Network Service Providers, CLECs, Equipment Providers, and Systems Integrators Serving Enterprise Customers

This appendix consists of a table and written profiles that provide basic overviews of services and equipment provided by major network service providers, equipment providers, and system integrators.

The table of products and services covered should be interpreted in light of company types – i.e., network service providers, equipment providers, and system integrators. That is, a company identified as a network service provider, and for which we have checked voice and data, provides network-based services related to voice and data communication. Similarly, a company labeled as equipment provider, and for which we have checked data and voice, provides network-based equipment related to voice and data communication. Finally, a company labeled as system integrator, and for which we have checked data and voice, provides system integration services aimed at the design and management of voice and data communication.

This second part of this Exhibit includes basic descriptions of the general scope of products and services, as well as the general scope of a company's network and geographic dispersion. Because companies do not report product or geographic data on a comparable basis, descriptions are kept at a general level. The revenue figures reported are company revenues, intended to give an idea of the overall scale of the companies. As such they may include revenues from products or services other than enterprise communications.

Network Service Providers, Equipment Providers, CLECs, and Systems Integrators Serving the Enterprise Customers in the U.S. and Internationally

			· · · · · · · · · · · · · · · · · · ·	,	·		,	,		,	,	,			·		
Companies		/4	20/2			Intranet	re d'inet	1.7 may	Wire.					ratio	Teus di		
/ c ^{ox}					7	/.	Ž/,	\$ ⁰ /	$\overline{}$	7			√ે/ .	<u>\$</u>	- /		1
		\angle		_	_	1	<u> </u>	<u> </u>	_		_		/ 4	<u> </u>	_	_	
P. C.											***************************************	-	***************************************	********	*********		
Network Service Providers				,	····	1	T	T	· · · · · ·	т		Υ	·	·			
AT&T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Sprint	Y	Y	Y	Y	<u> </u>	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SBC Communications	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bell South	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y
Qwest Communications	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	<u> </u>	Y	Y	Y
BT Infonet	Y	Y	Y	Y	Y		Y	Y		Y	<u> </u>		Y	Y	ļ	Y	Y
Broadwing	Y	Y	Y	Y		Y	Y			Y	<u> </u>	Y			Y	Y	Y
Deutsch Telekom/T-Systems/T- Mobile/T-Online	Y	Y	Y	Y	Y		Y	Y	Y	Y			Y		Y		
Equant	Y	Y	Y	Y	Y	Y	Y			Y				Y	Y	Y	Y
Global Crossing	Y	Y	Y	Y		Y	Y			Y		Y	Y	Y	Y	Y	Y
Level 3	Y	Y	Y	Y		Y	Y			Y		Y		Y			
Savvis Communications		Y	Y	Y	Y	Y		Y					Y	Y	Y		
Equipment Providers			**************												······································		_
Cisco	Y	Y	Y	Y	Y	Y	Y	Y		Y				Y	Y	Y	
Avaya	Y	Y	Y	Y		Y	Y	Y	Y	Y					Y	Y	
3Com	Y	Y		Y			Y	Y	Y	Y					Y	Y	
Nortel Networks Corporation	Y	Y		Y		Y	Y	Y	Y	Y				Y	Y	Y	
NEC Corp.	Y	Y	Y	Y		Y	Y	Y		Y							
Lucent Technologies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				Y	Y	Y	Y
Alcatel	Y	Y	Y	Y			Y	Y	Y	Y					Y	Y	Y
CLECs																	
XO Communications	Y	Y		Y		Y	Y		Y	I	Y	Y	I		Y	Y	Y
Time Warner Telecom	Y	Y	Y	Y		Y	Y			Y	Y	Y					
PAETEC Communications	Y	Y	Y	Y			Y			Y	Y	Y	Y		Y		Y
US LEC	Y	Y		Y		Y	Y			Y	Y	Y		Υ		Y	Y
				-													
Systems Integrators																	
Accenture	Y	Y		Y	Y		Y	Y	Y	Y			Y	T			
Computer Sciences Corp. (CSC)	Y	Y		Y	Y					Y			Y		Y		
ВМ	Y	Y	$oxed{\int}$	Y	Y	Y	Y	Y		Y			Y		Y	Y	
EDS	TY	Y	Y		Y			Υ		Υ				Υ			

Network Service Providers

AT&T

Revenue: \$30.54 billion¹

Product Scope: Product and service offerings include domestic and international long distance voice service, toll-free voice service, local voice service, local data and special access services, domestic/international data and Internet protocol (IP) services. Managed enterprise networking services include e-mail, VoIP, order entry systems, employee directories, human resource transactions and other database applications, IP VPN, remote access services, dial, broadband, WiFi and cellular wireless technologies. ³

Geographic/Network Scope: U.S. network consists of 55,543 route miles of long-haul backbone fiber optic cable, as well as 21,655 additional route miles of local metropolitan fiber. AT&T owns and leases facilities, and owns and manages ATM, frame relay and/or IP switches and routers, in 57 countries. AT&T serves 60 countries and 850 cities worldwide. AT&T serves 60 countries and 850 cities

Sprint

Revenue: \$26 billion in 2003⁷

Product Scope: Sprint is a global communications company offering an extensive range of innovative communication products and solutions, including wireless, long distance voice and data transport, global Internet Protocol (IP), local and multi-product bundles. Sprint is selling into the cable telephony market through arrangements with cable companies that resell Sprint long distance service and/or use Sprint back office systems and network assets in support of their local telephone service provided over cable facilities. Sprint is one of the largest carriers of Internet traffic, and provides connectivity to any point on the Internet either through its own network or via direct connections with other backbone providers. 8

Geographic/Network Scope: Sprint's fiber optic long distance and Internet backbone extends throughout the US. Moreover, Sprint "offers global services through a combination of company owned points of presence and its partners Equant and Infonet" ⁹. It also provides local exchange services in a number of states.

¹ AT&T Corp. 10-K for fiscal year ended December 31, 2004.

² AT&T Corp. 10-K for fiscal year ended December 31, 2004.

³ AT&T Corp. 10-K for fiscal year ended December 31, 2004.

⁴ AT&T Corp. 10-K for fiscal year ended December 31, 2004.

⁵ AT&T Corp. 10-K for fiscal year ended December 31, 2004.

⁶ AT&T Corp. 10-K for fiscal year ended December 31, 2004.

⁷ http://www2.sprint.com/mr/news_dtl.do?id=5140

⁸ Sprint Corp. 10-K for the fiscal year ended December 31, 2004.

⁹ See D. Neil, W. Hahn, J. Delcroix, J. Pultz, "Gartner's 2004 Network Service Provider Magic Quadrants", Gartner, November 10, 2004, p. 4.

Sprint operates a 100% digital personal communications service (PCS) wireless network with licenses to provide service to the entire United States population, including Puerto Rico and the U.S. Virgin Islands, using a single frequency band and a single technology. Sprint, together with third party affiliates, operates PCS wireless systems in over 350 metropolitan markets, including the 100 largest U.S. metropolitan areas. Sprint's wireless service, including third party affiliates, reaches a quarter billion people. Combined with its wholesale partners and Sprint PCS Affiliates, Sprint served a total of 24.7 million wireless subscribers at the end of 2004. Sprint currently serves approximately 7.7 million access lines in its franchise territories in 18 states. ¹⁰

SBC

Revenue: \$40.79 billion¹¹

Product Scope: Product and service offerings vary by market, however, generally include: local exchange services, wireless communications, long-distance services, Internet services, telecommunications equipment, and directory advertising and publishing. ¹²

Geographic/Network Scope: SBC Communications Inc. (SBC) provides communications services and products in the United States, and has investments in 14 countries. SBC's principal wireline subsidiaries provide telecommunications services in thirteen states: Arkansas, California, Connecticut, Illinois, Indiana, Kansas, Michigan, Missouri, Nevada, Ohio, Oklahoma, Texas, and Wisconsin. 4

Bell South

Revenue: \$20.3 billion¹⁵

Product Scope: Product and service offerings for large businesses include data services, voice services, equipment services, Internet services, long distance, and VoIP. 16

Geographic/Network Scope: "The Company provides communications service in the southeastern United States, serving substantial portions of the population within Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee. BellSouth also publishes telephone directories in the United States." ¹⁷

¹⁰ Sprint Corp. 10-K for the fiscal year ended December 31, 2004.

¹¹ http://finance.yahoo.com/q/ks?s=SBC

¹² SBC 10-K for the fiscal year ended December 31, 2004

¹³ SBC 10-K for the fiscal year ended December 31, 2004

¹⁴ SBC 10-K for the fiscal year ended December 31, 2004

¹⁵ http://finance.yahoo.com/q/ks?s=BLS

¹⁶ http://www.bellsouthlargebusiness.com/

¹⁷ http://finance.yahoo.com/q/pr?s=bls

Qwest

Revenue: \$13.81 billion¹⁸

Product Scope: "Qwest Communications International Inc. (Qwest) provides local telecommunications and related services, long-distance services, and wireless, data and video services within its local service area... The Company operates in three segments: Wireline Services, Wireless Services and Other Services." ¹⁹

Geographic/Network Scope: Qwest's wireline products and services include its traditional telephone network services. Qwest's traditional telephone network is made up of both copper cables and fiber optic broadband cables and serves approximately 15.5 million access lines in 14 states. "Qwest's local service area consists of the 14-state region of Arizona, Colorado, Idaho, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington and Wyoming." According to its web site Qwest provides "Global connectivity to over 250 countries around the world" and "Qwest's broadband network, designed with the latest advances in network technology for speed and efficiency, spans more than 156,000 route miles globally, enabling new products and services that benefit businesses and consumers worldwide. Qwest's industry-leading network reaches the last mile throughout 14 states."

BT Infonet

Revenue: \$34.32 billion²³

Product Scope: "BT supplies over 20 million customers with a wide range of communications products and services, including voice, data, Internet and multimedia services and offers a comprehensive range of managed and packaged communications solutions. The Company's core portfolio covers traditional telephony products, such as calls, analogue/digital lines and private circuits." Product and service offerings also include mobility services, consulting, integration and provisioning services, call center, security, enterprise management, messaging, collaboration, managed extranet, X.25 transport service and other legacy communications services. ²⁵

Geographic/Network Scope: "BT Group plc provides voice and data services in the UK and overseas, particularly in Europe, but also in the Americas and the Asia Pacific region.

¹⁸ http://finance.yahoo.com/q/ks?s=Q

¹⁹ http://finance.yahoo.com/q/pr?s=Q

²⁰ Qwest 10-K for the fiscal year ended December 31, 2004

²¹ http://finance.yahoo.com/q/pr?s=Q

²² http://www.qwest.com/about/media/presskit/companyFact/

http://finance.yahoo.com/q/ks?s=BT http://finance.yahoo.com/q/pr?s=BT

Infonet 10-K for the fiscal year ended April 2, 2004.

British Telecommunications plc is a wholly owned subsidiary of BT Group plc and holds virtually all businesses and assets of the BT group."²⁶

"British Telecom is...one of Europe's leading providers of large enterprise telecommunications services. BT's global network operates in over 200 countries across five continents, and it owns POPs in 14 major U.S. metropolitan areas." BT recently completed an acquisition of Infonet. The Infonet network can be accessed from over 180 countries and territories. Infonet representatives actively provide services in over 70 countries and territories. The network is accessible to clients through dedicated, dial-up, wireless or other access services. Additional access methods offered are digital subscriber line (DSL) and broadband wireless remote access adapted to the network backbone. BT Infonet provides cross-border managed data and communications services to over 2,600 multinational enterprises.

Broadwing

Revenue: \$672 million³¹

Product Scope: Broadwing Communications Inc. is a provider of data and voice communications services. The company's revenue is generated by broadband transport through private line and IRU agreements, Internet services utilizing technology based on Internet protocol ("IP"), and switched voice services provided to both wholesale and retail customers. The company also offers data collocation, information technology consulting, network construction and other services.³²

Geographic/Network Scope: Services are provided over approximately 18,700 route miles of fiber-optic transmission facilities. Broadwing owns advanced fiber-optic network connecting over 100 cities in the United States.³³ Broadwing International Private Line data service provides "fast, scalable and highly reliable transcontinental private line service in major regions throughout the globe." Broadwing can send data to over 50 countries with speeds from DS1 to optical levels. Broadwing provides international Frame Relay and ATM "for global communications needs. With extensive worldwide reach," Frame relay service is provided in 70+ countries. ATM service is provided in 30+ countries. Broadwing International Dedicated Internet is an access service that provides a company with continuous connection to the Internet throughout Europe, Asia, Latin America, North America and the Middle East. It has points of presence (PoPs) in 50+ countries.³⁴

²⁶ http://finance.yahoo.com/q/pr?s=BT

Declaration of Eric J. Bruno and Shelley Murphy, p. 17.

²⁸ Infonet 10-K for the fiscal year ended April 2, 2004.

²⁹ Infonet 10-K for the fiscal year ended April 2, 2004.

³⁰ Infonet 10-K for the fiscal year ended April 2, 2004.

³¹ http://finance.yahoo.com/q/ks?s=BWNG.

³² Broadwing Communications, Inc. 10-K for the fiscal year ended December 31, 2002.

³³ Declaration of Eric J. Bruno and Shelley Murphy, p. 21.

³⁴ http://www.broadwing.com/allserv-g19.html

Deutsch Telekom/T-Systems/T-Mobile

Revenue: \$75.18 billion³⁵

Product Scope: "T-Mobile USA... is a growing nationwide wireless service provider, offering all digital voice, messaging and high-speed wireless data services to more than 17.3 million customers in the United States. T-Mobile International offers service on both sides of the Atlantic with a single global brand name and a single digital technology standard (GSM)..."³⁶

The T-Systems, according to its web site provides "Systems Integration, [which] equips enterprises with state-of-the-art software and solutions. Combined expertise in telecommunications and information technology enables T-Systems to provide convergence solutions. T-Systems also provides network infrastructure solutions that ensure the reliability of an enterprise network."³⁷

Geographic/Network Scope: Deutsche Telecom is Europe's largest telecommunications company and a major competitor in the United States through its T-Systems and T-Mobile subsidiaries.³⁸

Equant

Revenue: \$2.91 billion³⁹

Product Scope: Equant's communication services encompass data & IP networks, voice, mobility and video. Managed network solutions include IP VPN (used by more than 1,300 multinationals IP), Internet Direct, Internet VPN, LAN Access, LAN VPN, Voice for IP VPN, and Video for IP VPN. Mobility solutions include fixed access (leased line, xDSL, Satellite, Ethernet, etc.) and remote access (Dial, GPRS, WiFi, etc.) products. Connectivity solutions include ATM, Frame Relay, Managed Direct Link, Optical Link and X.25.

Geographic/Network Scope: "[Equant] boasts the world's largest global network in terms of geographic coverage." The network spans 164 countries and territories, 967 cities and towns with 1,468 points-of-presence worldwide. 44 Equant serves as a global

³⁵ http://finance.yahoo.com/g/ks?s=DT

³⁶ http://finance.yahoo.com/q/pr?s=DT

http://www.t-systemsus.com/coremedia/generator/www.t-

systemsus.com/en/Home/CompetenceAreas/Services/id=42742.html

³⁸ Declaration of Eric J. Bruno and Shelley Murphy, p. 18

³⁹ http://finance.yahoo.com/q/ks?s=ENT

⁴⁰ http://www.equant.com/content/xml/what we do.xml

⁴¹ http://www.equant.com/content/xml/press_release_allianz_26_10_04.xml.

⁴² http://www.equant.com/content/xml/network products home.xml

⁴³ Declaration of Eric J. Bruno and Shelley Murphy, p. 17

⁴⁴ http://www.equant.com/content/xml/about_network.xml

network service provider serving over 3,700 large business customers, including twothirds of the top 100 companies in Business Week's "Global 1000" list for 2003. 45

Global Crossing

Revenue: \$2.49 billion⁴⁶

Product Scope: Global Crossing provides "global data and Internet Protocol ("IP")based telecommunications solutions to enterprises, governments and telecommunications carriers..." Product and service offerings include IP VPN, VoIP, domestic and international long-distance voice, toll-free routing services, calling cards and, in the United Kingdom, commercial managed voice services. 47

Geographic/Network Scope: The company provides telecommunications services using a global IP-based "worldwide optical cable network of over 100,000 route miles" that connects more than 300 cities in over 30 countries and delivers services to more than 500 major cities in over 50 countries around the world. 49 "The North American network portion of the GC fiber network comprises approximately 19,000 route miles of fiber in the U.S. and Canada, most of which consists of IRUs in fibers purchased from other carriers." ⁵⁰ GC introduced converged IP service in January 2005, an IP bundle delivered over a common IP service architecture and single access connection where voice, video, data and multi-media are managed and delivered as applications riding a VPN. 51

Level 3 Communications

Revenue: \$3.71 billion⁵²

Product Scope: Serves as a facilities-based provider of a broad range of integrated communications services. 53

Geographic/Network Scope: Level 3 has "built an advanced IP backbone with coverage across the United States and Europe, and its network includes nearly 1 million miles of fiber in 99 metropolitan areas including over 150,000 miles in Europe."54 As of December 31, 2004, the company had metropolitan networks totaling approximately 14,560 conduit miles and approximately 792,000 fiber miles in the United States, and

⁴⁵ Declaration of Eric J. Bruno and Shelley Murphy, p. 17

⁴⁶ http://finance.yahoo.com/q/ks?s=GLBC

⁴⁷ Global Crossing 10-K for the fiscal year ended December 31, 2004.

⁴⁸ Declaration of Eric J. Bruno and Shelley Murphy, p. 22.

⁴⁹ Global Crossing 10-K for the fiscal year ended December 31, 2004.

⁵⁰ Global Crossing 10-K for the fiscal year ended December 31, 2004. 51 Global Crossing 10-K for the fiscal year ended December 31, 2004.

⁵² http://finance.yahoo.com/g/ks?s=LVLT

⁵³ Level 3 10-K for the fiscal year ended December 31, 2004.

⁵⁴ Declaration of Eric J. Bruno and Shelley Murphy, p. 22.

approximately 3,580 conduit miles and approximately 155,000 fiber miles in Europe. ⁵⁵ As of December 31, 2004, the company's intercity covered approximately 18,800 miles in North America, leased or owned local networks in 77 North American markets, an intercity network covering approximately 3,600 miles across Europe, leased or owned local networks in 22 European markets, approximately 5.0 million square feet of Gateway and transmission facilities in North America and Europe, and a 1.28 Tbps transatlantic cable system. ⁵⁶ "The Company's nearly 19,000 mile fiber optic intercity network in North America consists of multiple conduits throughout the vast majority of its intercity network connecting approximately 200 North American cities." ⁵⁷

Savvis Communications

Revenue: \$616.8 million⁵⁸

Product Scope: "In March 2004, Savvis purchased substantially all of the assets of Cable & Wireless USA, Inc. and Cable & Wireless Internet Services, Inc. together with the assets of certain of their affiliates (CWA). [Savvis] acquired hosting assets in 15 data centers, 3,000 business clients, an Internet Protocol (IP) network, with a footprint encompassing approximately 27% of all Internet routes, a global Content Delivery Network and considerable consulting expertise." Services include managed IP VPN, hosting, Internet access, wholesale carrier networks, voice services, and professional services. 60

Geographic/Network Scope: Savvis's "clients 'plug into' its infrastructure and receive services through hundreds of Points of Presence, or PoPs, in 47 countries... [Savvis] provides network connectivity through an extensive global infrastructure that includes over 300 ATM and Frame Relay switches, 200 backbone routers and 17,000 access devices on customer locations." The Savvis IP network spans 110 cities in 45 countries, encompassing the U.S., Canada, Latin America, Europe, the Middle East, Asia and the Pacific Rim. [Savvis] also operates eight hosting centers in the U.S, Europe and the Pac Rim... More than 4,700 financial institutions -- including 75 of the top 100 worldwide banks and 45 of the Top 50 brokerage firms -- connect to Savvis to conduct secure high-speed transmission of financial and economic data. From this heritage of providing real-time applications management for the world's most demanding customers, Savvis now has over 70% of its customer base comprised of non-financial enterprises and 50% of the Fortune 500. 62

⁵⁵ Level 3 10-K for the fiscal year ended December 31, 2004.

⁵⁶ Level 3 10-K for the fiscal year ended December 31, 2004.

⁵⁷ Level 3 10-K for the fiscal year ended December 31, 2004.

⁵⁸ Savvis Communications 10-K for the fiscal year ended December 31, 2004

⁵⁹ Savvis Communications 10-K for the fiscal year ended December 31, 2004

⁶⁰ Savvis Communications 10-K for the fiscal year ended December 31, 2004

⁶¹ Savvis Communications 10-K for the fiscal year ended December 31, 2004

⁶² http://www.savvis.net/company/profile/index.html

Equipment Providers

Cisco

Revenue: \$23.58 billion⁶³

Product Scope: Cisco provides "a broad line of products for transporting data, voice, and video within buildings, across campuses, and around the world." Product and service offerings include routing technology, switching technology, home networking technology, IP telephony, optical networking, security, storage area networking, wireless solutions, "ISDN remote-access routers, dialup access servers, digital subscriber line (DSL) technologies, and cable universal broadband routers." ⁶⁴ "Cisco creates and delivers solutions in collaboration with third-party application and hardware vendors and channel partners taking advantage of Cisco's products and advanced technology solutions such as enterprise routing, switching, security, IP telephony, mobility, and storage. The firm also offers a wide variety of services, including service and support packages, financing, and managed service offerings through its service provider partners." ⁶⁵

Geographic/Network Scope: Cisco has international business operations in the Americas, Europe, the Middle East, Africa, and Japan. ⁶⁶ Cisco's "IP telephony products use a single network infrastructure for the transmission of data, voice, and video traffic to deliver IP voice and fully integrated communications." ⁶⁷

Avaya

Revenue: \$4.25 billion. 68

Product Scope: Avaya is "focused on migrating customers' traditional voice communications to a converged network that provides for the integration of voice, data, video and other application traffic on a single network." Product offerings include IP telephony systems, telephone sets, multi-media contact center infrastructure, and traditional voice communication systems. Service offerings include managed services, business consulting, professional services, design and network integration, product implementation, and maintenance services. The Enterprise Communications Group

⁶³ http://finance.yahoo.com/q/ks?s=CSCO

⁶⁴ Cisco 10-K for the fiscal year ended July 31, 2004

⁶⁵ Cisco 10-K for the fiscal year ended July 31, 2004

⁶⁶ Cisco 10-K for the fiscal year ended July 31, 2004

⁶⁷ Cisco 10-K for the fiscal year ended July 31, 2004

⁶⁸ http://finance.yahoo.com/q/ks?s=AV

⁶⁹ Avaya, Inc. 10-K for the fiscal year ended September 30, 2004

⁷⁰ Avaya, Inc. 10-K for the fiscal year ended September 30, 2004

⁷¹ Avaya, Inc. 10-K for the fiscal year ended September 30, 2004

focuses "on the sale of communications systems, products and applications to enterprise customers." Avaya supports its customer base by assisting customers in planning, designing, implementing, maintaining and managing their communications networks. Avaya also assists its customers in implementing a new IP telephony system or "IP-enabling" their existing voice communication system.

Geographic/Network Scope: Avaya has a presence in over 140 countries, and maintains U.S. offices in Colorado, Florida, Massachusetts, and New Jersey.⁷⁴

3Com

Revenue: \$698.9 million in fiscal year 2004⁷⁵

Product Scope: 3Com works "with systems integrators, major telecom service providers, and direct marketers... 3Com offers enterprise networking products and solutions for enterprises and public sector organizations of all sizes... VoIP enables customers to transport their standard voice traffic, as well as new IP-based voice-related applications, over their existing data networking infrastructure". ⁷⁶

Geographic/Network Scope: While 3Com operates predominately in the United States, a significant portion of its net sales originate outside of the U.S.⁷⁷

Nortel Networks Corporation

Revenue: \$10.48 billion⁷⁸

Product Scope: Nortel Enterprise Networks solutions portfolio provides data, voice and multimedia communications solutions for enterprise customers. ⁷⁹ Nortel's products include "data switches, secure routers and associated security products [that] provide data switching designed to allow customers to provide Internet data security and IP services including IP routing, virtual private networks, deep packet inspection, firewall applications, policy management and data traffic flow management." ⁸⁰

Geographic/Network Scope: Nortel has customers in over 150 countries.81

 $^{^{72}}$ Avaya, Inc. 10-K for the fiscal year ended September 30, 2004

⁷³ Avaya, Inc. 10-K for the fiscal year ended September 30, 2004

http://www.avaya.com/gcm/master-usa/en-us/tasks/connect/contacts/worldwide/worldwide.htm&cid=AVHCT; see also, http://www.avaya.com/gcm/master-usa/en-

us/tasks/connect/contacts/worldwide/locations/usa.htm&Filter=Country:USA

 $^{^{75}}$ 3Com 10-K for the fiscal year ended May 28, 2004. 76 3Com 10-K for the fiscal year ended May 28, 2004.

⁷⁷ 3Com 10-K for the fiscal year ended May 28, 2004.

⁷⁸ http://finance.yahoo.com/q/ks?s=NT

⁷⁹ Nortel Networks Corp. 10-K for the fiscal year ended December 31, 2003

⁸⁰ Nortel Networks Corp. 10-K for the fiscal year ended December 31, 2003

⁸¹ http://www.nortel.com/corporate/global/index.html

NEC Corp.

Revenue: \$47.182

Product Scope: NEC product offerings include IP-PBX, VoIP, wireless LAN, and switches/routers. 83 Broadband Display Solution (BBDS) allows enterprise customers to centrally manage delivery/display schedule and distribute various types of information to remote site displays such as PDP and LCD displays via networks on an on-time basis.84 NEAX®2400 Internet Protocol eXchange (IPX) fuses existing NEC technologies with dynamic advancements in hardware and software to satisfy system requirements.⁸⁵ NEAX 2400 IPX provides over 780 service features that enhance productivity, reduce operating costs, and improve communications efficiently. 86 The NEAX 2400 Internet Protocol eXchange has the ability to expand from its minimum configuration to its maximum capacity with virtually no loss of existing hardware. This unique expansion capability allows the system to grow in a cost-effective manner as the user's requirements grow. 87 The system also delivers advanced applications such as Fusion, CCIS and IP Networking, IP Stations (both IP enabled and peer-to-peer), Remote Switching, Electronic Tandem Networking, Centralized Attendant Service, Direct Digital Interface, Integrated ACD, Voice Messaging Integration, along with many other feature-rich capabilities via the Open Applications Interface (OAI).88

Geographic/Network Scope: NEC operates in North America, Europe, Asia, Latin America, Africa, and Oceania. 89

Lucent

Revenue: \$9.12 billion. 90

Product Scope: Lucent's Integrated Network Services (INS) "provides a broad range of software and wireline equipment related to voice networking (switching products, convergence solutions, and voice messaging products), data and network management (access and related data networking equipment and operating support software) and optical networking." "Lucent's IP Multi-Media Subsystem (IMS)-based solutions, which deliver multimedia communications services to end-users, involve voice networking, data and network management and optical networking products for

⁸² NEC 20-F filed September 17, 2004. http://www.x-rates.com/calculator.html

⁸³ http://www.neaxnet.com/products/index.html

⁸⁴ http://www.neaxnet.com/solutions/broadband.html

⁸⁵ http://www.neaxnet.com/products/neax2400.html

http://www.neaxnet.com/products/neax2400.html

⁸⁷ http://www.neaxnet.com/products/neax2400.html

⁸⁸ http://www.neaxnet.com/products/neax2400.html

⁸⁹ http://www.nec.com

http://finance.yahoo.com/q/ks?s=LU

⁹¹ Lucent 10-K for the fiscal year ended September 30, 2004

customers' networks."⁹² "Lucent is actively engaged with its traditional voice networking customers to help them evolve their 5ESS® circuit-switched platforms to increase capacity, lower the cost of operations, accelerate new feature introductions, and lay the groundwork for the introduction of packet-based IP transport and IMS-based services."⁹³ "In August 2004, Lucent completed the acquisition of Telica, a private manufacturer of VoIP solutions for network service providers."⁹⁴ Lucent is committed to helping customers migrate to Multi-Protocol Label Switched (MPLS) networks in a packet-switched network core. ⁹⁵

Geographic/Network Scope: Lucent is based in NJ and operates in over 20 countries worldwide. 96

Alcatel

Revenue: EURO 12.3 billion in 2004.97

Product Scope: Alcatel "provides communications solutions to telecommunication carriers, Internet service providers and enterprises for delivery of voice, data and video applications to their customers or employees." Alcatel sells IP telephony and IP networking products. Product and service offerings include business phones, contact center applications, enterprise communication applications and servers, enterprise mobility, LAN switching/enterprise IP platforms, enterprise network management, enterprise professional services and support/certification, enterprise network security, and WAN access. 100

Geographic/Network Scope: Alcatel operates in more than 130 countries 101

CLECs/DLECs

XO Communications

Revenue: \$1.3 billion¹⁰²

⁹² Lucent 10-K for the fiscal year ended September 30, 2004

⁹³ Lucent 10-K for the fiscal year ended September 30, 2004

⁹⁴ Lucent 10-K for the fiscal year ended September 30, 2004

⁹⁵ Lucent 10-K for the fiscal year ended September 30, 2004

⁹⁶ http://www.lucent.com

⁹⁷ http://www.alcatel.com/; http://www.alcatel.com/enterprise/en/

 $http://www.alcatel.com/apropos/; jsessionid=OSBDG4OMWES5WCTFR0HHJHIKMWHI0TNS?_requestid=59963$

⁹⁹ http://www.alcatel.com/; http://www.alcatel.com/enterprise/en/

¹⁰⁰ http://www.alcatel.com/products/productsbyfamily.jhtml?category=Enterprise

¹⁰¹ http://www.alcatel.com/; http://www.alcatel.com/enterprise/en/

¹⁰² XO Communications 10-K for the fiscal year ended December 31, 2004

Product Scope: XO Communications provides business customers with a comprehensive array of voice and data telecommunications services, "including local and long distance voice, Internet access, private data networking (via ATM, Frame Relay, SONET, and other transmission protocols) and hosting services." 103 XO offers "VPN services enabling customers to deploy tailored, IP-based business applications for secure internal enterprise, business-to-business and business-to-customer data communications among geographically dispersed locations, while also affording high-speed access to the Internet."104 XO Communications "holds ten broadband wireless licenses in the 39 GHz frequency band, of which five provide from 100 to 300 additional MHz in two cities where it holds a 150 MHz LMDS license, plus 100 MHz in Denver and 200 MHz of spectrum in Las Vegas, where the company does not hold a LMDS license."105

Geographic/Network Scope: Services provided through its national telecommunications network consisting of more than "6,700 route miles of fiber optic lines connecting 953 unique ILEC end-office collocations in 37 U.S. cities." Metro fiber networks "consist of rings of more than 888,000 fiber miles of fiber optic cables encircling the central business districts of numerous metropolitan areas. [XO] operates 37 metro fiber networks in 22 states and the District of Columbia, including 25 of the 30 largest metropolitan areas in the U.S. In the aggregate, XO metro fiber networks connect approximately 953 unique ILEC end-office collocations." The company's "IP backbone connects to its intercity fiber network at nine IP backbone nodes, 62 local facilities in 34 markets, and two hosting data centers."108

Time Warner

Revenue: \$653.1 million¹⁰⁹

Product Scope: Time Warner "delivers data, dedicated Internet access, and local and long distance voice services. Its customers are principally telecommunications-intensive businesses, long distance carriers, incumbent local exchange carriers ("ILECs"), competitive local exchange carriers ("CLECs"), wireless communications companies, Internet service providers ("ISPs"), enterprise organizations in the health care, finance, higher education, manufacturing and hospitality industries, and state, local and federal government entities."110 Time Warner has forged a partnership with Sprint and MCI to deliver VoIP services. Under the agreement, Sprint and MCI will help Time Warner offer VoIP telephony in 17 markets and carry long-distance traffic for the cable company. Furthermore, they will provide 911 and operator service to Time Warner's telephony customers. 111

 $^{^{103}}$ XO Communications 10-K for the fiscal year ended December 31, 2004 XO Communications 10-K for the fiscal year ended December 31, 2004

¹⁰⁵ XO Communications 10-K for the fiscal year ended December 31, 2004

¹⁰⁶ XO Communications 10-K for the fiscal year ended December 31, 2004

¹⁰⁷ XO Communications 10-K for the fiscal year ended December 31, 2004

XO Communications 10-K for the fiscal year ended December 31, 2004

 $^{^{109}~}http://finance.yahoo.com/q/ks?s=TWTC\\$

Time Warner Telecom 10-K for the fiscal year ended December 31, 2004.

Residential VoIP: Analysis and Forecasts (Second Edition)

Geographic/Network Scope: Time Warner Telecom "operates in 44 U.S. metropolitan markets that have high concentrations of medium and large-sized businesses. As of December 31, 2004, its fiber networks covered 19,169 route miles, with the equivalent of 917,461 fiber miles, and offered service to 5,074 buildings served entirely by its facilities ("on-net"), and 14,139 buildings served through the use of facilities of other carriers..."112

PAETEC Communications

Revenue: N/A

Product Scope: Serves as a "national communications solutions provider specializing in IP-based services."113 "PAETEC offers local and domestic and international longdistance voice services, as well as high-speed broadband data services, to midsized and large businesses such as colleges and universities, government organizations, and hospitals."114

Geographic/Network Scope: "Has installed 675,000 access line equivalents on its network as of September 30, 2004." 115 "PAETEC services are offered in more than 27 large markets from California to New Hampshire. It is developing a facilities-based network that manages more than 420,000 access lines."116

US LEC

Revenue: \$356.2 million¹¹⁷

Product Scope: "The US LEC product line includes local calling services, long distance, long distance plans featuring toll free, calling card, audio conference and Web-enabled audio conferencing services, dedicated and dial-up Internet services, including its MegaPOP Internet access product, frame relay, multi-link frame relay, asynchronous transfer mode, digital private line services, voice over Internet Protocol-enabled services, managed data solutions, data center services, collocation and Web hosting."118

Geographic/Network Scope: "US LEC provides its full suite of voice, data and Internet services in 15 states plus the District of Columbia, including Alabama, Florida, Delaware, Georgia, Kentucky, Louisiana, Maryland, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, and Virginia. US LEC also offers

^{© 2005} Parks Associates

¹¹² Time Warner Telecom 10-K for the fiscal year ended December 31, 2004.

¹¹³ Declaration of Eric J. Bruno and Shelley Murphy, p. 15

¹¹⁴ http://biz.yahoo.com/ic/99/99913.html

¹¹⁵ Declaration of Eric J. Bruno and Shelley Murphy, p. 15

¹¹⁶ http://biz.yahoo.com/ic/99/99913.html

http://finance.yahoo.com/q/ks?s=CLEC

¹¹⁸ http://finance.yahoo.com/q/pr?s=CLEC

nationwide data services, as well as selected voice services, such as long distance calling, calling card, conferencing and toll free service, in 27 additional states including Arkansas, Arizona, California, Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, North Dakota, Ohio, Oregon, South Dakota, Texas, Utah, Washington, West Virginia, Wisconsin and Wyoming."

Systems Integrators & IP Applications Providers

Accenture

Revenue: \$13.7 billion¹²⁰

Product Scope: The communications and high tech group helps clients exploit the convergence of communications, computing and content. "The Communications industry group serves many of the world's leading wireline, wireless, cable and satellite communications companies." Services and solutions include the application of mobile technology, advanced communications network optimization, broadband and Internet protocol solutions as well as systems integration, customer care and workforce transformation services." 122

Geographic/Network Scope: "As of August 31, 2004 Accenture had more than 100,000 employees based in over 110 offices in 48 countries... Accenture's business is structured around five operating groups, which together comprise 18 industry groups serving clients in every major industry." ¹²³

CSC (Computer Sciences Corporation)

Revenue: \$14 billion¹²⁴

Product Scope: Primary service offerings are information technology (I/T) outsourcing and I/T and professional services. Outsourcing involves operating all or a portion of a customer's technical infrastructure and also includes business process outsourcing. I/T and professional services include systems integration, consulting, and other professional services and also include product sales and related services. ¹²⁵

Geographic/Network Scope: Provides these services to customers in the global commercial market and the U.S. federal government. CSC provides services to global commercial customers in the United States, Europe, and other international locations.

http://www.uslec.com/Site-Company-1001

Accenture 2004 10-K for the fiscal year ended August 31, 2004.

Accenture 2004 10-K for the fiscal year ended August 31, 2004.

Accenture 2004 10-K for the fiscal year ended August 31, 2004.

Accenture 2004 10-K for the fiscal year ended August 31, 2004.

http://finance.yahoo.com/q/ks?s=CSC

¹²⁵ CSC 10-K for the fiscal year ended April 2, 2004.

Operations in Australia, Asia and Canada generate substantially all revenue within the other international. 126

IBM

Revenue: \$96.29 billion¹²⁷

Product Scope: "IBM Global Services, the technology services and consulting division of International Business Machines, is the world's biggest provider of systems integration and technology consulting. It offers services in such areas as application development, data storage, infrastructure management, networking, and technical support. IBM Global Services is also among the world leaders in providing business consulting and outsourcing services." ¹²⁸

Geographic/Network Scope: Largest IT and consulting services provider in the world and has 180,000 employees in 160 countries. 129

EDS

Revenue: \$20.70 billion¹³⁰

Product Scope: "EDS provides a broad portfolio of business and technology solutions to help its clients worldwide improve their business performance. EDS' core portfolio comprises information technology (IT), applications and business process services, as well as IT transformation services." EDS also provides "Converged Network Services," which it says include a "comprehensive suite of fully managed, integrated data, voice and video network capabilities." ¹³²

Geographic/Network Scope: EDS supports the world's leading companies and governments in 60 countries. EDS' global headquarters is located in Plano, Texas, USA. ¹³³

¹²⁶ CSC 10-K for the fiscal year ended April 2, 2004.

¹²⁷ http://finance.yahoo.com/q/ks?s=IBM

http://biz.yahoo.com/ic/103/103329.html

Declaration of Eric J. Bruno and Shelley Murphy, p. 11.

¹³⁰ EDS 10-K for the fiscal year ended December 31, 2004.

¹³¹ http://www.eds.com/about/profile/

http://www.eds.com/services/index/

http://www.eds.com/about/locations/