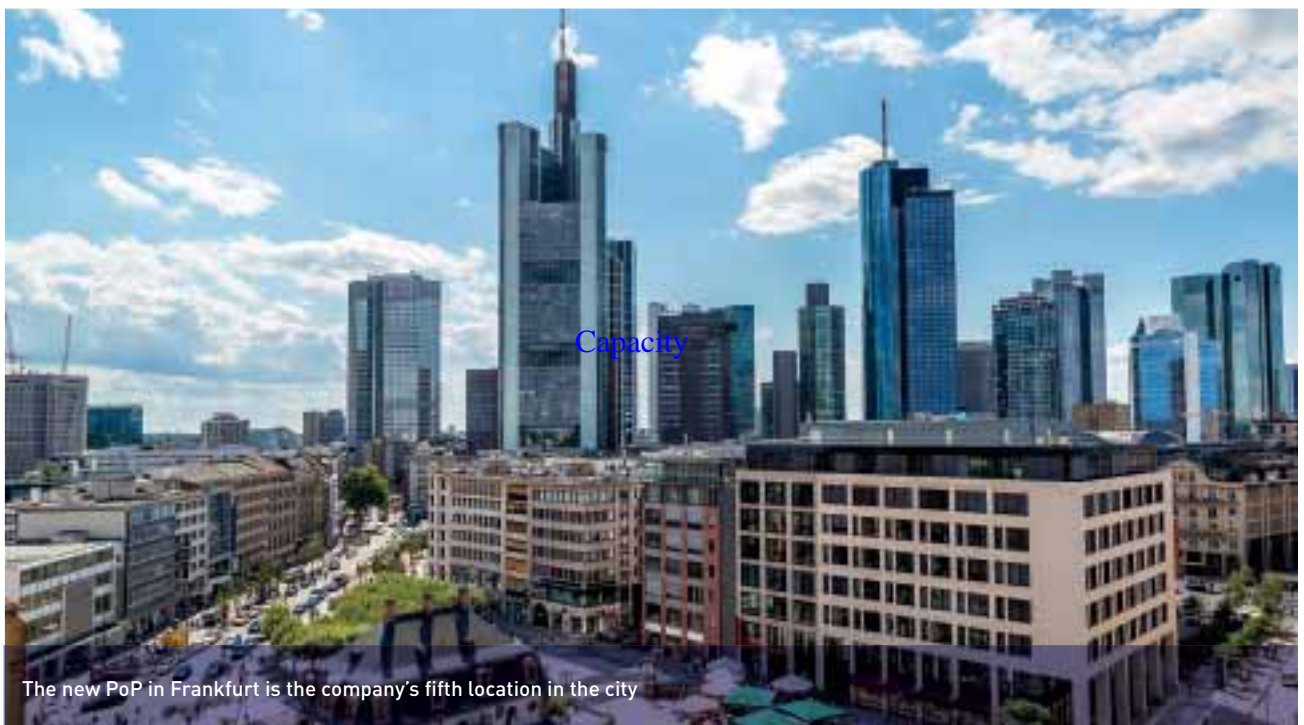# NTT COMMUNICATIONS: ANOTHER YEAR OF GROWTH

The past year has been a fruitful one for NTT Communications in terms of expanding the reach of its network and points of presence, and paving the way towards massive adoption of 100G – a technology for which the company saw an upsurge in demand in 2016.

The new PoP in Frankfurt is the company's fifth location in the city

A key recent aim for carriers in the telecoms industry has been to make moves to boost their region-wide and interregional networks in a bid to reduce latency and add capacity, redundancy and security to support the ever-growing need of companies to be connected on a global basis.

In line with these demands, last October NTT Com announced the launch of the Asia Pacific Gateway (APG) in partnership with other major telecoms carriers across the region. The high-bandwidth optical submarine cable is 10,400km long, linking up China, Hong Kong, Taiwan, Japan, South Korea, Malaysia, Singapore, Thailand and Vietnam, and providing a further link from Asia to the west coast of the US.

As well as providing much-demanded connectivity between countries and regions, the cable offers extra reliability and redundancy to complement the Asia-Submarine-Cable Express (ASE) that NTT Com launched in 2012 in collaboration with Telekom Malaysia, PLDT of the Philippines and Singapore-based StarHub.

Furthermore, the move aids the transition towards higher capacities, with the network making use of 100Gbps transmission capabilities and having the ability to deliver more than 54Tbps of capacity.

To support the need for the roll-out of submarine cables to boost capacity, deliver bandwidth-intensive services and meet rising data demand, NTT Com, along with NTT World Engineering Marine Corporation and NTT Finance, has also unveiled the cable-laying ship Kizuna. The 8,500-ton vessel, which is due for completion in early 2017, will mainly roll out undersea cables in Japanese waters, with its sister vessel Subaru focusing on other areas of the world.

Together, these moves clearly boost global connectivity and help connect up markets – a philosophy that is also evident in the ultra-low-latency service that NTT Com established last year between the Japan Exchange Group (JPX) and the Singapore Exchange (SGX). At a mere 63.5 milliseconds, such low latencies are a major attraction for financial institutions and

enterprises that require an efficient and effective connection between such key financial markets of the world and want to engage in high-frequency trading.

This link between markets also reflects the importance of having robust and reliable submarine cable networks in place, running as it does over the ASE.

RACE TO 100G

In terms of 100G, NTT Com saw the race for the technology really begin to pick up in 2016, with a major acceleration in customer adoption of ports. Michael Wheeler, executive vice president of the Global IP Network business unit, explains that most of the backbone infrastructure to support this uptick had been in place for some time and early 100G engineering challenges had been overcome, but demand started to grow "exponentially" last year. All indications point to this trend continuing for the next few years, he adds.

"We've really seen customers starting to move, and I think we'll just see more and more people going down that road. In line with this, costs are coming down, so the benefits can be seen," he says.

It also boils down to the simple fact that the business case for 100G is compelling in the current environment, adds Wheeler, in that migrating from many 10G ports to just a few 100G ones can both add capacity and significantly reduce the amount paid in cross-connect fees. "The sheer fact that they can reduce their monthly cross-connect costs in many of the buildings they are in is a big motivator at some point," he says.

Now that previous capex limitations have been overcome and almost the entire NTT Com global network is 100G-capable, the company is well set up to support the future growth of the market and sees promising times ahead.

MORE POPS IN PLACE

NTT Com has meanwhile continued to follow its policy of extending its point-of-presence (PoP) and data-centre footprint in markets where customers demand it, with its recent activity to bolster its European network over the past five years showing how it pursues this strategy. In one of the latest developments in that region, NTT Com announced the expansion of its network in Germany, adding new PoPs in each of Berlin and Frankfurt.

Wheeler explains that the business case for this expansion was "multifaceted". Not only does it fulfil NTT Com's aim of growing in line with customer demand, but the move consolidated the company's recent purchase of German data-centre provider e-shelter – which already had

facilities in Frankfurt, Berlin, Hamburg and Munich, as well as Vienna in Austria and Zurich in Switzerland.

"The new sites in Germany tie back to our acquisition of and relationship with data-centre provider e-shelter in 2015," says Wheeler. "But we also always look to extend our networks into buildings where customers or prospective ones are located in existing markets."

Given that Frankfurt has been a big market for the company for some time, it made sense to add a new building there. Wheeler says that it was a "fairly modest" cost structure to add another PoP in Berlin, so that location offered a good opportunity to bolster its footprint in the core of Europe as it seeks to expand its presence in the region and offer more connectivity options to foreign companies looking to add services in highly strategic markets.

"When a facility fills up, the internet-centric companies that we do business with look for other sites where they can stick their infrastructure. We look to pair up with them so we can do business with them in those same sites," says Wheeler.

And not only has NTT Com boosted its footprint at the heart of Europe, but it is investing US$160 million in a new data-centre facility in Virginia, the world's leading data-centre market. The site in Ashburn, in the area known as "Data Center Alley", is the first stage of subsidiary RagingWire's huge Ashburn Campus and is due to open by the end of this year.

As well as strengthening its footprint in key regional markets, NTT Com regularly looks at prospects in other locations that could be a future source of new business opportunities. Wheeler says the company sees probably the most near-term opportunity in Latin America. "It's an emerging marketplace, but we launched our PoP in Sao Paulo, Brazil, about five years ago and it has grown significantly since that time. Some costs in the region have really come down over the last few years because new cable systems have gone into production and new ones are being built out right now."

Such factors mean that other markets such as Argentina, Chile and Colombia hold promise for the future if there is a large enough customer opportunity, as the company is always on the lookout for new options for growth to where its customers want to be.

A MORE SECURE NETWORK

But none of NTT Com's plans would come to fruition without a secure network to underlie all this. The company therefore

New vessel Kizuna will boost subsea-cable-laying capacity

continued to work in 2016 to make its entire infrastructure as robust as possible in combating threats.

This is hugely important in the current climate, especially seeing as last year saw some major distributed denial of service (DDoS) attacks that affected applications such as Internet-of-Things (IoT) devices on a wide scale.

NTT Com has specific tools that can deal with such events, allowing it to scrub and pass clean traffic to its customers, such as its DDoS Protection Services (DPS) – and it will be souping these up over time to become even more effective. The company also offers products such as "blackholing" services, helping to further protect networks against attacks.

For NTT Com itself, the company believes that the sheer breadth of its network mitigates many threats because this gives it a broad overview of the nature and location of attacks. "The first line of defence against attacks is scale and scope," explains Wheeler.

So not only does NTT Com's expansion of its network over time help to cut latency and bring its services to ever-more markets where customers demand a presence; it also gives the company more insight into the security products needed to eliminate threats. And moving forward, this combination can't be a bad thing.

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