

phones by 52 percent during that period.⁵⁶ Moreover, approximately 32.9 percent of wireless subscribers use their landline only for local calls.⁵⁷ These findings “suggest[] that wireless is eroding the usage of wireline long distance and local toll services twice as much as the rate of complete wireless substitution.”⁵⁸

35. The absolute increase in wireless minutes has been explosive. By 2005, wireless minutes of use had risen to 1.4 trillion, an increase of 35.8 percent from 2004 and more than 400 percent since 2000.⁵⁹ This increased usage has been accompanied by a rapid erosion in traditional distinctions between the locations from which subscribers use fixed and mobile service, as subscribers increasingly use their mobile devices at stationary locations from which wireline alternatives would readily be used. For example, a Yankee Group survey found that the percentage of wireless usage in the home by mobile phone users doubled as a percentage of total usage between 2001 and 2005.⁶⁰ By 2005, wireless subscribers reported that 24 percent of their wireless calling took place inside the home, and 10 percent of their wireless calling took place at work.⁶¹

Intrastate, IntraLATA-Interstate, InterLATA-Interstate, International, and Others (toll-free minutes billed to residential customers, 900 minutes, and minutes for calls that could not be classified)).

⁵⁶ *Trends in Telephone Service* at Table 14.2.

⁵⁷ D. Chamberlain, In-Stat/MDR, *Cutting the Cord: Consumer Profiles and Carrier Strategies for Wireless Substitution* at 1 (Oct. 2005).

⁵⁸ *Id.* at 6.

⁵⁹ See CTIA, *CTIA's Semi-Annual Wireless Industry Survey Results* at 7, <http://files.ctia.org/pdf/CTIAEndYear2005Survey.pdf>.

⁶⁰ See K. Mallinson, Yankee Group, *Wireless Substitution of Wireline Increases Choice and Competition in Voice Services* at Exhibit 3 (July 27, 2005).

⁶¹ K. Griffin, Yankee Group, *Pervasive Substitution Precedes Displacement and Fixed-Mobile Convergence in Latest Wireless Trends* at 5 (Dec. 2005).

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36. There is statistical evidence that wireless puts competitive pressure on wireline pricing. An econometric analysis by the Competitive Enterprise Institute found that “a one percent increase in wireline prices would result in nearly a 2 percent increase in wireless demand. In other words, if wireline carriers were to increase their prices, wireless service providers would gain a substantial number of subscribers. This finding, coupled with the fact that wireless prices continue to decrease, suggests that wireline providers may soon be under pressure to decrease prices in order to stem market share losses.”⁶²

C. Traditional CLECs

37. Although declining in importance relative to intermodal competitors, there are still a number of traditional CLECs that serve mass-market customers. In the New York MSA, Broadview Networks operates a voice network and four data networks, using three voice switches and two ATM switches.⁶³ Broadview states that it offers “[l]ocal calling and features priced 10% to 15% below Verizon standard rates.”⁶⁴ Broadview offers two plans for circuit-switched residential service: the 4 Penny Package includes 500 local calls and 300 regional minutes of calling for \$29.95 per month, and the No NonCents Residential Plan includes unlimited local, regional, and long-distance calling for \$44.95 per month.⁶⁵ Optional calling features are available with both plans for an additional \$5 per month.⁶⁶

⁶² Stephen B. Pociask, Competitive Enterprise Institute, *Wireless Substitution and Competition: Different Technology but Similar Service – Redefining the Role of Telecommunications Regulation* at 15 (Dec. 15, 2004) (endnote omitted).

⁶³ New Paradigm Resources Group, Inc., *Competitive Carrier Report 2006*, Ch. 6 – Broadview Networks, Inc. at 6-7 (20th ed. 2006) (“*Competitive Carrier Report 2006*”).

⁶⁴ Broadview Networks, *Local & Regional: Save on Local and Regional Calling*, http://www.broadviewnet.com/Products_Services/Residential/LocalRegional.asp?scenario=1.

⁶⁵ Broadview Networks, *Residential: Promotions & Offers*, http://www.broadviewnet.com/PromosOffers/Residential/Res_NonCents.asp; Broadview Networks, *How Does the Broadview Networks No NonCents Residential Plan Stack Up Against Other Unlimited Plans*,

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38. A number of CLECs are serving mass-market customers using Verizon's Wholesale Advantage product – which is the market-based successor to the regulated UNE platform service that Verizon was at one time required to provide. Some CLECs also resell Verizon's retail residential service. As of the end of December 2005, competitors are serving approximately **** voice-grade equivalent residential lines in the New York MSA using Wholesale Advantage and **** voice-grade equivalent residential lines on a resale basis.

D. Over-the-Top VoIP

39. Consumers who today are unable to receive telephone services directly from their cable company can usually obtain them from multiple independent over-the-top VoIP providers. Any customer who has access to cable modem or other broadband services – which more than 90 percent of U.S. households now do⁶⁷ – can obtain voice services from one of these providers. VoIP vastly expands the number of competitors that can offer mass-market voice telephone service because they can offer VoIP over any type of broadband facility provided by any other company. Broadband access through satellite, BPL, Wi-Fi, and WiMax is emerging, and these technologies will offer an alternative means through which mass-market customers can access

http://www.broadviewnet.com/PromosOffers/Residential/Res_NonCentsComparison.asp?scenario=1.

⁶⁶ Broadview Networks, *Residential: Promotions & Offers: Voice Plans*, http://www.broadviewnet.com/PromosOffers/Residential/Res_Voice_Promos.asp.

⁶⁷ See NCTA, *Broadband Availability*, <http://www.ncta.com/ContentView.aspx?contentId=60> (116.1 million homes passed by cable modem service as of 2005); see also NCTA, *2006 Industry Overview* at 11 & Chart 6 (cable modem service is available to approximately 93 percent of homes passed by cable as of year-end 2005) (citing Morgan Stanley).

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VoIP service.⁶⁸ Vonage, the largest of the new over-the-top providers, currently offers local numbers in 44 states and the District of Columbia.⁶⁹ Vonage already is approaching two million VoIP subscribers, and reports that it is adding an average of more than 22,000 subscribers each week.⁷⁰

40. As shown in Exhibit 2, mass-market customers in the New York MSA can choose from more than 25 over-the-top VoIP providers who offer local phone numbers. These VoIP providers are offering service at prices that are competitive to Verizon's service, with plans that start at \$5.95 for metered service (ZingoTel's 100-minute Basic plan) and \$14.95 for unlimited service (ZingoTel's Residential Unlimited plan). Verizon has prepared a chart that compares the prices and features of voice telephone service offerings of several leading competitors in the New York MSA. *See* Exhibits 1 & 2. For example, Vonage and AT&T both offer unlimited local and long-distance packages for \$24.99 per month.⁷¹ Vonage also offers a VoIP package for \$14.99 per month that includes 500 minutes with additional minutes at 3.9 cents.⁷² Packet8, Lingo, and BroadVoice offer similar packages for \$19.99 or less, not including promotional discounts such as the first month free.⁷³ *See* Exhibit 2. Some providers offer pay-as-you-go

⁶⁸ *See, e.g., Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853, ¶ 33 (2005).

⁶⁹ Vonage, *Available Area Codes*, http://www.vonage.com/avail.php?lid=nav_avail.

⁷⁰ *See* Vonage, Form 10-Q at 14 (SEC filed Aug. 4, 2006). More than 95 percent of Vonage subscribers are in the U.S. *See* Vonage, Form S-1A at 1 (SEC filed May 23, 2006).

⁷¹ Vonage, *Premium Unlimited Plan*, http://www.vonage.com/services_premium.php; AT&T, *Plans & Pricing*, <http://www.usa.att.com/callvantage/plans/index.jsp>.

⁷² Vonage, *Basic 500 Plan*, http://www.vonage.com/products_basic.php.

⁷³ Packet8, *Residential Plans*, <http://www.packet8.net/about/residential.asp>; Lingo, *Home Plans*, http://www.lingo.com/voip/residential/home_plans.jsp; BroadVoice, *Rate Plans, Compare Plans*, http://www.broadvoice.com/rates_compare.html.

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plans, often with a small number of minutes, for \$5.95 to \$9.99, to attract low-volume users. *See* Exhibit 2.

41. For customers who have not yet subscribed to broadband service, the combination of broadband service and VoIP is competitive with what customers pay for a narrowband combination of local, long-distance and dial-up Internet access. One study concluded that the average narrowband household could capture a net savings of \$6 per month by subscribing to broadband and migrating to VoIP service.⁷⁴ In fact, many subscribers appear to be making the switch from narrowband to broadband principally in order to obtain VoIP phone service. According to a recent study by Bernstein Research, at least 40 percent of all VoIP subscribers are new subscribers to broadband services that are attracted to the voice-data-video bundle that cable operators offer.⁷⁵ As Bernstein explains, cable “[v]oice bundles induce not only existing HSD [high-speed data] customers to add voice to existing bundles, they also add incremental growth to HSD through three separate mechanisms. First, they induce new customers either to *convert* from dial-up to HSD in order to get the bundled phone price; second, they induce DSL customers to switch to cable HSD in order to get the bundled phone price; and/or third, they induce HSD customers to retain their HSD service, thereby reducing churn.”⁷⁶

⁷⁴ *See* M. Rollins, *et al.*, Citigroup, *Share Wars – Telco vs. Cable* at 7 (Oct. 5, 2005) (assuming \$50 a month landline service & \$21 a month dial-up, replaced by \$40 a month cable modem service and an independent VoIP provider at \$25 a month); *see also* C. Moffett, *et al.*, Bernstein, *Quarterly VoIP Monitor: The “Halo Effect” of VoIP is Driving Faster Subscriber Growth* at 4 (Sept. 2, 2005) (“[T]he bundled price of VoIP and broadband is compelling to dial-up subscribers, for whom the cost of upgrading to broadband is more than offset by the savings on telephony.”).

⁷⁵ *See* C. Moffett, *et al.*, Bernstein Research, *Cable and Satellite: ~40% of Cable VoIP Customers “New” to Broadband* (July 6, 2006).

⁷⁶ *Id.* at 3.

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42. Many customers view VoIP service as a replacement for their primary telephone line. For example, approximately 60-70 percent of Vonage's subscribers are porting their telephone numbers.⁷⁷ Analysts estimate that over-the-top VoIP providers will displace 5 percent of local telephone access lines by the end of 2010.⁷⁸

III. COMPETITION FOR ENTERPRISE SERVICES

43. Just as there is intense competition for mass-market customers in the New York MSA, the same is true for enterprise customers. Indeed, this is widely considered the most competitive segment of the telecommunications industry.⁷⁹ The Commission has recognized that competition for medium and large enterprise customers is "strong" and is poised to remain so because these customers "are sophisticated, high-volume purchasers of communications services that demand high-capacity communications services" and because there are a "significant number of carriers competing in the market."⁸⁰ These competitors "include interexchange carriers, competitive LECs, cable companies, other incumbent LECs, systems integrators, and equipment vendors."⁸¹

⁷⁷ See D. Shapiro, *et al.*, Banc of America Securities, *Battle for the Bundle* at 30 (June 14, 2005).

⁷⁸ See J. Chaplin, *et al.*, JPMorgan, *Telecom Services/Wireline: State of the Industry: Consumer* at 12 (Jan. 13, 2006).

⁷⁹ *SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control*, Memorandum Opinion and Order, 20 FCC Rcd 18290, ¶ 73 n.223 (2005) ("competition in the enterprise market is robust"); *Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations, et al.*, Memorandum Opinion and Order, 19 FCC Rcd 21522, ¶ 248 n.590 (2004) ("[W]e note that [] competition is greater for enterprise services than for mass market services."); *Federal Communications Commission 2004 Biennial Regulatory Review; Consumer & Governmental Affairs Bureau*, Staff Report, 20 FCC Rcd 88, Appendix, ¶ 44 (2005) ("Competition for business customers in metropolitan areas, in general, continues to develop more rapidly than competition for residential customers or customers in rural areas.").

⁸⁰ *Verizon Communications Inc. and MCI, Inc. Applications for Approval of Transfer of Control*, Memorandum Opinion and Order, 20 FCC Rcd 18433, ¶ 56 (2005) ("*Verizon/MCI Order*").

⁸¹ *Id.* ¶ 64.

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44. Although not all of the carriers that serve enterprise customers own and operate their own facilities, there is an extensive wholesale market for these facilities. In fact, no telecommunications carrier in the United States, including Verizon, has ubiquitous high-capacity telecommunications facilities that are capable of serving all the needs of commercial and institutional customers. As a result, all retail service providers must depend, to a greater or lesser degree, on multiple facilities-based carriers to create a network that can serve all of the needs of commercial and institutional customers. Furthermore, provision of underlying facilities is only one component of offering service, because commercial and institutional customers demand integrated communications solutions that are likewise compatible with their overall information technology infrastructure.

45. While Verizon is one of the largest wholesale suppliers to other competing carriers in the enterprise market, it provides the vast majority of wholesale inputs to these carriers as special access, not as unbundled network elements. In the *Omaha Forbearance Order*, the Commission acknowledged that this form of wholesale competition was relevant in evaluating whether competition is sufficient to constrain Verizon's prices in the enterprise market.⁸²

A. Overview of Enterprise Competition in the New York MSA

46. The New York MSA has long been recognized as one of the most competitive regions for enterprise customers in the country and the world. The major cable operators in the New York MSA offer service to business customers, using both their cable networks and fiber networks that they have deployed specifically to serve business customers. According to data from GeoTel, there are at least 24 known competing carriers that operate fiber networks within

⁸² See *Omaha Forbearance Order* ¶ 68.

the New York MSA and these networks span at least **** route miles.⁸³ Exhibits 5 and 6 contain maps of these networks. As these maps indicate, there are at least one or more known competing fiber providers in **** percent of wire centers in the New York MSA. These wire centers represent approximately **** percent of Verizon's retail switched business lines in the MSA. These data also show that there are one or more known competing fiber providers in at least **** percent of the **** wire centers in the New York MSA that account for 80 percent of Verizon's high-capacity special access revenues.

47. Based on Verizon's business E911 listings data as of the end of December 2005, competing carriers are serving business customers in **** percent of the wire centers in the New York MSA, and these wire centers account for **** percent of Verizon's retail switched business lines in the MSA. As of this same date, competitors had obtained at least **** business E911 listings. These data provide an estimate of the number of business lines that competitors are serving. Each E911 residential subscriber listing necessarily represents one customer access line, but in the case of business customers a listing does not necessarily correlate one-to-one based on the manner in which the service is provided. Importantly, competitors do not typically obtain E911 listings for lines that are used to provide data services. In any event, this total indicates that competitors controlled at least **** percent of switched business lines in the New York MSA.

48. Based on Verizon's wholesale billing records from December 2005, competitors are serving more than **** voice-grade equivalent lines in the New York MSA

⁸³ Lightpath operates a fiber network that extends more than 2,700 route miles. Lightpath's fiber is not included in the GeoTel data or, as a result, in the maps in Exhibits 5 and 6. A separate map of Lightpath's network, taken from the company's own website, is produced in Exhibit 8.

using special access: approximately **** voice-grade equivalent lines using DS3s, approximately **** voice-grade equivalent lines using DS1s, approximately **** voice-grade equivalent lines using DS0s, and approximately **** voice-grade equivalent lines using OCN, FMS, or other services. As of this date, competitors are serving an additional **** voice-grade equivalent lines using DS3 private lines, **** voice-grade equivalent lines using DS1 private lines, and **** voice-grade equivalent lines using DS0 private lines. Competitors are using special access to serve business customers in **** percent of wire centers in the New York MSA. These wire centers serve more than **** percent of Verizon’s retail switched business lines in the MSA.

49. As of the end of December 2005, approximately 40 CLECs are collocated in Verizon’s central offices in the New York MSA. These competitors are collocated in a total of **** central offices that reach **** percent of Verizon’s retail access lines in the MSA, and approximately **** percent of Verizon’s retail switched business lines in the MSA.

B. Summary of Major Facilities-Based Competitors in the New York MSA

50. In the New York MSA, there are large numbers of facilities-based providers competing for enterprise customers today, including cable operators such as Cablevision and Time Warner, as well as traditional telecom carriers such as AT&T, Level 3, Sprint, Global Crossing, Broadwing, XO, and One Communications. In addition, Verizon increasingly faces competition from carriers who aggregate facilities from multiple sources and combine them with their own value-added services. Such competitors include systems integrators and managed service providers (like IBM, EDS, Accenture, Northrop Grumman, and Lockheed Martin),

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equipment vendors (like Lucent and Nortel), and, most recently, major application providers (like Microsoft).

1. Cable Operators

51. The nation's major cable operators are now actively pursuing commercial and institutional customers. Cable operators originally focused on small businesses, but they have broadened their reach to offer individualized services to medium-sized businesses and even to large enterprise customers. Cable operators are providing high-capacity services to business customers both by deploying fiber to office buildings, and by extending their hybrid fiber-coax networks to business districts in order to provide cable modem services to business customers.⁸⁴ Each of the major cable companies in the New York MSA has web pages devoted to voice services specifically for business customers.⁸⁵ See Exhibit 7.

52. Cablevision operates a subsidiary, Optimum Lightpath, to serve business and wholesale customers.⁸⁶ Lightpath states that it “has been at the forefront of business communications” “[f]or more than 17 years.”⁸⁷ Lightpath “has invested over \$1 billion to keep its fiber optic network current with the latest advances,” and its “state-of-the-art, all-digital network comprises more than 2,700 miles of fiber optic cable (nearly 113,000 miles of actual fiber).”⁸⁸ According to Lightpath, “more than 4,000 businesses in approximately 2,000

⁸⁴ See *Verizon/MCI Order* ¶¶ 30, 60 & n.170, 64, 65, 67 & n.188, 74, 77.

⁸⁵ *Cablevision*, <http://www.optimumlightpath.com/Interior210.html>; *Time Warner*, http://www.twtelecom.com/cust_solutions/services/biz_switched.html; *Comcast*, <http://www.comcastcommercial.com/index.php?option=content&task=view&id=24&Item=56>; *RCN*, <http://www.rcn.com/business/prodserv/voice.php>.

⁸⁶ Optimum Lightpath, *About Lightpath*, <http://www.optimumlightpath.com/Interior7.html>.

⁸⁷ Optimum Lightpath, *Products & Services*, <http://www.optimumlightpath.com/Interior5.html>.

⁸⁸ Optimum Lightpath, *Our Technology*, <http://www.optimumlightpath.com/Interior30.html>; Optimum Lightpath, *Lightpath's Network Advantage*, <http://www.optimumlightpath.com/Interior84.html>.

commercial buildings [] are already connected to Lightpath’s optical network.”⁸⁹ Lightpath offers a variety of data services, including dedicated Internet access, metro Ethernet, continuity solutions, and high-speed optical transport.⁹⁰ In addition, Lightpath “can provide carriers throughout New York, New Jersey, and Connecticut with transport services ranging from DS-1 to OC-192 (Wave Division).”⁹¹ As of the end of December 2005, Lightpath had approximately ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA. In addition to services provided by Lightpath over its fiber optic network, Cablevision offers Optimum Online cable modem services for use by businesses.⁹² Lightpath recently stated that it could provide discounts as high as 60 percent to small businesses compared to what they would pay to phone companies like Verizon.⁹³

53. Time Warner Cable “has provided communication services to the business community in New York City for over 25 years.”⁹⁴ Time Warner has its “own fiber throughout the New York Metro area [with] access to over 2500 commercial buildings in our footprint.”⁹⁵ Time Warner says its business division “revenue is growing at about 50 percent annually” and the company expects to take a “good chunk” of the \$13 to \$15 billion dollar [business market]

⁸⁹ M. Vincent, *Cervalis Taps Lightpath for Metro Ethernet*, Lightwave (Mar. 2006), http://lw.pennnet.com/articles/article_display.cfm?article_id=249840.

⁹⁰ Optimum Lightpath, *Products & Services*, <http://www.optimumlightpath.com/Interior5.html>.

⁹¹ Optimum Lightpath, *Carriers & ISPs*, <http://www.optimumlightpath.com/Interior21.html>.

⁹² Cablevision, *Optimum Online for Business*, http://www.optimum.com/business/index.jhtml?pageType=ool_business.

⁹³ Y. Adegoke, *Cable Sets Its Sights on Business Services*, Reuters (Aug. 25, 2006).

⁹⁴ Time Warner Cable New York City, *Private Networks*, http://www.twcny.com/index2.bus.cfm?c=new_bus/privatenetwork.

⁹⁵ *Id.*

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opportunity in its cable markets nationwide.⁹⁶ Time Warner offers a variety of data services to business customers, including Ethernet, private lines, private LANs and optical transport services.⁹⁷ Time Warner has signed on companies such as L.L. Bean and Fairchild Semiconductor.⁹⁸ The company “views the SMB market as a high-growth opportunity” and has “an infrastructure there that is just ripe for commercial services We pass 1.2 million businesses”⁹⁹ Time Warner also offers Time Warner Business Class services, allowing businesses to use cable modem service.¹⁰⁰

54. Comcast offers business customers service through its subsidiary, Comcast Commercial.¹⁰¹ Comcast offers a variety of data services to business customers in the New York MSA, including dedicated Internet access, Ethernet, and metropolitan area network services.¹⁰² Comcast also offers cable modem services for use by smaller businesses.¹⁰³ In addition, Comcast offers data services to other telecommunications carriers, leveraging “the massive

⁹⁶ Y. Adegoke, *Cable Sets Its Sights on Business Services*, Reuters (Aug. 25, 2006).

⁹⁷ Time Warner Cable New York City, *Private Networks*, http://www.twnyc.com/index2.bus.cfm?c=new_bus/privatenetwork.

⁹⁸ E. Sheng, *Cable/Baby Bell Competition Heats Up in Business Services*, Dow Jones News Service (Mar. 30, 2004), http://www.prophet.net/DisplayNews?article=20040330460_7cde005f4828c1ae&format=html&full=true&footer=true.

⁹⁹ J. Barthold, *Small Business, Big Money, No Guarantees*, Telephony Online (Aug. 12, 2002), http://telephonyonline.com/mag/telecom_small_business_big/index.html; A. Figler, *Turning Businesses into Customers*, Cable World (Dec. 9, 2002) (quoting Ken Fitzpatrick, senior vice president of commercial services for Time Warner Cable).

¹⁰⁰ Time Warner Cable New York, *Time Warner Business Class*, http://www.twnyc.com/index2.bus.cfm?c=new_bus/roadrunner.

¹⁰¹ Comcast Commercial, http://www.comcastcommercial.com/index.php?option=com_frontpage&Itemid=1.

¹⁰² Comcast Commercial, *Services*, <http://www.comcastcommercial.com/index.php?option=content&task=view&id=6&Itemid=27>; Comcast Commercial, *Enterprise Network Service*, <http://www.comcastcommercial.com/index.php?option=content&task=view&id=8&Itemid=37>.

¹⁰³ Comcast, *Comcast Workplace*, <http://www.comcast.com/business/Availability.ashx> (using zip code 07304).

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network of our parent company.”¹⁰⁴ For carriers, Comcast says it offers “[c]ost-effective transport that can reach into new markets and scale at a moments notice.”¹⁰⁵ As of the end of December 2005, Comcast had more than ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.

55. According to RCN, “RCN Business Solutions provides an unparalleled set of business services as a CLEC, CAP, ISP and MSO. All of our solutions are delivered over the RCN state-of-the-art fiber optic network.”¹⁰⁶ RCN operates a fiber network in the New York MSA, which runs through portions of Manhattan, Queens and Brooklyn.¹⁰⁷ RCN also has three voice switches deployed in the New York MSA.¹⁰⁸ According to data from GeoTel, RCN’s New York network is comprised of more than **** route miles of fiber, including the network RCN recently acquired through its purchase of Con Ed Communications, the telecommunications operating unit of Consolidated Edison.¹⁰⁹ RCN offers a variety of voice and data services to business customers, including Gigabit Ethernet, SONET services, wavelength transport services, collocation, local voice origination and termination services, and IP transit services.¹¹⁰ RCN says it also offers “carrier services [which] leverage [RCN’s] self-owned and

¹⁰⁴ Comcast Commercial, *Telecommunications: Increasing Margins with Lower Transport Costs*, <http://www.comcastcommercial.com/index.php?option=content&task=view&id=33&Itemid=71>.

¹⁰⁵ *Id.*

¹⁰⁶ RCN Business Solutions, *About Us*, <http://www.rcnbusinesssolutions.com/about/index.php>.

¹⁰⁷ RCN, *Metro Maps: New York, NY*, http://www.rcnbusinesssolutions.com/images/metro_maps/fiber-route-nyc-lg.jpg.

¹⁰⁸ *Competitive Carrier Report 2006*, Ch. 6 – RCN at 6-7.

¹⁰⁹ RCN Press Release, *RCN Closes Acquisition of Consolidated Edison Communications* (Mar. 20, 2006).

¹¹⁰ RCN, *Network Services*, http://www.rcnbusinesssolutions.com/services/network_services/index.php; RCN, *Services*, <http://www.rcnbusinesssolutions.com/services/index.php>; RCN,

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operated fiber optic network to develop carrier grade solutions that meet [carrier's] 'First Mile' needs."¹¹¹ According to RCN, RCN Business Solutions relies on its "advanced, dense metropolitan fiber optic network for: Wholesale markets . . . Enterprise markets: hospitality/lodging, broadcast media; education; finance; construction; and real estate vertical markets. . . [and] Government markets: federal, state and local municipalities."¹¹² As of the end of December 2005, RCN had more than ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.

2. Traditional Telecommunications Carriers

56. AT&T is the largest competitor for enterprise customers in the nation. AT&T states that it is "No. 1 in large-business customers," and that "virtually all of the Fortune 1000 companies and all of the Standard & Poor's (S&P) 500 are customers."¹¹³ AT&T has deployed eight voice networks and seven data networks, along with eleven voice switches and five data switches, in the New York MSA.¹¹⁴ AT&T offers the full range of voice and data services for enterprise customers in New York, including local and long-distance voice services, private lines, Ethernet, ATM, Frame Relay, Managed Internet, IP VPNs, and hosting services.¹¹⁵ As of the end of December 2005, AT&T had approximately ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY

Managed Data Services, http://www.rcnbusinesssolutions.com/services/managed_data_services/index.php.

¹¹¹ RCN, *RCN Business Solutions: Wholesale*, <http://www.rcnbusinesssolutions.com/index.php?oc=who>.

¹¹² RCN Press Release, *RCN Enhance Company's Business Solutions Division; Targets Enterprise, Wholesale Carriers & Government* (Oct. 10, 2005).

¹¹³ AT&T News Release, *AT&T Positioned in the Leaders Quadrant in Magic Quadrant Report for U.S. Managed and Professional Network Service Providers* (July 17, 2006); AT&T, *2005 Annual Report* at 1 (2006).

¹¹⁴ *Competitive Carrier Report 2006*, Ch. 6 – AT&T at 5-11.

¹¹⁵ AT&T, *Enterprise Business: Products & Services*, http://www.business.att.com/services.jsp?reporid=ProductCategory&segment=ent_biz.

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CONFIDENTIAL]**** business E911 listings in the New York MSA. In addition, AT&T offers “an array of Local and Long-Haul Dedicated Private Line & SONET Services, from Single Channel to OC192 (Wavelength) Services” for use by other telecom carriers.¹¹⁶

57. Broadview began providing service in the New York MSA in October 1996.¹¹⁷ Broadview has deployed a voice network and four data networks, along with 3 voice switches and two ATM switches, in the New York MSA.¹¹⁸ Broadview’s New York service area includes New York, Newark, Westchester, and Long Island.¹¹⁹ Broadview offers a range of voice and data services to business customers, including local and long-distance voice, ISDN-PRI, VoIP, dedicated Internet access, and web hosting.¹²⁰ As of the end of December 2005, Broadview had approximately ****[**BEGIN HIGHLY CONFIDENTIAL]** [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA. Broadview recently announced an agreement to acquire ATX Communications, a CLEC with nearly ****[**BEGIN HIGHLY CONFIDENTIAL]** [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.¹²¹

58. Broadwing owns an advanced fiber-optic network connecting over 100 cities in the United States.¹²² In the New York MSA, Broadwing has deployed four voice networks and

¹¹⁶ AT&T, *Wholesale: Private Line Services*, http://www.business.att.com/service_fam_overview.jsp?repopid=ProductSub-Category&repopitem=w_privateline&serv_port=w_data&serv_fam=w_privateline&segment=whole.

¹¹⁷ Broadview Press Release, *Broadview Network Reaches 100,000 Lines* (Jan. 2, 2001).

¹¹⁸ *Competitive Carrier Report 2006*, Ch. 6 – Broadview Networks, Inc. at 6-7.

¹¹⁹ Broadview, *Service Coverage Area*, http://www.broadviewnet.com/Products_Services/Common/ServiceArea.asp?scenario=0.

¹²⁰ Broadview Networks, *Voice Services*, http://www.broadviewnet.com/Products_Services/Business/VoiceServices.asp?scenario=0; Broadview Networks, *Data & High-Speed Internet*, http://www.broadviewnet.com/Products_Services/Business/DataHighspeed.asp?scenario=0.

¹²¹ Broadview Press Release, *Broadview Networks to Acquire ATX Communications* (June 27, 2006).

¹²² Broadwing Corp., Form 10-K (SEC filed Mar. 6, 2006).

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two data networks, along with five voice switches.¹²³ Broadwing offers a variety of voice and data services for enterprise customers, including switched and dedicated voice services, private lines, wavelength services, both public and private IP, and wide area networking.¹²⁴ Broadwing also offers all of the above services for use by its carrier customers, including private lines which, according to Broadwing, “provide[] a flexible, cost-effective, seamless solution for infrastructure, voice, video and data applications.”¹²⁵ As of the end of December 2005, Broadwing had more than ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.

59. Global Crossing has deployed one voice network and one data network, along with one voice switch, in the New York MSA.¹²⁶ According to GeoTel data, Global Crossing’s New York network spans more than **** route miles. Global Crossing offers a full range of voice and data services for enterprise customers, including local and long-distance voice, VoIP, Frame Relay, ATM, private lines, wavelength services, collocation, dedicated Internet access, IP VPNs, and metro and local access services.¹²⁷ Global Crossing also offers many of these same services on a wholesale basis for use by other telecommunications carriers.¹²⁸ Global Crossing says its “Metro Network Services allow [] customers to link to

¹²³ *Competitive Carrier Report 2006*, Ch. 6 – Broadwing at 7-9.

¹²⁴ Broadwing, *Data Services*, <http://www.broadwing.com/enterprise-d4.html>; Broadwing, *Voice Services*, <http://www.broadwing.com/enterprise-d5.html>.

¹²⁵ Broadwing, *Carrier Services*, <http://www.broadwing.com/carrier.html>; Broadwing, *Carrier Services: Private Line*, <http://www.broadwing.com/carrier-e402.html>.

¹²⁶ *Competitive Carrier Report 2006*, Ch. 6 – Global Crossing at 5-7.

¹²⁷ Global Crossing, *Enterprise Products*, http://www.globalcrossing.com/xml/services/serv_products.xml.

¹²⁸ Global Crossing, *Carrier Products*, http://www.globalcrossing.com/xml/carrier/car_products.xml.

[Global Crossing's] high-speed, intra-city, SONET/SDH and DWDM rings."¹²⁹ As of the end of December 2005, Global Crossing had approximately ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.

60. InfoHighway provides a variety of voice and data services in the New York MSA, including local and long distance voice services, DSL, T-1s, dedicated Internet access from DS1 up through 100 Mbps, hosted PBXs, and web hosting.¹³⁰ InfoHighway began providing service in New York in 1993.¹³¹ In 2005, InfoHighway acquired Eureka Networks, another carrier operating in the New York MSA, creating "one of the largest hosted and managed communications providers in the Northeast."¹³² InfoHighway boasts of "[o]ver 400 lit buildings in the New York metro area."¹³³ As of December 2005, InfoHighway had nearly ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.

61. According to data from GeoTel, Level 3 operates an approximately **** route-mile metropolitan fiber network in New York. Using this network, Level 3 is able to offer an extensive array of data services to both enterprise and carrier customers, including metro Ethernet, private lines, wavelength services, dark fiber, IP VPNs and

¹²⁹ Global Crossing, *Carrier Products: Metro Network Service*, http://www.globalcrossing.com/xml/carrier/car_access_metro_over.xml.

¹³⁰ InfoHighway, *Local Phone Service*, http://www.eurekanetworks.net/Local_Phone.html; InfoHighway, *Internet Services*, http://www.eurekanetworks.net/Internet_Services.html; InfoHighway, *Onlight Internet Service*, <http://www.eurekanetworks.net/Onlight.html>; InfoHighway, *Products & Services*, http://www.eurekanetworks.net/products_services.html.

¹³¹ InfoHighway, *Company Milestones*, http://www.eurekanetworks.net/Company_Milestones.html.

¹³² *Id.*

¹³³ InfoHighway, *Lit Building List*, <http://www.eurekanetworks.net/IH%20Lit%20Building%20List.pdf>.

collocation.¹³⁴ Level 3 also offers wholesale IP voice services.¹³⁵ According to Level 3, “[t]he Level 3 Metro Private Line service meets your needs to move data traffic between major data aggregation points in a given geographic area, such as carrier hotels, peering points, and Central Offices (COs),” and “includes DS-1, DS-3, OC-3/3c, OC-12/12c, and OC-48/48c and OC-192 capabilities.”¹³⁶ Level 3 recently acquired ICG Communications, TelCove and Looking Glass Networks.¹³⁷ As of the end of December 2005, Level 3 had nearly ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA (including those attributed to TelCove).

62. One Communications, recently formed through the merger of Choice One Communications, CTC Communications, and Conversent Communications, claims to be “the largest privately-held competitive local exchange carrier in the United States.”¹³⁸ One Communications has a two voice networks and nine data networks, along with two voice switches, in New York.¹³⁹ One Communications offers a variety of voice and data services in the New York MSA, including “local and long distance [voice], high-speed Internet, T1 service, managed services including VoIP, Web hosting, and Web development services.”¹⁴⁰ As of the end of December 2005, One Communications had more than ****[BEGIN HIGHLY CONFIDENTIAL] [END

¹³⁴ Level 3, *Metropolitan Networks*, <http://www.level3.com/3385.html>; Level 3, *Services*, <http://www.level3.com/3383.html>.

¹³⁵ Level 3, *Services*, <http://www.level3.com/3383.html>.

¹³⁶ Level 3, *Level 3 Metro Private Line Service*, <http://www.level3.com/557.html>.

¹³⁷ Level 3 Press Release, *Level 3 Completes ICG Acquisition* (May 31, 2006); Level 3 Press Release, *Level 3 Reports Second Quarter Results* (July 25, 2006); Level 3 Press Release, *Level 3 Completes Looking Glass Networks Acquisition* (Aug. 3, 2006).

¹³⁸ One Communications Press Release, *Choice One Communications and CTC Communications Finalize Merger; Simultaneously Complete Acquisition of Conversent Communications* (July 3, 2006).

¹³⁹ *Competitive Carrier Report 2006*, Ch. 6 – Conversent Communications at 6-7, CTC Communications at 8-9.

¹⁴⁰ One Communications, *About Us*, <http://oncommunications.com/about-us.php>.

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HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA. In addition to retail services, One Communications says its carrier services “can provide a fully-protected, dedicated DS1, DS3, or OCxN circuit with full channel, point-to-point capacity.”¹⁴¹ Predecessor company CTC recently announced the opening of a second office in New York City to “meet surging demand for CTC’s converged voice, Internet and data services.”¹⁴²

63. PAETEC Communications is a national communications solutions provider specializing in IP-based services.¹⁴³ PAETEC has deployed two switches in New York, and counts New York and New Jersey as part of its “Local Service Areas.”¹⁴⁴ PAETEC offers a variety of voice and data services in New York, including local and long-distance voice services, VoIP, frame relay, IP VPNs, managed VPNs, and dedicated Internet access.¹⁴⁵ As of the end of December 2005, PAETEC had approximately ****[**BEGIN HIGHLY CONFIDENTIAL]** [END HIGHLY **CONFIDENTIAL]****** business E911 listings in the New York MSA.

64. Sprint is one the nation’s largest long-distance carriers, with an extensive, national fiber optic network and a large base of enterprise customers.¹⁴⁶ According to data from

¹⁴¹ One Communications, *Choice One Carrier Services: Metro Private Line*, http://www.choiceonecom.com/products/wholesale/wholesale_metro.php.

¹⁴² CTC Communications Press Release, *CTC Communications Takes Bigger Bite of Big Apple* (Feb. 6, 2006).

¹⁴³ PAETEC News Release, *PAETEC Exceeds 675,000 Access Lines* (Oct. 14, 2004). PAETEC recently agreed to merge with US LEC, creating a “Premier Communications Provider” to enterprise customers. PAETEC News Release, *PAETEC and US LEC to Combine in \$1.3 Billion Transaction* (Aug. 14, 2006).

¹⁴⁴ PAETEC, *Wholesale Markets: Switch Sites and LATAs*, http://www.paetec.com/1_5/1_5_11__1.html; PAETEC, *Network Map*, http://www.paetec.com/2_1/2_1_5__2.html.

¹⁴⁵ PAETEC, *Offerings*, http://www.paetec.com/1_1/1_1__1.html.

¹⁴⁶ Sprint, *Leadership & Innovation*, <http://www.sprint.com/business/products/whySprint/leadershipInnovation.jsp> (“95% of the FORTUNE 1000 use Sprint”); Sprint, *The Network*, <http://www.sprint.com/business/products/whySprint/theNetwork.jsp> (Sprint’s “IP, ATM, and Frame Relay networks offer seamless interconnectivity, eliminating the need for extensive (and

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GeoTel, Sprint's New York metropolitan area network is comprised of approximately
**** route miles of fiber (the network was deployed prior to March 2003).¹⁴⁷ Sprint
offers a full suite of voice and data services, including local and long-distance voice, VoIP,
ATM, frame relay, Ethernet, private lines, IP VPNs, and dedicated Internet access.¹⁴⁸

**** According to

Sprint, in addition to retail services, the company's "Sprint Wholesale Private Line services
provide dedicated wide area networks (WANs) links to enhance data and voice communications
for your customers and your own network."¹⁴⁹

65. Time Warner Telecom is a national provider of business communications
solutions, including a "comprehensive suite of voice, data, dedicated Internet and integrated
communications services," according to the company.¹⁵⁰ Time Warner Telecom counts both
New York City and Northern New Jersey among its markets.¹⁵¹ According to data from GeoTel,
Time Warner Telecom operates an approximately **** route-mile fiber-optic network

expensive) physical overhauls or conversions. ... The bottom line is infrastructure and we have
spent years investing in ours to make it among the most robust and consistently reliable in the
industry.").

¹⁴⁷ *Sprint: 30 Metro Ethernet Installations by 2004*, OpticallyNetworked.com (Mar. 10, 2003),
<http://www.opticallynetworked.com/news/article.php/2107161> ("MANs are established in
markets where customer demand for Sprint network quality and survivability is the highest.
Those markets currently are: . . . New York.").

¹⁴⁸ *Sprint, Landline Phone*, <http://www.sprint.com/business/products/sections/landlinePhone.html>; *Sprint, Internet & IP*, <http://www.sprint.com/business/products/sections/internetAndIp.jsp>; *Sprint, Networking*, <http://www.sprint.com/business/products/sections/networking.jsp>.

¹⁴⁹ *Sprint, Sprint Wholesale Private Line*, http://www.sprint.com/wholesale/nl_products_data_privateline.html.

¹⁵⁰ *Time Warner Telecom, Our Networks*, http://www.twtelecom.com/about_us/networks.html#TWTC.

¹⁵¹ *Id.*

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in the New York MSA. Time Warner Telecom offers a variety of business services to customers in New York, including local and long distance voice services, ISDN PRI, digital trunks, Ethernet, Native LAN, dedicated transport, dedicated Internet access, web hosting, SONET services, and wavelength transport services.¹⁵² Time Warner Telecom offers these services to carriers as well, noting that “Dedicated High Capacity Services offer a complete range of transmission speeds from 1.5 Mbps to 10 Gbps . . . and can be used for voice, data, image and video transmissions.”¹⁵³ As of the end of December 2005, Time Warner Telecom had approximately ****[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]**** business E911 listings in the New York MSA.¹⁵⁴

66. XO provides an extensive array of voice, data, Internet access, security solutions, and integrated and managed services to Fortune 500 companies.¹⁵⁵ In the New York MSA, XO has deployed two voice and three data networks, along with eight voice switches.¹⁵⁶ According to data from GeoTel, XO has deployed a fiber-optic network of approximately **** **** miles in New York. XO also has a long haul termination point, a core IP node, and three metro IP nodes in New York, and its private line backbone and OC192 BLSR rings run through the

¹⁵² Time Warner Telecom, *Business Voice*, http://www.twtelecom.com/cust_solutions/services/biz_switched.html; Time Warner Telecom, *Internet & Data*, http://www.twtelecom.com/cust_solutions/services/internet_data.html; Time Warner Telecom, *Dedicated High Capacity Services*, http://www.twtelecom.com/cust_solutions/services/ded_hi_capacity.html.

¹⁵³ Time Warner Telecom, *Dedicated High-Capacity Services*, http://www.twtelecom.com/cust_solutions/services/ded_hi_capacity.html.

¹⁵⁴ Verizon’s data do not distinguish between Time Warner Telecom and other Time Warner affiliates (such as Time Warner Cable) in all cases. For purposes here, we have attributed all business E911 listings for any Time Warner affiliate to Time Warner Telecom.

¹⁵⁵ XO Communications, *XO Products and Programs*, <http://www.xo.com/products/>.

¹⁵⁶ *Competitive Carrier Report 2006*, Ch. 6 – XO Communications at 7-10.

MSA.¹⁵⁷ As of the end of December 2005, XO had more than ***[BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL]*** business E911 listings in the New York MSA. XO also offers many of its services for use by carrier customers, such as “Carrier Private Line services [which] provide high-speed, dedicated point-to-point connectivity for voice, data and video applications.”¹⁵⁸

67. Other CLECs operating in the New York MSA include Covad¹⁵⁹ and DeltaCom.¹⁶⁰

3. Wholesale Carriers

68. In addition to cable operators and traditional telecommunications carriers, there is a class of carriers that offer mainly wholesale services to other telecommunications carriers. These “carrier’s carriers,” such as AboveNet, Enkido, KeySpan Communications and NEON Communications, offer dark fiber, wholesale access and transport, and a variety of other services designed exclusively for use by other providers. For example, NEON Communications says its customers include “competitive local exchange companies (CLECs), Internet service providers (ISPs), wireless companies, and cable television operators.”¹⁶¹ KeySpan Communications provides “dark fiber and bulk bandwidth throughout the New York metropolitan region” “for

¹⁵⁷ XO Communications, *Private Line Assets*, http://www.xo.com/about/network/maps/privateline_large.html; XO Communications, *IP Network Assets*, http://www.xo.com/about/network/maps/ip_large.html.

¹⁵⁸ XO Communications, *XO Carrier Services*, <http://www.xo.com/products/carrier/>; XO, *XO Carrier Private Line*, <http://www.xo.com/products/carrier/transport/privateline/index.html>.

¹⁵⁹ Covad, *Covad Corporate Brochure*, <http://www.covad.com/companyinfo/docs/CovadCorpBrochure.pdf>.

¹⁶⁰ DeltaCom, *Our Network*, <http://www.deltacom.com/network.asp>.

¹⁶¹ NEON Communications, *Company Overview*, <http://www.neoninc.com/page.cfm?contentID=96>.

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small, local communications carriers to the largest international carriers.”¹⁶² Wholesale carriers allow other communications carriers to purchase bandwidth where such purchases may otherwise be unfeasible due to cost constraints or other limiting factors.

4. Other Competitors

69. In recent years there has been a dramatic increase in competition from systems integrators – such as Electronic Data Systems Corp., IBM Global Services, Accenture, Cap Gemini Ernst & Young, Northrup Grumman, General Dynamics, and Computer Sciences Corp. With the increasing complexity and utilization of IT and communications systems, large businesses are increasingly turning to network integrators to assess, plan, and manage their telecommunications systems. The need for network integrators is heightened by the need for extensive planning and management needed to create converged systems without having to create new physical networks from scratch. Network integrators thus provide managed services to large business customers, such as network design and operation.

70. Systems integrators have shown that they can compete successfully against traditional telecommunications providers. One Yankee Group study showed that 10 percent of surveyed businesses reported that a system integrator was its primary communications service provider in 2004.¹⁶³ Likewise, in the government sphere, systems integrators have emerged as leading competitors. Integrators have recently won many major contracts. For example, in October 2004, Lockheed Martin teamed up with AT&T, Hewlett-Packard Co., Hughes Network Systems Inc., and large local exchange carriers to become the comprehensive provider of managed network services to over 37,000 U.S. Postal Service locations. The \$3 billion contract

¹⁶² KeySpan Energy, *KeySpan Communications*, http://www.keyspanenergy.com/psbusiness/comm/index_ny_ny.jsp; KeySpan Energy, *Dark Fiber Services*, http://www.keyspanenergy.com/psbusiness/comm/dark_fiber_ny_ny.jsp.

¹⁶³ S. Hackett, Yankee Group, *The State of the Enterprise* at 28 (Nov. 30, 2004).

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was awarded principally to Lockheed Martin.¹⁶⁴ In January 2006, a Lockheed-led team was awarded a \$2 billion contract to create a new Air Force communications network.¹⁶⁵ Harris Corp. won a \$1.7 billion contract for the nationwide FAA network;¹⁶⁶ EDS and Lockheed Martin won HUD contracts worth \$400 million each;¹⁶⁷ EDS won the Navy's \$8.8 billion NMCI networking contract;¹⁶⁸ General Dynamics won the contract for Pentagon renovations;¹⁶⁹ CSC won the \$2 billion WIN-T contract in connection with the Army's Warfighter Information Network project¹⁷⁰ and was recently awarded a \$1.9 billion contract to provide IT services to BAE systems;¹⁷¹ and Northrop Grumman won the Air Force's \$9 billion NetCENTS contract, as well as a \$2 billion contract to run the State of Virginia's information infrastructure.¹⁷² IBM

¹⁶⁴ J. Miller, *USPS Taps Lockheed Martin for \$3 Billion Telecom Contract*, Gov't Computer News (Oct. 14, 2004), http://www.gcn.com/vol1_no1/outsourcing/27505-1.html; United States Postal Service, *Postal Facts 2006*, <http://www.usps.com/communications/organization/postalfacts.htm>.

¹⁶⁵ Lockheed Martin Press Release, *Lockheed Martin Awarded \$2 Billion Contract to Build Network Missions Operations System* (Jan. 27, 2006) (the team included Northrup Grumman, Telcordia Technologies, and SAIC, among others).

¹⁶⁶ Harris Corp., *2002 Annual Report* at 2, <http://www.harris.com/harris/ar/archives/annual-report2002.pdf>.

¹⁶⁷ U.S. Department of Housing and Urban Development, *HUD Information Technology Services*, <http://www.hud.gov/offices/cpo/primes/hits.cfm>.

¹⁶⁸ J. Perez, *EDS CEO: Navy Contract Under Control*, InfoWorld (Feb. 18, 2004).

¹⁶⁹ F. Tiboni, *General Dynamics wins Pentagon Contract*, Federal Computer Week (Aug. 13, 2004).

¹⁷⁰ CSC News Release, *CSC Wins \$500 Million Forscom Aviation Support Contract* (Aug. 24, 2004) ("The aggregate ceiling value for all four contracts is \$2 billion.").

¹⁷¹ CSC News Release, *CSC Renews \$1.9Billion IT Services Contract with BAE Systems for The Third Time* (May 2, 2006).

¹⁷² W.D. Gardner, *USAF To Dole Out \$9 Billion On Beefed Up Network, Networking Pipeline* (Sept. 14, 2004); FedSources, *Market News Flash – 10/31/05 – Virginia Awards \$2 Billion 10-Year IT Outsourcing Contract* (Oct. 31, 2005), http://www.fedsources.com/about/fsinews/mktflash_103105.asp.

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Global Services won a recent contract with Lloyd's TSB bank to provide that company with converged voice and data systems, including 70,000 VoIP telephones.¹⁷³

71. Because all communications services depend in part on customer premises equipment, one trend for enterprise customers is the development of increasingly sophisticated on-site communications capability to replace services that were previously provided through the network.¹⁷⁴ In part for this reason, a variety of equipment manufacturers are also competing for large business customers. Siemens offers a variety of converged communications solutions, including real-time IP systems, security systems, customer interaction solutions, and voice, data, and messaging systems, for enterprise customers.¹⁷⁵ Lucent provides a host of telecommunications services for business customers, including, among other things, its IP Centrex product, which is a fully managed service that combines the functionality of Centrex with the benefits of VOIP.¹⁷⁶ Lucent also provides managed data services, including ATM, Frame Relay, and Ethernet-over-SONET, to business customers.¹⁷⁷

¹⁷³ IBM Release, *At £500m IBM Voice and Data Services Deal To Enable Lloyds TSB's Next Generation Business Solutions* (Dec. 6, 2004).

¹⁷⁴ See T. Valovic, *et al.*, IDC, *U.S. Hosted IP Voice Forecast and Analysis, 2002–2007* at 1, 19 (Feb. 2003).

¹⁷⁵ Siemens Enterprise Networks, *Products, Solutions & Services*, <http://enterprise.usa.siemens.com/products.html>.

¹⁷⁶ Lucent Technologies, *IP Centrex Service for Enterprises*, http://www.lucent.com/solutions/ip_centrex.html.

¹⁷⁷ Lucent Technologies, *Optical Networking Solutions for Enterprises*, http://www.lucent.com/solutions/optical_networking_ent.html; Lucent Technologies, *Ethernet over SONET (EoS) Services for Enterprises*, <http://www.lucent.com/solutions/ethernet.html>.