hesitant to award SBC major contracts because it cannot guarantee its ability to manage and control the networks over which the service is provided. The reason for this reluctance is that on-net traffic is better controlled by the primary network provider; there is less opportunity for delays or trouble at network-to-network interconnect points, less risk of missed orders or provisioning delays between networks, and on-net providers can control all of the network elements and give the highest degree of accountability and performance, among other reasons.(11)

26. SBC s efforts to expand out-of-region also included working to expand our product portfolio, especially for data and converged voice-data services. SBC s historic strength has been in the consumer and small-to-medium business segments of the marketplace. These consumer and smaller business customers, in addition to being more local or regional, have to-date required less sophisticated products and service, both for voice and data communications. Large enterprises, on the other hand, are extremely demanding of the most feature-rich, cost-effective, flexible, reliable, and secure

(11) *See* Declaration of Christopher Rice, ¶¶6-18.

communications services available. It is common for large enterprises to impose very high service level requirements on their network provider. These commitments, known as Service Level Agreements (or SLAs), can apply to a broad range of things, including minimum provisioning intervals, minimum up-times and availability, maximum tolerances for throughput delays or errors, etc., and often impose financial penalties for failure to perform to the specified SLAs. Like the task of creating a national and international network for purposes of geographic expansion, this product development effort to meet the needs of large enterprise customers is extremely costly and time consuming, and SBC continues to lag significantly behind companies like AT&T, MCI, and system integrators, which have continued to enhance and improve their abilities to provide the differentiating managed and system integration capabilities and sophisticated network applications, such as call routing and service management tools, that SBC has no track record in providing.

27. For the reasons described above, our competitive success is greatest among consumer and smaller business customers. As we have begun to compete for larger business customers, our success rate likewise has been greatest with customers that are predominantly within our region and those with fewer locations. By contrast, our success is much more limited with larger enterprises, particularly with those business customers with a large portion of their locations outside of our region. In fact, recognizing our competitive disadvantage with larger business customers that have a significant portion of their locations outside our region, our sales strategies identify and pursue only those accounts that we are best suited to serve, namely those that closely fit the description of our past successes. SBC focuses its attention on competing to provide

services to business customers in its sweet spot, which refers to businesses with locations predominantly located within SBC s footprint. That is, SBC typically does not even try to compete for business where more than half of the customer s locations are out of its footprint or where more than 20% of the traffic is international. This eliminates a large portion of potential enterprise customers. Given our relative lack of geographic scope, product portfolio and established reputation among this segment of the market, we do not believe that we will be able to compete effectively for a prime supplier role for the majority of the largest enterprise customers in the foreseeable future.

28. The combination of the complementary strengths of SBC and AT&T will result in a more effective competitor in all customer segments. The merged firm will be a financially stronger competitor, able to deliver the advanced network technologies necessary to offer integrated, innovative, high quality and competitively priced telecommunications services to all customers.

29. The combined company will have the financial ability to continue cutting edge research and product development. Because of its broader and more diverse customer base, the combined company will have a greater incentive to invest in R&D and capital improvements. SBC expects higher capital spending (totaling approximately $2 billion before synergies over the first few years after closing) than would likely have been incurred by the two companies absent the merger.

30. The combined company will have enormous incentive to innovate, raise productivity, and improve the price/performance of its products as it meets the continuing competitive threat of both traditional competitors, customer-premise equipment

manufacturers, and non-traditional rivals such as system integrators, cable companies, independent VoIP providers, and others.

The Transaction Will Benefit All Customers

31. The merger will preserve and enhance an important part of the nation s communications infrastructure. SBC intends to continue to invest in AT&T s facilities to keep pace with technology and market development. The merger maintains a strong U.S. company capable of competing with foreign firms to serve global customers including federal government installations critical to national security and defense. It will also preserve the vitality of an important provider of telecommunications services to national, state and local governments.

32. As described more fully in the Declarations of Christopher Rice and Hossein Eslambolchi, increased innovation will result from the combination of the research skills and infrastructure of AT&T Labs with SBC s access to capital and marketing expertise. SBC s emphasis on services to its residential and small and medium business customers will provide the incentive for more rapid deployment of AT&T s advanced technologies to those customers. SBC plans to increase capital expenditures to achieve this goal.

33. The transaction will result in a more rapid deployment of VoIP services, both in and out of SBC s region. As noted above, demand for and availability of VoIP services is expected to grow exponentially in the next few years. SBC intends to continue AT&T s CallVantage VoIP product both in and outside of SBC s existing service territory. Today, CallVantage trails other VoIP providers in penetration. After the merger, by combining AT&T s and SBC s IP backbones and putting SBC s consumer

focus behind VoIP, the merged firm will be able to deploy VoIP more rapidly and in a technically robust and cost effective manner. The integration of SBC s and AT&T s networks, as discussed in the Eslambolchi and Rice Declarations, is a significant underpinning of the combined company s ability to quickly and effectively roll out a robust VoIP product to both business and mass market customers.

34. The transaction also will permit the merged firm to provide improved quality of service to all consumers through integration of AT&T s broad national and global IP network with SBC s dense in-region network. As described in the Declaration of Christopher Rice, this will allow a more efficient and cost-effective distribution of network traffic, as well as the redeployment of redundant equipment and facilities. The reduced handoffs between networks, reduced choke points, reduced latency, and reduced packet loss resulting from integrating the networks all will lead to higher quality service, increased security, and increased reliability for all customers.

35. The integration of the networks also will result in a broader and more rapid deployment of services using IP networks. The combined firm will have a broader reach of MPLS than either firm provides on its own, facilitating carriage of Layer 2 and Layer 3 traffic on the same backbone, with increased scale driving costs down. SBC is presently deploying additional fiber optic facilities deeper into its local networks to enable delivery of IP-based voice and ultra-high speed data and video services. However, SBC lacks the extensive backbone network necessary to efficiently interconnect all of its content sources and subscribers. AT&T, on the other hand, has the backbone capabilities but lacks broad local access facilities. The combined assets will

create a seamless, high quality and cost-effective end-to-end IP network for next-generation applications.

36. As Christopher Rice and Hossein Eslambolchi discuss extensively in their Declarations, the merged firm will also be able to more quickly provide a broader range of products to all customers. Because of SBC s strong focus on residential and smaller business consumers, the merged firm will have the incentives to bring those customers innovative services and features originally developed for higher-end customers, and it will have the expertise, financial strength and incentives to do so.

37. The merger of SBC and AT&T will also result in substantial savings in both fixed and variable costs of operations. Anticipated synergies are over and above benefits expected from each company s on-going productivity initiatives in the absence of a transaction. Improved efficiencies and cost savings will be derived from areas such as: elimination of duplicate facilities; elimination of overlapping staff and related administrative expenses; consolidation of billing and operating support systems, greater utilization of network assets by combining the companies traffic streams (especially as applications increasingly become IP); greater scalability from business process improvements (including mechanization functions and higher flow-through rates); improved pricing from equipment and service providers; greater scalability from standardization and automation of IT systems and elimination of duplicative IT development projects; and reduction of off-net, third party network expenses. The synergies are anticipated to commence immediately and reach an annual run rate of $2

billion by 2008(12). SBC estimates the net present value of these synergies, net of costs to achieve, is approximately $15 billion. Wall Street research analysts have generally agreed that the synergies identified by SBC are reasonable and achievable.

38. Our ability to deliver existing and new services in a more efficient and cost-effective manner will benefit all of the customers of the combined company.

Conclusion

39. For the telecommunications industry the last decade has been a period of unprecedented technological transformation and competitive upheaval. The merger of SBC and AT&T will create a vibrant, innovative competitor capable of providing to all customers reliable, high quality services that neither company could achieve on its own.

I declare under penalty of perjury that the foregoing is true and correct.

Signed: /s/ James S. Kahan
James S. Kahan
Senior Executive Vice President for
Corporate Development
SBC Communications Inc.

Dated: February 18, 2005

(12) Expected synergies are described more fully in materials presented at the Special Analyst Meeting by SBC and AT&T on February 1, 2005 (available at www.sbc.com).

DECLARATION OF CHRISTOPHER RICE

Executive Vice President Network Planning and Engineering

SBC Communications Inc.

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DECLARATION OF CHRISTOPHER RICE

Executive Vice President Network Planning and Engineering, SBC

I, Christopher Rice, hereby declare the following:

Position and Qualifications

1. My name is Christopher Rice. I am Executive Vice President Network Planning and Engineering. I am responsible for enterprise-wide technology direction, new technology introduction, platform development, engineering, planning, network methods and procedures, deployment guidelines, advanced switching and routing, and SBC Laboratories.

2. Prior to becoming Executive Vice President Network Planning and Engineering, I held the position of Executive Vice President Services & CTO, Network Planning Engineering, Procurement, and SBC Laboratories, in which I was responsible for enterprise-wide technology direction, new technology introduction, platform development, engineering, planning, network methods and procedures, deployment guidelines, advanced switching and routing, and SBC Laboratories.

Purpose

3. The purpose of my affidavit is to explain the benefits to our customers that will result from SBC s acquisition of AT&T. These benefits fall into four broad categories: (a) benefits from network integration, (b) more innovation in networks and services, and faster roll-out of new and existing services to our customers, (c) our ability to make available to small and medium business customers, as well as to residential customers,

services that AT&T offers only to enterprise customers, and (d) new services that we will be able to offer with AT&T s network assets.

4. The combined company will be able to offer both current and new services that are better than current services either company offers or could offer on its own. The services of the combined company will have lower costs than would the services of either company on its own. These cost reductions include: savings on equipment purchases stemming from redeployment and more intense use of existing equipment; reductions in operating costs; savings from reduction and elimination of payments to other carriers, and; lower unit costs of traffic handling due to more efficient use of the combined network. We will also be able to roll-out new services more quickly, and to more customers and customer groups, than either company could on its own.

5. The combined company will be a more significant competitor, and will offer a broader assortment of services both in the SBC region, as well as outside the SBC region than either company could on its own.

Benefits of Network Integration

6. Once the acquisition is completed, SBC will integrate the current SBC network assets with the current AT&T network assets. While, in general, the networks are complementary, there are areas of overlap in network facilities. The overlap in network facilities will allow us to re-distribute traffic across the now-combined network to achieve a more efficient distribution of traffic, thereby carrying traffic more efficiently (at lower average unit cost) on the previously-under-utilized network segments, and saving the cost of augmenting facilities on the previously-over-taxed network segments. In some

places, network equipment or facilities that will no longer be necessary in their current application or location will be re-deployed in other locations or other services, thereby utilizing our capital more efficiently. And there will be network facilities that can be retired, thereby saving the recurring costs of maintaining and operating those facilities.

7. Currently (and historically) internet traffic is exchanged between the networks at a limited number of public peering points, because SBC is so much smaller than AT&T in internet traffic that SBC does not qualify as a Tier 1 carrier, and therefore is not permitted a direct peering relationship with AT&T. Based on the locations of these public peering points, in relation to the origination and destination points of the traffic, the required traffic routing is inefficient, consuming excess network resources. In addition, routing traffic through these peering points involves multiple traffic handoffs, further reducing efficiency and degrading quality.

8. Integrating the two networks will allow us to move SBC s internet-bound traffic (both domestic-bound and international-bound) onto AT&T s network, achieving greater economies of scale, and significantly allowing us to take on AT&T s Tier 1 status. This status will allow us to hand off internet traffic on a direct peering basis, and therefore more efficiently from an engineering viewpoint, and also without our paying to hand off that internet traffic to other carriers. This will increase efficiency by up to 25% to 50% over current traffic handling. In addition, with the AT&T backbone and the resulting increase in direct peering relationships, even where the internet traffic on our network is destined for other networks, we will carry that traffic on our network for a longer duration, thereby enabling us to better manage the quality of the traffic as it is delivered to the other carrier(s) with which we will have a (Tier 1) direct peering relationship. By thus reducing the total

number of hand-offs the traffic will experience as it travels among carriers, this integration will improve reliability, reduce latency (delay in signal flow), and therefore allow us to provide a higher quality of service (QoS).

9. The benefits of network integration are even more significant for business data traffic (including the traffic traditionally considered data, as well as voice over IP or VoIP , IP video, and other real-time IP-based traffic). With the combination of AT&T s and SBC s IP backbones and ATM/FR networks, more of our data traffic will remain on-net. The categories of traffic here under discussion include network-based virtual private networks, IP-enabled Frame Relay, ATM, managed data services, and optical switched Ethernet traffic destined for our IP backbone. This traffic is largely business traffic and has different characteristics than the internet traffic discussed above. Internet traffic is best effort traffic, such as surfing the web, which can tolerate latency and packet loss with relative little reduction in utility to the customer. The IP-based services traffic described above, on the other hand, is traffic in which the utility to the (usually business) customer is significantly affected by such issues as latency and packet loss. This traffic will experience significant quality improvement from remaining on-net, as our control over the network will allow us to control latency and packet loss, resulting in a much higher level of quality of service (QoS).

10. The higher QoS we can offer will allow us to offer Service Level Agreements (SLAs) that are more in line with the strict performance these business customers require. SLAs are service warranties from us to our customers. SLAs specify the performance of the services we offer our customers, provide clear rules for measuring that performance, and specify exactly what the consequences are should we fail to meet the quality of

service we have offered. SLAs typically include such performance metrics as: network latency (the time it takes a data packet to travel roundtrip between two points in the network), packet loss (the number of packets that must be resent), network uptime (the percentage of a given measure of time, such as a month, that the network will be available without problems), and mean time to repair (how long it will take us to remedy a problem). The ability to offer higher level SLAs than either company could offer independently will make our network more competitive.

11. Integrating the networks will also reduce the number of networks involved in moving traffic from origination to destination, thus further improving efficiency, reliability, and latency, all of which contribute to higher QoS and better SLAs. Networks generally are engineered to a high standard, specifically to move traffic between endpoints with no more than three hops on a given network. But when the routing between those endpoints involves two networks, as it often does, the traffic is subject to a total of up to at least six hops, even when each network is operating at high industry standards. (Similarly, if the hand-offs involve two networks working through a transiting carrier, the traffic may experience up to nine hops over the originating-transiting-and-terminating networks.)

12. Network integration will allow us to deliver traffic between any two points on the combined network at no more than three hops total, since all the traffic will be on a single network, which we will engineer. This will increase the efficiency of traffic handling, improving reliability, reducing latency, and packet loss (which affects data speed and quality). These efficiency improvements will lower the cost of handling the traffic, and will also allow us to offer tighter SLAs warranting significantly improved QoS. This reduction in

latency and packet loss are especially significant for real time services such as voice over IP (VoIP), video, video conferencing, and collaboration.

13. Network integration will also result in more traffic being carried entirely on our network. Increasing the on-net traffic over a greater percentage of the distance between the origination and destination points allows us to better manage that traffic. Better management again reduces latency, and therefore allows us to offer our customers better service. We will also be able to offer our customers improved reliability and security.

14. By decreasing the amount of off-net traffic, network integration will also decrease the off-net mileage, and therefore the mileage charges we will pay to other networks. In-region, the density of the SBC network will reduce mileage charges for the combined company, and therefore reduce access costs for our customers. Similarly, out of region, the density of the AT&T network will reduce mileage charges for the combined company that we must pay to other providers to gain access to our customers outside of our service territory, and therefore reduce access costs for our customers.

15. The integrated network will be significantly better suited to IP-based services, such as VoIP. As I mentioned previously, our customers will gain the benefits of our having greater control over reliability, security, and latency for on-net traffic. Part of the reason for these improvements comes from the difficulty of obtaining sufficient SLAs from the other networks involved in current multi-network traffic exchange. It is difficult for networks to work out SLAs among themselves that would allow us to offer our customers the SLAs they want when traffic must cross multiple networks. As a result, there are no commercial arrangements today for exchanging VoIP traffic with QoS guarantees. Once the traffic is

on-net due to network integration, we will be able to guarantee reliability, security, and QoS, and offer our customers the SLAs they want.

16. In addition, we will reducethe amount of traffic for which we have to pay other carriers for transiting our traffic as it moves from our network to another network. For example, we currently use Sprint, Level3 and WilTel (but not AT&T) for transit traffic. Much of that transit traffic will move onto the AT&T network, reducing the fees we currently pay these other carriers, and resulting in real savings.

17. The greater control over network performance we will gain through network integration will allow us to provide superior QoS even when the customer s traffic originates over the network of another broadband access provider and then is handed off to the combined company via a direct peering point. This will increase the number of customers to whom we can offer superior service. The combined company network will more often exchange traffic through direct peering points, which will enable us to offer this higher quality of service.

18. In many areas, the amount of traffic we are projecting for the SBC backbone primarily from such bandwidth-intensive services as video and VoIP will soon exceed our planning maximum, requiring us to augment the backbone with additional capacity. Network integration will allow us to rebalance traffic onto the AT&T backbone, thus avoiding the need to augment the SBC backbone.

Increased and Accelerated Investments In Innovation;

Rollout Of New Services; and the Provision of

A Broader Range of Services to a Broader Range of Customers

19. The combined company will increase the pace of innovation, roll-out new services more quickly, and offer those services to a broader range of customers, including making

available to SMBs and residential customers services that otherwise would be available only to enterprise customers. Moreover, the combined company will have a greater incentive to invest in the future than would either company alone. Because technical innovations are generally applicable to a broad range of services, the incentive to invest in such innovations is greatest when the resulting innovation can be offered across multiple services and to the broadest range of customers, allowing the innovator the maximum opportunity to earn the full benefits of the innovation. Today, AT&T focuses it service offerings only on enterprise customers, depriving it of the opportunity to reap benefits of innovation directly from other customer groups. And while SBC serves all customers, residential and business, SBC is primarily confined to only a portion of the country, reducing the scope over which it can realize the benefits of innovation. Once the transaction is completed, the combined company will be able to realize the benefits of innovation across the entire country and across all customer groups. This will increase the incentive of the combined company to engage in innovation. And the increased innovation will be a significant benefit to the public. AT&T has budgeted $200 million dollars per year for five years for research on a number of initiatives. SBC expects higher capital spending totaling approximately $2 billion (before synergies) over the first several years after closing than would likely have been incurred by the two companies absent the merger.

20. One current innovation is AT&T s development of an all-optical network that allows for remote click-through service provisioning. This means that, through the use of all optical components, including switching, customer orders for service can be fulfilled by remotely manipulating graphical representations and indications of network components, eliminating the need to physically connect and disconnect those components.

21. Customers benefit from this innovation in seeing shortened service intervals, through the elimination of the delays inherent in human intervention. In the future, customers will be able to provision services for themselves, once again reducing provisioning intervalsand increasing the accuracy of service provisioning. Finally, customers will also receive higher quality service on the all-optical network.

22. SBC also plans to adopt this click-through all-optical provisioning approach as broadly as possible across its existing network and services. In addition, SBC plans to offer this click-through all-optical provisioning approach not only to the enterprise customers of AT&T who currently benefit from it, but also across the full range of small and medium business customers SBC now serves and will serve after the acquisition, both in region and out of region.

23. There are additional innovations under development at AT&T and SBC that we will make available throughout the service reach of the combined network (both in region and out of region for the current SBC) and throughout the full range of customer groups (including residential customers and all sizes of business customers) that would otherwise have been available only to enterprise customers if offered by AT&T as a stand-alone company. These services include Storage Area Network, enhanced security solutions, and Internet Data Centers.

24. Storage Area Network (SAN) is a service offering in which a network offers hosted storage capacity at various points on its network. This service permits businesses to obtain secure redundant storage on a flexible basis, without incurring the capital cost of acquiring and installing the storage devices and infrastructure, and without incurring the operational costs of maintaining those storage facilities. While AT&T designed this service

for its enterprise customers, SBC will offer these services throughout the full range of its business customers, including small and medium businesses, both in the SBC region as well as out of region.

25. AT&T is currently developing proprietary security solutions which exceed the capabilities available from other sources, and plans to offer them to its enterprise customers. SBC will offer these services throughout the full range of business customers of the combined company, including enterprise, medium, and small businesses. AT&T offers a network protection service that identifies viruses and worms before they infect networks. This solution monitors network traffic for anomalies and when they are identified, it reroutes the abnormal packets for cleansing. Once the packets are sanitized, they are forwarded on to their destination. This ensures the customers networks do not become infected, thereby increasing network reliability and security. AT&T is also developing advanced network security capabilities they plan to offer in the future.

26. Internet Data Centers (IDCs) are carrier-controlled facilities for hosting and distributing IP-based services. The carrier provides the physical data centers, including power and emergency power, physical security, fire protection, and redundancy, as well as the personnel to support the services. Customers are the businesses that offer IP-based services to their customers and subscribers. The IDCs allow them to offer such services without incurring the capital cost of acquiring and installing the storage devices and infrastructure, and without incurring the operational costs of maintaining those storage facilities. Moreover, because the facilities and personnel who support them are shared among multiple customers, those customers achieve a level of efficiency and cost reduction no single customer could achieve on its own. SBC is outgrowing the capacity of

its IDCs, and has been planning to expand that capacity. Once the transaction is completed, SBC will be able to transfer its additional business to existing AT&T IDCs. This will not only reduce the capital costs SBC had been planning to incur, but also will increase the efficiency of the AT&T IDCs, by spreading their costs across greater demand. Moreover, while AT&T had offered IDC service only to its enterprise customers, SBC will offer those services to the full range of its business customers, including enterprise, medium and small businesses, both in region and out of region.

27. SBC also has a significant research and development organization that will contribute valuable innovation to the combined business. For example, SBC Labs developed the architecture and tight security in our business VoIP platform, which ensures that the VoIP platform and the customer network interface are secure from intrusion, as well as, viruses and worms. This is crucial to make VoIP as secure as the public switched telephone network (PSTN), and is complementary to AT&T s work on network security.

28. Another example is that SBC Labs has been working with the switch suppliers regarding their next generation IP Multimedia Services (IMS) solutions for soft switching to enable wireless/wireline integration. This would enable customers to have a dual mode handset and utilize their wireless (WiFi) VoIP service at home on their cell phone using WiFi, as well as receiving calls on the VoIP number on their dual mode handset via the GSM cellular network. And SBC Labs has also developed a software client for laptops and PDAs that integrates Cingular s GPRS/EDGE (and soon UMTS) cellular data services with SBC s Freedomlink WiFi service. The next release of the client will facilitate seamless roaming between SBC s Freedomlink service and the Cingular GPRS/EDGE (and soon

UMTS) service without the end user having to log back into either the Freedomlink service or the Cingular cellular data service when the user switches between the two networks.

Increased Competition and Competitiveness

Both In Region and Out of Region

29. The combined company will be a much more significant competitor, offering a broader array of services, to a broader spectrum of customers, both in region and out of region, than either company could have been on its own.

30. SBC and AT&T have traditionally focused on, and been successful with, complementary customer groups. While AT&T has been increasingly focused on enterprise customers, SBC has continued to focus on residential customers, and business customers of all sizes, including medium and small businesses. Selling to and supporting these different customer groups requires different products, network capabilities, sales forces, and technical skills.

31. AT&T lacks the resources to serve residential customers throughout the footprint of the combined company, and the dense ubiquitous network needed to serve those customers in the SBC region.

32. SBC on its own lacks the necessary array of enterprise services, and out of region lacks the dense ubiquitous network needed to support a broad array of services and customers. While SBC could, with enough time and money, build a sufficient out of region network, it is unlikely to have enough funding to be able to do so in any reasonable

period of time. Moreover, it would be shooting at a moving target, as the networks it would be trying to match would themselves continue to develop while SBC was building.

33. Therefore, the combined company will be able to offer a broader array of services, to a broader range of customers, both in region and out of region, than either company could on a stand-alone basis.

Conclusion

34. SBC s acquisition of AT&T will result in significant benefits. These include increased efficiency and service quality from network integration, increased innovation in network technology and services, and the availability of a broader range of services to a broader range of customers, including those available using AT&T s network assets.

I declare under penalty of perjury that the foregoing is true and correct.

Signature: /s/ Christopher Rice
Christopher Rice
Executive Vice President
Network Planning and Engineering, SBC

Dated: February 18, 2005

DECLARATION OF THOMAS HORTON

Chief Financial Officer and Vice Chairman

AT&T Corp.

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SBC, AT&T Corp. and their respective directors and executive officers and other members of management and employees may be deemed to be participants in the solicitation

of proxies from AT&T shareholders in respect of the proposed transaction. Information regarding SBC s directors and executive officers is available in SBC s proxy statement for its 2004 annual meeting of stockholders, dated March 11, 2004, and information regarding AT&T Corp. s directors and executive officers is available in AT&T Corp. s proxy statement for its 2004 annual meeting of shareholders, dated March 25, 2004. Additional information regarding the interests of such potential participants will be included in the registration and proxy statement and the other relevant documents filed with the SEC when they become available.

Certain matters discussed in this statement, including the appendices attached, are forward-looking statements that involve risks and uncertainties. Forward-looking statements include, without limitation, the information concerning possible or assumed future revenues and results of operations of SBC and AT&T, projected benefits of the proposed SBC/AT&T merger and possible or assumed developments in the telecommunications industry. Readers are cautioned that the following important factors, in addition to those discussed in this statement and elsewhere in the proxy statement/prospectus to be filed by SBC with the Securities and Exchange Commission, and in the documents incorporated by reference in such proxy statement/prospectus, could affect the future results of SBC and AT&T or the prospects for the merger: (1) the ability to obtain governmental approvals of the merger on the proposed terms and schedule; (2) the failure of AT&T shareholders to approve the merger; (3) the risks that the businesses of SBC and AT&T will not be integrated successfully; (4) the risks that the cost savings and any other synergies from the merger may not be fully realized or may take longer to realize than expected; (5) disruption from the merger making it more difficult to maintain relationships with customers, employees or suppliers; (6) competition and its effect on pricing, costs, spending, third-party relationships and revenues; (7) the risk that Cingular Wireless LLC could fail to achieve, in the amount and within the timeframe expected, the synergies and other benefits expected from its acquisition of AT&T Wireless; (8) final outcomes of various state and federal regulatory proceedings and changes in existing state, federal or foreign laws and regulations and/or enactment of additional regulatory laws and regulations; (9) risks inherent in international operations, including exposure to fluctuations in foreign currency exchange rates and political risk; (10) the impact of new technologies; (11) changes in general economic and market conditions; and (12) changes in the regulatory environment in which SBC and AT&T operate.

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DECLARATION OF THOMAS HORTON

Chief Financial Officer and Vice Chairman

AT&T Corp.

I, Thomas Horton, hereby declare the following:

1. I am the Chief Financial Officer and Vice Chairman of AT&T Corp. I offer this affidavit to explain AT&T s reasons for entering into the merger agreement with SBC and the basis for our belief that combining AT&T and SBC will create significant benefits for consumers as well as for AT&T s shareholders.

2. This affidavit is organized in two parts. First, I will briefly summarize the marketplace and other developments that led to AT&T s June 2004 decision to cease marketing mass market services generally and to focus AT&T on the provision of service to large enterprise and wholesale long distance customers. Second, I will explain that, although we believed that AT&T could prosper as a standalone firm focused on large commercial, government and wholesale customers, we concluded that a merger with SBC was likely to assure broader and more productive uses of AT&T s assets and capabilities. The merger is designed to create a combined company that will have a far greater ability to innovate, to invest, and to provide better and lower priced services for all consumers mass market as well as enterprise than either AT&T or SBC would in the absence of a merger.

3. At the enactment of the Telecommunications Act of 1996 (1996 Act), AT&T consisted of AT&T Wireless (which has since been divested and sold), AT&T s Consumer Services (which has ceased marketing to customers), AT&T Business Services (which serves

enterprise business, government and wholesale customers), and AT&T Laboratories (which conducts R&D and network design and engineering to support all of AT&T s businesses). AT&T s landline operations focused on the provision of long distance telecommunications services to mass market, enterprise, and wholesale customers and did not provide local exchange or exchange access services.

4. The 1996 Act sought both to open local services to competition and to allow the regional Bell Operating Companies (RBOCs) to provide long distance services once they opened their local markets to competition. The 1996 Act thus unleashed a flood of changes that eventually led AT&T to decide to cease marketing of mass market services and focus on enterprise, government and wholesale services.

5. First, even apart from the RBOCs entry, marketplace developments led to precipitous declines in AT&T s mass market revenues in its long distance business. AT&T s long distance customers were increasingly using wireless carriers to make long distance calls, greatly reducing long distance revenues. Likewise, the explosion in e-mail and Instant Messaging traffic had a dramatic and, from AT&T s perspective, negative impact on long distance calling. Although AT&T still carried some of this traffic pursuant to its wholesale arrangements with wireless carriers and ISPs, the wholesale margins it earned were far below its historic retail margins. Further, because of intense wholesale competition, much of the burgeoning wireless and e-mail long haul traffic was carried by AT&T s competitors.

6. Second, once the RBOCs began providing long distance service, AT&T believed that it was essential that it be able to offer the bundles of local and long distance to customers that the RBOCs would be able to offer. AT&T had already made substantial investments in various local

entry strategies that had not been successful. The only local entry option that AT&T was still actively pursuing was the purchase of combinations of loops, transport and switching (UNE-P) at TELRIC-based rates.

7. However, after the D.C. Circuit struck down the Commission s *Triennial Review Order*, and after the Commission determined that it would not defend further the order, it became clear that AT&T would not be able to offer local services using UNE-P. With growing competition from multiple quarters further undermining the economics of AT&T s mass market offerings, AT&T concluded that it no longer made business sense to market service to mass market customers.

8. At the same time, AT&T senior management believed strongly that AT&T had the ability to be a strong competitor in the provision of enterprise and wholesale long distance services. In our view, AT&T s state-of-the-art network and the R&D capabilities of AT&T Labs assured that AT&T could remain a leading provider of enterprise voice and data services particularly with respect to providing global and the most sophisticated services.

9. However, AT&T s senior management concluded that the opportunity to merge with SBC was a far superior option for AT&T s customers and AT&T s shareholders. In our view, there is little doubt that AT&T s shareholders and consumers would benefit more if AT&T s assets were combined with those of SBC.

10. In addition to the cost reductions that can be achieved by the merger, we believed that the merger will increase innovation and hasten the introduction of new services, including the development of new services that would likely not exist but for the merger. One of AT&T s most important assets is its AT&T Laboratories. Its scientists and engineers are dedicated to the

research and development of next generation telecommunications networks and systems. Their areas of expertise range from advanced data networking to software engineering, to systems integration, to speech technology. AT&T Labs is a global leader in many areas, but is perhaps best known for its work on network systems based on Internet protocol (IP).

11. As noted, AT&T does not own mass market local telephone facilities. As a result, the focus of AT&T Labs has been on AT&T s long distance network and services sold to large customers. In many cases, the basic principles and technologies developed by AT&T can, with additional effort and funding, be applied in other market segments. Post-merger, AT&T Labs will have the incentive and ability to apply its existing know how to technologies and services aimed at mass market customers. As explained in greater detail in the Affidavit of Dr. Eslambolchi, the merger can be expected benefit consumers in the short run by enhancing the ability of the combined firm to provide services over IP, to exploit superior speech/text technologies (such as natural language speech understanding systems), to provide more robust fraud and network security, and to provide superior provisioning and repair.

12. The merger will also foster increased R&D for a second, related reason. While many of the technologies and innovations being pioneered by AT&T Labs are (with further development work) transferable to mass market services, that situation is somewhat fortuitous. AT&T makes a decision to invest in R&D based on whether a project has a reasonable prospect of enhancing AT&T s enterprise business services and AT&T does not fund projects on the basis of how much the research may also advance mass market or other services that AT&T no longer actively offers.

13. Post-merger, that incentive situation will no longer be the case. The merged entity would have a powerful incentive to fund R&D at AT&T Labs based on how it will benefit a broad array of services. And because both companies are moving toward a unified IP-based network, research into IP-based services provided to enterprise customers is likely to generate significant spill over benefits with respect to IP-based services provided to mass market customers benefits that will be fully internalized by the combined company. In turn, this should increase the incentive to invest and almost certainly result in greater innovation in technologies and services aimed at mass market customers.

14. In this regard, it is important to stress that the full potential of IP-based capabilities cannot be realized simply by transforming the backbone network, but also requires a comparable transformation of the local network. An end-to-end IP network offers the prospect of a whole new host of innovative services that simply cannot be offered using the legacy, circuit switched network. As Dr. Eslambolchi explains in greater detail, a fully unified IP network will allow the creation of a single, integrated system for ordering, provisioning and maintaining voice, data and video services with interactive capabilities. The creation of a single, unified IP network will also allow for greater ability to share bandwidth, and hence enable better bandwidth-intensive services such as video teleconferencing, customer relationship management applications integrated with voice services, and unified voice and e-mail messaging. And a fully unified IP network will allow for the combined company to provide greater guaranteed quality service.

15. Finally, the increased scale and diversification of the company should lower the cost of capital for AT&T. Currently, Standard and Poor s assigns AT&T a long term investment rating of BB+. I anticipate that the combined company will have a higher, investment grade

rating. Further, a combined AT&T-SBC should, because of its greater scale and scope, have increased latitude to invest in R&D while maintaining any particular debt rating. Correlatively, the increased scale and scope of the network should lower the per-unit costs of R&D and allow the combined to company to realize the benefits of R&D on a more accelerated basis. Each of these factors will give the combined company a greater incentive to undertake innovation.

16. In sum, the merger will enable the existing inventions and innovations of AT&T Labs to be extended to services provided to mass market customers to whom AT&T is now no longer marketing. The broader scope and scale of the combined firm will also lead to greater R&D than would have occurred in the absence of the merger. The scale of the combined firm, and its reduced capital costs, will mean that the combined entity will be better equipped to make network investments and to roll out innovative new services.

VERIFICATION

I declare under penalty of perjury that the foregoing is true and correct.

Signature:	/s/ Thomas Horton Thomas Horton Chief Financial Officer and Vice Chairman AT&T Corp.
Date:	February 21, 2005

DECLARATION OF JOHN POLUMBO

President and CEO

AT&T Consumer Services

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DECLARATION OF JOHN POLUMBO

Introduction

1. My name is John Polumbo. I am President and CEO of AT&T Consumer Services (ACS). The ACS division of AT&T is responsible, among other things, for all aspects of providing and supporting traditional local and long distance services (collectively, mass market services). In my capacity, I am involved in all strategic decisions affecting ACS. In 2004, I participated in AT&T s decision to cease actively competing for mass market customers and to scale back our operations to retain only enough infrastructure to continue to serve existing customers at a high level of service as they migrate to active competitors. I am presently involved in overseeing the implementation of this strategy.

2. The purpose of this declaration is to describe the mass market services ACS provides and to explain AT&T s carefully considered 2004 decision to cease actively marketing traditional telephony services to the residential and small business customers that ACS has historically served. I will also explain the many steps AT&T has taken in response to that decision, including the cessation of active marketing, substantial reductions in headcount, termination of relationships with outside suppliers and the retirement of infrastructure. As I explain below, those actions are so extensive that AT&T s decision is now effectively irreversible as a practical matter. I will also describe the price increases AT&T has instituted since its decision to focus on providing world class communications and value-added services to large commercial, government and wholesale customers. Finally, I will describe how

quickly AT&T s mass market customer base is leaving AT&T and migrating to other mass market providers.

I. AT&T s Decision To Stop Actively Competing In The Consumer Market.

3. In the months and years leading up to AT&T s mid-2004 decision to cease actively competing for new customers, AT&T was faced with a strategic dilemma. Its long distance services (stand-alone long distance, or SALD) offered to residential and small business customers were under severe competitive attack and revenues associated with those services had been declining rapidly for some time.

4. This was due to several factors. New, powerful competitors had entered the market. For example, wireless carriers offering all-you-can-eat plans were stealing away more and more minutes from traditional IXCs every year. The RBOCs had won authority to offer interLATA services throughout the country, and they were competing aggressively and winning market share very quickly. E-mail and instant messaging were also reducing traditional carriers minutes of use.

5. In the context of these developments, pricing competition had become extremely fierce. AT&T s revenue per customer was declining rapidly, and its margins were decreasing steadily. AT&T was losing millions of SALD customers every quarter.

6. It quickly became obvious that AT&T could remain an active competitor in the residential and small business markets only if it could find a viable and profitable means of augmenting its long-distance offerings with economically viable local service offerings that would allow AT&T to match other wireline and wireless providers attractive all distance offerings. AT&T had already made substantial investments in various local entry strategies

that had not been successful. The only local entry option that AT&T was still actively pursuing was UNE-P.

7. In March of 2004, however, the D.C. Circuit vacated the Commission s unbundling rules. *USTA* v. *FCC*, 359 F.3d 554 (D.C. Cir. 2004). Shortly thereafter, the Government decided not to seek review of that decision in the Supreme Court, and AT&T recognized that the availability of UNE-P at TELRIC pricing would likely be effectively eliminated. AT&T had always understood that UNE-P would not be available forever, but now it was clear that UNE-P at TELRIC pricing would be phased out far more quickly than AT&T had previously projected.

8. Thus, the economics of AT&T s mass market offerings were expected to change radically for the worse in the very short term. Indeed, AT&T s costs were set to increase substantially even as new competitors (*e.g.*, cable) were entering and as its competitors costs were declining. Moreover, the decision simply underscored the uncertainty inherent in *any* UNE-based approach to entering the local market.

9. In the wake of these developments, AT&T made a difficult, but inevitable decision: it had to cease actively competing for residential and small business markets, but it sought to manage its change in strategy in the most customer-friendly way possible. AT&T thus decided to stop its marketing efforts, to stop attempting to compete with other mass market entrants on price, and selectively raise prices. The inevitable effect of these actions is that AT&T s mass market customer base will dwindle away over time through churn. AT&T redirected its focus and resources almost entirely to its enterprise, government and wholesale customers.

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10. During the eight months since this decision was made, the mass market environment has become even less attractive to AT&T. The FCC issued an order, on remand from the D.C. Circuit, that eliminates access to UNE-P for new customers and requires all carriers to transition their existing customers off of UNE-P within one year. Cable providers that have the ability to provide the full suite of local and long distance services as well as broadband Internet and video services have greatly expanded their VoIP telephony efforts. Other new VoIP providers continue to enter, and minutes continue to shift from traditional wireline providers to wireless and other providers.

11. AT&T has chosen not to take steps, however, that would cause immediate termination of service to its legacy customers, many of whom have been with AT&T for years. AT&T has accordingly been careful to maintain enough mass market infrastructure to continue to provide quality service to existing customers as they decide, on their own terms, how, when, and whether to move to another provider. In anticipation of the phase-out of UNE-P, therefore, AT&T has made efforts to negotiate commercial agreements with incumbent LECs that will allow it to continue to serve those customers who have not yet chosen another provider when the UNE-P transition ends. For example, AT&T has recently negotiated such an agreement with Qwest, which will allow a gentle glidepath for rate increases rather than abrupt rate shock upon the expiration of UNE-P. It remains the case, however, that AT&T is not actively seeking new residential or small business customers.

12. AT&T s strategic decision regarding the mass market includes its DSL and ISP offerings. AT&T has a minimal presence in the broadband Internet access market. It offers DSL almost exclusively in conjunction with its UNE-P-based local offer, with Covad through line splitting or line sharing arrangements. AT&T is no longer actively seeking new DSL

customers. Similarly, AT&T has also ceased all marketing efforts and has selectively increased prices for its WorldNet ISP service. AT&T has about 1.2 million customers for its WorldNet and DSL services. And AT&T has also ceased efforts to win new wireless customers. AT&T provides wireless services today only to several thousand customers in a reselling arrangement with AT&T Wireless that has been terminated. Moreover, AT&T has also cancelled plans announced last year to sell AT&T-branded wireless service to its mass market customers pursuant to an arrangement with Sprint.

13. The only mass market retail service that AT&T is today marketing to new customers is its AT&T CallVantage Service, a VoIP service that AT&T launched only shortly before its decision to cease actively competing for mass market customers. In the wake of the strategic refocus on business services, however, AT&T has substantially reduced investment in the marketing of this VoIP service. AT&T s VoIP service is now marketed predominantly through retail outlets such as Best Buy. AT&T has won a modest amount of customers for this service nationwide, with only a fraction of those in SBC s region.

II. AT&T Has Taken Extensive Steps To Implement Its Mass Market Strategy.

14. In the eight months since it made its strategic decision, AT&T has taken extensive steps to implement its new strategy. AT&T has taken numerous actions to scale back its mass market operations to only those functions necessary to provide high quality service and customer care functions for its declining customer base.

15. Specifically, after announcing its strategy change, AT&T immediately eliminated or drastically reduced its marketing and advertising activities. AT&T also undertook extensive headcount reductions, principally in the areas of marketing and customer care,

and AT&T will continue to scale back customer care functions and institute additional headcount reductions through 2005 as its customer base continues to decline. AT&T has also retired much of the physical infrastructure used to support these activities, including dialers, databases, computers and servers, 800 numbers, switches and high capacity lines, and much else.

16. In short, AT&T has already taken many actions to dismantle its mass market operations relating to its unilateral decision to cease actively competing for mass market customers.

A. Cessation of Active Marketing.

17. Immediately after the decision to stop competing for mass market local and long distance customers, AT&T ceased virtually all marketing and advertising activities in the consumer market. AT&T is simply no longer actively attempting to win new customers.

18. For example, AT&T immediately ceased almost all outbound telemarketing efforts. In the latter half of 2004, AT&T terminated most of its outside telemarketing vendors, and it also closed down its telemarketing centers. AT&T also immediately stopped almost all direct mail advertising, and now sends only those mailings that are legally required (such as notices concerning changes in rates or other required notifications).

B. Headcount Reductions.

19. After the decision to cease active marketing, AT&T also undertook a very substantial headcount reduction in its consumer operations.

20. ACS took substantial reductions in headcount in 2004, and further headcount reductions are expected in 2005.

21. Consistent with the strategy, which is to scale operations back to only those functions necessary to provide quality service for its dwindling mass market customer base, the reductions were focused on marketing, sales, and customer care functions. For example, AT&T has drastically reduced its headcount (including outsourcing to vendors) in sales and customer care functions. Similarly, the telemarketing division (including outsourcing), which handled both inbound and outbound telemarketing, was cut even more drastically, and the remaining employees perform more traditional customer care functions rather than telemarketing.

22. As a result of these large headcount reductions, AT&T does not have the capacity today to re-enter the consumer mass market on a basis consistent with historic practice.

C. Retirement of Infrastructure

23. AT&T has also retired much of the infrastructure that supported its marketing and customer care activities for mass market services.

24. For example, AT&T eliminated outbound telemarketing (OTM) mass market sales and ordering capabilities. Both the AT&T internal and external vendor OTM system capabilities were shutdown as of November 2004 *e.g.*, sales script support and ordering platforms, customer call list management applications, Integrated Voice Response (IVR) applications, outbound dialing applications, and outbound sales tracking and reporting applications. Additionally, all hardware (servers, PCs, dialers, IVR, etc.), network resources (800 numbers, T1s, switches, etc.), and licenses associated with these applications were eliminated. Today, ACS has no technical infrastructure to support a significant outbound telemarketing sales campaign.

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25. AT&T is also in the process of retiring the consumer marketing applications and technical infrastructure that allowed ACS to produce automated marketing campaigns. The acquisition infrastructure, data, and reporting applications associated with consumer marketing campaigns are being removed *e.g.*, customer prospect data, market and customer modeling data, tracking capabilities, and processes and campaign management reporting. Once this effort is completed ACS will no longer have the capability to launch a large scale automated acquisition campaign.

26. AT&T has also extensively dismantled the infrastructure supporting its mass market operations, including outbound telemarketing sales and ordering capabilities (*e.g.*, support and ordering platforms, Integrated Voice Response systems, outbound dialers, servers, PCs, 800 numbers, etc.), databases associated with customer marketing campaigns, 70% of the Integrated Voice Response infrastructure and other computers and servers used for customer service calls, and the infrastructure to support online billing.

27. While maintaining the capability to provide high quality service to existing customers, AT&T is also shedding infrastructure in the area of customer service, to coincide with the reduction of customers, call volume, and operational centers.

28. For example, AT&T s Consumer Integrated Voice Response (IVR) infrastructure was built to handle 200 million calls annually. This consisted of 56 IVRs and supported natural language voice recognition capabilities. As of today, AT&T has reduced this infrastructure to 30 IVRs, and they now support only 80 million calls annually, without natural language capabilities.

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29. AT&T has also reduced service desktop capacity, by eliminating PCs, servers, network resources, 800 numbers, and the like. In January 2004, AT&T s desktop infrastructure had the ability to support 17,000 customer service representatives. By the end of 2005 the remaining infrastructure will be able to support only a small fraction of this amount. Capacity and disaster recovery capabilities have been correspondingly reduced by 50 percent.

30. In short, given the extensive retirement of infrastructure, AT&T could not market and acquire new mass market customers unless it made a substantial investment to build a new information technology infrastructure.

III. AT&T Has Raised Prices For Its Residential And Small Business Services.

31. When ACS was seeking to build its all-distance customer base, it offered prices that generally were consistent with those available from the incumbent carriers. Following its announcement to cease actively competing for mass market customers and in the face of expected increases in the costs to provide service, AT&T is not competing on price with other active mass market providers. Although other mass market entrants, most notably the VoIP providers, continue to compete vigorously on price and continue to introduce new service packages at low rates, AT&T has raised its rates for many of its consumer and small business services to recover its increasing costs.

32. *Local Service.* In September, October, and November of 2004, AT&T raised many of its retail rates for local service in almost every state in the country. AT&T offers various local service packages (*e.g.*, Call Plan Unlimited Plus, Call Plan Unlimited, and Call Plan

Deluxe) that have different sets of features and range roughly from $12 to $30 per month. AT&T has raised the rates for almost all of these services in every state from $1 to $3.

33. AT&T has also raised rates for its all-distance bundles in some states. In December 2004, AT&T raised the retail rates for its One Rate USA and One Rate Advantage all-distance bundles in Massachusetts, Pennsylvania, Rhode Island, North Carolina, South Carolina, Tennessee, Iowa, New Mexico, Kansas, and Oklahoma by anywhere from $2 to $5.

34. *Toll Services.* AT&T also has a range of interstate toll service plans. Many of these plans have a monthly recurring charge, and AT&T has increased the charge on many of these plans (typically by either $1 or $2). AT&T also increased a number of basic rates for international service.

IV. AT&T s Customer Base Is Eroding Quickly And Will Continue To Do So.

35. AT&T s actions in the marketplace are having a predictable effect. Customers are canceling their service with AT&T and purchasing the services of AT&T s competitors. In the absence of active marketing to replace customers who leave, AT&T s customer base is eroding away quickly.

36. *Local and All-Distance Services.* As of June 2004, when AT&T decided to exit the mass market, AT&T had gained about 4.7 million local residential customers. As of December 2004, AT&T had approximately 4.2 million local residential customers a loss of half a million customers in just six months.

37. *Stand Alone Long Distance.* AT&T s stand-alone long-distance customer base has been declining for years. As recently as the first quarter of 2003, AT&T had 38.4 million SALD customers. By the end of 2003, that number had fallen to 30.3 million, and by the end of 2004 it had declined again to about 20 million a loss of almost half of its customer base in just two years.

38. *Revenues.* The effect of these customer losses can be seen clearly in AT&T s revenues. For example, AT&T s revenue from stand-alone long-distance voice and other services in the first quarter of 2003 was $2.1 billion. For the fourth quarter of 2004, such revenue had shrunk to only $1.1 billion.

39. ACS s total revenue was $9.4 billion in 2003, and $7.9 billion in 2004.

40. The FCC s recent decision in the *Triennial Review* Remand Order, which will shortly raise the costs of UNE-P and requires all carriers to transition off of UNE-P within one year, may accelerate these trends.

I declare that the foregoing is true and correct.

Signature:	/s/ John Polumbo John Polumbo President and CEO AT&T Consumer Services
Date:	February 21, 2005

DECLARATION OF HOSSEIN ESLAMBOLCHI

President, Global Networking Technology Services and AT&T Laboratories,
CIO and CTO of AT&T Corp.

In connection with the proposed transaction, SBC intends to file a registration statement, including a proxy statement of AT&T Corp., and other materials with the Securities and Exchange Commission (the SEC). Investors are urged to read the registration statement and other materials when they are available because they contain important information. Investors will be able to obtain free copies of the registration statement and proxy statement, when they become available, as well as other filings containing information about SBC and AT&T Corp., without charge, at the SEC s Internet site (www.sec.gov). These documents may also be obtained for free from SBC s Investor Relations web site (www.sbc.com/investor_relations) or by directing a request to SBC Communications Inc., Stockholder Services, 175 E. Houston, San Antonio, Texas 78205. Free copies of AT&T Corp. s filings may be accessed and downloaded for free at the AT&T Investor Relations Web Site (www.att.com/ir/sec) or by directing a request to AT&T Corp., Investor Relations, One AT&T Way, Bedminster, New Jersey 07921.

SBC, AT&T Corp. and their respective directors and executive officers and other members of management and employees may be deemed to be participants in the

solicitation of proxies from AT&T shareholders in respect of the proposed transaction. Information regarding SBC s directors and executive officers is available in SBC s proxy statement for its 2004 annual meeting of stockholders, dated March 11, 2004, and information regarding AT&T Corp. s directors and executive officers is available in AT&T Corp. s proxy statement for its 2004 annual meeting of shareholders, dated March 25, 2004. Additional information regarding the interests of such potential participants will be included in the registration and proxy statement and the other relevant documents filed with the SEC when they become available.

Certain matters discussed in this statement, including the appendices attached, are forward-looking statements that involve risks and uncertainties. Forward-looking statements include, without limitation, the information concerning possible or assumed future revenues and results of operations of SBC and AT&T, projected benefits of the proposed SBC/AT&T merger and possible or assumed developments in the telecommunications industry. Readers are cautioned that the following important factors, in addition to those discussed in this statement and elsewhere in the proxy statement/prospectus to be filed by SBC with the Securities and Exchange Commission, and in the documents incorporated by reference in such proxy statement/prospectus, could affect the future results of SBC and AT&T or the prospects for the merger: (1) the ability to obtain governmental approvals of the merger on the proposed terms and schedule; (2) the failure of AT&T shareholders to approve the merger; (3) the risks that the businesses of SBC and AT&T will not be integrated successfully; (4) the risks that the cost savings and any other synergies from the merger may not be fully realized or may take longer to realize than expected; (5) disruption from the merger making it more difficult to maintain relationships with customers, employees or suppliers; (6) competition and its effect on pricing, costs, spending, third-party relationships and revenues; (7) the risk that Cingular Wireless LLC could fail to achieve, in the amount and within the timeframe expected, the synergies and other benefits expected from its acquisition of AT&T Wireless; (8) final outcomes of various state and federal regulatory proceedings and changes in existing state, federal or foreign laws and regulations and/or enactment of additional regulatory laws and regulations; (9) risks inherent in international operations, including exposure to fluctuations in foreign currency exchange rates and political risk; (10) the impact of new technologies; (11) changes in general economic and market conditions; and (12) changes in the regulatory environment in which SBC and AT&T operate.

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DECLARATION OF HOSSEIN ESLAMBOLCHI

**President, Global Networking Technology Services and AT&T Laboratories,
CIO and CTO of AT&T Corp.**

I, Hossein Eslambolchi, hereby declare the following:

1. My name is Hossein Eslambolchi. I am President of AT&T s Global Networking Technology Services (GNTS), President of AT&T Laboratories, and AT&T s Chief Technology Officer (CTO) and Chief Information Officer (CIO). As President of AT&T Labs, I lead the research and development undertaken by some of the world s leading scientists and engineers. I am also responsible for the network engineering, design, development, and operations of AT&T s global network. I am a member of AT&T s Executive Committee, which is led by AT&T Chairman and CEO David W. Dorman.

2. I have a B.S., M.S. and Ph.D. from the University of California San Diego. I joined AT&T Bell Laboratories in 1985 and have more than 17 years of extensive experience in design, development, and operation of packet switching and other advanced networks. I am an inventor of more than 500 worldwide patents issued, pending, and in preparation. My work has been published in 18 technical publications, and I am on the IEEE editorial board of the Journal of Network and Systems Management.

3. In this affidavit, I will briefly describe AT&T Labs, its historic and current activities, and its role in creating, maintaining, and enhancing the global AT&T network. I will then describe how the combination of AT&T and SBC will lead to greater innovation. First, it will increase innovation designed to enable the current and future advanced services developed by AT&T Labs, for large enterprise customers, to be extended to residential and

small business consumers. Second, the greater scope of the combined company, and AT&T s and SBC s complementary strengths, should assure that the combined company will invest more in research and development, and be more effective in bringing new products and services to consumers, than the two companies would be in the absence of the merger.

AT&T Laboratories

4. AT&T Laboratories is a direct descendant of the Bell Telephone Laboratories. Bell Labs had been retained by AT&T during the 1984 divestiture of the Bell System. When AT&T spun off Lucent in 1995, Bell Labs was split into two entities. The portions of Bell Labs devoted to research, development, and design of telecommunications networks and advanced network services were reconstituted as AT&T Labs. Innovations developed by Bell Labs and its descendants have launched or proved instrumental to the development of basic telephone service, facsimile services, sound recording technologies, cellular telephone service, the Internet, the transistor, solar cells, the C++ computer language, the creation of the UNIX operating system, and various speech and video recording and transmission technologies.

5. AT&T Labs continues in the tradition of Bell Labs. AT&T Labs is recognized as one of the world s leading corporate R&D organizations focused on developing next-generation solutions for the Internet and the world s networks. AT&T Labs is currently supported by many of the world s best scientists, engineers, and IT specialists including experts in advanced data networking, software engineering, systems integration, and speech technology. AT&T s research specialists include members of the National Academy of Science or National Academy of Engineering, and many more are elected Fellows of

prestigious industry organizations such as the IEEE and the ACM. AT&T Labs scientists and researchers apply worldwide for new patents at a rate of nearly two per business day.

6. The innovative strengths of AT&T Labs continue to provide the basis for the global leadership AT&T maintains in the efficiency, reliability, speed, scope, and service quality of its network. AT&T Labs scientists and engineers have allowed AT&T to develop, maintain, and operate the most advanced, sophisticated networks. AT&T Labs has been instrumental in providing AT&T with the ability to integrate software components, integrate network components, develop processes to manage networks, develop new products and services, and ensure that network capabilities can deliver services on both the smallest and largest scales. AT&T Labs is also leading AT&T s efforts to transform its existing communications networks from multiple, legacy systems, processes, and facilities to a uniform, advanced network supported by a single set of integrated systems. Those systems and networks are being designed using Internet Protocol (IP) capabilities that will enable delivery of the next generation of advanced communications services.

The Merger Will Allow AT&T Labs Innovations to be Extended to Residential and Small Business Customers.

7. In the absence of this transaction, AT&T Labs research and development efforts would continue to be devoted largely to developing capabilities designed for services provided to large enterprise customers. That is so because AT&T has ceased actively marketing traditional local and long distance services to small business and residential customers. The potential benefits of R&D, however, are not so limited. Breakthroughs that AT&T achieves in R&D aimed at developing new enterprise services, or providing those services more

efficiently, often will have relevance to other services that could potentially be offered over AT&T s network facilities, to the mass market and small businesses.

8. By combining the complementary businesses of SBC and AT&T, the merger should lead to the development of an array of new mass market services and capabilities. The combined entity would have the incentive to undertake the additional work necessary to take the advancements AT&T has made, and will continue to make, with respect to enterprise services and apply them to mass market offerings because of greater economies of scale and the ability to cost effectively market them.

9. Examples of the types of initiatives under development by AT&T that could be extended to smaller business customers and residential customers include the following:

10. *IP-Based Video.* AT&T has focused much of its research and development efforts on developing an IP environment that can support a variety of communications services, including video services. AT&T has also developed a broad range of innovations to make the delivery and use of video services far more effective than is achievable today. These innovations include diagnostic tools that allow network operators to fine-tune their video delivery capabilities to produce higher quality and far more efficient transmission. They include as well the ability to record and index a variety of audio and video inputs, the ability to search audio and video sources using automatic speech recognition technologies and video search engines, capabilities to alert customers to specified types of newly received information, and the ability to convert various types of broadcast information for use in many different types of consumer devices. They also include various tools that will allow individuals to search, collect, review, and manipulate video images and to use video services in conjunction with voice and data services. In addition, AT&T Labs continues to

work on improving video compression technology and Quality of Service (QoS) capabilities in order to enhance video conferencing capabilities for enterprise customers. That should permit the integration of traditional television-like services with interactive, voice, and data services delivered to the home. As noted below, AT&T s ongoing innovations in developing general broadband platform capabilities should also provide various advanced service benefits for smaller business and residential customers.

11. *Speech/Text Technologies.* AT&T is a global leader in the development of text-to-speech engines, synthesized voice capabilities, automatic speech recognition, and natural language speech understanding systems. These technologies have the potential to allow real-time translation of written text to spoken speech (and vice versa), simultaneous foreign language translation capabilities, and exceptionally efficient customer care and relationship management capabilities. Intelligent language systems will be a crucial component of the next generation of services that enable customers of all types to select, alter, and manage their communications purchases, as well as to overcome service and billing difficulties. Accelerated deployment of these capabilities into residential and small business offerings holds the potential for enormous public benefits, particularly for visually, hearing, and speech-impaired customers.

12. *Fraud Reduction And Security Services.* AT&T is a leader in the development of fraud reduction and network security services for business customers. It is developing capabilities to detect unauthorized use of communications services and customer information, as well as to safeguard information transmitted in the course of e-commerce and other sensitive communications services. The company was a leader in offering online security monitoring services that can actively block and quarantine anomalous behaviors

detected within applications a service that most managed security service providers (MSSPs) have not added even a year and a half after AT&T introduced the feature. The more rapid detection of the unauthorized use of communication services permits customers and providers to flag potential identity theft situation quickly, before significant damage is done. Similar security capabilities will also allow customers to transact business over the Internet with less concern about identity theft benefiting both the customers as well as the retail segment. AT&T currently offers a security alerting and notification system to its enterprise customers AT&T Internet Protect℠ that could be made available to small businesses and residential consumers as a result of the transaction. This service offers advanced notice regarding potential real-time attacks (viruses, worms and distributed denial of service (DdoS) attacks) that are in the early formation stages. Similarly, AT&T s network firewalls could be expanded to enable personal firewalls leveraging the capabilities of a robust network. (*Frost & Sullivan* s recent analysis, *World Managed Security Services Markets*, selected AT&T as the recipient of the 2004 Customer Solutions Excellence Award for having the broadest scope of services among all MSSPs). As demand for anti-fraud and security services among mass market and small business customers continues to grow, these innovations may be adapted and developed for all customer segments

13. *Service Provisioning And Repair.* AT&T has developed, and is enhancing, systems that use artificial intelligence overlays and speech recognition to shorten and simplify the ordering, provisioning, and repair of services. These capabilities were developed for enterprise customers, but can readily be extended to residential customers and small businesses providing them with more responsive customer support as well as lower cost..

14. *Applications Support And Network Efficiency.* AT&T is continuing to develop a compelling platform that will allow enterprises to deploy applications rapidly and on a global basis through AT&T s secure IP network. Application aware networks (AANs) will allow computing power to be purchased on an as needed basis with computing power allocated based on customer-specific rules. Similarly, with AT&T s hosted storage solutions, customers can use AT&T s network as a primary place to store data or as a disaster recovery backup without having to invest and maintain complex storage systems. The combined company will be able to make these capabilities more readily available to smaller businesses. More broadly, AAN represents an acceleration of the convergence of the networking and IT industry, and this convergence could spawn a whole new generation of technology innovation, better service and lower costs for customers.

15. Finally, I would emphasize that achieving these initiatives will permit the combined company to be a more effective competitor in the delivery of services to small business and residential customers. By enhancing the delivery and development of video services, ensuring that customer care improves, enabling the integration of voice, video and data services, and providing for a rich and secure interactive service environment for consumers, the combined entity will be a more effective competitor in providing video and other services.

The Merger Will Result In More R&D.

16. The merger should also foster increased research and development of advanced services for the benefit of all customers because, by combining the complementary businesses of SBC and AT&T, the merger will create a single entity that provides the full range of telecommunications services across all customer classes over local as well as long distance

networks. The broader scope of the combined entity will increase the likelihood that R&D will pay off in some segment of the industry, reducing the risk of R&D investment. In analyzing the costs and benefits of engaging in R&D today, AT&T is able to capture only the benefits of the R&D with respect to a fraction of the services that could be potentially provided over its network. Post-merger, the combined entity s increased scope will increase the likelihood that it will be in its economic self-interest to increase its research and development of advanced services.

17. Further, the benefits of developing advanced capabilities will be spread across a far broader network and customer base, reducing the unit costs of R&D investment and increasing the effective returns derived from the prompt and full development of advanced capabilities. In addition, SBC s greater financial strength, its local network technical expertise and personnel, and the resulting economies of scale in procurement and deployment can be expected to lower the cost, increase the returns, and increase the efficiency and thus the pace and breadth of innovation, including deployment of advanced networks and services.

18. The transformation from existing to advanced networks that should be accelerated and enhanced as a result of the merger will put in place the necessary building blocks to provide public benefits associated with the next generation of advanced, IP-based broadband services. Consumers will more quickly realize the benefits of a unified, advanced telecommunications network capable of delivering the full range of voice, data, and video services to an ever-expanding array of personal and business devices. Once telecommunications service providers can surmount the difficulties created by the multitude of legacy software and hardware systems, the artificial divisions of applications and systems, and the limitations of traditional switched-based networks, they can provide

consumers of all types with the ability to choose, provision, change, and maintain their services with an almost unimaginable degree of speed, efficiency, and efficacy. The converged network will provide a highly efficient and cost effective platform for communication not only in North America, but also in Europe and Asia providing increased global competitiveness for U.S.- based businesses.

19. The resulting ability to offer services over IP will permit customers to use wireline and wireless devices to access quickly the full capabilities of an integrated, intelligent network that is capable of providing a vast array of voice, data, and video services that include interactive capabilities. AT&T is developing a rich customer environment for the delivery and manipulation of all communications services through the implementation of a single, unified system and operational process designed to support the efficient delivery of those services. The resulting improvements in the manipulation, integration, and delivery of services, in turn, is the basis for the next generation of IP-based services.

20. The enhancement of the network s capabilities is an important component of this broader, advanced services strategy and will provide important public benefits. Already, increased deployment of voice over Internet Protocol (VoIP) services in the business environment allows customers to have the benefits of a converged data and voice network. VoIP allows a sharing of network and access facilities for multiple services, eliminating the operating costs and inefficiencies associated with separate networks and allowing bandwidth to be efficiently shared. Further development of VoIP to produce a single, unified environment for voice and data services will serve as the basis for more widespread and efficient deployment of high bandwidth services such as advanced video teleconferencing, customer relationship management (CRM) applications integrated with

voice services, and unified voice mail and e-mail messaging. VoIP and other IP services, like video conferencing, are important elements of enabling remote workers to be productive regardless of physical location. This has important public benefits including enabling more flexible work environments, as well as reducing the need to commute to distant offices. It also allows U.S.-based companies to do business overseas more effectively, with their global workers integrated into critical business and communications systems.

21. In addition to these broad benefits, the complementary aspects of the merger should lead to innovations related to network development that provide the following, more specific benefits:

22. *Broadband Platform And Services.* Many AT&T solutions rely on the end-users having broadband access. Given SBC s extensive DSL footprint, AT&T can bring its considerable technological resources to enable those customers to gain many more robust services, as well as greater quality of services through AT&T s Multi-Protocol Label Switching (MPLS) and QOS capabilities. By being able to direct Internet traffic and being able to dynamically allocate bandwidth, customers can expect to see enhanced broadband services. In fact, AT&T s experience in broadband, wireless and wireline uniquely positions the new company to drive the convergence of these various platforms to the benefit of all customers.

23. *RFID (Radio Frequency ID).* AT&T has been partnering with some of the nation s leading retailers to develop a scalable standards-based implementation of an RFID solution. Providing a network-based RFID solution will accelerate the standardization of technologies and operations across suppliers and retailers. Ultimately, RFID could

significantly increase the capabilities of U.S. manufacturers and retailers to respond to changes in supply and demand more rapidly. Customers would benefit from greater product availability, lower costs and products more tailored to their needs.

24. *Intelligent Optical Network.* Other public benefits of the merger should arise from the accelerated and more widespread deployment of AT&T s initiative to develop a nationwide intelligent optical network. That network is designed to increase the speed of data transmission between major U.S. and international cities. Enhancing the intelligence built into the network also provides the basis for improvements in the features and services offered to customers. AT&T is moving to a new, all-optical network by doubling and then quadrupling the amount of information that can be sent over optical fiber. The new network is designed to carry signals without regeneration over much longer distances, to restore service faster in the event of a failure or disaster, and to shorten dramatically the provisioning time for new, high-speed circuits for business customers who have direct access to the network, among other advanced capabilities. Increased intelligence of the network comes from the use of advanced multiplexing technology and intelligent optical switches, which enable quick recovery from failure through use of automatic re-routing and support automatic provisioning. Rather than waiting months for a high-speed circuit to be provisioned, customers will be able to secure bandwidth on demand through point and click provisioning. Through the combined company s ongoing investments in MPLS data networks and QOS technologies, the global AT&T IP-network will continue to enhance the combined company s ability to deliver IP traffic efficiently and effectively. These and other AT&T initiatives will enable customers to build a greater part of their business on an

integrated basis with linkages between suppliers, distributors, manufactures and customers, thereby reducing costs and taking advantage of a secure, global IP environment.

25. *Integrated, Online Processes.* Related innovations designed to streamline and automate operations are focused on developing an integrated, on-line system to support multiple services, permitting customers to manage their communications needs on-line from quote to cash. Ordering, provisioning, billing, continued maintenance, and revision of service requirements will all be executed with greater speed, enhanced flexibility and lower costs by customers of all types.

I declare that the foregoing is true and correct.

Signature:	/s/ Hossein Eslambolchi Hossein Eslambolchi CIO, CTO, and President, GTNS AT&T Corp.
Date:	February 21, 2005

DECLARATION OF

DENNIS W. CARLTON

and

HAL S. SIDER

In connection with the proposed transaction, SBC intends to file a registration statement, including a proxy statement of AT&T Corp., and other materials with the Securities and Exchange Commission (the SEC). Investors are urged to read the registration statement and other materials when they are available because they contain important information. Investors will be able to obtain free copies of the registration statement and proxy statement, when they become available, as well as other filings containing information about SBC and AT&T Corp., without charge, at the SEC s Internet site (www.sec.gov). These documents may also be obtained for free from SBC s Investor Relations web site (www.sbc.com/investor_relations) or by directing a request to SBC Communications Inc., Stockholder Services, 175 E. Houston, San Antonio, Texas 78205. Free copies of AT&T Corp. s filings may be accessed and downloaded for free at the AT&T Investor Relations Web Site (www.att.com/ir/sec) or by directing a request to AT&T Corp., Investor Relations, One AT&T Way, Bedminster, New Jersey 07921.

SBC, AT&T Corp. and their respective directors and executive officers and other members of management and employees may be deemed to be participants in the solicitation of proxies from AT&T shareholders in respect of the proposed transaction. Information regarding SBC s directors and executive officers is available in SBC s proxy statement for its 2004 annual meeting of stockholders, dated March 11, 2004, and information regarding AT&T Corp. s directors and executive officers is available in AT&T Corp. s proxy statement for its 2004 annual meeting of shareholders, dated March 25, 2004. Additional information regarding the interests of such potential participants will be included in the registration and proxy statement and the other relevant documents filed with the SEC when they become available.

Certain matters discussed in this statement, including the appendices attached, are forward-looking statements that involve risks and uncertainties. Forward-looking statements include, without limitation, the information concerning possible or assumed

future revenues and results of operations of SBC and AT&T, projected benefits of the proposed SBC/AT&T merger and possible or assumed developments in the telecommunications industry. Readers are cautioned that the following important factors, in addition to those discussed in this statement and elsewhere in the proxy statement/prospectus to be filed by SBC with the Securities and Exchange Commission, and in the documents incorporated by reference in such proxy statement/prospectus, could affect the future results of SBC and AT&T or the prospects for the merger: (1) the ability to obtain governmental approvals of the merger on the proposed terms and schedule; (2) the failure of AT&T shareholders to approve the merger; (3) the risks that the businesses of SBC and AT&T will not be integrated successfully; (4) the risks that the cost savings and any other synergies from the merger may not be fully realized or may take longer to realize than expected; (5) disruption from the merger making it more difficult to maintain relationships with customers, employees or suppliers; (6) competition and its effect on pricing, costs, spending, third-party relationships and revenues; (7) the risk that Cingular Wireless LLC could fail to achieve, in the amount and within the timeframe expected, the synergies and other benefits expected from its acquisition of AT&T Wireless; (8) final outcomes of various state and federal regulatory proceedings and changes in existing state, federal or foreign laws and regulations and/or enactment of additional regulatory laws and regulations; (9) risks inherent in international operations, including exposure to fluctuations in foreign currency exchange rates and political risk; (10) the impact of new technologies; (11) changes in general economic and market conditions; and (12) changes in the regulatory environment in which SBC and AT&T operate.

The cites to webpages in this document are for information only and are not intended to be active links or to incorporate herein any information on the websites, except the specific information for which the webpages have been cited.

I, Dennis W. Carlton, hereby declare the following:

I, Hal S. Sider, hereby declare the following:

I. QUALIFICATIONS

1. I, Dennis W. Carlton, am Professor of Economics at the Graduate School of Business of The University of Chicago. I have served on the faculties of the Law School and the Department of Economics at The University of Chicago and the Department of Economics at the Massachusetts Institute of Technology. I specialize in the economics of industrial organization, which is the study of individual markets and includes the study of antitrust and regulatory issues. I am co-author of Modern Industrial Organization, a leading textbook in the field of industrial organization, and I also have published numerous articles in academic journals and books. In addition, I am Co-Editor of the Journal of Law and Economics, a leading journal that publishes research applying economic analysis to industrial organization and legal matters.

2. In addition to my academic experience, I am a Senior Managing Director of Lexecon, an economics consulting firm that specializes in the application of economic analysis to legal and regulatory issues. I have served as an expert witness before various state and federal courts and foreign tribunals and I have provided expert witness testimony before the U. S. Congress. I have submitted testimony before the Federal Communications Commission in a number of matters. In 2004, I was appointed to the Antitrust Modernization Commission, a 12-member commission created by Congress to review U.S. antitrust laws. I have previously served as a consultant to the Department of Justice regarding the Merger Guidelines of the Department of Justice and Federal Trade Commission, as a general consultant to the Department of Justice and Federal Trade Commission on antitrust matters, and as an advisor to the Bureau of the

Census on the collection and interpretation of economic data. A copy of my curriculum vita is attached in Appendix 1 to this affidavit.

3. I, Hal S. Sider, am a Senior Vice-President of Lexecon. I received a B.A. in Economics from the University of Illinois in 1976 and a Ph.D. in Economics from the University of Wisconsin (Madison) in 1980. I have been with Lexecon since 1985, having previously worked in several government positions. I specialize in applied microeconomic analysis and have performed a wide variety of economic and econometric studies relating to industrial organization, antitrust and merger analysis. I have published a number of articles in professional economics journals on a variety of economic topics and have testified as an economic expert on matters relating to industrial organization, antitrust, labor economics and damages. In addition, I have provided economic testimony on telecommunications issues on a variety of matters before the FCC and state public utility commissions. A copy of my curriculum vita is attached in Appendix 1 to this affidavit.

II. INTRODUCTION AND OVERVIEW

4. We have been asked by counsel for SBC Communications Inc. (SBC) and AT&T Corp. (AT&T) to present our assessment of competitive issues raised by the proposed merger of these firms. This initial assessment is based on our general familiarity with developments in the telecommunications industry, our extensive review of public source data and information provided by the companies to date.(1) We will continue to review and analyze additional data and documents during the course of this proceeding and use that information to respond to any issues raised by the Parties Application or otherwise supplement our analysis as appropriate.

(1) We understand that the Parties will be submitting to the Commission additional non-public information when a protective order is in place. This information, when it is available to be reported, will enable us to make more precise several of the statements in this filing.

5. The proposed transaction will promote competition by creating a more efficient firm which will achieve significant cost savings and will be better positioned to develop and deploy new products and services for business and residential customers. In addition, our analysis to date indicates that the transaction is unlikely to create significant competitive problems due to a variety of characteristics of the industry and Parties, including: (i) the largely complementary nature of AT&T s and SBC s networks, services and target customers; (ii) the rapid on-going pace of developments in telecommunications technology; (iii) AT&T s prior decision to cease marketing its services to residential and small business customers; (iv) the growth of facilities-based competition for both businesses and residential consumers; and (v) the sophistication and purchasing practices of business customers as well as the importance of non-price dimensions of telecommunications services.

6. The major conclusions explained in this Declaration are as follows:

SBC s and AT&T s businesses are largely complementary, with SBC operating a dense local network in its region and AT&T operating an extensive national and global network. Similarly, SBC is majority owner of a leading facilities-based wireless carrier while AT&T does not own wireless facilities and does not at present market wireless services. The firms also focus on serving different sets of customers, with AT&T increasingly focusing its efforts on serving large business customers with national or global needs while SBC maintains a predominantly regional focus.

Rapid technological changes are expanding the competitive alternatives available to all consumers including residential, small business and large business subscribers. For example, the rapid growth of Internet Protocol (IP) technology is blurring the distinction between voice and data services, and

increasing the number of firms competing with legacy carriers to provide service to all categories of customers.

Changes in technology, regulation and business strategy mean that historical and current measures of the extent of competition between the firms overstate any potential reduction in competition resulting from the proposed transaction.

AT&T s decision to cease marketing traditional services to residential consumers and small businesses means that it will rapidly cease to be a significant competitive factor in serving these customers in the absence of the transaction.

Moreover, residential customers that would have remained with AT&T in the absence of the transaction are likely to benefit from the merger because SBC, which has no plans to exit, does not face the same incentives as AT&T to raise prices to this group.

Where SBC and AT&T both compete to provide a variety of data and voice services to certain business customers, they face a wide variety of competitors and conditions that make it unlikely that the transaction will harm competition either through coordinated or unilateral actions.

In providing service to certain business customers, SBC and AT&T face competition from interexchange carriers (IXCs), new network providers, competitive local exchange carriers (CLECs), systems integrators, equipment providers, value-added resellers and cable providers.

The sophistication of business consumers, the importance of non-price dimensions of service and the large and infrequent nature of the

bidding contracts at issue reduce the potential for the transaction to adversely affect competition.

The transaction is unlikely to adversely affect competition for wireless services, where AT&T today has only limited plans to provide service as a reseller or mobile virtual network operators (MVNO). Similarly, the transaction is unlikely to adversely affect competition in the provision of Internet telephony, where AT&T is one of many new entrants and faces significant competition from cable companies and other providers.

By combining firms with complementary networks and businesses, the transaction will benefit consumers by:

Enabling the merged firm to provide services now available to AT&T s large business customers to a wider range of business customers;

Increasing incentives to invest in new products and services by enabling innovations to be deployed to the combined firm s larger customer base.

Enabling the merged firm to provide end-to-end services to an increased number of multilocation business customers and thus to improve service reliability;

Enabling the merged firm to operate at substantially lower costs than those that AT&T and SBC would face separately, thus enabling it to compete more effectively against new firms deploying new, lower-cost technologies.

7. The remainder of this declaration provides the basis for these initial conclusions. Section III presents: (i) background information on SBC and AT&T; (ii) background regarding trends in the demand for wireline telecommunications services; and (iii) an overview of consumer benefits resulting from the transaction. Section IV addresses the competitive impact of the transaction on consumer services, including wireless services. Section V reviews factors that affect the impact of the transaction on services used by business customers.

III. THE PROPOSED TRANSACTION IS LIKELY TO RESULT IN SIGNIFICANT BENEFITS TO CONSUMERS.

A. BACKGROUND ON THE MERGING PARTIES

1. AT&T

8. AT&T provides local and long distance voice services as well as an array of local and long distance data services. It serves business customers of all sizes from small firms to large multinational enterprises as well as residential customers, although it is no longer marketing its traditional services to the latter group. In 2004: (2)

Business services accounted for 74 percent of AT&T s revenue, with 26 percent from consumer services, although the share accounted for by consumers is declining rapidly.

Long distance voice services accounted for 84 percent of AT&T s voice revenue, with 16 percent coming from local voice services.

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(2) AT&T Corp. Fourth-Quarter and Full-Year 2004 Financial Results, Historical Segment Data, January 20, 2005.

9. AT&T and other IXCs have experienced substantial declines in wireline revenue in recent years and these declines have been far greater than those experienced by ILECs.(3) Between 2002 and 2004, ILEC wireline revenues fell about 7.5 percent. During the same period, AT&T s revenue fell 19 percent, with consumer services revenue falling 31 percent and business revenue falling 15 percent.(4) Revenue for AT&T and other IXCs are projected to continue to decline. AT&T estimates that its 2005 revenue will fall 16.5 percent and analysts forecast that AT&T s revenue will fall by 42 percent between 2004 and 2008.(5) ILEC revenue is projected to increase slightly in 2005 and analysts forecast that it then remain nearly unchanged through 2008.(6)

Figure 1

Wireline Revenue of AT&T and Other Major ILECs and IXCs

(3) AT&T spun off its cable and wireless operations in 2001.

(4) AT&T Corp. Fourth-Quarter and Full-Year 2004 Financial Results, Historical Segment Data, January 20, 2005 and AT&T Corp. Earnings Commentary, Quarterly Update Fourth Quarter 2002, January 23, 2003, p. 8. All data exclude revenue from wireless or cable operations.

(5) AT&T press release, AT&T Announces Fourth-Quarter Results, January 20, 2005, and UBS Investment Research, Wireline Telecom Play Book, January 14, 2005, p. 46.

(6) UBS Investment Research, Wireline Telecom Play Book, January 14, 2005, p. 46.

10. In the face of rapidly declining wireline revenue, AT&T and other IXCs significantly reduced their capital expenditures. Between 2002 and 2004, AT&T s wireline capital expenditures fell 55 percent, from $3.9 billion to $1.8 billion. AT&T s wireline capital expenditures were 10 percent of its wireline revenue in 2002 but less than six percent of 2004 revenue.(7) Over the same time period, ILECs capital expenditures fell (-16 percent) although this decline was substantially less than that of AT&T and other IXCs. Capital expenditures (expressed as a percentage of revenue) for AT&T and major ILECs are shown in Figure 2.

Figure 2

Wireline Capital Expenditures as a Percentage of Wireline Revenue

for AT&T and Major ILECs

11. Nonetheless, AT&T has continued to fund innovation and investment in its networks and has maintained its reputation as a leading provider of innovative and high-quality voice and data services for business customers. For example, a recent report on IP-VPN (Internet Protocol-Virtual Private Network) services, a leading new data technology, noted that:

(7) AT&T financial statements.

AT&T has maintained their leadership in this very competitive market because of their strong brand for reliable data and voice networking services, the breadth of their services and remote access options, and their recognized expertise in VPN and security services. They have been highly innovative this past year in adding new offerings and features to their MPLS, remote access, and security services.(8)

AT&T was also rated in a Yankee Group survey as the top-ranked wholesale telecommunications vendor.(9) AT&T has also continued to invest in improving service to large business customers.(10)

12. Given changes in the demand for AT&T s services, as well as court and FCC decisions that invalidated regulations that enabled AT&T to acquire for resale ILECs local services at TELRIC-based rates, AT&T announced a dramatic change in its business strategy in mid-2004. (11) More specifically, AT&T announced that it would:

Stop marketing traditional local and long distance services to residential customers and selectively raise prices to these customers;(12)

Stop marketing to some and reduce marketing to other smaller business customers;

End efforts to win back residential and small business consumers that terminate service with AT&T.

13. AT&T has taken a variety of steps to implement this new business plan:

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(8) In-Stat, High Growth and Lots of Opportunity: The US IP VPN Services Market, January 2005, p.20.

(9) Yankee Group, AT&T and Level 3 Earn Top Marks for Quality in Yankee Group Wholesale Buyer Survey, October 18, 2004.

(10) See Declaration of Hussein Eslambolchi.

(11) See Declaration of John Polumbo.

(12) This decision did not affect the AT&T CallVantage service, which was introduced in 2004.

AT&T undertook extensive headcount reductions in its Consumer unit in areas relating to marketing and customer care and plans further headcount reductions through 2005.(13)

AT&T has also retired much of the infrastructure that it used to acquire and serve residential customers.(14)

2. SBC

14. SBC provides local and long distance voice as well as local and long distance data services, primarily in a 13-state region. SBC s mix of service revenue differs significantly from that provided by AT&T. In 2004, for example:

Business services accounted for 48 percent of SBC s retail wireline revenue, with 52 percent derived from consumer services.(15)

Long distance voice services accounted for 14 percent of SBC wireline voice revenue, with 86 percent coming from local voice services.(16)

15. SBC s revenue, unlike AT&T s, has grown in recent years. Since receiving authorization to provide long distance services in each state in which it operates between 2000 and 2003, SBC has rapidly expanded its provision of long distance services. It now provides long distance to 44 percent of its local service customers.(17) SBC s wireline revenues have also increased as a result of the sale of DSL services. SBC now has over 5 million DSL lines in

(13) See Declaration of John Polumbo.

(14) See Declaration of John Polumbo.

(15) Based on internal SBC documents.

(16) SBC 4Q04 Earnings Information,

http://www.sbc.com/Investor/Financial/Earning_info/docs/Segments_IB_4Q04.xls

(17) UBS, Wireline Telecom Play Book, January 14, 2005, p.20.

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service.(18) In addition, SBC owns a 60 percent economic interest in Cingular Wireless, one of the leading wireless service providers, which serves both businesses and consumers.

16. SBC s authorization to provide long distance services also enabled it to expand provision of voice and data services to multilocation business customers. SBC uses WilTel and others to transport its long distance traffic.(19) In 2003, SBC launched an initiative to expand SBC s provision of voice and data services to multilocation business customers. It deployed facilities on a limited basis in 30 metropolitan areas outside of its 13-state footprint. Based on its experience in the marketplace, SBC has decided to focus its attention on seeking to serve business customers with locations predominantly located within SBC s footprint.(20) SBC typically does not compete for business where more than half of the customer s locations are out of its footprint or where 20 percent or more of the traffic is international.(21)

B. FACTORS AFFECTING THE DEMAND FOR TRADITIONAL WIRELINE SERVICES

1. General Trends

17. Dramatic changes in technology and regulation are resulting in fundamental changes in the competitive landscape for the provision of wireline services. These factors have placed increased competitive pressure on suppliers of wireline services for all types of consumers. These phenomena, and others, have reduced demand for traditional wireline services.

(18) 4Q04 Investor Briefing, January 26, 2005.

(19) See Declaration of James Kahan.

(20) See Declaration of James Kahan.

(21) See Declaration of James Kahan.

FCC data indicate that average revenue per minute for wireline long distance services has fallen from $0.11 per minute in 1999 to $0.07 per minute in 2002, the last year for which data are available. Similar declines are observed if prices are measured net of access charges.

Figure 3

Average Wireline Revenue per Long Distance Domestic Minute **1999** **2002**

Wireline long distance minutes of use have also fallen despite falling prices. FCC data indicate that minutes of interstate calling fell more than 20 percent between 2000 and 2003.

Figure 4

Interstate Switched Access Minutes

1996 2003

The number of ILEC access lines, as well as the number of calls processed by ILECs, has fallen in recent years.(22)

18. Among the factors contributing to these trends are: (i) the explosive growth in wireless service, and (ii) the growth of high-speed Internet services and the growth in non-traditional Internet based communications. In addition, the rapid on-going deployment of voice of Internet Protocol (VoIP) for the provision of voice services is widely expected to contribute to continued declines in demand for traditional wireline services. Each of these factors is briefly summarized below.

(22) See FCC, Trends in Telephone Service, May 2004, Tables 7.1 and 10.2.

2. The growth of wireless service

19. The unprecedented growth in wireless services has been widely documented:

Between 1995 and 2003, the number of wireless subscribers grew from 34 million to almost 160 million. Over the same period, monthly minutes of use per subscriber increased from 120 to more than 500.(23)

Together, total minutes of use of wireless services increased from 38 billion in 1995 to 830 billion in 2003, a more than 20-fold increase in less than 10 years.

Figure 5

Wireless Average Revenue per Minute and Total Minutes of Use

20. This increased utilization of wireless services is due in part to a rapid decline in the average revenue per minute for wireless services, which fell from $0.43 in 1995 to $0.10 in 2003, a 77 percent decline.

21. The explosive growth in wireless services and its impact on wireline services is reflected in the market value of telecommunications firms. AT&T Wireless and Nextel, two

(23) FCC, Ninth Competition Report, FCC 04-216, September 28, 2004, Table 1 and Table 9.

of six major nationwide wireless companies, were valued in recent transactions at $41 billion and $35 billion respectively. In contrast, this proposed transaction values AT&T at $16 billion.(24)

22. While available data indicate that a modest (but increasing) share of subscribers have cut the cord and no longer subscribe to wireline service, data also indicate that consumers readily substitute minutes on wireless services for minutes on wireline services. For example, a recent Yankee Group survey reports that in U.S. households, more than 36% of local calls and 60% of long-distance calls have been replaced by wireless. (25) This substitution is facilitated by the growth of bucket plans, which effectively lower the marginal cost of many local and long distance calls to zero. Thus, wireless services are an alternative technology that reduces usage of wireline phones.

3. Broadband services

23. Another dramatic shift affecting the demand for wireline services in recent years is the increased adoption of high-speed Internet access technologies. FCC data indicate that the number of residential and small business high speed lines has grown from less than 4 million lines in 2000 to over 30 million lines in 2004. Consumer broadband services allow for more intensive use of the Internet than dial-up services.

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(24) See, R.I.P., AT&T, Business Week Online, Feb. 16, 2005,

http://www.businessweek.com/bwdaily/dnflash/feb2005/nf20050216_9529_db035.htm?site= cbs&campaign_id=cbs (The dollar amount seems puny compared to other epic mergers this year and doesn t begin to reflect AT&T s storied place in American history.)

(25) Yankee Group, The Success of Wireline/Wireless Strategies Hinges on Delivering Consumer Value, October 2004, p. 7.

Figure 6

Residential and Small Business High-Speed Lines

24. The growth of broadband services has contributed to a decline in the demand for second phone lines, which are often used in part to accommodate dial-up Internet access. Additionally, as discussed in more detail below, broadband Internet connections allow for the use of VoIP products.

4. E-mail and instant messaging

25. The increase in Internet utilization has resulted in extraordinary growth in the volume of e-mail and instant messaging, which provide alternatives to both business and personal telephone calls. An estimated 9 billion e-mails are sent each day in the U.S.(26) In addition, 80 million people in the U.S. use instant messaging (IM) and it is estimated that 7 billion IMs are sent each day worldwide.(27) While it is difficult to quantify the amount of voice

(26) Legal Tech Newsletter, E-Mail and Records Management in the Legal Environment, 11/14/03, cited in UNE Fact Report 2004, October 2004, p. I-6.

(27) http://www.webpronews.com/news/ebusinessnews/wpn-45-20040824AOLAnnouncesthatInstantMessagingisMorePopularthanEver.html, cited in UNE Fact Report 2004, October 2004, p. I-6.

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telephone traffic these new technologies have displaced, analysts recognize that such substitution occurs. For example, In-Stat/MDR has stated that [c]onsumers are using e-mail and instant messaging in place of a phone call. (28) According to an analysis presented to the FCC in the Triennial Review Order (TRO) remand proceedings, if just 5 percent of [email and IM messages] substitute for a 90 second voice call, this data traffic has displaced more than 10 percent of the voice traffic that would otherwise have been handled by the incumbents networks. (29)

5. VoIP

26. Voice over Internet Protocol (VoIP) is a new technology for providing local and long distance voice services that is widely expected to provide significant competition for traditional wireline services. VoIP has already been deployed by a number of firms. Prominently, cable providers are in the midst of deploying VoIP services throughout their networks. While VoIP services are generally targeted to serve residential and small business consumers, IP based virtual private networks (IP-VPNs) are being deployed by businesses of all sizes to carry both voice and data traffic. (IP-VPNs are discussed in more detail in Section V below.)

27. VoIP can provide high quality local and long distance services, and can include advanced features, such as call logs and follow-me calling,(30) as well as enhanced 911 services.(31) Analysts agree that VoIP services can be provided at lower cost than traditional circuit-switched voice services provided by legacy carriers. For example, Bernstein Research

(28) In-Stat/MDR, State of the U.S. Carrier Market, October 2003, p. 6.

(29) UNE Fact Report (2004), p. I-6.

(30) See for example, Vonage s description of its Call Hunt feature.

http://www.vonage.com/features.php?feature=call_hunt

(31) See, for example,

http://www.timewarnercable.com/austin/products/digitalphones/default.html.

concludes that [d]ue to the relatively low cost structure of VoIP, cable VoIP operators will be able to absorb significant price decreases while maintaining attractive margins. (32)

28. There are two basic types of VoIP services.

Cable-based VoIP services are installed by the cable provider and do not require that the consumer subscribe to a broadband service. The service is connected to a home s inside wiring so all handsets in the home are connected to the service. (33) Cable-based services typically make extensive use of dedicated facilities as well as backup power in the event of a disruption.(34) Bernstein Research estimates that VoIP service will be available to 87 percent of U.S. households by the end of 2006. Cable MSOs today offer unlimited all-distance voice service at roughly $35 to $40 per month. (35)

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(32) Bernstein Research, Cable and Telecom: VoIP Will Reshape Competitive Landscape in 2005, p. 1.

(33) See, e.g., http://www.cox.com/Telephone/FAQs.asp#P25_5970 (Will my house need to be rewired? No, the existing wiring inside your home will operate just as it always has.)

(34) Cox, for examples, states (p. 12) that in designing its VoIP network that it assumes at least four hours of standby power in the HFC plant for both technologies, with in-home battery back-up for the VoIP MTA . Cox (p. 3) also states that it owns and operates its own end to end network infrastructure. Cox Communications White Paper, Voice over Internet Protocol: Ready for Prime Time, May 2004, p. 12.

(35) Stratecast Partners, Residential Broadband Voice: End-User Experience, January 7, 2005, p. 2.

Figure 7

Percentage of U.S. Households Passed by Cable Telephony

Virtual services provided over existing broadband connections are self-installed by subscribers and serve only those handsets connected to the broadband service. These services typically utilize the public Internet for transport. Virtual service providers may not offer E911 service or backup power in case of blackouts.(36) In addition to AT&T s CallVantage service, non-cable firms that offer virtual VoIP include Vonage, 8x8, BroadVoice, BroadVox, delta-three, Net2Phone, Primus Lingo and VoicePulse. These firms offer packages of unlimited local and long distance voice for prices ranging from $20 to $30 a month.(37)

(36) http://www.fcc.gov/voip/

(37) Stratecast Partners, Residential Broadband Voice: End-User Experience, January 7, 2005, pp. 2-3.

29. Analysts view the VoIP products being rolled out by cable operators as a direct competitive threat to the ILECs. Morgan Stanley concludes that [t]he introduction of VoIP, especially by cable companies, represents the largest long-term competitive threat to the Bells, in our view. (38) Other analysts agree:

During the end of 2004 cable companies made significant moves into the telecom space. It was reported that Time Warner expects to have 200K Digital Phone subscribers by 2004 end, and is currently adding 10K subscribers per week. CableVision passed the 250K telephony subscribers milestone and its Optimum Voice service has been adding 1,000 customers per day in the New York area. Comcast continued to discuss plans to offer phone service to 40M homes by the end of 2006 . Going forward, we see RBOC competitive pressures increasing as internet telephony services become more feature rich, cable services become more on-demand orientated, and consumers crave more integrated offerings.(39)

C. THE MOTIVATION FOR THE PROPOSED TRANSACTION AND POTENTIAL CONSUMER BENEFITS

30. The proposed transaction reflects the companies response to fundamental changes in the demand and supply of telecommunications services and is expected both to result in substantial cost savings and to bring substantial benefits to consumers. The cost savings and consumer benefits are described in greater detail in the accompanying declarations of SBC s James Kahan and Christopher Rice and AT&T s Hossein Eslambolchi.

1. The transaction combines firms with complementary networks and business focuses.

31. As discussed above, AT&T s and SBC s operations are highly complementary. For example, AT&T operates a dense national and international long distance network and has limited assets used to provide local services. SBC operates a dense local network in 13 states and has limited out-of-region and long distance assets. The combination of these networks

(38) Morgan Stanley, 3Q04 Trend Tracker: Let the Good Times Roll? December 2004, p. 22.

(39) Blaylock Partners, Telecommunications: Wireline Services, January. 20, 2005, p. 2

enables the merged firm to better serve business customers by increasing its ability to provide end-to-end services to as many of its locations as possible.

32. The provision of end-to-end service improves the ability of a carrier to control and monitor network performance, which is important to many business customers.(40) Traffic handoffs can reduce efficiency and degrade quality, as well as result in delays in signal flow. By carrying more of its own traffic from end to end, the merged company will be able to reduce the number of handoffs necessary, and thus improve service quality for its customers. These benefits can be particularly important for newer services such as video conferencing, IP television and VoIP.(41)

2. The transaction enables SBC to offer its subscribers services that otherwise would be available only to AT&T larger business customers.

33. As noted above, AT&T is recognized as a provider of innovative services. As described in the accompanying declaration of Hossein Eslambolchi, AT&T, through AT&T Labs, has deployed a variety of business services and features that could be provided to SBC s base of business customers and consumers. For example:(42)

AT&T has deployed advanced network security capabilities such as Internet Protect and inline application security monitoring services. Internet Protect is a security alerting and notification service that offers information regarding potential real-time attacks that are in the early formation stages. Inline application security monitoring services can actively block and quarantine anomalous behaviors detected within applications.

(40) See Declaration of James Kahan.

(41) See Declaration of Christopher Rice.

(42) See Declaration of Hossein Eslambolchi.

AT&T also has introduced systems that use artificial intelligence and speech recognition to shorten and simplify ordering, provisioning and requests for repair. These capabilities were developed for enterprise customers, but can be readily extended to consumers and small business customers.

34. According to Dr. Eslambolchi, AT&T Labs is also working on a number of projects that have the potential to benefit consumers and smaller business customers as well as the enterprise customers they are currently targeted. These projects include IP video services (with obvious application to consumers), and speech and text recognition technologies.(43)

3. The merged carrier will have greater incentive to invest in new services.

35. More generally, the proposed transaction will increase the merged firm s incentive to invest in the development of new services. With a broader customer base and more extensive network, the merger enables the firm to deploy innovations rapidly to a broader base of customers. Similarly, the merger increases the incentive of the combined firm to invest in network features that reduce cost and enhance productivity, by enabling the benefits of such improvements to be realized over a wider network.

36. In the absence of this transaction, AT&T would be selling its current and future innovative services predominantly to a base of larger business customers. With this transaction, however, the combined firm will have the incentive and ability to market them to a wider customer base, including smaller businesses and consumers.

37. SBC s merger-related plans already anticipate that it will increase spending on certain new AT&T technologies above the level budgeted by AT&T. For example, SBC plans to fund deployment of new AT&T technologies through its network, including click-through provisioning on all-optical networks, and enhanced security solutions. Furthermore, SBC also

(43) See Declaration of Hossein Eslambolchi.

plans to provide these services to small and medium sized business as well as enterprise customers.(44)

4. The proposed transaction is expected to result in significant cost savings.

38. SBC estimates that the merged firm will incur substantially lower costs than would the be incurred if the two firms operated separately. More specifically, SBC estimates that the transaction will result in annual cost savings of approximately $2 billion beginning in 2008.(45)

39. These cost reductions come from a variety of sources:

SBC estimates that the merged network will enable it to more efficiently distribute traffic across the combined network, increasing utilization where there is excess capacity and routing traffic to avoid segments near capacity.(46) This also would enable traffic to be delivered with fewer hops (network exchange points), which contributes to higher service quality.(47)

The transaction also enables the merged firm to reduce a variety of additional costs relating to, for example: (i) consolidation of billing and operating support systems: (ii) elimination of duplicate facilities; (iii) ability to obtain lower prices from equipment vendors.(48)

SBC also estimates the merged firm will achieve a 26 percent reduction in operating personnel used for such functions as enterprise data ordering, data provisioning and care functions, network management, and access

(44) See Declaration of Christopher Rice.

(45) See Declaration of James Kahan.

(46) See Declaration of Christopher Rice.

(47) See Declaration of Christopher Rice.

(48) See Declaration of Christopher Rice.

management.(49) These headcount reductions result from the deployment by SBC of AT&T technology that enables customers to make orders and request repairs through computer-based systems. As noted above, AT&T has deployed systems that simplify the ordering, provision and repair processes for business customers.(50)

IV. CONSUMER SERVICES

40. This section addresses issues relating to the competitive effect of the proposed transaction on services sold to consumers (including residential and very small business customers with under five lines). While AT&T has long been a major provider of long distance services to residential consumers and has provided local services on a resale basis in recent years, its declining sales as well as its recent decision to cease marketing traditional services to consumers means that current and historical information on AT&T s activities is not relevant for evaluating the impact of the proposed transaction on consumers. Additionally, the proposed transaction will have no significant competitive effect on the provision of wireless and VoIP services.

A. CONSUMER SERVICES SOLD BY AT&T AND SBC

1. AT&T

41. As noted above, consumer services account for roughly 25 percent of AT&T s 2004 revenue, although this figure is expected to decline rapidly due to AT&T decision to cease marketing consumer services.(51) Roughly 65 percent of AT&T s consumer services revenue is from stand alone long distance (i.e., consumers that do not obtain local service from AT&T)

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(49) SBC, SBC + AT&T A Premier Provider for a New Era of Communications, Special Analyst Meeting Notes, February 1, 2005, p. 34.

(50) See Declarations of James Kahan and Hossein Eslambolchi.

(51) AT&T Corp. Fourth-Quarter and Full-Year 2004 Financial Results, Historical Segment Data, January 20, 2005.

while 35 percent of consumer revenue is from subscribers that purchase a local/long distance bundle.(52) The local component of such bundles reflects resold ILEC services purchased at TELRIC-based rates for the unbundled network elements platform (UNE-P). As discussed earlier, AT&T no longer markets local/long-distance bundles or stand-alone long distance services, nor does it attempt to win back customers that it has lost. AT&T executives have characterized their current position as harvesting the business and as an exit over time. (53)

42. AT&T has recently introduced AT&T CallVantage service, a voice-over-Internet-Protocol (VoIP) service in 100 MSAs. This service is provided using a broadband Internet connection, with calls transmitted through the public Internet for termination on the public switched network or with other VoIP subscribers. AT&T CallVantage service offers unlimited local and long distance calling for $30 a month, although customers must separately have a broadband Internet connection.(54) We understand that at the end of 2004, AT&T CallVantage had significantly fewer subscribers than other major providers of VoIP services.(55)

2. SBC

43. As discussed above, more than half of SBC s retail wireline revenue in 2004 reflected sales to residential consumers.(56) These revenues were distributed as follows: (57)

Local voice services account for roughly 70 percent of SBC s 2004 consumer revenue. Local services for consumers remain subject to price regulation in each of the 13 states in which SBC operates.

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(52) AT&T Corp. Fourth-Quarter and Full-Year 2004 Financial Results, Historical Segment Data, January 20, 2005.

(53) AT&T 4Q04 Earnings Conference Call, January 20, 2005, p. 8.

(54) http://www.usa.att.com/callvantage/plans/index.jsp

(55) As noted above, we understand that the Parties will be submitting to the Commission more specific non-public information after a protective order is in place.

(56) These calculations exclude revenue attributable to Cingular as well as SBC s resale of EchoStar s Dish Network satellite television services.

(57) Based on internal SBC documents.

Long distance services account for 16 percent of SBC s 2004 wireline consumer revenue. Other than SNET operations which it acquired, SBC entered into the provision of long distance service when it gained §271 approval for Texas in June 2000. By the end of 2003, SBC had been authorized to sell long distance in each of the 13 states in which it operates as an ILEC.(58)

DSL accounts for about 10 percent of SBC s 2003 wireline consumer revenue.(59)

44. SBC offers each of these voice services on a stand alone basis or in various bundles, including all-distance voice bundles that include local and long distance services.

B. AT&T S HISTORICAL AND CURRENT ROLE IN THE PROVISION OF CONSUMER SERVICES IS NOT RELEVANT FOR EVALUATING THE COMPETITIVE IMPACT OF THE PROPOSED TRANSACTION

45. In recent years, AT&T, MCI and others offered local services by reselling ILECs local service based on UNE-P at TELRIC-based rates. The final chapter in this long history is reflected in the FCC s recent rules that phase out by early 2006 ILECs obligation to offer UNE-P service.(60) As described above, the FCC s decision to end ILECs obligation to offer UNE-P at TELRIC-based rates contributed to AT&T s decision to stop marketing local and long distance services to consumers.(61)

46. AT&T s decision to cease marketing consumer services and to harvest its customer base means that, in the absence of the proposed transaction, AT&T s current and

(58) http://www.fcc.gov/Bureaus/Common_Carrier/in-region_applications/

(59) Based on internal SBC documents.

(60) FCC, Order on Remand, FCC 04-290, February 4, 2005, ¶199.

(61) The Declaration of John Polumbo discusses in more detail how the change in the FCC s regulations affected AT&T s ability to compete for consumers. For the announcement see, http://www.att.com/news/2004/06/23-13121

historic share overstates its future competitive significance. There are two reasons for this. First, in the absence of the transaction, AT&T s share of subscribers would be lower than its current share as customers continue to migrate away without being replaced. Second, for any given share that AT&T might have in the future, its decision to harvest its customer base means that AT&T is not competing to attract new customers.

47. Analysts forecast that AT&T s customer base will suffer rapid attrition in the absence of the proposed transaction. Morgan Stanley forecasts that AT&T s Consumer revenues will fall from almost $8 billion in 2004 to $3.5 billion in 2006 and to zero by 2010.(62) Similarly, Bernstein Research forecasts that AT&T s consumer revenues will decline by 60 percent by the endof 2006.(63)

48. As part of its harvesting strategy, AT&T has already instituted price increases. For example, AT&T CEO Dave Dorman has stated that AT&T is carefully managing the decline in [and] harvest of those businesses that we will exit over time as those customers run off. (64)

49. AT&T has already raised rates for consumer local and interstate long distance services: (65)

In late 2004, AT&T raised by $1 to $3 per month the retail rates for various local service packages with prices that range from $12 to $30 per month.

In December 2004, AT&T raised rates in a variety of states for all distance bundles by $2 to $5 per month.

(62) Morgan Stanley, AT&T Corp. , January 21, 2005, p. 5.

(63) Bernstein Research, AT&T: 4Q04 Beats on Cost Cuts, January 21, 2005, p. 2 .

(64) AT&T 4Q04 Earnings Conference Call, January 20, 2005, p.8.

(65) These examples are discussed in the Declaration of John Polumbo.

AT&T has raised the monthly recurring charge for stand alone interstate long distance services by $1 to $2 per month for many plans.

AT&T has also raised a number of the basic rates for international long distance services.

50. Changes in concentration in any market that result from the proposed transaction, such as those measured using the Herfindahl-Hirschman Index (HHI), must be evaluated using as a benchmark estimates of the shares that would prevail in the absence of the proposed transaction.(66) Increases in concentration based on future shares necessarily would be smaller than those calculated on the basis of current shares. Similarly, even if prices were to rise as the result of AT&T s business decision to abandon marketing to consumers, any such increases cannot be considered to be merger related. To the contrary, the price expected to prevail in the future in the absence of the transaction is the appropriate benchmark for evaluating any potential impact of the proposed transaction.

51. The use of market shares, HHIs and changes in HHIs to evaluate the competitive impact of mergers is based on the premise that firms of all sizes remain active competitors in the marketplace.(67) Generally, a firm that does not actively compete has less of an impact on market price than one with the same market share that competes actively. In turn, industry prices will be higher when some firms in the market are not active competitors. Since AT&T would not be an active competitor in the absence of the proposed transaction, its future share overstates its

(66) The importance of using forward looking shares is discussed in the Horizontal Merger Guidelines of the U.S. Department of Justice and Federal Trade Commission (Revised April 1997), Section 1.521.

(67) The use of HHIs in merger analysis has as its theoretical basis the static Cournot model of oligopoly behavior. AT&T s stated pricing strategy is not consistent with that of a static Cournot oligopolist. See Carlton and Perloff, Modern Industrial Organization, 4th edition, Appendix 8A (p. 283-4) for a derivation of the relationship between the HHI and price-cost margins.

competitive significance and conventional measures of the change in concentration based on its future share will overstate the expected impact of the transaction on competition.

52. Due to both its decision to cease competing actively for mass market customers and its decreased competitive significance while it remains, AT&T would not remain a competitive factor in the marketplace for traditional telephone services in the absence of the transaction. As such, prices charged by SBC and others firms would be constrained, not by AT&T, but by other factors.

53. Among others, these factors include rival providers of local and long distance services. While AT&T has decided to no longer actively market consumer services, other firms have not. For example, Sage Telecom, the fourth largest provider of local service and fifth largest provider of long distance service to consumers in SBC s 13-state territory, announced that it will continue to add new residential and small business local and long distance customers despite the phase out of UNE-P. Sage now serves more than 500,000 subscribers in SBC s territory. In 2004, Sage and SBC signed a seven-year agreement for wholesale local service throughout SBC s territory. SBC has offered similar terms to similarly situated carriers.(68) In addition, the ability of consumers to use VoIP services, wireless services, and email and other alternatives to traditional calls also will constrain market-determined prices for wireline services. These alternatives are precisely the same factors that will constrain prices following the transaction.

54. In addition, the transaction is likely to benefit AT&T consumers that would remain with AT&T in the absence of the transaction. As discussed above, AT&T had decided, consistent with its harvesting strategy, to implement a variety of consumer price increases. Following the transaction, however, these subscribers will be served by SBC. Because SBC

(68) Sage Telecom Press Releases, June 25, 2004 and April 5, 2004.

does not plan to exit from the provision of local or long distance services, it has strong incentives to retain AT&T s former customers and would not have the same incentives as AT&T to raise prices to these consumers. For example, SBC markets DSL and video services to its telephone subscribers and will have an incentive to retain AT&T s current customers to facilitate marketing additional services to them. Thus, AT&T s former customers are likely to be better off as a result of the transaction because it enables them to avoid the higher prices AT&T would have been expected to charge.

55. As noted above, AT&T continues to market its VoIP services to consumers. By merging SBC with a small virtual VoIP provider, the proposed transaction is unlikely to adversely affect competition. This is due to the factors discussed above, including: (i) the modest number of subscribers to AT&T s VoIP service, (ii) the availability of a number of providers of rival virtual services (including Vonage and cable providers);(69) and (iii) competition from VoIP services provided by cable operators, which analysts expect to be the principal competitive challenge to ILECs. Analysts also view the AT&T CallVantage service as one of many providers with no special competitive significance. Lehman Brothers concludes that [w]ithout demonstrated success, we are not assuming significant CallVantage growth. (70)

C. THE PROPOSED TRANSACTION WILL HAVE NO ADVERSE IMPACT ON THE PROVISION OF WIRELESS SERVICES

56. The proposed transaction is not likely to adversely affect competition for the provision of wireless services. SBC owns a 60 percent economic interest in Cingular Wireless, the nation s largest wireless carrier and AT&T spun off its wireless division, AT&T Wireless, in 2001.(71) AT&T has previously announced it would enter as a MVNO. MVNOs are value

(69) http://www.vonage.com/corporate/aboutus_fastfacts.php

(70) Lehman Brothers, AT&T Corp., January 21, 2005, p.3.

(71) AT&T press release, AT&T Splits Off AT&T Wireless, July 9, 2001, and New York Time, AT&T in Deal to Return to Wireless Market, May 18, 2004.

added resellers of other carriers wireless services, such as Virgin and Qwest.(72) After deciding in 2004 to cease marketing to consumers, AT&T decided to scale back its efforts and seek to provide wireless services to large business customers only.(73)

57. The loss as the result of this transaction of a narrowly focused entrant reseller would not be expected to adversely affect competition. The wireless industry already has many competitors. There are several national facilities-based wireless carriers, as well as regional facilities-based carriers and other resellers.(74) The FCC recently examined these factors and concluded that there is effective competition in the [wireless] marketplace. (75) In October 2004, the FCC approved (subject to minor conditions) the merger of two of six national facilities-based wireless carriers (AT&T Wireless and Cingular).(76) These factors, and the FCC s recent analyses, indicate the proposed transaction will not harm competition in the provision of wireless services.

V. BUSINESS SERVICES

A. DESCRIPTION OF SERVICES

58. Business voice and data services offered by SBC and AT&T are described in detail in the Application and related filings. This section provides a brief overview of the scope of competition in the provision of business services and assesses the potential impact of the transaction on competition for various business voice and data services.

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(72) FCC, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Ninth Report, WT Docket No. 04-111, September 9, 2004, at paras 39-40, and http://wirelessreview.com/ar/wireless_qwest_revisits_history/

(73) See, for example, AT&T 4Q04 Earnings Conference Transcript, January 20, 2005, p. 2.

(74) See, for example, FCC, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Ninth Report, WT Docket No. 04-111, September 9, 2004, ¶36.

(75) FCC, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Ninth Report, WT Docket No. 04-111, September 9, 2004, ¶2.

(76) FCC, Memorandum Opinion & Order, *In the matter of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations*, FCC 04-255, (Cingular-AT&T Order) 10/26/04, ¶147.

59. As a general matter, business voice revenue fell three percent between 2003 and 2004 and is forecast to decline eight percent over the next two years. By contrast, business data traffic is expected to grow significantly, although business data revenues are expected to grow more slowly than traffic due to increased competition and productivity.(77)

60. While both SBC and AT&T today provide both local and long distance business services, including both voice and data services, there are substantial differences in the mix of services each provide and the customers that are the focus of each company s efforts.

1. AT&T Business Services

61. AT&T offers a variety of services to its business customers, including local voice service (provided through dedicated access and UNE-P to certain smaller business customers); long distance voice services, including domestic and international long distance; data services, including frame relay, ATM, IP VPN, and private lines; and managed services that include network design, maintenance, security, web hosting and desktop implementation.(78) AT&T s long distance voice revenues for business services account for 85 percent of its total business voice revenues.(79) The local/long distance mix of AT&T s data revenues is similar.

62. As discussed above, AT&T has stopped marketing to consumers (including businesses with less than five lines), is becoming much more selective in [its] approach to the small business market and is focusing on serving large business and government customers.(80) The same reasons that lead AT&T to stop marketing to consumers would likely cause it to reduce its efforts to serve smaller business customers as well.

(77) In-Stat, Wireline in Decline, December 2004, pp.18, 24.

(78) See www.business.att.com

(79) AT&T Corp. Fourth-Quarter and Full-Year 2004 Financial Results, Historical Segment Data, January 20, 2005.

(80) AT&T Earnings Conference Call, January 20, 2005. (Reported by Thomson StreetEvents, pp. 3-4).

2. SBC Business Services

63. SBC also offers a variety of services to business customers, including local voice and data service and, since receiving regulatory approval in recent years, long distance voice and data services.(81) SBC s retail business voice revenues are 86 percent local and 14 percent long distance.(82)

64. In 2000 and 2001, SBC attempted to enter into the provision of enterprise services and deployed facilities in 30 out-of-region territories. These efforts, however, were largely unsuccessful.(83) As discussed above, SBC in 2003 began an initiative with the goal of providing enterprise services to multilocation customers, focusing on firms with locations inside of SBC s 13-state territory.

B. ENTRY AND TECHNOLOGICAL CHANGES HAVE CREATED INCREASED COMPETITION IN THE PROVISION OF BUSINESS SERVICES

65. In recent years the widespread entry of new facilities-based telecommunications providers throughout the United States has created a variety of new competitors for both local and long distance data and voice services. Entry by service providers has been facilitated by large increases in fiber optic capacity deployed in long haul and local networks. Carriers including Qwest, Level 3, Global Crossing, Williams, Broadwing and others deployed extensive long distance fiber networks. At the same time, CLECs including AT&T (TCG), MCI (MFS, Brooks), Time Warner, Focal, as well as the new long distance providers deployed fiber networks within metropolitan areas, typically to serve central business districts.

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(81) See Declaration of James Kahan.

(82) Based on internal SBC documents.

(83) See Declaration of James Kahan.

1. Long distance fiber and service providers

66. Between 1996 and 2001, the number of fiber-kilometers of optical fiber deployed in national networks increased six-fold.(84) For both long haul and metro area fiber networks, the increase in fiber deployed substantially understates the increase in potential network capacity due to improvements in electronics that increase the bandwidth than can be carried on a given strand of fiber.

67. Firms such as Qwest, Level 3, Broadwing, and Global Crossing that deployed fiber are now service providers. However, in addition, the new networks have also facilitated entry by additional service providers that purchased either capacity or indefeasible rights of use (IRUs) on these networks. For example, Level 3 s business model focuses on providing wholesale services enabling other companies and carriers to take advantage of Level 3 s national network.

2. Metropolitan area fiber and service providers

68. The FCC has also noted large increases in the deployment of fiber in metropolitan areas.(85) New Paradigm Resources Group (NPRG) reports that in 2004 the facilities-based CLECs tracked in its annual report operated networks with over 370,000 route miles, had deployed over 1,200 voice switches and had over 2,000 data switches in place.(86)

69. The NPRG data identify areas in which CLECs report they operate voice and/or data networks, and provide frame relay, ATM and IP services.(87) For CLECs affiliated with

(84) KMI Corp., Fiberoptic Networks of Long Distance Carriers in North America: Market Developments and Forecast, November 1999, p. A-1.

(85) FCC, Triennial Review Order, August 21, 2003, ¶ 378.

(86) NPRG, CLEC Report 2005, p. 2-12, Table 9.

(87) Operational networks are defined to include those in which a CLEC operates a switch within a city (an operational network) as well as those in which services are provided through facilities in a nearby area. CLECs that serve an area through resale are excluded from this analysis.

interexchange carriers, such as AT&T, MCI, Sprint and others, only CLEC related activities are reported. In addition, the NPRG data do not report all CLEC activity. For example, out-of-region ILEC facilities are not reported, and not all carriers report with respect to all types of facilities.

70. CLECs in an MSA do not necessarily serve the same routes and buildings and, to date, we have not analyzed the extent to which CLECs facilities in a given MSA serve the same areas. Nonetheless, the NPRG data suggest that a wide variety of CLECs can deploy facilities in response to demand throughout MSAs in SBC region.

71. As Table 1 indicates, nearly all metropolitan areas in states served by SBC are served by multiple facilities-based CLECs that operate voice and data networks. The data indicate that the 38 MSAs in SBC s region with more than 500,000 residents have an average of 11.2 operational data networks. The data also indicate that 94.7 percent of the MSAs have 3 or more CLECs operating data networks and that 68.4 percent have five or more. (That is, only 5.3 percent have less than three networks and 31.6 percent have less than five.) On a population-weighted basis, CLEC coverage is higher, due to the fact that MSAs with larger populations typically have more CLEC activity.

Table 1

Number of CLECs with Operations in MSAs with more than 500,000 Residents in SBC States - 2004

Service	Average Number of Networks	Population Weighted Average	Percentage of MSAs with 3+ Networks	Percentage of MSAs with 5+ Networks	Percentage of Population in MSAs with 3+ Networks	Percentage of Population in MSAs with 5+ Networks
Facilities Based Voice Network	7.5	10.5	89.5%	71.1%	96.9%	87.8%
Facilities Based Data Network	7.7	11.2	94.7%	68.4%	98.6%	87.0%
Frame Relay	5.1	6.8	81.6%	52.6%	91.3%	77.8%
ATM Service	5.9	7.8	84.2%	65.8%	92.0%	85.1%
Internet Protocol	5.3	8.0	78.9%	57.9%	90.5%	80.7%
Fiber Network in Place	4.8	6.7	73.7%	42.1%	88.5%	72.5%

Source: New Paradigm Group CLEC Report 2005; U.S. Census Bureau.

New Paradigm reports services offered through CLEC divisions only.

Includes 38 MSAs.

3. IP Convergence

72. Both legacy firms as well as entrants provide a wide variety of voice and data services. While such services have been treated as distinct markets by the FCC in the past, the growth of IP technology is rapidly blurring these distinctions. IP enables voice and data services to be carried simultaneously on the same network by the same equipment.

73. For example, IP based services, such as IP virtual private networks (IP VPNs), today compete directly with traditional data technologies (such as private lines, frame relay, and ATM) as well as with traditional voice services. This convergence between voice and data service has been widely recognized. According to Yankee Group, [t]he market opportunity for convergent telephony solutions has never been greater, and we predict a significant SMB [small and medium business] adoption of converged solutions over the next 2 years. (88) Industry research firms such as Forrester, IDC and In-Stat have all noted migration from these traditional services to IP services. For example, InStat notes in a recent report that:

(88) Yankee Group, Educated SMBs Have Aggressive Plans to Upgrade to Converged Phone and Data Systems, January 2004, p.2.

IP VPN [Virtual Private Network] services are generating strong revenue growth for a number of service providers, as they migrate customers from legacy Frame Relay/ATM and private-line services to these next-generation VPN services. They will also be a key battleground for service providers looking to capture the many customers who will be converging their voice, data, and video traffic onto a single service in the future.(89)

74. Forrester research similarly concludes that our recent research indicates that 56% of North American enterprises plan to replace Frame Relay with some amount of IP VPN in 2005. (90)

75. As this suggests, revenue from traditional data services such as frame relay and ATM is expected to fall, while revenue from IP VPNs is expected to increase. In-Stat/MDR predicts that between 2004 and 2006, ATM revenues will decline by 1 percent and frame relay by 7 percent while IP VPN revenues will increase by 25 percent.(91)

76. The growth of data services, and particularly IP-VPNs, has resulted in important changes in the competitive environment. While legacy carriers often provide customers service through circuit-switched voice service and traditional data services, entrants offer competitive alternatives to business customers based on lower-cost IP-based technologies.

C. THERE ARE A WIDE VARIETY OF SUPPLIERS OF BUSINESS SERVICES

77. There is great heterogeneity among telecommunications carriers and others selling telecommunications solutions with respect to the products or services offered, geographic coverage and types of customers served. There is also great heterogeneity among purchasers of telecommunications services with respect to the mix of services required, service quality requirements, the number of employees to be served and the geographic location of those

(89) In-Stat, High Growth and Lots of Opportunity: The US IP VPN Services Market, January 2005, p.1.

(90) Forrester, IP VPNs: Build or Buy?, January 27, 2005, p.1

(91) In-Stat/MDR, Wireline in Decline: US Wireline Services 2004, Table 7 and IDC, U.S. IP VPN Services 2004-2008 Forecast and Analysis, Table 1.

employees. As a result, it is difficult to identify with any precision the scope of markets for business services.

78. However, as discussed below, available data indicate that a variety of providers compete to meet the telecommunications needs of all general categories of business customers. These include traditional wireline local and long distance carriers as well as a variety of facilities-based firms that have entered in recent years. In addition, non-carriers including systems integrators and equipment manufacturers have entered into the provision of services to business customers. These non-carriers design, implement and operate networks for business customers using in part wholesale transport services purchased from carriers.

79. The various competitors competing to serve business customers fall into a number of broad groups including traditional IXCs, new long distance network operators, CLECs, systems integrators, equipment manufacturers and their value-added resellers (VARs), and cable television companies. The nature of competition and coordination between these members groups is not easily characterized, although groups of customers face a variety of alternative suppliers. Firms compete with respect to some customers or locations but may partner in attempting to bid for contracts with other customers. Some firms (like systems integrators, manufacturers and VARS) may compete with others (such as IXCs, ILECs and CLECs) that serve as suppliers of their wholesale transport.

80. Some of the major competitors seeking to serve business customers are briefly described below.

1. Traditional IXCs

81. The traditional IXCs, including AT&T, MCI and Sprint, supply a variety of services to business customers. They have extensive national and international networks and

provide a variety of local and long distance voice and data services. These firms serve a wide range of business customers, from smaller business to very large scale enterprise customers.

2. Operators of new fiber networks

82. In the late 1990s a variety of firms deployed extensive long-haul fiber networks throughout the United States as well as internationally. This capacity is now used by those companies and others to provide voice and data telecommunications services. New network operators have expanded their reach by purchasing or trading fiber on multiple networks. In some cases, the companies have merged with other carriers with local networks, thus increasing their ability to pursue large business customers.

83. Principal firms in this group include: Qwest, which has a worldwide fiber optic and also includes U S West s local networks in the western United States; Broadwing which has an extensive domestic network and acquired Focal, a CLEC operating in metropolitan areas across the United States; Global Crossing, which has a national and international fiber optic network; and Level 3, which has a national and international network and focuses on providing wholesale services to other carriers.

3. CLECs

84. CLECs operate local or regional networks and many operate in a number of metropolitan areas. These companies typically deploy facilities in central business districts to serve business customers and offer a variety of voice and data services.(92) Examples of major CLECs include XO Communications, which operates facilities in 18 metropolitan areas in SBC s region, MCI (33 areas), McLeod (49 areas), Birch (22 areas) and TimeWarner Telecom (19 areas).

(92) See, generally, NPRG CLEC Report 2005.

4. Systems integrators

85. Systems integrators provide managed services to larger business customers. These services include, among other things, network design, desktop implementation, and network operation. Systems integrators purchase wholesale transport services from carriers. IBM, EDS, and Accenture are leading systems integrators.

5. International carriers

86. Firms associated with international carriers also provide business services to U.S. companies, focusing on those with international services needs. Equant, part of the France Telecom Group, serves a variety of multinational corporations, including Ernst & Young and ABN AMRO.(93) Similarly, British Telecom operates a U.S. network and offers managed voice and data network services.

6. Equipment manufacturers / Value added resellers

87. Like systems integrators, manufacturers of IP equipment design, implement and manage customer networks that utilize the manufacturers equipment. Equipment manufacturers maintain organizations that provide these services, principally to larger customers. Value added resellers provide the same types of services to smaller business customers. As noted by the Yankee Group, [c]lose collaboration allows systems integrator channel partners and vendors to gain access to SMBs. (94) Leading firms in this category include Cisco, Avaya, Lucent, and Nortel.

7. ILECs

88. Verizon and BellSouth, like SBC, offer local voice and data services both to businesses within their footprint but also to larger business customers with locations that spill

(93) Datamonitor, Equant, September 27, 2004.

(94) Yankee Group, Level 3 Reaches SMBs Through a Systems Integrator Channel Partner, September 2004, p. 1.

outside of their footprint. However, both of these firms, like SBC, focus on serving business that have most of their locations and employees within their home service territory. (95)

8. Cable companies

89. Cable companies operate networks of optical fiber and coaxial cable. While they are traditionally viewed as serving residential consumers, they also provide broadband services throughout the United States and are deploying IP and VoIP services to business customers. Cox, for example, markets IP VPN solutions to businesses as replacements for frame relay or private lines.(96) It also offers traditional voice and Internet services to business customers within the cities that it serves.(97) Analysts view cable companies as significant competitors for business customers. For example, the Yankee Group has written that cable operators have expanded their service offerings to include voice, video, data and internet business solutions. Initially focused on the SMB market, MSOs are now looking to capture enterprise wallet share. (98)

D. PURCHASERS OF TELECOMMUNICATIONS SERVICES ARE HIGHLY HETEROGENEOUS

90. Business customers are highly heterogeneous and cannot readily be classified. Business customers differ widely with respect to, among other factors: (i) the number of sites they operate; (ii) the geographical mix of these sites; (iii) geographical locations to be served; (iv) the number and types of services required; (iv) the complexity of these services; and (v) requirements regarding service reliability.

91. In addition, buyers differ widely with respect to their purchasing practices. Some firms choose to have a single provider for all their telecommunications services. Others may

(95) Frost & Sullivan / Stratecast Partners, Assessment of Verizon ESG, June 2004, pp.12-13. In-Stat, High Growth and Lots of Opportunity: The US IP VPN Services Market, January 2005, p.21.

(96) http://www.coxbusiness.com/connectivity/.

(97) http://www.coxbusiness.com/.

(98) Yankee Group, Cable MSOs Look to Penetrate the Business Market, December 2004, p. 1.

have separate carriers for, for example, local, long distance and data services. Some firms may have different providers in different locations. Some large purchasers may use multiple providers at any given location to ensure redundancy in case of a network outage. Some firms purchase services through formal Requests for Proposals (RFPs) and multiple rounds of bidding for contracts or even on-line auctions, while others purchase through informal negotiations or based on published tariff, rack, or catalog rates.

92. As frequently recognized by the FCC, enterprise and large business customers are often highly sophisticated, and often have IT staffs with considerable telecommunications expertise.(99) In addition, there are a variety of consultants that advise business customers and may assist in both the design of RFPs and evaluation of bids that are received. These services are also provided to a wide range of businesses through VARs and others that offer a variety of technological solutions to buyers.

93. The procurement practices that many large firms use in obtaining customized telecommunications services further reduce the likelihood of anticompetitive effects through either through coordinated or unilateral actions. As noted above, large business customers typically request firms to submit bids in response to RFPs that describe the services desired and locations to be served. These bidding opportunities are idiosyncratic and even the form of the outcome is uncertain. A contract award could be winner take all, or result in a split outcome, where portions of the contract are awarded to multiple bidders. As indicated above, overlapping awards for primary and secondary or backup service may be made. The range of these outcomes is not necessarily specified in advance.

94. In bidding situations, such as those that occur in procurement for many business customers, it is widely recognized that market share is a poor indicator of a firm s potential

(99) FCC, Bell Atlantic-GTE Order, FCC 00-221, 7/16/00, ¶121.

market power. If all firms in a bid competition are equally likely to win, it is the number of firms that best measures the extent of competition, not bidders market shares. The Merger Guidelines of the U.S. Department of Justice and Federal Trade Commission recognize that market shares may not be relevant in such situations, and note that [w]here all firms have, on a forward-looking basis, an equal likelihood of securing sales, the Agency will assign equal market shares. (100)

95. Additionally, the importance of non-price elements of competition further reduces the likelihood that firms can exercise market power either unilaterally or through coordinated effects. Buyers often have customized needs and bidders do not necessarily offer the same technological solutions. In addition, any type of coordination is further complicated by the fact that different buyers place different relative weights on price and quality characteristics of bids.

E. SBC AND AT&T FACE SIGNIFICANT RIVALS FOR ALL PRODUCTS AND SERVICES FOR WHICH THEY NOW COMPETE.

96. As discussed above, rapid changes in technology as well as the heterogeneity among both consumers and service providers of telecommunications services make it difficult to define economic markets with specificity. Nonetheless, available information indicates that, for all customers and services for which AT&T and SBC compete, the firms face competition from numerous other sources. This section provides an overview of the competitive alternatives relating to broadly-defined groups of services and customers.

1. Local voice and data service

97. As discussed above, CLECs have deployed a variety of local voice and data facilities throughout the United States. Table 2 extends this analysis and shows that in virtually all areas in which AT&T operates local facilities in SBC s territory (as reported in the NPRG

(100) Merger Guidelines of the U.S. Department of Justice and Federal Trade Commission, (Revised April 1997), Section 1.41.

data), there are a number of other CLEC providers of the same service. These data indicate that several CLEC providers will have facilities after the transaction in nearly all metropolitan areas in SBC s territory with a population of 500,000 where AT&T operates CLEC facilities.

Table 2

Number of CLECs with Operations in MSAs where AT&T has CLEC Operations in MSAs with more than 500,000 Residents in SBC States - 2004

Service	Number of MSAs	Average Number of Networks	Population Weighted Average	Percentage of MSAs with		Percentage of Population in MSAs with	
				3+ Networks	5+ Networks	3+ Networks	5+ Networks
Facilities Based Voice Network	26	9.1	11.3	100.0%	84.6%	100.0%	92.6%
Facilities Based Data Network	14	11.1	13.1	100.0%	92.9%	100.0%	94.2%
Frame Ready	12	7.8	8.4	100.0%	100.0%	100.0%	100.0%
ATM Service	12	8.0	9.5	100.0%	100.0%	100.0%	100.0%
Internet Protocol	8	9.0	10.5	100.0%	100.0%	100.0%	100.0%
Fiber Network in Place	23	6.3	7.4	95.7%	69.6%	95.3%	84.0%

Source: New Paradigm Group CLEC Report 2005; U.S. Census Bureau.

New Paradigm reports services offered through CLEC divisions only.

2. Long distance voice and data services

98. As the discussion in Section V.B above indicates, there are a large number of providers of business long distance voice and data services, including MCI, Sprint and new networks such as Broadwing and Level 3. Moreover, SBC does not possess such long haul fiber facilities outside its territory, but instead serves customers long distance needs through a wholesale arrangement with WilTel and arrangements with other carriers. Additionally, SBC s long distance voice and data services are marketed predominantly to customers that have the majority of their locations in SBC s territories. As a result, SBC is at a disadvantage in attempting to serve certain national customers since it must coordinate with other carriers in order to complete a large share of these calls.

99. It is generally recognized that prices for wholesale long distance services have been falling.

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Bernstein Research reports that wholesale voice pricing typically falls at a steady rate of 10-12% per year, while data price declines regularly exceed 20%. (101)

In-Stat/MDR reports that, for business voice services, there is [r]obust wireline long distance voice service competition driving service rates down. (102)

100. A large number of firms compete successfully to provide long distance services. For example, a recent SBC report summarized competition in the provision of interLATA high capacity lines purchased by DITCO, the Department of Defense procurement authority, between August 2003 and July 2004. The report identified a variety of entrants and smaller firms. Electra was awarded the largest volume of contracts for interexchange services, followed in descending order, by OLCR, AT&T, Axxess Connect, TimeWarner Telecom, Able Business Technology, MCI, Greyman Connections, BellSouth and SBC.(103)

3. Enterprise and large business customers

101. As discussed above, AT&T is a leading provider of services to enterprise and large business customers. SBC, on the other hand, is a recent entrant focusing on providing service to businesses with locations concentrated in their 13-state region. As noted above, AT&T also competes with MCI, Sprint, Qwest, systems integrators such as IBM and EDS, and others to provide services to these customers, and a large number of firms other than SBC are making efforts to expand their provision of these services to them as well.

(101) Bernstein Research, U.S. Telecom: Wholesale Segment Too Large to Sweep Under Rug, But Expected to Decline at 2.5% CAGR Through 09, 1/6/05, p. 8.

(102) In-Stat/MDR, Wireline in Decline: US Wireline Services 2004, December 2004, p. 25.

(103) SBC, SBC Federal DITCO Competitive Analysis, August 6, 2004, p. 3.

102. As discussed above, enterprise and large business customers are very sophisticated and purchase in large volumes. Buyers often conduct formal bids for services and both service quality and price are important dimension in firms evaluation of bids. These circumstances make it difficult for suppliers to price in a non-competitive fashion.

4. Small and medium business customers

103. Typically, small and medium sized business customers are less sophisticated and purchase more standardized products than larger business customers. However, as discussed above, there are many providers of standard local voice and data products, such as CLECs and VARs, which offer IP-based networks that serve these customers. Similarly, there are many providers of standard long distance voice and data products, such as traditional IXCs, new network providers, as well as resellers.

104. Industry analysts have recognized that cable companies now actively compete for small and medium business customers:

[C]able companies are already a competitive threat in the small business market, particularly with their cable modem services.(104)

We anticipate that cable operators will grow their SMB subscriber base from 654,000 at year-end 2002 to 2.3 million by year-end 2008, representing a CAGR of 23.4 percent.(105)

105. As noted above, AT&T has announced it is becoming much more selective in [its] approach to the small business market (106) We understand that many of these businesses would be among those SBC considers to be small business (Valued) customers (which generally generate less than $7,000 in annual revenue) and its medium business (Signature) customers (which generally generate less than $48,000 annually). For the reasons discussed in

(104) XChange Magazine, Vying for Small and Medium Business Customers, March 1, 2004.

(105) Yankee Group, Cable MSOs Continue to Get Down to Business, July 30, 2003, p. 2.

(106) AT&T Earnings Conference Call, January 20, 2005. (Reported by Thomson StreetEvents, pp. 3-4.)

Section IV above, AT&T historical and current market shares are of little or no relevance in evaluating the effect of this transaction on competition in the provision of services to smaller business customers. Indeed, AT&T has advised analysts that it expects its revenue from small businesses to decline in 2005 by several hundred million dollars as a result of its change in strategy.(107)

106. The above indicates that in the absence of this transaction, AT&T would have the incentive to harvest its base of smaller business customers as this group declines in size. Economic theory indicates that in such a situation a firm would find it profitable to raise price to such customers. SBC, which plans to actively serve small and medium business customers in competition with CLECs, IXCs and others, does not face these same incentives. These business customers are likely to be better off following a merger than they would have been if they remained customers of an independent AT&T.

VI. CONCLUSION

107. The proposed transaction will promote competition by creating a more efficient firm able to achieve significant cost savings and with increased incentives to develop and deploy new products and services for a wide range of customers. Our analysis to date indicates that the transaction is unlikely to create significant competitive harm due to a variety of characteristics of the industry and Parties, including the firms complementary business and networks, the rapid technology changes now occurring in the industry, and the wide variety of competitors serving consumer and business customers.

(107) AT&T Fourth Quarter 2004 Earnings Conference, January 20, 2005, pp.3-4.

I declare under penalty of perjury that the foregoing is true and correct to the best of my information and belief.

Signature: /s/ Dennis W. Carlton
Dennis W. Carlton

Date: Feb 21, 2005

I declare under penalty of perjury that the foregoing is true and correct to the best of my information and belief.

Signature: /s/ Hal S. Sider
Hal S. Sider

Date: Feb 21, 2005

Appendix 1

DENNIS WILLIAM CARLTON February 2005
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EDUCATION

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M.S., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Operations Research, 1974.

A.B., HARVARD UNIVERSITY (Summa cum laude): Applied Math and Economics, 1972.

EMPLOYMENT

LEXECON INC., Chicago, Illinois (1977 - present): President, 1997 2001, Senior Managing Director, 2003 - present.

UNIVERSITY OF CHICAGO, Graduate School of Business (1984 - present): Professor of Economics.

UNIVERSITY OF CHICAGO, Law School (1980 - 1984): Professor of Economics.

UNIVERSITY OF CHICAGO, Department of Economics: Assistant Professor (1976 - 1979): Associate Professor (1979 - 1980).

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts, Department of Economics (1975 - 1976): Instructor in Economics.

OTHER PROFESSIONAL EXPERIENCE

HARVARD UNIVERSITY, Public Policy Summer Course in Economics (1977): Professor.

BELL TELEPHONE LABORATORIES (Summers 1976, 1977).

JOINT CENTER FOR URBAN STUDIES OF M.I.T. AND HARVARD UNIVERSITY, Cambridge, Massachusetts (1974 - 1975).

CHARLES RIVER ASSOCIATES, Cambridge, Massachusetts (Summers 1971, 1972): Research Assistant.

FIELDS OF SPECIALIZATION

Theoretical and Applied Microeconomics Industrial Organization

ACADEMIC HONORS AND FELLOWSHIPS

M.I.T., National Scholar Award, 1968

Edwards Whitacker Award, 1969

Detur Book Prize, 1969

John Harvard Award, 1970

Phi Beta Kappa, 1971

National Science Foundation Fellowship, 1972 - 1975

Recipient of Post-doctoral Grant from the Lincoln Foundation, 1975

National Science Foundation Grant, 1977 - 1985

Recipient of the 1977 P.W.S. Andrews Memorial Prize Essay, best essay in the field of Industrial Organization by a scholar under the age of thirty

Ph.D. Thesis chosen to appear in the Garland Series of Outstanding Dissertations in Economics

Alexander Brody Distinguished Lecture, Yeshiva University, 2000

Keynote Address to the International Competition Network, Mexico, 2004

Milton Handler Lecture, New York, 2004

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Co-editor, Journal of Law and Economics, 1980 - present

Associate Editor, Regional Science and Urban Economics, 1987 - 1997

Associate Editor, The International Journal of Industrial Organization, 1991 - 1995

Member, American Economics Association, Econometrics Society

National Bureau of Economic Research, Research Associate

Member, Advisory Committee to the Bureau of the Census, 1987 - 1990

Editorial Board, Intellectual Property Fraud Reporter, 1990 - 1995

Consultant on Merger Guidelines to the U.S. Department of Justice, 1991 - 1992

Accreditation Committee, Graduate School of Business, Stanford University, 1995

Visiting Committee, MIT, Department of Economics, 1995 - present

Resident Scholar, Board of Governors of the Federal Reserve System, Summer, 1995

Member, Advisory Board, Economics Research Network, 1996 - present

Member, Steering Committee, Social Science Research Council, Program in Applied Economics, 1997 - 1999

Participant in meetings with Committee of the Federal Reserve on Payment Systems, June 5, 1997

Participant in roundtable discussions on The Role of Classical Market Power in Joint Venture Analysis, before the Federal Trade Commission, November 19, 1997 and March 17, 1998.

Member, Advisory Board of Antitrust and Regulation Abstracts, Social Science Research Network, 1998 - present

Participant in the Round Table on the Economics of Mergers Between Large ILECS before the Federal Communications Commission, February 5, 1999

Advisory Board, Massachusetts Institute of Technology, Department of Economics, 1999 - present

Chairman, FTC Round Table on Empirical Industrial Organization (September 11, 2001)

Professor, George Mason Institute for Judges, October 2001

Presidential Appointment to the Antitrust Modernization Commission, March 17, 2004

Editorial Board, Competition Policy International (CPI), 2004

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Deposition of Dennis W. Carlton in Re: M. K. Metals Inc., et al. v. National Steel Corporation: In the U.S. District Court for the Northern District of Illinois, Eastern Division, No. 79 C 1661, September 15, 1983.

Declaration and Deposition of Dennis W. Carlton in Re: Carter Hawley Hale Stores, Inc. v. The Limited, Inc., et al.: In the U.S. District Court, Central District California, No. CV 84 22000 AWT (JRX), April 21, 1984 (Declaration), and April 23, 1984 (Deposition).

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Expert Report and Deposition of Dennis W. Carlton In Re: D. Lamar DeLoach, et al. v. Philip Morris Companies, Inc., et al. (R.J. Reynolds Tobacco Co.), In the United States District Court for the Middle District of North Carolina, Greensboro Division, Case No. 00-CV-1235, October 2, 2003 (Expert Report) and October 30, 2003 (Deposition).

Report of Dennis W. Carlton on behalf of Verizon, November 18, 2003 (with K. Arrow, G. Becker, and R. Solow).

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Declaration, Deposition, and Rebuttal Declaration of Dennis W. Carlton In Re: CSC Holdings, Inc. v. Yankees Entertainment and Sports Network, LLC., before the American Arbitration Association, Arbitration Proceeding, Case No 13 181 02839 03, January 23, 2004 (Declaration), February 5, 2004 (Deposition), and February 24, 2004 (Rebuttal Declaration).

Expert Report, Discovery Deposition, Expert Report, and Discovery Deposition of Dennis W. Carlton In Re: Jamsports and Entertainment, LLC v. Paradama Productions, Inc., d/b/a AMA Pro Racing, Clear Channel Communications, Inc., SFX Entertainment, Inc., d/b/a Clear Channel Entertainment SFX Motor Sports, Inc., d/b/a Clear Channel Entertainment-Motor Sports, In the United States District Court for the Northern District of Illinois Eastern Division, Case No. 02 C 2298, March 8, 2004 (Expert Report), April 19 and 20, 2004 (Discovery Deposition), September 28, 2004 (Expert Report), and October 4, 2004 (Discovery Deposition).

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Expert Report and Declaration of Dennis W. Carlton (Sprint PCS Report) in Re: Wireless Telephone Services Antitrust Litigation: In the United States District Court Southern District of New York, 02 Civ. 2637, December 20, 2004 (Expert Report and Declaration).

Expert Report and Declaration of Dennis W. Carlton (AT&T Wireless Report) in Re: Wireless Telephone Services Antitrust Litigation: In the United States District Court Southern District of New York, 02 Civ. 2637, December 20, 2004 (Expert Report and Declaration).

Expert Report and Declaration of Dennis W. Carlton (Cingular Report) in Re: Wireless Telephone Services Antitrust Litigation: In the United States District Court Southern District of New York, 02 Civ. 2637, December 20, 2004 (Expert Report and Declaration).

Expert Report and Declaration of Dennis W. Carlton (Verizon Wireless Report) in Re: Wireless Telephone Services Antitrust Litigation: In the United States District Court Southern District of New York, 02 Civ. 2637, December 20, 2004 (Expert Report and Declaration).

HAL SIDER **February 2005**
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EDUCATION

Ph.D., UNIVERSITY OF WISCONSIN, Madison, Wisconsin: Economics, 1980.

M.A., UNIVERSITY OF WISCONSIN, Madison, Wisconsin: Economics, 1978.

B.A., UNIVERSITY OF ILLINOIS, Urbana, Illinois: Economics, 1976.

EMPLOYMENT

LEXECON INC., Chicago, Illinois (October 1985 - present): 1985-90: Economist; 1990-1999: Vice President; 1999-current: Senior Vice President.

U.S. COMMISSION ON CIVIL RIGHTS, Washington, D.C., (August 1984 - October 1985): Co-Director: Project on Minority Income Trends.

OFFICE OF POLICY: U.S. DEPARTMENT OF LABOR, Washington, D.C., (May 1982 - August 1984): Economist.

PRESIDENT S TASK FORCE ON FOOD ASSISTANCE (on leave from U.S. Department of Labor), Washington, D.C., (September 1983 - February 1984): Research Associate.

OFFICE OF RESEARCH AND EVALUATION; BUREAU OF LABOR STATISTICS, Washington, D.C., (September 1980 - May 1982): Economist.

UNIVERSITY OF WISCONSIN, Madison, Wisconsin (1978 - 79): Teaching Assistant.

UNIVERSITY OF WISCONSIN, Madison, Wisconsin (1976 - 78): Science Writer.

FIELDS OF SPECIALIZATION

Applied Microeconomics

Econometrics

Industrial Organization

Telecommunications

Labor Economics

ARTICLES

Have Mergers of Large Local Exchange Carriers Led to Discrimination Against Rivals?
An Empirical Investigation July 2002 (forthcoming, ABA publication on the use of econometrics in litigation, with Dennis Carlton and Thomas Stemwedel).

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University-Industry Dissertation Fellowship, University of Wisconsin, 1979-80.

Referee for:

Journal of Human Resources
Journal of Industrial Economics
Journal of Labor Economics
National Science Foundation
Policy Studies Journal
Review of Economics and Statistics

Journal of Law and Economics
Journal of Legal Studies
National Commission on Employment Policy
Social Science Research Council
U.S. Department of Health and Human Services
Antitrust Law Journal

TESTIMONIAL EXPERIENCE

Declaration to the Federal Communications Commission, In the Matter of AT&T Corp. v. BellSouth Telecommunications, Inc., July 20, 2004 (with Dennis Carlton), on behalf of BellSouth Telecommunications, Inc.

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No. 00-157, October 17, 2000 (with Dennis Carlton), on behalf of Verizon and Northpoint.

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Testimony before the Department of Public Service Regulation, Public Service Commission of the State of Montana, Docket No. D97.10.191, in the Matter of the Application of WorldCom, Inc. and MCI Communications Corporation for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., May 12, 1998, on behalf of WorldCom.

Testimony before the Public Utilities Commission of the State of Colorado, Docket No. 97A-494T, in re Application of WorldCom, Inc. for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., pre-filed direct testimony (March 25, 1998), cross-examination (April 2, 1998); on behalf of WorldCom.

Affidavit before the Florida Public Service Commission, Docket No. 971375-TP, Petition of WorldCom, Inc. for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., February 27, 1998 (with Dennis Carlton); on behalf of WorldCom.

Affidavit before the New York State Public Service Commission, Case 97-C-1804, Petition of WorldCom, Inc. for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., February 16, 1998 (with Dennis Carlton); on behalf of WorldCom.

Second Declaration before the Federal Communication Commission, CC Docket No. 97-211, in the Matter of Application of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc., March 19, 1998 (with Dennis Carlton); on behalf of WorldCom and MCI.

Shuller v. United States, U.S. District Court for the Eastern District of Pennsylvania, Civil Action No. 97-3820, Expert report in February, 1998; on behalf of U.S. Department of Justice.

Declaration before the Federal Communication Commission, CC Docket No. 97-211, in the Matter of Applications of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications to WorldCom, Inc., January 25, 1998 (with Dennis Carlton); on behalf of WorldCom and MCI.

Smith v. Amtrak, Circuit Court of Cook County, IL, Case 92 L 10525. Deposition in November 1997, trial testimony in January 1998; on behalf of Smith.

Johnson and Lehl v. City Colleges of Chicago, U.S. District Court for the Northern District of Illinois Eastern Division Case No. 96 C 0862. Expert report in July 1997, deposition testimony in November 1997; on behalf of City Colleges of Chicago.

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Sprint Communications Company L.P. v. Network 2000 Communications Corporation, Expert report on July 15, 1996, deposition testimony in July, August 1996; affidavit on November 9, 1996; on behalf of Sprint.

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Carbon Dioxide Industry Litigation, U.S. District Court for Central District of Florida MDL940. Expert report in October 1994 (with William M. Landes); supplemental report (with William M. Landes and Richard Leftwich) in May 1995; deposition testimony in July 1995; on behalf of opt-out plaintiffs.

AVR, Inc. v. Cemstone Products Corp., U.S. District Court, District of Minnesota, Third Division, File CIV 3-92-551. Expert report in October 1994; supplemental affidavits in December 1994, January 1995; on behalf of Cemstone.

W. Borysiewicz v. M. Gilblair, Circuit Court of Cook County, Illinois. Deposition testimony in August 1994; trial testimony in September 1994; on behalf of Borysiewicz.

NAACP et. al. v. American Family Mutual Insurance Co., U.S. District Court, Eastern District of Wisconsin, Civil Action No. 90-C-0759. Deposition testimony in July 1994 and November 1994; on behalf of American Family.

G. Bowan v. The Sales Force Companies, U.S. District Court for The Western District of Missouri, Case No. 92-0496-CV-W-2. Affidavit in February 1993; on behalf of Sales Force.

Wisconsin Central Transportation Corporation Continuance in Control Fox Valley and Western Ltd., Finance Docket 32036. Verified Statement to the Interstate Commerce Commission in September 1992 (with Andrew M. Rosenfield); on behalf of the Wisconsin Central.

Castaneda v. Baron Wire and Steel Inc., Circuit Court of Cook County, Illinois, Municipal Department, Second District. Deposition testimony in February 1992; on behalf of Castaneda.

Morgan v. ServiceMaster, U.S. District Court for the Northern District of Illinois, Case No. 89-C-0581. Report in August 1991 (with Sherwin Rosen); on behalf of ServiceMaster.

Sepich v. Mueller, U.S. District Court for the Central District of Illinois, U.S. District Court, Case No. 88-2353. Report in March 1991 (with Sherwin Rosen); on behalf of Mueller.

N. Savakis v. Beatrice Company, U.S. District Court for the N.E. District of Illinois Eastern Division, No. 89 C5790. Deposition testimony in June 1990; on behalf of Beatrice.

Times Herald Printing Company v. A.H. Belo Corp. and Dallas Morning News Company, District Court of Harris County Texas, 280th Judicial District. Deposition testimony in April 1990; on behalf of Dallas Morning News.

Turner v. IDS Financial Services, Inc., U.S. District Court for the District of Minnesota, File No. 88-521. Report in November 1989; on behalf of IDS.

McLendon et al. v. Continental Group et. al, U.S. District Court for the District of New Jersey, Civil Action No. 83-1340 (SA). Trial testimony in February 1989, testimony before Special Master in February 1990; testimony before Special Master (with Sherwin Rosen) in August 1990; on behalf of Continental Group.

Application of Illini Carrier L.P. before Illinois Commerce Commission. Testimony in April 1988 regarding application to provide natural gas transportation services; on behalf of Illini Carrier.

DECLARATION OF MARIUS SCHWARTZ

Professor of Economics
Georgetown University

In connection with the proposed transaction, SBC intends to file a registration statement, including a proxy statement of AT&T Corp., and other materials with the Securities and Exchange Commission (the SEC). Investors are urged to read the registration statement and other materials when they are available because they contain important information. Investors will be able to obtain free copies of the registration statement and proxy statement, when they become available, as well as other filings containing information about SBC and AT&T Corp., without charge, at the SEC s Internet site (www.sec.gov). These documents may also be obtained for free from SBC s Investor Relations web site (www.sbc.com/investor_relations) or by directing a request to SBC Communications Inc., Stockholder Services, 175 E. Houston, San Antonio, Texas 78205. Free copies of AT&T Corp. s filings may be accessed and downloaded for free at the AT&T Investor Relations Web Site (www.att.com/ir/sec) or by directing a request to AT&T Corp., Investor Relations, One AT&T Way, Bedminster, New Jersey 07921.

SBC, AT&T Corp. and their respective directors and executive officers and other members of management and employees may be deemed to be participants in the solicitation of proxies from AT&T shareholders in respect of the proposed transaction. Information regarding SBC s directors and executive officers is available in SBC s proxy statement for its 2004 annual meeting of stockholders, dated March 11, 2004, and information regarding AT&T Corp. s directors and executive officers is available in AT&T Corp. s proxy statement for its 2004 annual meeting of shareholders, dated March 25, 2004. Additional information regarding the interests of such potential participants will be included in the registration and proxy statement and the other relevant documents filed with the SEC when they become available.

Certain matters discussed in this statement, including the appendices attached, are forward-looking statements that involve risks and uncertainties. Forward-looking statements

include, without limitation, the information concerning possible or assumed future revenues and results of operations of SBC and AT&T, projected benefits of the proposed SBC/AT&T merger and possible or assumed developments in the telecommunications industry. Readers are cautioned that the following important factors, in addition to those discussed in this statement and elsewhere in the proxy statement/prospectus to be filed by SBC with the Securities and Exchange Commission, and in the documents incorporated by reference in such proxy statement/prospectus, could affect the future results of SBC and AT&T or the prospects for the merger: (1) the ability to obtain governmental approvals of the merger on the proposed terms and schedule; (2) the failure of AT&T shareholders to approve the merger; (3) the risks that the businesses of SBC and AT&T will not be integrated successfully; (4) the risks that the cost savings and any other synergies from the merger may not be fully realized or may take longer to realize than expected; (5) disruption from the merger making it more difficult to maintain relationships with customers, employees or suppliers; (6) competition and its effect on pricing, costs, spending, third-party relationships and revenues; (7) the risk that Cingular Wireless LLC could fail to achieve, in the amount and within the timeframe expected, the synergies and other benefits expected from its acquisition of AT&T Wireless; (8) final outcomes of various state and federal regulatory proceedings and changes in existing state, federal or foreign laws and regulations and/or enactment of additional regulatory laws and regulations; (9) risks inherent in international operations, including exposure to fluctuations in foreign currency exchange rates and political risk; (10) the impact of new technologies; (11) changes in general economic and market conditions; and (12) changes in the regulatory environment in which SBC and AT&T operate.

The cites to webpages in this document are for information only and are not intended to be active links or to incorporate herein any information on the websites, except the specific information for which the webpages have been cited.

Declaration of Marius Schwartz

I, Marius Schwartz, hereby declare the following:

Biographical Information and Qualifications as an Expert

1. I am a Professor of Economics at Georgetown University. I earned my B.Sc. degree from the London School of Economics with 1st class honors, and Ph.D. from UCLA. My teaching and research specialties are in industrial organization, competition, and regulation. From September 1998 to April 2000, I served at the Antitrust Division of the U.S. Department of Justice (DOJ) as the Economics Director of Enforcement, and for six months also as the Acting Deputy Assistant Attorney General for Economics (chief economist).

2. I have been actively involved in the telecommunications area both as an academic, government official, and private consultant. From April 1995 to June 1996, I served at the President s Council of Economic Advisers as the Senior Economist for industrial organization, working extensively on telecom issues including the 1996 Act. From 1996 to 1997, I was the DOJ s main economic outside expert on Bell entry into long-distance services. In 2000, I prepared to serve as the DOJ s testifying economic expert on Internet backbone issues in the proposed merger between WorldCom and Sprint. I have also consulted for the private sector on significant telecom matters, including international satellite services, international settlement rates, and the FCC s spectrum cap. My curriculum vitae is attached as Appendix 1.

I. Overview

3. The proposed transaction entails, among other things, a combination of Internet-related assets. Three attempted mergers in recent years by MCI (then known as WorldCom) have elicited concerns about the effects on competition in Internet Backbone services. This declaration

examines the likely effect of the current transaction on Internet Backbone (IB) competition, and is organized as follows:

a. Section II recaps the analysis by the reviewing U.S. agencies in the prior mergers: the postulated relevant product and geographic market, and the competitive concerns.

b. Section III demonstrates why this transaction does not raise competitive concerns in the provision of Internet Backbone services.

c. Section IV briefly addresses some of the efficiencies that SBC expects to realize in the provision of Internet-based services as a result of the transaction.

d. Section V provides brief conclusions.

II. DOJ and FCC Competitive Analysis of Past Internet Backbone Mergers

4. In the 1998-2000 time period, the Federal Communications Commission (FCC) and the Department of Justice (DOJ) reviewed three transactions involving attempted acquisitions by WorldCom of Internet backbone assets: WorldCom-MCI, approved in 1998 subject to the divestiture of MCI s backbone (iMCI); WorldCom-Sprint, abandoned in 2000; and WorldCom-Intermedia, approved in late 2000 subject to the divestiture of Intermedia s assets other than Digex (a provider of managed web site hosting). This section discusses the competitive concerns raised by the U.S. agencies, based on my review of their public documents.(1)

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(1) The FCC s public analysis is contained mainly in its Memorandum Opinion and Order, FCC, CC Docket No. 97-211, adopted September 17, 1998 (FCC WorldCom-MCI Order). The FCC issued only brief pronouncements in the other two mergers: Order, FCC, CC Docket 99-333, adopted August 3, 2000 (FCC WorldCom-Sprint Order) and Memorandum Opinion and Order, FCC, CC Docket No. 00-206, adopted January 17, 2001 (FCC Intermedia Order). The DOJ s analysis can be discerned from U.S. v. WorldCom, Inc. and Sprint Corp., Complaint, June 26, 2000 (DOJ Sprint Complaint), U.S. v. WorldCom, Inc. and Intermedia Communications, Inc., Civil Action No.1:00CV02789, Complaint, November 17, 2000 (DOJ Intermedia Complaint), and the Address by Constance K. Robinson, Director of Operations and Merger Enforcement, Antitrust Division, U.S. Department of Justice, Before the Practicing Law Institute, San Francisco, California, August 23, 1999, Network Effects in Telecommunications Mergers - MCI WorldCom Merger: Protecting the Future of the Internet (Robinson Speech). (No complaint was filed in WorldCom-MCI because a divestiture agreement had been reached.)

A. The Postulated Tier 1 Internet Backbone Market

5. Internet Backbone Providers (IBPs) operate the transmission networks to carry traffic over the Internet. The FCC previously defined IBPs as a separate product market:

we are inclined to agree that Internet backbone services, which we define to be the transporting and routing of packets between and among ISPs and regional backbone networks, constitutes a separate relevant product market.(2)

6. An IBP s customer (whether an ISP or an end user) typically pays a fee often based on the volume of traffic and/or the connection size for a *transit* service, whereby the IBP handles the customer s traffic to and from (a) the IBP s other customer as well as (b) any other network with which the IBP has agreed to exchange traffic. Under *peering* each network agrees to accept traffic from the other network only to the recipient s customers (not to third networks that are not customers of the recipient). Peering typically means the exchange of such traffic at zero price (settlement free) in both directions, though there are also instances of *paid peering* where only one network pays the other to accept traffic (still destined only to the recipient s customers, as distinct from transit). The physical interconnection to exchange traffic can take place at bilaterally chosen points *private peering* or at *public* sites managed by third parties (though the financial terms for exchanging traffic are determined by the participating networks).

7. The DOJ further distinguished between what it termed Tier 1 IBPs, and lower level IBPs (Tier 2 or Tier 3). It defined Tier 1 IBPs based on two attributes: (a) they have high-capacity networks nationwide or internationally and (b) they do not purchase connectivity from (are not customers of) any other network but instead have private peering with all other Tier 1 IBPs on a settlement-free basis. The DOJ concluded that the relevant product market was the provision of

(2) FCC WorldCom-MCI Order, ¶ 148.

connectivity to Tier 1 IBPs. It viewed the geographic market as the United States. *See* DOJ Sprint Complaint, ¶¶ 27-31.

8. Before discussing the DOJ s competitive concerns with each of the prior mergers, I offer some brief observations on the Tier 1 market definition. An IBP s key fundamental assets are: (a) probably most important, the size and relative significance of its customer base, such as the eyeballs and content providers connected to it, and (b) the capacity and geographic reach of its network facilities. Peering with another network is an indicator that the networks view each other as comparable in some sense, and thus may serve as a proxy of the strength of their underlying assets, but need not be a differentiator in itself. My analysis of the current transaction, however, is not sensitive to the precise market definition adopted, so I do not address whether a bright line can be drawn between Tier 1 and lower level IBPs. Thus, for present purposes I will largely accept the past Tier 1 market definition.

B. The Competitive Concerns

1. Horizontal Concern: Loss of a Competitor

9. In the Sprint Complaint, the DOJ noted that:

The proposed transaction would produce anticompetitive harm in at least two ways. First, it would substantially lessen competition by eliminating Sprint, the second-largest IBP in an already concentrated market, as a competitive constraint on the Internet backbone market.(3)

This traditional horizontal concern appears to have been largely based on the merger s effect on market concentration, e.g., the Sprint acquisition would have increased the Herfindahl-Hirschman index (HHI) for traffic from about 1,850 to 3,000.(4) However, probably because there still remained

(3) DOJ Sprint Complaint, ¶ 34.

(4) *Id.* ¶ 32.

a significant number of major competitors, this horizontal concern did not play center stage in any of the three reviews.

2. Vertical Concern: Interconnection Incentives of the Enlarged Network

10. Rather, the main concern in past transactions is encapsulated in the paragraph from the Sprint Complaint immediately following the one quoted above:

Second, the combined entity (UUNET/Sprint) will have the incentive and ability to impair the ability of its rivals to compete by, among other things, raising its rivals costs and/or degrading the quality of its interconnections to its rivals. Such behavior will likely enhance the market power of the combined firm and ultimately facilitate a tipping of the Internet backbone market that will result in a monopoly.

According to the DOJ, when a single network grows to a point at which it *controls a substantial share of the total Internet end user base and* its size *greatly exceeds that of any other network*, network effects may cause a reversal of its previous incentives to achieve efficient interconnection arrangements with its rival networks. In this context, degrading the quality or increasing the price of interconnection with smaller networks can divert customers from them to the largest network.

11. A central requirement under both scenarios degrading interconnection or raising its price under the threat of degradation is that the largest network must be sufficiently large that degrading interconnection would be a profitable option. As explained in Section C below, the DOJ s judgment was that each of the three prior mergers threatened to make WorldCom sufficiently large to put it in such a position.

12. A final point noted by DOJ in *Sprint* and *Intermedia* is that WorldCom controlled three of the seven largest and busiest public interconnection sites at which smaller Internet backbones exchange traffic (the MAE sites).(5) The merger by expanding WorldCom s market share could increase its incentive to impede rivals interconnection through under-investing in

(5) DOJ Sprint Complaint, ¶ 25, and DOJ Intermedia Complaint, ¶ 20.

these public facilities, or its ability to impede rivals, by placing additional public facilities under its control (since Sprint controlled another of these major sites).

13. There is no basis for similar concerns in the current transaction. SBC controls only one active public interconnection facility, while AT&T does not control any public interconnection sites. Thus, apart from industry changes that have reduced the competitive significance of these sites,(6) the transaction will not increase the ability of the combined company to impede interconnection among rivals.

C. Indicators of Backbones Relative Importance Noted in Past Reviews

14. **Reviewing agencies have measured IBPs relative size for purposes of assessing their competitive significance by various metrics.**

15. ***WorldCom-MCI.*** In its review, DOJ considered a number of measures.(7) The DOJ concluded that the merger would have combined the facilities, personnel, and, perhaps most importantly, the customer bases of iMCI and UUNET, the two top backbone providers and that the combined entity would have been by far the largest single nationwide backbone with an overall majority of customers (web sites, ISPs and dedicated access corporate customers). Each of

(6) As noted by Telegeography, while the role of public interconnection continues to decline, a new breed of hybrid exchanges offering premium interconnection facilities has risen. These sites managed by companies such as Equinix and PAIX have attempted to build businesses out of the efficiencies inherent in bringing multiple providers together in a neutral and safe environment. Telegeography 2003, Global Internet Geography. These factors contributed to SBC s exit from the NAP West facility acquired with the Pacific Telesis acquisition.

(7) These include: Total Internet revenue for ISPs connected to the IBP, with and without eliminating double counting and irrelevant revenue; Number of ISPs connected to the IBP; Internet traffic originating, terminating, or otherwise traversing the IBP s network; Number and type of Points of Presence on an IBP s network; Number of circuits connecting customers to the IBP; Number of routes advertised (or terminating IP addresses); Density of the network and web of customers; Number, type, and significance of the IBP s customers. *See* Robinson Speech, pages 10-11. DOJ obtained the data for the first two measures from public sources. The other measures apparently came from non-public sources.

the measures studied exhibited the same pattern. after the merger, MCI/WorldCom would be the dominant player in the market, and substantially greater than any other player. (8)

16. ***WorldCom-Sprint.*** In this review, the DOJ reported, based on a traffic study conducted in February 2000, shares of Internet traffic sent to or received from the customers of the 15 largest Internet backbones in the United States. (9) The DOJ also stated that these 15 largest IBPs represented about 95% of all U.S. dedicated Internet access revenues.(10) This traffic study found that WorldCom s UUNET had a share of 37%, more than twice that of Sprint, the next-largest Tier 1 IBP, which had a 16% share, putting the merged firm in a commanding position vis-à-vis all of their Tier 1 IBP rivals, [with] a majority of all Internet traffic on its own network. (11) The DOJ noted that UUNET alone is by far the largest Tier 1 IBP by any relevant measure and is already approaching a dominant position in the Internet backbone market. (12)

17. *WorldCom-Intermedia.* In its Intermedia Complaint, the DOJ did not report share estimates, but reiterated that the merger would increase WorldCom s commanding position .(13)

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(8) Robinson Speech, p. 10. For the European Commission s report on traffic shares in Worldcom-MCI *see* Commission Decision of 8 July 1998, Case No. IV/M.1069 WorldCom/MCI.

(9) DOJ Sprint Complaint, ¶ 32. The DOJ did not provide details about the methodology of its traffic study, the names of the 15 IBPs, nor the underlying data source.

(10) *Id.* DOJ did not provide the details or source underlying the 95% calculation.

(11) *Id.* ¶ 42.

(12) *Id.* ¶ 32. Reviewing the same merger, the European Commission (EC) reported the following ranges of market shares for the universe of top five IBPs based on *traffic flows*: MCI WorldCom 46-51%; Sprint 10-20%; hence the combined entity 56-71%. For an expanded universe of 17 networks, the EC s calculated ranges were: WorldCom 32-36%; Sprint 5-15%; and the combined firm 37-51% (30-40% under alternative assumptions described by the EC as extremely favorable to the parties). Commission Decision of 28 June 2000, Case No COMP/M.1741-MCI WorldCom/Sprint, (EC WorldCom/Sprint Decision) ¶¶ 104-106, 114-116, 123. The EC (but not the DOJ) also reported for the universe of 17 IBPs, , based on confidential information, shares (summarized in Table 1 below) based on two measures of *revenues*. EC WorldCom/Sprint Decision, ¶¶ 118-120, 122-123, 126.

(13) DOJ specifically alleged that: If the merger is allowed to proceed, UUNET will increase its commanding position vis-à-vis all other IBP rivals. UUNET already carries more than twice the Internet traffic as its nearest rival, Sprint. ((DOJ Intermedia Complaint ¶36); Ultimately, there is a significant risk that, as a result of the merger, the

18. Table 1 summarizes the position of WorldCom and the potential merged firm in the MCI and Sprint proceedings. (As noted, no share information was reported in Intermedia.)

Table 1

Descriptions of WorldCom s Internet Backbone (IB) Position in Past Merger Reviews

	MCI merger (1998)	**Sprint merger (2000)**
WorldCom / UUNET	**DOJ:** **top IBP (iMCI #2)** **EC:** **Traffic share: 30-40%** **Revenue share:** **Total Internet: 35-45%** **Dedicated access: NA**	**DOJ:** **by far largest Tier 1 IBP by any relevant measure** **already approaching dominant position** **Traffic share: 37%** **(Sprint #2 at 16%)** **EC:** **Traffic share: 32-36%** **Revenue share:** **Total Internet: 40-50%** **Dedicated access: 25-35%**
Merged Firm	**DOJ:** **40-75% share of Internet connectivity** **overall majority of IBP customers** **the dominant player and substantially greater than any other, by any measure** **EC:** **Traffic share: 42-52%** Revenue share: **Total Internet: 45-55%** **Dedicated access: NA**	**DOJ:** **Traffic share: 53%** **commanding position v. all Tier 1 rivals** **EC:** **Traffic share: 37-51%** **(30-40% very conservatively)** **Revenue share:** **Total Internet: 45-65%** **(next rival 10-15%)** **Dedicated access: 35-45%**

III. The Past Concerns Do Not Apply to This Transaction

19. Today, a portrayal of MCI, AT&T, or any other IBP as approaching a dominant position in the Internet backbone and that its merger with a non-leading backbone provider such

combined entity will be able to tip the Internet backbone services market and raise prices for all dedicated access services. (*Id.* ¶ 37).

as SBC would create a significant risk that the combined entity will be able to tip the Internet backbone services market simply is not tenable.

A. Concentration Among Tier 1 Backbones Is Much Lower Today than in 2000 and No Single Firm Approaches Dominance

20. There are today at least six Tier 1 IBPs by the DOJ s prior definition a backbone that pays no other for transit: MCI, AT&T, Sprint, Level 3, Qwest, and Global Crossing. Based on information provided by SBC and AT&T, three additional IBPs NTT/Verio, Savvis and Cogent may also meet the Tier 1 definition. SBC is not a Tier 1 IBP by the past DOJ definition: while SBC expects to obtain settlement-free peering fairly soon with several of the Tier 1 IBPs, it does *not* expect to achieve peering status with others, including its current primary provider of paid transit services.(14)

21. The traffic shares reported for past Internet backbone mergers by the DOJ and EC, and the revenue shares reported only by the EC (all summarized in Table 1 above), relied on non-public information. Therefore, for traffic shares I have relied on third party analysis prepared for AT&T by RHK, Inc. for the fourth quarter of 2003; for revenue shares, I have relied on data for 2003, the most recent year compiled by IDC.

22. *RHK Traffic Data.* RHK, Inc. prepared its data by surveying the top 7 Internet Backbone Providers, and then supplementing that survey data with its own estimates. A more detailed description of its methodology is provided in Appendix 2. Using the traffic data reported by RHK, the pre-merger shares of Internet Traffic are shown in Table 2, below. Based on these shares, the maximum pre-acquisition HHI would be approximately 773 and the increase in HHI would be 145 points (2 x 12.5 x 5.8), producing a post-merger HHI of only 918.

(14) In addition to the lack of full peering, SBC does not own its entire backbone facilities it owns routers, but not the fiber.

Table 2

Internet Traffic Shares

IB Provider	Share (%)	HHI
AT&T	12.5	156.25
Company B	12	144
Company C	9	81
Company D	8	64
Companies E, F &G	5 (each)	25 x 3
Top 7 Sub Total	61.5	
Others collectively	43.5	
Maximum concentration of others		
SBC	5.8(15)	33.64
6 others at	6	36 x 6
1 other at	1.7	2.89
TOTAL	100	772.78

23. Thus, the pre-merger traffic HHI today is about 40 percent of the 1,850 level reported by the DOJ in the Sprint Complaint (¶ 32), and the post-merger HHI is less than one-third of the 3,000 level reported for that transaction.

24. Besides the much lower pre- and post-merger concentration levels than in the prior transactions, it is also worth noting that the past few years have witnessed an increase in volatility in the shares of the leading providers. Moreover, the identity of the top-ranked firm has changed twice between January 2003 and May 2004. This increased volatility is further indication of the lack of dominance by any of the main providers today. Contrast this with the EC s statement in WorldCom-Sprint, that WorldCom s market share has shown a remarkable stability over the 1998-2000 period.

(15) The 5.8% share for SBC is calculated from the ratio of SBC s traffic to AT&T s traffic using December, 2004 proprietary data provided by the parties.

25. *IDC Revenue Data*. IDC reports revenues derived from various Internet-related services.(16) Among the revenue measures tracked by IDC are: (a) US Wholesale IP Revenue, which consists of (i) US Wholesale Dial IP Revenue, (ii) US Wholesale Upstream Transit IP Revenue, and (iii) US Wholesale Other IP Revenue; and (b) US Business IP Connectivity, which consists of (i) US Dedicated Internet Access IP Revenue, and (ii) US Remote Access IP Revenue. Of these, the two measures that would appear to reflect most closely Internet backbone functions are US Dedicated Internet Access IP Revenue, and US Wholesale Upstream Transit Revenue. Moreover, focusing on these two categories tends to overstate the position of the parties inclusion of dial up revenues would raise the share of MCI while lowering the shares of AT&T and SBC. In Table 3, I combine the latest revenue figures, i.e., 2003, provided to the parties by IDC for these two categories, and compute the implied shares.

26. The shares of dedicated Internet access plus wholesale upstream transit revenues shown in Table 3 below demonstrate that as with traffic data concentration before and after this transaction would fall well within levels deemed unconcentrated that presumptively raise no competitive concerns.

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(16) The latest published reports from IDC, providing 2002 revenue data and describing IDC s methodologies, are provided as Appendix 3. IDC has prepared and provided to SBC, but has not yet formally published, 2003 revenue information. With IDC s consent, the parties have used this unpublished information as the source for Table 3.

Table 3

Revenue Shares for Internet Backbone Related Functions

2003 Calendar Year ($ Millions)

Internet Backbone Provider		IP Backbone Revenue (Wholesale Upstream Transit and Business Dedicated Internet Access)	Revenue Share
AT&T	$	1,134	15%
MCI (WorldCom)	$	699	9%
Sprint	$	600	8%
Verizon	$	403	5%
BellSouth	$	400	5%
SBC	$	396	5%
Level 3	$	283	4%
Qwest	$	170	2%
Comcast	$	166	2%
Savvis	$	107	1%
XO	$	99	1%
Verio	$	92	1%
Equant	$	92	1%
Internap	$	81	1%
Cable & Wireless	$	73	1%
Other	$	2,896	38%
Total	**$**	**7,691**	**100%**
SBC & AT&T Combined	$	1,531	20%
HHI (Other split equally among 15 additional firms)			568
Change in HHI			152

Source: Unpublished IDC Report, 2004

27. *Telegeography AS Connections.* The number of connections linked to different backbones can be an imperfect proxy for these backbones relative importance as carriers of traffic or generators of revenue, because connections can vary in their size, number of users and their intensity of utilization. Nevertheless, unless there are strong differences between backbones in their

traffic or revenue per connection, shares of connections can provide at least a rough indication of the relative importance of the customer bases of various IBPs. Even if IBPs do differ greatly in their traffic per connection at a given point in time, provided these differences do not vary greatly over time, one can get a sense of trends in industry structure by examining *changes* in connection shares of over time.

28. Appendix 4 presents data from Telegeography on autonomous system connections for each year 1999-2004.(17) The trends observed from Appendix 4 include:

a. Overall concentration dropped significantly. For example, the ASCs HHI declined as follows: 1,059 in 1999, 919 in 2000, 750 in 2001, 665 in 2002, 602 in 2003, and 452 in 2004. Also, in 1999, the top 5 IBPs accounted for 60% of total ASCs,(18) while in 2004, the top 5 accounted for less than 39%.

b. There have also been significant shifts among the leading firms, as can be seen, for example, in the relative decline of MCI, and the rise of Providers C and E.

29. Taken as a whole, the above evidence on traffic, revenue and connectivity yields the following conclusions:

No one company can be said to have anything approaching a dominant position in the Internet Backbone space.

The combination of SBC and AT&T will not materially alter the current status quo.

My ensuing conclusions, that none of the past competitive concerns apply to this transaction, follow almost immediately from the above data.

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(17) An Autonomous System (AS) is either a single network or a group of networks controlled by a common administrator on behalf of a single organizational entity (such as a university, business, or an IBP). An AS is assigned a globally unique number, sometimes referred to as an Autonomous System Number, or ASN. The number of AS connections refers to the number of other ASs to which a given AS is connected.

(18) Because some of the top 5 in 1999 were out of the top 10 by 2004, it is not possible to compute the 60% number from the data which Telegeography has permitted to be placed on the public record. However, the

number has been validated against the full 1999 ASC list.

B. The Transaction Raises No Horizontal Competition Issues

30. As noted earlier, SBC is not a Tier 1 IBP by the past DOJ definition: it lacks settlement-free peering agreements with some of the carriers generally regarded as the major Tier 1 backbones. I do not wish to overstate the significance of SBC s not being a Tier 1 IBP because, as noted earlier, the competitive analysis of this transaction is not sensitive to the precise product market definition employed. As shown below, SBC also is not a major IBP by any of the DOJ/EC metrics for which data are available. Expanding the product market beyond the traditional Tier 1 to include SBC would also encompass other backbones, with concentration and the increase in concentration produced by this transaction, both remaining low.

31. It is instructive to contrast the pre-merger concentration levels, and the increases in concentration from the SBC/AT&T transaction, with the levels and increases reported earlier in Table 1 for previous Internet backbone transactions.

a. *Traffic*. As shown in Table 2, based on traffic data today s pre-merger HHI is 773 about 40 percent of the pre-merger HHI in WorldCom-Sprint; the ΔHHI of 145 produced by the current transaction is one-eighth the size of the HHI increase that would have occurred in WorldCom-Sprint.

b. *Internet Revenue*. Table 3 showed that AT&T s share of Internet revenues derived from upstream transit and dedicated access was 15% in 2003, as estimated by IDC, while SBC s share based on these measures was approximately 5%. The change in the HHI of 152 points would leave the post-merger level below 750.

c. *Autonomous System Connections*. As discussed above and in Appendix 4, AT&T ranks second with 8.4% of ASCs, and SBC ranks 13th with 2.2%. The combined SBC/AT&T share would be 10.6%, and the ΔHHI would be a mere 37 points.

32. Summing up, under any reasonable market definition and measures of backbones significance, the above information shows that market concentration would rise only modestly

following this merger and would remain very low by the standards that the DOJ and FTC have used in recent years to challenge horizontal mergers.(19)

C. The Transaction Raises No Vertical Competition Issues

33. Nor is there any basis to fear that the expansion in the combined company s backbone size would put it in such a strong position compared to other IBPs that it could impose adverse interconnection terms on them. As such, there is no significant risk that, the combined entity will be able to tip the Internet backbone services market and raise prices for all dedicated access services. (20) SBC and AT&T combined would still be generally comparable in size to other leading IBPs, not two to three times larger, as DOJ alleged UUNET would become. Even under aggressive assumptions about SBC s growth relative to other IBPs e.g., assuming SBC s share of traffic or revenue were to increase in the next two to three years by 50 percent (from 6% to 9% on traffic, and from 5% to 7.5% on revenue) without a change in AT&T s share the extrapolated market share of the merged firm would still increase only modestly, and would be well below twenty five percent by either measure. Moreover, the same factors that would contribute to SBC s growth new internet services (e.g., VoIP) and growth in broadband subscribers would also contribute to the growth of cable companies. This transaction therefore does not create or enhance a dominant position, as was feared in prior cases.

34. The competitive landscape and the nature of this particular transaction are very different from the MCI mergers scrutinized in 1998 and 2000. By any reasonable measures, including those cited by the DOJ and EC, a combined SBC/AT&T would have a much smaller share likely no more than one-half of Internet backbone share than MCI alone had five years

(19) See Merger Challenges Data, Fiscal Years 1999-2003, issued by the Federal Trade Commission and the U.S. Department of Justice, December 18, 2003 <http://www.usdoj.gov/atr/public/201898.htm>

(20) DOJ Intermedia Complaint, ¶ 37.

ago. Since MCI was unable to prevent the growth of competitors at a time when its Internet backbone position was considerably stronger than what SBC/AT&T would now have, I see no plausible basis for believing the merger would create such ability today.

IV. Benefits of Network Integration

35. Based on reviewing the Declaration of Christopher Rice, my understanding is that this transaction will yield significant benefits from integrating the two companies networks. Focusing specifically on the Internet backbone, the transaction will result in the more direct connection of SBC s broadband customers to AT&T s backbone, reducing the number of hops (connections between routers) required to complete a given transmission. Today, each network can have as many as three hops. Thus, even if SBC were to connect directly (i.e., be peered) with AT&T today instead of reaching AT&T through SBC s transit provider a packet could still undergo as many as six hops; integration of the networks would, for traffic that originates and terminates on the combined companies network, reduce the number of hops to at most three thus reducing delay and thereby improving quality of service (QoS).

36. In addition, integration of the two networks will allow QoS standards to be enforced for on-net traffic. While the enforcement of QoS requirements across interconnected networks is a goal of the industry, appropriate and comprehensive standards are not yet completely available. The combined company will be able to apply common standards internally to make their networks QoS compatible faster than could occur between separate companies. In turn, the ability to enforce QoS will allow the combined company to enter into tighter service level agreements (SLAs) for customers and applications that require them, e.g., priority business data and high quality IP-video and VoIP.

37. The combined effect of the above factors is to improve service quality generally, and especially to enable the faster deployment of IP-based services that are particularly sensitive to delay and to variation in delay, such as VoIP and videoconferencing.

V. Conclusions

38. For all the reasons discussed above, it is clear that the IBP competitive landscape and this transaction are fundamentally different from the prior reviews. Today, a competitive review cannot credibly start with the premise that a modest expansion of one of the leading IBP s poses a risk to competitors. Based on the evidence that I have examined, the proposed merger of SBC and AT&T would not pose a threat to competition in Internet backbone services.

I declare, under penalty of perjury, that the foregoing is true and correct.

Signature: **/s/ Marius Schwartz**
Marius Schwartz

Date: February 18, 2005

APPENDICES

Appendix 1

Curriculum Vitae of Professor Marius Schwartz

Appendix 2

RHK Methodology and Selected Tables

Appendix 3

IDC Reports: November 2003 and December 2003

Appendix 4

Telegeography Autonomous System Connection Data: 1999-2004

MARIUS SCHWARTZ

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Home: 3905 Jocelyn Street, NW
Washington DC 20015
tel (202) 363-1896

EDUCATION

University of California, Los Angeles: Ph.D. in Economics, September 1982

University of California, Los Angeles: M.A. in Economics, March 1978

London School of Economics: B.Sc. in Economics (1st Class Honors), August 1976

PROFESSIONAL EXPERIENCE

Georgetown University, Department of Economics

Professor, June 1993 present

Associate Professor, August 1987 May 1993

Assistant Professor, January 1983 July 1987 (part time in Fall 1982)

Excellence in Undergraduate Teaching Award, Economics Department, 2001

Director of Graduate Studies: Spring 1993-Spring 1995

Courses Taught: *Graduate* Industrial Organization, Microeconomics for executives and policy makers, Macroeconomic Theory I and II, Monetary Policy. *Undergraduate* Antitrust, Industrial Organization, Mergers & Corporate Control, Microeconomics (Principles, and Intermediate), Topics in Competition and Regulation, International Economics, Macroeconomic Theory.

President s Council of Economic Advisers

Senior Staff Economist**,** June 1995 May 1996 (part-time consultant April & May 1995, June 1996).

Served as the senior economist responsible for antitrust, regulated industries, and other industrial organization matters. Work included: Telecommunications Act of 1996; competition in international satellite services; competition in the electric utility industry; reforming the patent and trademark office; intellectual property rights; international trade disputes; health care.

U.S. Department of Justice, Antitrust Division

Acting Deputy Assistant Attorney General for Economics, January 1999 June 1999

Economics Director of Enforcement, September 1998 December 1998, July 1999 April 2000

In these positions, I was responsible for overseeing economic analysis at the Antitrust Division of numerous mergers and non-merger matters in various industries, including:

Mergers & Joint Ventures Ameritech/SBC, Bell Atlantic/GTE, AT&T/BT, Cargill/Continental, Aetna/Prudential, CBS/Viacom.

Monopolization suit against American Airlines for predatory pricing (pending).

Regulatory Bell entry into long-distance telecommunications services.

U.S. Department of Justice, Antitrust Division (continued)

Outside Expert

UPM-Raflatac/Bemis-MACtac merger, 2003 testified at trial.

News Corp-DirecTV partial acquisition, 2003.

General Electric/Honewyell merger, 2000-01 prepared to serve as the testifying economic expert.

WorldCom/Sprint merger, 2000 prepared to serve as the testifying economic expert on Internet backbone issues.

Bell entry, 1996 997 served as the DOJ s outside economic expert on Bell company entry into longdistance telecom services long-distance telecommunications services, under section 271 of the Telecom Act, and submitted two affidavits on behalf of DOJ to the Federal Communications Commission..

Economist, January 1983 May 1995 (part time), October 1980 December 1982 (full time).

Expert Testimony

Presented written and oral court testimony in successful challenges of merger and of consent decree.

Mergers

Investigated mergers in several industries and helped to design appropriate relief.

Business Practices

Worked on vertical-restraints cases (tying, exclusive dealing, resale price maintenance, exclusive territorial arrangements) and horizontal-conduct cases (collusion and predation).

Legislation, Congressional Matters, Division Reports

Provided input to Antitrust Division s Merger Guidelines (1992) and Vertical Restraints Guidelines (1984). Helped draft Division comments on various Congressional legislation and responses to inquiries in several areas including price discrimination and dealer termination.

Cooperation with Foreign Competition Authorities

Interacted with competition officials from several countries and agencies, and commented on various documents covering subjects such as predatory pricing, price discrimination, distribution systems, sole import distributorships, joint R&D, and the interaction between trade and competition policies.

Other Professional Experience

Consultant in private antitrust and regulatory matters details and references available on request.

Management Group Associate, Economic Studies Program, American Institute for Contemporary German Studies, Washington DC, October 1997-2000.

OECD: Lecturer in Seminar on Vertical Restraints for competition officials from Czech Republic, Hungary, Poland, and Slovakia in Cracow, Poland, November 20-22, 1995.

ILADES: Participated in designing and teaching a short course in industrial organization to policy makers and executives in Santiago, Chile, June 1994.

Pew Freedom Fellows Program: Taught short course in microeconomics to twenty Fellows from transition economies, annually, January 1993 1999. (Fellows hold middle-level or upper-level positions in government and private business.)

Center for Economic Development, Slovakia: Academic Advisory Board.

World Bank: Consultant.

Abt Associates/USAID: Advised Government of Zimbabwe in Harare on formulating antitrust law, summer 1993 (consultant to Abt, work funded by USAID s Implementing Policy Change Project).

LANGUAGES

French, Hebrew, Romanian (speak and read Hebrew fluently; proficient in French and Romanian).

HONORS

U.S. Department of Justice, Antitrust Division: Special Achievement Awards

Brookings Institution: Research Fellow, 1979-80

University of California, Los Angeles: Earhart Fellowship, 1977-78

University of California, Los Angeles: Regents Fellowship, 1976-77

London School of Economics: Premchand Prize in Monetary Economics, 1976.

PUBLICATIONS

Refereed Journals

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<http://www.abanet.org/antitrust/committees/computer/clayton/winter02.pdf>

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Discussant Comments on papers by Patrick Rey and Ralph Winter and by Robert Anderson et al., in Robert D. Anderson and Nancy T. Gallini, Eds., *Competition Policy and Intellectual Property Rights in the Knowledge-Based Economy*, Calgary: University of Calgary Press, 1998.

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REGULATORY FILINGS, DISCUSSION PAPERS AND WORK IN PROGRESS

Should Antitrust Assess Buyer Market Power Differently than Seller Market Power? presented at DOJ/FTC Workshop on Merger Enforcement, Washington DC, February 2004
< http://www.ftc.gov/bc/mergerenforce/presentations/index.html>

Interconnection Incentives of a Large Network Facing Multiple Rivals, (with David Malueg), Georgetown University, Department of Economics Working Paper 03-01, January 2003
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The National Television Ownership Cap and Localism, paper submitted with Comments of NAB and NASA to FCC in *2002 Biennial Regulatory Review - Review of the Commission s Broadcast Ownership Rules and Other Rules*, FCC 02-249, Notice of Proposed Rulemaking (rel. Sep. 23, 2002), January 2, 2003 (with Daniel R. Vincent).

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<http://econ.georgetown.edu/workingpapers/>

Exclusive Dealing, Product Differentiation, and Rent Extraction, in progress (with Serge Moresi and Francis O Toole).

Are Spectrum Limits Needed to Preserve Competition? paper submitted on behalf of CTIA to FCC in *2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services,* WT Docket No. 01-14, Notice of Proposed Rulemaking (rel. Jan. 23, 2001), April 13, 2001 (with John Gale).

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Intelsat Restructuring and Comsat s Non-Dominance: Reply to Dr. Owen and Professor Waverman, paper filed on behalf of Comsat Corporation with the FCC*, In the Matter of Comsat Corporation Petition for Forbearance from Dominant Carrier Regulation and for Reclassification As a Non-Dominant Carrier*, (Comsat s Forbearance Petition) File No. 60-SAT-ISP-97, March 1998.

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The Open Local Market Standard for Authorizing BOC InterLATA Entry: Reply to BOC Criticisms, Supplemental Affidavit submitted on behalf of U.S. DOJ to FCC, along with DOJ s evaluation of following BOC application(s): BellSouth in South Carolina, November 4, 1997 and in Louisiana, December 10, 1997. <www.usdoj.gov/atr/statements/1281.htm>

Competitive Implications of Bell Operating Company Entry into Long-Distance Telecommunications Services, Affidavit submitted on behalf of U.S. Department of Justice (DOJ) to FCC, along with DOJ s evaluations of following BOC applications: SBC in Oklahoma, May 16, 1997; Ameritech in Michigan, June 25, 1997; and BellSouth in South Carolina, November 4, 1997 and in Louisiana, December 10, 1997. <www.usdoj.gov/atr/statements/Affiwp60.htm>

Towards Competition in International Satellite Services: Rethinking the Role of INTELSAT, paper distributed at OECD Ad Hoc Meeting of Experts on Competition in Satellite Services, Paris, June 1995 (with Joseph E. Stiglitz and Eric Wolff).

Competitive Markets in Generation: Economic Theory and Public Policy, paper presented at conference on Electric Utility Restructuring: Whither Competition? organized by International Association for Energy Economics Los Angeles Chapter, and Micronomics Inc., Los Angeles, May 1995.

Option Values of Deposit Insurance and Market Values of Net Worth: Some Evidence for U.S. Banks, mimeo, December, 1992 (with Behzad Diba and Chia-Hsiang Guo).

Do Sunk Costs Discourage or Encourage Collusion? U.S. Department of Justice, Antitrust Division, EPO Discussion Paper 85-10 (September 1985).

Signalling Equilibria Based on Sensible Beliefs: Limit Pricing Under Incomplete Information, U.S. Department of Justice, Antitrust Division, EPO Discussion Paper 84-4 (May 1984) (with Maxim Engers).

OTHER SCHOLARLY ACTIVITIES

Seminars Presented

Bellcore

Bureau of Competition Policy, Industry Canada

California State University, Hayward

Center for Strategic and International Studies

Columbia University

ENSAE, Paris

Federal Reserve Bank of Philadelphia

Georgetown University

George Washington University

U.S. International Trade Commission

Johns Hopkins University

New York University Economics Department

New York University Stern School of Business

Pennsylvania State University

Simon Fraser University

Tel Aviv University Law School

Tulane University

University of Alberta

University of British Columbia

University of Calgary

University of California, Davis

University of California, Los Angeles

University of Colorado, Boulder

University of Illinois

University of Maryland

University of Montreal

University of Pennsylvania

University of Toronto

University of Virginia

U.S. Department of Justice

U.S. Federal Communications Commission

U.S. Federal Trade Commission

Conferences: Speaker, Discussant or Panelist

- Institut d Economie Industrielle, The Economics of Electronic Communication Markets, Toulouse, October 2004
- DOJ/FTC Merger Enforcement Workshop, Washington DC, February 2004
- DOJ/FTC Hearings on Health Care and Competition Law and Policy, Washington DC, April 2003
- International Industrial Organization Conference, Boston, April 2003
- Integration, Investment and Innovation: Future Directions for the Telecommunications Industry, Georgetown University McDonough School of Business, February 2003
- The Regulation of Information Platforms, University of Colorado School of Law, Boulder, January 2002
- Phoenix Center for Advanced Legal & Economic Public Policy Studies, U.S. Telecoms Symposium, Washington DC, July 2001
- Practising Law Institute, Antitrust and Trade Practices Issues in Cyberspace New York, March 2001
- 28th Annual Telecommunications Policy Research Conference, Washington DC, September 2000

- Schwab Capital Markets LP, Washington Research Group, Telecom, Internet and Ecommerce Conference, Washington DC, September 2000
- Experiences with Telecommunications Deregulation, semi-annual meetings organized by AEIBrookings Joint Center for Regulatory Studies and Centre for European Policy Studies, Washington DC, April 2000
- Telecommunications After Bell Entry, Conference at University of Colorado School of Law, Boulder, April 2000
- 48th Annual Antitrust Spring Meeting, American Bar Association Section of Antitrust Law, Washington DC, April 2000
- Telecom-IT Americas 99 Conference, Institute of the Americas, La Jolla, November 1999
- 5th Annual Health Care Antitrust Forum, Northwestern University School of Law, Chicago, October 1999
- Regulatory Reform in Japan, Mexico, the Netherlands and the United States, OECD, Paris, March 1999
- Federal Communications Bar Association Competition Committee, Symposium, Washington DC, January 1999
- Conference on Current Topics in Merger and Antitrust Enforcement, Charles River Associates, Washington DC, December 1998
- Conference on Anticompetitive Regulation, Robert Schuman Centre of the European University Institute, Florence, September 1999
- 47th Annual Antitrust Spring Meeting, American Bar Association Section of Antitrust Law, Washington DC, April 1999
- 25th Annual Telecommunications Policy Research Conference, Washington DC, September 1997
- Telecommunications seminar series, Canadian Bureau of Competition, Ottawa, September 1997
- Competition Policy Workshop, The World Bank, June 1997
- Economics of Interconnection Forum, Federal Communications Commission, Washington DC, May 1996
- Authors Symposium on Competition Policy and Intellectual Property Rights, Canadian Bureau of Competition, Aylmer, Quebec, May 1996
- Electric Generation Association, Annual Meetings, West Palm Beach, April 1996
- Wheeling & Dealing: Opportunities and Challenges in the New Electric Industry, conference sponsored by the Center for Regulatory Studies, Illinois State University and the Institute of Government and Public Affairs, University of Illinois-Urbana, Chicago, April 1996
- New Social and Economic Approaches to a Multimedia World, OECD Symposium, Tokyo, March 1996
- Telecommunications and Energy Regulation in Transition Economies, Center for Economic Development, Bratislava, October 1995
- Electric Utility Restructuring: Whither Competition? organized by International Association for Energy Economics Los Angeles Chapter, and Micronomics Inc., Los Angeles, May 1995.
- New Learning on Barriers to Entry in Competition Policy, Canadian Bureau of Competition, Ottawa, March 1995
- Southeastern Economic Theory Meetings, Charlottesville, October 1994
- EARIE Conference, Tel Aviv, September 1993
- Midwest International Economics Meetings, Pittsburgh, October 1992
- Latin American Econometric Society, Mexico City, September 1992
- Conference on Industrial Organization, Carleton University, Ottawa, July 1991
- Workshop on Strategic and Dynamic Aspects of International Trade, SUNY at Stony Brook, July 1991
- AEI Conference on Innovation, Intellectual Property and World Competition, Washington DC, September 1990
- EARIE Conference, Lisbon, September 1990
- Conference on International Trade and Technology, Brussels and London, November 1989
- EARIE Conference, Budapest, August 1989
- Conference on Strategy and Market Structure, Dundee University, Dundee, August 1988
- Conference on Firm Ownership and Competition, Graduate School of Business, Stanford University, June 1987
- EARIE Conference, Berlin, August 1986
- AEA Annual Meetings, Dallas, December 1984

Referee for Professional Journals

American Economic Review

Canadian Journal of Economics

Economica

Economic Journal

Economics Letters

European Economic Review

European Journal of Political Economy

International Economic Review

International Journal of Industrial Organization

Journal of Business

Journal of Business Economics

Journal of Economic Dynamics and Control

Journal of Economic Education

Journal of Economic Theory

Journal of Economics and Management Strategy

Journal of Industrial Economics

Journal of International Economics

Journal of Law & Economics

Journal of Political Economy

Managerial and Decision Economics

Quarterly Journal of Economics

Quarterly Review of Economics and Business

RAND Journal of Economics

Review of Industrial Organization

Review of International Economics

Scandinavian Journal of Economics

Southern Economic Journal

Outside Evaluator Research Proposals and Tenure & Promotion Cases

National Science Foundation

Small Business Administration

Duke University

INSEAD

Northwestern University School of Law

University of Calgary

University of Michigan

University of Virginia

Internet Traffic Analysis

Muayyad Al-Chalabi

Director Executive Strategic Program

February 17, 2005

www.rhk.com

CHARTING THE TELECOM FUTURE

Methodology

Data Collection

5 major carriers (Interview and data)

Detailed AT & T peering and customer data

Traffic Analysis

Estimate total Internet Traffic

Allocate market share

Peering data (AT & T and others)

% of total traffic

Revenue Analysis

Private communications

Public data

AT & T revenue breakdown

Validate results with public data

Definitions

AccessCapacity = $(\text{NumAccessLinks x TransmissionRate})_i$

BackboneCapacity = *BackboneLinks x Transmission Rate*

OfferedMonthlyLoad = *AverageDailyLoad x* 30

CarriedMonthlyLoad = $\textit{AverageDaily Traffic}_i$ *x* 30

OfferedPeakLoad = *AccessLinksPeakLoad*

CarriedPeakLad = *BackboneLinksPeakLoad*

Peering Traffic = Traffic Exchanged through Peering Points

Metrics

Access Capacity Gigabits per seconds

Backbone Capacity Gigabit per Second

Offered Monthly Load - Petabytes

Offered Peak Load - Gigabits per Second

Revenue per Access Gigabit - $/Gbit

Revenue per Monthly Petabyte

MARKET ANALYSIS

U.S. Business IP Connectivity Forecast and Analysis, 2003 2007

Steven Harris

IDC OPINION

While scandal, fraud, and errors have dogged much of the telecom industry and affect this business IP connectivity forecast, the overall market segment will hold up reasonably well throughout the forecast period as economic conditions improve, budgets loosen, and pent-up demand is released. Highlights are as follows:

ý Overall business IP connectivity spending will increase by a 3.3% compound annual growth rate (CAGR), with faster growth expected in the next few years as companies catch up and satisfy pent-up demand for greater bandwidth and connectivity for sites and remote users.

ý Price declines will continue unabated as carriers compete for business spending. Newly reconstituted carriers will reenter the market, and all carriers are targeting the business IP segment for growth.

ý The growth of IP VPNs will help propel business connectivity spending. While IP VPN services are included in IDC s value-added services segment, the underlying connectivity needed to deploy an IP VPN will support business connectivity spending.

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IN THIS STUDY

Methodology

This study reflects IDC s ongoing research into Internet services markets. The research is based on public and proprietary sources of information and is used to generate the forecasts and market share analysis in this study. Forecasts are based on historical growth, insight from IDC s consulting experience, IDC s business markets and consumer markets primary research (e.g., the annual *WAN Manager Survey*), and discussions with service providers and equipment manufacturers.

IDC relies on its discussions with service providers for this study, and each year the providers ability and willingness to participate in the survey varies. In addition, IDC relies on carriers to provide accurate information and adjusts estimates as necessary when it believes such information is not credible.

Wherever possible, actual revenue and subscriber counts are used. IDC estimated and projected for certain time periods based on trends in the previous quarters and the previous year.

IDC took actual revenue from the universe of ISPs and made estimates of which percentages of overall IP revenue applied to each market segment. Reported numbers were used whenever possible, and IDC estimated where necessary. For almost every carrier, estimates were used in the segment breakout totals.

The totals were added for each market segment, and an estimate was made of the other category, which includes roughly 7,000 additional ISPs in the United States. Most of these ISPs are small local providers with little revenue, and many in this group derive a fairly substantial portion of their revenue from consulting and professional services, which are excluded from this analysis and forecast.

Other categories of revenue excluded from this study include dark fiber sales, private lines, hardware and software sales by carriers, local loops except where noted, Web merchandise sales, and all non-IP services, including switched voice and traditional data services, such as frame relay and ATM.

Definitions

What Is an ISP?

An ISP is an operator that provides direct access to the Internet and a business for which core revenue is based on the billable use of a network transport facility that it either owns or contracts from a network provider.

The ISP usually also provides a core group of Internet utilities and services, such as email, a portal or start page, Web page hosting, and other items of interest to its subscribers or customers. Users reach their ISP by either dialing up a computer modem with a phone line or using a dedicated line that is installed by the provider.

Internet Access

Internet access is defined as a dial-up or dedicated connection to the World Wide Web or the Internet. This definition excludes services provided by companies that use IP technology but are not ISPs or do not provide Internet access and transport services (e.g., IBM and Yahoo!).

Internet access can be broken down into two general realms of connectivity methods: dial-up and dedicated service. All access methods and speeds fall within one of these two groups:

ý **Dial-up access.** This method involves using a modem to convert digital signals into analog signals to allow them to traverse the public telephone system and make a connection to the Internet. The dial-up user connects to a modem bank on the ISP s network or to a contracted network provider and is thereby connected to the Internet.

ý **Dedicated access.** This method involves a connection established for and dedicated to the primary purpose of enabling Internet access. Thus, fractional T1, full T1, T3, and Optical Carrier (OCx) at speeds ranging from OC3 to OC48 or more connections constitute dedicated access speeds. In addition, digital subscriber line (DSL) and cable modems are always-on connections. For this reason, DSL and cable are considered dedicated access methods by IDC.

Business Access Services

Business IP access involves mostly dedicated connections to the Internet for corporate sites and dial-up access for remote corporate users, such as road warriors and business travelers. All Internet services provided for business users or paid for by businesses are included in this market segment.

Business-Oriented ISPs

Business-oriented ISPs concentrate on offering Internet-related services to U.S. businesses. Such services typically include dial-up Internet access for business remote users, dedicated and dial access for business locations, and a wide variety of value-added services for the business sector. Services such as consulting and network aggregation make up a large part of the revenue for these ISPs.

IDC includes in this segment ISPs such as XO Communications and Internap.

Regional/Local ISPs

Most local and regional ISPs do not have their own networks and confine their coverage to areas smaller than the entire United States. Many ISPs in this category provide software applications development as well as consulting in systems design, Internet marketing strategies, and Internet advertising creation and placement.

There are over 7,000 regional and local ISPs in the United States, with some evidence suggesting many thousands more.

SITUATION OVERVIEW

The business Internet access market took a hit in 2001 and 2002, although the decline is largely illusory. The litany of accounting errors, omissions, and fraud are well known, and these have impacted IDC s business IP forecast.

While the overall market declined officially from 2001 to 2002, IDC believes this is mostly a result of inaccurate financial reporting in past time periods and not a real decline. However, economic conditions, spending freezes on business investment, and price competition certainly reduced real demand for business IP connectivity to some extent.

The overall market for business IP connectivity was $8.4 billion in 2002. Dedicated Internet access, including broadband connections, represented $6.5 billion of that total, and remote access represented the remaining $1.9 billion.

2002 Market Share by ISP

Table 1 shows the market shares of carriers for the overall business IP connectivity market, which combines dedicated Internet access and remote access. MCI (formerly WorldCom) still leads the market, although at much reduced levels from 2001.

IDC estimates that MCI s business IP connectivity revenue declined by $1.2 billion between year-end 2001 and year-end 2002. Bankruptcy has no doubt played a large role, although accounting scandals at the company do not appear to have impacted revenue reporting, which is the basis for the market share ranking.

AT&T is a close second in Table 1. One surprise to many readers may be AOL, ranked number 4 for business IP revenue. IDC counts all revenue attributable to businesses in the business IP segment. Some businesses use AOL as their dial-up or broadband ISP, and some end users have AOL accounts that are either paid for by their employer or other business or that the employer reimburses the employee for access.

All of the above transactions are included in the business IP segment and not in the consumer segment, hence AOL s appearance on the business IP market share list. All four RBOCs are making inroads in the business access marketplace and are included on IDC s top 10 list, partly through their dominance of DSL services, which is still largely a business access method.

Telecommuters and corporate offices are often connected via DSL as an alternative to T1 and fractional T1 connections. In addition, RBOCs are often default telecommunications service providers for many businesses in their territories, especially small and medium-sized enterprises (SMEs). Hence, the RBOCs are making progress in this segment.

Tables 2 and 3 show the market shares for dedicated Internet access and remote access business IP connectivity. MCI s revenue is concentrated more than most in the remote access space, whereas AT&T is the number 1 provider for dedicated connectivity.

TABLE 1

U.S. Business IP Connectivity Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	MCI (WorldCom)	1,453.8	17.4
2	AT&T	1,012.5	12.1
3	Sprint	433.9	5.2
4	AOL	381.5	4.6
5	Genuity	266.4	3.2
6	Verizon	243.6	2.9
7	SBC	239.0	2.9
8	Qwest	234.4	2.8
9	BellSouth	220.8	2.6
10	XO	189.0	2.3
	Subtotal	4,675.0	55.8
	Other	3,699.4	44.2
	Total	8,374.4	100.0

Source: IDC, 2003

TABLE 2

U.S. Dedicated Internet Access IP Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	AT&T	961.9	14.9
2	MCI (WorldCom)	750.2	11.6
3	Sprint	412.2	6.4
4	Genuity	239.7	3.7
5	Verizon	236.3	3.7
6	Qwest	227.4	3.5
7	BellSouth	218.6	3.4
8	SBC	217.5	3.4
9	XO	179.6	2.8
10	Savvis	153.2	2.4
	Subtotal	3,596.7	55.7
	Other	2,865.8	44.3
	Total	6,462.4	100.0

Source: IDC, 2003

TABLE 3

U.S. Remote Access IP Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	MCI (WorldCom)	703.6	36.8
2	AOL	381.5	20.0
3	EarthLink	51.0	2.7
4	AT&T	50.6	2.6
5	iPass	34.0	1.8
6	Genuity	26.6	1.4
7	Sprint	21.7	1.1
8	SBC	21.5	1.1
9	Infonet	20.4	1.1
10	Equant	10.2	0.5
	Subtotal	1,321.1	69.1
	Other	590.9	30.9
	Total	1,912.0	100.0

Source: IDC, 2003

FUTURE OUTLOOK

Forecast and Assumptions

Going forward, the business IP connectivity segment will increase from $8.4 billion in 2002 to $9.8 billion in 2007, resulting in a CAGR of 3.3% (see Tables 4 and 5).

The business access market is propelled by remote access for corporate employees and connectivity for company sites.

Remote access may involve Internet roaming for employees who are traveling, employees who are taking work home at night or on weekends and accessing the Internet or the corporate LAN via an Internet connection, or telecommuters who work primarily, or often, at home.

TABLE 4

Key Forecast Assumptions for the U.S. Business IP Connectivity Market, 2003 2007

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
Macroeconomics				
GDP growth	U.S. economic growth will continue to recover slowly. IDC anticipates U.S. GDP growth of 2% in 2003. In 2004, IDC anticipates U.S. GDP growth of 3.3%.	**High.** The telecom services market benefits directly from economic growth. As companies add additional sites, they spend more on telecom.	Increase	high
Constrained capital budgets	In near term, due to economic downturn, U.S. companies have constrained capital expenditure budgets that may prevent them from moving to alternative technologies.	**Moderate.** Companies with limited capital expenditure budgets are unlikely to pursue a major overhaul of their networking strategy because of the costs of new hardware and training.	Increase	moderate
Technology/service developments				
Price pressure	Price declines continue for IP connectivity and services.	**High.** Declining prices directly impact IP market sizing.	Decrease	very high
Growth from existing customers	IP connectivity is nearly ubiquitous. Growth comes primarily from greater bandwidth purchases, which continue, but at a slower rate.	**Moderate.** The greater the demand for more bandwidth, the greater the market for IP services; so a slowing in bandwidth demand impacts the market size.	Decrease	high
Market characteristics				
Installed base	IP connectivity is nearly ubiquitous. The potential market grows, but at a slower rate as saturation begins.	**Moderate.** New IP services, such as IP VPNs, will continue to prop up IP connectivity and other IP services and	Increase	high

		drive the demand for greater bandwidth.		
Evolutionary or revolutionary	Growth of IP will remain evolutionary.	**Moderate.** IP VPNs will continue to drive IP connectivity growth.	Increase	high

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
DSL deployments	DSL will continue to grow as an IP connectivity method.	**Moderate.** T1 and slower speeds will continue to be negatively impacted by greater DSL penetration, with resulting lower prices, and will negatively impact the IP market in revenue terms. This negative impact is tempered by potentially greater market opportunities.	Decrease	high
Renewed carrier instability	The rapid return of many previously bankrupt carriers to the market and the resulting intense competition will continue to drive price declines and ultimately lead to unsustainable market conditions. In the latter years of the forecast, a renewed shakeout of IP carriers will occur.	**High.** Bankruptcies will likely result in the eventual exit of some carriers after a second bankruptcy filing. Customers will scramble for stability, and the market may recover to sustainable pricing over time.	Decrease	low
Market ecosystem				
Price declines	IP pricing continues to decline at roughly 10% per year.	**High.** Price declines directly impact market size.	Decrease	very high
Consumption				
Primary buyers	All companies of all sizes have a need for IP connectivity and Internet access.	**Moderate.** The market is largely saturated except for greater bandwidth requirements.	No Variation	moderate
Dedicated access demand	Demand for connectivity services continues to grow, with new sites and greater bandwidth.	**Moderate.** Price declines for connectivity largely offset the growth in demand, although not completely.	Increase	high
Remote employees	Demand for remote access services for employees continues to grow, with more companies offering remote access and giving more employees	**Moderate.** Price declines will offset much but not all of this growth in demand, and price	Increase	high

such access.	declines are less steep than for dedicated connectivity for sites.

Source: IDC, 2003

TABLE 5

U.S. Business IP Connectivity Revenue by Segment, 2002 2007 ($M)

	2002	2003	2004	2005	2006	2007	2002 - 2007 CAGR (%)
Dedicated Internet access	6,462.4	6,572.6	6,940.6	7,244.6	7,521.0	7,669.3	3.5
Growth (%)	NA	1.7	5.6	4.4	3.8	2.0	
Remote access	1,912.0	1,969.4	2,028.5	2,083.2	2,133.2	2,178.0	2.6
Growth (%)	NA	3.0	3.0	2.7	2.4	2.1	
Total	8,374.4	8,541.9	8,969.0	9,327.8	9,654.3	9,847.4	3.3
Growth (%)	NA	2.0	5.0	4.0	3.5	2.0	

Note: See Table 4 for key forecast assumptions.

Source: IDC, 2003

Remote access may be obtained via a dial-up connection or a broadband connection on the road. The market for remote access connectivity will increase from $1.9 billion in 2002 to $2.2 billion in 2007, representing a CAGR of 2.6%.

Dedicated access connects corporate sites, and the bandwidth requirements are generally increasing for businesses. Although there is evidence that the recession in the United States has caused telecom budgets to rise more slowly than planned or to be frozen, the trend is for greater telecom spending an ever greater proportion of which is devoted to Internet and IP services. The market for dedicated Internet access will increase from $6.5 billion in 2002 to $7.7 billion in 2007, for a CAGR of 3.5%.

Price declines, bundling of Internet services with other telecom products, such as voice or data, and the bankruptcy of many ISPs are hampering growth of the business access market. However, these negative factors are outweighed by increasing connectivity and bandwidth requirements as well as the migration of other WAN technologies to IP.

ESSENTIAL GUIDANCE

Service providers face difficult challenges in the business IP space over the next few years. Market demand continues to grow, as businesses buy additional IP connectivity and services for corporate sites and for remote employees. However, price declines will hamper revenue growth. Price declines are a function of continued excessive competition in the market:

Most bankrupt carriers are returning to the market with balance sheets clear of debt, and all carriers are focused on IP as a growth segment and, therefore, are pushing hard in this market. In addition, the necessity of pleasing Wall Street is causing carriers to focus on revenue growth, even if steep discounts are needed to woo customers from other carriers. The business IP connectivity segment is and will remain very competitive.

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Related Research

ý *U.S. Internet Service Provider Forecast, 2003 2007* (IDC #30408, November 2003)

ý *AT&T s MPLS Common Data Network* (IDC #30163, September 2003)

ý *MPLS Guide for Network Executives* (IDC #29649, June 2003)

ý *U.S. Business Internet Access Market Forecast and Analysis, 2002 2007* (IDC #29378, May 2003)

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MARKET ANALYSIS

U.S. Wholesale IP Forecast and Analysis, 2003 2007

Steven Harris

IDC OPINION

Recent scandals have affected wholesale IP more than they have most segments of the overall telecommunications market. Dark fiber swaps and other accounting irregularities have dogged wholesale IP far more than they have other segments of the market. In addition, price competition is heating up rather than dissipating. Highlights are as follows:

ý Highlights is a misnomer. While some carriers with laser focuses on wholesale IP services may yet do well in this market subsegment, most carriers will be disappointed.

ý The wholesale IP market will decline throughout the forecast period.

ý Price competition will get more intense as more carriers enter or reenter the market. Over time, unused fiber in the ground will create increasing pressure on carriers to reduce prices further. This will intensify as carriers try to recoup investments.

ý However, demand for IP services continues to increase. The market decline for wholesale IP is a result of competitive pricing pressure and not the lack of demand.

Filing Information: December 2003, IDC #30467, Volume: 1, Tab: Markets ISP Markets: Market Analysis

IN THIS STUDY

Methodology

This IDC study reflects IDC s ongoing research on Internet services markets. The research is based on public and proprietary sources of information and is used to generate the forecasts and market share analysis in this study. Forecasts are based on historical growth, insight from IDC s consulting experience, IDC s business markets and consumer markets primary research (e.g., the annual *U.S. WAN Manager Survey* and *U.S. Residential Telecommunications Survey*), and discussions with service providers and equipment manufacturers.

IDC relied on discussions with service providers for this study, and each year the providers abilities and willingness to participate in the survey varies. In addition, IDC relies on carriers to provide accurate information and adjusts estimates as necessary when it believes such information is not credible.

Wherever possible, actual revenue and subscriber counts are used. IDC estimated and projected data for certain time periods based on trends in the previous quarters and the previous year.

IDC took actual revenue from the universe of Internet service providers (ISPs) and estimated the percentages of overall IP revenue that applied to each market segment. Reported numbers were used whenever possible, and IDC estimated where necessary. For almost every carrier, estimates were used in the segment breakout totals.

The totals were added for each market segment, and an estimate was made for the other category, which includes roughly 7,000 additional ISPs in the United States. Most of these ISPs are small local providers with little revenue, and many in this group derive a fairly substantial portion of their revenue from consulting and professional services, which are excluded from this analysis and forecast. Very few of these providers have large wholesale operations, however.

Other categories of revenue excluded from this study include dark fiber sales, private lines, hardware and software sales by carriers, local loops (except where noted), Web merchandise sales, and all non-IP services, including switched voice and traditional data services, such as frame relay and asynchronous transfer mode (ATM).

All other IP services are included. Wholesale IP includes any service that is IP based and that one provider sells to another provider for resale to the end user. All such private-label services must be grouped into IDC s wholesale segment in order to deduct wholesale from the total IP market to avoid double counting.

Definitions

What is an ISP?

An ISP is an operator that provides direct access to the Internet and a business for which core revenue is based on the billable use of a network transport facility, either

owned by it or contracted for it from a network provider. The ISP also usually provides a core group of Internet utilities and services, such as email, a portal or start page, Web-page hosting, and other items of interest to its subscribers or customers. Users reach their ISPs by either dialing up a computer modem with a phone line or using a dedicated line installed by the provider.

Internet Access

Internet access is defined as a dial-up or dedicated connection to the World Wide Web or the Internet. This definition excludes services provided by companies that use IP technology but are not ISPs or do not provide Internet access and transport services (e.g., IBM and Yahoo!).

Types of Access

Internet access can be broken down into two general realms of connectivity methods: dial-up and dedicated service. All access methods and speeds fall within one of these two groups:

ý **Dial-up access.** This method involves using a modem to convert digital signals into analog signals to allow them to traverse the public telephone system and make a connection to the Internet. The dial-up user connects to a modem bank on the ISP s network or to a contracted network provider and is thereby connected to the Internet.

ý **Dedicated access.** This method involves a connection established for and dedicated to the primary purpose of enabling Internet access. Thus, fractional T1, full T1, T3, and Optical Carrier (OCx) at speeds ranging from OC3 to OC48 or more connections constitute dedicated access speeds. In addition, digital subscriber line (DSL) and cable modems are always-on connections. For this reason, DSL and cable are considered dedicated access methods by IDC.

Wholesale Services

Wholesale Internet access involves the reselling of Internet access, both dedicated and dial-up. Large ISPs and IP carriers will sell either dial-up capacity (e.g., modem banks) or dedicated transit circuits to other ISPs and telcos to be resold to their end users. The most common form of dial-up wholesale service involves a consumer-oriented ISP or virtual Internet service provider (VISP) using the points of presence (POPs) and network of the wholesale provider to connect their subscribers to the Internet. Transit or dedicated wholesaling usually involves ISPs purchases of upstream capacity from their POPs to an Internet backbone via a transit link from a wholesale ISP. Wholesale customers will aggregate their traffic and send it on to the backbone provider.

The wholesale segment also includes other IP services sold on a private-label basis through ISPs. In the case of VISP services, these include portal sites and customer service support. IP VPN services sold through a private-label agreement are also wholesale services to the carrier that produces the services that are resold.

Backbones

A backbone carrier is defined by IDC as having the following characteristics:

ý Owns or has agreements for fiber strands on an indefeasible right to use (IRU) basis an IP network

ý Carries a significant portion of IP traffic for other carriers

Carriers that transport only their own customers traffic will not be considered backbone carriers according to IDC s definition. Backbone implies being a component and integral part of the public Internet, which, in turn, implies the carriage of wholesale traffic. Wholesale customers may include other ISPs, regional Bell operating companies (RBOCs), cable television companies, and a variety of other network operators entering the ISP business. However, backbone providers also may provide retail services directly to businesses and consumers.

Peering

Peering is the process of exchanging traffic from one network to another over a connection that is provided with no monetary exchange between the carriers. Essentially, there are two kinds of peering: public and private. Public peering is the exchange of traffic by multiple ISPs over shared facilities managed by a central entity, which is usually a third party. Private peering is the exchange of traffic between two carriers through a direct connection.

The exchange of traffic from one carrier to another with one party paying the other for this service is termed upstream transit and is considered by IDC to involve a wholesale transit transaction and a customer, not a peering relationship or a peer. Peering implies that the two networks are equal, which in this case generally means that the traffic balance (the amount of traffic sent to the other s network and received from the other s network) is roughly equal and is in sufficient volume to justify a private connection between the two with no payment for the service. There are significant costs involved with private peering but no fees change hands for the exchange of traffic over a peering connection.

Regional/Local ISPs

Most local and regional ISPs do not have their own networks and confine their coverage to areas smaller than the entire United States. Many ISPs in this category provide software applications development and consulting in systems design, Internet marketing strategies, and Internet advertising creation and placement.

There are over 7,000 regional and local ISPs in the United States, with some evidence suggesting many thousands more.

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

SITUATION OVERVIEW

Pricing pressure, bankruptcies, and accounting concerns all depress the wholesale market.

However, almost no consumer ISPs own their own networks, and, therefore, they contract with wholesale providers for wholesale dial or managed modem services to connect their customers to the carriers backbone networks. Those ISPs that have their own modems in their own POPs need a wholesale carrier to connect those POPs to the backbone networks. Thus, demand for managed modem services and upstream transit services remains strong. The supply side is depressing the wholesale market.

2002 Market Share by ISP

Table 1 shows the market shares for total wholesale IP in the United States. MCI (WorldCom) is still the largest wholesale IP provider by far. MCI wholesale IP business has weathered the bankruptcy considerably better than its business IP product lines.

TABLE 1

U.S. Wholesale IP Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	MCI (WorldCom)	1,389.3	26.8
2	Level 3	533.1	10.3
3	Sprint	524.7	10.1
4	Genuity	472.0	9.1
5	Covad	326.7	6.3
6	Verizon	285.2	5.5
7	AT&T	253.1	4.9
8	BellSouth	247.8	4.8
9	SBC	211.0	4.1
10	Qwest	202.1	3.9
	Top 10 subtotal	4,445.0	85.9
	Other	730.2	14.1
	Total	5,175.3	100.0

Source: IDC, 2003

All the top carriers in Table 1 are there largely as a result of their contracts with America Online (AOL), which is by far the largest consumer ISP in the United States. By virtue of these contracts, AOL creates the leaders in the wholesale IP segment.

Of note is that Genuity is listed separately from Level 3. The purchase of Genuity by Level 3 occurred in February 2003 and, thus, is listed separately for the 2002 market shares.

The market shares for wholesale dial (also known as managed modem services) mirror the market shares for total wholesale IP, again largely thanks to AOL and its huge base of subscribers. Table 2 has the rankings.

TABLE 2

U.S. Wholesale Dial IP Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	MCI (WorldCom)	1,180.9	45.6
2	Level 3	431.8	16.7
3	Sprint	262.3	10.1
4	Genuity	259.6	10.0
5	ICG	184.6	7.1
6	Qwest	80.8	3.1
7	AT&T	75.9	2.9
8	StarNet	31.0	1.2
9	Verizon	28.5	1.1
10	Allegiance	24.8	1.0
	Top 10 subtotal	2,560.4	98.9
	Other	29.7	1.1
	Total	2,590.0	100.0

Source: IDC, 2003

Table 3 shows the market shares for upstream transit IP services, or connecting another ISP s POPs or headend location to the provider s Internet backbone. There is considerable variation from the previous two market share tables.

TABLE 3

U.S. Wholesale Upstream Transit IP Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	Sprint	251.8	15.7
2	Genuity	188.8	11.7
3	MCI (WorldCom)	180.6	11.2
4	BellSouth	123.9	7.7
5	Verizon	114.1	7.1
6	AT&T	101.3	6.3
7	Level 3	96.0	6.0
8	SBC	95.0	5.9
9	Covad	65.3	4.1
10	Cable & Wireless	64.0	4.0
	Top 10 sub total	1,280.7	79.7
	Other	326.6	20.3
	Total	1,607.3	100.0

Source: IDC, 2003

Table 4 has the final wholesale breakout, for other wholesale IP services. Again, other services are any IP services resold by another provider, mostly composed of DSL, as well as private-label IP VPNs and Web hosting. As can be seen in Table 4, all the major DSL providers are listed. Covad resells DSL to other providers, and most of the RBOCs sell a large number of DSL lines on a wholesale basis to ISPs such as EarthLink or MegaPath.

TABLE 4

U.S. Wholesale Other IP Revenue by ISP, 2002

Rank	ISP	Revenue ($M)	Share (%)
1	Covad	261.4	26.7
2	Verizon	142.6	14.6
3	SBC	116.1	11.9
4	BellSouth	99.1	10.1
5	AT&T	75.9	7.8
6	Qwest	64.7	6.6
7	MCI (WorldCom)	27.8	2.8
8	Genuity	23.6	2.4
9	New Edge Networks	20.7	2.1
10	Metromedia Fiber Network	20.3	2.1
	Top 10 subtotal	852.1	87.1
	Other	125.8	12.9
	Total	977.9	100.0

Source: IDC, 2003

FUTURE OUTLOOK

Forecast and Assumptions

IDC s forecast for wholesale services in 2001 was largely correct, despite the accounting gyrations in the market since then. However, several wholesale providers have gone out of business or declared bankruptcy. Many have slashed prices to gain business in an attempt to avert failure, but they have dragged the pricing of the overall market down with them. OC-level upstream transit pricing is declining rapidly.

AOL renegotiated its contracts with the major wholesale carriers in the United States and continues to receive large price reductions. As the largest consumer ISP, this effect has been enough to have a noticeable impact on the wholesale segment. In addition, AOL set the stage for other consumer ISPs to renegotiate their own contracts, and the result has had a sizeable effect for wholesale dial providers. Assumptions used to produce the 2002 wholesale IP forecast can be found in Table 5.

TABLE 5

Key Forecast Assumptions for the U.S. Wholesale IP Market, 2003 2007

Market Force	IDC Assumption	Impact	Accelerator/ Inhibitor/ Neutral	Certainty of Assumption
Macroeconomics				
GDP growth	U.S. economic growth will continue to recover slowly. IDC anticipates U.S. GDP growth of 2% in 2003. IDC anticipates 2004 U.S. GDP growth of 3.3%.	**High.** The telecom services market benefits directly from economic growth. As companies add additional sites, they spend more on telecom.	Increase	high
Constrained capital budgets	In the near term, because of the economic downturn, U.S. companies will have constrained capital expenditure (capex) budgets, which might prevent them from moving to alternative technologies.	**Moderate.** Companies with limited capex budgets are unlikely to pursue a major overhaul of their networking strategy because of the costs of new hardware and training.	Increase	moderate
Technology/service developments				
Price pressure	Price declines will continue for IP connectivity and services.	**High.** Declining prices will directly affect IP market sizing.	Decrease	very high
Growth from existing customers	IP connectivity will be nearly ubiquitous, and growth will come primarily from greater bandwidth purchases, which continue at a slower rate.	**Moderate.** The greater the demand is for more bandwidth, the greater the market for IP services will be, so a slowing in bandwidth demand affects the market size.	Decrease	high
Market characteristics				
Installed base	IP connectivity will be nearly ubiquitous and the potential market will grow at a slower rate as saturation begins.	**Moderate.** New IP services, such as IP VPNs, will continue to prop up IP connectivity and other IP services and drive greater bandwidth.	Increase	high
Evolutionary or revolutionary	Growth of IP will remain evolutionary.	**Moderate.** IP VPNs will	Increase	high

		continue to drive IP connectivity growth.		
DSL deployments	DSL will continue to grow as an IP connectivity method.	**Moderate.** T1 and slower speeds will continue to be negatively affected by greater DSL penetration, with the result being lower prices, which will negatively affect the IP market in terms of revenue. This negative impact is tempered by potential greater market opportunities.	Decrease	high

Renewed carrier instability	The rapid return of many previously bankrupt carriers to the market and the resulting intense competition will continue to drive price declines and will ultimately lead to unsustainable market conditions. In the latter years of the forecast, a renewed shakeout of IP carriers will occur.	**High.** Bankruptcies will likely result in the eventual exit of some carriers after a second bankruptcy filing. Customers will scramble for stability, and the market might recover to sustainable pricing over time.	Decrease	low
Market ecosystem				
Price declines	IP pricing will continue to decline at roughly 10% per year.	**High.** Price declines directly affect market size.	Decrease	very high
Consumption				
Primary buyers	All companies of all sizes will have a need for IP connectivity and Internet access.	**Moderate.** The market is largely saturated, except for greater bandwidth requirements.	No Variation	moderate
Wholesale dial/managed modem	Dial users will continue to decline, though remote business users will increase slightly.	**High.** Price declines in conjunction with a net decrease in the number of dial users will negatively affect the market for wholesale dial/managed modem services.	Decrease	very high
Upstream transit	Demand for greater bandwidth at the edge with broadband connections and high-speed dedicated lines will increase traffic, yet price declines will more than offset this effect.	**Moderate.** Price declines will offset much, but not all, of this growth in demand.	Decrease	high
Other wholesale	Demand for other IP services sold by carriers on a private - label basis will increase, especially for services such as IP VPNs. Other includes all IP services resold by another carrier under their own name.	**Moderate.** Price declines will not offset the greater demand for private-label IP services and the increasing use of wholesale channels by many carriers.	Increase	high

Source: IDC, 2003

Table 6 shows the wholesale IP forecast through 2007. The market in 2002 was $5.2 billion and will decline to $4.4 billion in 2007 for a CAGR of -3.0%.

The wholesale subsegments show a wide range of growth rates. Wholesale dial/managed modem services will suffer the most, as seen in Table 6. Price declines, led by AOL contract discounts, very active competition among wholesale carriers, and a decrease in total consumer dial users will all conspire to reduce the size of the wholesale dial market. Wholesale dial services will decline from $2.6 billion in 2002 to $1.8 billion in 2007 for a CAGR of -7.2%.

TABLE 6

U.S. Wholesale IP Revenue by Segment, 2002 2007 ($M)

	2002	2003	2004	2005	2006	2007	2002 2007 CAGR (%)
Dial	2,590	2,486	2,362	2,173	1,978	1,780	-7.2
Growth (%)	NA	-4.0	-5.0	-8.0	-9.0	-10.0	
Upstream transit	1,607	1,575	1,544	1,497	1,445	1,373	-3.1
Growth (%)	NA	-2.0	-2.0	-3.0	-3.5	-5.0	
Other	978	1,027	1,109	1,187	1,246	1,283	5.6
Growth (%)	NA	5.0	8.0	7.0	5.0	3.0	
Total	5,175	5,088	5,015	4,857	4,668	4,436	-3.0
Growth (%)	NA	-1.7	-1.4	-3.1	-3.9	-5.0	

Note: See Table 5 for key forecast assumptions.

Source: IDC, 2003

Upstream transit will decline, but at a slower pace. Upstream transit will benefit from increased traffic, especially from broadband POPs and aggregation points, though price declines will reduce the total market size. Upstream transit revenue will decrease from $1.6 billion in 2002 to $1.4 billion in 2007 for a CAGR of -3.1%.

Other wholesale IP services will benefit from increased broadband usage and traffic, as well as the business-user demand for IP VPNs and other IP services. The other market will be the sole growth subsegment within wholesale services, growing from $978 million in 2002 to $1.3 billion in 2007 for a CAGR of 5.6%.

Wholesale IP will decline due to price competition, not lack of demand. By the end of the forecast period, IDC expects that price declines will have proceeded to a point at which several carriers will have financial difficulties and will expect a renewed shakeout in the IP carrier segment. Wholesale will suffer the most from this development, and the wholesale IP forecast reflects this accelerating decline.

ESSENTIAL GUIDANCE

Service providers face difficult challenges in the wholesale IP space over the next few years. Market demand continues to grow as businesses and consumers buy additional IP connectivity and services. However, price declines will hamper revenue growth. Price declines are a function of continued excessive competition in the market.

Most bankrupt carriers are returning to the market with balance sheets clear of debt, and all carriers are focused on IP as a growth segment and, therefore, are pushing hard in this market. In addition, the necessity of pleasing Wall Street is causing carriers to focus on revenue growth, even if steep discounts are needed to woo customers from other carriers. The wholesale IP connectivity segment is and will remain very competitive, and those carriers focused on wholesale are likely to do better than those with both retail and wholesale channels.

ISPs and other carriers that buy capacity and services from wholesale carriers can expect price declines that will offset their increased bandwidth needs. Users of wholesale IP services are well advised to sign short-term contracts with carriers since pricing will decline and maximum leverage can be used to wrestle additional price cuts from the current IP carrier at the end of the contract period. However, a significant risk of additional bankruptcies and service disruption is likely by the end of the forecast period, and ISPs using wholesale services should prepare for this eventuality by instituting business continuity plans.

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Related Research

ý *U.S. Business IP Connectivity Forecast and Analysis, 2003 2007* (IDC #30449, November 2003)

ý *U.S. Internet Service Provider Forecast, 2003 2007* (IDC #30408, November 2003)

ý *AT&T s MPLS Common Data Network* (IDC #30163, September 2003)

ý *MPLS Guide for Network Executives* (IDC #29649, June 2003)

ý *U.S. Business Internet Access Forecast and Analysis, 2002 2007* (IDC #29378, May 2003)

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APPENDIX 4

Top 13 Internet Providers by Autonomous System Rank, 1999-2004

Number of AS Connections

Provider	2004	Rank	1999	% Share	2000	% Share	2001	% Share	2002	% Share	2003	% Share	2004	% Share	2004% Share (Among Top 13)	Change 2002-2003	Change 2003-2004
MCI		1	1528	25	2242	22	3129	20	3212	18	3276	15	3034	13	22	2%	-7%
AT&T		2	362	6	694	7	1197	8	1423	8	2052	10	1986	8	14	44%	-4%
Provider A		3	649	10	1036	10	1417	9	1603	9	2333	11	1842	8	13	46%	-21%
Provider B		4	332	5	658	7	1048	7	1009	6	1388	6	1167	5	8	37%	-16%
Provider C		5	88	1	418	4	644	4	973	6	1007	5	1074	5	8	4%	7%
Provider D		7	133	2	210	2	296	2	270	2	275	1	664	3	5	2%	141%
Provider E		6	45	1	211	2	362	2	437	2	554	3	668	3	5	27%	21%
Provider F		8	277	4	379	4	445	3	475	3	553	3	636	3	5	17%	15%
Provider G		9	90	1	217	2	432	3	351	3	601	3	616	3	4	9%	3%
Provider H		10	75	1	207	2	547	4	569	3	488	2	590	3	4	-14%	21%
Provider I		11	60	1	105	1	202	1	196	1	323	1	544	2	4	65%	68%
Provider J		12	12	0	45	0	520	3	411	2	457	2	530	2	4	11%	16%
SBC		13	57	1	90	1	155	1	243	1	337	2	514	2	4	38%	53%
Others 14 - 50	14 - 50		2483	40	3503	35	5212	33	6237	35	7944	37	9497	41		27%	20%
Total ASCs/HHI			6190	1,059	10015	919	15605	750	17608	665	21589	602	23341	452			
Change in HHI with AT&T-SBC			11		12		15		22		30		37				

HHI with only 13 firms (shares of each of top 13 are adjusted such that total share adds to 100%)	1,139
Change in HHI with AT&T-SBC	105

Source: Number of AS Connections from TeleGeography; Share and HHI Calculations Added

Top 50 Internal Providers by Autonomous System Rank, 1999-2004, Copyright 2004/2005 PriMetrica, Inc. All Rights Reserved.

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Notes: Connections is equal to the total number of autonomous systems (ASs) directly connected to a provider as of June of year listed. Where a provider operates multiple ASs, the totals for each AS are aggregated while eliminating duplicated connections between the provider s ASs. Historical numbers represent that companies current operated ASs, excluding the recent purchase of Cable and Wireless s U.S. AS by Savvis (represented only in the 2004 numbers)

Publication: Global Internet Geography 2005

Source: TeleGeography research and University of Oregon Route Views Project

http://www.telegeography.com