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Why the Cable Landing Station Matters

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Traditionally quiet places that are seldom visited, the Cable Landing Station (CLS) is supposed to serve one purpose: to be a point where very expensive equipment transitions to a subsea cable, costing hundreds of millions of dollars, to a terrestrial cable that then provides connectivity to a major population center. Normally, this traditional terrestrial cable has two routes to ensure uptime to the hub, designed that way in case one is compromised. Once it reaches the hub, it fans across an entire continent. This concept has worked for decades. But today's CLS can no longer be a passive location. It must be more than just a landing point that allows connection to a faraway hub for carriers. Today, we are building cable landing station campuses that are the hub itself.

The genesis of this new concept comes from the OTTs. When downtime is not an option and microseconds count, OTTs use this concept to avoid points of failure to reach their hyperscale data centers. Enterprise companies also appreciate this concept because they want 100 percent uptime. A Cable Landing Station campus with a fully integrated data center can do what traditional carrier incumbents have been doing for decades: control their networks in a wholesale environment, with no backhaul required, along with providing low latency and better access to connectivity.

It is crucial to have clarity in global connectivity. In order to do that, there are now multiple terrestrial options to the CLS and then multiple subsea networks to route across oceans with diverse landings in the next continent. The availability of multiple routes—both subsea and terrestrial—is crucial to become a true CLS hub. A cable system cannot land at a site and be stranded with one backhaul provided. Multiple backhaul routes create truly diverse options, which in turn can allow for both collaboration and competition. If one carrier is not providing necessary interconnection, with a robust ecosystem, there are half a dozen other choices. Today, there are just a few unique places on the planet with access to both multiple subsea cables and multiple backhaul routes.

A hub at the site of the CLS eliminates backhaul that can often cause connectivity issues. What kind of connectivity issues might these be? Let's consider, for example, a manhole fire in a city the data was never meant to visit or network regrooming on lit services due to the carrier dealing with other network issues related to outages. These scenarios are no longer acceptable. Clarity, operational independence and direct access to subsea capacity, whether intercontinental or up and down the coast, are the best options. Enterprises and OTTs should always know how the data flows 100 percent of the time.

When the latest upgrade of cable systems was completed nearly 20 years ago, smartphones had barely come into existence. The bandwidth needs were there, but the number of access points and demands were served by multiple systems. The bandwidth players had redundancy built across these cable systems to support their needs. In the two decades since, however, bandwidth growth and demands have surged, and in the last three years they have surged even higher.

In addition, it is becoming clear that the carrier-neutral model at the cable hub itself is the way to move forward. Colocation facilities would be better suited being closer to cable landing points as opposed to carrier hotels that are located further inland. Legacy carrier hotels on Long Island and in lower Manhattan are not capable of providing this type of infrastructure model that provides interconnection to 300 terabits or more. An important part to making an ecosystem of multiple subsea and terrestrial

routes is carrier neutrality. A data center campus that is carrier-neutral is superior in that it cannot sell services that carriers would sell. The facility only provides the real estate and the power and cooling, allowing multiple carriers to operate independently of each other. This model avoids the facility having a vested interest in one carrier over another. Another benefit of being carrier-neutral is it encourages carriers to operate at their peak performance. They all compete on an even playing field, which then lets their network architecture dictate the best way to get things done. Being carrier-neutral allows for increased capacity as well, as multiple carriers—even if they are competitors—can meet at a single location and feel comfortable using the existing infrastructure because they're not going to compete with their landlord. All these factors considered, a carrier-neutral facility is more cost-effective and scalable while also offering redundancy, flexibility and a reduced risk of data loss.

Along with connectivity, security at the cable landing site is key. In fact, security is so crucial that U.S. cable landing sites now fall under the jurisdiction of the Department of Homeland Security and are considered "hardened infrastructure." According to the Office of the Director of National Intelligence, the concentration of cable landing sites in very few physical locations and the relative ease in finding documented cable routes and cable termination points could facilitate the targeting of the submarine cable network by bad actors.

According to the publication *The Maritime Executive,* the UK National Security Advisor recently stated "you can achieve the same effect as used to be achieved in, say, World War II by bombing the London docks or taking out a power station by going after the physical infrastructure of cyberspace in the form of Internet undersea cables."

While much of the conversation about security breaches has centered on the cables as they lay on the ocean floor, the more vulnerable point for disruption could very well be at the landing site itself. A report in *The Times* newspaper year detailed how a journalist stumbled upon a landing

site in Cornwall and gained access to sensitive areas. Security at the landing site is crucial and taken very seriously in the U.S.

To bring these points together, let's consider the ideal scenario for a cable landing station. It's a facility located at the point where subsea cables from the domestic U.S., South America and Europe meet—at the United States' easternmost edge—offering service providers, enterprises, carrier-neutral operators and cable companies direct interconnection options directly at the cable-head without recurring cross-connect fees. This scenario is truly a paradigm shift from traditional fiber backhaul to the nearest metro area without consideration of potential bottlenecks found in congested areas such as New York and northern New Jersey. Having multiple physical subsea sea cables interconnecting with multiple backhaul fiber providers facilitates the most reliable global network architecture available—a necessity as we consider what the coming years will bring in terms of network evolution, demand for bandwidth, increasing data volumes, and evolving security threats.