2011: THE YEAR OF THE INVESTEMENT

INTO NEUTRAL, DARK FIBER NETWORK INFRASTRUCTURE

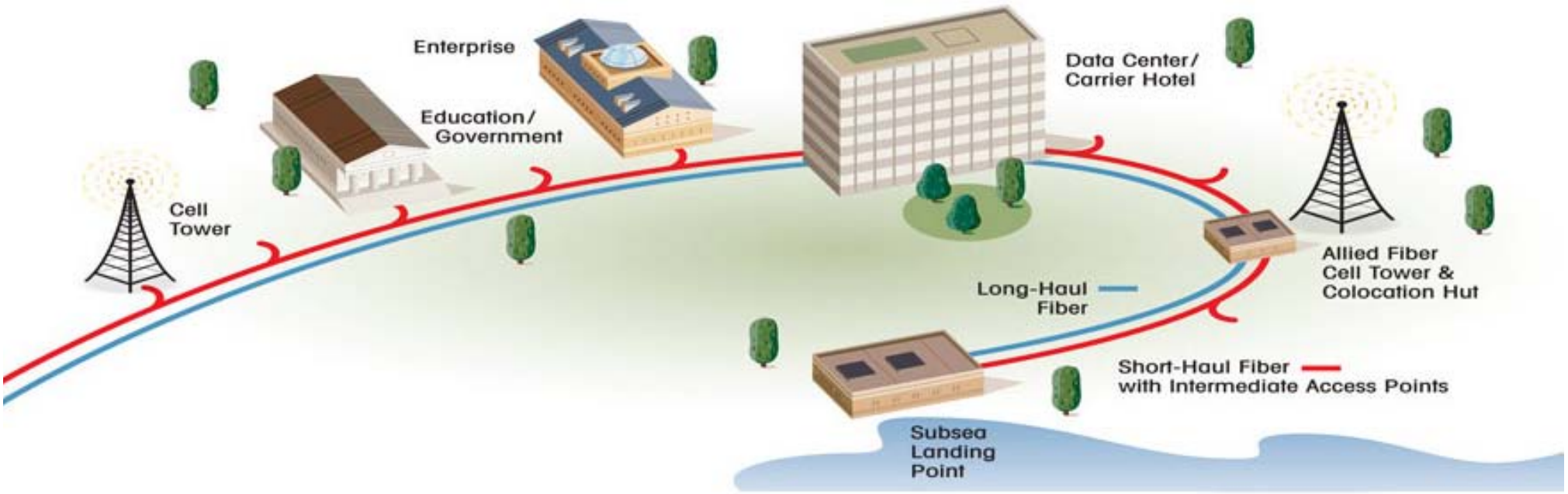
Hunter Newby

It can be expected that 2011 will bring significant change to the network landscape in all aspects. In this New Year, many necessary steps will be taken to build both American and global infrastructure so that it can support the digital world and its present and future demands. The investment in physical layer assets ranging from dark fiber in the metro, regional and long-haul portions will enable more access points for fiber laterals to data centers, wireless towers and rural networks. With that access a more efficient use of fiber and transport will stimulate new designs for data center development and utility power delivery and consumption as well as fiber backhaul for wireless towers, community, government and educational networks. It is and will be an exciting, challenging and rewarding time for everyone actively involved in the evolution of the industry. The recognition and awareness of the need for new dark fiber in every aspect of global networks is vital. From subsea to FTTH and everything in between, new dark fiber investments are being made globally. It is actually not a trend, but a necessity for every nation that wishes to be globally competitive on multiple levels. Investments are being made in fiber to towers and data centers, new diverse routes, better fiber for the 100G wavelengths and more. For those that invest and do so wisely, the returns will be significant in the years to come.

NETWORKS DRIVING NEW TRENDS

A new network system will drive the trends of 2011 and beyond. When network operators use services provided by neutral, colocation fiber-optic cable service providers, they reap the benefit of immediate access and avoid the problems of acquiring routes for fiber and constructing and maintaining the fiber systems. Neutral fiber providers are landlords to the network operators, providing them with access to the space, power and fiber they need to run their businesses.

Allied Fiber, for example, is not a carrier itself. It is in the physical layer, dark fiber, neutral colocation and interconnection



business. The company uses a multi-duct fiber system design that deploys long-haul duct-and-fiber cable with a separate, parallel, short-haul duct-and-fiber cable.

The short-haul duct-and-fiber cable (the red line in the above diagram) is built with hand holes usually placed every 3,000 feet, but hand holes can be placed wherever required. Hand holes provide intermediate access to fiber for physical routing to the closest colocation facility providing access to the long-haul fiber. The hand holes are placed wherever there is a point of interest for fiber, such as an existing regional, rural or metro fiber network, a data center, an office park, a university or a wireless telecommunications tower. It is left to those who have local knowledge to build lateral fiber ducts or subtending dark fiber rings off of the route to reach these points of interest. The multi-duct business model and design provides for access to any and all network operators that need an environment in which they can openly and freely interconnect with other networks.

FIBER-TO-THE-TOWER

A revolutionary aspect of the multi-duct new design is its focus on fiber-to-the-tower overlaid on a long-haul fiber network. This approach to dark fiber connectivity to towers along the route for microwave backhaul to support mobile wireless traffic is unique. Without the interplay between

fiber and microwave transport, wireless carriers' backhaul needs will never be met. Using the multi-duct system, transport providers to the mobile operators can more easily and cost-effectively design and build their networks over dark fiber that they light themselves. The multi-duct system's long-haul dark fiber provides direct access back into the major carrier hotels and data centers where the mobile operators can easily exchange data traffic with other network operators, making the entire process more seamless and scalable.

OPEN MARKET FOR TELECOM

The multi-duct system ensures that more communities will have a chance to be on-net and share in the benefits that many other on-net communities have. This open market for telecommunications was once just a carrier secret in the largest cities. The concept for the new plan is to offer a neutral connectivity environment to more and more communities to increase broadband access and improve the economy, health care and the overall standard of living. The multi-duct system begins at what is called the point of origin, essentially the location where international cables come up from the ocean, also known as subsea landing points.

SUBSEA LANDING POINTS

Subsea landing points represent the aggregated amount of global fiber-optic cable capacity flowing around the world. The multi-duct system begins and ends at these locations, harnessing the power of the networking demand of the earth's continents and the countries, people and machines within them. In a network sense, the United States is geographically

located on planet Earth right in the middle of Asia, Europe and Latin America. The major subsea networks of the world travel across the Atlantic Ocean from Europe to New Jersey and Long Island, N.Y., from South America through the Caribbean Sea to Florida and from Asia across the Pacific Ocean to Washington, Oregon and California.

MOBILE BACKHAUL

Mobile backhaul is playing an increasingly dramatic role in the growth of all network transport requirements. In truth, there is not enough backhaul capacity to suffice and more intelligent routing and switching architectures must be deployed to keep mobile traffic as local as possible. This is not as much of an issue in submarine systems, but it is critically important from an inter-nation peering perspective particularly in Southeast Asia. The mobile network operators cannot expect to establish reliable, high-speed connections to content providers of video being served nations, or oceans away and have any meaningful level of quality of service or user experience. If the video content is local by nature then it is less of an issue, if any at all. If the video content is coming from a neighboring country, but via a connection on the Any2 Exchange at 1 Wilshire Blvd in Los Angeles, there will be throughput issues to contend with for sure. This will necessarily dictate video peering to be established closer to home, or deal with a provider, perhaps only one, or two, that have a network robust enough to support the capacity and latency requirements. Verizon is once such provider, but their rate structure is quite different than low-cost to free peering on Any 2.

LOOKING AHEAD

As user demand increases, network systems must increase to meet the demands of consumers. Technologies, from standards in DWDM, Ethernet, IP, Wimax and LTE to smart phones and tablet computers, are strongly influencing and driving bandwidth growth. Broadband bandwidth cannot meet current demands (consider the rate at which smart phones and tablet computers, such as the iPads, are being sold). Certain mobile service providers have been forced to change their bandwidth plans to metered packages because unlimited bandwidth is not a realistic option. Backhaul and the backbone to support these networks will need to increase over the next year and in the future because the rate of which consumers are buying these types of products will only continue to increase. In order to be globally competitive, a national infrastructure that supports rapid growth must be present. Fueled by the subsea cable system, a new multi-duct system can provide the needed backhaul for the technologies of the future.

Hunter Newby, a 15-year veteran of the telecom networking industry, is the Founder and CEO of Allied Fiber. Mr. Newby possesses an extensive breadth of experience within the industry. In addition to physical layer interconnection, Mr. Newby is a recognized authority on Internet and Ethernet exchanges and VoIP Peering.