NEWBY VENTURES

The "Meet Me" Series

Fat Pipe Magazine, February 2003 - November 2005

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BY HUNTER NEWBY

Meet Me in New York

Editor's note: *This is the first in a series of articles in which Hunter Newby, TELx executive vice president, will discuss carrier interconnection options available in 10 major North American cities. The ongoing series will include key information on infrastructure, power and HVAC information in the carrier hotel and primarily will focus on the largest carrier-neutral "meet me" facility in each building.*

We believe that Mr. Newby knows the subject as well as anyone, even the Dagda. So when he was gracious enough to take this assignment, we suggested that he start with the renown 60 Hudson Street in New York, also known as his own backyard. Indeed, TELx operates the carrier-neutral interconnect facility with the greatest number of "touch points" (to other networks) at 60 Hudson. So we asked him to begin his effort there.

This series also will cover Los Angeles, Atlanta, Seattle, Miami, Toronto, Chicago, Philadelphia and Dallas. Readers will select the last city profiled. Send your suggestions to suggestions@telx.com.

The place where most of the world's "fat pipes" meet to interconnect with each other these days is inside the buildings known as "carrier hotels." These facilities easily represent the single greatest collection of network elements and backbone network access points, representing most, if not all, major carriers in any city.

In our new world, the "network of networks" needs the equivalent of the old bilateral "mid-span meet." This is where the biggest pipes come and go and where the largest revenue-generating circuits are provisioned. Given the razor-thin nature of backbone network profits these days, service availability, delivery options and costs within the carrier hotel often can make or break a capacity deal's margin and profitability.

For most service providers, most of the time, the best place to get connected at a carrier hotel is within the building's meet me room, if such a facility exists. In some instances, the building might not have a formal meet me room. In other cases, the meet me room might not feature the widest number of interconnected carriers within the building.

Also, keep in mind that typically there is more than one choice for co-location within a carrier hotel, and sometimes any single carrier's space and power considerations may dictate the choice of a point of presence, outweighing co-location in the most densely cross-connected facility within the building.

A typical carrier hotel also will feature numerous carrier-owned co-location facilities that provide interconnections but usually only to the carrier that owns that particular point of presence.

We'll start with the largest carrier hotels within each city. The definition of "large," for the purposes of this series, is not size of the building but rather the potential number of interconnect options that are available within the building.

Within each building, we'll try to focus on the single carrier-neutral site that today offers the greatest number of touch points to other networks. Again, keep in mind that there may be several carrier-neutral meet me rooms within any single hotel and that some carriers also will have their own points of presence within the hotel.

Of course, your business requirements may dictate interconnection on some other basis than sheer access to the greatest number of other partners with which to hand off traffic.

60 Hudson

"If you can make it here, you can make it anywhere," Frank Sinatra used to croon, but in the carrier interconnection business, the lyrics might be: "If you can make it here, you can get just about anywhere." And in New York, you're talking 60 Hudson Street.

TELx Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	No
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	No
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	No
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No
For carriers not in the meet area, the interconnect options include: in-building, intra city local loops and in-building, intra city dark fiber, shared conduit and inner duct. Customers can hire labor for conduit construction directly.	
The costs and availability are determined based upon the order. TELx facilitates interconnections and access, but is not a carrier or agent. All loops, fiber and certain shared routes must be contracted directly by the customer.	

Customers 23rd Floor	Customers 9th Floor
Access Plus Int'l Ltd.	Athena News
AccessLine Comms.	Band-X
Amtel Corporation	Bell Nexxia
Cambrian Comms.	Cogent
Comtek	Con Edison Comm.
Dominion Telecom	Data Peer
Easy Net	Deutsche Telekom
Emergia	Dynegy Connect
Eureka GGN	Dynegy Europe
FiberNet	Eircom
FoneCorp International	FiberNet
Globix	Gigex
IBN	Global Crossing
Invision	Instanet
iNYC	i flex Solutions
Megh Communications	ITXC
Nac.net	Key Span Comms.
Nexphase Comms.	Last Mile Connections
Outsourced Switching Inc.	Looking Glass Networks
Progress Telecom	MAE Carrier Services
Qwest	NY6ix
Sonova Networks	OnFiber
The Spoken Hub	Open Access
Valensina US Inc.	Progress Telecom
VGM International, Inc.	Qwest
	Stealth Communications
Non-customer 23rd Floor	Teleque
Allegiance (Intermedia)	TELx vault
AT&T	Tyco Telecom
Cablevision Lightpath	Time Warner Cable
Global Crossing	V3 Global
Metcom	Viatel
MFN	Web Air
Qwest - Mezz	Worldpoint Comms.
Time Warner Telecom	
Verizon	**Non-customer 9th Floor**
WorldCom	AT&T
XO Communications	Metcom
	MFN
	Time Warner Telecom
	Verizon
	WorldCom

Manhattan is one of the largest global telecom centers in the world and also is home to several major carrier hotels. Of the two most recognized (60 Hudson St and 111 8th Ave.), 60 Hudson earns the distinction of the best place to get connected in New York.

One of the reasons is that the building has a tenant that operates one of the largest carrier-neutral interconnect facilities in New York, or anywhere in the United States, for that matter. The tenant is TELx, which has been operating as a central point within the building for interconnections for several years.

The TELx model for interconnections uses a sub-set of the larger floor space as the meet area where the carrier tenants on the floor extend their demarcation points toward.

The cables and panels that are run to this area are owned by the carriers, so they are literally an extension of their own networks. The billing model is that the tenants pay for the cage, cabinet or rack space on the floor, as well as the homerun cables by cable count and panel presence by rack unit on a monthly basis.

Once the carrier customer has extended their presence to the meet area, they can order cross connects to any other customer in that meet area for no additional monthly charge. TELx performs all of the actual cross connections and keeps an inventory of every single port installed, in use and available across every carrier panel in the meet area.

That includes POTS, DS-1, E-1, DS-3, Ethernet and fiber, as well as network elements such as multiplexers and Ethernet switches. This inventory provides valuable information regarding each carrier's network capability and availability. That information is used to set expectations as to when and if a circuit can be delivered.

Several carriers already have points of presence within the building, or in other buildings, so they would not need to relocate that equipment to TELx. All that would be necessary to take advantage of the carrier choices in the meet area would be an extension from their suite to the TELx meet area.

This can be done a couple of ways. For the short term, it is possible to lease in-building or metro dark fiber from certain providers that have a presence at TELx. The incoming carrier would then deploy a multiplexer to provide its own in-building transport.

For the long term, conduits can be designed and engineered to run from the carrier suite directly into the TELx meet area. The carrier installs a high-count fiber cable in a fiber distribution panel and installs equipment as necessary. In either situation, a business case is necessary to justify the costs, but most times it pays for itself in the first cross connect.

Since TELx operates two separate facilities within 60 Hudson Street – suites 900 and 2300 – the company has installed its own dark fiber between the meet areas, as well as a transport system of DS-1 and DS-3 level circuits. This helps to eliminate any proximity issues that may arise as a result of two carriers looking to interconnect that are on the different floors.

Many of the larger local loop providers already have a presence within both meet areas. Some of the legacy local loop providers have a network presence at TELx but are not TELx customers. This distinction puts them in a non-customer class and does not give them ordering authority for any work including cross connects.

All orders for these carriers must originate from a TELx customer. Some of these carriers also may be customers for certain network elements but not for others. Here you will find the list of customers and non-customer carriers by floor. These are just a few of the things that make each carrier hotel and interconnect facility within them unique and what sets TELx apart from the rest.

At 60 Hudson, as at all other major carrier hotels, affordable and reliable connections to other carriers is the whole reason any single carrier wants to be at the co-location facility in the first place. These days, with carriers watching every cost element to maintain a positive business case, the cost – and ease – of interconnection can be a decisive factor.

BY HUNTER NEWBY

Meet Me in L.A.

Editors' note: This is the second in a series looking at the dominant "meet me" facilities in 10 major North American cities. Author Hunter Newby is executive vice president of TELx. He can be reached at hnewby@telx.com.

Los Angeles is the single most important place for major carrier interconnections on the West Coast, much as New York is key on the East Coast. As is the case in most major cities, there are numerous carrier hotels in the Los Angeles area. But one site generally is agreed to stand above the rest.

The One Wilshire building is home to more than 100 carriers and is the key gateway for Pacific Rim service providers. One Wilshire earns the distinction of being one of the best carrier hotels due to its meet me room and overall carrier tenant accessibility. The One Wilshire meet me room also is one of the longest operating sites in the entire industry.

The management of the building and interconnect facility have been taken over by CRG West, an operating arm of the Carlyle Group. Expect to be hearing more about the Carlyle Group, as the firms believes there is a short-term opportunity to buy healthy assets at distressed prices. William Kennard, chairman of the Federal Communications Commission under Bill Clinton, is a member of Carlyle's global telecommunications and media group.

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No
For carriers not in the meet area, the interconnect options include: in-building, intra-city local loops and in-building, intra-city dark fiber, shared conduit and inner duct. Customers can hire labor for conduit construction directly.	
The costs and availability are determined based upon the order. The operator facilitates interconnections and access but is not a carrier or agent. All loops, fiber and certain shared routes must be contracted directly by the customer.	

One Wilshire Carrier Hotel

Building size	656,300 square feet
Union building	No
Building generator	Multiple
Generator rooms for tenants	Available
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	Yes
Is this MMR the featured site?	Yes

Attributes of the Interconnect Facility

Facility size	17,000 square feet
Suite	4th floor
AC power feed	3 x 3,750 kva, 1 x 5,000 kva
Generator	4 x 2,000kw
Control system	Yes
UPS	Multiple systems
DC plant	Multiple systems
HVAC	Multiple redundant circuits
Fire suppression	Dry pipe pre-action sprinklers

One Wilshire Carriers Interconnected

Access International	Globe Telecom	Pacific Netwave
Advantel	GRIC Communications	Pacific Telecom
AEA Plus Telecom	GrooveTel	PAIX
Arbinet	HHSI, Inc.	PLDT
Aries Network	Hurricane Electric	Primus Telecom
Arirang Telecom	I2Line	Qwest Communications
Asean Telecom	iBasis	Sirius
Asia Access	iCall	Sprint
AT&T Broadband	ICG Communications	SwitchNet
AT&T Local Services	IDT	TCAST Communications
Atcall International	Infolink Communications	TCI Networks
Atlas Communications	Innocom Telecom	Teleglobe U.S.A.
Bancroft Telecom	Innosys Communications	Telehouse International
Broadwing Communications	Innovative Technologies	Telepacific Communications
Cable & Wireless	Intermedia	Telis Communications Group
Call Net	Interpacket Group, Inc.	Telseon
China Motion	Japan Telecom	Telstra
China Netcom	KDDI America	Terabeam
China Telecom	KeySpan Communications	Time Warner Telecom
Cignal Global Communications	Korea Telecom	Total Axcess
ClearData Communications	LD Exchange	Total Call International
CNM Networks	Leading Edge Broadband Services	TouchAmerica
Cogent	Level 3 Communications	Transaction Network Services
Colocation Gateways	Lighttrade	TransGlobal Telecom
Concert Global Networks	Linkline Communications	Tremcom International
Control Network Systems	Linkmax Communications	TS Group
CTC Communications	Looking Glass Networks	Tyco Telecom
CTI	MCI	U.S. Colo
DACOM	Media One	UFO
Dancris	Media.net	Ultimate Communications
DTI Services, Inc.	Meritech Integration	Unipoint
DWP (Fiber Services)	MFN	Universal Access
Dynalink	Miracle Communications	USC
Dynegy Connect	My Telecom	Verizon
Eagle Bell (Re-Boot)	Network IP	Vertex
Edison Carrier Solutions	New Century/Sparq	Vianet
Electric Lightwave	New Network	Viva Telecom
Elephant Talk	New Wave Communications	Williams Communications
Encore	NewEdge Networks	Winsonic Holdings
Excel Switch	Nextel	WinStar
Expresstel	Novacom	WorldCom (MAE-LA)
Fibernet Equal Access	NTT/Verio	Worldtel Interactive
Flag Telecom	OnFiber	XA Alliance
GE American Communications	Onsenet	XM Satellite Radio
General Telecom/Verestar	On-Site Information Services	XO Communications
Genuity	Pac-West Telecomm	YAP!
Global Crossing	PacAmTel	Zone Telecom
Global West Network	PacBell	

BY HUNTER NEWBY

56 Marietta Is a Peach

***Editors' note**: This is the third in a series looking at the dominant "meet me" facilities in 10 major North American cities. Author Hunter Newby is executive vice president of TELx. Reader suggestions for the final city to be covered in this series should be sent to Hunter at hnewby@telx.com.*

In the Southeast, 56 Marietta is the quintessential telecom facility. While other buildings in Atlanta have failed to reach a "critical mass" of telecom tenants or have failed altogether, 56 Marietta has achieved the critical mass that is a hallmark of all leading carrier-neutral collocation facilities.

Perhaps this site's emergence as a premiere carrier-neutral facility was due, in part, to an early decision to create a space ideally suited to carriers. The 56 Marietta facility, encompassing 160,000 square feet, is dedicated solely to telecommunications, and it has been since 1998.

Of course, it wasn't a huge leap in logic. Much as 60 Hudson was formerly a Western Union building, 56 Marietta likewise had seen prior use as a communications hub, so gutting the building and engineering the facility for

Attributes of 56 Marietta Carrier Hotel

Building size	162,000 sq. ft.
Union building	No
Building generator	Yes
Generator rooms for tenants	Yes
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	Yes
Is this MMR the featured site?	Yes

56 Marietta Carriers Interconnected

AGL Networks	Marietta FiberNet
Allegiance	MCI/WorldCom
Alltel Communications	McLeod Communications
AT&T/TCG	Metromedia Fiber
BellSouth	MFS
BroadView Networks	National Data Centers
Broadwing	NuVox Communications
Cable & Wireless	Odyssey/EPIK
Cogent Communications	OnFiber
Digital Service Consultants	PAIX
Dominion Telecom	Primus Telecom
Dynegy	Progress Telecom
GA Institute of Technology	Qwest
Georgia Public Web	Southern Telecom
Global Compass	Switch & Data
Global Crossing	Telecom Access
Global NAPS	Teleglobe
GTE/Genuity	Time Warner Telecom
ICC Internet	Universal Access
ICG Communications	U.S. Carrier Telecom
Integrated Communications	UUNet
ITC Deltacom	Verio
JT Communications	Vespice Limited
KMC	WilTel Communications
Level 3 Communications	Winstar IDT
LocalDial	XO Communications
Looking Glass	Xspedius/e.spire/ACSI

telecom tenants wasn't an odd notion.

That early lead paid off. Indeed, 56 Marietta was one of the first "carrier-exclusive" hotels in the southeastern United States. That "first mover" advantage allowed the site to gain critical mass in a relatively short time. Today the building has an occupancy rate in excess of 90 percent and houses more than 40 carriers and 80 other telecom-related companies.

56 Marietta Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	No
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	No
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	No
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	No
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No
All carriers have a presence within the meet-me-room	

Early on, the developers of 56 Marietta intended to create an area in the building where carriers could rapidly, directly and freely interconnect with one and other. Today the 23,000-square-foot area has evolved into a carrier-neutral collocation facility. There are no cross-connect charges.

Attributes of the 56 Marietta Interconnect Facility

Facility size	23,000 sq. ft.
Suite	2nd floor
AC power feed	3,000 amps, 208v, 2 phase
Generator	900kw
Control system	Liebert
UPS	Liebert
DC plant	10,000 amp Lucent
HVAC	Liebert DX
Fire suppression	Dry pipe, pre-action fire protection system

In other more recent developments, 56 Marietta has added the "Vault," a space designed for enterprise customers with requirements that are similar to those of carriers. The Vault is an enhanced neutral collocation and data center located adjacent to the meet me room.

As a result, large enterprise customers have the ability to interconnect with facilities and networks provided by carriers in the building. Remote hands, technical support and managed services are offered 24/7/365, as well. Again, there are no cross-connect charges.

A critical mass of carriers might seem to be the end, but it is really just the beginning. A whole new market is being created within the interconnection facility. Once a majority of the carriers in a given market have established a presence in the same interconnection facility, services from multiple carriers can be delivered without local loop charges.

The next logical step for the interconnection facility is to make large network operating enterprises in the immediate metro area aware of this telecom marketplace without loops and assist them in establishing a presence there with all of the carriers.

This is essentially extending their phone closet "demarc" to the interconnection point. This will provide tremendous value to the enterprise by eliminating multiple, low-speed, disparate loops and re-engineering them into a larger access network and then cross connects. Doing this will save them time and, most importantly, money. It helps the carriers because now they are able to deliver services more efficiently and cost effectively directly from their established point of connectivity.

Marietta Street Partners, LLC is both owner and manager of the property.

BY HUNTER NEWBY

Meet Me in Toronto

Editors note: *This is the fourth in a series looking at the dominant "meet me" facilities in 10 major North American cities. Author Hunter Newby is chief stragety officer for TELx. Reader suggestions for the final city to be covered in this series of ten cities should be sent to Hunter at hnewby@telx.com.*

Owned and managed by Trizec Properties, 151 Front Street in Toronto serves as Canada's premier carrier hotel. Home to more than 150 telecommunications companies, it's one of North America's most connected buildings with nine unique fiber-optic networks, 25 diverse entrances and more than 7,000 strands of fiber.

It isn't stretching matters to say 151 Front is at the heart of every major provider's network in Canada. In some ways, every facilities-based telecommunications carrier in Canada has a footprint at 151 Front.

The building maintains its own fiber "meet me" room as an entrance and interconnection point. This location is limited to fiber only and is approximately 450 square feet in size. An independent operator, Remote Access Company Limited (RACO Canada), manages the largest neutral point of interconnection there. RACO manages all access at the electrical level to carriers in the meet me room.

Operating since 1995, RACO Canada facilities incorporate more than 25,000 square feet of fully operational carrier neutral, collocation space covering seven different suites at 151 Front Street. About 5,000 square feet of private office space also is available.

RACO is one of the most experienced operating collocation service providers in the North American telecommunications industry. RACO also is Canada's largest carrier neutral collocation provider. Since 1991, RACO's collocation sites have provided a carrier neutral place to house telecommunications switching, transmission and Internet-access equipment, enabling the exchange of telecommunications traffic in a neutral setting.

RACO has succeeded due to its premier 151 Front Street location, carrier neutrality, on-site technical staff 24/7/365 support, quick circuit delivery times and cross border access between the United States and Canada.

The RACO contact is Peter Burns, sales and marketing manager, (716) 852-7950 ext. 233, peter.burns@racogroup.net, www.racogroup.net.

Attributes of the RACO Interconnect Facility

Facility Size	25,000 sq. ft.
Suite	3rd, 6th and 7th floors
AC Power feed	3,000 kva
Generator	2 x 1,500 kw
Control system	Yes
UPS	Multiple systems
DC plant	Multiple systems
HVAC	Multiple redundant circuits
Fire suppression	FM 200

Attributes of Carrier Hotel at 151 Front Street

Building size	297,000 sq. ft.
Union building	No
Building generator	Multiple
Generator rooms for tenants	Multiple
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	Yes
Is this MMR the featured site?	No

Carriers and Providers within RACO	Carriers and Providers within Building Meet Me Room
360networks	360networks
AT&T Canada	AT&T Canada
Bell Canada	BCE Bell
Bell Nexxia	Call-Net
Cogeco	Group Telecom
Cogent Communications	Rogers Communications
Equant	Telus
Global Crossing	Toronto Hydro
Group Telecom	Videotron
HydroOne Telecom	
Navigata	
Primus Communications	
Rogers Communications	
Savvis Communications	
Shaw/BigPipe	
Sprint Canada	
TeleGlobe	
Telus	
TorIX	
T-Systems (Deutsche Telekom)	
UUNet	
VideoTron	

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	No
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	In their space, yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	In their space, yes
Are there monthly recurring charges to cross connect in the meet area?	Yes
Do all of the building tenants have a presence in the interconnect facility?	No
What percentage is it?	80%
For carriers not in the meet area, the interconnect options include Trizec MMR or direct conduit build to RACO	
The costs and availability are determined based upon the order.	

BY HUNTER NEWBY

Meet Me in Seattle

Editors note: *This is the fifth installment in a series looking at the dominant "meet me" facilities in 10 major North American cities. Author Hunter Newby is chief strategy officer of TELX. Reader suggestions for the final city to be covered in this series should be sent to Hunter at hnewby@telx.com.*

By and large, the place many carriers find they "must be" when exchanging traffic in Seattle is The Westin Building, one of the largest "carrier hotels" in the United States. Most interconnect facilities in the area generally are home to no more than seven carriers. The Westin Building, on the other hand, offers access to virtually every carrier in the Pacific Northwest including access to the northbound and eastbound fiber routes.

The Seattle Internet Exchange (SIX) and the Pacific Northwest Gigapop (PNWGP) also are located inside The Westin Building. What makes the Westin Building unique in its market is the original "meet me room" model that has been adopted by the building management to facilitate the thousands of interconnects which take place within the facility.

The MMRs are state of the art areas centrally located within the building that facilitate easy access to new and existing high-rise and low-rise cable risers. The MMRs allow tenant-to-tenant cross connects to occur 24 hours a day at the tenant's convenience.

These amenities are a key offering that allows for competition of network bandwidth where customers can select from criteria unique to their applications and specifications.

Additionally, the Westin Building offers turnkey telecommunications facilities that allow direct fiber and copper access to the meet me rooms. The Westin Building offers extensive infrastructure including diverse fiber-optic building entrances, multiple fire suppression systems, building condenser water system, building maintained back-up emergency generators, diesel fuel storage, AC & DC power plants, 24 x 7 building attendants, card key access systems and closed circuit TV continuous video recording of all entries.

The management of the Westin Building is solid with more than 100 years of real estate history in Seattle. This, and the commitment to the telecom industry, is unique and fundamental to its success.

For more information, contact The Westin Building Telecommunications Facility at (206) 443-1800, TFacility@westinbldg.com; or contact Michael Boyle at MBoyle@westinbldg.com.

Attributes of Carrier Hotel

Building size	387,823 square feet on 34 floors
Union building	No
Building generator	Building maintained "Essential Power System;" back-up generators provide emergency electrical power for all services.
Generator rooms for tenants	Yes
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	Yes, 5 unique rooms
Is this MMR the featured site?	Yes

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	No
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	No
Is there a shared fiber panel (MDF, CFDP)?	No
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	No
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No
For carriers not in the meet area, the building allows direct point-to-point interconnects at current rates. Rates are based on cable type and number of floors.	
The costs and availability of cabling jobs are suite/floor specific, and bids are based on individual tenant requirements and existing conditions.	

Attributes of the Interconnect Facility

Facility size	The building maintains in excess of 3,000 sq. ft. of meet me room/interconnect facilities.
Suite	Meet me rooms are located on both 19th and 20th floors.
AC power feed	The Westin Building meet me rooms are passive interconnect rooms. Convenience outlets are located within the facilities for termination and testing equipment.
Generator	See building generator information above; 14 generators in all.
Control system	The building maintains an extensive control and surveillance system for all sensitive areas of the building, utilizing C-cure, Isys, Alerton, Datatrax.
UPS	Multiple facilities throughout the building offer UPS battery and generator back-up power.
DC plant	Multiple DC power plants are located throughout building telecommunications facilities.
HVAC	2,500-ton Condenser Water Loop
Fire suppression	Building maintained pre-action and FM 200 systems are available.

Carriers at The Westin Building

2alpha	GCI	SBC Internet Services
360networks	Global Crossing	Seimens Medical Solutions
AboveNet Communications, Inc.	Globix Corp.	Semaphore Corporation
Academia Sinica	Go.com	Sense Networking/The River Internet Access Co.
Acumen Associates	Grande Communications	Sentris Network, LLC
Advanced TelCom Group, Inc.	Group Telecom	Shaw Communications, Inc.
Altopia Corporation	Integrated Communications Consultants	SingAREN
Amazon.com, Inc.	Interland	Seattle Internet Exchange
Amerion	InterNap	Sprint Canada
Apollo Communications	ISOMEDIA, Inc.	StarNet, Inc.
Arch Wireless	Jazzie Systems	Swiftdesk
ARINC	King County Institutional Network (I-Net)	Switch and Data
AT&T	Level 3 Communications	Telus
AT&T Broadband/Comcast	Looking Glass Networks	Terabeam
AT&T Canada	McLeod USA	The River Internet Access Co.
Bell Nexxia	Metropolitan Fiber Networks	Time Warner Telecom
Beyond the Network	Microsoft Corp.	Touch America
Broadwing Communications	Nack.Net, Inc.	TSCNet Online Services
Cellular Express	Network OS	Universal Access
CenturyTel, Inc.	Nexion	VarTec Telecom, Inc.
Cidera	Northwest Link	Verizon Northwest, Inc.
CM2.COM, Inc.	Northwest Microwave	Verizon Wireless
Cogent Communications	Northwest Open Access Network	Vision Net, Inc.
COMindico Australia Pty Ltd	NTT/Verio	Washington Dept. of Information Services
Compass Communications Inc.	OneEighty Networks, Inc.	WebUseNet Corp.
Concord Technologies	OneStar	Who's Calling
Connect Northwest Internet Svs.	Pacific Northwest Gigapop	WilTel Communications
Corban Communications	Packet Clearing House	Winstar
Cortland Electronics Corp.	Peer1 Network	WoodyNet
Delta Communications	Pocketinet Communications, Inc.	WorldCom
Digital Marketing	Pointshare Corp.	XO Communications
EarthLink, Inc.	Primus Telecommunications Canada Inc.	Yipes Communications, Inc.
Electric Lightwave, Inc.	Qwest Communications	Zhonka
Epoch Internet	RealNetworks, Inc.	Zocalo
Fisher Communications	RGnet/PSGnet	
Fox Communications, Corp.	Savvis Communications	

BY HUNTER NEWBY

Meet Me in San Francisco

A continuing series examining the dominant "meet me" facilities in major North American cities

EXchange @ 200 Paul operates on a 15-acre campus, in a building it owns and custom built, and contains 425,000 square feet of carrier hotel and data center space. It is the leading carrier hotel and "meet me room" in the San Francisco Bay Area and is 82 percent occupied. Today, some 38 carriers use eXchange, and the company expects to have 50 carriers in the building by 2004, says John Wilson, eXchange CEO.

That's significant, since "people want to be where the other people are," says Mark Hansen, director of operations.

The company also has city permission to build another 330,000 square feet of space, for a total of 750,000 square feet, says Wilson. So customers are assured the facilities are "future proof" and "stable," says Bill Wilde, company CTO. The entire facility, in fact, was built from scratch, with customer input. "Shortages of power, riser access, conduit, inter-duct and space in meet me rooms all were cited by the engineers we talked to," says Wilde. "So we started there, and everywhere we could spend $1 upfront to save customers $10 later, we did."

The company also "is strongly cash flow positive and self funding," says Wilson. That's another "stability" factor carriers should think about.

EXchange @ 200 Paul minimizes local access charges and capital costs, creating an efficient environment for both carriers and enterprises. "All the long haul carriers in the building can be reached without paying a local access charge," says Wilde. "And in case somebody isn't in the building, there are multiple Type I on-network connections available to you."

"Every metro player except maybe Comcast is inside the building, or within two blocks," says Hansen. All of that helps out the enterprise customers collocating in the building. "Even smaller collocation customers get good bandwidth prices."

For more informatiod on eXchange @ 200 Paul, contact John Wilson, (415) 508-2853 or jwilson@e200paul.com.

eXchange Attributes

Building size	425,000 sq. ft. in the existing buildings. Entitlements in place for a 330,000-sq.-ft. expansion
Union building	Yes
Building generator	Yes
Generator rooms for tenants	Generator yard – entitlements and air quality district approvals for 38 generators on the site
Roof access	Yes. Roof space is available for mechanical equipment and satellite dishes and antennas.
Tenant conduit rights	Yes, negotiated on a tenant-by-tenant basis. There are pre-installed primary, secondary and tertiary data vaults and associated riser shafts in the facility.
Is there a building meet me room?	Yes
Is this MMR the featured site?	Yes. In addition to the 3rd floor 5,000-sq.-ft. carrier meet me room, the facility has a 9,245-sq.-ft. colocation facility located on the 5th floor that provides space for IP network POPs and larger Telco POPs.

Attributes of the Interconnect Facility

	3rd Floor Meet Me Room	5th Floor Colocation Facility
Facility Size	5,000 sq. ft.	9,300 sq. ft.
Suite	N/A	N/A
AC Power Feed	400 amps at 480 volt	2,000 amps at 480 volt
Generator	350 kw	1,000 kw and 2,000 kw
Control System	Siemens Apogee building management system	Siemens Apogee building management system
UPS	Liebert 100 KVA	Multiple Powerware 400 KVA units
DC Plant	Two DC plants installed with space for two future plants. Existing DC plants are 400 amp and 600 amp.	Two DC plants installed with space for two future plants. Existing DC plants are 400 amp and 1,600 amp. Future space can allow for up to 3,600 amps of additional DC power.
HVAC	Liebert CRAC units (N+1 design)	Phase 1 Trane / Phase 2 Compu-Aire CRAC units (N+1 design)
Fire Suppression	Three levels of protection provided: VESDA / FM-200 / Double Interlock Pre-Action	Three levels of protection provided: VESDA / FM-200 / Double Interlock Pre-Action

Suggestions and Feedback

As this series has developed over the past several months, I've learned many things about the different markets and have received various suggestions from readers as well.

One thing that I have learned (or I should say that has been validated) is in certain cities there are defined interconnection points that are generally known throughout the industry, while in others it is not so clear. In the cities that always had a large competitive telecom presence, the sites were for the most part defined and widely known.

There is a definite "network effect" in the interconnect business, leading carriers to collocate where their business partners already are. In the historical "major" markets, the "places to be" are widely understood. But there are many markets where this degree of carrier concentration is less developed, at least in part because there are multiple sites with the right physical attributes. In these cities, one still has to ask, "Where is the best place to be?"

In terms of reader suggestions, there have been a couple of notable requests, among them was a call to look at San Francisco as a featured market and not simply as part of the "Bay Area." I've also gotten requests for more information on multiple sites in the remaining markets to be covered: Dallas, Miami, Chicago and Philadelphia.

One thing is clear: there is a difference between "core interconnection facilities" used by carriers and "enterprise-geared collocation facilities." They generally look the same but really sit in different places in the network. The difference is really between the transport and application layers, although both play in each.

So we'll spend some additional time returning to markets we've previously covered, to look at additional sites readers asked about in those markets. If anyone has a request for the remaining markets, please email me at suggestions@telx.com.

Author Hunter Newby is chief strategy officer of TELx.

eXchange Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	No
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	Yes, if it is located in the customers cabinet or cage
Are there monthly recurring charges to cross connect in the meet area?	Yes
For carriers not in the meet area, the interconnect options include: a few connections allowed directly between major tenant/carriers in the facility. These are carriers that have leased large areas in the building and located major gateways in the facility. (Note: these tenants also provide a POP in an MMR.) There is an IDF in the 5th floor colocation facility where various IP network providers are allowed to cross connect.	
The costs and availability are negotiated on a case-by-case basis.	

Carriers at eXchange

AT&T	Optigate
BurnaDisc	PAIX – Palo Alto Internet Exchange
CENIC (Corp. for Educational Networks Initiative in California)	Qwest/Qwest Local
Cingular	Reliable Hosting
Coastside	RCN
Cogent	SBC/Pacific Bell
Digital Wire Works	SBC Long Distance
DSL Extreme	SMRN (San Mateo Regional Network)
Internap	Teleknex
IP Networks	Time Warner Telecom
Level 3	Tycom
Looking Glass	United Colocation Group
MFN	United Layer
Neapolitan	Universal Access
nLayer	Verizon
Novani	WilTel Communications
NTT/Verio	WorldCom/MFS Communications
OnFiber Communications (Yipes, Internap & Broadwing)	XO Communications

Meet Me in Chicago

A continuing series examining the dominant "meet me" facilities in major North American cities

With lots of good interconnect options, Chicago is my kind of town. Yet whenever the Chicago market comes up in interconnect conversations, or a network operator wants to know where to go to get connected, two names typically get dropped: the EP Connect Lakeside Technology Center and Printers' Square at 600 South Federal Street.

Even though there are a few other carrier-style properties in the city, the general perception is that these buildings are where most networks in the area are accessible. Since the purpose of this series is to validate general perception, let's dig deeper and see where the connections actually happen within the sites.

Printers' Square – RACO

Without exception, Printers' Square has one of the largest telecom tenant bases in Chicago's central business district (CBD) and offers superior connectivity to the tenants of other CBD telecom facilities. The property's nearly 30 telecommunications tenants include long haul and local fiber providers; competitive local exchange carriers; and long distance, data, voice, wireless, collocation and cable companies. The building is owned by Waterton Printers' Square LLC and managed by WPS Management LLC.

Printers' Square consists of five original buildings and six annexes situated on a 1.72-acre site that occupies one-half of two city blocks. All buildings are joined by one- to three-story annexes, creating a common hallway running through the first floor. This is a big building, so where does one go to get easy access to the carriers within it?

In 2002, RACO Chicago began operations within Printers' Square. RACO Chicago facilities incorporate more than 5,000 square feet of fully operational carrier neutral colocation and network interconnection space. RACO is one of the most experienced operators of this type of facility in North America. Its success in Chicago is due to the premier

Attributes of Carrier Hotels

	600 S. Federal	Lakeside Technology Center
Building size	161,000 sq. ft. and expandable	Approx. 1.2 million sq. ft. on nine floors
Union building	No	Yes
Building generator	No	Yes, for life safety systems. Tenants install their own generators for standby power.
Generator rooms for tenants	Multiple	Generators for most tenants are located in an outdoor yard adjacent to the building. A few tenants have interior generator rooms.
Roof access	Yes	Yes
Tenant conduit rights	Yes	Yes
Is there a meet me room?	No	Yes
Is this MMR the featured site?	No	Yes

Attributes of the Meet Me Room/Interconnect Facility

Attribute	RACO	EP Connect
Facility size	5,100 sq.ft	17,786 total sq. ft. equals 4,480 collocation, 5,386 passive space and 7,920 expansion area.
Suite	Suite 700	2nd floor MMR
AC power feed	600 amp & 480 volts	2,400 amps 480-3ph-60 Hz total/ 1,600 amps @ 480-3ph-60 Hz conditioned
Generator	30KVA expandable	1,000 KW 480-3ph-60 Hz
Control system	Yes	Access control including video monitoring and recording
UPS	Yes, 2,400 amp hours of GNB batteries	Redundant UPS system with available redundant PDU's
DC plant	Yes, Nortel Helios 2,000 amp plant	Yes, expandable to 2,000 amp
HVAC	Two 20-ton Liebert Systems	Four 30-ton Liebert units in the 4,480 sq. ft. collocation area; N+1
Fire suppression	Preaction	Dual action/preaction fire suppression system

Interconnection Guidelines

	RACO	EP Connect
Can customers order cross connects to any other meet area customer?	Yes	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes	Yes
Is on-site technical support available 24/7/365?	Yes	No
Can customers access the site 24/7/365?	Yes	Yes
Can the technicians test and turn up circuits?	Yes	Yes
Does the meet area operator perform the cross connect?	Yes	Yes
Can the customer perform the cross connect?	No	No
Are all cross connects tagged and inventoried?	Yes	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes	Yes
Can the customer bring and install its own fiber distribution panels?	Yes	Yes
Is there a shared COAX or copper panel?	Yes	Yes
Can the customer bring and install its own COAX or copper panel?	Yes	Yes
Are there monthly recurring charges to cross connect in the meet area?	Yes	Yes
Interconnect options for carriers not in the meet area		
RACO: All tenants are within reach to RACO's entire building conduit system and meet me boxes on every floor and basement meet me points.		
EP Connect: All connections between building tenants occur in the 2nd Floor MMR. Interconnections can also occur in tenant's space if the tenant has brought other carriers to its premise from the outside manholes.		
Costs and availability		
RACO: The costs and availability are determined based upon the order.		
EP Connect: Availability is determined by tenants. Tenants negotiate circuits with each other and then order the cross connect. All cross connects have a fixed install cost along with a monthly re-occurring fee for each fiber pair cross connect.		

600 S. Federal Street location, carrier neutrality, on-site technical staff 24/7/365 and quick circuit delivery times.

The Lakeside Technology Center – EP Connect

The Lakeside Technology Center is the largest dedicated telco hotel in the Chicago market. EP Connect is the owner of the building and also the operator of the meet me room (MMR). In addition to being a central point of interconnection for the network operators in the building, EP Connect sees the MMR as having an important role in preserving the structural integrity of the building by preventing direct conduit builds between tenants, thereby preventing massive amounts of random core locations and unstructured conduit routed through the halls and floors. By being a defined central point, the MMR saves the tenants the capital expense of having to build multiple conduits.

The meet me room has no competitors in the building. Colocation is available in the MMR but not marketed as a product. Colocation prices are set to recoup construction and operating costs of the MMR. The main purpose of the colocation is to provide an equipment space to facilitate transporting the cross connected signal back to the tenants lease space. It is a very large building and some signals cannot survive the distance without amplification or transformation.

A secondary purpose of the available colocation is to provide a place to jumpstart new tenants of the building. It can take many months for a new tenant to build out a lease space. The tenant can utilize the MMR colocation for a temporary equipment location to immediately establish its services in the building, thus removing the need to spend additional capital on expediting construction.

The contact at EP Connect is Richard Lloyd, project manager, (713) 962-7015 or richard.lloyd@elpaso.com.

For RACO information contact Peter Burns, sales and marketing manager, (716) 852-7950 ext. 233 or peter.burns@racogroup.net.

Hunter Newby is chief strategy officer of TELx. Reader suggestions for cities to be covered in this series should be sent to Hunter at hnewby@telx.com

Carrier Lists

RACO	EP Connect
Ameritech (SBC)	AT&T
AT&T Local	360networks
WorldCom	AboveNet (MFN)
Dominion Telecom	Ameritech (SBC)
Sprint Canada /CNCS	Dominion Telecom
Group Telecom	Fidelity
Shaw Big Pipe	Level 3 Communications
WilTel (Williams)	Looking Glass Networks
	OnFiber Communications
	Qwest Communications
	T Systems
	Vartec Telecom
	Verio
	WitTel (Williams)
	WorldCom
	XO Communications

BY HUNTER NEWBY

Meet Me in Dallas

A continuing series examining interconnect options in major North American cities

It has been said that everything is big in Texas. Well, the carrier-interconnect market there is no exception. Dallas is one of the best interconnect markets in North America with many East/West routes as well as Mexican in- and outbound voice and data traffic. For years, the two sites that have always come up in interconnect conversations have been 2323 Bryan Street, also known as Univision Tower, and InfoMart.

Looking beyond the buildings themselves, there are two well-known interconnect points within them. LayerOne at 2323 Bryan St. and Collocation Solutions at InfoMart. Whether you are an enterprise or carrier network operator, if you are currently looking for interconnection options in Dallas, these are the sites you should consider.

Collocation Solutions

Collocation Solutions allows its customers to self-manage their own data center within the space, allowing them to layer their own policies and procedures over the infrastructure provided. For enterprise customers with their own IT staff, this is extremely appealing. Their sites can be primary sites, mirrored hot sites or even have some equipment in a stand-by mode in a typical disaster-recovery model. Because of Collocation Solutions' data center construction expertise, they can accommodate larger square footage with build-to-suit solutions.

Collocation Solutions' Dallas site has succeeded by creating a history of satisfied customers. As the first customers moved into the site in the summer of 2001, when it opened, they were made to feel important and as if the business they ran from the site was important. Consequently, they treat the facility as "their" data center and are happy to provide glowing references to prospective new customers.

Carrier Lists

Collocation Solutions	
Allegiance Telecom	OnFiber Communications
AT&T	Qwest
Broadwing	SBC
Cogent	Time Warner Telecom
Electric Lightwave	Verio
El Paso Global Networks	MCI
Looking Glass Networks	XO Communications
MFN	Yipes
LayerOne	
4GL Communications	McLeodUSA
Acceris Communications	MFN
Aspen Communications	OnFiber Communications
AT&T	Operator Service Company
AT&T Local	People's Telephone Cooperative
Bestel	ProHosting/NetFire.com
Broadwing	PT-1 Communications
Cable & Wireless	Qwest
Conference Call.com	Talk America
El Paso Global Networks	Texas.Net
Global Crossing	Time Warner Telecom
Grande Communications	Transaction Network Services
ICG Communications	TXU Communications
IDT (Winstar)	Vartec (Excel Communications)
Intermedia	Verizon
ITC^Deltacom	Voicecom
Layer One	Vycera Communications
Level 3 Communications	WorldCom
Looking Glass Networks	Xpedius Communications
MCI	XO Communications

Interconnection Guidelines

	Collocation Solutions	LayerOne
Can customers order cross connects to any other meet area customer?	Yes	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes	Yes
Is on-site technical support available 24/7/365?	Yes	Yes
Can customers access the site 24/7/365?	Yes	Yes
Can the technicians test and turn up circuits?	Yes	Yes
Does the meet area operator perform the cross connect?	Yes	Yes
Can the customer perform the cross connect?	Yes	No
Are all cross connects tagged and inventoried?	Yes	Yes
Is there a shared fiber panel (MDF, CFDP)?	No	Yes
Can the customer bring and install its own fiber distribution panels?	Yes	No
Is there a shared COAX or copper panel?	No	Yes
Can the customer bring and install its own COAX or copper panel?	Yes	No
Are there monthly recurring charges to cross connect in the meet area?	No	Yes
For carriers not in the meet area, the interconnect options include:		
Collocation Solutions	Direct connections to either customers or other carriers	
LayerOne	LayerOne will build to carriers and tenants on other floors to complete circuits.	
The costs and availability are determined by:		
Collocation Solutions	Individual carriers	
LayerOne	Capacity is pulled and inventoried. Availability is determined by open circuit pairs.	

For more information, contact Jeff Crawford of Collocation Solutions at (214) 231-0162 ext. 20 or jcrawford@datasuites.com.

LayerOne

LayerOne boasts the most telecom rich interconnect/data center in the Dallas-Ft. Worth area. It does not cater to one type of customer and is successful in the carrier-to-carrier wholesale interconnect business as well as data and telecom collocation. Carriers benefit from the interconnect services by improving provisioning time frames while decreasing costs to stitch networks together. Smaller providers and enterprise business customers take advantage of the dense provider list, buying the services they need to create their product offerings. They can order local and long distance voice, IP services, private line, ATM, etc. from several on-net carriers. This creates a competitive environment, which allow customers to buy services for less.

LayerOne has succeeded in Dallas by offering the highest number of on-net carriers at one location. This, coupled with their highly redundant facility, makes for a very attractive offering. Their expertise in network transport and carrier relationships helps both the customer and carrier realize very fast turn-up cycles.

For more information, contact LayerOne at (214) 752-6204 or info@layerone.com.

Hunter Newby is chief strategy officer of TELx. Reader suggestions for cities to be covered in this series should be sent to Hunter at hnewby@telx.com.

Attributes of Carrier Hotel

	InfoMart	2323 Bryan St.
Building size	1.6 million sq. ft.	477,107 sq. ft.
Union building	No	No
Building generator	Yes	Yes
Generator rooms for tenants	Yes	Yes, pad sites
Roof access	Yes	Yes
Tenant conduit rights	Yes	Yes
Is there a meet me room?	Yes	Yes
Is this MMR the featured site?	Yes	No

Attributes of the Data Center/Interconnect Facility

	Collocation Solutions	LayerOne
Facility size	16,200 sq. ft. of technical space	17,000 sq. ft.
Suite	2033	1400
AC power feed	Yes, dual utility	Dual 4,160 volt
Generator	2MW diesel	Yes, N + 1
Control system	Yes	Yes
UPS	Yes, multiple	Yes
DC plant	Yes	Yes
HVAC	Yes, 180 tons	Yes, N + 2
Fire suppression	Pre-action dry pipe	Pre-action sprinkler

BY HUNTER NEWBY

Meet Me in Philly

A continuing series examining interconnect options in major North American cities

For carriers interconnecting in Philadelphia, the story is "let freedom ring." This market is an unassumingly large one with natural advantages for carriers wanting to collocate here. The market sits squarely atop a major North-South fiber route. Philadelphia also is a signal regeneration point for many networks and also is a strong enterprise and retail sales market, so there's opportunity to pick up some traffic there.

In this market two sites are frequently thought about when network operators are looking for interconnections. They are Meridian Telesis at 3701 Market St. and 401 North Broad St. But the two sites provide quite a contrast. Meridian Telesis is a data center operator and 401 North Broad St. is the largest carrier hotel in the city.

Perhaps oddly, 401 North Broad St. has no "meet me room," so all carrier-to-carrier, in-building connections must be completed using conduit. Obviously, the business case for a return on a collocation investment therefore becomes much more difficult for any single carrier to make, compared to a site with meet-me facilities. However, there is a neutral collocation facility within the building that serves the function on a de facto basis. Over the years, the Switch and Data facilities inside the building have become the largest central point of interconnection in the building.

Comparing Meridian Telesis and Switch and Data should help network operators get a better understanding of the access offerings available in Philadelphia. At a high level, Switch and Data is more of a carrier-to-carrier interconnection point where large network providers exchange backbone fiber connections,

Attributes of Carrier Hotel

	Meridian Telesis	**401 N. Broad St.**
Building size	8 stories – approximately 150,000 sq. ft. total	1.29 million sq. ft.
Union building	No	Yes
Building generator	The building has a life safety generator. Meridian Telesis has its own emergency generator onsite, which is dedicated to the power requirements of our clients.	Yes
Generator rooms for tenants	Yes, however, available space is occupied. Meridian Telesis' generator is housed in a boxcar outside the building on the ground floor.	Yes
Roof access	Yes	Yes
Tenant conduit rights	Yes	Yes
Is there a meet me room?	No	No
Is this MMR the featured site?	No	N/A

Carrier Lists

Switch & Data	PointOne
AboveNet	PPL Telecom
AT&T Local	Qwest
Calpoint	Sunesys, Inc.
Cavalier Telephone	Transaction Network Services
City Signal Communications	T-Systems North America
Cogent Communications	Verio
GPU Telecom	Verizon
Integrity Data	V-Link
KMC Telecom	XO Communications
Level (3) Communications	Yipes
MAGPI GigaPOP	
MCI	**Meridian Telesis**
NEON	AboveNet
Net Carrier	Adelphia
Netifice	Cogent Communications
Nova CTI	Internap
NuNet	PPL Telcom
OnFiber Communications	Verizon
PECO Hyperion	Yipes

Interconnection Guidelines

	Meridian Telesis	Switch and Data
Can customers order cross connects to any other meet area customer?	Yes	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes	Yes
Is on-site technical support available 24/7/365?	Yes	Yes
Can customers access the site 24/7/365?	Yes	Yes
Can the technicians test and turn up circuits?	Yes	N/A
Does the meet area operator perform the cross connect?	Yes	Yes
Can the customer perform the cross connect?	No	No
Are all cross connects tagged and inventoried?	Yes	Yes
Is there a shared fiber panel (MDF, CFDP)?	No	Yes
Can the customer bring and install its own fiber distribution panels?	Yes	Yes
Is there a shared COAX or copper panel?	No	Yes
Can the customer bring and install its own COAX or copper panel?	Yes	Yes
Are there monthly recurring charges to cross connect in the meet area?	Yes	Yes

For carriers not in the meet area, the interconnect options include:

Meridian Telesis	Carriers not in the MMR may obtain dark fiber, which is available onsite, through MFN, or they may utilize copper, which is available onsite or as a type II circuit from Verizon or Adelphia. They may, of course, deliver service directly to the MMR or the building d-marc room, if they so choose.
Switch & Data	The customer and carrier can each order a cross connect to the MMR.

The costs and availability are determined by:

Meridian Telesis	Generally, any install costs within the facility are based on T&M plus 20%. If the service is to be taken through the landlord's space, then it must be negotiated with the LL.
Switch and Data	Standardized cross-connect fees apply.

as well as accomplish IP peering.

Meridian Telesis, on the other hand, has a stronger focus on the enterprise market and is more of a traditional data center than a core interconnection point, although it does have further physical site diversity for added disaster recovery benefits for core networks.

Switch and Data's location within 401 North Broad St. puts it right in the most fiber-dense property in the city, which is beneficial for carriers. Meridian's location is the only data center located in a Keystone Opportunity Zone (KOZ). Qualified businesses within a KOZ are eligible for various forms of tax relief including – among other things – sales tax obligations, which can be very beneficial for enterprise customers.

For more information on Meridian Telesis, contact David M. Taffet, president, at 215.689.4000 ext. 4025.

For more information on Switch and Data, contact Jim Weller, vice president of business development, at (410) 827-9383, jweller@switchanddata.com.

Hunter Newby is chief strategy officer of TELx. Reader suggestions for cities to be covered in this series should be sent to Hunter at hnewby@telx.com.

Attributes of the Meet Me Room / Interconnect Facility

	Meridian Telesis	Switch and Data
Facility size	The rentable collocation areas total 9,000 sq. ft. (phase I is 6,000 sq. ft. and phase II is 3,000 sq. ft.)	21,313 sq. ft.
Suite	The facility encompasses the entire 5th floor (20,540 RSF)	9th Floor 401 N. Broad St., Philadelphia, PA 19130
AC power feed	Dual incoming feeds from separate substations, which sit on diverse grids	1,200 amp
Generator	(1) 1MW Detroit Diesel generator w/ an 1,800-gallon tank	Dedicated 750 kW standby generator
Control system	Fully monitored 24x7	24x7 monitoring
UPS	Liebert UPS modules (225 KvA each) in a parallel redundant arrangement	N+1
DC plant	(1) 600 amp Helios DC system, (1) 1,000 amp Helios DC system	N+1
HVAC	Liebert glycol loop CRAC units (30 tons each) in an N+1 arrangement	A/C units maintain a climate of 72 degrees (+/- 5) and 30 to 60% humidity, N+1 redundancy
Fire suppression	Dual-action, pre-action system (multi-zoned), VESDA smoke detection	Pre-action, dry-pipe sprinkler system

BY HUNTER NEWBY

Meet Me in Miami

A continuing series examining the dominant "meet me" facilities in major North American cities

Miami is a hot place to be and not just because of its average daily temperatures, spicy foods or rich cultural mixes. It's also a hot spot for core network access. The market is one of the best examples of what facilities a gateway city normally possesses, and that helps to clarify the difference between a core interconnection facility and a data center or hosting facility. The state of Florida, having such an extensive coastline, with proximity to Caribbean islands and all of Central and Latin America, has natural advantages as a landing spot for many undersea cables. These cables come ashore all over the coast, but most of them backhaul to Miami. Miami is not just a city in Florida but also the key gateway to the Caribbean and Latin America.

Interestingly, Miami got a late start to the massive telecom infrastructure build-out game, since many of the undersea cables were not constructed when the insanity began. This pause created an opportunity for a world-class facility to be constructed from the ground up, literally sparing no expense. But, as you will see, the best money can buy in terms of a physical site does not always equate to the point of greatest multi-network access. Being "first to market," whether accidentally or not, sometimes means everything. "Better," as Dagda Mor says, "to be lucky rather than smart." As is the case in any site selection, new entrants must go to where the fiber already is.

For all that Miami has to offer, there are two locations with mature interconnection facilities that usually come up in discussions. They are the LayerOne facility at 36 Northeast 2nd St. and the NAP of the Americas at the Technology Center of the Americas (TECOTA). Aside from these two well-known interconnection facility operators, there are a few other carrier hotel buildings, such as 100 North Biscayne, and other sites in Miami with a dense multi-network presence.

The "right" choice isn't about which is the better building or site, in a mechanical sense. It really depends on what an incoming network operator needs. If you need a data center, you go to one. If you need a cabinet and two connections, you can go almost anywhere, but the key difference between a building with a meet point of some kind and one without is the ease of interconnection and the maximization of a single interconnect point. As always, this reduces the need for multiple home run cables and demarcation points, which create inventory and points of failure issues.

There is a great deal that can be said about both LayerOne and the NAP. The history of the NAP and the type of facility in terms of construction could take up pages, but what is particularly interesting about the NAP is that it is a core interconnection facility for major transport networks and a major Internet network access point. This is the only site in the entire "Meet Me" series that is both in one. That says a lot about it, as well as the clear difference between all of the other major core sites in North America and the Internet MAEs (metropolitan area exchanges), NAPs and sites such as Equinix and PAIX. The core interconnection points of the major transport and legacy time division multiplex voice networks are not the same as the core Internet points. The fact that the NAP is both ties back into the fact that Miami got a late start, and they were able to plan the convergence.

LayerOne provides a highly dense point of interconnection for the market. It does not manage as much physical space as the NAP, but if you do not require a large footprint, this is a good location to explore. In either case, these are a couple of the best sites around in the Miami market.

For more information on NAP of the Americas, Inc. (a Terremark Worldwide company), contact Joshua Snow Horn, director, at (305) 808-5214 or jhorn@terremark.com.

For more information on LayerOne, call (214) 752-6204 or check out www.layerone.com.

Hunter Newby is chief strategy officer of TELx. Reader suggestions for cities to be covered in this series should be sent to Hunter at hnewby@telx.com.

Attributes of the Meet Me Room / Interconnect Facility

	LayerOne	NAP of the Americas
Facility size	Aggregate 18,100 sq. ft.	150,000 sq. ft.
Suite	1st Floor suite 100, 5th floor suite 550	Entire 2nd floor
AC power feed	800 amp 480V service	24,000 amps at 480V (power is 2N+1+1 – the NAP is fed from redundant substations with six 13.2 feeds)
Generator	500 KVA, 750 KVA	6 – 2.2 Megawatt Hitech CPS flywheel generators
Control system	Prowatch	HiTech
UPS	375 KVA and 100 KVA	None – The NAP uses a CPS system
DC plant	Helios Growth to 10,000A – eight hour battery back	Marconi Rectifiers
HVAC	N+1 Airflow and Liebert units	3N+1 chilled water system using 46 – 30-ton air handlers
Fire suppression	Kiddie FM 200 system, Viking dry-pipe system	Pre-action dry-pipe fire suppression

Carrier Lists

LayerOne	
Abovenet	ICG Telecom Group, Inc.
AccelerateBiz Inc.	IDS Telecom, LLC
ACSI	Impsat USA
Aleron Broadband Services	INN Wireless
AmNet US	ITC^Deltacom
BellSouth	Latamnap, Inc.
Braslink Network Inc.	Latinode
Broadwing Communications	Level 3 Communications
BTI	MCI Worldcom
Cable & Wireless	Merchant Central
Cable Onda	Metropolitan Fiber Systems of Florida
Call Center Telemarketing Pro-Panama, SA	Neopolitan Networks
Cogent Communications	Next Holdings Group
Data Management Group	NiuTech
Data Wave	OnFiber Communications
Davies, Inc.	Progress Telecom
Digital Isles, Inc.	Qwest Communications
Dynegy/360 Networks	ServerOutsource.NET
Electronic Network Holdings	StarnetUSA
EPIK Communications	Telecarrier Inc.
e-Xpedient	Telefonica Data USA
First Cash Reserve, LLC	Tyco Telecommunications (US)
FPL FiberNet	Verizon Global Solutions
Genuity Solutions	Webhosting.net
Giant Nerds	Williams Communications
Giant Technologies	XO Communications
Global Crossing	Xpedius Communications
Grande Communications	Yipes Enterprise Services
Happy Empire, Inc.	

NAP of the Americas	
AT&T	E-xpedius
WorldCom/MCI	Onfiber
Level3	BellSouth
Sprint	Global Crossing
XO	Progress Telecom
360 Networks	FPL FiberNET
ACSI (DARK)	Adelphia Communications
MFN (DARK)	Telcove
EPIK Communications	

Attributes of Carrier Hotel

	36 NE 2nd	TECOTA
Building size	7 Stories, 162,150 RSF	750,000 sq. ft.
Union building	No	No
Building generator	Yes	Base building generator is 2.2 Megawatts
Generator rooms for tenants	Yes	Building has facilities to accommodate 30 – 2.2 Megawatt Gensets
Roof access	Yes, 65-foot and 100-foot towers	120,000 sq. ft. of roof space available to tenants on a pro-rata basis
Tenant conduit rights	Yes	384 – 4-inch conduits (48 –4-inch conduits in eight separate diverse shafts from the curb and gutter to the NAP or Tenant floor)
Is there a meet me room?	Yes	Yes, the NAP of the Americas on the 2nd floor is the meet-point-room for the building
Is this MMR the featured site?	Yes	The NAP is the dedicated meet-point room and the marquee site/tenant within the building

Interconnection Guidelines

	LayerOne	NAP of the Americas
Can customers order cross connects to any other meet area customer?	Yes	Yes
Is the average turnaround time for cross connects 48 hours or less?	72 hours	Yes
Is on-site technical support available 24/7/365?	Yes	Yes
Can customers access the site 24/7/365?	Yes	Yes
Can the technicians test and turn up circuits?	Yes	Yes
Does the meet area operator perform the cross connect?	Yes	Yes
Can the customer perform the cross connect?	No	No
Are all cross connects tagged and inventoried?	Yes	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes	Yes
Can the customer bring and install its own fiber distribution panels?	Yes, per LayerOne standards	No
Is there a shared COAX or copper panel?	Yes	Yes
Can the customer bring and install its own COAX or copper panel?	Yes, per LayerOne standards	No
Are there monthly recurring charges to cross connect in the meet area?	Yes	Yes

For carriers not in the meet area, the interconnect options include:

LayerOne	All connections in LayerOne facilities are provisioned at the LayerOne MDF. LayerOne has built a diverse vertical riser system that allows it to access service providers on other floors. LayerOne uses this riser to place its owned equipment in provider POPs.
NAP of the Americas	All interconnections transit the meet me rooms or the peering core. This includes carriers with backbone and users of those services. Each customer must use intra-facility cables to connect their space to the MMR and then must purchase the appropriate cross connect to their business partner. Only one side pays for the cross connect.

The costs and availability are determined by:

LayerOne	MRCs are and NRCs have been standardized. When a certain threshold is reached, capacity will be augmented.
NAP of the Americas	MRCs and NRCs based on the medium and speed of the cross connect requested

BY HUNTER NEWBY

Meet Me in Boston

An ongoing series examining the dominant "meet me" facilities in major North American cities

In concluding our 2003 tour of the major core interconnection facilities in North America, this writer would like to thank The Dagda for the opportunity, as well as for a beneficial and enlightening year.

Throughout the past year, the major communications markets of North America were researched, reviewed and the core interconnection points of the major networks were featured. Along the way, a clearer picture was drawn about the network interconnection business and, more specifically, the difference between a core interconnection point and a collocation or data center-type facility.

In the core sites, multiple interconnections happen at every speed, medium and protocol (including DWDM), and the physical space requirements are usually for transport and core switching and routing. In the data center-type sites, there are usually less interconnects needed, and they are mainly Ethernet or TDM, while the space is mostly servers. Almost every network has core routing and server requirements. Finding the best place for each layer was the purpose of the series.

Last year, readers were encouraged to suggest additional markets to be featured in this series. That is how San Francisco was included, and due to the response and requests for other markets, the series was extended again, and this month will feature Boston. If there are other sites or markets you would like to see featured in an upcoming issue of FAT PIPE, please email me directly at hunternewby@telx.com. To see any of the previous cities covered (New York, L.A., Seattle, Atlanta, Toronto, Chicago, Dallas, San Francisco, Philadelphia or Miami) please visit the magazine archives at www.fatpipeonline.com.

Attributes of Carrier Hotel

	1 Summer St.	230 Congress St.
Building size	800,000 sq. ft.	162,584 sq. ft.
Union building	Yes (Boston requirement)	Yes
Building generator	Yes	Yes
Generator rooms for tenants	Yes, unused generators also are available with lease.	Yes
Roof access	Yes, steel platforms in place on 120,000 sq. ft. of roof	Yes
Tenant conduit rights	Yes, multiple empty conduits are available with lease.	Yes
Is there a meet me room?	Landlord does not sponsor a building meet me room. Instead, tenants are allowed to work together directly without charges or interference.	N/A
Is this MMR the featured site?	No	No

For Carriers Not in the Meet Area, Interconnect Options Include:

1 Summer St.	Tenants of the building can request conduit runs throughout the building.
230 Congress St.	Riser master plan permits efficient access to tenant ancillary equipment and carriers located throughout the building.

The Costs and Availability Are Determined By:

1 Summer St.	There are labor and materials charges for the construction, but the landlord does not impose any additional fees.
230 Congress St.	Labor and materials. Contact landlord for additional pricing information.

Boston T-1 Party

After researching the Boston market, the three sites that were mentioned most were 1 Summer St., 230 Congress St. and 74 West St. in Waltham, Mass. The first two would fall into the carrier hotel category, whereas 74 West St., a Switch and Data Facilities site, is more of a data center. Depending on one's needs, these site should be able to accommodate most folks in the Boston Area.

Carrier Lists

1 Summer St.	230 Congress St.
Broadwing	360 Networks
Level 3	AT&T
MCI	Broadwing
Verizon	Global Crossing
XO	InterNAP
ICG	Level 3
MFN	MCI
NEON Communications	MFN
Nstar	NEON
Qwest	Network Plus
WilTel	Paetec
	Qwest
	RCN-BecoCom
	Verizon
	Winstar Wireless
	XO

Within the carrier hotels, it was made clear that there was no building meet me point at 1 Summer St., and I was unable to get enough detail about 230 Congress St. to make that determination. As a result, I will compare the two without the interconnection-facility-specific questions. Keep in mind that without a concentrated point of interconnection, cross connects within the building can be problematic. Especially for the single, low-speed circuits that may not be generating enough revenue for the carrier in need of the connection to cost justify the necessary labor and materials and/or conduit. For a low-speed circuit or multiple carrier interconnections, it might be a better option to collocate with one of the existing tenants in the building. Prior to that, however, be sure and investigate the carrier access within their site and their level of neutrality in connecting to those networks.

One Summer St. is easily one of the best carrier hotels in New England due to its list of carrier tenants and carefully designed infrastructure, which caters to telecommunications companies. The building has a long list of the top telecom tenants in the industry, and the owner understands that the building is only successful because of those tenants. There are no charges to the tenants for the right to run conduit, interconnect to other tenants or customers, get power or conduct their business. The current owner knows the success of its customers is crucial to his own success and, accordingly, will create an environment that reflects that philosophy.

230 Congress St. is the old Western Union building and Boston's oldest carrier hotel. It is substantially full with almost every telecom player in Boston having a presence in the building. Connectivity between all floors and all tenants in the building is easily achieved by existing infrastructure.

The Waltham Switch and Data site, north of Boston, offers a convenient, secure and connected location for firms that wish to house mission-critical gear in this technology corridor. Ease of access, 24 x 7 coverage, flexibility in space offerings and a managed meet me room powered by a mix of providers are some of the key components to the value provided at this location.

This site has been successful by offering a high-grade data center facility in conjunction with neutral, meet me room options. The entire building is owned by Switch and Data, and within the meet me point you can access C2C Fiber, Cogent, NAII, NSTAR, Qwest, RCN, Verio and Verizon. Even though the site is not downtown and more of a data center environment, the managed interconnection point may provide the level of access your network needs.

For more information on 1 Summer St., contact Jeff Markley at (213) 361-3200 or jmarkley@markleygroup.com.

For further information on 230 Congress St., contact Steve Novick of Yale Properties USA at (617) 737-3777 or novick@yaleusa.com.

For information on 74 West St., contact Jim Weller, Switch and Data vice president of business development, at (410) 827-9383, jweller@switchanddata.com.

Hunter Newby is chief strategy officer of tel^{X} . Reader suggestions for cities to be covered in this series should be sent directly to Hunter at hunternewby@telx.com.

BY HUNTER NEWBY

Remember the Alamo! But Meet Me at 100 Taylor

An ongoing series examining carrier interconnection options in major North American cities

When in San Antonio, you must remember two things: The Alamo and the 100 Taylor Telecom Center. One was lit with gunfire; the other is lit with optical fiber.

San Antonio was a secondary market, so the flood of telecom build out was not as feverish as the primary markets. As a result, the carriers were not as motivated to build out huge stand-alone facilities in San Antonio and instead decided to locate their main POPs in the 100 Taylor Telecom Center.

The three-story building originally was built as a Studebaker dealership around 1912. Cars were parked on every floor, so the entire building is poured-in-place concrete. Serendipitously, that means the building now has ample floor loads for telecom equipment. Likewise, the elevator shaft was designed to carry four cars, meaning it now has a great riser for interconnections. Still, there are really two other motivating reasons for carriers to locate their network in the building.

For one, the building is only one block away from the SBC central office. SBC has both a copper DMARC in the basement and a fiber DMARC on the third floor, which travels directly to the central office via an aerial fiber home run. Additionally, every carrier that has hard network in the ground runs through the vault in the street directly in front of 100 Taylor. For this reason of proximity, other carriers began to locate there.

Secondly, when the music stopped for the telecom industry in late 2000, it was the only colocation game in town. Multiple carriers, with lit fiber and switching equipment, were located in the same building. That, coupled with the fact that the building was one of the only facilities to have all of the physical characteristics of a carrier hotel, plus proximity to the incumbent's main central office for the 210 area code one block away, made it the place to be.

Success was, in part, ensured by the lack of competition in the marketplace. Also, the building's owners are focused more on real estate than technology, so there is a very complementary relationship with the tenants. The owners are only looking for a fair rental rate for the building and have no intentions of offering any type of telecom services that might compete with their tenants.

Tenants are able to interconnect with one another very easily,

with only a small interconnect fee. As might be expected at a facility whose virtues include lower rent, no enhanced services are offered. Going forward, the owners' main focus is to make the facility as user friendly to the tenants as possible. Their philosophy is the same as many of the other successful traditional real estate owner-operators, and that is the more successful their tenants are the more successful the facility will be.

One example of the owners' efforts to facilitate this atmosphere is their investment in conduit tracking software. More than 180 conduit runs have been documented and recorded on a CAD program, which combined with the software, allows the property manager to track conduit from suite to suite. So it's possible to identify the owner, contents and exact location of all conduits, all from the desktop computer in the manager's office. The tenant simply submits a request for pathway rights to the property manager listing the two desired termination points, and the property manager can then find any under-utilized conduit, or possibly empty conduit, from past tenants, saving everyone a lot of time and effort.

One of the most unique aspects of the subject property is a 225-foot cell tower that sits 30 feet away from 100 Taylor Telecom Center. The tower was originally erected in the early 1980s and was used by an existing tenant for its point-to-point microwave network. But the 100 Taylor Telecom Center now owns the tower, and it should be noted that the tower has conduit running directly into the building.

In downtown San Antonio, just two blocks away from the Alamo, it is very difficult to get permits for any new tower structures. Yet every wireless network must interconnect with the wired network somewhere, so what better place than the most "lit" building in central and south Texas. It's one more reason the 100 Taylor Telecom Center is definitely a site to check out if you need to be in the area.

For more information on the 100 Taylor Telecom Center, contact Brad Hardy, senior associate Cross & Company Commercial Realty Advisors, (210) 824-9080 x 287 or bhardy@cross-co.com.

If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter Newby at hnewby@telx.com Thank you!

Attributes of Carrier Hotel

Building size	80,746 sq. ft.
Union building	N/A
Building generator	None
Generator rooms for tenants	Available
Roof access	Yes
Tenant conduit rights	With proper agreement
Is there a building meet me room?	No
Is this MMR the featured site?	No

Interconnection Guidelines

Can customers order home runs to any other building tenant?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Tenant performs work
Is on-site technical support available 24/7/365?	No
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	N/A
Does the meet area operator perform the cross connect?	No
Can the customer perform the cross connect?	Yes
Are all home runs tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	SBC facility only
Can the customer bring and install its own fiber distribution panels?	Within suites only
Is there a shared COAX or copper panel?	SBC facility only
Can the customer bring and install its own COAX or copper panel?	No
Are there monthly recurring charges to home run between tenants?	Yes
For carriers not in the meet area, the interconnect options include	Tenant to tenant home runs
The costs and availability are determined by	Negotiations with the landlord

Carrier Tenant List

Adelphia	SBC
Capital Telecom	Tex-Link Communications
Grande Communications	Time Warner Telecom
Grande River Communications	WorldCom
ICG Communications	XO Communications
McLeod	Xspedius Communications
Qwest	

BY HUNTER NEWBY

Meet Me in Phoenix

An ongoing series examining carrier interconnection options in major North American cities

The Downtown Phoenix Technology Exchange (DPTE) is the interconnection oasis carriers seek in this dry market. Located at 120 E. Van Buren, it is the sole carrier hotel in Phoenix featuring direct access to every major carrier operating in the Phoenix/Scottsdale market. Originally a printing plant, the building is a concrete fortress, which draws power from a highly reliable network power grid and has not lost power on an unscheduled basis for more than 50 years

The owners recognized that carriers were the lifeblood of the building's meet me room (MMR). As in all carrier hotels, a strong MMR or common neutral interconnection point is essential. Where some competitors tried to make their money off of carriers, the management of DPTE welcomed every carrier they could and have created the best-connected, best-run interconnection facility in the market.

The MMR is one "area" comprised of two rooms. There is really no practical distinction between the two. Because both are permitted for batteries, the fire department preferred two rated rooms. There are ladder racks, conduit paths, etc., between the rooms, and cross connects are routinely done from MMR1 to MMR2 and vice versa. The building policy on cost for interconnections is not to charge any recurring fees, which customers greatly appreciate.

On-Net Carrier List

AboveNet	Sprint
AGL Networks	SRP Telecom
Allegiance Telecom	Time Warner Telecom
AT&T	ViaWest
Citizens/ELI	WilTel
Clear Sky Broadband	XO Communications
Cox Business Services	**Type II**
Kobalt Networks	Cogent Communications
Level(3) Communications	Broadwing Communications
MCI	Global Crossing
Puregig	Mountain Telecommunications
Qwest (ILEC and Broadband)	InterNAP
Savvis Communications	

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No

Carriers not in the MMR can (a) hire Sterling Network to make interconnection or (b) contract with their type I provider to make interconnection.

The costs and availability are determined by the management of Sterling Network.

Although Phoenix is not a gateway city for international carriers, it is a strong market for enterprise back-office and call center operations. As more enterprise network operators realize the benefits of going beyond the local exchange carrier or big name interexchange carrier for service from their phone closet, they will find that establishing their own interconnection node at a facility such as DPTE is very advantageous.

As transport availability goes up, and the costs come down, access to services such as voice over IP and voice peering becomes easier and a competitive advantage for those that have it. Carrier interconnection facilities such as DPTE provide that access, not only to carrier networks, but also enterprises. So if you are looking for the bright spot in the Phoenix sun, check out DPTE.

For more information, contact Anthony Wanger, managing partner, Sterling Network Services, LLC, at (602) 682-2204.

Hunter Newby is chief strategy officer of TEL^{X}. If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Attributes of the Interconnect Facility

Facility Size	9,000 sq. ft.
Suite	MMR1 and MMR2
AC Power Feed	Yes (building: 16,000 amps at 480v)
Generator	Yes (Multiple, Cummins Onan 1.5Mw for MMR)
Control System	Yes
UPS	Yes (Multiple, Liebert)
DC Plant	Yes (Lorain, 16,000 amp)
HVAC	2N (Building: 2,000 tons)
Fire Suppression	Dry pipe, pre-Action: zoned. Foam protection for fuel storage area

Attributes of Carrier Hotel

Building size	300,000 sq. ft.
Union building	No
Building generator	Yes (multiple)
Generator rooms for tenants	Yes
Roof access	Yes, plus antenna tower available
Tenant conduit rights	Yes (full conduit and inner-duct)
Is there a building meet me room?	Yes
Is this MMR the featured site?	Yes

BY HUNTER NEWBY

Meet Me in Vegas

An ongoing series examining carrier interconnection options in major North American cities

Don't roll the dice on your interconnections in Las Vegas. When in Sin City, see Collocation Solutions.

Collocation Solutions' 302 E. Carson Avenue location was a Bank of America building prior to becoming a carrier hotel. In 2001 Collocation Solutions was looking for opportunities in the Las Vegas area, and 302 E. Carson Avenue was the perfect location because of its convergence of fiber running underneath the building. The company built the data center on the first floor around the former bank vault, which is fireproof, flood-proof and earthquake proof for added security.

The 302 E. Carson location is strategically placed to provide optimum fiber and wireless connectivity. Collocation Solutions has all six metropolitan fiber SONET network providers providing connectivity in the facility. The facility has access to major interexchange carriers such as AT&T, MCI, Broadwing, Wiltel, Global Crossing and Qwest. This provides clients with a high-density of bandwidth providers in a carrier-neutral environment.

The Las Vegas market is traditionally known to have a service and casino concentration. However, West Coast companies consider Las Vegas a "safe haven," far enough away from potential natural disasters but close enough to drive to in case of emergencies. A lot of this facility's success comes from West Coast companies planning for disaster recovery and/or business continuity. The Collocation Solutions disaster recovery hot site model allows for zero down-time tolerance, and this is unique to the traditional data center data recovery insurance model.

Collocation Solutions has succeeded because of a synergy it creates with clients. The company does not compete with its customers but actually brings them business

Special Availability at E. Carson Ave. Collocation Solutions

Bank Vault	18" thick concrete walls
	Originally the main branch office of Bank of America Las Vegas
	Earthquake, flood-proof and fireproof security

CS Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	No
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	No
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No
For carriers not in the meet area, the interconnect options include:	
In-building, intra-city local loops and in-building, intra-city dark fiber, shared conduit and inner duct. Customers can hire labor for conduit construction directly.	
The costs and availability are determined based upon:	
The individual order. Collocation Solutions facilitates interconnections and access but is not a carrier or agent. All loops, fiber and certain shared routes must be contracted directly by the customer.	

Collocation Solutions

Facility Size	1 suite
Suite 100	13,600 sq. ft.
AC Power Feed	2,500 amp, 480 v service
Generator	Diesel generator 2,000 kW, 2,500 kVA. Three phase output at 480v, 3,000-gallon fuel tank
Control System	ATS with isolated bypass circuit
UPS	500 kVA (2 units). 480 v and 480 v output
DC Plant	400 amps (growth to 800 amps)
HVAC	330 tons of cooling via Liebert air conditioning units. N +1 configuration. 11 units monitored by Collocation Solutions NOC.
Fire Suppression	Dual-action, dry-pipe system. Laser detection system with alarm monitor directly to local alarm company and the Las Vegas Fire Department.

Carrier Tenant List

Carriers
Sierra Pacific
XO
Cox
Optigate
Xspedius
Sprint
AT&T
WorldCom
Broadwing
Williams
Global Crossing
Qwest

Attributes of 302 E. Carson Avenue

Building size	151,000 sq. ft.
Union building	No
Building generator	No (Collocation Solutions has separate generator)
Generator rooms for tenants	No (Collocation Solutions has separate room)
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	No
Is this MMR the featured site?	No

and introduces them to other clients, so they can do business together. This is a common theme among most successful sites in North America. Tenants prefer this and refer other companies because they see this as a partnership rather than a vendor relationship. Collocation Solutions' carrier-neutrality also is a big part of its success, since it gives enterprises the opportunity to pick and choose which carriers they would prefer.

So, if you're looking for a place to have a good telecom time and make a few quality network connections in Las Vegas, odds are you'll get what you need at Collocation Solutions.

For more information, contact Jayne Rios of Collocation Solutions at (214) 231-0162 ext. 14 or jrios@datasuites.com.

Hunter Newby is chief strategy officer of tel^{X} . If you own, operate or know of an interesting property that you would like to see featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

BY HUNTER NEWBY

Meet Me in Denver

An ongoing series examining carrier interconnection options in major North American cities

Rocky Mountain high-speed bandwidth has found its home. Just as Denver was once a hub of activity for pioneers heading west to discover new territory, it is today considered to be a hub of technological pioneering. And when the companies at this high-tech frontier want to find the premier interconnection spot, they look to Comfluent.

Comfluent is a carrier interconnection facility located at the crossroads of telecommunications in Denver. The company's facility is located in Denver's major carrier hotel at 910 15th Street, adjacent to Denver Main, the primary entry point for the northern LATA (656) of Colorado. This location puts them in the middle of the networking world:

In the middle of Denver: Carriers like Qwest, MCI, UUNet, Level 3, WilTel, ICG and all of the local exchange carriers are tenants of the 910 15th Street building.

In the middle of the country: The Denver location has distinct advantages for foreign customers that need to expand their network within the United States or domestic companies that need to strengthen their position in the Rocky Mountains. Comfluent is less than 30 milliseconds from either coast, one satellite bounce to Europe and one satellite bounce to Asia.

Comfluent's CEO, Alf Gardner, discovered the 910 15th Street location and its potential in 1997. "After spending 15 years in the oil and gas industry, I realized what we were sitting on here," he explains. "It reminded me of the famous Henry Hub natural gas interchange in Erath, La. – the delivery point for the New York Mercantile Exchange. I realized then that Comfluent would become the Henry Hub of the networking world."

The New Frontier

Comfluent has unique insight into where things are headed. One of the hottest topics they're working with today is voice over Internet protocol. "VoIP providers need access to the PSTN, big pipes to the Internet and a variety of local exchange carriers," explains Gardner. "We host the Rocky Mountain Internet eXchange here. It's a neutral regional IP peering point that offers cost and latency savings, enhanced Internet performance and exciting VoIP opportunities."

Other hot topics? Comfluent is working with an increasing number of enterprise customers to provide disaster recovery and remote data storage services. Having the ability to take advantage of a carrier-neutral facility to protect enterprise data is key. And the company's Transparent Metro Ethernet Service is on the rise, as well. It's like running a very long Ethernet cable between locations, making it truly plug and play. It's far less expensive for customers than running traditional private lines.

"The only certainty out there is that opportunities will present themselves in the coming years that will surpass our wildest dreams," Gardner concludes. "Our location in Denver gives us – and our customers – the chance to seize those opportunities."

For more information on Comfluent contact Alf Gardner at (303) 376-1600 or agardner@comfluent.com.

Hunter Newby is chief strategy officer of tel^{X} . If you own, operate or know of an interesting property that you would like to see featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Attributes of Carrier Hotel

Building size	150,000 sq. ft.
Union building	No
Building generator	Four 2 Mw
Generator rooms for tenants	No
Roof access	Yes – controlled by building management
Tenant conduit rights	Yes – controlled by building management
Is there a building meet me room?	No
Is this MMR the featured site?	N/A

Attributes of the Interconnect Facility

	Present	Additional Under Construction
Facility Size	2,900 sq. ft.	
Suite	7th floor suite 751	
AC Power Feed	400 Amp, 208 VAC	600 Amp, 208 VAC
Generator	150 Kva	225 Kva
Control System	Power/environmentals/access/ video monitoring & recording	
UPS	PowerWare 80 Kva	PowerWare 80 Kva
DC Plant	Marconi – 48V 400 Amp	Marconi – 48V 400 Amp
HVAC	15-ton dry cooler system	40-ton chilled water system
Fire Suppression	FM 200	

Comfluent Carrier List

AT&T/TCG
Broadwing Communications
C Com
Cogent Communications
Comcast
E-Xpedient
Fortis Communications
Front Range Internet
ICG Communications
IDT/Winstar
Internet2
Level 3/Genuity
MCI/MFS
OnFiber
OneSource
Optigate Networks
PointOne Communications
Qwest (US & Classic)
Rock Solid Broadband
Rocky Mountain Internet eXchange
Time Warner Telecom
Tone Networks/ Boulevard Media
Universal Access
Usurf
WilTel/Vyvx
XO Communications
Yipes
Other carriers at 910 15th Street
360networks/Touch America
MCI/UUNet
National Network
Popp Telecom

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	No - dispatch
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	No
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	Yes

For carriers not in the meet area, the interconnect options include:

For carrier tenants of the building the operator will install conduits and fiber, coax and copper facilities. Non-tenant carriers need to deal with building management to first gain entry into the building.

The costs and availability are determined by:

Standard cross connect fees apply.

BY HUNTER NEWBY

Meet Me in Santa Clara

An ongoing series examining carrier interconnection options in major North American markets

California here we come. The West Coast has an interesting interconnection landscape. Between the older and more developed international Layer 2 TDM (time division multiplex) transport bookends of Los Angeles and Seattle lies one of the most IP-centric corridors in the world. This IP runs at Layer 2 first, of course, so therefore needs solid physical layer interconnection points. But where are the neutral sites with the greatest carrier density?

Attributes of eXchange @ 1100 Space Park Drive	
Building size	169,020 sq. ft.
Union building	Yes
Building generator	Yes
Generator rooms for tenants	Generator yard – entitlements and air quality district approvals for 10 (2mW) generators on the site.
Roof access	Yes. Roof space is available for mechanical equipment and satellite dishes and antennas.
Tenant conduit rights	Yes. Negotiated on a tenant-by-tenant basis. There are pre-installed primary, secondary and tertiary data entry vaults, conduits and associated riser shafts in the facility. Tenants can be licensed into any part of the conduit system
Is there a building meet me room?	Yes
Is this MMR the featured site?	Yes

Santa Clara is one of a few popular regions for connectivity in this sector, as there are several "known" properties that house carrier networks within close proximity of each other. This proximity of brand name facilities makes finding the right one for core network interconnections at the physical layer challenging. The challenge is that you trust the brand, as you should, but what really is there, in that particular site?

The same checklist points apply here as they do anywhere else in regard to the facility infrastructure and interconnection rules, but the key to carrier access is the carriers actually present.

The service that is in the greatest demand in this area is IP transit, due to the number of businesses that use the public Internet as a platform for commerce. That differs from the international gateways of North America, which have more of a "service demand" mix. So, if you are seeking neutral, multi-carrier, multi-protocol Layer 2 and 3 services in Santa Clara, here's one possibility.

eXchange @ 1100 Space Park Drive is owned and operated by the eXchange @ 200 Paul team, which specializes in developing and managing the leading carrier hotels in the San Francisco Bay Area. It has developed facilities that are recognized throughout the world for their strategic locations, access to key fiber routes, scalability, security and quality. eXchange sites are directly on or near major fiber routes and urban local loop fiber rings and thereby provide unprecedented access to local, national and global networks in a financially stable environment.

The 1100 Space Park Drive facility is a marketplace that combines premier carrier hotel, collocation and interconnection facilities for network providers and enterprises in the Santa Clara region. This facility, with its developed meet me room, minimizes local access charges and capital costs for both carriers and enterprise network operators by bringing each into the facility directly. This creates an efficient environment for access to every type of network service, reducing time-to-market and increasing profitability for its tenants.

One key feature of this site is that it is home to a Tyco Telecom International transport gateway with direct access to Asia and the rest of the world. By the end of this year the owners of 1100 Space Park plan to provide low cost, virtual cross connections between this site and their 200 Paul facility in San Francisco.

For more information on eXchange @ 1100 Space Park Drive, contact Cliff Dillingham, carrier services manager at (415) 508-2866 or cliffd@e200paul.com, or visit www.e200paul.com.

Attributes of the Interconnect Facility

Facility size	2,000 sq. ft.
Suite	N/A
AC power feed	225 amps at 480 volt
Generator	Yes. Supplied from 2mW building generator system
Control system	Siemens Apogee building management system
UPS	Future 30 KVA (N+1) installation planned for Q3 2004
DC plant	400 amp DC plant
HVAC	CRAC Units (N+1 design)
Fire suppression	VESDA, standard smoke detection & double interlock pre-action

Carriers in Building

AT&T
Level 3 Communications
Looking Glass Networks
Neopolitan Networks
OnFiber
Qwest Communications
SBC – Pacific Bell
Silicon Valley Power
Tyco Telecom (Intenational Gateway)
Verizon

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes, on an outsourced basis
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes, but not exclusively
Can the customer perform the cross connect?	Yes, under supervision of operator
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	Mixed charge and N/C
For carriers not in the meet area, the interconnect options include:	
All carriers in the building are given space in the meet me room and are required to install access (conduits) back to the meet me room.	
The costs and availability are determined by:	
Negotiated on a case by case basis.	

Hunter Newby is chief strategy officer of TEL^X . If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Meet Me in St. Louis

An ongoing series examining carrier interconnection options in major North American markets

By Hunter Newby

In the award-winning Broadway musical *Meet Me in St. Louis,* everybody who was anybody was at the 1904 St. Louis World's Fair. The same can be said of the Bandwidth Exchange Buildings.

The two Bandwidth Exchange Buildings at 210 North Tucker Blvd. and 900 Walnut St. are owned and operated by Bandwidth Exchange Buildings, LLC as a single, 500,000-plus-square-foot facility. They are the primary carrier hotels and carrier interconnection facilities for St. Louis and the entire region. The two meet me rooms are connected by 432 strands of dark fiber, owned and maintained by the Buildings.

The Bandwidth Exchange Buildings are operated first and foremost as carrier hotels. Since the primary need of the tenants is that of interconnection to the other network-operating tenants, the owner has established a main interconnection point within each building. The 210 North Tucker meet me room is a passive interconnection-only facility, and the 900 Walnut meet me room is a full-service facility that is actually a former LayerOne site.

The meet me rooms are considered amenities that serve the buildings, so all carriers otherwise present in the buildings are provided rack space in the meet me rooms with no additional charge and with no recurring cross-connection fees. "Ensuring that every provider active in the region is only a cross connect away is what makes ours a unique and valuable facility," says Bob Guller, managing member of the Bandwidth Exchange Buildings. "Lowering

Carrier List
900 Walnut MMR

- AT&T (local & long haul)
- Broadwing
- Charter Communications
- Cogent/PSINet
- ICG Communications
- KMC Telecom
- Level 3 Communications
- Lightcore/CenturyTel
- MCI - Intermedia
- MCI - Local
- MCI - Long Haul
- MCI - UUNet
- McLeod Communications
- Missouri Network Associates
- New Edge Networks
- Qwest Communications
- SBC
- SBC Internet Services
- Sprint
- US Sonet
- WilTel Communications
- XO/Allegiance Telecom

Attributes of Carrier Hotel

	210 North Tucker	900 Walnut
Building size	410,000 sq. ft.	110,000 sq. ft.
Union building	N/A	N/A
Building generator	1 x 1.5-megawatt	3 x 1.5-megawatt
Generator rooms for tenants	Yes	Yes
Roof access	Yes	Yes
Tenant conduit rights	Yes	Yes
Is there a building meet me room?	Yes	Yes
Is this MMR the featured site?	Yes	Yes

barriers to carrier access while creating a secure, reliable environment is what we do best."

The Bandwidth Exchange Buildings feature a significant range of plug-and-play collocation options, from Web hosting/collocation providers (Cybercon and Xiolink), enterprise IT outsourcers (Connectria), pure collocation facilities (Switch and Data) and a building-owned-and-operated Class-A collocation facility. The Switch and Data facility at 210 North Tucker also acts as an active network element extension from the passive building meet me room for those that need more than just an interconnect.

In addition to attracting major telecom players, the Buildings owners also play matchmaker between providers and users of communications and bandwidth services. "You can't just bring everybody to the Fair, you have to get them dancing too," says Guller.

The buildings are on multiple, underground power grids with six 1.5-megawatt generators and several small generator sets. The U.S. Army Corps of Engineers designed one building, and both are near the incumbent primary central office. Both buildings also qualify for power discounts and various economic incentives. So if you are looking for a fair place to meet in St Louis, take a look at the Bandwidth Exchange Buildings.

For more information on the Bandwidth Exchange Buildings, please contact Bob Guller at (314) 621-1226 or RGuller@bandexch.com.

Hunter Newby is chief strategy officer of TEL^X . If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Attributes of the Interconnect Facility

	210 N. Tucker	900 Walnut
Facility Size	2,500 sq. ft.	14,000 sq. ft.
Suite	515	320 & 300
AC Power Feed	Convenience outlets 110v, generator backed	2,400 amps 480 v, 3 Phase
Generator	1.5-megawatt	Yes, on 2 building generators
Control System	Standard	Yes
UPS	No	Yes, 2 x 300 KVA, 1 x 150 KVA
DC Plant	No	Yes, 3,200 KVA
HVAC	Building HVAC	Yes, 8 x 20 tons
Fire Suppression	Standard building	Dry pipe, pre-action

Interconnection Guidelines

	210 N. Tucker	900 Walnut
Can customers order cross connects to any other meet area customer?	Yes	Yes
Is the average turnaround time for cross connects 48 hours or less?	N/A	Yes
Is on-site technical support available 24/7/365?	No	3rd-party
Can customers access the site 24/7/365?	Yes	Yes
Can the technicians test and turn up circuits?	No	Yes
Does the meet area operator perform the cross connect?	No	No
Can the customer perform the cross connect?	Yes	Yes
Are all cross connects tagged and inventoried?	Yes	N/A
Is there a shared fiber panel (MDF, CFDP)?	No	Yes
Can the customer bring and install its own fiber distribution panels?	Yes	Yes
Is there a shared COAX or copper panel?	No	Yes
Can the customer bring and install its own COAX or copper panel?	Yes	Yes
Are there monthly recurring charges to cross connect in the meet area?	No	No
For carriers not in the meet areas (210 North Tucker and 900 Walnut), the interconnect options include:		
Intra-city duct bank, multiple local loop and local dark fiber providers, building riser and building access licenses		
The costs and availability are determined by:		
Landlord negotiatons		

Carrier List
210 N. Tucker MMR

AT&T (local & long haul)
Birch Communications
KMC Telecom
Level 3 Communications
Lightcore/CenturyTel
MCI - Intermedia
MCI- Local
MCI - Long Haul
MCI - UUNet
McLeod Communications
New Edge Networks
Qwest Communications
SBC
SBC Internet Services
Strategic Technology Group
Tone Networks
Verio
WilTel Communications

BY HUNTER NEWBY

Meet Me in Cleveland

An ongoing series examining carrier interconnection options in major North American markets

If you are looking to roll out a network in the home of the Rock & Roll Hall of Fame, there are a couple of stones to overturn when searching for interconnection satisfaction.

For carriers looking for opportunities or enterprises looking to relocate, Cleveland has a diverse base of network users to tap. Aside from several major bank headquarters, hospitals and research centers, there is a non-profit organization called OneCleveland, whose underlying mission is to provide broadband access to Ohio's academic, research, cultural, health care and government organizations through a major 1-10G Ethernet network build-out project that's currently underway. Case Western University is a participant in this project and in the next phase will offer free public wireless access from its 1,200-plus wireless access points. There are sure to be substantial network opportunities and interconnection needs in to the future as a result of this initiative. For more information visit www.onecleveland.org.

So, where do you go in this town to get a network connected?

The FiberMedia meet me room at the Higbee Building and FONE-MMR at the T-Rex Technology Center are two of the hottest gigs in town when it comes to network interconnection. Cleveland is an interesting market from the long-haul perspective, as it is situated almost directly in the middle of New York and Chicago, making it an interconnection and regeneration point for several major networks. This gives the surrounding Cleveland market easy access to other major interconnection sites through these local facilities.

The Higbee Building ownership, along with FiberMedia, has created a top-notch carrier hotel located in the center of downtown

Attributes of Carrier Hotel

	T-Rex Tech Center 1525 Rockwell Ave.	The Higbee Bldg. 200 W. Prospect Rd.
Building size	277,286 sq. ft.	500,000 sq. ft.
Union building	No	Yes
Building generator	Available	850 kva
Generator rooms for tenants	Yes	Yes
Roof access	Yes	Yes
Tenant conduit rights	Available	With leased space
Is there a meet me room?	Yes	Yes
Is this MMR the featured site?	Yes	Yes

Carrier Lists

FONE
AFS
Allegiance Telecom
CityNet
ICG Communications
Level (3) Communications
McLeod
Qwest Communications
SBC
XO Communications
FiberMedia
AFS
Elantic
MCI
SBC
Verizon
XO Communications

Interconnection Guidelines

	FONE-MMR	FiberMedia
Can customers order cross connects to any other meet area customer?	Yes	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes	Yes
Is on-site technical support available 24/7/365?	No	Yes
Can customers access the site 24/7/365?	Yes	Yes
Can the technicians test and turn up circuits?	Yes	Yes
Does the meet area operator perform the cross connect?	No	Yes
Can the customer perform the cross connect?	Yes	No
Are all cross connects tagged and inventoried?	Yes	Yes
Is there a shared fiber panel (MDF, CFDP)?	No	Yes
Can the customer bring and install its own fiber distribution panels?	Yes	Yes
Is there a shared COAX or copper panel?	No	Yes
Can the customer bring and install its own COAX or copper panel?	Yes	Yes
Are there monthly recurring charges to cross connect in the meet area?	Yes	Not for customers
For carriers not in the meet area, interconnect options include:		
FONE	Carriers can lease access to the MMR via MMR deployed and managed conduit that provides direct access to the MMR from the buildings multiple riser access points.	
FiberMedia	The building has diverse risers connected to the city fiber loop. They can come from almost any point in downtown Cleveland directly to the MMR.	
The costs and availability are determined by:		
FONE	A standardized, published pricing structure set by the MMR management	
FiberMedia	Volume of space and services required	

Cleveland. There's tremendous redundancy, a high level of security, 40-meg electrical design, capacity for 22 two-megawatt generators with a 120,000-gallon capacity fuel farm and 68 diverse shafts with intermittent steel and grating on every floor. The building provides redundant shafts and points of entry for all infrastructure systems and local loop connectivity to almost all area carriers in diverse routes. The staff is well trained and available 24/7, 365 days a year. FiberMedia is the meet me room operator, building designer and technology consultants for the building. Its broad technology expertise includes the design, engineering, construction, connectivity, equipment provisioning and management in flexible affordable packages.

Attributes of the Interconnect Facility

	FONE-MMR	FiberMedia
Facility Size	1,200 sq. ft.	10,000 sq. ft
Suite	300	710
AC Power Feed	1,600 amps @ 480v	800 amp expandable
Generator	N/A	900 kva and roll up box
Control System	N/A	Mir3 Remote BMS
UPS	Building supplied	Two-225kva Leibert
DC Plant	Building supplied	Available
HVAC	None	120-tons glycol system at N+1
Fire Suppression	Pre-action	Double interlock pre-action

The FONE-MMR at the T-Rex Technology Center is a joint venture between these two companies, designed specifically to provide direct carrier-to-carrier interconnections via existing conduit runs within the building. Network operators wishing to interconnect within the building have the ability to directly connect within the FONE meet me room. This is done through a series of FONE-MMR-owned and managed in-building conduits that tie back into its facility. The connections in this MMR are passive only.

The FONE-MMR management team has a unique understanding of network infrastructure and services provided through carriers located in Cleveland and servicing the Ohio Valley. This knowledge provides FONE-MMR with the ability to help carriers design interconnection relationships that best service carrier expansion needs. All prospective carriers looking to interconnect to other carriers within the T-Rex Technology Center are required to use this meet me facility as the access point for services.

You can't always get what you want, but if you try looking at these sites, you might get what you need, at least in terms of interconnection in Cleveland.

For more information about FONE, contact Peter Berns at (800) 604-9908 or pberns@fonemmr.com.

For more information about FiberMedia, contact Roger Krulak, president, at (216) 687-0060 or krulak@fibermedia.net or Dave Diaz, CTO, at (954) 342-5001 or Ddiaz@fibermedia.net.

Hunter Newby is chief strategy officer of tel^{X} . If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Meet Me in Vancouver

An ongoing series examining carrier interconnection options in major North American markets

By Hunter Newby

Two jewels of Canadian North America are the city of Vancouver, British Columbia and a carrier hotel known as Harbour Centre that calls the city home. Just as Vancouver is a gateway for international commerce, Harbour Centre is a nexus for networks – both public and private.

If you have networking needs in this part of the world, it's likely that you'll find the best view of the landscape from Harbour Centre. A 384,000-square-foot building, with a mix of commercial real estate and the most interconnected telecom space in Western Canada, Harbour Centre also is Vancouver's tallest building. The building maintains multiple meet me rooms that allow tenants to rapidly cross connect at very low costs – a key factor found in every successful interconnection facility. Harbour Centre also offers extensive infrastructure options to tenants, including access to emergency back-up generators, 24x7 building attendants, key card access, 1,600-ton chilled water loop access and rooftop access. And as the tallest building in town, with a 360-degree unobstructed view, Harbour Centre provides clear benefit to all of the wireless operators in the region.

Harbour Centre is a main Internet access point and has enabled many of its network tenants to dramatically expand their reach. One such tenant within Harbour Centre is BCNET, which currently operates the ORAN (optical regional advanced network) to facilitate next-generation Internet architecture and service delivery. The ORAN is the first and only high-speed research and education network in British Columbia. The network currently connects Vancouver (VANTX) and Victoria (VICTX) to CANARIE's CA*net4 national network and to other international research and education networks. In addition to BCNET, there are more than 30 other carriers located within the facility. So, if you are looking to add some color to your connectivity options in the Great White North, make sure to sail on into Harbour Centre for a look.

For more information, contact Greg Hamilton, Harbour Centre Complex leasing manager, at (604) 899-7380 or ghamilton@harbourcentre.com. *(Additional tables on page 88)*

Hunter Newby is chief strategy officer of tel^{X}. If you own, operate or know of an interesting property that you would like to see featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Carrier List

AT&T
360networks (CDN) Fibre Ltd.
Allstream
Assertive Technology
BCNET
BCBC
Bell West Inc.
Big Pipe Inc.
Chinamotion Netcom
CM Tel (U.S.A. LLC)
Craig Wireless
ECMarket
Excalibur Communication
ExFone
Fatport
Fusepoint Managed Services
IDC Internet
London Connect Inc.
Navigata Communications
NetNation Communications
Novus Telecom
Peer1.net
Primus
Serenity Networks
Soho Skyway
Telus
Teraspan Networks
Urban Networks
Westsphere Systems
WorldCom Canada
Zoolink Communications

Attributes of Carrier Hotel

Building size	348,000 square feet
Union building	No
Building generator	Building-maintained "emergency power system" back-up generators provide emergency electrical power for all essential building services.
Generator rooms for tenants	Building maintains and supplies 3.9 MW of emergency power generated from six different generators distributed throughout the facility.
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	Yes
Is this MMR the featured site?	Yes

Attributes of the Interconnect Facility

Facility size	The building maintains in excess of 2,000 sq. ft. of meet me room/interconnect facilities.
Suite	Meet me rooms located on the 6th floor and P1
AC power feed	Available
Generator	See above
Control system	The building maintains an extensive control and surveillance system including 24-hour manned security with interior and perimeter patrols.
UPS	No
DC Plant	No
HVAC	1,600-ton chilled process loop available 24/7
Fire suppression	Building maintained pre-action sprinkler

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	No
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	No
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No

For carriers not in the meet area, the interconnect options include:

The building allows direct point-to-point interconnects at market rates. Rates are based on cable type and number of floors.

The costs and availability are determined by:

Market conditions – bids are based on individual tenant requirements and existing conditions.

BY HUNTER NEWBY

Meet Me in Charlotte

An ongoing series examining carrier interconnection options in major North American markets

When it comes to carrier hotels in Hornet country, the Charlotte NAP is the buzz around town. The Charlotte NAP is the only location in Charlotte, N.C. that was built specifically for the telecom, disaster recovery and hosting service industries. It is a carrier hotel comprised of three buildings that are interconnected via building-owned conduits, and recently the management announced a building-owned meet me room that is now getting started. It is not a traditional public Internet access point, as per the common definition of the NAP acronym. The facilities were specifically designed in a location offering the greatest number of connectivity options in the market – hence "network access point" but non-Internet specific.

Charlotte, as a growing market and the number two banking city in the United States, is the home to multiple Fortune 500 companies and a diverse financial and services market. This presents an opportunity for prospective carrier and enterprise network operators looking to open up this region for on-net service.

The Charlotte NAP offers 100,000 square feet of newly designed and built "from the ground up" mission-critical facilities located at the fiber hub of Charlotte. The facilities offer numerous amenities in a secure and fiber-rich atmosphere including floor loading up to 500 pounds per square foot live load, a 5,000-pound capacity oversized elevator, chase space allotted for fiber, HVAC and electrical in diverse locations and many other design features.

The meet me room is fully built out offering 10,000 square feet of raised floor, closed circuit video security, racks, cages and fan-cooled cabinets in place. Fiber has been brought into the facility, offering easy connectivity to providers in the complex. The MMR also has UPS, DC, generator back-up and many other amenities.

There are eight carriers that have established a presence within the Charlotte NAP and five with a fiber presence within the MMR. There also is an additional five carriers with access to the street-level fiber vaults, making this site a key interconnection point and setting the stage for the next network deployment in the area to have it easier than the last. So, if you are feeling the sting of limited network access and inadequate infrastructure in the land of the Hornets, maybe you should run for the shelter of the Charlotte NAP.

For more information, contact Douglas G. Hollidge, Pinnacle Properties LLC partner, (704) 377-3274 or doug@pinnacle-properties.net, www.pinnacle-properties.net.

Hunter Newby is chief strategy officer of tel^{X}. If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter at hnewby@telx.com. *Thank you.*

Carrier List

Fiber within the MMR
AT&T
BellSouth
DukeNet
Qwest
Time Warner Telecom
Presence within Building
Verizon
Level 3
MCI

Access Available through Fiber Vaults
PalmettoNet
WilTel
ITC^Deltacom
Global Crossing
Sprint

(Additional tables on page 50)

(Continued from page 48)

Attributes of Charlotte NAP

Building size	100,000-square-foot complex
Union building	No
Building generator	Myers & Chapman
Generator rooms for tenants	Generator and fuel storage yard
Roof access	Yes, with steel structure for placement of rooftop equipment allowing for no roof penetrations
Tenant conduit rights	Full chase diverse chase space offering tenants its pro rata share of fiber conduit, electrical and HVAC chase. Conduit already stubbed from building to exterior fiber vaults in diverse locations.
Is there a building meet me room?	In process. Offers a fully "built out" meet me room available for lease called the Charlotte MMR.
Is this MMR the featured site?	Yes

Attributes of the Interconnect Facility

Facility Size	10,500 sq. ft.
Suite	300
AC power feed	800 amps at 480 volts
Generator	800 kva
Control system	Yes
UPS	Yes
DC plant	Yes
HVAC	Liebert 24-7 units
Fire suppression	Dry pipe, pre-action double interlock system

Charlotte NAP Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	Yes
Is on-site technical support available 24/7/365?	Yes
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	Yes
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	Yes
Is there a shared fiber panel (MDF, CFDP)?	Yes
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	Yes
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No
For carriers not in the meet area, the interconnect options include:	
Fiber chase through building owned conduit	
The costs and availability are determined by:	
Please visit www.charlottemmr.com for a list of pricing for intra MMR and Charlotte NAP connectivity.	

BY HUNTER NEWBY

Meet Me in Indy

An ongoing series examining carrier interconnection options in major North American markets

Carrier List

- AT&T
- AT&T Cellular
- Broadwing
- Choice One
- Cinergy/Kentucky Data Link
- CityNet
- Elantic Telecom
- Fiber Works
- Fibertech
- First National Merchant Solutions
- Global Crossing
- Grande Communications
- Lifeline Data Centers, LLC
- MCI
- McLeod USA
- MFS
- Norlight
- NuVox Communications
- Qwest Communications
- Switch and Data
- Time Warner
- US Signal
- WilTel Communications

In a city where speed is highly appreciated, speed to market and a quick interconnection are no exceptions. Carrier hotel meet carrier motel.

Indy Telcom Center in Indianapolis is indeed one of the most interesting network interconnection facilities in the country. The number of buildings, the layout, the interconnection process and the carrier density all are unique and help to eliminate any caution flags on the road to service delivery.

Eighteen years ago, a company called Lightnet chose a site to build its Indianapolis switching facility because of proximity to its railroad right of way, where the company was constructing fiber optic cable through downtown Indianapolis. Several years later, Lightnet was acquired by WilTel, which was then purchased by LDDS, which ultimately became MCI.

The owners of this building began to notice a trend. In the early 1990s interest in telecom carrier switch space was increasing, and by the late 1990s the property owners had built or rehabilitated 12 buildings on about 10 acres of land, providing some 280,000 square feet of space. All of the buildings were designed and occupied exclusively for telecommunications purposes.

Indy Telcom Center has implemented massive conduit banks connecting each building to each other, whether through under-slab conduits within a multi-tenant building or through a series of vaults, handholes and basements that connect the buildings. Tenants have the right to use these conduits or implement their own routes within the buildings and on the property. The tenant has the right to use conduits as long as the carrier or tenant remains a tenant of the Indy Telcom Center.

The conduit system allows a tenant to interconnect to anywhere in the facility. Most have looped the facility with fiber cable and have their own fiber distribution panels in most of the meet me rooms in the different buildings.

The conduit system interconnects all of the meet me rooms within each of the buildings. Access is controlled by building management. The meet me rooms range in size from a closet to 2,000 square feet depending on the building. The meet me rooms primarily are passive, with some having limited AC power. The tenants are responsible for their own cross connects. The furthest distance between any two meet me rooms is approximately 800 feet, so that route might go through three or four pull points, a basement, vault or handholes.

In early to mid 2001 Indy Telcom Center had 38 leases, most of which were national companies, and no vacancies. Today management feels very fortunate to have only a few vacancies (less than 10 percent). They expect there will be further consolidations, and Indy Telcom Center will continue to be one of the Midwest's, and the nation's, major telecommunications centers. So, if you need to get your network on track in Indianapolis, race on over to the Indy Telcom Center for a pit stop.

For more information on the Indy Telecom Center, contact Kent Hall at (317) 972-0849 or khall@indytelecom.com.

Hunter Newby is chief strategy officer of tel^{x}. If you own, operate or know of an interesting property that you would like featured in this series, please contact Hunter at hnewby@telx.com. Thank you.

Attributes of Carrier Hotel

Building size	12 buildings, 280,000 sq. ft. total
Union building	No
Building generator	None
Generator rooms for tenants	Yes, within their space
Roof access	Yes
Tenant conduit rights	Yes
Is there a building meet me room?	Yes, several
Is this MMR the featured site?	Yes

Attributes of the Interconnect Facilities

Facility Size	A closet to 2,000 sq. ft. varying within each building
Suite	N/A
AC Power Feed	Limited power by location
Generator	None
Control System	N/A
UPS	N/A
DC Plant	N/A
HVAC	None
Fire Suppression	Combination of wet and dry pipe in common spaces

Interconnection Guidelines

Can customers order cross connects to any other meet area customer?	Yes
Is the average turnaround time for cross connects 48 hours or less?	N/A
Is on-site technical support available 24/7/365?	No
Can customers access the site 24/7/365?	Yes
Can the technicians test and turn up circuits?	Yes
Does the meet area operator perform the cross connect?	No
Can the customer perform the cross connect?	Yes
Are all cross connects tagged and inventoried?	No
Is there a shared fiber panel (MDF, CFDP)?	No
Can the customer bring and install its own fiber distribution panels?	Yes
Is there a shared COAX or copper panel?	No
Can the customer bring and install its own COAX or copper panel?	Yes
Are there monthly recurring charges to cross connect in the meet area?	No

For carriers not in the meet area, the interconnect options include:

Management has constructed a conduit system interconnecting all 12 buildings. This conduit system can be utilized to interconnect carriers, or they can request to build new conduits between the sites.

The costs and availability are determined by:

For new builds the management determines the costs by distance and availability. For existing conduits the carriers run the interconnections themselves.

The Big Apps

Evolution of the "Meet Me" series

By Hunter Newby

Editors' note: *As the interconnection business evolves so to does the "Meet Me" series. Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the key service providers with wholesale enterprise-focused offerings within those markets.*

Clearly, the key services in the greatest demand by enterprise users today are Ethernet transport, both metro and long haul, and voice over Internet protocol (VoIP). And since most enterprises deploying VoIP only want to do so over a private native layer 2 network, it's enterprise VoIP demand that's driving Ethernet transport demand.

So, each month, the series will focus on the previously featured carrier hotels and their carrier customer bases. A list of standard questions will be presented to the known Ethernet transport and VoIP service providers separately within each facility. The primary objective is to identify which carriers are offering Ethernet transport for enterprise wide area networks and which VoIP carriers enterprise networks can directly connect to at each carrier hotel in order to maximize savings.

Going back to where it all began – old New York. If there are any doubts about the success of Ethernet transport and VoIP, the "city that never sleeps" can put them to rest. One look at the staggering growth curve of Ethernet ports wired and connected in 60 Hudson Street's largest physical layer interconnection facility, tel^{x}, is proof enough.

Being the central point of layer 1 interconnection in one of the world's largest carrier hotels gives a certain perspective that many other core interconnection facilities haven't yet seen. The trends in ordering at tel^{x} New York are a solid indication of what's to come for network service providers throughout the rest of North America. Observing these trends creates an advantage. Applying the knowledge creates revenue.

In the past 12 months, for example, category 5 Ethernet port deployment by network service providers to the tel^{x} meet me area has jumped 200 percent, double the increase of fiber and coax and three times the growth of DS-1/E-1. The vast majority of those ports are coming from native layer 2 metro, domestic and international long haul Ethernet transport providers, as well as direct physical network extensions from VoIP carrier switches and gateways.

There are many international VoIP carriers that use the public Internet for backhaul to the far end for call termination. There are others that use the Internet to interconnect to other wholesale carriers and customer switches. These practices will continue, but there also is a new dynamic beginning to take shape. Interconnection complexity is becoming less of an issue for the carriers at the carrier hotels because their network elements are in a common space with close interconnection proximity. What's more, there is a tremendous amount of Ethernet transport available between these key sites, which house a large section of the known carrier world. Having this access to a carrier marketplace enables service providers to create new services and features that get them to market in ways and at prices never before attainable over private layer 2 networks.

Indeed, having a good resource for potential local and long haul Ethernet partners in key markets can help out-of-region providers get circuits competed quickly and cost effectively. Aside from knowing which carriers are accessible, it is also important to know something about the type of service provided. Similarly, knowing the major VoIP service providers in these markets, what they offer and how it is delivered can assist some service providers in complementing an existing product set or creating an entirely new one based on customers needs.

Here is a look at what is available at the tel^{x} facility today from these two key groups of service providers. The service providers listed below represent those that responded to the inquiry. As can be expected, a few replied that they do not offer the services being featured, and others chose not to participate.

tel[x] 60 Hudson St. New York – Ethernet Service Providers

	1	2	3	4	5	Contact	email
AboveNet	Yes	Yes	Yes	Yes	Yes	Brian Sheehan	Bsheehan@above.net
Cogent Communications	Yes	Yes	No	Yes	Yes	Jeff Henriksen	jhenriksen@cogentco.com
Fiber Rail	Yes	Yes	No	Yes	No	Rod Beck	rodbeck@erols.com
FiberNet	Yes	Yes	No	Yes*	No	John Dowd	john.dowd@ftgx.com
Interoute	Yes	Yes	No	No	Yes	Jay Belodoff	jay.belodoff@interoute.com
Keyspan Communications	Yes	Yes^^^	No	No	No	Joe Hilt	jhilt@keyspanservices.com
Level 3 Communications	Yes	Yes	No	No	No	Brian Solish	brian.solish@level3.com
Looking Glass Networks	Yes	No	No	Yes	Yes	Steve Daigle	Steve.Daigle@lglass.net
Metcom	Yes	Yes	No	Yes*	Yes	Andy Weitzberg	aw@metcom.com
OnFiber Communications	Yes	Yes	No	Yes	Yes	Brad Cheedle	brad.cheedle@onfiber.com
Open Access	Yes	Yes	No	Yes	No	Joe Corso	jcorso@openaccessinc.com
PPL Telcom	Yes	Yes	No	Yes	Yes	Abraham Nemitz	anemitz@pplweb.com
Progress Telecom	Yes	Yes	No	Yes	Yes	Greg Tennant	gtennant@progresstelecom.com
Qwest Communications	Yes	Yes	No	Yes	No	Shawna Lubner	shawna.lubner@qwest.com
Stealth Communications	Yes	Yes	No	Yes	Yes	Shrihari Pandit	spandit@stealth.net
TelCove	Yes^	Yes	Yes	Yes	Yes^	Jay Martin	jay.martin@telcove.com
TeliaSonera	Yes	Yes	No	Yes*	Yes	Art Kazmierczak	art.kazmierczak@teliasonera.com
Time Warner Cable	Yes	Yes	Yes	Yes	Yes	David Durso	david.durso@twcable.com
Time Warner Telecom	Yes	Yes	No	Yes	Yes	David Meyers	David.meyers@twtelecom.com
Veroxity	Yes	Yes	Yes^^	No	Yes	Michael Papell	mpapell@veroxity.com
WilTel Communications	Yes**	Yes	No	No	No	Renee Lem	Renee.Lem@wiltel.com
WV Fiber	Yes**	No***	Yes	Yes	No	Mark Wilson	Mwilson@wvfiber.com
XO Communications	Yes	Yes	No	Yes	Yes	Ruth Li	Ruth.Li@xo.com
Yipes	Yes	Yes	No	Yes*	Yes	Stephen McConnell	smcconnell@yipes.com

*Gig E and/or off-net buildings may not be flat rate

** Long haul only, not metro

*** MPLS

^ Intercity only

^^Layer 2 Ethernet over MPLS

^^^ Layer 2 over SONET, offered in either private line mode (no Layer 2 switching in core) or switched mode (either transparent or 802.1 tagged) for multipoint service

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?

2 = Is the Ethernet service native layer 2?

3 = Is the Ethernet service layer 2 over public layer 3 IP?

4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?

5 = Is the Ethernet service metro as well as long haul?

Ethernet Service Providers

As it is with most of the industry, there simply are too many definitions and service types, which is one of the reasons for this new series. Many of the responses indicated that the Ethernet service was native layer 2, but after further inquiry it has been determined that this may also include Ethernet over SONET, not exactly native Ethernet. The point is to differentiate between those that operate and offer for sale a private, non-public IP transport service and those that offer Ethernet over the Internet, as this, again, is at the center of the issue about voice over the public Internet verses VoIP on a private layer 2 network.

telx 60 Hudson St. New York – VoIP Service Providers

	1	2	3	4	5	Contact	email
3U Telecom	No	Yes	Yes	No	Yes	Jean Gottschalk	gottschalk@3u.net
Aneura Telecommunications	Yes	Yes	Yes	No	Yes	Steve Cespedes	steve@anuera.com
Arbinet	No	No	Yes	No	Yes	Steve Heap	sheap@arbinet.com
AT&T	No^	Yes	Yes	No^	No	Dina Lemmond	lemmond@att.com
Broadsplash	Yes	Yes	Yes	Yes	Yes	Prince Owusu	prince@broadsplash.com
Broadview	Yes	Yes	Yes	No	Yes	Jerry Salvi	jsalvi@broadviewnet.com
Calltrade	No	Yes	Yes	No	Yes	James Trinkler	j.trinkler@calltrade.ch
Contactel	No	No	Yes	No	Yes	David Palmer	david.palmer@contactel.cz
Voiceglo	Yes	Yes	Yes	No	Yes	Kelly Ketrow	kketrow@voiceglo.com
Eureka Networks	No	Yes	Yes	Yes	Yes	Jeff Davis	jeff.davis@eurekanetworks.com
Frontline Communications	Yes	Yes	Yes	Yes	Yes	Eric Ramos	er@frontlineusa.com
Gateway Communications	No	No	Yes	No	Yes	Peter Gbedeman	peter@gatewaycomms.com
Go2Call	Yes	Yes	Yes	Yes	No	Bryon Morse	bmorse@go2call.com
IBN	No	No	Yes	No	Yes	Mihail Balasa	mbalasa@ibntel.com
IDT	No	Yes	Yes	No	No	Jose Branco	jbranco@corp.idt.net
InfiniRoute Networks	No	Yes*	Yes*	No	Yes*	Chris Doe	cdoe@infiniroute.com
Instanet	No	Yes	Yes	No	Yes	Rahmat Kamran	rahmat@instatelecom.com
Interoute	No	No	Yes	No	Yes	Jay Belodoff	jay.belodoff@interoute.com
Ipgrade	Yes	Yes	Yes	No	No	Israel Cohen	israel@ipgrade.com
Jaina Systems Network	No	Yes	Yes	No	Yes	Surajit Bose	s.bose@jainasystems.com
Junction Networks	No	No	No	Yes	Yes	Michael Oeth	mike@junctionnetworks.com
Kayote Networks	Yes	No	Yes	No	Yes	Lior Netzer	lior@kayote.com
Long Distance Post	Yes	Yes	Yes	No	No	Alex Filippov	alex@ldpost.com
Moruda	No	No	No	No	No	Maurice Mizrahi	maurice@moruda.com
NetOne International	No	No	Yes	No	Yes	Tareq Tujjar	ttujjar@netoneint.com
Nobel	No	No	Yes	No	Yes	James Siminoff	james.siminoff@nobelworld.com
Passport Telecom	No	No	Yes	No	No	John Brizendine	jbrizendine@passporttele.com
QuaesTel	No	No	Yes	No	Yes	Geoff Bazegian	gbazegian@quaestel.com
Qwest Communications	No	No	Yes	Yes	Yes	Shawna Lubner	shawna.lubner@qwest.com
Reynwood Communications	Yes	Yes	Yes	Yes	Yes	Richard Kelly	rich@reynwood.com
Sprint	No	No	Yes	No	No	Dorene Weiland	dorene.weiland@mail.sprint.com
Teleworks Wholesale	No	Yes	Yes	No	No	Michael Rothchild	mr@teleworkswholesale.com
TeliaSonera	No	No	Yes	No	Yes	Art Kazmierczak	art.kazmierczak@teliasonera.com
The Voice Peering Fabric	Yes*	Yes*	Yes*	Yes*	Yes*	Shrihari Pandit	spandit@stealth.net
T-Systems USA	No	No	Yes	No	Yes	Corinne Haley	corinne.haley@t-systems.com
United Telecom	Yes	Yes	Yes	Yes	Yes	Samy Mahfar	samy@unitedllc.com
VOIPME	No	Yes	Yes	Yes	Yes	Uri Litvinenko	uri@voipme.com
Xyrous Communications	No	No	Yes	No	Yes	David Kovach	d.kovach@xyrous.com

** Available through partners/members*
^Plans to offer early this year

VoIP Service Provider Question Key

1 = Does the provider have an IP-based local direct inward dialing service offering accessible via the carrier hotel?

2 = Does the provider have a flat rate pricing plan for domestic call termination?

3 = Does the provider have an international call termination offering?

4 = Does the provider offer a hosted IP PBX service?

5 = Does the provider accept layer 2 category 5 cross connects at the carrier hotel?

VoIP Service Providers

The responses from this group were quite interesting, as the questions and the audience was not limited to the international wholesale minutes aspect of VoIP. Although the major carrier hotels are home to most of the large wholesale minute VoIP service providers, there is clearly a new breed of hosted VoIP applications coming up in these facilities.

One such application that has been developed into a service is the hosted Asterisk platform. This popular open source IP PBX is now being used to create a new service model that provides direct inward dialing over IP and free inter-company calling across the platform.

Also worth noting is the number of service providers that accept Ethernet connections at the interconnection facility. This puts into perspective the concept that metro and long haul Ethernet transport providers are using the interconnection facility as a destination for their customers. At that point the customers then interconnect to other outsourced, hosted VoIP platforms for low cost, multifunction services, which allow them access to off-net voice termination at wholesale rates.

L.A.'s Big Picture

The "Meet Me" series returns to One Wilshire Blvd.

By Hunter Newby

Editors' note: Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the key service providers with wholesale enterprise- focused offerings within those markets.

Clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and voice or Internet protocol (VoIP). And since most enterprises deploying VoIP only want to do so over a private native layer 2 network, it's enterprise VoIP demand that's driving Ethernet transport demand. So, each month, the series will focus on the previously featured carrier hotels and their carrier customer bases. The primary objective is to identify which carriers are offering Ethernet transport for enterprise wide area networks and which VoIP carriers enterprise networks can directly connect to at each carrier hotel in order to maximize savings.

From coast to coast, the trend remains the same: VoIP is driving Ethernet.

The downtown Los Angeles area has many carrier facilities, but none are quite like One Wilshire Blvd. One Wilshire is certainly one of the major carrier hotels in the world, and the data complied for this article does not do it justice in terms of the total number of service providers present there (or in the other downtown facilities, for that matter), but what this sample data does show is that IP based local DID (direct inward dialing) phone service, hosted IP PBXs (private branch exchanges) and flat-rate domestic termination plans currently exist, and the number of providers is growing.

As time goes by and the industry evolves, many providers will come and go. The real value for charting long-term success is in tracking the evolutionary trend from the information about the services available today and how they will impact tomorrow.

There are several entities that are concerned about the existence, acceptance and growth of VoIP and its potentially disruptive economics. Those concerned groups would be fiscally satisfied if all of this VoIP development evolved at their pace, or perhaps even not at all.

The fact is that VoIP alone isn't much of a threat or an issue. It needs help from a supporting cast of other services and vendors to make it a reality. If you are a service provider or vendor with a product or service that complements this evolution, you will succeed. If not, you will most likely fail.

VoIP Service Providers

Analyzing the data one can see that, on the VoIP side, the newer service providers coming out of a wholesale voice or ISP (Internet service provider) background are already out with DID services using IP as the provisioning interface. Many are establishing the signaling with SIP (session initiation protocol), and all of them accept Ethernet cross connects, keeping the voice traffic off of the public Internet. This is key and gives the small and nimble service providers an advantage in the near term.

The larger, more established, traditional voice service providers are in the process of a retro-fit. Many of them have VoIP in their core but not as a true service and certainly not at the interface level. Many of them are moving toward a public Internet-based SIP connection as well as a layer 2 interface, but it is tricky as it involves multiple departments and philosophies about how to deliver service.

QoS (quality of service) is a major issue for the large carriers, since they cater to the enterprise customer, and this is a reason for their slower adoption rate of TDM (time division multiplex)-less signaling and transport. Since QoS wasn't traditionally a major issue for the new VoIP service providers, they are more comfortable putting a service offering together and getting it right out to market.

This is a result of two things. In the world of wholesale minutes, there is something called least cost routing (LCR), which is tied to available capacity and call completion percentages. In the ISP world, there is border gateway protocol, which enables routing over multiple paths. Both of these things teach buyers and sellers that they need and can have options for sending traffic. The new VoIP providers know how to manage dynamic QoS. Within 2005 most of the larger carriers will have built IP front ends to their legacy switches to keep up with the ubiquitous IP provisioning capabilities of their more agile competitors, and then they will deal with migrating those TDM switches out for packet-based models. Hopefully the migration is seamless (on the front-end, at least).

Ethernet Service Providers

Ethernet providers provide another interesting perspective on the development of purpose-built Internets. Aside from the fact that some providers are still trying to figure out their own services, most say they are layer 2. And the ones that are layer 3 run MPLS (multi-protocol label switching) over their own private IP backbone. The key here is that the capacity is not shared and not public.

The two reasons for that are the size of the applications that are riding the networks and security. In the voice world, the cost savings of moving from the PSTN (public switched telephone network) to a private VoIP network are so large that the buyers don't mind a negligible difference in the price per megabit between public IP transit and Ethernet transport. In addition, the sensitivity

One Wilshire - VoIP Service Providers

	1	2	3	4	5	Contact	Email
AT&T	Yes^	Yes	Yes	Yes	No	Dina Lemmond	lemmond@att.com
Beyond The Network/PCCW	No	No	Yes	No	Yes	Scott Butterworth	sbutterworth@btnaccess.com
Frontline	Yes	Yes	Yes	No	Yes	Eric Ramos	er@frontlineusa.com
Konfer Technologies	Yes	Yes	Yes	No	Yes	Chris Hall	chall@konfertech.com
Nobel	No	Yes	Yes	No	Yes	James Siminoff	James.Siminoff@nobelusa.com
Primus	Yes	Yes	Yes	No	Yes	Ramona Boudreau	rboudreau@primustel.com
Qwest	No	No	Yes	No	No	Shawna Lubner	shawna.lubner@qwest.com
Race Technologies, Inc.	Yes	Yes	Yes	Yes	Yes	Raul Alcaraz	raul@race.com
The Voice Peering Fabric	Yes*	Yes*	Yes*	Yes*	Yes*	Shrihari Pandit	spandit@stealth.net
Xyrous	No	No	Yes	No	Yes	David Kovach	d.kovach@xyrous.com

* Available through partners/members ^ In trial and available this year

VoIP Service Provider Question Key

1 = Does the provider have an IP based local direct inward dialing service offering accessible via the carrier hotel?
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5 = Does the provider accept layer 2 category 5 cross connects at the carrier hotel?

of putting voice on the public cloud with the threat of hackers, denial of service attacks, viruses, etc., means it is totally worth the premium price. This gives the buyers a big pipe to run an application that doesn't take up a whole lot of capacity, leaving them with plenty of room to grow into other applications.

An interesting dimension of Los Angeles, which is similar to New York, is the fact that it is the television and film capitals of the country. A big driver for Ethernet transport in Los Angeles is backhaul from the movie studios to One Wilshire for long haul to New York. This is where the applications, namely video, are driving private, high-capacity layer 2 networks. Yes, it's all IP based, but it's not the Internet. The public Internet is a bigger concern for the video community because of the real-time nature and sensitivity of the content. They cannot tolerate latency.

VoIP is doing video a big favor – it's cost justifying the Ethernet (and waves), enabling all of the glass that was laid in the bubble years with the money being saved from inflated PSTN charges. This VoIP "Trojan horse" is preparing everyone for the next phase in the evolution of communications, video over IP, so that when it arrives we don't have to wonder how it will all get provisioned. The transport will be there already.

There are many other service providers of VoIP and Ethernet transport in L.A., but they did not provide data for various reasons, including secrecy as well as being at the CompTel conference in New Orleans at the time when this installment was being compiled.

One Wilshire - Ethernet Service Providers

	1	2	3	4	5	Contact	Email
Beyond The Network/PCCW	Yes	Yes*	Yes**	Yes	Yes	Scott Butterworth	sbutterworth@btnaccess.com
Broadwing	Yes	Yes	Yes	No	Yes	Brian Schloss	bschloss@broadwing.com
Cogent	Yes	Yes	Yes	Yes	Yes	Jeff Henriksen	JHenriksen@Cogentco.com
Konfer Technologies	Yes	Yes	Yes^^	Yes	Yes	Chris Hall	chall@konfertech.com
Looking Glass	Yes	No	No	Yes	Yes^^*	Steve Daigle	steve.daigle@lglass.net
OnFiber Communications	Yes	Yes	No	Yes*^*	Yes**^	Michael Rees	michael.rees@onfiber.com
Qwest	Yes	Yes	No	No	No^^^	Shawna Lubner	shawna.lubner@qwest.com
Race Technologies	Yes	Yes	Yes	Yes	Yes	Raul Alcaraz	raul@race.com
SBC	Yes	Yes	No***	Yes^	Yes	Amy Byrne	ab1717@sbc.com
Sify Limited	Yes	Yes	No	Yes	Yes	Rohit Dhingra	rohit_dhingra@sifycorp.com
Sohonet Limited	Yes	Yes	No	Yes	Yes	Jon Ferguy	jon.ferguy@sohonet.co.uk
Verio	Yes	Yes	No	No	Yes	David Hansen	dhansen@verio.net
Wiltel	Yes	Yes	No	No	No^*^	Renee Lem	renee.lem@wiltel.com
WV Fiber	Yes	Yes	No***	Yes	No^*^	Mark Wilson	mwilson@wvfiber.com
XO Communications	Yes	Yes	No	Yes	No	Ruth Li	ruth.li@xo.com
Yipes	Yes	Yes	No	Yes	Yes	Mike Spieldenner	mspieldenner@yipes.com

* As a cross connect ^^ Both are available *^* Some variation if going to Orange County ^^^ Metro only ^ Some mileage sensitivity
** Layer 3 MPLS ^^* Long haul via partners **^ Metro primarily; LH on ICB basis *** Not for GigaMan service ^*^Long haul only

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?
2 = Is the Ethernet service native layer 2?
3 = Is the Ethernet service layer 2 over public layer 3 IP?
4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

Hunter Newby is chief strategy officer of telx. He can be reached at hnewby@telx.com.

Gate City of the South

The "Meet Me" series returns to 56 Marietta.

By Hunter Newby

Editors' note: *Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the key service providers with wholesale enterprise-focused offerings within those markets.*

Clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and VoIP (voice over Internet protocol). And since most enterprises deploying VoIP only want to do so over a private native layer 2 network, it's enterprise VoIP demand that's driving Ethernet transport demand. So each month the series will focus on the previously featured carrier hotels and their carrier customer bases. The primary objective is to identify which carriers are offering Ethernet transport for enterprise wide area networks and which VoIP carriers enterprise networks can directly connect to at each carrier hotel in order to maximize savings.

56 Marietta St. holds a special place in the major fiber routes of the Southeast – right in the middle of it all. As we have learned from the original *Meet Me* series, where the fiber is determines where the carriers go to get connected. This creates the natural benefits of proximity reducing time and costs to deliver services, and a marketplace is born.

There is a tremendous amount of network development going on in and around Atlanta. Everything from major research and education networks in the city and suburbs to WiMAX (pre-standard) deployments in the rural areas. All of this activity is an effort to improve the underlying layer 2 capabilities so that developing packet-based applications can be supported properly. The existence of these networks actually helps to drive the creation of packet-based applications – for what good is the application if people can't use it?

Being an inland city, Atlanta doesn't have the proximity to undersea cables that would make it an obvious international gateway. But, after taking a closer look, it is evident that service providers offering Ethernet transport riding all of those major fiber routes give the city and this location more global access. Global Crossing, Teleglobe and TeliaSonera are located at 56 Marietta and provide international Ethernet transport from the site. These providers make it very easy for any type of VoIP user to build private layer 2 networks to carry voice traffic efficiently and securely, bypassing the public switched telephone network across the pond and beyond.

If those international providers can't get you where you need to go, there are always options. There are several domestic Ethernet transport providers available with routes to the Atlantic and Pacific gateways, where Ethernet cross connects to major undersea providers are happening every day. Those domestic providers also connect to other major United States cities to support any wide area network and/or VoIP peering needs. In addition to the international and domestic providers, there are many local Ethernet transport providers to support the last mile origination and termination efforts of VoIP traffic directly to the demarcation point, be it a softswitch, cell tower or IP private branch exchange.

One very interesting transport solution located within 56 Marietta is the Southern Light Rail (SLR), the local transport arm of the National Lambda Rail (NLR), which is a nationwide 10G research network. SLR provides shared and/or dedicated transport to NLR at very aggressive rates with a condition that the buyer's application has some direct ties to a research or educational project. Currently there are several projects underway, and many involve VoIP and video over IP. Access to the SLR and NLR presents new and uncommon opportunities for possible carrier and enterprise trials of IP services, and as of July 2005 they will be Ethernet enabled.

The VoIP service offerings at this site include domestic and international providers as well. It is evident that some providers still are in the midst of a front-end upgrade, as they have IP-enabled their voice core but have not yet added that functionality at the interface level. This is an interesting trend to watch develop, as it's a clear indicator of the adoption of VoIP and necessity of local Ethernet connections migrating away from the more costly time division multiplexed switch ports and SONET transport devices.

IP-based local phone service offerings also are available at this site. In addition to the service providers with direct access, 56 Marietta also is a Voice Peering Fabric-enabled facility. Due to its distributed Ethernet nature, all of the service providers on the VPF are accessible from any of its locations. This means that any of the competitive local exchange carriers, multiple system operators and voice over broadband service providers on the Fabric can offer their local phone service to anyone in this site, even though they

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?

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4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?

5 = Is the Ethernet service metro as well as long haul?

are not physically there. The VPF adds a whole new dimension to VoIP service offerings and creates domestic and international buy-and-sell opportunities for the local Atlanta market.

The combination of Ethernet and VoIP is making great strides in localizing voice traffic and creating a secure, economical environment for calls to occur. As the series continues, we're sure to see many new names as well as several new offerings from traditional telcos trying to keep up and get ahead in the changing landscape. **FAT**

56 Marietta St. – Ethernet Service Providers

	1	2	3	4	5	Contact	Email
American Fiber Systems	Yes	Yes	Yes^	Yes^^	No^^^	Gail Funderburk	gfunderburk@americanfibersystems.com
AboveNet	Yes	Yes	No	Yes	Yes	Brian Sheehan	bsheehan@above.net
Cogent	Yes	Yes	No	Yes	Yes	Jeff Henriksen	jhenriksen@cogentco.com
Broadwing	Yes**	Yes	No	Yes	No	Jamey Heinze	jamey.heinze@broadwing.com
Global Crossing	Yes	Yes	No	Yes	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
Looking Glass Networks	Yes	No	No	Yes	No	Steve Daigle	steve.daigle@lglass.net
Level (3)	Yes	No*^*	No	Yes	No	Ketan Patel	ketan.patel@level3.com
OnFiber Communications	Yes	Yes	No	Yes	Yes	Brad Cheedle	brad.cheedle@onfiber.com
Progress Telecom	Yes	Yes	No	Yes	Yes	Paul Aiello	paiello@progresstelecom.com
Qwest Communications	Yes	Yes	No	Yes	No	Shawna Lubner	shawna.lubner@qwest.com
Southern Light Rail	No^^*	Yes	No	No	Yes	Brian Savory	brian.savory@oit.gatech.edu
Teleglobe	Yes	Yes	No	No	No	David Barnes	david.barnes@teleglobe.com
TelCove	Yes	Yes	Yes	Yes	Yes	Jay Martin	jay.martin@telcove.com
TeliaSonera	Yes	Yes	No	Yes*	Yes	Art Kazmierczak	art.kazmierczak@teliasonera.com
Time Warner Telecom	Yes	Yes	No	Yes *^	Yes	Bob Meldrum	bob.meldrum@twtelecom.com
WilTel Communications	Yes**	Yes	No	No	No	Renee Lem	renee.lem@wiltel.com
WV Fiber	Yes**	No***	No	Yes	No	Mark Wilson	mwilson@wvfiber.com
XO Communications	Yes	Yes	No	Yes	Yes	Joe Patton	joe.patton@xo.com
Yipes	Yes	Yes	No	Yes*	Yes	Stephen McConnell	smcconnell@yipes.com

**Gig E and, or off-net buildings may not be flat rate*

^^^ Metro only

*** Long haul only - not metro*

**^ Extended metro Ethernet (inter-city service offering) is priced in bands*

**** MPLS*

**^* Ethernet over SONET, or waves*

^ Layer 2 and layer 3 VPN's supported

^^* July 2005 launch for Ethernet

^^ On-net only

56 Marietta St. – VoIP Service Providers

	1	2	3	4	5	Contact	Email
AT&T	No	Yes	Yes	No	No	Dina Lemmond	lemmond@att.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
Level 3 Communications	Yes	No	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Primus Telecommunications	No	No	Yes	No	No	Mike Magill	mmagill@primustel.com
Sprint	No	No	Yes	No	No	Dorene Weiland	dorene.weiland@mail.sprint.com
The Voice Peering Fabric	Yes*	Yes*	Yes*	Yes*	Yes*	Shrihari Pandit	spandit@stealth.net
Qwest Communications	No	No	Yes	Yes	Yes	Darryl Caprio	darryl.caprio@qwest.com
TeliaSonera	No	No	Yes	No	Yes	Art Kazmierczak	art.kazmierczak@teliasonera.com
Teleglobe	No	No	Yes	No	No	David Barnes	david.barnes@teleglobe.com

**Available through partners*

VoIP Service Provider Question Key

1 = Does the provider have an IP-based local direct inward dialing service offering accessible via the carrier hotel?

2 = Does the provider have a flat rate pricing plan for domestic call termination?

3 = Does the provider have an international call termination offering?

4 = Does the provider offer a hosted IP PBX service?

5 = Does the provider accept layer 2 category 5 cross connects at the carrier hotel?

Cold Pucks, Hot Packets

The "Meet Me" series returns to 151 Front St. West

By Hunter Newby

Editors' note: *Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the service providers with the key wholesale enterprise-focused offerings within those markets. And clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and VoIP.*

North of the border, up Canada way, Ethernet and VoIP (voice over Internet protocol) are showing tremendous growth and activity, as they are almost everywhere else in the world. But one city, Toronto, and one carrier hotel, 151 Front Street West, leads the way for everyone in the area.

No doubt, 151 Front is the place to go for all of the hottest games in town when it comes to these rule-breaking services, and given that there are no Maple Leafs games to attend, 151 Front also has the best action around. So trade in your cross-checks for cross-connects and check out which service providers are facing off in the game of PSTN (public switched telephone network) replacement and paving the way for IP everything.

Most, if not all, of the metro and long haul fiber in and through Toronto touches 151 Front. This is the physical layer basis for the next greatest thing in transport, Ethernet. The enterprise LANs (local area networks) of many cities, including Toronto, are 10-100 megabits-plus of pent up demand. Metro and long haul Ethernet service providers pave the way for packet-based last mile, metro interconnect and international access offerings that enable Toronto-based enterprises to peer data traffic, including voice, with each other locally and to reach out to other major city centers around the world.

Let's not forget wireless Ethernet either. For those buyers that may not be on a fiber path, have no access to a land-based Ethernet service provider or just want a back-up plan, there are wireless options that cover the city and have a presence at 151 Front providing access to every possible alternative for communications services needs.

Indeed, a new equation to the marketplace is the use of fixed wireless providers to supply cost-effective Ethernet transport links to multi-location enterprise clients. TeraGo Networks Inc., Canada's largest fixed wireless data services provider, is a prime example of the power of Ethernet. TeraGo's entire network is an Ethernet delivery platform that maintains a termination presence within Canada's largest carrier hotel, 151 Front.

Some larger enterprise clients are utilizing TeraGo VLAN (metro area LAN extension) service to aggregate traffic from multiple suburban manufacturing locations to TeraGo's point of presence in 151 Front. This traffic is then handed off to whomever the clients need. Because TeraGo's fixed wireless network provides a cost-effective solution to reach areas typically not served by high-speed services (above 1.5 Mbps), never mind Ethernet transport, clients are able to purchase a ubiquitous local loop that is capable of carrying any combination of data traffic. TeraGo's VLAN services are fully Layer 2 for the transport. Customers can run any protocol (including IP) on the service, and management of those services is Layer 3, making it transparent to the customer.

The flurry of new service providers at this layer are enabling many VoIP services, including hosted IP PBX (private branch exchange), flat-rate domestic and international calling and

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2 = Does the provider have a flat-rate pricing plan for domestic call termination?
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4 = Does the provider offer a hosted IP PBX service?
5 = Does the provider accept Layer 2 category 5 cross connects at the carrier hotel?

151 Front St. West Toronto – VoIP Service Providers

	1	2	3	4	5	Contact	email
Level 3	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
MCI	Yes	Yes	Yes	No	Yes	Info	Info@ca.mci.com
Navigata Communications	Yes	Yes	Yes	Yes	Yes	Michael Anyon	Michael.Anyon@navigata.ca
Primus Telecom	Yes	Yes	Yes	No	Yes	Sandy Denison	sdenison@primustel.ca
Shaw Big Pipe	Yes	No	No	No	Yes	Mark Knill	mark.knill@bigpipeinc.com
Sprint Canada	No	Yes	Yes	No	No	Bruce Allen	bruce.allen@sprint-canada.com
Peer1/Symmetric Broadband	Yes	Yes	Yes	Yes	Yes	Ken Thorpe	kthorpe@symmetricbroadband.com
Teleglobe	No	No	Yes	No	No	David Barnes	david.barnes@teleglobe.com
Telnet Communications	Yes	Yes	Yes	Yes	Yes	Sales Dept	wholesale@telnetcommunications.com
Telus Communications	No	No	No	Yes	No	Tammy April	tammy.april@telus.com
Yak Communications	Yes	Yes	Yes	No	Yes	Rajiv Jagota	r.jagota@yak.ca

aggressive wholesale rates for everything that isn't on-net. The carrier hotel is home to many international VoIP gateway operators. Service providers such as Primus Telecommunications and Yak Communications, along with others (see table) have established interconnection points in the building. This cluster enables easy access to the best rates and quality for voice minutes.

Wholesale voice service applies to many customer segments ranging from calling cards for the international community living in the Toronto area to the enterprise IT departments moving to VoIP PBX systems. The enterprise is coming around to a reality that the international community has been aware of for some time: that wholesale rates are available and accessible, and they can save thousands of dollars a year or more. Access is the key. That's where Ethernet comes in.

Ethernet transport circuits are the ties that bind the enterprise VoIP networks in the metro and long haul. Due to the current usage of and demand for Ethernet in the marketplace, most long haul and even many metro routes are now supported by 2.5G and 10G wavelengths. Many high-end core transport equipment vendors already are testing 40G in anticipation of the coming enterprise application shift to packet-based everything. Sorry OC-768, you're no longer on the roadmap. It's a packet world now.

Director, leasing and property management, for Northam Realty Advisors, Scott Metcalfe, says that the building appears to have a "breeder reactor" effect. "Many tenants have started with one or two racks and after taking advantage of the connectivity at 151 Front, have increased their presence dramatically," Metcalfe says. "Most have cited the building's services coupled with its advanced capabilities—connectivity, power, cooling and security—as the reasons for their expansion.

"The business climate is also right for these increases," adds Metcalfe. Access, speed, choice and price are driving the network transformation process in the Great White North, as well as other parts of the globe, and if the service exists in Toronto, it's available at 151 Front.

Now if the National Hockey League could only get back on track, all would be right in the world. In the meantime, we'll have to settle for packets over pucks and stick to Ethernet and VoIP.

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?
2 = Is the Ethernet service native Layer 2?
3 = Is the Ethernet service Layer 2 over public Layer 3 IP?
4 = Is the Ethernet service a flat-rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

56 Marietta St. – Ethernet Services Providers

	1	2	3	4	5	Contact	email
Bell Canada	Yes	Yes	No	Yes	Yes	Matt Eby	matt.eby@bell.ca
Cogent Canada Inc.	Yes	Yes**	Yes^	Yes	Yes	Claudio Nespeca	cnespeca@stoc.net
Global Crossing	Yes^^	Yes	No	Yes	No^^^	Sian Cameron	sian.cameron@GlobalCrossing.com
Magma	Yes	Yes	No	No	Yes	Magma Sales Team	sales@magma.ca
Navigata Communications	Yes	Yes	No	Yes	Yes	Michael Anyon	michael.anyon@navigata.ca
Shaw Big Pipe	Yes	Yes	No	No	Yes	Mark Knill	Mark.knill@bigpipeinc.com
Sprint Canada	Yes	Yes	No	No	Yes	Sean Chen	sean.chen@cncs.ca
Switch and Data	Yes	Yes	No	Yes	No*	Duncan Elliott	delliott@switchanddata.com
Teleglobe	Yes	Yes	No	No	No	David Barnes	david.barnes@teleglobe.com
Telnet Communications	Yes	Yes*	Yes	Yes	Yes	Sales Dept	wholesale@telnetcommunications.com
Telus Communications	Yes	Yes	No	Yes	Yes	Bill McConnell	bill.mcconnell@telus.com
TeraGo Networks Inc	Yes	Yes	No	Yes	No	Ed Hachey	edward.hachey@terago.ca
Toronto Hydro Telecom	Yes	Yes	No	Yes	Yes	Deno Farinaccia	dfarinaccia@torontohydro.com
Videotron Telecom Ltd.	Yes	Yes	No	Yes	Yes	Jean-Pierre Proulx	jp.proulx@vtl.quebecor.com

* Within 151 Front St. only **VLAN ^ Layer 2 and 3 reside on the same backbone ^^ Capable, not implemented - answers based on implementation ^^^ Long haul only

The Crown Jewel of Emerald City

The Meet Me series returns to the Westin Building in Seattle

By Hunter Newby

Editors' note: *Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the service providers with the key wholesale enterprise-focused offerings within those markets. And clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and VoIP (voice over IP).*

From coast to coast and back again, Ethernet and VoIP are helping to redesign the entire communications network infrastructure. When it comes to the Pacific Northwest, nothing comes close to the Westin Building in Seattle. It's a magnificent carrier hotel in a great city, and if the coffee in this town isn't enough to get you revved up and going, the availability of Ethernet transport certainly will. Couple that with several maturing VoIP service offerings, and you've got a combination that's better than a caramel mocha frappuccino.

There are several solid local access VoIP offerings from well-known providers in this region, and many of them accept Ethernet handoffs. This is a big plus for those looking to buy IP-based Seattle local service and run VoIP on a private (non-Internet) network. Additionally, many of these providers offer local access numbers from other rate centers across the country through the same Ethernet connection. What's also impressive is the availability of international VoIP termination from many of these providers. For regional service providers looking to create a bundled solution for their Pacific Northwest customers, there is much to choose from at the Westin Building.

Of course, all of that pent-up service capability needs to meet the pent-up demands of the buyers somehow, and the Westin is full of Ethernet transport providers ready and willing to connect enterprise LANs (local areas networks) and IP-enabled PBXs (private branch exchanges) to those VoIP providers. There is a terrific mix of metro, domestic and international long haul Ethernet providers capable of interconnecting offices to the core and beyond at the most competitive rates and best possible quality. The benefit of such an interconnection point is choice, and the Westin Building, similar to the other major carrier hotels in North America, has become the place to be with 22 (and counting) Ethernet transport providers.

Although some people in the telecom business may think that

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3 = Does the provider have an international call termination offering?
4 = Does the provider offer a hosted IP PBX service?
5 = Does the provider accept layer 2 Category 5 cross connects at the carrier hotel?

Westin Building, Seattle – VoIP Service Providers

	1	2	3	4	5	Contact	Email
AT&T	Yes	Yes	Yes	Yes	No	Dina Lemmond	lemmond@att.com
Broadwing	Yes	Yes	Yes	No	Yes*^*	Javed Abdi	javed.abdi@broadwing.com
ecuity, Inc.	Yes	Yes	Yes	Yes	Yes	Jon Schnelz	jon.schnelz@ecuityinc.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
Group Telecom	No	Yes***	Yes***	No	Yes	Nicholas Trott	nicholas.trott@gt.ca
Level 3	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Peer1	Yes	Yes	Yes	No	Yes	Garrick Sturgill	gsturgill@peer1.net
Savvis	Yes	Yes	Yes	No	Yes	Brian Ackley	brian.ackley@savvis.net
Speakeasy	Yes	Yes	Yes	Yes*^	Yes	Sales	sales@speakeasy.net
Sprint Canada	No	Yes	Yes	No	No	Bruce Allen	bruce.allen@sprint-canada.com
Telstra	No	No	Yes	No	No	Ilissa Miller	ilissa.miller@team.telstra.com
Time Warner Telecom	Yes*	Yes**	No	Yes	Yes	Brian Petit	brian.petit@twtelecom.com
WilTel Communications	No	No	Yes	No	Yes	Jeff Pounds	jeff.pounds@wiltel.com
XO Communications	No^	No^^	No	No	Yes^^^	Dan Dunn	daniel.m.dunn@xo.com

** 3Q05*

*** No charge in-network calling; off-network calling is standard LD rates*

**** Conditions apply*

^ Will be available with release of VoIP Origination end of 3Q05

^^ VoIP termination based on a rate per minute, varies by NPA NXX

^^^ Fee-based

**^ IP Centrex*

**^* ICB, not standard*

times are tough, it all depends on where you are in the food chain. Just ask Michael Boyle, business development manager for the Westin Building. "Since just before close of 2004, there has been a significant up tick in business that has not let up and continues to show promise of additional growth," says Boyle. New leasing activity, equipment upgrades and continued industry consolidation are fostering new activity, while new developments in the Asia-Pacific telecom marketplace also have contributed to growth in the Pacific Northwest telecommunications marketplace.

What's more, "changes in overall telecom technology, including wireless (WiMAX and Wi-Fi), video technology, VoIP, Ethernet and cellular technology, along with overall market transitions, have created excellent opportunities for recent growth in our area, which is likely to continue through 2006," Boyle continues.

One of those specific areas, WiMAX, has been getting a lot of attention recently, and one Seattle-based service provider, Speakeasy, is actually out there making it happen. Just recently the company announced its new pre-WiMAX standard service offering in Seattle. The company's approach to the market is different in that it is launching in a city rather than a rural or broadband-starved area. This new offering was developed in response to the need for more network access, as enterprises increase their usage of applications and voice calling over IP networks. Speakeasy's fixed-line business has grown quite nicely to date, with 60,000 customers in eight cities, and the company expects revenue of $70 million in 2005.

Because of the access it provides to every other major network, the Westin Building is a key to the company's success in Seattle. "The Westin Building is a landmark building for all Internet connectivity in and out of the Pacific Northwest," says Umesh Amin, vice president, WiMAX Initiative, for Speakeasy. "We have been operating our wireline business from this building for some time now."

The Westin Building houses one of Speakeasy's eight points of presence on its national network, which serves 120 markets in the United States.

"When we conceived our WiMAX service for Seattle, the Westin Building was the first building that we secured," says Amin. "We are delighted to have the Westin Building serve as our WiMAX Class service base station and are proud of the partnership that we have cultivated with the property management team."

These new types of service developments, the reasons why they are being developed and where they are being centrally located all reinforce key facts. First, the evolutionary shift from circuit to packet switching is taking place not just at layer 3 and up, but also layer 2. Secondly, broadband wireless has a role in this shift within the metro as well as remote areas. Thirdly, voice as an application has a lot to do with driving the layer 2 build outs based on a sound business case. So if you are in need of a jolt to your system, go grab a double espresso, set up a few meetings with your local area service provider representatives and chart a course around the Seattle sounds of VoIP and Ethernet.

Hunter Newby is chief strategy officer of tel^x. He can be reached at hnewby@telx.com.

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?
2 = Is the Ethernet service native layer 2?
3 = Is the Ethernet service layer 2 over public layer 3 IP?
4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

Westin Building, Seattle – Ethernet Services Providers

	1	2	3	4	5	Contact	Email
180networks	Yes	Yes	Yes	Yes	Yes	Jenny Terrell	jterrell@go180.net
AT&T	Yes	Yes*	Yes**	No	Yes	Dina Lemmond	lemmond@att.com
AboveNet	Yes	Yes	No	Yes	Yes	John Johnson	John.Johnson@above.net
Broadwing	Yes	Yes	No	No	No	Javed Abdi	Javed.Abdi@broadwing.com
Cascadelink	Yes	Yes	Yes	Yes	Yes	Chris Flugstad	info@cascadelink.com
Cogent	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
Eli.net	Yes	Yes	No	Yes	Yes	Steve Frame	steve_frame@eli.net
Global Crossing	Yes	Yes	No	Yes	Yes	Sian Cameron	Sian.Cameron@globalcrossing.com
Group Telecom	Yes	Yes	No	No	No^^	Nicholas Trott	nicholas.trott@gt.ca
Level 3	Yes	No	No	Yes	No	Ketan Patel	Ketan.Patel@level3.com
Looking Glass Networks	Yes	No	No	Yes	Yes***	Steve Daigle	steve.daigle@lglass.net
NoaNet	Yes	Yes	No	No*^	Yes	Rob Kopp	rkopp@noanet.net
OnFiber Communications	Yes	Yes	No	Yes	No^	Ronnie Galang	galang@onfiber.com
Peer1	Yes	Yes	Yes	Yes	No^^	Garrick Sturgill	gsturgill@peer1.net
Qwest Communications	Yes	Yes	No	Yes	Yes^^^	Jane Thornton	jane.thornton@qwest.com
Savvis	Yes	Yes	Yes	Yes	Yes	Brian Ackley	brian.ackley@savvis.net
Speakeasy	Yes	Yes	No	Yes	Yes	Sales	sales@speakeasy.net
Sprint Canada	Yes	Yes	No	No	Yes	Sean Chen	sean.chen@cncs.ca
Teleglobe	Yes	Yes	Yes	No	Yes	Carlo Azzolini	giancarlo.azzolini@teleglobe.com
Time Warner Telecom	Yes	Yes	No	Yes	Yes	Brian Petit	brian.petit@twtelecom.com
WilTel Communications	Yes	Yes	No	No	Yes	Jeff Pounds	Jeff.Pounds@wiltel.com
XO Communications	Yes	Yes	No	Yes	Yes	Dan Dunn	daniel.m.dunn@xo.com
Yipes	Yes	Yes	No	Yes	Yes	Kirk Martinez	kmartinez@yipes.com

** ESS-MAN and AT&T Ultravailable Services* — *^^ Long haul only*

*** Ethernet MIS with self-managed VPNs* — *^^^ ICB*

**** Through Type II partners* — **^ Contact for more details*

^ Metro only

Connections in The Gateway City

The "Meet Me" series returns to St. Louis

By Hunter Newby

Editors' note: *Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identify the service providers with the key wholesale enterprise-focused offerings within those markets. And clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and VoIP.*

Although this market is not an international gateway city, it certainly is a domestic one. Just the same as it is for roadways and trains, St. Louis is a junction point for communications networks. These all-important commerce routes intersect at distinct places in the city, and those places for communications network interconnections are 210 North Tucker Blvd. and 900 Walnut St. Much the same as the rest of North America, the networks in these sites are experiencing a transformation from circuit- to packet-based transport and higher layer services.

Both properties are owned and managed by the same group, Bandwidth Exchange Buildings, and they have taken the right steps to run fiber between them to facilitate interconnections. Making it easy for networks to interconnect is the key to success. That same premise applies to enterprise LAN-WAN (local area network – wide area network) connections and the metro and long haul circuits necessary to put them all together.

Ethernet dominates every LAN in North America; therefore it is logical to see such Ethernet growth in the transport business. Keeping things packet-based and low cost across the continent and ultimately the world is a successful combination.

The core interconnection points for networks in the major cities are in place. In these facilities there is never a local

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2 = Does the provider have a flat rate pricing plan for domestic call termination?
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4 = Does the provider offer a hosted IP PBX service?
5 = Does the provider accept Layer 2 Category 5 cross connects at the carrier hotel?

210 N. Tucker VoIP Service Providers

	1	2	3	4	5	Contact	email
Level 3	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
XO	No^	No^^	No	No	Yes^^^	Dan Dunn	daniel.m.dunn@xo.com
Broadwing	No	Yes	Yes	No	Yes*	Javed Abdi	javed.abdi@broadwing.com
NetLogic	Yes	No	Yes	Yes	Yes	Michael Morey	mmorey@netlogic.net
900 Walnut VoIP Service Providers							
Level 3	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
XO	No^	No^^	No	No	Yes^^^	Dan Dunn	daniel.m.dunn@xo.com
Broadwing	No	Yes	Yes	No	Yes*	Javed Abdi	javed.abdi@broadwing.com
NetLogic	Yes	No	Yes	Yes	Yes	Michael Morey	mmorey@netlogic.net
Charter Communications	Yes	Yes	No	No	Yes	John Scheihing	jscheihing@chartercom.com

^ Will be available with release of VoIP origination end of 3Q05

^^ VoIP termination product is based on a rate per minute and varies by NPA NXX

^^^ Fee-based

* ICB, not standard

access problem. There is no fiber exhaust between networks. Interconnection prices are fixed and stable for the most part (where there are rational minds at work), and this gives the buyers a very high level of predictability. Setting the right expectations is critical, but what good is all of this potential if the buyer cannot access it?

There still exists a last mile, or first mile, problem in the minds of many. Although this is not a figment of their imagination, the solution to the problem is not as insurmountable as one might think. Enterprise buyers need to know about the operational cost reductions that can be achieved from buying carrier services at the carrier hotels, such as Bandwidth Exchange Buildings. The metro transport providers need to spread that word.

Awareness creates need and urgency and drives access solutions. Where there's a will, there's a way. Where there's a problem to be solved, there's a dollar to be made. Transport providers should position their products as selling access to the marketplace, and they will cost justify their piece of the enterprise's new network as soon as it is built. Every day buyers wait, they are losing money.

One such way to lower operating costs at the marketplace is to move from circuit-switched minutes to VoIP (voice over Internet protocol). This is a voice trunking scenario, from the PBX (private branch exchange) out, and is not about devices or PBX replacement. The VoIP wholesale carriers at Bandwidth Exchange Buildings are ready to offer PSTN (public switched telephone network) quality call terminations at lower rates.

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?
2 = Is the Ethernet service native Layer 2?
3 = Is the Ethernet service Layer 2 over public Layer 3 IP?
4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

It's a fairly simple story. The best way for a buyer to take advantage of that is to get an Ethernet presence, via metro circuit from their premises to the marketplace or actually housing an Ethernet switch in the carrier hotel. Think of it as rather than having your phone closet in your office, having it at the carrier hotel. That one move does wonders for buying power and dramatically changes the networking landscape. This also drives metro carrier transport business and the VoIP carrier termination business.

This is not a forward-looking statement or concept; this actually is all happening right now. "The upswing in the demand for VoIP and Ethernet-based services out of the Bandwidth Exchange Buildings has been amazing," according to Bob Guller, managing member of the Bandwidth Exchange Buildings. "In the St. Louis market, the strongest demand for these services has come from enterprise and academia. A large major private university has just completed the switch of both its campus and research networks to Ethernet-based transport. We are also seeing the same for enterprises."

As it has been in each article in this series, there are more providers of these services in the carrier hotels than are listed in the charts. This data is meant to give the readers a view to what is actually happening in the market. For various reasons, including secrecy, certain carriers choose not to participate in the information gathering and awareness process. The ones that could be reached and were willing to be open and discuss their offerings are included below. I thank you all.

Given all of the confusion in the way the networking world is changing, it is clear that the Bandwidth Exchange Buildings in St Louis, as well as their tenants listed below, are on the right track. **FAT**

Hunter Newby is chief strategy officer of tel^{x}.
He can be reached at hnewby@telx.com.

210 N. Tucker Ethernet Service Providers

	1	2	3	4	5	Contact	email
Broadwing	Yes	Yes	No	No	No	Javed Abdi	javed.abdi@broadwing.com
Charter Communications	Yes	Yes	No	No	Yes	Robert Kittner	robert.kittner@chartercom.com
Cogent	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
Level 3	Yes	No	No	Yes	No	Ketan Patel	ketan.patel@level3.com
XO Communications	Yes	Yes	No	Yes	Yes	Dan Dunn	daniel.m.dunn@xo.com
900 Walnut Ethernet Service Providers							
Broadwing	Yes	Yes	No	No	No	Javed Abdi	javed.abdi@broadwing.com
Charter Communications	Yes	Yes	No	No	Yes	Robert Kittner	robert.kittner@chartercom.com
Cogent	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
Level 3	Yes	No	No	Yes	No	Ketan Patel	ketan.patel@level3.com
XO Communications	Yes	Yes	No	Yes	Yes	Dan Dunn	daniel.m.dunn@xo.com

Golden Gateway

The "Meet Me" series returns to San Francisco

By Hunter Newby

***Editors' note**: Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the service providers with the key wholesale enterprise-focused offerings within those markets. And clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and VoIP.*

In the "City by the Bay" there are many wonderful sites to see. Just past the Golden Gate Bridge, for example, lies the "Golden Gateway" to the packet communications world. Though it's one of the lesser known tourist destinations, 200 Paul Avenue is one of the most important destinations in the networking world.

Sitting just south of the city on Route 101, it is uniquely positioned to pick up not only the north-south fiber running up and down the West Coast, but it also hits several major metro San Francisco networks. In addition to the key transport networks providing access in and out of the city, there also are many IP transit and voice over IP providers at 200 Paul making this an excellent one-stop-shop destination for all of the local area enterprises.

The Bay Area is unique in a networking sense in that there are many Internet-based applications being developed in the market that drive Ethernet transport over and above VoIP. In other major United States markets, public Internet access certainly is critical for day-to-day business as a medium that is consumed. But in the Bay Area, it is the basis of the business in many instances.

That said, there certainly is no lack of interest, or diminished need, for VoIP in the region, for the IP application developers and for all of the other local businesses.

Getting in and around the city is easy with access to

Ethernet Service Provider Question Key

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3 = Is the Ethernet service Layer 2 over public Layer 3 IP?
4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

200 Paul Ave. Ethernet Service Providers

	1	2	3	4	5	Contact	Email
AboveNet	Yes	Yes	No	Yes	Yes	Nelson Frye	nfrye@above.net
Cogent Communications	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
MCI	Yes	Yes	No	Yes	Yes	John Logan	john.logan@mci.com
Global Crossing	Yes	Yes	No	Yes	Yes	Sian Cameron	sian.cameron@globalcrossing.com
Looking Glass Networks	Yes	No	No	Yes	Yes*	Steve Daigle	steve.daigle@lglass.net
Level 3 Communications	Yes	No	No	Yes	No	Ketan Patel	ketan.patel@level3.com
OnFiber Communications	Yes	Yes	No	Yes	Yes	Ronnie Galang	ronnie.galang@onfiber.com
IP Networks	Yes	Yes	No	Yes	No	Adam Elasowich	aelasowich@ipnetworksinc.com
Time Warner Telecom	Yes	Yes	No	Yes	Yes	Eric Bell	erick.l.bell@twtelecom.com
XO Communications	Yes	Yes	No	Yes	Yes	David Allen	david.j.allen@xo.com
Yipes Enterprise Services	Yes	Yes	No	Yes	No	Kirk Martinez	kmartinez@yipes.com
Neopolitan Networks	Yes	Yes	No	Yes	Yes	David Smith	dsmith@neopolitannetworks.com

** Long Haul to San Jose, type II Partners for others*

the Ethernet transport networks of many of the major U.S. carriers. The Ethernet networks that terminate at 200 Paul bring enterprise network operators from their offices to the edge of several VoIP service providers within the facility that accept Category 5 handoffs. This keeps the voice services flowing packet-based all the way, thus maximizing efficiencies. This makes locating Ethernet and VoIP equipment in this site very painless and allows almost any in-house IT department to begin to manage the corporate voice network, as well as the data out into the wide area. After all, VoIP is data.

200 Paul also is home to several wireless carriers that service the area. The building has great infrastructure and line-of-site to other important wireless connection points, which makes it an optimal place to locate. In addition to the wireless networking benefits, the facility neatly delivers a multitude of fiber-based service provider offerings that bring competition through price and quality options. These attributes will no doubt make it a likely home for the high-speed broadband wireless-based networks, such as WiMax, currently being rolled out across the country.

A perfect example of the new breed of Ethernet-based transport providers is Neopolitan Networks. Neopolitan recently extended its network into San Francisco to expand coverage for new and existing clients and support the applications of video streaming, voice telephony and content distribution. Its native Layer 2 network architecture delivers the quality and non-public cloud security that enterprise network operators desire. In addition, Neopolitan's network consists of fiber and fixed wireless components, which when used in combination create a very robust and wide-reaching offering. It is services such as these that help to usher in the "packet age."

San Francisco is one of the key interconnection points in North America, and it has seen continued growth throughout the boom and bust periods of the telecom business. At times the growth is stronger than others, but it continues to grow despite overall industry woes. It is very similar to the other major interconnection markets in that respect, even though this market contains more IP-based businesses than most.

Key interconnection facilities in markets such as these continue to sustain higher rates per foot for the prime real estate than other non-critical markets and data center spaces, in general due to the critical mass of networks they have reached. That mass brings economies of scale, and it also creates an environment within those facilities that is optimal for the testing and deployment of next-generation communications technologies and protocols such as VoIP and Ethernet.

Chris Crosby, vice president of sales of Digital Reality Trust, the owners of 200 Paul Avenue, develops a solid understanding of the market and industry as he sees the North American trends unfold. "Digital Realty Trust has made significant progress this year at 200 Paul Ave." states Crosby. "Demand in the San Francisco and greater Bay Area market has strengthened, and as a result we have seen significant new absorption and deal flow at 200 Paul.

"200 Paul Ave. continues to be recognized as San Francisco's premier gateway building for Internet, telecommunications and the enterprise," he continues. Being in the right place with the right model helps businesses like Digital Realty Trust succeed. So, if you're in the "City by the Bay" and need to improve your network performance, check out the "Carrier Hotel by the Bay" at 200 Paul. **FAT**

Hunter Newby is chief strategy officer of tel^{x}.
He can be reached at hnewby@telx.com.

VoIP Service Provider Question Key

1 = Does the provider have an IP based local direct inward dialing service offering accessible via the carrier hotel?

2 =Does the provider have a flat rate pricing plan for domestic call termination?

3 = Does the provider have an international call termination offering?

4 = Does the provider offer a hosted IP PBX service?

5 = Does the provider accept Layer 2 Category 5 cross connects at the carrier hotel?

200 Paul Ave. VoIP Service Providers

	1	2	3	4	5	Contact	Email
Level 3 Communications	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
XO	No^	No^^	No	No	Yes^^^	David Allen	david.j.allen@xo.com
NetLogic	Yes	No	Yes	Yes	Yes	Michael Morey	mmorey@netlogic.net
Telekenex	Yes	Yes	Yes	Yes	Yes	Brandon Chaney	brandon@telekenex.com
MCI	Yes	N/A	Yes	Yes	Yes	John Logan	john.logan@mci.com
Hooked Communications	Yes	N/A	Yes	Yes	Yes	David Hollub	david@hooked.com

^ Will be available with release of VoIP origination end of 3Q05

^^^ Fee-based

^^ VoIP termination product is based on a rate per minute and varies by NPA NXX

My Kind of Connections

The "Meet Me" series blows into the Windy City

By Hunter Newby

***Editors' note**: Throughout 2004, we used this space to identify the key physical layer carrier interconnection points within the major North American markets. This year the series moves forward to identifying the service providers with the key wholesale enterprise-focused offerings within those markets. And clearly, the key services in the greatest demand by enterprise users today are Ethernet transport and VoIP.*

With two of the better known North American carrier hotels and plenty of Ethernet and VoIP services to go around, Chicago is my kind of town. Both 350 East Cermak (Lakeside) and 600-700 South Federal Street (Printers Square) hold the distinctions of being the dominant carrier hotels in the city for interconnections, but their histories differ.

Printers Square is the traditional telecom carrier hotel housing many of the old school PSTN (public switched telephone network) voice switches that service the area. This is good for the VoIP service providers that need direct, local loop-less access for DID (direct inward dial) local phone numbers. Lakeside is the newer, more IP-centric facility and,

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?
2 = Is the Ethernet service native Layer 2?
3 = Is the Ethernet service Layer 2 over public Layer 3 IP?
4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

Ethernet Services Providers – Chicago 350 E. Cermak

	1	2	3	4	5	Contact	email
AT&T	Yes	Yes*	Yes**	No	Yes	Dina Lemmond	lemmond@att.com
360networks	Yes	Yes	Yes	Yes	Yes	Jerry Piazzola	jerry.piazzola@360.net
AboveNet	Yes^	Yes	No	Yes	Yes	Nelson Frye	nfrye@above.net
Cogent Communications	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
Global Crossing	Yes	Yes	No	Yes	Yes	Sian Cameron	Sian.Cameron@globalcrossing.com
Level 3 Communications	Yes	No	No	Yes	No	Ketan Patel	Ketan.Patel@Level3.com
Looking Glass Networks	Yes	No	No	Yes	Yes***	Steve Daigle	steve.daigle@lglass.net
MCI	Yes	Yes	Yes	N/A	Yes	Timothy Drinkard	timothy.drinkard@mci.com
OnFiber Communications	Yes	Yes	No	Yes	Yes	Ronnie Galang	ronnie.galang@onfiber.com
Teleglobe	Yes	Yes	Yes	No	Yes	Carlo Azzolini	giancarlo.azzolini@teleglobe.com
Time Warner Telecom	Yes	Yes	Yes^^	Yes	Yes	Sandy Lammers	slammers@twelecom.com
T-Systems	Yes	Yes	Yes	Yes	Yes	Josh Stokrocki	Joshua.Stokrocki@t-systems.com
Vartec	Yes	Yes	Yes	N/A	Yes	Mike LaPore	mlapore@vartec.net
XO Communications	Yes	Yes	No	Yes	Yes	John Condenzio	john.a.condenzio@xo.com
Yipes	Yes	Yes	No	Yes	Yes	Jeff Zator	jzator@yipes.com

* ESS-MAN and AT&T Ultravailable Services
^ Ethernet services can be provided upon request at the Equinix PoP
** Ethernet MIS with self-managed VPNs
^^ Using L3 Ethernet over MPLS
*** Through Type II partners

Ethernet Services Providers – 600-700 S. Federal (Printers Square)

	1	2	3	4	5	Contact	email
AboveNet	Yes	Yes	No	Yes	Yes	Nelson Frye	nfrye@above.net
Cogent Communications	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
Looking Glass Networks	Yes	No	No	Yes	Yes*	Steve Daigle	steve.daigle@lglass.net
Level 3 Communications	Yes	No	No	Yes	No	Ketan Patel	Ketan.Patel@level3.com
OnFiber Communications	Yes	Yes	No	Yes	Yes	Ronnie Galang	ronnie.galang@onfiber.com
Time Warner Telecom	Yes	Yes	Yes**	Yes	Yes	Sandy Lammers	slammers@twelecom.com
XO Communications	Yes	Yes	No	Yes	Yes	John Condenzio	john.a.condenzio@xo.com
Yipes	Yes	Yes	No	Yes	Yes	Jeff Zator	jzator@yipes.com

* Through Type II partners
** Using L3 Ethernet over MPLS

from an infrastructure and tenant base perspective, is better positioned for enterprise data center-type applications. As Ethernet assists VoIP in getting beyond the carriers to the business, it is interesting to see these two worlds collide.

Both locations have all of the metro fiber access a network operator could want, or need. Access is the key and Chicago has plenty of it. All flavors of metro, regional, long haul and international long haul Ethernet transport flows through the market, giving it all of the benefits of an international gateway but also the travel benefit of being centrally located from the East and West Coasts. This can play a role with international enterprises looking to establish a presence in the United States.

As Ethernet transport gets built out further across the world, being on-net with a foreign LAN (local area network) and all of its applications gets easier. Flat-rate pricing models for national and global Ethernet circuits make distance a non-issue, and as equipment costs decrease and performance increases, enterprises find it easier to build and manage their own networks. As a result, they need less IP transit. This is not to say that there is any lack of demand for public IP, but there definitely is growth coming from the Layer 2 department in the enterprise WAN (wide area network).

Taking a look at the Ethernet service providers available at both 350 E. Cermak and 600 S. Federal St., one will find the usual suspects, but what's important to note is that in the last year many of these service providers' offerings have matured and gained traction. "We're pleased to say that we've been offering Ethernet in Chicago since day-one of our lighting the market in the fall of 2001," states Steve Daigle vice president, product and sales development of Looking Glass Networks.

"We're seeing a groundswell in demand for Ethernet. We've got growth not only for our on-net offering but for our off-net Ethernet (Type II) products, too, including long-haul Ethernet. Overall we're seeing an increase in Ethernet demand, as last quarter was the first time Ethernet sales represented a double-digit percentage of our revenue," he continues. "Specifically in Chicago, most of the circuits we have sold have been 100 Mbps and 1,000 Mbps circuits."

Ethernet transport is not a service creation anomaly or one with a limited shelf-life, like some of its bulkier packet-based predecessors. This is very clearly due to the fact that almost every LAN in North America is based on Ethernet. Tying these

VoIP Service Provider Question Key

1 = Does the provider have an IP based local direct inward dialing service offering accessible via the carrier hotel?
2 = Does the provider have a flat rate pricing plan for domestic call termination?
3 = Does the provider have an international call termination offering?
4 = Does the provider offer a hosted IP PBX service?
5 = Does the provider accept Layer 2 Category 5 cross connects at the carrier hotel?

VoIP Service Providers – Chicago, 350 E Cermak

	1	2	3	4	5	Contact	email
360networks	Yes	No	No	No	Yes	Jerry Piazzola	jerry.piazzola@360.net
Broadwing	Yes	Yes	Yes	No	Yes*	Javed Abdi	javed.abdi@broadwing.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
Level 3 Communications	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
MCI	Yes	Yes	Yes	Yes	No	Timothy Drinkard	timothy.drinkard@mci.com
NetLogic	Yes	No	Yes	Yes	Yes	Michael Morey	mmorey@netlogic.net
T-Systems	Yes	No	Yes	No	Yes	Josh Stokrocki	joshua.stokrocki@t-systems.com
XO	No^	No^^	No	No	Yes^^^	John Condenzio	john.a.condenzio@xo.com

^ Will be available with release of VoIP origination end of 3Q05

^^ VoIP termination product is based on a rate per minute and varies by NPA NXX

^^^ Fee-based

* ICB, not standard

VoIP Service Providers – 600-700 S. Federal (Printers Square)

	1	2	3	4	5	Contact	email
Broadwing	Yes	Yes	Yes	No	Yes*	Javed Abdi	javed.abdi@broadwing.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
Level 3 Communications	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Telstra	No	No	Yes	No	No	Ilissa Miller	ilissa.miller@team.telstra.com
The Voice Peering Fabric	Yes**	Yes**	Yes**	Yes**	Yes**	Shrihari Pandit	spandit@stealth.net
XO	No^	No^^	No	No	Yes^^^	John Condenzio	john.a.condenzio@xo.com

* ICB, not standard

^^ VoIP termination product is based on a rate per minute and varies by NPA NXX

** Available through members of the VPF

^^^ Fee-based

^ Will be available with release of VoIP origination end of 3Q05

high-speed pockets together with the same protocol is only logical. This is a reassuring reality for the Ethernet transport providers. There is a lot of work to be done and many orders to take in the days to come.

On the VoIP (voice over Internet protocol) side of the service coin there are several choices in the market for local numbers and dial tone that can be delivered via IP using a SIP (session initiation protocol) handoff over the various Ethernet providers. In addition to Chicago-based 312 numbers, many of the VoIP service providers offer local telephone numbers from any market they serve in the same package. Although this is a feature that has been around for a while in the consumer VoIP space, it is just starting to become available from the larger carriers for enterprise and commercial accounts. This alone can dramatically change the amount a company has to spend on long distance to call its own branch offices without even having to build a VoIP WAN of its own.

Beyond the straight-forward VoIP carrier service offerings, Chicago also is home to one of the distributed Ethernet access points of the Voice Peering Fabric (www.thevpf.com). Located at 600-700 S. Federal, the VPF provides the local community with access to all of its other members located around the world. In addition to having out-of-region choices for inbound and outbound calling, as well as the VPF ENUM (electronic numbering) registry, carriers in the market now can take advantage of SS7 (signaling system 7) services provided by SNET DG and Verisign across the Fabric. Now a local Ethernet connection can eliminate the need and cost for long haul A-Link DDS circuits for signaling. This makes the world a whole lot smaller and more cost effective.

The activity and strength in the market is witnessed firsthand by the owners of the carrier hotels, and it echoes the comments of the service providers. “350 E. Cermak has been the premier Internet and datacenter facility in Chicago since 2000,” states Chris Crosby, vice president of sales for Digital Realty Trust, owners of 350 E. Cermak. “Since our recent acquisition and implementation of the Digital Realty Trust operating model, we have seen a burst of activity from the carrier and the enterprise data center communities, as we leverage the density of carriers and the incredibly sophisticated level of infrastructure at the building.” The stage is set for this market to see significant Layer 2 VoIP network growth.

Strong demand across the major markets for Ethernet transport, carrier VoIP services and the prime interconnection real estate that these services reside in has been clearly stated and repeatedly supported throughout this series. As we all move forward in the evolution of communications networking, we’re sure to see other beneficial IP-based applications riding over Ethernet that emanate from these locations. Here’s to the future, may it be packetful! **FAT**

Hunter Newby is chief strategy officer of tel^{x}. He can be reached at hnewby@telx.com.

Tex Mex

The "Meet Me" series rides into 2323 Bryan St.

By Hunter Newby

It's been said that everything grows big in Texas. That holds true in this installment of our series on Ethernet and VoIP service providers residing in North America's major carrier hotels.

Located in the city of Dallas, 2323 Bryan Street serves up a big, Texas-style list of providers in each category. The names of the providers on the list also are quite impressive, ranging from smaller, local players to some of the biggest names in the business. But large or small, local or global, it's pretty clear that in the past year many service providers across the continent have come to the reality of the packet-based future and made appropriate service offering modifications to compete. Those that have not aren't on the list. That might just mean that by next year it's too late to get on it.

The big deals and major shake-up surrounding voice on the public Internet service offerings have been playing out in the press recently. From GoogleTalk and Microsoft-Teleo to eBay-Skype, it seems that all of the big name Internet companies have been making substantial moves into the VoIP space. That's good for end users and also indirectly for the enterprise network operators out there that were wondering if VoIP was going to make it into the big time.

Looks like we can put those doubts to rest now, but these announcements might leave them thinking: "Are these VoIP applications on the public Internet enterprise-class solutions?" Good question. That's where 2323 Bryan St. and the other major network interconnection points in North America come into play.

Why have so many Ethernet transport and VoIP service providers sprung up in carrier hotels during the past year? Is this to address the growing market for VoIP on the public Internet? If logic and rational thinking are put to work, the

VoIP Service Provider Question Key

1 = Does the provider have an IP based local direct inward dialing service offering accessible via the carrier hotel?

2 = Does the provider have a flat rate pricing plan for domestic call termination?

3 = Does the provider have an international call termination offering?

4 = Does the provider offer a hosted IP PBX service?

5 = Does the provider accept Layer 2 Category 5 cross connects at the carrier hotel?

VoIP Service Providers – 2323 Bryan St., Dallas

	1	2	3	4	5	Contact	Email
AboveNet	Yes	Yes	No	Yes	Yes	Chris Alexander	chris.alexander@above.net
AT&T LNS	Yes	Yes	Yes	Yes	Yes	Matt Robare	robare@att.com
China Voice Corp.	Yes	No	Yes	No	Yes	Bill Andreton	bill@apptra.com
Cytratel	Yes	Yes	Yes	Yes	Yes	Hooman Moayyed	hooman@cytratel.com
FonetFone	Yes	Yes	Yes	No	Yes	Sales Dept.	sales@fonetglobal.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
IT Partners	Yes	No	Yes	Yes	Yes	Scott Myers	smeyers@itpartners.net
Level 3	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@Level3.com
MCI	Yes	Yes	Yes	Yes	No	Steve Pittsinger	steve.pittsinger@mci.com
McLeod Communications	Yes	No	Yes	No	Yes	Freddy Martinez	freddy.martinez@mcleodusa.com
NetLogic	Yes	No	Yes	Yes	Yes	Michael Morey	mmorey@netlogic.net
Qwest Communications	Yes	Yes	Yes	Yes	Yes	Carol Mistretta	carol.mistretta@qwest.com
SBC	Yes	No	Yes	Yes	Yes	Jeff Gafford	jg0115@sbc.com
TxLink	Yes	No	Yes	Yes	Yes	Matthew Simpson	matt@txlink.net
Union Datacom	Yes	No	Yes	Yes	Yes	Mike Faulkner	mike@uniondatacom.net
Verizon	Yes	No	Yes	Yes	Yes	Jerry Jones	j.jones@verizon.com
XO	Yes	Yes	No	No	Yes	Renate Cormier	renate.cormier@xo.com
Zyterra Solutions	Yes	Yes	Yes	Yes	Yes	Hunter Elam	helam@zyterra.com

reason becomes clear, and the truth makes sense.

These types of service providers have been building up their networks and offerings at the carrier hotels to mainly address the enterprise market in the particular region, whether directly or through value added resellers. If this were a pure Internet-VoIP play, the carriers simply would have gone to the already-stablished public Internet peering points.

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?

2 = Is the Ethernet service native Layer 2?

3 = Is the Ethernet service Layer 2 over public Layer 3 IP?

4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?

5 = Is the Ethernet service metro as well as long haul?

This, however, was not the case, as the Internet peering points do not have direct access to the legacy TDM (time division multiplex) voice carriers that can provide local dial tone and phone number blocks for the various area codes. These number blocks and the ability to port numbers from one carrier to another are the foundation of an enterprise VoIP offering.

There is some degree of carrier resale in these offerings that comes in the form of enhanced service providers. They buffer the enterprise from having to deal directly with the carrier. This particularly relates to the larger, nationwide competitive local exchange carriers, such as XO, which hold number blocks in most of the major LATAs (local access and transport areas).

Ethernet Services Providers – 2323 Bryan St., Dallas

	1	2	3	4	5	Contact	Email
AT&T	Yes	Yes*	Yes**	No	Yes	Dina Lemmond	lemmond@att.com
360Networks	Yes	Yes	Yes	Yes	Yes	Jerry Piazzola	jerry.piazzola@360.net
AboveNet	Yes^	Yes	No	Yes	Yes	Nelson Frye	nfrye@above.net
Alpheus	Yes	Yes	No	Yes	Yes	Chip Robertson	chip.robertson@alpheuscommunications.com
Aspen Communications	Yes	Yes	No	Yes	Yes	Rocky Ahmann	rocky@aspenTX.com
Broadwing	Yes	Yes	No	No	Yes	Robert Marquart	rob.marquart@broadwing.com
Cogent	Yes	Yes	No	Yes	Yes	Christopher Smith	csmith@cogentco.com
Global Crossing	Yes	Yes	No	Yes	Yes	Isaias Almanza	isaias.almanza@globalcrossing.com
Grande Communications	Yes	Yes	No	Yes	Yes	Michael Brown	michael.brown@corp.grandecom.com
Grande River Communications	Yes	Yes	No	Yes	Yes	Mirta Flores	mflores@granderiver.net
Innercity FiberNet	Yes	Yes	No	Yes	Yes	Greg Stillwell	greg@innercityfiber.net
Level 3	Yes	No	No	Yes	No	Ketan Patel	ketan.patel@Level3.com
Lightcore (CenturyTel)	Yes	Yes	No	Yes	Yes	Art Smith	asmith@digitalteleport.com
Looking Glass Networks	Yes	No	No	Yes	Yes^^	Steve Daigle	steve.daigle@lglass.net
MCI	Yes	Yes	No	Yes	Yes	Steve Pittsinger	steve.pittsinger@mci.com
McLeod USA	Yes	Yes	No	Yes	Yes	Freddy Martinez	freddy.martinez@mcleodusa.com
Netlogic	Yes	Yes	No	Yes	Yes	Michael Morey	mmorey@netlogic.net
OnFiber Communications	Yes	Yes	No	Yes	Yes	Tim Norris	tim.norris@onfiber.com
Qwest Communications	Yes	Yes	No	Yes	Yes	Jonathan Keen	jonathan.keen@qwest.com
Savvis	Yes	Yes	No	Yes	Yes	Shawn Armstrong	shawn.armstrong@savvis.net
SBC	Yes	Yes	No	Yes	Yes	Jeff Gafford	jg0115@sbc.com
Speakeasy	Yes	Yes	No	Yes	Yes	Mike Mings	michael.mings@speakeasy.net
Sprint	Yes	Yes	No	Yes	Yes	Kristin Brown	kristin.a.brown@mail.sprint.com
Teleglobe	Yes	Yes	No	No	Yes	Carlo Azzolini	giancarlo.azzolini@teleglobe.com
Time Warner Telecom	Yes	Yes	No	Yes	Yes	Will Sears	will.sears@twtelecom.com
Union Datacom	Yes	Yes	No	Yes	Yes	Mike Faulkner	m.faulkner@udcc.net
VarTec	Yes	Yes	No	Yes	Yes	Mike LaPore	mlapore@vartec.net
Verizon	Yes	Yes	No	Yes	Yes	Jerry Jones	j.jones@verizon.com
WilTel Communications	Yes	Yes	No	Yes	Yes	John Firmin	john.firmin@wiltel.com
XO	Yes	Yes	No	Yes	Yes	Renate Cormier	renate.cormier@xo.com
Xspedius	Yes	Yes	No	Yes	Yes	Dana Godfrey	dana.godfrey@xspedius.com
Yipes	Yes	Yes	No	Yes	Yes	Chance Waid	cwaid@yipes.com
Zyterra Solutions	Yes	Yes	No	Yes	Yes	Hunter Elam	helam@zyterra.com

* ESS-MAN and AT&T Ultravailable Services

^ Ethernet services can be provided upon request at the Equinix point of presence

** Ethernet MIS with self-managed VPNs

^^Through type II partners

XO, for example, now has IP enabled their inbound and outbound local switches and can provide local access via an Ethernet connection using private IP and SIP (session initiation protocol). This is a big step and also very popular with the calling card and voice over broadband providers, which are more end-user focused. It prevents them needing to have circuits or physical equipment in every city they want to serve locally. Now, these types of providers only need to be in one or two major interconnection points, such as 2323 Bryan St., and they can get full coverage.

"What many enhanced service providers may not be aware of is that through our colo at 2323 Bryan St. they can get cost-effective access to local inbound and outbound calling capabilities in all 70 plus markets where XO has a presence. Essentially, they get a virtual presence in each of our markets to make and receive local calls," states John Nishimoto, director of carrier product management for XO. "Through an Ethernet connection at 2323 Bryan St. we can terminate their VoIP calls into any of our 70 plus markets. We can also provide inbound calling and outbound calling nationwide through a PRI in 2323 Bryan St."

This type of network modification, in many cases, can help keep the legacy circuit switches in place for some time but simultaneously allow these carriers to provide voice provisioned as IP. Clearly not voice on the Internet but rather an IP interface to the public switched telephone network.

As it relates to Ethernet, carriers are just starting to catch up to where enterprises have already been for 15 years. Ethernet has been present in the local area network for quite some time, and the IT and MIS directors of every company in North America are very familiar with the technology and its capabilities. Carriers that are bringing Ethernet to the metro and long haul are being met by buyers that need no education on how to use the service. Adding VoIP as an application on top of the Ethernet transport is not a big stretch.

"We continue to see the upward trend of enterprises adopting Ethernet, VoIP and private network services," says Chris Crosby, vice president of Digital Realty Trust, owners of 2323 Bryan St. "Consequently, we have experienced significant absorption in our meet me room and turnkey datacenter facilities, due to the high concentration of quality service providers at 2323 Bryan St."

The trend is just in its early stages, yet its impact can already be felt. Everything that's happening out there right now with Ethernet and VoIP is so big that it's almost as if it's all coming out of Texas.

For more information on 2323 Bryan St., contact Jerry Faught at jfaught@digitalrealtytrust.com. **FAT**

Hunter Newby is chief strategy officer of tel[x] . He can be reached at hnewby@telx.com.

Miami's Double Whammy

The "Meet Me" series ends its tour in South Florida

By Hunter Newby

Since its original carrier hotel feature for the Meet Me series in March of 2004, the two major network interconnection properties in Miami remain the NAP of the Americas and 36 N.E. 2nd Street. The properties house the critical mass of metro and long haul fiber and all the applications that come above it, in and out of the city.

Over time these sites and their respective roles in the marketplace and global networking community have only become more relevant and necessary. The New World Tower property also plays a significant role, especially in the realm of the legacy voice networks, and as time passes and the industry evolves, it will become clearer which technologies and networks will succeed. A great deal of that success has to do with which carriers possess and properly market the "right" services.

Miami is an interesting market for transport and VoIP services because it is both an international carrier network gateway between North and Latin America and also a densely populated metro area with several businesses located there. The two dimensions play off of each other to a certain extent as it relates to Latin American-based businesses with an office in Miami that are looking for local phone numbers and service based out of their home country. This unique situation has not necessarily been productized or marketed as such just yet, but with the increase in international Ethernet transport, it will become much easier for enterprise VoIP WAN (wide area network) managers to put the pieces together and build out their own private VoIP networks.

An extension of this remote-local service model logically can be created for other transport and/or VoIP service providers to provide access to, or resell it into, different North American markets. Local number accessibility out-of-country can effectively work both ways if the service providers can reach an understanding of who they are and where they sit in the service chain. The keys to success are the creation, interconnection point and the proper positioning of the service.

During the course of this series it has become apparent that some Ethernet transport service providers don't realize that they currently carry VoIP traffic for their customers. This is somewhat due to the fact that they don't necessarily "care" what their customers are doing with the pipes. This lack of concern may be seen by some as a proper way to not be intrusive on customers' privacy, but it may also result in a general

VoIP Service Provider Question Key

1 = Does the provider have an IP based local direct inward dialing service offering accessible via the carrier hotel?
2 = Does the provider have a flat rate pricing plan for domestic call termination?
3 = Does the provider have an international call termination offering?
4 = Does the provider offer a hosted IP PBX service?
5 = Does the provider accept Layer 2 Category 5 cross connects at the carrier hotel?

VoIP Service Providers - 36 N.E. 2nd St.

	1	2	3	4	5	Contact	Email
AboveNet	Yes	Yes	No	Yes	Yes	Chris Alexander	chris.alexander@above.net
AT&T LNS	Yes	Yes	Yes	Yes	Yes	Matt Robare	robare@att.com
BellSouth	Yes	No	Yes	Yes	Yes	Rick Chapes	rick.chapes@bellsouth.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
Level (3)	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
MCI	Yes	Yes	Yes	Yes	No	Steve Pittsinger	steve.pittsinger@mci.com
Qwest Communications	Yes	Yes	Yes	Yes	Yes	Jonathan Keen	jonathan.keen@qwest.com
Verizon	Yes	No	Yes	Yes	Yes	Jerry Jones	j.jones@verizon.com
XO Communications	Yes	Yes	No	No	Yes	Renate Cormier	renate.cormier@xo.com

VoIP Service Providers – NAP of the Americas

	1	2	3	4	5	Contact	Email
AT&T	Yes	Yes	Yes	Yes	No	Dina Lemmond	lemmond@att.com
Broadwing Communications	Yes	Yes	Yes	No	Yes*	Javed Abdi	javed.abdi@broadwing.com
Global Crossing	Yes	No	Yes	No	Yes	Thomas Topalian	thomas.topalian@globalcrossing.com
IP COM, Inc.	Yes	No	Yes	Yes	Yes	Andres Otero	aotero@ipcomnetwork.com
LD Telecommunications	Yes	No	Yes	Yes	Yes	Juan Carlos Canto	jcanto@ldtelecom.com
Level (3)	Yes	Yes	Yes	No	Yes	Jackson Markley	jackson.markley@level3.com
Neopolitan Networks	N/A	N/A	N/A	Yes	Yes	David Smith	sales@neopolitan.com
NetHertz.com	Yes	Yes	Yes	Yes	Yes	Daivesh Sanghvi	daivesh@nethertz.com
Newcom Americas	Yes	Yes	Yes	Yes	Yes	Uwe Valiente	uvaliente@newcomamericas.net
TelCove	Yes	Yes	Yes	Yes	Yes	Charles W. Lewis	charles.lewis@telcove.com
Teleglobe	No	No	Yes	No	No	Jeff Bak	jeff.bak@teleglobe.com
Telstra	No	No	Yes	No	No	Ilissa Miller	ilissa.miller@team.telstra.com
VoIP Blue	No	No	Yes	Yes	Yes	Craig Waltzer	craig@voipblue.com
XO Communications	No**	No^	No	No	Yes^^	Joe Patton	joe.l.patton@xo.com
Xynergia	No	Yes	Yes	Yes	Yes	Jose Schwank	jschwank@rgia.net

* ICB, not standard

^ VoIP Termination product based on per minute rate and varies by NPA/NXX

** Will be available with release of VoIP Origination (expected this fall)

^^ Fee-based

lack of understanding of customer needs and therefore missed opportunities to package and market a natural fit for many other existing and prospective clients.

On the flip side, it also has been interesting to see the number of international wholesale voice carriers that still don't have an Ethernet-based IP hand off available at the carrier hotel where their voice switch resides. Even though this makes logical sense from a cost and efficiency standpoint, things take time. Networks and mindsets must change, which isn't easy, but eventually it will all happen.

The Ethernet service providers that can see VoIP driving some of their enterprise business, and then take steps to leverage it as an application platform for future sales, have much to gain. The biggest hurdle for many of them is coming to an understanding that they don't sell VoIP and are not going to be in the VoIP business, per se, but will talk about how they can enable secure VoIP via Layer 2 transport. There is nothing wrong with knowing that Ethernet carries VoIP traffic and that the trend for many businesses spending more than $10,000 monthly on local and long distance services is toward a Layer 2 VoIP WAN-based solution.

The same importance and potential success can be seen in carrier-to-carrier VoIP, or bi-lateral VoIP peering, via private Ethernet circuits. Identifying demand for this specific application based upon current customer utilization brings back excellent data. As Nanette Peralta, director of sales for Progress Telecom states, "We have found that the Ethernet market right now in South Florida is driven 50 percent by intra-metro needs (Miami-FLL) and 50 percent coming in from overseas driven by VoIP. We do not find this too surprising, as many of the incumbent carriers in Latin America are still running TDM (time division multiplex) networks."

That is valuable knowledge and shows that Progress Telecom is well positioned to predict customer requirements. In the future, marketing Ethernet transport as a VoIP enabler may help drive sales, given this type of information.

Miami plays an integral role in the next phase of global, packet-based networking. From the feature lists it is evident that all of the essential VoIP and Ethernet building blocks are offered here. Between these carrier hotels and the service providers within them, any network operator, enterprise or carrier can find what they're looking for in this multipurpose market.

For more information on 36 N.E. 2nd St., contact Jerry Faught at jfaught@digitalrealtytrust.com. For information on the NAP of the Americas, contact Josh Snowhorn at jhorn@terremark.com.

This article concludes the Meet Me series that has appeared in **FAT PIPE** magazine for three straight years. As the technology and carrier worlds evolve, so does the publishing world. By the time this article goes to print **FAT PIPE** will become part of a bigger and better **VoIP Business News**. I want to thank everyone at Dagda Mor Media, the service providers and carrier hotel owners that helped me so much, and all of the readers - especially those who sent in emails!

Here's looking forward to the new VBN! **FAT**

Hunter Newby is chief strategy officer of telx. He can be reached at hnewby@telx.com.

Ethernet Service Provider Question Key

1 = Is the Ethernet service in use in this metro area today?
2 = Is the Ethernet service native Layer 2?
3 = Is the Ethernet service Layer 2 over public Layer 3 IP?
4 = Is the Ethernet service a flat rate price and zero-mile within the metro footprint?
5 = Is the Ethernet service metro as well as long haul?

Ethernet Service Providers – NAP of the Americas

	1	2	3	4	5	Contact	Email
AT&T	Yes	Yes*	Yes**	No	Yes	Dina Lemmond	lemmond@att.com
Cogent	Yes	Yes	No	Yes	Yes	Andrew Hathaway	ahathaway@cogentco.com
Global Crossing	Yes	Yes	No	Yes	Yes	Sian Cameron	sian.cameron@globalcrossing.com
Level (3)	Yes	No	No	Yes	No	Ketan Patel	ketan.patel@level3.com
Neopolitan Networks	Yes	Yes	No	Yes	Yes	David Smith	sales@neopolitan.com
Newcom Americas	No	Yes	Yes	Yes	Yes	Uwe Valiente	uvaliente@newcomamericas.net
OnFiber Communications	Yes	Yes	No	Yes	Yes	Ronnie Galang	ronnie.galang@onfiber.com
Progress Telecom	Yes	Yes	No	Yes	Yes	Todd Patterson	tpatterson@progresstelecom.com
TelCove	Yes	Yes^	Yes^^	Yes	Yes	Charles W. Lewis	charles.lewis@telcove.com
Teleglobe	Yes	Yes	Yes	No	Yes	Carlo Azzolini	giancarlo.azzolini@teleglobe.com
XO Communications	Yes	Yes	No	Yes	Yes	Joe Patton	joe.l.patton@xo.com
Yipes	Yes	Yes	No	Yes	Yes	Thomas Robb	trobb@yipes.com
* ESS-MAN and AT&T Ultravailable services				^ Ethernet and SONET			
** Ethernet MIS with self-managed VPNs				^^ Private IP or SONET			

Ethernet Services Providers – 36 N.E. 2nd St.

	1	2	3	4	5	Contact	Email
AT&T	Yes	Yes*	Yes**	No	Yes	Matt Robare	robare@att.com
AboveNet	Yes	Yes	No	Yes	Yes	Chris Alexander	chris.alexander@above.net
BellSouth	Yes	Yes	No	Yes	Yes	Rick Chapes	rick.chapes@bellsouth.com
Cogent	Yes	Yes	No	Yes	Yes	Christopher Smith	csmith@cogentco.com
FPL Fibernet	Yes	Yes	Yes	Yes	Yes	Marketing Department	fibernet_marketing@fpl.net
Global Crossing	Yes	Yes	No	Yes	Yes	Irving Woods	irving.woods@globalcrossing.com
Level (3)	Yes	No	No	Yes	No	Michael Daley	michael.dailey@level3.com
MCI	Yes	Yes	No	Yes	Yes	Steve Pittsinger	steve.pittsinger@mci.com
Neopolitan Networks	Yes	Yes	No	Yes	Yes	Sales	sales@neopolitan.com
OnFiber Communications	Yes	Yes	No	Yes	Yes	Tim Norris	tim.norris@onfiber.com
Progress Telecom	Yes	Yes	No	Yes	Yes	Sales	contact@progresstelecom.com
Qwest Communications	Yes	Yes	No	Yes	Yes	Jonathan Keen	jonathan.keen@qwest.com
Savvis	Yes	Yes	No	Yes	Yes	Kenneth Taylor	kenneth.taylor@savvis.net
Verizon	Yes	Yes	No	Yes	Yes	Jerry Jones	j.jones@verizon.com
WilTel Communications	Yes	Yes	No	Yes	Yes	Pete Bell	pete.bell@wiltel.com
XO Communications	Yes	Yes	No	Yes	Yes	Renate Cormier	renate.cormier@xo.com
Xspedius	Yes	Yes	No	Yes	Yes	Dana Godfrey	dana.godfrey@xspedius.com
* ESS-MAN and AT&T Ultravailable Services							
** Ethernet MIS with self-managed VPNs							