NTT: Large Scale Bandwidth on a Global Level

NTT Communications solves the world's technology challenges by helping enterprises overcome complexity and risk in their ICT environments with managed IT infrastructure solutions. These solutions are backed by their worldwide infrastructure, including global tier-1 public and private networks reaching over 190 countries/regions, and more than 400,000 of the world's most advanced data center facilities.

Consistently ranked among the top networks worldwide, NTT Com's Tier-1 Global IP Network covers North and South America, Asia, Europe and Oceania, and provides the best possible environment for content, data and video transport through a single autonomous system number (AS 2914).

Telecom Review recently visited with Michael Wheeler, Executive VP of the Global IP Network at NTT Communications to get a feel for their operations, and growth. Michael is in charge of their global network IP network and oversees its operation.

Michael told us that NTT is consolidating its larger companies under one holding company under NTT Corporation by the third quarter of the fiscal year ending March 31, 2019. This entity will be called NTT, Inc., and Jun Sawada, current CEO of NTT Corporation, will also serve as its CEO. Estimated operating revenue of NTT, Inc. is approximately U.S. $38 billion with U.S. $20 billion already coming from outside Japan (consolidated figures, based on the fiscal year ending March 31, 2018).

By the third quarter of the fiscal year ending March 31, 2019, NTT Communications, Dimension Data, NTT DATA, NTT Security, and NTTi3 will be transferred to NTT, Inc. and will align together under its new leadership.

While making NTT Group more competitive and profitable, their global governance will also benefit from embracing and integrating their people's diverse talents, skills, and management experience in global markets. The new structure will leverage their expertise to its maximum potential.

Expanding Global R&D Capability Further steps will include creating a new global innovation fund: NTT Venture Capital, L.P. (a limited partnership), which will help us evolve their global innovation. With this new fund, they will activate investment in high-growth areas such as digital technology. The fund is initially capitalized at 500 million USD.

They will also intensify their R&D activities in global markets by using a global network of experts from advanced academic research institutions and venture-capital communities around the world.

Network Expansion

Michael told us that they are in the top 5 of all global IP networks and they continue to grow. "We have a large number of 100g ports today compared to a few years ago. The volume of traffic has grown tremendously with 30-40% of our ports now being 100G. "Most of our content customers are now connected on at least 3 continents. We use a data driven approach to building new network and new PoPS. We always make sure that any expansion works from a financial perspective."

NTT Communications is expanding its Tier-1 Global IP Network with a new Point-of-Presence (PoP) in Dublin, Ireland, at Equinix's DB1 data center. This new PoP will support the growing demand for high-quality IP transit services from global companies and organizations that have established their European headquarters and/or operational organizations in Dublin.

The PoP is located at Equinix's DB1 data center in Dublin, one of the most densely connected IBX® facilities in Ireland. It is NTT Com's first location in the city and reflects the company's commitment to the expanding Internet-centric, cloud service, content and digital media community in the area.

NTT Com customers at DB1 will be able to connect to the Global IP Network at numerous capacity levels including 100G ports with confirmed diversity and direct connections to Amsterdam and London to ensure the highest reliability and the lowest latency in the IP services.

"The new PoP in Dublin fits our strategy to take NTT Com's global backbone into some of the fastest-growing Internet markets," said Michael. "This location will not only serve new customers looking for high-capacity, high-quality IP transit services but also many of our current global customers that have established operations or are considering expansions in the Dublin area. Overall, this is a very exciting market for us," Wheeler added.

NTT also announce the expansion of its Tier-1 Global IP Network with a new Point-of-Presence (PoP) in Manchester, United Kingdom, at Equinix's MA4 Manchester IBX® data center, a strategically-located facility within the Manchester Science Park.

This expansion will enable NTT Com to further scale its offerings to Internet service providers (ISPs), content-oriented companies, cloud, hosting and CDN providers in one of the UK's most populous areas. Manchester is home to some of Europe's leading producers of digital media, broadcasters, financial services organizations and enterprises.

Equinix's MA4 data center enables direct interconnection to IX Manchester and the London Internet exchange, LINX, as well as a wide range of network service providers and major cloud service providers. This facility features innovative cooling technologies and operates with the highest possible standards of energy efficiency, meeting very standard for security, resilience, quality and environmental management.

NTT Com customers at MA4 will be able to connect to the Global IP Network at numerous capacity levels including 100G ports with guaranteed physical path diversity to ensure the highest reliability and quality of services.

"We are thrilled to extend our footprint into one of the UK's biggest tech hubs to serve a vibrant community of Internet-centric businesses and organizations," said Michael. "We chose this facility because it provides a centralized location, exceptional performance and reliability that are an excellent match to our fully redundant Tier-1 IP backbone," Wheeler added.

IoT Has Massive Potential to Innovate, But First Needs to Be Secure

"The Internet of Things revolution has tremendous potential to enhance and improve daily life by enabling our devices to connect and communicate with our other devices," said Michael. "The key to facilitating the IOT is

creating a network foundation that enables these applications and services to function in a safe and secure manner."

While the Internet of Things (IoT) has the potential to drive the next wave of online innovation, it needs to be grounded on secure networks that prevent cyber criminals from hacking into the myriad of IoT-enabled devices that they are increasingly connecting.

According to results of the NTT Security 2018 Global Threat Intelligence Report, a survey of about 1,350 companies showed that nearly 60 percent of respondents see IoT as a potential security threat to their organizations.

Gartner, a research and advisory company, recently found that nearly 20 percent of organizations observed at least one IoT-based attack in the last three years. Gartner also predicts that by 2020 IoT will play a part in more than 25 percent of cyberattacks.

"IOT is not cache driven so the network needs to be prepared for the large volumes of traffic," Michael said.

"IoT continues to gain momentum and, in response to that, businesses need to proactively protect against IoT-related cyberattacks," added Wheeler. "Because of the growing universe of connected devices, software and carriers in the IoT ecosystem, there's also a need for increased industry collaboration to ensure a seamless and secure IoT experience for everyone."

Insights from recent Memcached-driven DDoS attacks and incidents involving Mirai-infected IoT botnets show that industry cooperation plays a key role in keeping networks and users safe. "I think carriers feel the responsibility to collaborate and communicate as much as possible and do so in the context of our roles within the broader Internet," Wheeler concluded on this issue.

Customization as Best Defense Against Cyberattacks

The first half of 2018 has seen a wider and more varied range of cyberattacks focused on denial of service, route hijacking and crypto currency theft. As a result, organizations are seeking customized security plans that align with their specific risk profile.

"When it comes to network security, there's no one-size-fits-all solution," said Wheeler. "It really comes down to assessing each business area that needs protection and, along the way implementing iterative enhancements that provide the comprehensive security solutions that are required. To achieve this, global network operators are increasingly working with each customer's internal IT teams, third-party vendors and industry groups to ensure that solutions are as customized as possible for each client."

Having contingency plans in place can also help to mitigate the impact of any breaches that may occur. "From a network security perspective, every company has to establish what they believe their risk profile is based on a number of factors, and then ultimately identify what they're going to do to address the risk profile that has been defined," Wheeler added.

Growing Adoption of Automation in Global Networks

Many carriers continue to leverage automation, including software defined networking (SDN) and network function virtualization (NFV), as a strategic approach to reducing operational expenditures, improving customer experience and lowering the occurrence of human errors.

"Router maintenance is a great example of a non-standard way in which automation has improved our delivery of service to customers and increased efficiency," said Wheeler. "By using our automation system, we can pre-load all of the card swaps and configuration changes in advance so that a major migration is completed in just a few hours. In the past, this was a manual process that would have taken a few days of maintenance work."

NTT Com has been a proponent of automation and SDN at the network management level for nearly two decades. "We've been incorporating automation within AS2914 since the late 1990s and, as a result, what we have today is extremely sophisticated and comprehensive," said Wheeler. "Automation is a win-win as it creates efficiencies and reduces costs for carriers while, at the same time, improving their customers' network experience." DDoS attacks can strike at any time, potentially crippling network infrastructure and severely degrading the performance and reachability of a website or other IP-accessible system. Depending upon the type and severity of an attack, the impact can result in significant losses in revenue and damaged assets and, most importantly, in unpleasant experiences for end users.

"The security and protection of our network and our customers' networks is a top priority for our company," said Michael. "We are focused on providing a wide-ranging suite of services and tools for network security and protection, including mitigation of DDoS attacks and black hole filtering. DPS Max enhances our offering and gives customers more solution options and the opportunity to choose the level of support they need."

NTT Com's DPS product suite also includes DPS Control, DPS Core and DPS Detect. DPS Control is an entry-level tier of service intended for customers that don't require full mitigation assistance. DPS Core is the initial level of service for customers that need full DDoS mitigation support. DPS Detect provides an advanced level of service as it adds detection capabilities to help identify potential attacks using state-of-the-art technology while working with customer-defined thresholds.

The new DPS Max offers the highest level of service and provides the features of DPS Core and DPS Detect, while adding automatic mitigation capabilities. With auto-mitigation, Global IP Network customers are able to have an attack mitigated immediately because the company's DDoS mitigation platform detects attacks and automatically initiates mitigations based upon customer-defined thresholds. When the platform notices that an attack has ended, it automatically stops the mitigation, returning the customer's traffic to their normal, pre-attack routing.

Looking to the Future

"In addition to the IOT growth for the future traffic we will see in the next years, AR and VR traffic that will need network availability as it grows. Again, these are not cache driven products so the networks need to be ready, Michael noted. "We will be there for those data driven solutions that need large scale bandwidth on a global level!" ℡