



For the last 20 years, the Internet's edge has been located in eight Tier 1 markets. These markets are defined as Tier 1 to the Internet because they facilitate the exchange of data globally. As you may know, the Internet is a collection of networks – not a single network, so the facilitation of interconnecting networks is key to the Internet's ability to provide users with access to content and information.

Originally, these networks met to exchange voice traffic, not data. Facilitating the exchange of

voice traffic is very different from the exchange of data and different again from the exchange of data which is primarily video. In the early 90's, the Internet began to take advantage of these pre-existing locations for convenience and network density. With a premium placed on network location, eyeballs (consumers of content) came to the networks over long distances to get to content. Today's exchange points need to be closer to population density, or where the eyeballs are located. This implies that content comes to the eyeballs at a local exchange. But why? Understanding the "why" allows us to understand the move to what is being labeled the "Edge". The "why" has to do with content and applications – past, present and future.

With an eye for innovation and a drive to deliver unsurpassed digital content experiences, EdgeConneX was born. Telecom Review recently met with Phill Lawson-Shanks, Chief Architect and VP of Product Innovation for EdgeConnex in order to give our readers a feel for the drive to deliver content to the "edge" in tier 2 and 3 markets

Edge Services provide Space, Power & Connectivity to deliver digital content like never before. With EdgeConneX, data delivery is optimized by placing Edge Data Centers®, Edge Small Cells and Edge PoPs® at the most critical locations—as close as possible to the end user's point of access. With our services, digital content can be delivered with enhanced performance and lower latency to any device, anywhere.

Phill told us that they have special monitoring for all centers so that they may plan space, infrastructure and power upgrades in a timely manner. He noted that they have sensors that monitor each site 24x7, using the Edge OS system.

"Since late 2013, we have built 23 Edge Data Centers across the US, creating a new Edge of the Internet. EdgeConneX moved the Internet to where it is most needed, yet has never existed

before – into local markets across the country and soon the globe. We recognize that insatiable demand for content continues to swell each day and that quality delivery of this content requires an Internet of Everywhere mentality. In two years, EdgeConneX will have approximately 40-50 centers in the US and be rapidly growing in Europe,” Phill told Telecom Review

Latency does matter but there was a time when it did not. If you think about a blink of an eye taking 300 milliseconds, then who really needs to get content faster than that? Prior to now, the answer was no one. Character-based content and a reliable TCP/IP protocol ensured everything that was sent arrived as it was sent. Whether it was across town or across the globe, it just worked. When it did not work, we threw bandwidth at the problem to solve it. However, not so fast (no pun intended); first, let’s discuss why bandwidth can’t solve today’s content dilemma; it involves physics.

Imagine a congested interstate from New York City to Miami and cargo that needs to be transported between these two markets. You can solve some of the issue of interstate congestion by adding two more lanes, albeit at significant costs. For the sake of this example, let’s say we had an unlimited budget and added 20 lanes to eliminate congestion. Let’s also assume that now all delivery trucks can safely travel at their max speed of 100MPH without stopping for the entire 1,200 miles. What was once a 22-hour drive due to the congested infrastructure (or two lanes of bandwidth in a network) and limited velocity (60MPH speed) is now a 12-hour drive. Because of physics, if distance is absolute and velocity is at its maximum, then the equation for the fastest delivery time bottoms out at 12 hours. There is no way around the physics to improve this time. (See figure 2) How could you improve this then from what appears to be the absolute optimal equation? Change the only variable possible – distance.

By shortening the physical distance, we are able to change the time it takes to deliver the product to the consumer. By shipping the cargo once to Miami, storing it (in a digital world, think ‘caching it’), and delivering it five miles across town at an average speed of 30MPH, we

have completely changed the equation – 12 hours now becomes 10 minutes. For data and content, the only variable you can adjust is distance, as velocity is fixed at the speed of light for content. Therefore, adding bandwidth can only solve latency to a point. There comes a stage where increased bandwidth (more highway lanes) brings no incremental latency reduction. However, the reduction of distance never stops reducing latency.

EdgeConneX recently announced a partnership with Northwest Access Exchange (NWAX) to build a new remote NWAX node into its Portland, Oregon Edge Data Center® (EDC), available in the fourth quarter of 2015. Located at 23245 NW Evergreen Parkway, Hillsboro, Oregon, the build will facilitate connectivity advancement of the local Internet community with superior content delivery to local-market consumers. The partnership also allows EdgeConneX customers to connect and exchange traffic locally with NWAX's broad base of participants.

EdgeConneX will provide a dark fiber path between the NWAX node inside its Portland EDC and the NWAX Core Switch, located at 921 SW Washington Street, Portland, Oregon, which will allow bandwidth to scale as members are added and traffic flow increases. This remote switch provides another location for NWAX members to connect to the exchange. NWAX currently has 72 members and is the 14th largest IX in the nation. Current customers taking advantage of direct access to NWAX's bilateral and multilateral peering services include wireless carriers, service providers, Content Delivery Networks (CDNs), enterprises, healthcare providers and government entities.

“Including a remote NWAX node inside our Portland EDC will enable EdgeConneX to provide customers with a new access point to the NWAX peering fabric,” remarks Clint Heiden, Chief Commercial Officer at EdgeConneX. “NWAX's established participant base, coupled with our purpose-built and strategically located Portland EDC, will allow providers to mitigate traffic latency and packet loss, avoid transit costs and improve regional fault tolerance, while experiencing the fastest and most reliable physical delivery of content to local-market

consumers.”

“NWAX is excited to add EdgeConneX as our sixth fabric access site in the Portland metro area. EdgeConneX is donating a high-quality switching platform and dark fiber backhaul, which will optimize this extension site for high-bandwidth member connections. NWAX looks forward to welcoming more content distribution members to our membership base as we continue to grow rapidly,” adds Eric Rosenberry, President of NWAX. “As a member-controlled nonprofit, NWAX focuses on helping the region grow the network economy in a facility / provider / vendor-agnostic way.”

EdgeConneX specializes in providing purpose-built, power dense and edge of network Edge Data Centers and wireless solutions that enable the fastest delivery of content to end-users. EdgeConneX has created a new Edge of the Internet by designing and deploying facilities that are strategically positioned nearest to network provider aggregation points, ensuring the lowest latency data delivery, with an improved quality of service.

The EdgeConneX Portland EDC is purpose-built and precisely located to provide the shortest and fastest routes for content delivery to local consumers, enterprises and Internet customers throughout the upper Northwest

Phill told us that the Company is privately held and will continue to focus on their growth in the US, Europe and soon to include South America.