communications

Solutions you want. Support you need.

XO Network Evolution Overview

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XO Communications

About XO Communications

- Leading nationwide provider of data and IP services
- Comprehensive portfolio of communications, managed network and IT infrastructure services
- Headquartered in Herndon, VA
- More than 3,100 employees
- Annual revenues of more than $1.5B
- Focus on business, large enterprise and wholesale customers
- Customers include more than 50% of the Fortune 500
- Leading brands across major industries
- Major cable, content, mobile wireless and domestic/global telecommunications companies

Our Customers

Large Enterprise

Abercrombie & Fitch, Boston Market, Cisco, Chipotle Mexican Grill, eBay, M&T Bank, Microsoft, Oracle, Thomson Reuters, United States Postal Service, Walgreens

Mid-Market

Blackboard, edisonlearning, Forman Mills, Kawasaki (Let the good times roll.), Larry H. Miller Group of Companies, Sub-Zero, Transwestern, West Marine, UMassMemorial Medical Center (A Member of UMass Memorial Health Care)

SMB

ColorTyme, Delta Resources, Inc., Monarch Title, Inc., ISPA (The Voice of the Mattress Industry™), SendOutCards, Urgo Hotels

Wholesale

BT, Cablevision, NTT, Cox Communications, T-Mobile, Sprint, Verizon wireless, Time Warner Cable

Comprehensive Services Portfolio

The Right Services with Simple Pricing to Meet Your Communications, Networking and IT Infrastructure Needs

Secure

Network security and data protection.

Network Security
Data Backup

Accelerate

Faster application and network performance.

Applications Performance Management
Web Site Acceleration

Compute

Cloud computing, hosting and IT services.

Web Hosting | Cloud Computing | Storage
Hosted Exchange

Unify

Voice, collaboration and communications.

VoIP | SIP Trunking | Hosted PBX
Contact Center | Conferencing

Connect

Internet connectivity and intelligent networks.

High-Speed Internet Access | Ethernet | MPLS IP-VPN | VPLS
Private Line | Wavelength | Colocation

We Can Support You as Your Needs Grow

The XO Network

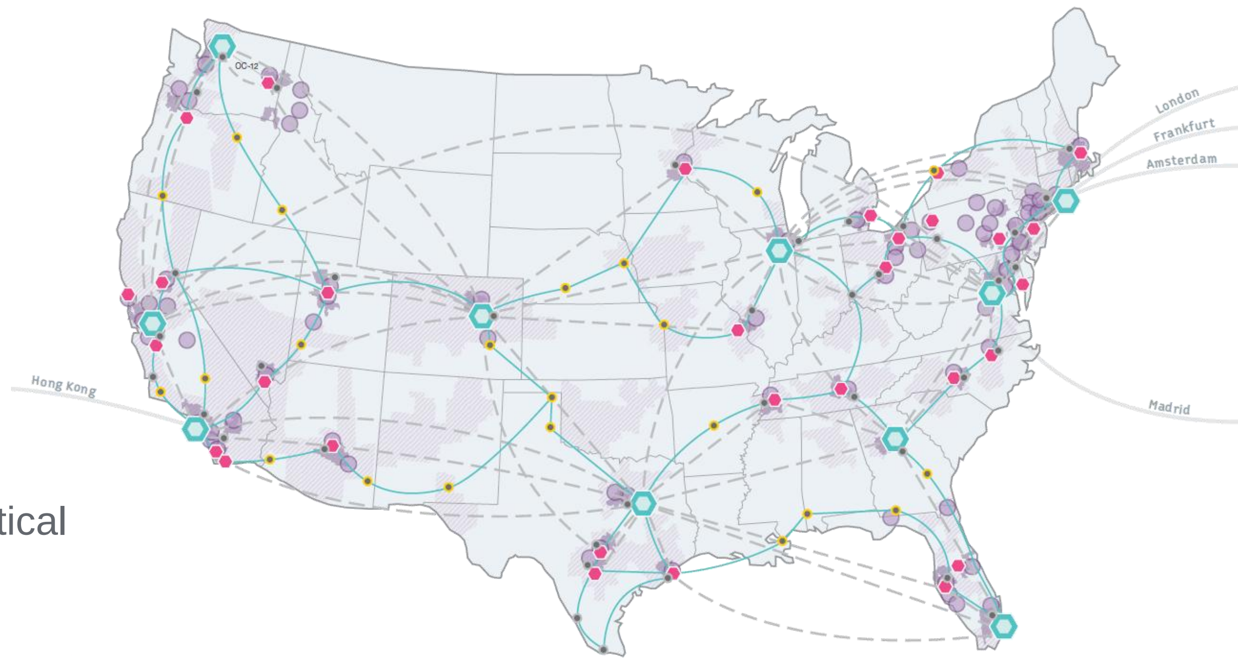
One of the Industry’s Largest and Most Advanced IP Networks

Extensive Coverage

- 85 major metropolitan markets across United States
- Global service delivery to 50+ countries on 5 continents
- 3,300 on-net buildings
- Ethernet access to hundreds of thousands business locations

Robust Assets

- Tier 1 IP network
- Built using advanced IP and optical technology from Ciena, Cisco, Infinera and Juniper Networks
- 19,000 route mile inter-city miles
- ~ 1 million metro fiber miles
- 1,000+ colocation facilities
- Fixed wireless spectrum in 80 major metropolitan markets



Americas Region		European Region					Pacific Region	
Bermuda	Mexico	Austria	Estonia	Ireland	Malta	Slovenia	Australia	Philippines
Brazil	Panama	Bulgaria	Finland	Israel	Netherlands	Spain	China	Saipan
Canada	Peru	Belgium	France	Italy	Poland	Sweden	Guam	Singapore
Chile	Puerto Rico	Cyprus	Germany	Latvia	Portugal	Switzerland	Hong Kong	Taiwan
Colombia	US Virgin Islands	Czech Republic	Greece	Lithuania	Romania	United Kingdom	India	Thailand
Costa Rica	Venezuela	Denmark	Hungary	Luxembourg	Slovakia	Ukraine	Japan	

Network Snapshot: 2013 (Now)

- All new network investment and product development is exclusively on packet technologies
  - All telecommunications services can be delivered via IP
  - Ethernet is the best way to deliver IP services and is on its way to becoming the dominant access technologies (2 Mbps to 100 Gbps). 40% of new IP service turnups use Ethernet access (XO EoX or E-NNIs)
  - MPLS provides a great SP toolkit for network virtualization, fast protection switching and traffic engineering
- Harvesting legacy TDM and circuit-switched platforms (long legacy tail)
- Most new voice interconnect in form of VoIP; TDM trunking reduced
- Public IP traffic doubles every 12-15 months, driving successive overbuilds
- Private IP service foundational service for Business Customers
  - Variety of managed services layered onto this VPN service
- PHYs: Copper (access), Radio (access) Fiber (access & backbone)
  - 36% of US commercial business base passed served by fiber (VSG Mar 2013)
  - Continue to leverage unbundled Copper Pairs
  - 3G and 4G (2013) mobile networks for backup access
- New services and platform developments
  - 100G LH and metro DWDM
  - 100G P and PE router deployment; 100G IP transit ports
  - 2nd generation Cloud platform deployment (Private & Public IP access)

Network Snapshot: 2016 (Now + 3 years)

- IP/MPLS backbone growth continues, perhaps with slight de-acceleration
- Multiple IP networks on common MPLS + DWDM core
- SONET infrastructure near apogee
- Decommission of circuit-switched platforms continues…
- All new voice interconnect in form of VoIP; little or no TDM trunking
- Managed Services + Private/Public IP + Cloud Service bundles key
- PHYs: Copper (access), Radio (access) Fiber (access & backbone)
  - ~45% (estimate) of US commercial business base served by fiber
  - XO continues to expand its metro fiber networks….
  - Microwave backhaul of small(er) cell towers sees increasing use
  - Continue to leverage unbundled Copper Pairs
  - 3G and 4G mobile networks for backup IP access
  - 4G mobile networks for primary IP access
- New services and platform developments
  - 200 & 400G wavelengths in portions of LH and metro DWDM
  - 100G LH and metro DWDM commonplace in SP networks
  - Continued100G class P and PE router deployment
  - 100GE Private IP ports start to appear
  - Cloud platforms and services generating significant revenue

Network Snapshot: 2018 (Now + 5 years)

- IP/MPLS backbone growth continues, perhaps with a doubling rate of 24 months?
- SONET platforms capped (no new equipment deployments)
  - Ethernet dominant form of access
- Continued decommission of circuit-switched platform (driven by RE)
- PHYs: Copper (access), Radio (access) Fiber (access & backbone)
  - >50% (estimate) of US commercial business base served by fiber
  - XO fiber networks at or near peak
  - Microwave backhaul of small(er) cell towers commonplace
  - 4G mobile networks for primary and secondary IP access
  - Regulation of access networks?
- New services and platform developments
  - 1T wavelengths in portions of LH and metro DWDM
  - 100G LH and metro DWDM client services common for enterprise customers
  - P and PE router overbuilds continue, with 400GE trunk & transit ports
  - 100GE Private IP ports common place
  - Cloud platforms and OTT services and bundles dominate revenue

Network Snapshot: 2020 (Now + 7 years)

- IP/MPLS backbone capacities near steady-state
  - Everything is well connected!
  - At least for ~90-95% of the population…..
- SONET platforms being decommissioned
- ILEC wire centers winking out in top 100 MSAs
- XO circuit-switches eliminated
- PHYs: Copper (access), Radio (access) Fiber (access & backbone)
  - 55-65% (estimate) of US commercial business base served by fiber
  - Microwave and mobile RANs principle access alternatives to fiber
- New services and platform developments
  - New services??? All we know is they will be over a set of interconnected and sophisticated packet networks, with IP still the fundamental lingua franca
  - Emphasis on improvements in reliability and cost basis never-ending