



BUYER CASE STUDY

Building a Network That Is Mission-Critical to the Business: Teradyne Case Study

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IDC OPINION

Within the network space, telecom operators offer little to no differentiation when it comes to service-level agreements, or SLAs. Hard metrics such as availability, packet loss/packet delivery, jitter, and latency are virtually identical when comparing contracts and the guarantees network operators provide to each of their customers. Legalese clauses such as force majeure ("act of God") are set up so that operators can mitigate their responsibility for incidents outside of their control as when networks go down — definitions can be vague.

- It is the contention of IDC that the real differentiators that distinguish one network operator from another is what one does when there is an outage or when a major trouble ticket is lodged. Here, both technical and human components are in play. The human component includes the level of responsiveness and priority assigned to the case, as well as the communication and skills of the help desk (and others involved) through to closure. The technical component considers whether customers are provided the interfaces into the network so they can see the same information as the carrier in real time. It also looks at whether the operator will perform a root cause analysis. This is important for getting to the core of the issue and identifying vulnerabilities in the network. However, many carriers overlook this too often as they are preoccupied with the speed at which they can close a ticket before they can move on to the next issue. As a result, the reason for an outage is never known.
- Beyond SLAs, human factors need to extend outside of the domains of customer care and operations. Businesses place a premium on the responsiveness of the sales and support teams in turning around a quotation and on the ability to support a move, as well as add or change and/or provide contract flexibility and some degree of customization. IDC end-user research has shown that even though a service provider can achieve all of the technical metrics and targets within an SLA (e.g., network availability, latency, packet delivery), it will often lose the contract at renewal by neglecting the soft factors. The reasons for staying with a provider (and often driving customer satisfaction) are typically due to the strength of the account management team, timeliness of proposals, billing accuracy, on-time delivery, quality of follow-up, and project management. Increasingly, businesses are looking for suppliers that know their business, can provide technology transfer, and make a link between the delivery of ICT services and business outcomes.

This Buyer Case Study describes the relationship Teradyne, a leading provider of automatic test equipment, has with its network supplier, NTT Communications (NTT Com).

IN THIS BUYER CASE STUDY

This Buyer Case Study describes the relationship between Teradyne, a leading provider of automatic test equipment, and its network supplier, NTT Communications. It outlines the importance of the NTT Com network in the successful functioning of Teradyne's business as well as Teradyne's overall approach to choosing and maintaining a strong relationship with its network suppliers.

SITUATION OVERVIEW

Teradyne is a leading provider of automatic test equipment. The company, which celebrated its 50th anniversary in 2010, claims that any device a consumer has is likely to have been touched by Teradyne in some way. In 2014, Teradyne had sales of US\$1.65 billion and currently has 3,900 employees worldwide. Headquartered in North Reading, Massachusetts, the company has over 70 locations across the United States, Europe, and Asia.

Organization Overview

Having several key units including a semiconductor test group, systems test division, as well as wireless test solutions, the company depends entirely on the performance and availability of the network to drive its enterprisewide ICT environments. It has major clients covering consumer electronics companies making anything from smartphones and tablets to gaming products through to defense and aerospace industries. The role of the network takes on an even higher significance as Teradyne is also moving into new areas such as Internet of Things (IoT) and advanced robotics. Both markets are highly relevant for Teradyne and place enormous demands on the network, where the company is placing strategic bets for future growth. The move to IoT and advanced robotics shifts network resources (including storage, connectivity, and compute) to the edge of the network, as well as the core. In May 2015, Teradyne acquired Universal Robots, which extends the company into advanced industrial automation. Thus, Teradyne is a company likely to place much more demands on the network as a platform to drive future growth.

Challenges and Solution

Teradyne is a company using its network to support three key areas of the business — engineering, manufacturing, and support. It is imperative that these areas are interconnected and able to work across geographies 24 x 7. Being able to collaborate is also essential for maintaining a competitive advantage.

- **Engineering.** This includes all areas of computer-aided design (CAD) and hardware and software regression testing to identify potential bugs and ensure continuous improvement in new upgrades. Networks must be "always on" as the engineering group, which sits mostly in the United States, needs to be connected with other regions in the world. In the case of Teradyne, a WAN outage would affect over 500 engineers in over 10 locations where work could potentially grind to a halt. WAN outages can also interrupt jobs that have taken up to a day to run and have to be restarted. Since they also use this network to connect to server farms (as well as various collaboration platforms) at the same time, the engineers must have a network that performs reliably to a high standard.
- **Manufacturing.** This includes all areas that have to do with configuration and build instructions. Product defect analysis is distributed daily, and there are other areas on the back-end that need to be supported such as delivering product and OS feature updates to the factory floor. This functional area needs the network to help drive automation and scale.

- **Customer support.** With major facilities and large teams located in the Philippines and Costa Rica, Teradyne's Global Services Organization (GSO) arm focuses on areas such as order management and logistics systems. It engages in TestDev programs, document management, and other areas of technical support for Teradyne customers, in either a remote or an onsite model. These areas of a business require the network to support customers through an always-on, multiple-channel environment. Going forward, ICT is expected to drive a better customer experience.

As a diversified international company, Teradyne decided to build a global network to interconnect its major business units. Like many global engineering companies, it needed the following from its chosen network supplier:

- **Geographical dispersion.** With locations in three continents, as well as the need to deliver projects to clients on a global basis, Teradyne needed to ensure its engineering, manufacturing, and customer care operations (as well as branch offices and remote workers) are interconnected through a robust infrastructure.
- **Collaboration.** Teradyne has many ongoing complex projects across the region and world; it needed to find a better way to collaborate with its partners, suppliers, and clients. This collaboration improves customer service and turnaround times and delivers better outcomes for clients.
- **Bandwidth.** As experienced by most engineering firms, the demand for network bandwidth and resources is continuously rising. As average file sizes for complex product designs continue to increase, it was important that the network could provide enough raw capacity to meet current and future demands of the businesses globally. The network should also be able to support unpredictable traffic patterns and deliver a consistent service.

Results

NTT Com has been a chosen partner for Teradyne and has successfully retained and expanded its network footprint through four contract renewals. NTT Com is using Virtela Internet to provide multiprotocol label switching (MPLS) service in four locations. The network is being used in Asia to connect sales and support sites, the Singapore headquarters, as well as the Suzhou factory. NTT Com also provides colocation, which supports Teradyne's other core services in Singapore (e.g., email, VPN gateway). The WAN solution provides connectivity back to the local corporate offices.

The NTT Communications Customer Council

NTT Com and Teradyne have set up a customer council and have also used this as an opportunity to address the following:

- **Peer relationships.** It is imperative that carriers consult with their equivalent operators that value speed, quality, and performance to guarantee the end-to-end experience. "Peer-ing" also provides the ability to bypass traffic bottlenecks in the network, increasing redundancy and improving overall user experience.
- **Root cause analysis.** Root cause analysis is extremely important for Teradyne to understand what happened, why it happened, and what is being done to improve the network on a continual basis. If an event cannot be described, then it cannot be improved. Companies like Teradyne can only have confidence if they understand the problems. Supplier confidence was highly weighted in the selection process. Every event must also have an improvement plan or an agreement about its limitations (e.g., places in the network where multiple vendors play a role).

- **Outage communications.** When an outage occurs, it is important that a service provider has the right troubleshooting capabilities and escalation procedures to resolve an event within a reasonable amount of time. The service provider is also expected to communicate proactively with the customer at every stage. It is important that account teams (front and back offices) have the power to escalate when necessary and see an event through to its conclusion.
- **Start-up times and carrier flexibility.** Start-up times and carrier flexibility are important for carriers to commit to provisioning times and targets that can be achieved. It is also important that there is commercial flexibility within the contracts. There needs to be some element of agility to meet the needs of the lines of business (LOBs) and end users at Teradyne.

Overall, Teradyne has been very satisfied with the services it has enjoyed from NTT Com since 2003. Even as the customer council has been a great forum to discuss the key issues of the day and building trust, NTT Com was also given credit for product ranges, existing relationships, level of responsiveness, as well as infrastructure reliability and total cost of ownership (TCO). Going forward, Teradyne will be looking for more transparency and continual improvements.

ESSENTIAL GUIDANCE

The business landscape is constantly evolving and service providers must consider the following to differentiate themselves in a highly competitive marketplace:

- According to the *IDC Asia/Pacific WAN Survey 2015*, the top 3 reasons driving investments in networking for 2015 were to improve business processes, increase productivity, and reduce overall cost structure. Going forward, network communications will continue to be intertwined with business needs, especially as LOBs become more prevalent in ICT decision making.
- The quality of network and related SLAs are very important for enterprise customers. ICT managers will continue to monitor and manage the network and demand better tools for real-time reporting. Going forward, it will also be important that SLAs evolve as well so that they can tie in with the business goals. They should be more reflective of end-user requirements and individual experience.
- Networks and SLAs should also look to evolve to the personas and expectations of business outcomes from the viewpoint of various CXOs. The CMO, for example, would place importance on a solution that can help the organization to better target and engage customers in omni-channel initiatives; the COO may place a premium on the automation of business processes; whereas the CFO might look at technology for performance management and growth. The network can play an important role in tying technology to business outcomes.

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- *Buyer Conversation: Jones Lang LaSalle – Journey in 3rd Platform Solutions* (IDC #AP250950, January 2015)
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