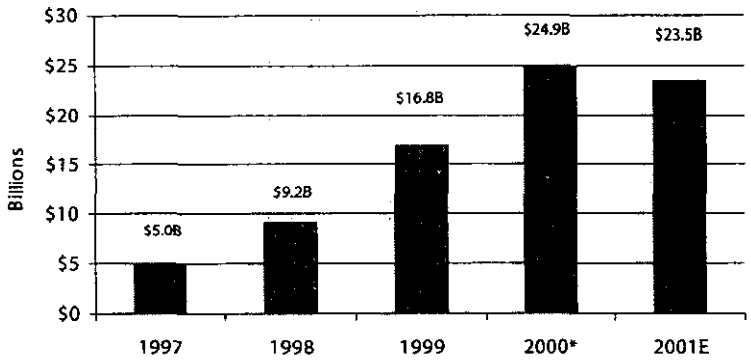
Companies Building Digital Futures...

Annual CLEC Capital Expenditures

$56 Billion Since 1997



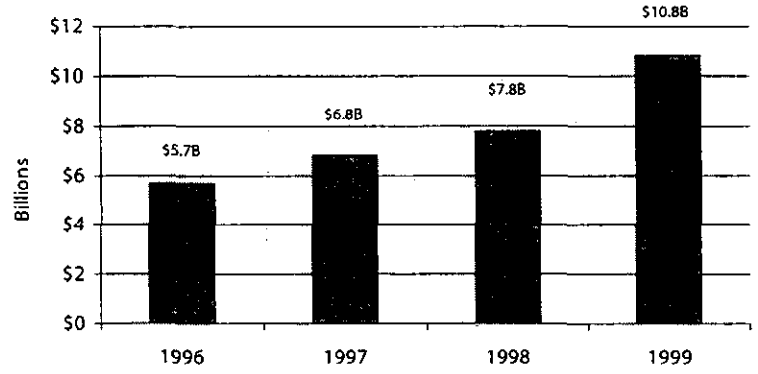
Note: (*) Actual data through 3Q00 and projected 4Q00 expenditures.

Source: Paine Webber, NPRG

CLECs are in a highly capital-intensive industry. One measurement of CLECs' commitment to building new networks is their level of capital expenditures. Since 1997, CLECs have invested $56 billion in infrastructure that will carry the next generation of communications. With the current market uncertainty, analysts expect capital expenditures to level off in 2001.

Cable Industry Capital Expenditures

1996 - 1999

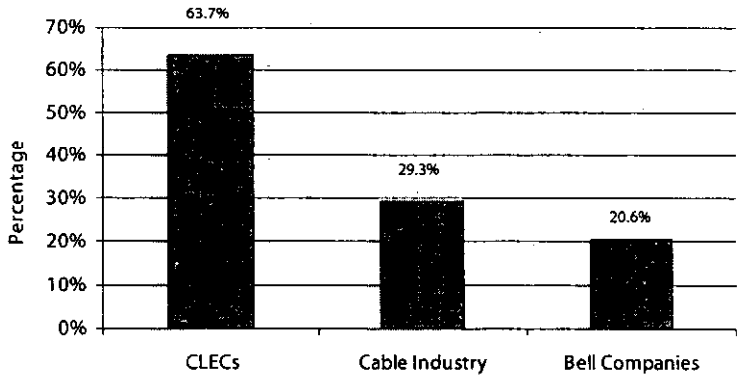


Source: National Cable Television Association (NCTA)

When comparing the CLEC and cable industries for the years 1997 - 1999, CLECs outpaced cable in capital expenditures each of the last two years on record. CLECs outpaced cable industry capital expenditures by $1.4 billion in 1998 and $6 billion in 1999. With both industries competing for many of the same voice and data customers, the intense rivalry has contributed to the rapid growth of high-speed broadband Internet access in the United States.

Companies Building Digital Futures...

Capital Expenditures as a Percentage of Revenues

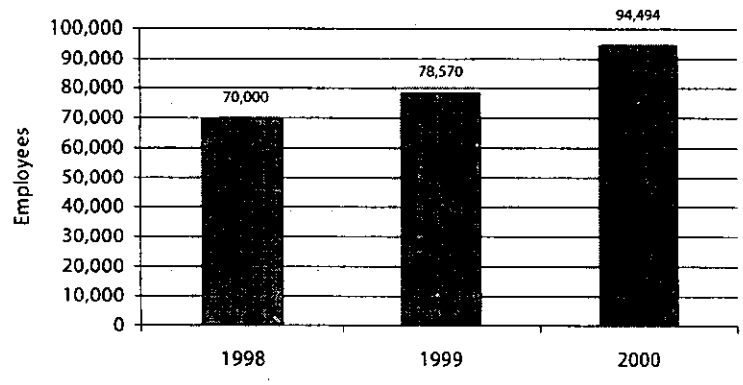


Notes: Cable industry data represents 1999 data. CLECs and Bell Companies represents 2000 data.

Source: NPRG, NCTA, company reports

In comparison to the cable industry and the Bell Companies, CLECs reinvest a much larger portion of their revenues back into facilities (e.g. capital expenditures). In 2000, CLECs invested almost 64% of their revenues in capital expenditures. For the same period, the Bell Companies invested 21% with the cable industry investing 30% in 1999. Total capital expenditures were valued at $24.9 billion for CLECs (2000), $10.2 billion for the cable industry (1999) and $33.6 billion for the Bell Companies (2000).

CLEC Employees



Note: Employee totals do not include AT&T, WorldCom or ALLTEL.

Source: NPRG, Merrill Lynch

The growth in the CLEC industry has led to new, high-value jobs in the communities in which they invest and compete. The competitive industry has grown from a negligible employee base to almost 100,000 employees today. However, with the recent downturn in the equity markets and with investor sentiment towards CLECs at historic lows, many companies have announced sharp cutbacks in staffing levels as they attempt to conserve cash to continue operations through more challenging financial times.

Public CLECs

Market Cap & 52 Week Performance

Company	Market Cap ($M)	52 Week Change	Ticker Symbol
Adelphia Business Solutions	$480.7	-86.30%	ABIZ
Advanced Radio Telecom	$89.7	-94.10%	ARTT
Allegiance Telecom	$2,130	-77.50%	ALGX
Allied Riser	$157.6	-89.50%	ARCC
ChoiceOne Communications	$504.7	-61.60%	CWON
Convergent Communications	$30.6	-89.00%	CONV
CoreComm Ltd.	$135	-94.40%	COMM
Covad Communications	$3449	-94.90%	COVD
CTC Communications	$300.7	-68.00%	CPTL
Cypress Communications	$53	-95.00%	CYCO
DSL.net	$132	-93.40%	DSLN
e.spire Communications	$54.8	-92.40%	ESPI
Electric Lightwave	$212.4	-79.70%	ELIX
FiberNet Telecom Group	$137.7	-75.80%	FTGX
Focal Communications	$932.3	-65.20%	FCOM
General Communications	$390.0	+16.10%	GNCMA
ICG**	$16	-98.00%	ICGX
Intermedia	$855.1	-76.10%	ICIX
ITC^DeltaCom	$427.2	-80.10%	ITCD
Log On America	$15.1	-91.30%	LOAX
McLeodUSA	$7,946	-52.40%	MCLD
Mpower Communications	$327.8	-85.90%	MPWR
Net2000 Communications	$98.5	-63.29%*	NTKK
Network Access Solutions	$71	-95.10%	NASC
Network Plus	$324.6	-85.10%	NPLS
NorthPoint Communications**	$79	-98.00%	NPNT
NTELOS	$269.2	-46.50%	NTLO
Pac-West Telecom	$169.6	-83.50%	PACW
RCN	$756.8	-86.00%	RCNC
Rhythms NetConnections	$94.5	-97.00%	RTHM
Teligent	$115.4	-97.70%	TGNT
Time Warner Telecom	$6,713	-06.70%	TWTC
US LEC	$228.3	-77.00%	CLEC
USOL Holdings	$23.3	-78.90%	USOL
Winstar	$1,173	-73.50%	WCII
XO Communications	$6,354	-66.90%	XOXO
Market Cap	**$32.14 billion**		

Note(s): as of mid-day 2.20.01 unless noted otherwise; includes providers that operated primarily as a CLEC and derive a significant portion of revenues from CLEC services. For example, AT&T (T), ALLTEL (AT), Level 3 (LVLT), Metromedia Fiber Network (MFNX) and WorldCom (WCOM) were excluded; (*) reflects 6-month change; (**) as of 11.30.00

Sources: WSJ.com, MSNBC.com, NPRG, Morgan Stanley Dean Witter

In 1999, there were 35 public CLECs. In 2001, there are 36 publicly listed CLECs. With the equity markets virtually closed to the CLEC industry, few CLECs successfully went public in 2000. In addition, many of the companies noted are in danger of being delisted or are currently in Chapter 11 proceedings. Of the public CLECs, only one saw a positive 52-week change, General Communications of Alaska. A majority (33 of 36) saw their equity values fall over 50% in the previous 52-weeks.

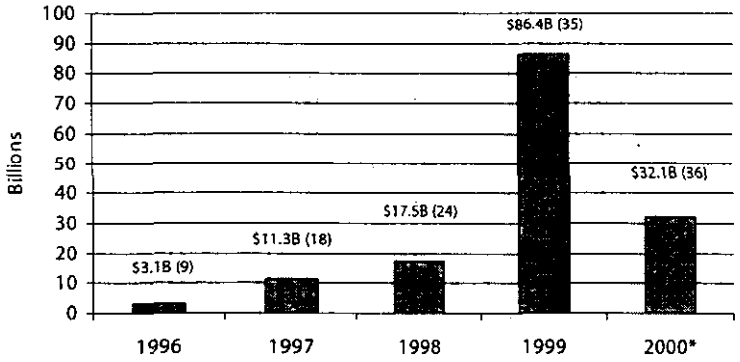
In addition to the companies noted, the following CLECs have parent companies that are publicly traded: ALLTEL (AT), Avana Communications (GCDV), Black Hills FiberCom (BKH), Cablevision Lightpath (CVC), Comcast Communications (CMCSK), Conectiv Communications (CIV), Cox Communications (COX), CTC Exchange Services (CTCI), CTSI (CTCO), HickoryTech (HTCO), MH Lightnet-Comcast (CMCSA), NEON Optica (NOPT), SBC Telecom (SBC), TDS Metrocom (TDS) and Vitts (SFE).

Association for Local Telecommunications Services

ALTS

Companies Building Digital Futures...

Market Capitalization

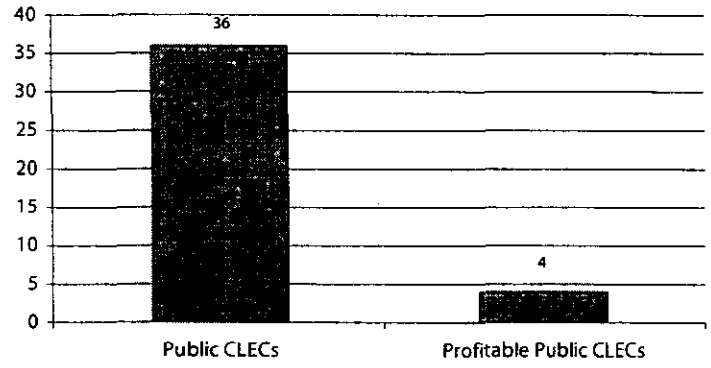


Note(s): (*) as of mid-day 2.20.01; includes providers that operated primarily as a CLEC and derive a significant portion of revenues from CLEC services. For example, AT&T (T), ALLTEL (AT), Level 3 (LVLT), Metromedia Fiber Network (MFNX) and WorldCom (WCOM) were excluded. Number of public CLECs in parentheses.

Source: WSJ.com, MSNBC.com, NPRG, Morgan Stanley Dean Witter, ALTS

Due to the steep fall in CLEC equity values, total CLEC market capitalization fell over 50%, from $86 billion in 1999 to $32 billion as of February 2000. The number of public CLECs saw an increase from 9 in 1996 ($3.1 billion market cap) to 36 in 2000. The total 2000 market cap escaped an even steeper drop due to the less severe decline in some of the first-tier CLECs which comprise a larger portion of total CLEC market capitalization.

CLECs Earning A Profit



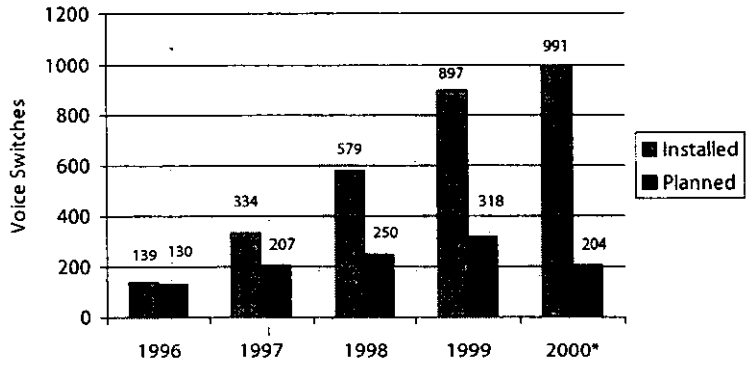
Note: Profitability defined as a positive net profit margin.

Source: WSJ.com, MSNBC.com, NPRG, Morgan Stanley Dean Witter, ALTS

Exemplifying the capital intensive nature of local telecommunications, five years after the passage of The Act, only 4 of the public CLECs are profitable (defined as a positive net profit margin). In 1999, only 1 public CLEC was profitable and prior to 1999, no public CLECs were profitable. The four CLECs in question are Intermedia Communications, NTELOS, Pac-West Telecomm & Time Warner Telecom.

Companies Building Digital Futures...

Voice Switches:
Installed & Planned

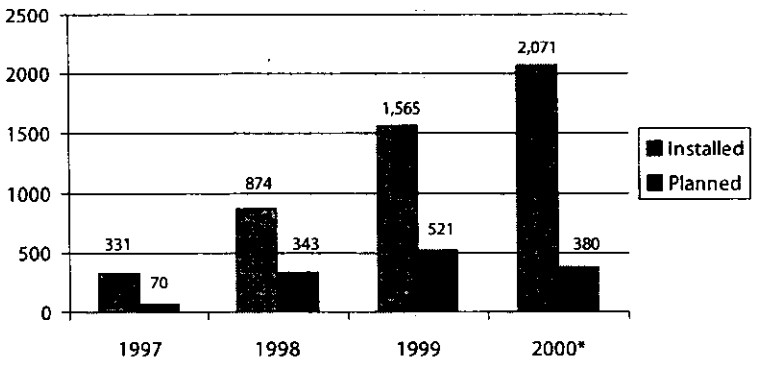


Note: (*) 2000 data through 3Q00.

Source: NPRG

The most basic level of the network is the switch, the piece of equipment that selects the appropriate path for the transmission of a telecommunications signal. CLECs have been rapidly installing these crucial facilities and have almost 1,000 voice switches in operation as of the 3Q00. However, with many companies experiencing scaled back operations amid financial difficulties, planned switches experienced its first decrease since the passage of the Act.

Data Switches:
Installed & Planned



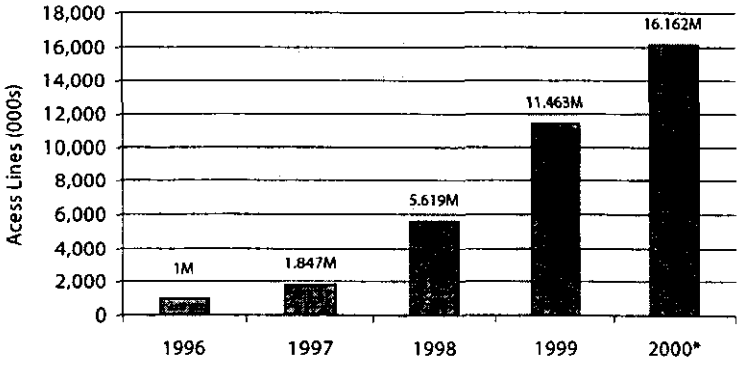
Note: (*) 2000 data through 3Q00.

Source: NPRG

Fueled by the demand for broadband connectivity, data switches have seen an even faster deployment rate than traditional voice switches. In an effort to meet the soaring demand for broadband services, CLECs now have over 2,000 such switches in place. However, again due to scaled back network expansion, planned data switches also experienced its first drop in 2000.

Companies Building Digital Futures...

CLEC Access Line Growth

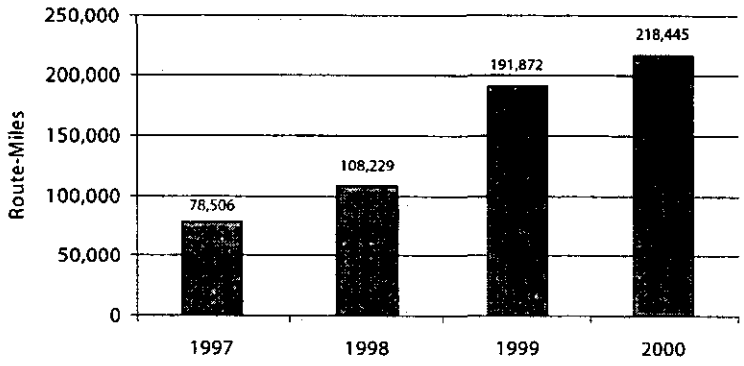


Note: (*) 2000 data through 3Q00.

Source: ALTS, NPRG

One of the most critical measures of competition in the local loop is the number of access lines served by CLECs. With just one million CLEC lines in service in 1996, CLECs now serve over 16 million access lines. This represents over 8% of all access lines in the United States. According to the FCC, CLEC market share in individual states exceeds the national average in Illinois (9%), Iowa (9%), Louisiana (11%), Kansas (16%) and New York (16%). Nationally, because only carriers with more than 10,000 access lines in service must report, the FCC estimates CLEC market share at 6.7% as of 2Q00.

Network Route-Miles

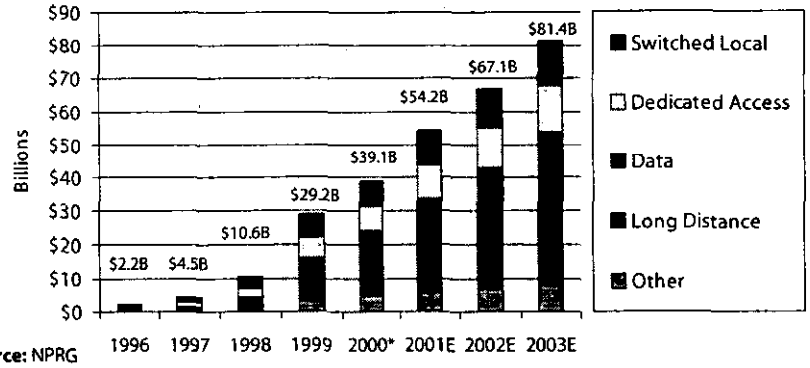


Source: NPRG

To transmit the massive amounts of voice and data traffic generated by consumers, CLECs have been aggressively building out local and long-haul networks. A large portion of the $56 billion in capital expenditures has been invested in erecting such networks. Since 1997, CLECs have almost tripled their route-miles in service. These high-speed, state-of-the-art networks carry the next generation of voice and data traffic.

Companies Building Digital Futures...

Total CLEC Revenue Growth

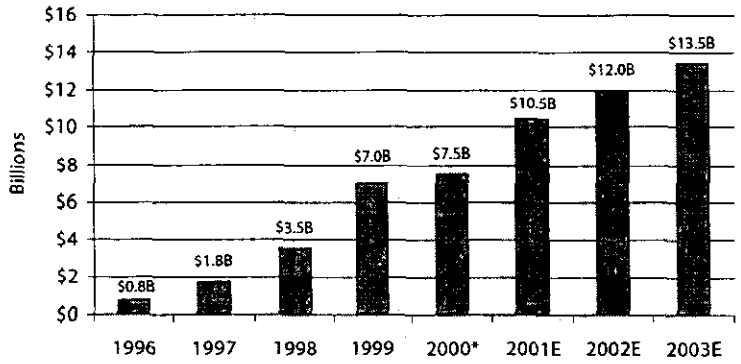


Source: NPRG

Note: (*) 2000 data through 3Q00 with 4Q00 projections. Switched Local Service & Long Distance Service include resale revenues. Data includes all data and data-Related services (e.g. Frame Relay, ATM, DSL, etc.). Other includes miscellaneous revenues (e.g. reciprocal compensation) as well as non-telecom related revenue (e.g., network development).

In 2000, CLECs are expected to report $39.1 billion in revenue, up from $2.2 billion in 1996. While this represents a marked increase over 1999, 2000 will mark the first time in the industry's history that CLECs did not double revenues over the previous year. Analysts predict, however, that as consolidation takes hold and the local market matures, revenues will continue to grow at a rapid, albeit somewhat reduced, rate. Of the various categories of revenue, data services represented the largest and strongest growth area as the demand for high-speed broadband services continues to grow unabated.

Switched Local Access Revenue Growth



Source: NPRG

Note(s): (*) 2000 date through 3Q00 with 4Q00 projections. Includes resale revenues.

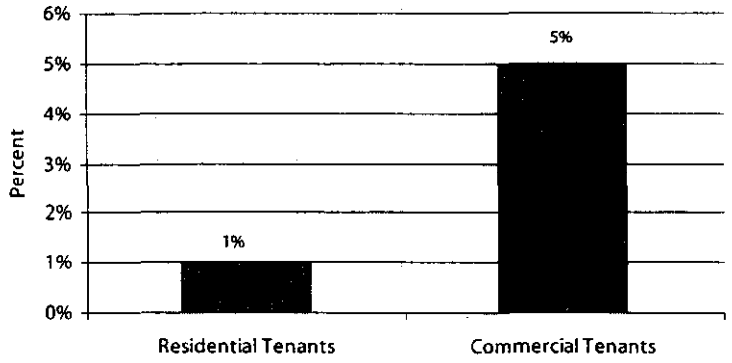
While CLECs doubled revenues between 1998 and 1999 in switched local access services, this area saw a leveling off in 2000 as uncertainty entered the marketplace. However, analysts expect local access revenues to rebound in 2001.

The CLEC Industry:
Building Access

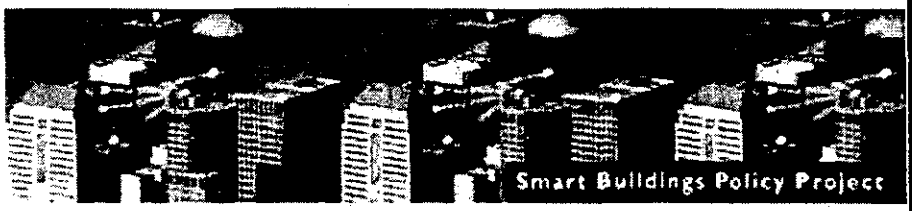
The Association for Local Telecommunications Services

Companies Building Digital Futures...

Multi-Tenant Unit (MTUs) Occupants with Access to Competitive Telecom Services



Source: Smart Buildings Policy Project



The Smart Buildings Policy Project (SBPP) was launched by ALTS on June 21, 2000 by 20 leading telecommunications providers and consumer organizations in an effort to eliminate barriers to building access and promote advanced broadband services to millions of American consumers. The SBPP is committed to insuring reasonable and nondiscriminatory access to rooftops and inside wiring in multi-tenant environments (MTEs). The SBPP believes that the absence of federal rules governing access to MTEs permits building owners to exert considerable control over the development of facilities-based competition. By denying competitive carriers access to the space necessary for the equipment required to provision facilities-based telecommunications and broadband services, building owners violate the letter and the spirit of the Telecommunications Act of 1996.

The SBPP is a growing coalition of telecommunications carriers, equipment manufacturers and trade organizations that includes: Alcatel, the Association for Local Telecommunications Services (ALTS), AT&T, the Commercial Internet eXchange Association (CIX), the Competition Policy Institute (CPI), the Competitive Telecommunications Association (CompTel), Digital Microwave Corporation, Focal Communications, The Harris Corporation, Highspeed.com, the Information Technology Association of America (ITAA), the International Communications Association (ICA), Lucent Technologies, NEXTLINK Communications, Nokia, P-Com, Siemens, the Telecommunications Industry Association (TIA), Teligent, Time Warner Telecom, Winstar Communications, Wireless Communications Association (WCA) and WorldCom.

The SBPP may be found on-line at www.buildingconnections.org.

Sources (sidebar): SBPP; Fortune Magazine

Despite the enormous inroads made by CLECs, building owners often refuse to offer carriers nondiscriminatory access to tenants in MTUs. Despite tenant requests, building owners continue to deny tenants choice in local telecommunications and high-speed Internet access service. With consumers beholden to the wishes of their landlords, millions of consumers stand to miss out on the new technologies being brought to market.

One-third of Americans live in apartment buildings.

The vast majority of small and medium-sized businesses are located in America's 760,000 commercial buildings.

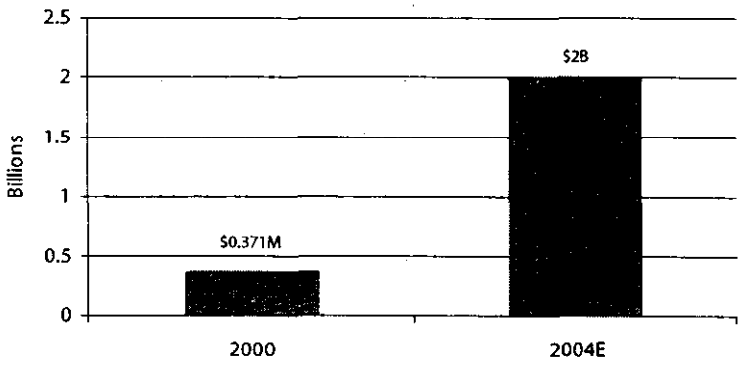
Only 20% of the 6.5 million small businesses in the United States are on-line, whether through a dial-up or broadband connection.

Most wireline competitive local exchange carriers (CLECs) are connected to 10,000 or fewer buildings.

Only 5% percent of commercial tenants, and less than 1% of residential tenants, have access to competitive telecommunications services.

Companies Building Digital Futures...

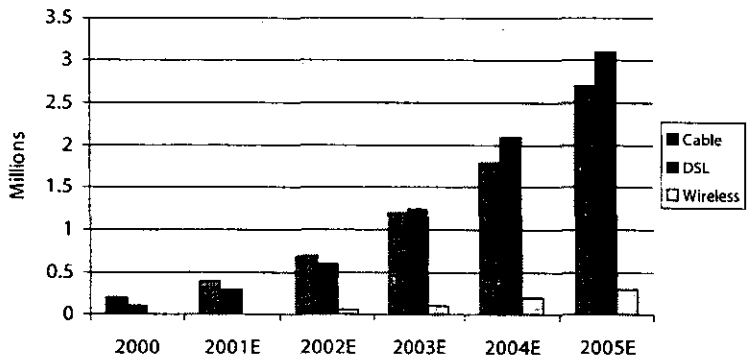
U.S. Multi-Tenant Broadband Equipment Market



Source: Cahners In-Stat Group

With consumers demanding high-speed broadband connections, the multi-tenant broadband equipment market is predicted to grow from just $371 million in 2000 to $2 billion in 2004. However, with the downturn in the CLEC industry, even the equipment suppliers and manufacturers, who rely heavily on CLEC demand, have not escaped the slowdown in 2000. For the 12 months ending 2.15.01, the stock value of Cisco (CSCO) has dropped 51% while the stock value of Lucent (LU) has dropped 73.8%.

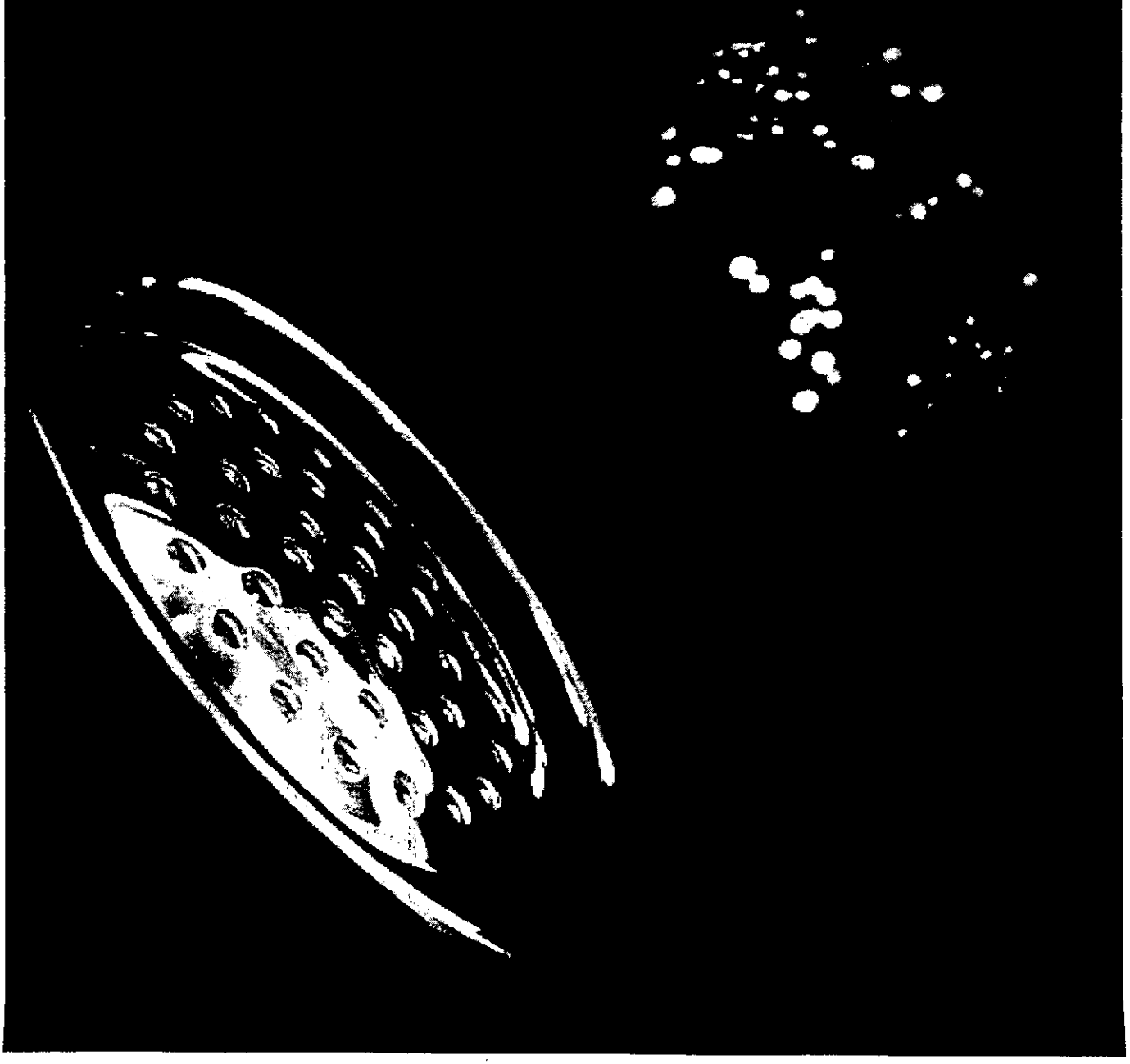
Residential High-Speed Internet Subscribers in MTUs



Source: The Strategis Group

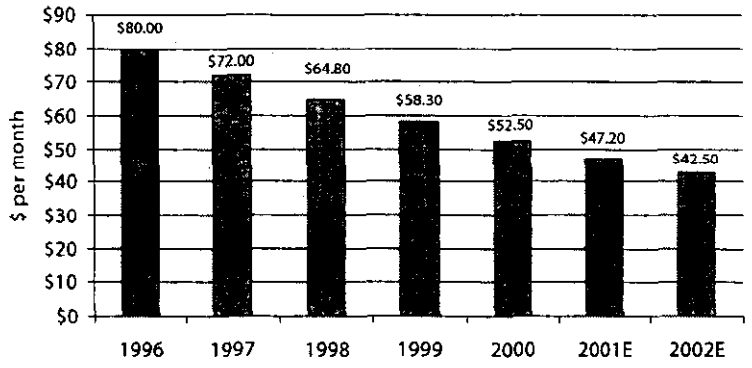
As residents of MTUs demand faster always-on Internet connections, analysts predict that almost 6 million residential consumers will subscribe to such services by 2005. Analysts further predict that, in 2003, DSL will surpass cable as the preferred high-speed service of MTU residents.

The CLEC Industry:
Internet, Broadband & DSL



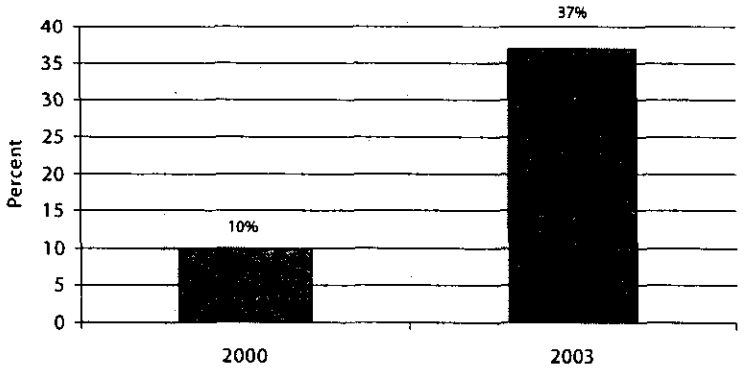
Companies Building Digital Futures...

Residential Broadband Pricing



Source: NxGen Data Research

U.S. Households Subscribing to Broadband



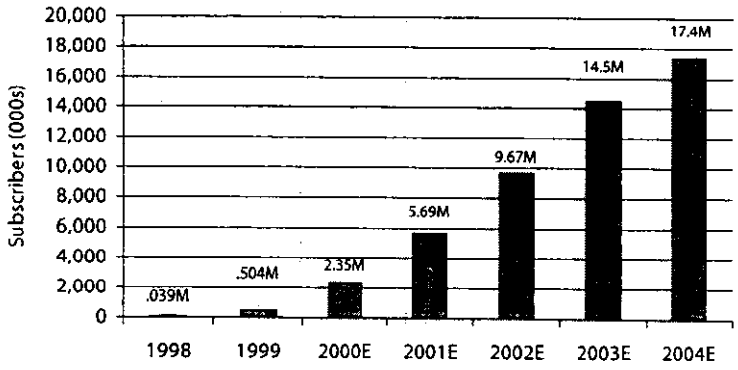
Source: Cisco

As a result of the tremendous competition in broadband markets, the price of residential broadband access is expected to drop by almost 50% between 1996 and 2002. Without the Act and the emergence of CLECs, it is likely that access to high-speed DSL services would not be available to millions of consumers. In 1999, the Council of Economic Advisers noted that "the incumbent's decision finally to offer DSL service followed closely the emergence of competitive pressures from... the entry of new direct competitors..."

With broadband service now available to over half of the nation's consumers, analysts predict that almost 40% of U.S. households will subscribe to broadband services in 2003. As consumers adopt more advanced Internet applications which require greater bandwidth, carriers will rush to meet the insatiable demand for high-speed connectivity.

Companies Building Digital Futures...

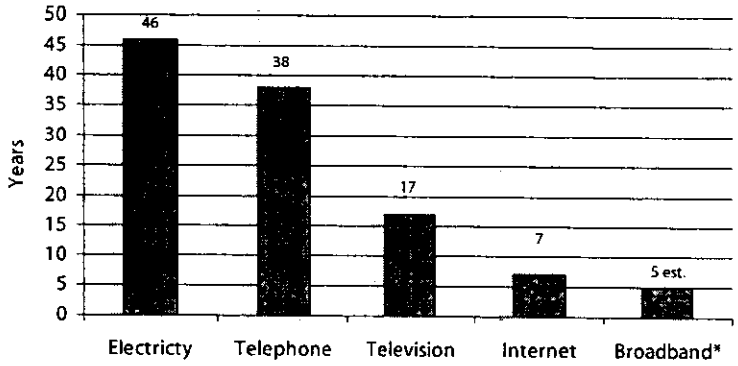
Projected DSL Line Growth



Source: TeleChoice, Cisco

Starting from just 39,000 subscribers in 1998, the DSL market exploded to almost 2.5 million subscribers at year-end 2000. Analysts expect triple-digit growth rates to continue through 2001 and slow to double-digit rates through 2004. DSL is expected to become the preferred technology of choice over cable modem service due to the dedicated nature of the connection and the faster upload speeds.

Years To Achieve 30% Penetration



Note: (*) includes all broadband access (e.g., DSL, cable, etc.)

Source: TeleChoice, Cisco, ALTS

As the country and world move at an increasingly faster pace, so has the adoption of new technologies. It took the United States almost 50 years to achieve 30% penetration for electric service, almost 40 years for telephone service and almost 20 years for television. On the other hand, it has taken only 7 years to achieve such penetration for the Internet and it is estimated that broadband service will achieve a 30% penetration rate in only five years.

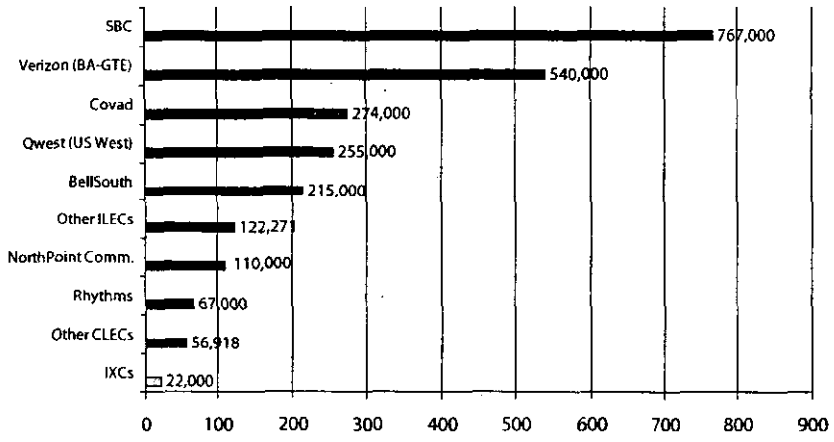
Association for Local Telecommunications Services

ALTS

Companies Building Digital Futures...

State of DSL Competition

4Q00 DSL Subscriber Lines



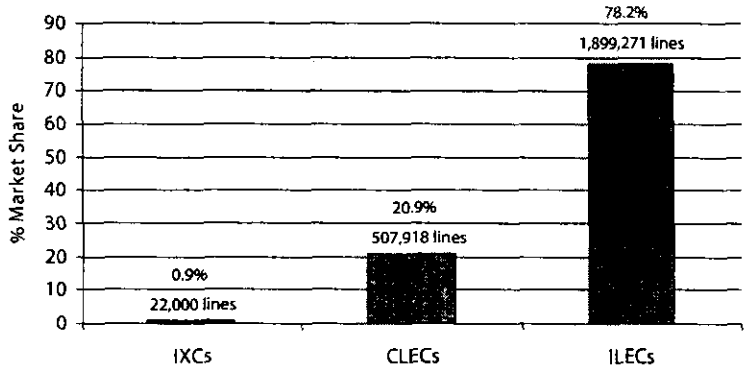
Note: NorthPoint Communications data represents ALTS estimate.

Source: Company Reports; TeleChoice

Total DSL Lines in Service = 2,429,189

DSL Market Share

4Q00 DSL Subscriber Lines



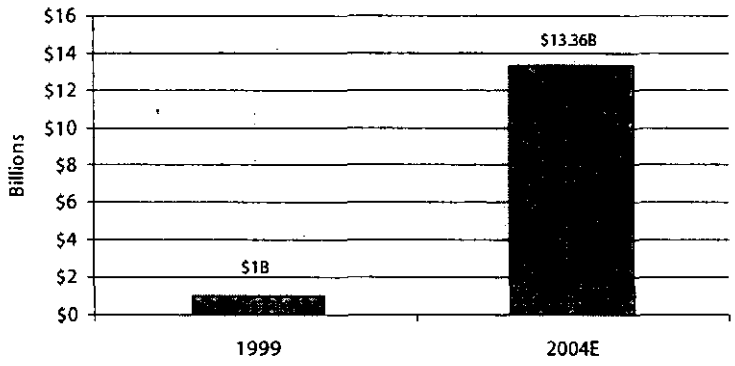
Source: TeleChoice

Through continued mergers, the Bell Companies have greatly increased individual RBOC DSL line counts. SBC (Ameritech, Pac Bell, Nevada Bell, SNET, SWBT), now serves almost 800,000 DSL customers while Verizon (Bell Atlantic, GTE, NYNEX) serves over 500,000 subscribers. Covad, the leading data CLEC (DLEC) ranks third in DSL subscribers with 274,000 as of 4Q00. Covad, NorthPoint Communications and Rhythms are all ALTS members. The recent souring of DLEC equities and the prospects for diminished competition has emboldened some of the Bell Companies, such as SBC to raise its monthly residential DSL rate to $50.

As of the 4Q00, CLECs held 21% of the DSL market, down from 23% as of the 3Q00. The incumbents hold the lion's share of the market with over 78% of DSL subscribers while the long distance companies (IXCs) hold just under 1% of the DSL market.

Companies Building Digital Futures...

Residential Broadband Revenues

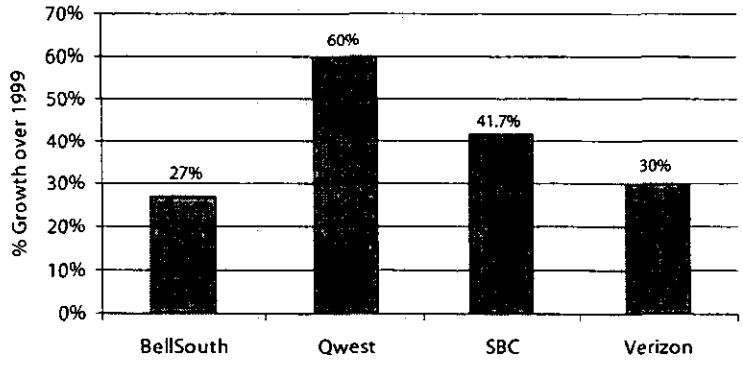


Source: Cahners In-Stat Group

With residences continuing to migrate from dial-up Internet access to broadband, analysts predict an explosion in residential broadband revenues. From only $1 billion in 1999, residential broadband revenues will exceed $13 billion in 2004. This trend represents the increasing reliance Internet users will have on broadband. Within two years, analysts expect a majority of time spent on-line will be over broadband connections as opposed to dial-up connections.

RBOC Data Revenue Growth

Growth Between 1999 & 2000

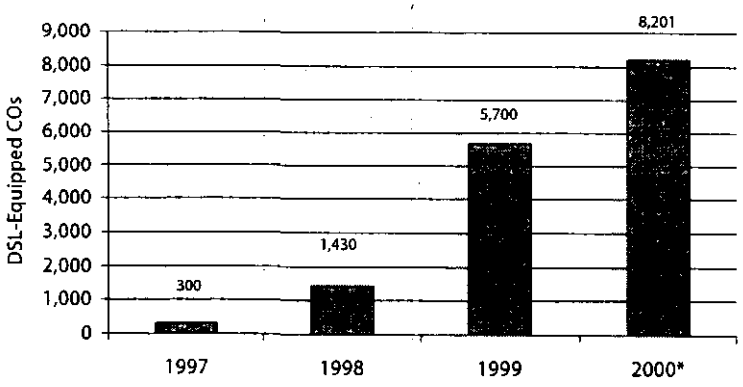


Source: Company Reports

A persistent argument made by the Bell Companies is that they lack the ability to successfully enter the broadband market due to interLATA restrictions. However, in the last year, each of the four RBOCs saw data revenue growth in excess of 25%. The revenue potential in the data market is enormous with analysts noting that the volume of data traffic now exceeds the volume of voice traffic.

Companies Building Digital Futures...

Data CLEC Central Office (CO) Collocations

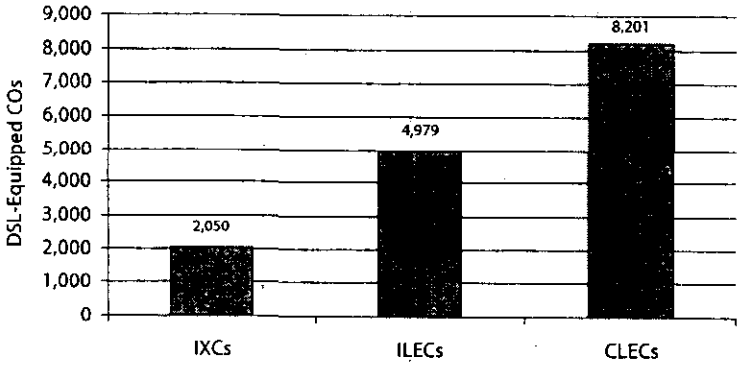


Note(s): (*) 2000 data through 3Q00; data represents pieces of equipment collocated in CO

Source: Company Reports; ALTS; CSFB; TeleChoice

DSL-Equipped Central Offices (COs)

3Q00



Note(s): Data represents pieces of equipment collocated in CO

Source: TeleChoice

Data CLECs specialize in deploying equipment in ILEC central offices that channel enormous amounts of data over the telephone companies' copper wires. From just over 200 central office collocations in 1997, CLECs have now placed over 8,000 pieces of equipment in ILEC central offices. As of the 3Q00, DLECs, with their national deployment plans, led the way in central office collocations.

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Prior to joining ALTS, Mr. Wolcott was a consultant in the international telecommunications industry focusing on the deregulation of international telecom markets. Mr. Wolcott worked with a number of carriers to identify new markets and market entry strategies in the Americas, Asia and Europe. Mr. Wolcott also interacted with the various international policy bodies that oversee international telecommunications policy.

Mr. Wolcott holds a Master of Arts degree in International Trade Policy from George Mason University's (GMU) International Institute in Arlington, Virginia. He earned his Bachelor of Arts degree in International Affairs with a concentration in Economics from James Madison University (JMU) in Harrisonburg, Virginia.

NATIONAL EXCHANGE CARRIER ASSOCIATION TARIFF (NECA No. 4)
Missouri - effective May 1, 2001

CLEC CLLI	Carrier Code	Carrier	Office Codes Converted to Function									
Section 37	Sec 37	Section 8										
STLSMOWQ	3049	Allegiance			FGD							
SPFDMOKC	2870	ALLTEL			FGD							
KSCYMO09	7890	AT&T Local			FGC							
CRVCMOAT	7890	AT&T Local			FGC							
HLBOMO01	7890	AT&T Local			FGC							
SKSTMOAT	7890	AT&T Local			FGC							
SPFDMOMC	7890	AT&T Local			FGC							
SPFDMOTL	7890	AT&T Local				Switched Access Physical Collocation	Switched Access Virtual Collocation	Special Access Virtual Collocation	Route Diversity			
STSLMO09	7890	AT&T Local			FGC							
KSCYMOSW	8665	Birch	FGB	FGD	Switched Access Physical Collocation	Special Access DS1 Transport	Voice Gateway	DS3 & DS1 Capable	Fiber X Connect Hub	Digital Data Service	Fractionalized DS0 & DS1	DS3 Hub
MRHGMO02	8665	Birch	FGB	FGD	Switched Access Physical Collocation	Special Access DS1 Transport	Voice Gateway	DS3 & DS1 Capable	Fiber X Connect Hub	Digital Data Service	Fractionalized DS0 & DS1	DS3 Hub
KSCYMOSW	7594	Brooks			FGD							
SPFDMOPY	7594	Brooks	FGA		FGD							
KSCYMOMC	7589	e-Spire	FGA	FGB	FGD	DS3 Wire Center						
OLVEMO01	4891	Gabriel			FGD							
SPFDMO45	4891	Gabriel			FGD							
STLUMOBN	4004	Global Crossing			FGD							
KSCYMOMC	4004	Global Crossing			FGD							
CHFDMO52	7666	Intermedia			FGD	Switched Access Physical Collocation						
FNTNMO54	7666	Intermedia			FGD	Switched Access Physical Collocation						

NATIONAL EXCHANGE CARRIER ASSOCIATION TARIFF (NECA No. 4)
Missouri - effective May 1, 2001

CLEC CLLI	Carrier Code	Carrier	Office Codes Converted to Function									
Section 37	Sec 37	Section 8										
HVTRMO67	7666	Intermedia			FGD	Switched Access Physical Collocation						
KRWDMO01	7666	Intermedia			FGD	Switched Access Physical Collocation						
MNCHMOBI	7666	Intermedia			FGD	Switched Access Physical Collocation						
STCHMO63	7666	Intermedia			FGD	Switched Access Physical Collocation						
STLSMO21	7666	Intermedia			FGD	Switched Access Physical Collocation						
STLSMO22	7666	Intermedia			FGD	Switched Access Physical Collocation						
STLSMO23	7666	Intermedia			FGD	Switched Access Physical Collocation						
STLSMO26	7666	Intermedia			FGD	Switched Access Physical Collocation						
STLSMO27	7666	Intermedia			FGD	Switched Access Physical Collocation						

NATIONAL EXCHANGE CARRIER ASSOCIATION TARIFF (NECA No. 4)
Missouri - effective May 1, 2001

CLEC CLLI	Carrier Code	Carrier	Office Codes Converted to Function									
Section 37	Sec 37	Section 8										
STLSMO42	7666	Intermedia			FGD	Switched Access Physical Collocation						
STLSMOXT	7666	Intermedia			FGD	Switched Access Physical Collocation						
VYPKMO64	7666	Intermedia			FGD	Switched Access Physical Collocation						
KSCZMODR	4932	Level 3			FGD							
STLSMOPL	4932	Level 3			FGD							
KSCAMO03	4142	Teligent	FGA	FGB	FGD							
STLSMOZC	4142	Teligent	FGB		FGD							
KSCYMOEC	8729	Sprint CLEC			FGD							
SPFDMOTL	8729	Sprint CLEC			FGD							
STLSMO05	8729	Sprint CLEC			FGD							
STJSMODN	8279	Sprint CLEC			FGD							
CRVCMOGM	7218	Teleport				Switched Access Physical & Virtual Collocation	Special Access Physical Collocation	Route Diversity				
KSCYMOSW	7211	Winstar	FGA	FGB	FGD	Switched Access Physical Collocation	Special Access Physical Collocation	Special DS1 Transport	NRS	TRM Service	Route Diversity	
CRVCMOEX	8508	Winstar	FGA	FGB	FGD	Switched Access Physical Collocation	Special Access Physical Collocation	Special DS1 Transport	NRS	TRM Service	Route Diversity	
STLSMOBO	7432	WorldCom		FGB	FGD							
MRHGMOGY	4774	XO		FGB	FGD	DS3 Capable						

Non Proprietary

Schedule 6

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary	SWBT Rate Center Non Proprietary	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
		**	**		
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
816/728	AT&T Wireless			Kansas City	Kansas City
816/273	AT&T Wireless			Belton	Kansas City
816/376	AT&T Wireless			Blue Springs	Kansas City
816/839	AT&T Wireless			Kansas City	Kansas City
816/388	Birch			Belton	Kansas City
816/463	Birch			Blue Springs	Kansas City
816/300	Birch			Kansas City	Kansas City
816/282	Birch			Kansas City	Kansas City
816/479	Birch			Kansas City	Kansas City
816/410	Brooks			Kansas City	Kansas City
816/868	Cellular One			Kansas City	Kansas City
816/581	e-Spire			Kansas City	Kansas City
816/222	e-Spire			Kansas City	Kansas City
816/268	Everest Comm			Kansas City	Kansas City
816/892	Gabriel			Belton	Kansas City
816/874	Gabriel			Blue Springs	Kansas City
816/875	Gabriel			Kansas City	Kansas City
816/883	Gabriel			Kansas City	Kansas City
816/265	Global Crossing			Belton	Kansas City
816/295	Global Crossing			Blue Springs	Kansas City
816/278	Global Crossing			Kansas City	Kansas City
816/272	Global Crossing			Kansas City	Kansas City
816/366	Global Crossing			Kansas City	Kansas City
816/289	KC SMSA LLC			Kansas City	Kansas City
816/653	KMC Telecom III			Kansas City	Kansas City
816/256	Level 3			Kansas City	Kansas City
816/485	McLeod			Blue Springs	Kansas City
816/684	McLeod			Kansas City	Kansas City
816/692	McLeod			Kansas City	Kansas City
816/798	Metrocall			Kansas City	Kansas City
816/771	Mobile Radio Comm			Kansas City	Kansas City
816/564	Nextel			Kansas City	Kansas City
816/621	Primary Network			Kansas City	Kansas City
816/594	Sprint CLEC			Belton	Kansas City
816/598	Sprint CLEC			Blue Springs	Kansas City
816/837	Sprint CLEC			Kansas City	Kansas City
816/736	Sprint CLEC			Kansas City	Kansas City
816/645	Sprint Spectrum			Kansas City	Kansas City
816/425	TCG Kansas City			Belton	Kansas City
816/427	TCG Kansas City			Blue Springs	Kansas City
816/399	TCG Kansas City			Kansas City	Kansas City
816/434	TCG Kansas City			Kansas City	Kansas City
816/429	TCG Kansas City			Kansas City	Kansas City
816/377	Teligent			Kansas City	Kansas City
816/825	AT&T Wireless			Greenwood	Kansas City Optional
816/733	Gabriel			Farley	Kansas City Optional
816/867	Gabriel			Grain Valley	Kansas City Optional
816/744	Gabriel			Greenwood	Kansas City Optional
816/866	Gabriel			Smithville	Kansas City Optional
816/354	Global Crossing			Farley	Kansas City Optional
816/355	Global Crossing			Grain Valley	Kansas City Optional
816/343	Global Crossing			Smithville	Kansas City Optional
816/826	Nextel			Excelsior Springs	Kansas City Optional
816/397	Primary Network			Farley	Kansas City Optional
816/638	Teligent			Farley	Kansas City Optional

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary **	SWBT Rate Center Non Proprietary **	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
816/617	Aerial Comm			St. Joseph	n/a
660/229	Aerial Comm			Marshall	n/a
660/221	Aerial Comm			Sedalia	n/a
543/745	ALLTEL Mobile			Lake Ozark	n/a
573/712	AT&T Local			Poplar Bluff	n/a
417/437	AT&T Wireless			Joplin	n/a
816/351	Cellular One			St. Joseph	n/a
660/247	Dobson Cellular			Chillicothe	n/a
660/734	Dobson Cellular			Brookfield	n/a
660/329	Dobson Cellular			Carrollton	n/a
660/635	Dobson Cellular			Trenton	n/a
660/537	KC SMSA LLC			Boonville	n/a
660/815	KC SMSA LLC			Marshall	n/a
816/281	KC SMSA LLC			Sedalia	n/a
417/793	KC SMSA LLC			Carthage	n/a
417/529	KC SMSA LLC			Joplin	n/a
417/489	KC SMSA LLC			Monett	n/a
417/592	KC SMSA LLC			Neosho	n/a
417/684	KC SMSA LLC			Nevada	n/a
816/752	KC SMSA LLC			St. Joseph	n/a
573/519	KMC Telecom III			Cape Girardeau	n/a
417/636	KMC Telecom III			Joplin	n/a
417/385	KMC Telecom III			Joplin	n/a
573/843	KMC Telecom III			Mexico	n/a
573/652	KMC Telecom III			Sikeston	n/a
816/385	KMC Telecom III			St. Joseph	n/a
417/526	Missouri Telecom			Carthage	n/a
417/726	Missouri Telecom			Joplin	n/a
417/279	Missouri Telecom			Lamar	n/a
417/635	Missouri Telecom			Monett	n/a
417/454	Missouri Telecom			Neosho	n/a
417/381	Missouri Telecom			Nevada	n/a
417/768	Nextel			Joplin	n/a
573/216	Nextel			Lake Ozark	n/a
573/741	Omniplex			Cape Girardeau	n/a
417/675	Sprint CLEC			Joplin	n/a
816/689	Sprint CLEC			St. Joseph	n/a
573/587	Sprint Spectrum			Cape Girardeau	n/a
573/872	Sprint Spectrum			Poplar Bluff	n/a
573/931	Sprint Spectrum			Sikeston	n/a
573/434	Sprint Spectrum			Lake Ozark	n/a
417/483	Sprint Spectrum			Joplin	n/a
816/294	Sprint Spectrum			St. Joseph	n/a
573/310	Sprint Spectrum			Fulton	n/a
573/795	Sprint Spectrum			Hannibal	n/a
660/349	Sprint Spectrum			Kirksville	n/a
660/473	Sprint Spectrum			Sedalia	n/a
816/827	TCG Kansas City			Adrian	n/a
660/303	TCG Kansas City			Knobnoster	n/a
573/381	Telecorp Comm			Cape Girardeau	n/a
573/922	Telecorp Comm			Caruthersville	n/a
573/427	Telecorp Comm			Charleston	n/a
573/521	Telecorp Comm			New Madrid	n/a
573/569	Telecorp Comm			Perryville	n/a
573/258	Telecorp Comm			Sikeston	n/a

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary **	SWBT Rate Center Non Proprietary **	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
573/836	Telecorp Comm			Camdenton	n/a
573/826	Telecorp Comm			Fulton	n/a
573/692	Telecorp Comm			Lake Ozark	n/a
573/470	United States Cellular			Bowling Green	n/a
417/356	United States Cellular			Carthage	n/a
573/375	United States Cellular			Eldon	n/a
573/315	United States Cellular			Flat River	n/a
573/822	United States Cellular			Hannibal	n/a
417/438	United States Cellular			Joplin	n/a
660/216	United States Cellular			Kirksville	n/a
660/651	United States Cellular			Moberly	n/a
573/721	United States Cellular			Mexico	n/a
417/355	United States Cellular			Neosho	n/a
573/880	United States Cellular			Ste. Genevieve	n/a
573/789	United States Cellular			Versailles	n/a
417/321	Western Wireless			Nevada	n/a
417/481	Adelphia			Springfield	Springfield
417/655	ALLTEL			Springfield	Springfield
417/576	AT&T Local			Springfield	Springfield
417/616	AT&T Local			Springfield	Springfield
417/693	AT&T Wireless			Springfield	Springfield
417/774	Atlas Mobilefone			Springfield	Springfield
417/522	Brooks			Springfield	Springfield
417/523	Brooks			Springfield	Springfield
417/323	Gabriel			Ash Grove	Springfield
417/289	Gabriel			Billings	Springfield
417/221	Gabriel			Clever	Springfield
417/567	Gabriel			Springfield	Springfield
417/242	Gabriel			Marionville	Springfield
417/449	Gabriel			Springfield	Springfield
417/735	Gabriel			Springfield	Springfield
417/929	Gabriel			Springfield	Springfield
417/447	Gabriel			Springfield	Springfield
417/879	Gabriel			Springfield	Springfield
417/367	Gabriel			Walnut Grove	Springfield
417/685	Gabriel			Springfield	Springfield
417/343	KC SMSA LLC			Springfield	Springfield
417/923	KMC Telecom III			Springfield	Springfield
417/799	McLeod			Springfield	Springfield
417/633	Metrocall			Springfield	Springfield
417/851	Missouri Telecom			Springfield	Springfield
417/353	Nextel			Springfield	Springfield
417/397	Sprint CLEC			Springfield	Springfield
417/894	Sprint Spectrum			Springfield	Springfield
417/287	Teletouch Comm			Springfield	Springfield
314/786	Allegiance			St. Louis	St. Louis
314/856	Allegiance			St. Louis	St. Louis
314/785	Allegiance			St. Louis	St. Louis
314/815	Allegiance			St. Louis	St. Louis
314/334	Allegiance			St. Louis	St. Louis
314/472	Allegiance			St. Louis	St. Louis
314/783	Allegiance			St. Louis	St. Louis
314/620	AT&T Local			St. Louis	St. Louis
314/292	AT&T Local			St. Louis	St. Louis
314/548	AT&T Local			St. Louis	St. Louis

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary **	SWBT Rate Center Non Proprietary **	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
314/450	AT&T Local			St. Louis	St. Louis
314/378	AT&T Wireless			St. Louis	St. Louis
314/614	AT&T Wireless			St. Louis	St. Louis
314/744	Birch			St. Louis	St. Louis
314/315	Birch			St. Louis	St. Louis
314/774	Birch			St. Louis	St. Louis
314/329	Birch			St. Louis	St. Louis
314/380	Birch			St. Louis	St. Louis
314/756	Birch			St. Louis	St. Louis
314/333	Birch			St. Louis	St. Louis
314/979	Connect			St. Louis	St. Louis
314/884	Digital Teleport			St. Louis	St. Louis
314/336	Gabriel			St. Louis	St. Louis
314/775	Gabriel			St. Louis	St. Louis
314/743	Gabriel			St. Louis	St. Louis
314/714	Gabriel			St. Louis	St. Louis
314/375	Gabriel			St. Louis	St. Louis
314/722	Gabriel			St. Louis	St. Louis
314/446	Gabriel			St. Louis	St. Louis
314/594	Global Crossing			St. Louis	St. Louis
314/596	Global Crossing			St. Louis	St. Louis
314/598	Global Crossing			St. Louis	St. Louis
314/675	Global Crossing			St. Louis	St. Louis
314/549	Global Crossing			St. Louis	St. Louis
314/635	Global Crossing			St. Louis	St. Louis
314/558	Global Crossing			St. Louis	St. Louis
314/471	Intermedia			St. Louis	St. Louis
314/782	Intermedia			St. Louis	St. Louis
314/272	Intermedia			St. Louis	St. Louis
314/392	Intermedia			St. Louis	St. Louis
314/387	Intermedia			St. Louis	St. Louis
314/236	Intermedia			St. Louis	St. Louis
314/723	KMC Telecom III			St. Louis	St. Louis
314/667	Level 3			St. Louis	St. Louis
314/238	McLeod			St. Louis	St. Louis
314/447	McLeod			St. Louis	St. Louis
314/449	McLeod			St. Louis	St. Louis
314/478	McLeod			St. Louis	St. Louis
314/248	McLeod			St. Louis	St. Louis
314/678	McLeod			St. Louis	St. Louis
314/751	Metrocall			St. Louis	St. Louis
314/617	Metrotel			St. Louis	St. Louis
314/568	Nextel			St. Louis	St. Louis
314/267	Nextel			St. Louis	St. Louis
314/745	Omniplex			St. Louis	St. Louis
314/455	Omniplex			St. Louis	St. Louis
314/475	Omniplex			St. Louis	St. Louis
314/225	Omniplex			St. Louis	St. Louis
314/825	Omniplex			St. Louis	St. Louis
314/282	Omniplex			St. Louis	St. Louis
314/474	Omniplex			St. Louis	St. Louis
314/445	Primary Network			St. Louis	St. Louis
314/698	Primary Network			St. Louis	St. Louis
314/373	Primary Network			St. Louis	St. Louis
314/221	Primary Network			St. Louis	St. Louis

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary **	SWBT Rate Center Non Proprietary **	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
314/408	Source One Wireless			St. Louis	St. Louis
314/639	Sprint CLEC			St. Louis	St. Louis
314/274	Sprint CLEC			St. Louis	St. Louis
314/357	Sprint CLEC			St. Louis	St. Louis
314/451	Sprint CLEC			St. Louis	St. Louis
314/556	Sprint CLEC			St. Louis	St. Louis
314/728	Sprint CLEC			St. Louis	St. Louis
314/226	Sprint CLEC			St. Louis	St. Louis
314/858	St. Louis Electronics			St. Louis	St. Louis
314/682	Teleport			St. Louis	St. Louis
314/288	Teleport			St. Louis	St. Louis
314/824	Teleport			St. Louis	St. Louis
314/649	Teleport			St. Louis	St. Louis
314/690	Teleport			St. Louis	St. Louis
314/655	Teleport			St. Louis	St. Louis
314/485	Teligent			St. Louis	St. Louis
314/488	Teligent			St. Louis	St. Louis
314/266	Teligent			St. Louis	St. Louis
314/766	Teligent			St. Louis	St. Louis
314/834	TSR Wireless			St. Louis	St. Louis
314/397	Voicestream Wireless			St. Louis	St. Louis
314/583	Voicestream Wireless			St. Louis	St. Louis
314/720	Winstar			St. Louis	St. Louis
314/527	Winstar			St. Louis	St. Louis
314/269	Winstar			St. Louis	St. Louis
314/819	WorldCom			St. Louis	St. Louis
314/800	WorldCom			St. Louis	St. Louis
314/813	WorldCom			St. Louis	St. Louis
314/885	WorldCom			St. Louis	St. Louis
314/748	WorldCom			St. Louis	St. Louis
314/898	WorldCom			St. Louis	St. Louis
314/985	XO			St. Louis	St. Louis
314/779	XO			St. Louis	St. Louis
314/228	XO			St. Louis	St. Louis
314/433	XO			St. Louis	St. Louis
314/431	XO			St. Louis	St. Louis
314/754	XO			St. Louis	St. Louis
636/787	Allegiance			Chesterfield	St. Louis Optional
636/557	Allegiance			Manchester	St. Louis Optional
636/573	Allegiance			St. Charles	St. Louis Optional
636/299	AT&T Local			Chesterfield	St. Louis Optional
636/649	AT&T Local			St. Charles	St. Louis Optional
636/795	AT&T Wireless			St. Charles	St. Louis Optional
636/777	Birch			Chesterfield	St. Louis Optional
636/600	Birch			Fenton	St. Louis Optional
636/500	Birch			Imperial	St. Louis Optional
636/200	Birch			Manchester	St. Louis Optional
636/333	Birch			Maxville	St. Louis Optional
636/400	Birch			Portage Des Sioux	St. Louis Optional
636/699	Birch			St. Charles	St. Louis Optional
636/444	Birch			Valley Park	St. Louis Optional
636/674	Gabriel			Antonio	St. Louis Optional
636/449	Gabriel			Chesterfield	St. Louis Optional
636/549	Gabriel			Eureka	St. Louis Optional
636/680	Gabriel			Fenton	St. Louis Optional

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary	SWBT Rate Center Non Proprietary	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
		**	**		
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
636/720	Gabriel			Harvester	St. Louis Optional
636/224	Gabriel			Herculaneum-Pevely	St. Louis Optional
636/692	Gabriel			High Ridge	St. Louis Optional
636/741	Gabriel			Imperial	St. Louis Optional
636/779	Gabriel			Manchester	St. Louis Optional
636/321	Gabriel			Maxville	St. Louis Optional
636/821	Gabriel			Pond	St. Louis Optional
636/425	Gabriel			Portage Des Sioux	St. Louis Optional
636/757	Gabriel			St. Charles	St. Louis Optional
636/923	Gabriel			Valley Park	St. Louis Optional
636/590	Global Crossing			Chesterfield	St. Louis Optional
636/678	Global Crossing			Fenton	St. Louis Optional
636/547	Global Crossing			Imperial	St. Louis Optional
636/628	Global Crossing			Manchester	St. Louis Optional
636/548	Global Crossing			Maxville	St. Louis Optional
636/648	Global Crossing			Portage Des Sioux	St. Louis Optional
636/634	Global Crossing			St. Charles	St. Louis Optional
636/556	Global Crossing			Valley Park	St. Louis Optional
636/237	Intermedia			Chesterfield	St. Louis Optional
636/203	Intermedia			Fenton	St. Louis Optional
636/229	Intermedia			Harvester	St. Louis Optional
636/599	Intermedia			Manchester	St. Louis Optional
636/431	Intermedia			Valley Park	St. Louis Optional
636/764	Level 3			Fenton	St. Louis Optional
636/642	Level 3			Imperial	St. Louis Optional
636/552	Level 3			Manchester	St. Louis Optional
636/352	Level 3			St. Charles	St. Louis Optional
636/812	McLeod			Chesterfield	St. Louis Optional
636/554	McLeod			Fenton	St. Louis Optional
636/336	McLeod			Harvester	St. Louis Optional
636/591	McLeod			Manchester	St. Louis Optional
636/669	McLeod			St. Charles	St. Louis Optional
636/592	McLeod			Valley Park	St. Louis Optional
636/262	Nextel			Chesterfield	St. Louis Optional
636/470	Omniplex			Chesterfield	St. Louis Optional
636/852	Omniplex			Harvester	St. Louis Optional
636/714	Sprint CLEC			Chesterfield	St. Louis Optional
636/588	Sprint CLEC			Fenton	St. Louis Optional
636/618	Sprint CLEC			Harvester	St. Louis Optional
636/691	Sprint CLEC			High Ridge	St. Louis Optional
636/491	Sprint CLEC			Manchester	St. Louis Optional
636/354	Sprint CLEC			Maxville	St. Louis Optional
636/762	Sprint CLEC			St. Charles	St. Louis Optional
636/783	Sprint CLEC			Valley Park	St. Louis Optional
636/858	St. Louis Electronics			Harvester	St. Louis Optional
636/858	St. Louis Electronics			Chesterfield	St. Louis Optional
636/681	Teleport			Chesterfield	St. Louis Optional
636/651	Teleport			Fenton	St. Louis Optional
636/685	Teleport			Harvester	St. Louis Optional
636/688	Teleport			St. Charles	St. Louis Optional
636/689	Teleport			Valley Park	St. Louis Optional
636/489	Teligent			Chesterfield	St. Louis Optional
636/682	TSR Wireless			Festus - Crystal City	St. Louis Optional
636/701	TSR Wireless			Manchester	St. Louis Optional
636/363	TSR Wireless			Maxville	St. Louis Optional

Non Proprietary

NPA/NXX	Carrier	Carrier CLLI Non Proprietary	SWBT Rate Center Non Proprietary	SWBT Exchange Local Exchange Tariff Section 1.5	SWBT MCA Local Exchange Tariff Section 1.5
		**	**		
816/693	Adelphia			Kansas City	Kansas City
816/543	AT&T Local			Kansas City	Kansas City
816/600	AT&T Local			Kansas City	Kansas City
636/347	TSR Wireless			St. Charles	St. Louis Optional
636/579	Voicestream Wireless			Chesterfield	St. Louis Optional
636/219	Voicestream Wireless			St. Charles	St. Louis Optional
636/292	Winstar			Chesterfield	St. Louis Optional
636/893	WorldCom			Manchester	St. Louis Optional
636/898	XO			Chesterfield	St. Louis Optional
636/533	XO			Fenton	St. Louis Optional
636/794	XO			Harvester	St. Louis Optional
636/594	XO			Manchester	St. Louis Optional
636/410	XO			St. Charles	St. Louis Optional
636/412	XO			Valley Park	St. Louis Optional
		**	**		

American Fiber Systems

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what we do

American Fiber Systems is the fastest way to get your metropolitan networks up to speed.

American Fiber Systems is a "dark" fiber metropolitan infrastructure provider, dedicated to enabling aggressive companies to profit from the burgeoning communications market without waiting years to do it. We design, build, lease and maintain high-capacity, high-bandwidth dark fiber-optic networks, constructed on full-spectrum fiber and completely connected to a city's most important points of communications presence:

ILEC and CLEC central offices; ISP and ASP facilities; Interexchange "carrier hotels;" Wireless providers and cable company head ends, and Fortune 1000 companies.

Our sophisticated FreedomRing™ networks, with built-in redundancy for total reliability, provide maximum high-capacity service coverage in high-density business districts. You can lease exactly the capacity you need on a strand-by-strand basis at a fixed price. What's more, we will never compete with you. As your strategic partner, our only mission is to enable your success as quickly and efficiently as possible.

Professional Services

AFS also offers a wide range of Professional Services designed to help our customers light, operate, monitor and maintain our dark-fiber networks.

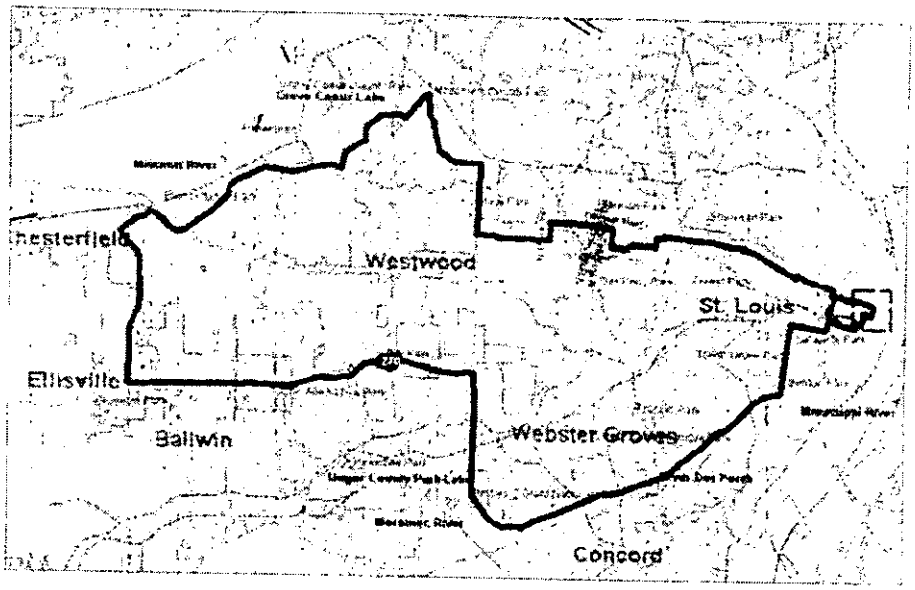
fiber factoid.

With the latest optical technology, a single strand of fiber thinner than a human hair can now carry every phone call, e-mail and Web page used by every person in the world.

100 Meridian Centre | Suite 250 | Rochester, NY 14618
Contact our webmaster with any technical issues.

Click here to go back to Metro Maps

St Louis, MO



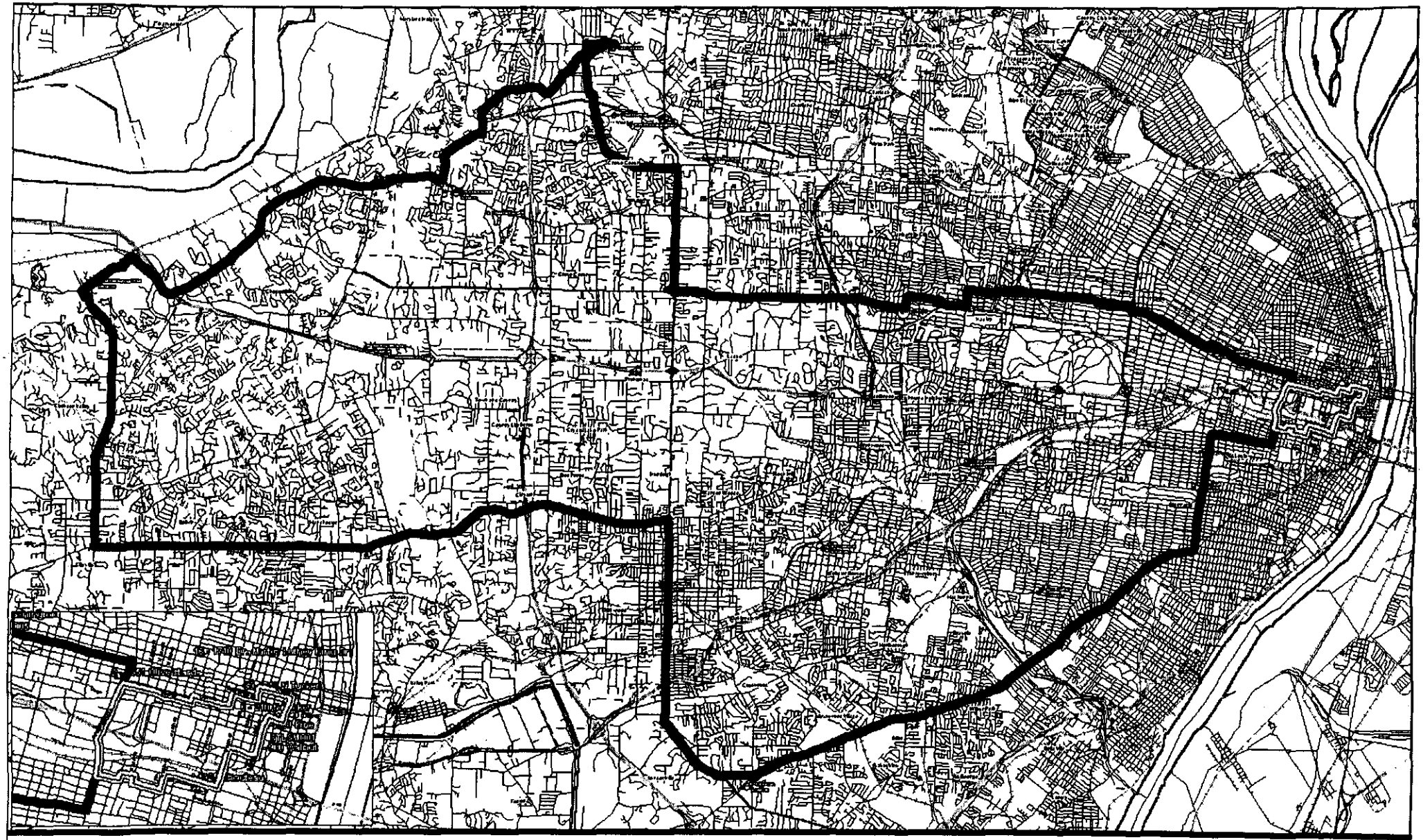
Click map to view detailed map.

You must have a password to visit the secure map area.
If you don't have a password, please call or to get one.

2

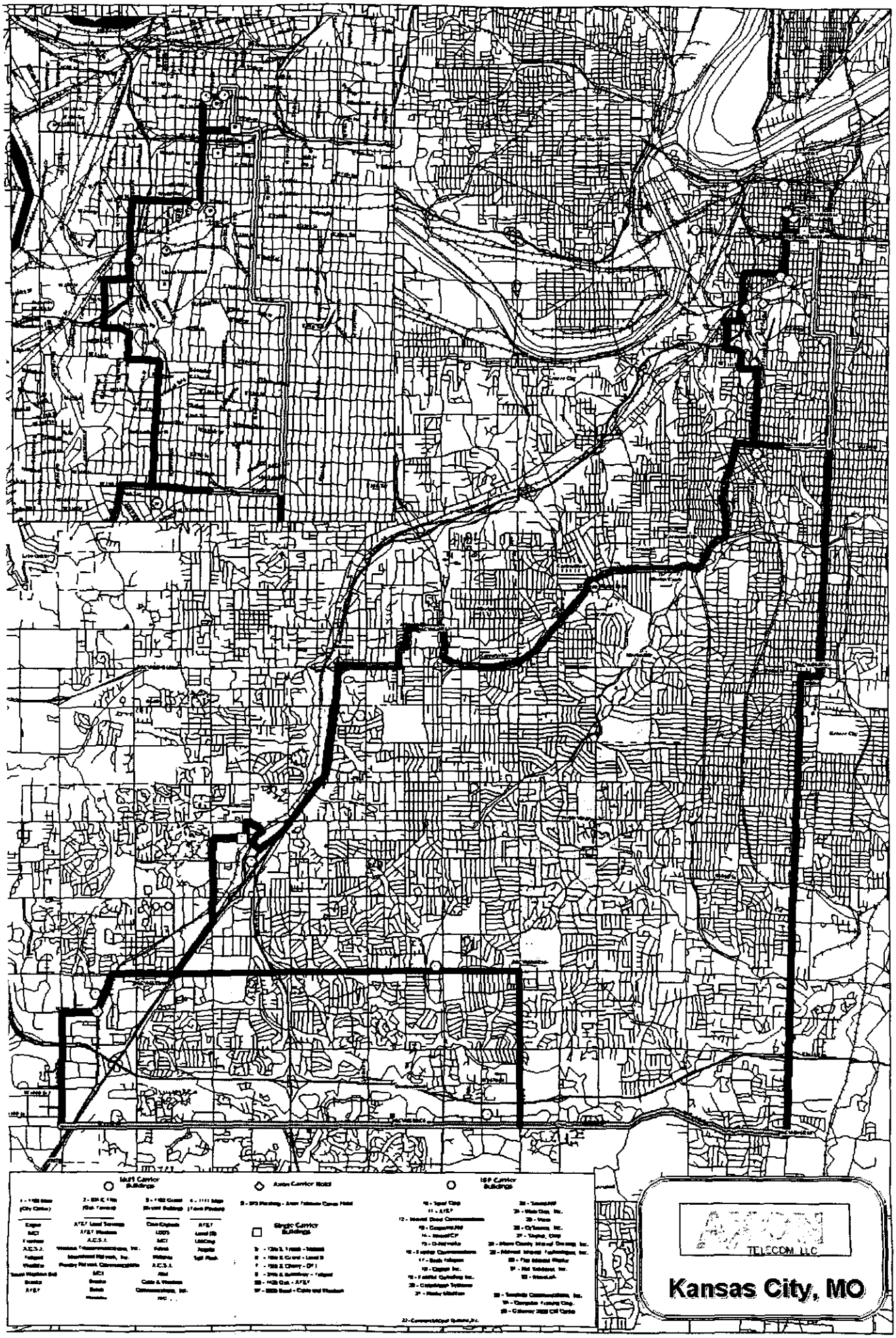
Axon Telecom's Map of Service Area in St. Louis Area

Extracted from Axom Telecom's website.


OCC's
1-Olive Blvd POP-13615 Olive St Blvd
2-Olive St POP-2851 Olive St Rd
3-MCI 11402 Dorsett Rd
4-Sprint- 1925 C Newman
5-Carrier " Hotel"-900 Walnut
6-Carrier " Hotel"-210 Tucker
39-Axon Telecom Carrier Hotel-710 North Tucker
SWBT LEC's
7-Chestnut Collocate-1010 Pine
8-Jefferson Collocate-3010 Washington
9-Parkview Collocate-6214 Delmar
10-Ladue Collocate-135 No. Lindbergh
11-Creve Coeur Collocate-12900 Olive St Blvd
C.L.E.C.'s
12-AT&T Local Services Switch 11840 Borman Dr
13-Worldcom (MFS)-Switch 11636 Lackland Rd
14-Intermedia Comm. Inc.-Switch 1465 N Warson Rd
15-Sprint PCS-Switch 24 Worthington
16-Americach Cellular-Switch 1710 Dr. Martin Luther King Dr
17-Nextlink 2020 West Port Center Dr.
18-Core Express
19 - 2317 Grand Ave
20 - 845 Maryville center
21- 300 W. Main
22 - 3501 Woodman
23 - 12397 St. Charles Rock Rd
24 - 402 N 3rd St
25 - 7218 Lanham
SWBTCO's
26 - 10224 Baker Dr
27 - 5189 Delmar
28 - 5 W. Lockwood
29 - 5410 January
30 - 326 Forest
31 - 16752 Wild Horse Creek Rd
32 - 707 St. Joseph St
33 - 111 Tecte
34 - 3710 Hamilton
35 - 4021 Lemay Ferry
36 - 11640 Gravois Rd
37 - 115 W. Adams
38 - 200 Manchester Rd
Phase 1 25,000 ft.
Phase 2 319,500 ft.

Axon Telecom's Map of Service Area in Kansas City Area

Extracted from Axom Telecom's website.

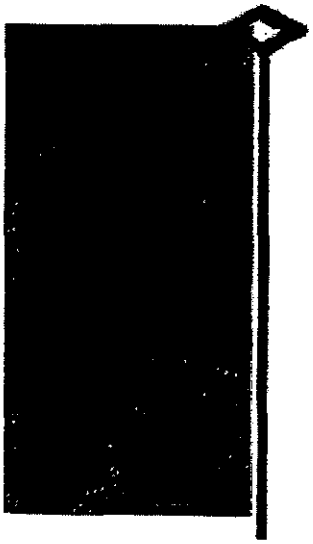

TELECOM, LLC
Kansas City, MO

Information downloaded from the following companies' websites:
Looking Glass
Axom

SCHEDULE 10

LOOKING GLASS NETWORKS, INC.

CORPORATE DATA



Our Mission

To provide low-cost, high bandwidth metro transport services in the major U.S. cities serving carrier and enterprise customers with large bandwidth requirements. We connect carriers, ISPs, POPs, IXCs, collocation hotels, web hosting facilities, ILEC central offices and major commercial buildings in the top 25 cities in the U.S.

Print

Axon Telecom, LLC

AXON TELECOM, LLC

Corporate Description

Home

Axon Corporate Description

Axon Products and Services

Network Presence

Corporate Contacts

At Axon Telecom we provide customers with a low-cost alternative to building their own infrastructure or purchasing metered service from communications carriers.

As an independent provider of fiber or conduit, we believe that telecommunication carriers will be more likely to purchase or lease facilities from us than from their competitors that are telecommunications carriers or are affiliated with one.

Products

- Intercity Dark Fiber and Conduit ; Purchase, IRU or lease options on Longhaul Routes
- Intracity Dark Fiber and Conduit ; Purchase, IRU or lease options on Local Rings
- Carrier Hotels ; Dedicated Telecom Real Estate

Services

- 'Turn-Key' Project Development ; Overall Project Services, Turnkey Approach provides financing, ROW negotiation, construction, maintenance and network management

With the increasing demands for fiber optic transmission facilities, we have focused on providing broadband fiber optic network and bandwidth services to companies such as:

- ILECs (Incumbent and Competitive Local Exchange Carriers)
- CLECs (Competitive Local Exchange Carriers)
- ISPs (Internet Service Providers)
- Long Distance Companies
- RBOCs (Regional Bell Operating Companies)
- IXCs (Interexchange Carriers)
- Multi-Service Operators
- Local Multipoint Distribution Service Providers

Nationwide Competitive AXON TELECOM, LLC Telecommunications Infrastructure

[Home]

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Axon Telecom, LLC

AXON TELECOM, LLC

Carrier Colocation Hotels

Home

Axon Corporate Description

Axon Products and Services

Network Presence

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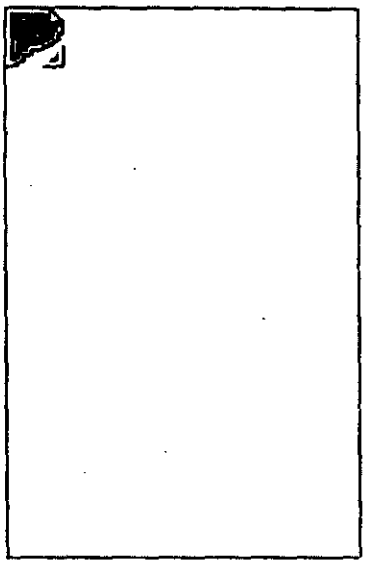

Axon Telecom owns and operates Telecommunications-Dedicated Real Estate in markets to further support the development of our customers overall telecommunications competitiveness. The Axon Telecom Carrier Colocation Hotels are strategically located on the Axon Network fiber optic backbone to serve as a central point of connection to other carriers and customers. The Axon Telecom Hotels are designed for the presence of all telecommunications providers, large and small. Our customers benefit from the inherent Economies-of-Scale and Synergies of our Homogeneous Tenant Population of Telecom Providers.

Benefits of Axon Telecom Carrier Hotels;

24 Hour Security

Customized Site Planning

Axon "Meet-Me" Rooms Provide Controlled Access to all Levels of Providers

Facilities Designed Specifically for Telecom Tenants

Axon Telecom provides equipment space for IXCs, CLECs, RBOCs, ISPs, and

Wireless Providers. Colocation at an Axon Telecom Hotel eliminates the need to construct and maintain you own POP, saving you money and reducing the time needed to enter a market.

Nationwide Competitive AXON TELECOM, LLC Telecommunications Infrastructure

[Home] [Up]

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Axon Telecom, LLC

AXON TELECOM, LLC Product and Services

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Axon Corporate Description

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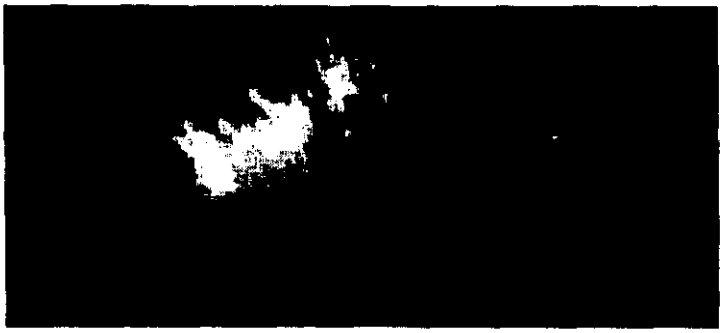
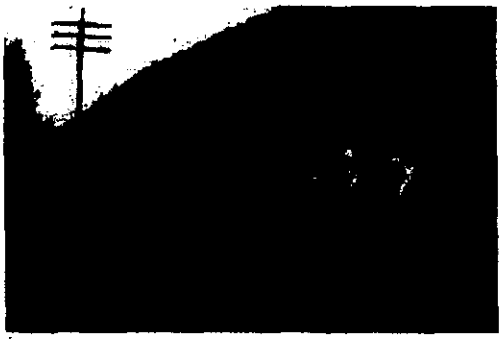


Dark Fiber Leasing

The Axon Telecom Network offers a powerful and cost-effective way to expand the reach and capacity of your network.



Underground Utility Infrastructure

Axon Telecom's underground utility systems are designed to access areas of significant end-user telecommunications.

Carrier Colocation Hotels

Axon Telecom provides equipment space for IXCs, CLECs, RBOCs, ISPs, and Wireless Providers.

Nationwide Competitive AXON TELECOM, LLC Telecommunications Infrastructure

[Home] [Undergroung Utility Infrastructure] [Carrier Colocation Hotels]
[Dark Fiber Leasing]

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Last modified: March 11,2001

Examples of Competitors' Marketing Efforts

Looking Glass

Yipes

Telseon

MCI WorldCom

LOOKING GLASS NETWORKS, INC.

AGENT INQUIRIES

We are interested in establishing partnerships – long-term relationships with commercial real estate professionals who specialize in telecommunications. More specifically, we are interested in individuals who can leverage their relationships with building owners and complete Point of Presence (POP) agreements.

Please forward a list of buildings and property owners in which you have completed agreements.

realestate@lglass.net

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http://www.telseon.com/index.asp

TELSEON

Telseon in the News | Investor Quotes | Industry Support
Press Releases | Analyst Quotes | Industry News

Press Releases

TELSEON ANNOUNCES SERVICE PROMOTION TO DRIVE METROPOLITAN GIGABIT ETHERNET SERVICE ADOPTION

More than 40 New Customers Have Joined Telseon's GigE Service Delivery Platform to Tap into Dozens of Next-Generation Services

MOUNTAIN VIEW, CA - Tuesday, April 24, 2001 - Telseon, the leading provider of instantly scalable optical networks, today announced that its service promotion is successfully driving adoption of GigE services and populating metropolitan IP networks. The (Connect Your World)™ promotion offers businesses a typical savings of $20,000* with a complimentary connection of up to 10 Mbps of bandwidth per month – equivalent to 6 T1 lines - through December 31, 2001.

More than 40 new customers, ranging from applications service providers and multi-media content distributors to storage solutions experts and web hosting giants, have joined Telseon's network since the promotion began on March 12th. The new customers joining Telseon's established customer portfolio of more than 60 businesses include Coradiant, CoreFuzion, Listen.com, Internet Business Services and Senterprise.

"We understand that in today's economy companies are cautiously approaching new technologies. Our promotion provides businesses with a risk-free opportunity to migrate to a GigE network," said Vesna Swartz, vice president of marketing at Telseon. "Once on the Telseon network, customers will quickly realize lower bandwidth costs, shorter time-to-market, expanded customer reach and access to dozens of new revenue streams from other Telseon customers and partners."

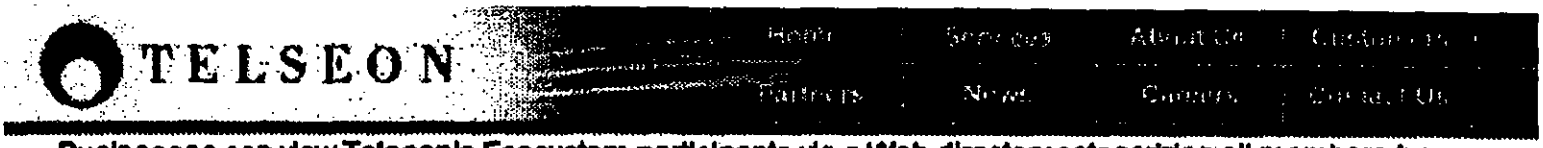
Telseon's GigE network is enabling businesses to create their own Ecosystem where they can quickly extend B2B connections to other businesses and share value-added services such as outsourced storage, video streaming, IP transport and voice over IP. As more businesses with varied service offerings enter the ecosystem, its value grows exponentially to create a scalable network that is ideal for the delivery and exchange of bandwidth-intensive applications.

"As one of the GigE service leaders, Telseon is showing that speed and simplicity of deployment are possible in the metro optical network. That should be encouraging to service providers who need to extend their data networks. Telseon's current promotion should also encourage these SP's to exploit the "network effect" created by connecting their businesses as well," said George Peabody, Aberdeen Group, Vice President and Practice Manager, Communications Infrastructure and Services. "Given the cost, it is a low-risk way to evaluate the ROI."

"The Telseon network allows Coradiant and its customers to access the widest choice of bandwidth, storage, and site operation services within a metropolitan area, making it an important part of our growth as a leading managed service provider," said Alistair. A. Croll, CEO of Coradiant Inc.

By using the utility of the Telseon GigE network, customers are able to take advantage of Telseon's web-based self-provisioning, bandwidth-on-demand and leak-proof security. These technologies are designed to place network control in the hands of the customer.

Businesses can view Telseon's Ecosystem participants via a Web directory categorizing all members by type of provider or type of service. The easy-to-use search index provides vendor profiles, service



Businesses can view Telseon's Ecosystem participants via a Web directory categorizing all members by type of provider or type of service. The easy-to-use search index provides vendor profiles, service descriptions, connection requirements, information request forms and contact information.

(Connect Your World)™ Eligibility
Any business colocated in a Telseon-enabled facility is eligible to sign up for the promotional service through June 30, 2001. Once they are signed up, the free service is available through December 31, 2001 to new customers or existing customers increasing their bandwidth orders. For more information on the Telseon Ecosystem or (Connect Your World)™, please call 866-Telseon or visit our web site at www.Telseon.com .

Read more about the Ecosystem Directory

About Telseon
Telseon offers instantly scalable optical network services to enable companies to break the bandwidth bottleneck in the metropolitan area. With support from industry giants in key markets including long-haul, storage and content services, Telseon is changing the way metropolitan bandwidth is acquired and delivered.

Telseon's optical network services are now available in Atlanta, Chicago, Cincinnati, Dallas, Denver, Detroit, Houston, Los Angeles, Miami, New York, Northern Virginia, Orlando, Philadelphia, Phoenix, San Diego, San Francisco Bay Area, Seattle, Silicon Valley, St. Louis and Tampa. The company is headquartered in Denver, Colorado, and can be reached at 866-TELSEON or on the web at www.telseon.com.

*** Estimate based on monthly fees for network access, cross connection service, and 10 Mbps of bandwidth through December 31, 2001. Bandwidth costs may vary based on distance.*

Press Contact:
Jennifer Castro
415-531-2632

INSIDE TECH

Yipes lights up dark fiber
By Lawrence Aragon
Red Herring
March 14, 2000

If Yipes had a theme song, it would probably be "Come in out of the dark." The company is trying to tap into a potentially huge market for low-cost broadband services by lighting up so-called "dark fiber" on optical networks.

Yipes is one of at least two well-funded startups targeting mid-size customers that need high-speed connections -- up to 1 gigabit (Bit) per second -- between the Internet and their local area networks (LANs) or between two or more LANs. It's a huge market because the alternatives are costly and inefficient, analysts say.

The pitch is compelling. Yipes, for example, can give customers twice the bandwidth they have now at about 80 percent of what they're paying, says CEO Jerry Parrick. Also working in the company's favor: most of the companies that can offer similar service may hold back because they don't want to cannibalize their customers.

"There is a potential here for a massive paradigm shift -- that's why these guys are getting so much investment," says Andrew Cray, senior telecommunications analyst for market researcher Aberdeen Group.

Yipes made a splash last week with its announcement that it had landed $77 million from ten

Orders the bandwidth revolution

Fiber optics takes the spotlight

Yipes made a splash last week with its announcement that it had landed $77 million from ten top-tier venture capitalists and strategic partners. The round was led by the Sprout Group/DLJ and included investments from Extreme Networks (Nasdaq : EXTR), Juniper Networks (Nasdaq : JNPR), and Intel (Nasdaq : INTC). There was enough interest to raise even more money, but the company didn't want to give up more equity, Mr. Parrick says.

IPO PLANS

Yipes hopes to go public this year, says Promod Haque, a director on the company's board and a general partner at Norwest Venture Partners, which provided its seed capital.

A likely Yipes competitor, Cmetric (pronounced "se-metric"), will have a coming-out party shortly with an announcement of a major second round of funding similar in size to that of Yipes, says Rich Shapero, a Cmetric director and general partner at Crosspoint Venture Partners, which incubated the company. (Cmetric is also backed by Sevin Rosen Funds.) The startup, which has been in stealth mode, is in the midst of a "soft launch," briefing analysts say.

"We absolutely believe that this is one of the most important future spaces in the broadband arena," says Mr. Shapero, whose firm is one of the most active VCs in the broadband space. In addition to Covad (Nasdaq : COVD), Digital Island (Nasdaq : ISLD), and DSL (Nasdaq : DSLN), Crosspoint has investments in at least six other broadband companies, including Bluestar, which has registered to go public.

Analysts agree that the opportunity to provide services over excess fiber on optical networks is "huge," in the billions of dollars, but no one has put a figure on it. Twenty-five of 50 Fortune 1000 companies surveyed by Forrester Research (Nasdaq : FORR) late last year say their bandwidth needs will at least double in the next two years.

STARVING FOR BANDWIDTH

Here's what makes the new companies so compelling: corporations are starving for bandwidth, but in order to boost their current bandwidth they must pay high prices and often purchase more than they require. Yipes is attractive to corporate customers on two fronts. One, it offers low-cost, high-bandwidth connections. And two, it sells those connections in increments of 1 MB per second, so customers can buy only as much as they need. The company is pitching its

low-cost, high-bandwidth connections. And two, it sells those connections in increments of 1 MB per second, so customers can buy only as much as they need. The company is pitching its optical network service as a way to connect various corporate sites in a region -- allowing the corporate customers to create a giant "transparent" LAN.

Yipes is able to offer lower prices because it is taking a completely different approach to broadband delivery. Right now most companies get broadband access through copper phone lines (usually through a T1 service), which have limited capacity. Those who need additional bandwidth turn to more expensive T3 lines, which run on fiber-optic networks.

In metropolitan areas fiber-optic networks are made up of a ring of optical fiber that typically operates on the Synchronous Optical Network (SONet) transmission standard. SONet-based gear is very stable, but it's expensive and it isn't flexible. For example, to connect one LAN to another, you need to add multiple layers of technology, such as pricey ad-drop multiplexers and ATM switches.

Additionally, customers can't get the exact bandwidth they ask for. A customer that wants a 1Gbit per second Ethernet connection would need to pay for a SONet OC48 fixed-bandwidth connection of 2.5 Gbps. You may only need half the pipe, but you have to pay for the 1.5 Gbps you're not using, which is obviously very inefficient, says Aberdeen's Mr. Cray. "This is the reason why not many businesses don't use transparent LAN services offered by traditional carriers," he adds.

Yipes -- and presumably Cmetric -- get around the SONet problems by taking a whole new approach. Yipes leases fiber not being used, or dark fiber, from cities and runs the fiber directly to corporate customers' LANs. It then installs a box with a high-performance Extreme Ethernet switch that can beam data from one LAN to another in increments of 1 Mbps, all the way up to 1Gbps. Juniper Networks's routers come into play when a company wants to route traffic through the Internet. "It's a much simpler technology, and it's easier to maintain and install," says Norwest's Mr. Haque. Yipes's network runs on native Internet protocol (IP), so customers can plug their Ethernet LANs into Yipes's network without any tinkering.

SAVINGS

Yipes's approach allows it to offer a customer a 3Mbps connection for two LANs at $450 per month per location. To get the same performance from T1 connections -- which run over traditional copper-wire phone systems -- the customer would have to have a total of four

month per location. To get the same performance from T1 connections -- which run over traditional copper-wire phone systems -- the customer would have to have a total of four connections (each one running at 1.54 Mbps) at a cost of about $600 each. That's for basic, non-Internet access.

"This is a huge opportunity," Mr. Haque says. "The goal is to build something bigger than Covad (which has a market cap in excess of $9 billion). This isn't selling DSL services at 29 bucks a month. This is a higher bandwidth, value-added service."

The space is so new that analysts are trying to figure out what to call it. Christine Heckart, president of Telechoice, has dubbed Yipes an optical local exchange carrier (OLEC), while Maribel Lopez, a networking analyst at Forrester, is calling the company a high-bandwidth data local exchange carrier (LEC).

While analysts are bullish about Yipes and Cmetric, they say both companies face hurdles before either one can become the next Covad. For one, there isn't agreement that there is plenty of dark fiber for them to acquire to create nationwide networks. Aberdeen's Mr. Cray says there is plenty of dark fiber, but Ms. Lopez of Forrester says she's not convinced. "It's one of those things that if it were really simple, somebody would be doing it already," she says. Yipes and Cmetric will have to lease fiber from multiple sources, and it isn't yet clear that there is enough excess bandwidth for them to achieve the economies of scale they need, Ms. Lopez says.

Another issue: the barriers to entry are pretty low. Anyone with access to fiber can offer a similar service, says Ms. Heckart of Telechoice. "It's not difficult," she says. "It just takes money and focus. There's lots of other companies with fiber in the ground that could get into this game quickly." Mr. Parrick says he's "paranoid" about competition. "I'm sure the announcements will create competition," he says. "Our lead can be measured in months. I'm not egotistical to think that it's years."

MORE HURDLES

A third obstacle: a plethora of startups are trying to improve SONet to make it more attractive, including Chromatis, Mayan Networks, and Cyras, analysts say. It isn't likely that they would be able to achieve the same price/performance as a company like Yipes, but it might be compelling enough to cause some customers to stick with SONet.

Yet another hurdle: credibility. Yipes can pitch a low-cost service, but that doesn't mean that corporate customers, which need 24/7 networks, will immediately switch from existing services. Both Yipes and Cmetric will need to build up a pool of strong reference accounts to get other customers to follow, analysts say. Cmetric lists three customers on its site: Compaq (NYSE : CPQ), WebTV -- which is owned by Microsoft (Nasdaq : MSFT), and Incyte Pharmaceuticals (Nasdaq : INCY).

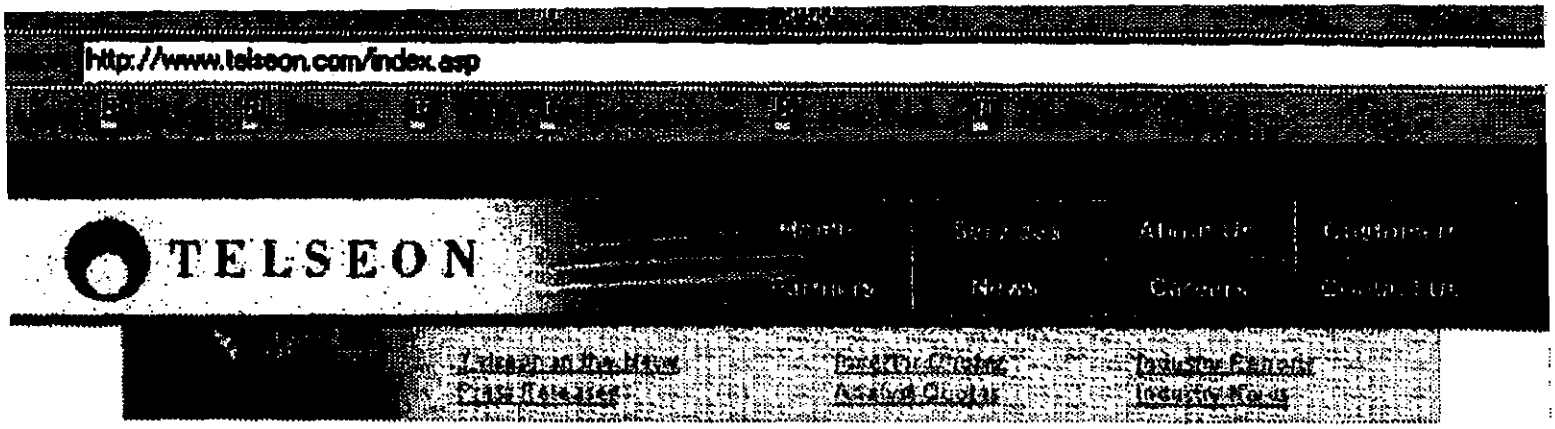
Mr. Parrick says Yipes, which has had one network running for six months, and two networks running for one month, has about 20 customers, including a school district with 22 locations, an ISP, and a large law firm. Yipes has networks in Palo Alto, California, Riverside, California, and Fort Collins, Colorado. "We have an aggressive objective to build out across the country," Mr. Parrick says.

Besides California and Colorado, Yipes plans to launch service this year in Connecticut, Illinois, Maryland, Massachusetts, Minnesota, New York, Texas, Washington, and Washington, DC. Noting that the expansion will run into the hundreds of millions of dollars, Mr. Parrick says that the company is looking for debt financing.

The challenges notwithstanding, analysts agree that the startups have a lot going for them, including momentum and focus. It would be difficult for larger players with lots of fiber, such as MCI/Worldcom (Nasdaq : WCOM), to steal their thunder because they would likely need to change their business models. For example, they couldn't continue to push high-cost T3 lines while offering a lower-cost alternative similar to Yipes's, because they would eat into their existing customer base.

Startups, on the other hand, "don't have a legacy network, nor do they have an installed customer base to protect," says Telechoice's Ms. Heckart. "They can adopt highly disruptive technologies and offer highly disruptive services."

What is likely to happen, then, is that the old guard will sit back and see how the market plays out before it makes any hard decisions. In the meantime, Yipes, Cmetric, and other smaller players will gain momentum and market share. If the old guys sit on the fence long enough, the upstarts could make a big-enough push to cause the "paradigm shift" Aberdeen's Mr. Cray predicted.



Telseon in the News

Telseon Expands Services to Long-Haul Carriers
LocalBusiness.com
By Dave Algeo
March 6, 2001

ENGLEWOOD, Colo., March 6 (LocalBusiness.com) – Telseon LLC is expanding its services to long-haul fiber-optic carriers, the company announced today.

"What we are offering gives carriers a tremendous competitive advantage," said Vesna Swartz, vice president of marketing at Englewood-based Telseon.

In the past year, the company has installed equipment and proprietary software at data centers in 20 key markets around the United States. The privately held company offers businesses in those markets high-speed access to long-haul, or backbone, data-transmission lines that link cities around the world.

Telseon now is offering the long-haul carriers themselves a chance to take advantage of the same technology. "It's the best of all possible worlds," Swartz told LocalBusiness.com. "We enable them (the carriers) to create a transparency between their long-haul networks and our metro networks. So the customer can seamlessly access – throughout the metro – the long-haul carrier's network. They also can provision within the metro and between metros across the long-haul network."

Past successes

Telseon already offers such services to Level3 Communications and 360networks, both of which operate long-haul fiber-optic networks. The success of those relationships led the company to start marketing its services to other carriers.

"What we have found, in speaking with our current customers, is they all face one major business problem-the ability to deliver their services into the metro marketplace," Swartz said. "The reason is that within the metro marketplace there are barriers to delivering services, because of a lack of next-generation infrastructure and technologies." Telseon's technology makes it easier for the carriers and their customers to deal with the outdated networks and mixed brands of equipment in use within individual metropolitan areas, she said.

Problem solvers

As businesses that need to transmit large volumes of data decide which long-haul carrier they will use, their decisions will be based on how readily the carriers can deal with the problems that arise in metro areas, Swartz said. Carriers that don't have a ready way to solve that problem "will have to go through a long lead time in terms of provisioning–and at higher cost to the end customer," she said.

Last spring, Telseon moved its headquarters to Englewood from Palo Alto, Calif. Late last month, Telseon formally opened a development center in Mountain View, Calif. About 50 people work in the Mountain View center. In total, Telseon employs 360 people. The company closed a $100 million round of equity funding earlier this winter. Telseon also arranged for $75 million in capital lease financing.

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Connnents

Overland City Council will help MCI WorldCom build facility By
]Dawn Grodsky
Special To **The** Post-Dispatch

MCI Wor]dCom Network Services Inc. is getting a boost from Overland in building a network services facility on Meeks Road off Page Boulevard at Dielman Road.

The City Council has unanimously approved issuing up to $80 million in taxable industrial revenue bonds to finance the project, to be paid off by MCI WorldCom. in exchange, Overland is offering abatement of real-estate and property taxes.

The deal means MCI will transfer the title of the property and later the 100,000-square-foot building to Overland, which will lease it back to the company, says Laura Lashley, a senior manager with KPMG, the firm that is helping to negotiate the deal.

The arrangement, called private-placement bonds, is allowable under Missouri's Chapter I 00, though Lashley says it is Dot Commonly Used in St. Louis or St. Louis County. It is widely used in St. Charles County and other parts of the state, she adds.

Lashley noted that the arrangement sounded more complicated than it acwally was, Overland is the issuer of the bonds, and MCI is the investor, she says. The lease transfer is necessary because municipal property is tax-exempt and that status will save the corporation money in tax dollars,

Economic development was cited as the key factor in issuing the bonds, and Overland City Clerk Linda Downs said that in the end, the deal wouldn't cost Overland a ponny. "We have no cost whatsoever," she said, "We are the entity issuing the bonds. They will buy the bonds."

Lashley added, "It's pretty standard for these types of transactions. The benefit of using Chapter 100 ftom a government perspective is to attract economic growth. The benefit for the corporation is helping to deter the costs of putting in capital investments, which are always inefficient in their first few years."

She explained that her firm helped companies find these types of deals to spur economic development and to keep the corporations competitive.

The foundation already has been laid at the construction site, and the bonds' issuance was approved in December, Last June the council adopted a resolution that approved a plan for an industrial development for MCI or a related entity. The $90 million deal requires MCI to pay the bonds with revenue from the project over 10 years.

Lashley said the building should be complete in the first quarter of 2001, and once it was operational between 10 and 15 employees would work there,

Voice Over Internet Protocol (VoIP) Information

Net2Phone

Dialpad

Cisco

Intel

Net2Phone launches broadband IP telephony service

Kevin Fitchard, Telephony

Online Exclusive, Jun 6, 2001, 12:00 a.m. ET

Net2Phone today launched its broadband voice technology and services, designed to bring IP telephony access over cable, DSL and T1 lines while bypassing the PC entirely.

"We're bringing IP to the edge," said a Net2Phone spokeswoman. "We want to take IP telephony far away from the PC, but bring it as close to the user as possible."

Through partners and in-house production, Net2Phone is incorporating its core voice over IP technology into a variety of different broadband devices. The routers are designed to hook into any broadband access device, such as a DSL or cable modem, and into a standard phone, making the service as accessible as a regular phone line.

The technology creates an "intelligent" IP dial tone, and allows a user to receive phone calls as well as make them. Net2Phone also has plans to incorporate the technology directly into access devices, making cable and DSL modems IP ready.

The Net2Phone spokeswoman added the company believes the future of consumer IP telephony is in broadband due to the enormous restrictions presented by PC-originated phone calls over dial-up connections. The static-ridden, choppy connections common in residential IP telephony today are due to the narrowband pipes and the limitations of the computers themselves. More bandwidth and dedicated routers will alleviate those problems, she said.

"Microsoft didn't design Windows so you could make phone calls. Compaq didn't build computers so you could make phone calls," she said. "But a broadband connection is ideal for this kind of voice connection. The quality of the call is going to be better than on any PC."

While services may be basic now, Net2Phone plans to eventually add more powerful applications, such as voice command, messaging and other enhanced services.

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UPDATE - Cisco launches new VoIP line for businesses

By Douglas F. Gray, IDG News Service\San Francisco Bureau
April 30, 2001, 16:43

Cisco Systems Inc. launched seven new IP (Internet Protocol) telephony products for businesses Monday, based around its Architecture for Voice, Video and Integrated Data (AVVID) network infrastructure.

As part of its aim to create a global VoIP (voice-over IP) network, Cisco announced three software products aimed at increasing personal productivity. The company also announced new call center software, call processing software and a new hardware switch that can server up to 24 IP-based phones.

The products expand on a VoIP portfolio Cisco has been building for the past four and a half years, said Elizabeth Ussher, vice president of global network strategies at IT research firm Meta Group Inc. "We're now starting to see the smoothing out of places that needed it," she said.

VoIP will get a big push when a significant number of early adopters start to report back on their experiences with it, she said. "People will start to look more closely at VoIP as the news flashes come in," Ussher said. "The credibility comes when the deployments are in and the return on investment is solid."

One deployment underway is Dow Chemical Co., which is installing 40,000 IP-based phones. Cisco, meanwhile, expects to become "fully IP-enabled" over the next three to four months, increasing the number of IP phones it uses to almost 40,000 from 25,000 today, said Bill Erdman, director of marketing for

Cisco's Enterprise Voice and Video division.

Cisco is working on a business case to present to companies who are thinking about switching to IP-based telephony which focuses on the technology's cost-saving benefits, he said.

The Cisco Personal Assistant, an IP-based telephony application, interoperates with Cisco CallManager and Microsoft Corp.'s Exchange to allow users to verbally sort through voice mail and dial by name. The software has a browser-based interface and allows users to set up rules of call forwarding and screening calls, as well as setting up conference calls without dialing. The Cisco Personal Assistant, available now, retails for $4,995 and includes the Cisco IP Phone Productivity Services Suite, Cisco said in a statement.

The company also launched Cisco Unity 2.46 unified messaging. The software includes worldwide time zone and language support, as well as localization capabilities. The unified messaging application works with both legacy-circuit and packet-based switches. It can manage e-mail, voice mail and faxes through a single inbox from any device, including IP phones, cellular phones and PCs. Unity is interoperable with Cisco Personal Assistant and Cisco CallManager 3.1. Unity is available immediately, and pricing starts at $145 per seat, the company said.

The final personal productivity application announced Monday is the Cisco IP Phone Productivity Services (PPS) suite. The suite of applications based on XML (Extensible Markup Language) can effectively turn the Cisco 7960 and 7940 IP phones into Internet thin-client devices that can provide access to corporate and Internet Web servers. The phones can then also be used for functions like e-mail, voice mail, calendar, and stock quotes. A development suite called the E-Service Application Engine lets developers create applications aimed at specific business needs. The application suite will be available in the third quarter of this year.

For customer service in small call centers within an enterprise, Cisco launched the IP Integrated Contact Distribution (IP-ICD). The application includes automated call distribution and custom contact interaction management for up to 48 agents. IP-ICD works with Cisco IP Interactive Voice Response and IP Automated Attendant applications. The IP-ICD is available immediately for $4,995.

Cisco also launched an updated version of CallManager, its software-based call processing system. CallManager 3.1 adds 15 new features, including hold music and extension mobility, which allows an employee's phone extension to be transferred to any of Cisco's 7960 or 7940 IP phones. CallManager 3.1 is available immediately for $5,995.

The software for making phone extensions portable is the most compelling application launched today, Erdman said. This will make it easier to transfer extensions and allow users to make use of any cubicle that happens to be free, she said. The service works anywhere so long as the user has access to an IP connection, making it ideal for branch offices, Erdman said.

Cisco also introduced its Survivable Remote Site (SRS) Telephony application on Monday. SRS ensures against WAN (wide area network) failure by auto-configuring Cisco multiservice routers to provide call-processing backup for IP phones in branch offices. When the WAN comes back online, the system automatically shifts call-processing functions back to the centrally located CallManager. SRS Telephony is available now on the Cisco 2600 and 3600 series routers and the Catalyst 4224 Voice Gateway Switch.

On the hardware side, Cisco launched the Catalyst 4224 Voice Gateway Switch platform, an integrated Ethernet switching, IP routing and voice gateway device targeted at small branch offices with up to 24 users, Cisco said in a statement. The Catalyst 4224 can be used with Cisco SRS Telephony to provide backup services in the event of a WAN failure. The Catalyst 4224 retails for $12,995.

Cisco, in San Jose, California, can be reached at http://www.cisco.com/.

NetworkWorldFusion NEWS

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Intel's iPOD extends PBX connectivity with VoIP

By Phil Hochmuth
Network World Fusion, 05/30/01

Intel this month will release an IP telephony product that could put the power of a central-site PBX into a small branch office or in a telecommuter's den

Intel's iPOD product could help IT and telecom professionals lower their phone costs by connecting small branch office and home office workers to a centralized PBX with voice over IP. Instead of deploying small PBXs or key systems in remote sites, network professionals could use the product to provide voice connectivity over a remote site's WAN link.

The iPOD - developed by Dialogic, Intel's computer telephony subsidiary - is a small, rack-mountable device that connects to either a Nortel Meridian or Avaya Definity PBX via a standard RJ-11 phone wire. On the other end of the iPOD is a Category 5 Ethernet jack that is used to bridge phone calls to an IP network.

One iPOD can be used to connect up to eight IP phones to a PBX by mapping each phone's IP address to an extension on the PBX. This is done either by assigning static IP addresses to specific phones, or by assigning addresses on the fly through the device's internal Dynamic Host Configuration Protocol server.

By mapping IP addresses to phone extensions, any H.323-compliant IP

Today's News

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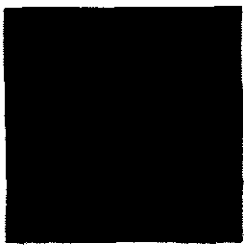
All of today's news



phone (from makers such as Cisco, PingTel and Siemens) can become a regular PBX phone extension, whether the phone is sitting on an internal LAN or in a remote location connected by an IP WAN link, such as a T-1 or ISDN line.

Once the iPOD is configured and mapped to IP addresses on the PBX-side of the network, deployment of the phones is simple, says Vince Connors, product manager for the iPOD.

"IT managers could just send IP phones to a remote site, tell employees there to plug them in, and they'd be off and running," Connors says.

Workers at a remote site can use all the features of the remote PBX, such as in-house extension dialing, hold, call forwarding, conferencing and voice mail access.

The iPOD was previously available to PBX vendors (such as Mitel) as part of an offer for IP-enabling a legacy PBX. The previous version of the product could only communicate through proprietary communications protocols used by the PBX legacy PBX vendors. The new version of the iPOD that will be sold to end users communicates via the H.323 voice over IP protocol, which is becoming a standard protocol in IP telephony. The iPOD will compete with products such as the PBXgateway II from MCK Communications, which can connect up to 24 PBX extensions in a single box, but at $9,000, costs three times as much as the iPOD.

The H.323-compatible iPOD will be available this month and will be priced around $2,700.

Intel

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SS7 and LIDB offerings

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TSI Telecommunication Services Inc.

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COMPETITIVE WIRELESS COMPANIES *today must provide top-quality technology and advanced calling features–then go beyond. Illuminet helps you achieve this goal by deploying expert network solutions and delivering fast, responsive service to customers.*

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Deliver nationwide seamless roaming via our SS7 network, the largest independently-owned SS7 network in the United States. The Cellular Telecommunications Industry Association (CTIA) has endorsed our network for its members' nationwide seamless roaming needs.

Simplify in-house operations by obtaining complete support from a single source. You won't have to work with multiple vendors and struggle with potentially incompatible network elements.

Customize network support to fit your particular requirements and technologies. Your personal account manager will work closely with you to ensure your service package fully meets your objectives.

Position your company to offer a full range of wireless and Advanced Intelligent Network services. Illuminet's gateway access to the NACN and GTE networks, and network architecture that fully supports X.25, DMX, GSM-MAP and SS7 signaling, assure you have maximum connectivity. Illuminet also supports the necessary SS7 functionality for emerging IN/AIN services.

Protect your competitive position. Unlike other network service companies, Illuminet does not provide telecommunications services directly to consumers, so we don't compete with you for your customers.

SS7 NETWORK SERVICES INCLUDE:

Network Connectivity

Take advantage of convenient access via 11 STP pairs and numerous Signaling Points of Interconnection (SPOIs) across the country, as well as complete support for X.25, DMX, GSM-MAP and SS7 protocols. You can count on us for end-to-end engineering, installation and maintenance, as well as 24-hour surveillance and maximum route diversity to ensure system-wide integrity.

IS-41 Network Transport

IS-41 Network Transport makes seamless roaming possible by providing a transparent interface between wireless switches. With Illuminet, you'll be able to access any wireless database for pre-call validation and registration, so your customers have the same uninterrupted service in out-of-area markets as they do in their home market.

Cellular Administration and Operations Support Service

Simplify IS-41 network setup and maintenance, as well as the exchange of technical roaming data. Through our Cellular Administration and Operations Support service, Illuminet coordinates network connection, testing and activation.

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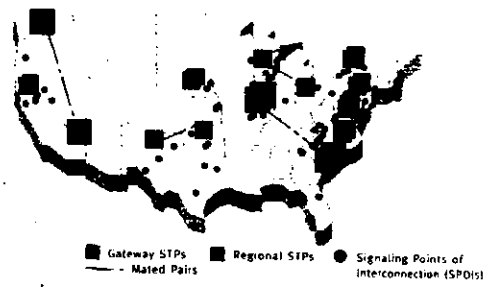
ILLUMINET BELIEVES IN *ease and convenience, offering SS7 access points throughout the United States. We tailor our network services to your requirements.*



data management

This service also provides centralized databases for all of your customer roaming information, and electronic data management to reduce paperwork, increase accuracy and improve security.

ISUP Trunk Signaling

ISUP Trunk Signaling is the key to fast call set-up, effective use of trunk resources, and deployment of enhanced services such as Caller ID. With Illuminet, you save administrative time and costs because we already maintain extensive connectivity arrangements with other SS7 networks throughout the United States. You won't have to establish multiple links.

Protocol Conversion

If you use X.25 or Motorola DMX protocol, you can still connect to Illuminet's SS7 network through our protocol conversion services. You'll have connectivity to SS7 without spending the time and money converting your entire network.

Roamer On-line Support Services (ROSS)

Our ROSS network surveillance platform allows you to view and monitor roaming activity in near real-time, enabling prompt customer assistance and troubleshooting, roaming performance tracking, and protection against roamer clone fraud.

Local Number Portability

Illuminet makes it possible for you to deploy FCC-mandated Local Number Portability without the high cost of developing your own infrastructure. We deliver essential database capabilities to store and manage customer call routing information with maximum ease, speed, accuracy and security - qualities we've developed through years of data management experience for hundreds of companies. You can also count on us for the STP, SCP and local service management system capabilities to perform accurate and reliable call routing, via a single point of service delivery for all metropolitan statistical areas nationwide.

COMMITTED TO YOUR SUCCESS

Illuminet takes special care to understand your particular needs and tailor your service package to best fulfill your objectives. We are constantly enhancing our network services so you have access to the latest technologies, such as AIN-based services and Local Number Portability.

This type of leadership is why CTIA chose our network for nationwide seamless roaming capability, and why more than 1,000 telecommunications companies have trusted our advanced SS7 network, database and billing services for more than a decade.

To learn more about Illuminet's SS7 services for wireless carriers, call your Illuminet account representative or Illuminet at: Overland Park, Kansas (913) 491-1600 Olympia, Washington (360) 493-6000

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SS7 OVERVIEW

ACCESS THE INTELLIGENT NETWORK

TSI Telecommunication Services Inc. (TSI) provides competitive access to the exciting opportunities of the SS7 network. Signaling System 7 is a reliable open-architecture protocol that easily handles current communication requirements and accommodates future expansion of new applications. This layered protocol separates the signaling and trunk setup to afford more efficient call processing and allows the delivery of today's digitally enhanced services. The TSI network is configured with mated pair Signal Transfer Points (STPs) to provide redundant links that assure maximum reliability.

The future growth of our industry is dependent on the SS7 network for the delivery of tomorrow's intelligent products and services. TSI is recognized as a leading supplier of SS7 hubbing and transport services to competitive local exchange carriers, inter-exchange carriers, RBOCs and wireless providers. TSI Telecommunication Services Inc. can help your company access a world of new opportunities with SS7.

- TSI Network Architecture
- SS7 Tutorial
- Porting a Number
- Glossary
  - Acronyms - A complete list of the acronyms commonly used in the industry
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SS7 NETWORK ARCHITECTURE

TSI's network system consists of three pairs of Tekelec Eagle STPs and the Tekelec LNP Platform, located in Wentzville and O'Fallon, Missouri.

The STPs are interconnected with the SS7 networks of other STPs (LIDB/800 providers) consistent with the requirements specified in ANSI recommendation T1.111.5 and will perform all SS7 message routing functions in the TSI network.

	Wentzville, MO	O'Fallon, MO
V & H	V6819 x H3601	V6810 x H3577
Address	104 SE Main Street Wentzville, MO 63385	106 East Highway 40 O'Fallon, MO 63366
Location	Toll Center	First Floor

	Wentzville, MO	O'Fallon, MO
STP Type	Tekelec Eagles	Tekelec Eagles
Local/Regional	Regional	Regional
NPA-NXX	636-327	636-272
CLLI Code	WNVLMOXA01W	OFLNMOXA01W
Point Code	235-001-000	235-000-000
Alias	235-235-000	235-235-000

	Wentzville, MO	O'Fallon, MO
STP Type	Tekelec	Tekelec
Local/Regional	Regional	Regional
NPA-NXX	636-327	636-272
CLLI Code	WNVLMOXZ02W	OFLNMOXA02W
Point Code	235-003-000	235-002-000
Alias	235-250-000	235-250-000

The TSI STPs consist of a fully duplicated high-speed, high-capacity message transport network used to handle inter-

processor communications. The STPs are equipped to meet the requirements published in Bellcore document TR-TSY-000082, including Appendix C.

NETWORK SURVIVABILITY

TSI uses route diversity on each SS7 signaling link set consistent with industry requirements. All A-links used to connect TSI's mated pair of hub STPs will be derived over a minimum of two diverse routes. TSI leases 56 kbps circuits from three ICs for the diverse routing of B-links. These routes will be physically diverse from all but one of the routes used. Route diversity is a requirement for STP to STP connections (B-Links).

Products & Services

www.idnllc.net

The IDN Product

IDN, LLC is a full service provider of nationwide Signaling System 7 (SS7) and Intelligent Network/Advanced Intelligent Network (AIN) database services for the telecommunications industry. Our network, consisting of the latest state-of-the-art technology interconnected via fully redundant and protected signaling links, conforms to the highest industry standards for SS7 networks as mandated by Telcordia and the American National Standards Institute (ANSI).

IDN's signaling products and services are backed with exceptional customer service, including around-the-clock assistance from our Network Control Center. We are always here to provide your signaling and database service needs. We welcome your ideas on how we can further improve our products and services.

Services We Provide

Local, Regional, National and International Signaling System Connectivity

Signaling System 7 Link Provisioning (End to end order management and coordination)

Caller Name Identification (CNAM)

Local and National City/State Database

Custom Local Area Signaling Services (CLASS)

Signaling System 7 Trunk Signaling (ISUP)

Local Number Portability (LNP) Transport

Location Routing Number (LRN) Service

800 Service Transport

Wireless Carrier Roaming Support (IS-41 signaling)

Line Information Database (LIDB) Service Transport

Signaling System 7 Transition and Implementation Assistance

Tariff Comparison - Switched Access

Carrier / Tariff No. / Rate	SWBT / PSC Mo. No. 36		AT&T / PSC Mo. No. 14	MCImetro / PSC Mo. No. 2	Intermedia / PSC Mo. No. 4	Birch / PSC Mo. No. 4	Allegiance/ PSC Mo. No. 3
Rate Element							
Common Line							
CCL InterLATA Terminating per MOU	0.01796620					0.01813300	0.01796620
CCL InterLATA Originating per MOU	0.00990800					0.01000000	0.00990800
CCL IntraLATA traminating per MOU	0.01796620					0.01813300	0.01796620
CCL IntraLATA Originating per MOU	0.00990800					0.01000000	0.00990800
Local Switching							
LS1 Bundled	0.00840200						
LS2 Bundled	0.00840200					0.00846400	0.00840200
LS1 Unbundled	0.00838600						
LS2 Unbundled	0.00838600						
Originating Switching	0.01831000	[1]	0.01848000		0.02661000		
Terminating Switching	0.02636820	[1]	0.02661300		0.02661000		
Local Transport							
0-1 Mile	0.00500000						0.00500000
Over 1 to 25 Miles	0.00760000						0.00760000
Over 25 to 50 Miles	0.01610000						0.01610000
Over 50 Miles	0.02710000						0.02710000
Tandem Switch						0.00100000	
Tandem Switching Termination			0.00770000		0.03161000	0.00398500	
Tandem Switching Termination per minute per mile						0.00003000	
Direct Connect Originating	0.02591000	[2]		0.02269000			
Direct Connect Terminating	0.03396820	[2]		0.02269000			
Tandem Connect Originating	0.02591000	[2]		0.02269000			
Tandem Connect Terminating	0.03396820	[2]		0.02269000			

NOTES:

1) SWBT does not have originating and terminating switching charges. Above was developed by adding CCL per MOU plus LS2 per MOU and is for illustrative purposes only.

2) SWBT does not have originating and terminating direct and tandem connect charges. Above was developed by adding CCL per MOU plus LS2 per MOU plus local transport (1 to 25 miles) and is for illustrative purposes only.