Blueshift RESEARCH TECH TRENDS YOU NEED TO KNOW

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Fast-Paced Change Upends IT Behind the Scenes

Companies: AKAM, AMZN, ANET, CIEN, CMCSA, COMM, CSCO, DDOG, DELL, FSLY, GLW, GOOG/GOOGL, IBM, MSFT, OKTA, SNOW, SPLK, VMW

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"Heard, tracked, understood, witnessed, confirmed, and you should really think about paying attention to this stuff."

Research Question:

What is the race for fast access to data stored in warehouses and data lakes doing to unleash profound change across the traditional IT hardware/software spectrum? And which companies are driving those changes—to the detriment of others?

Key Findings

Fast cloud access over global fiber optic systems tied to endpoint security and ID management that interacts with a slew of data management, analytics, distribution, and workload applications is rapidly replacing the way data networking is done—and will be moving ahead. Change is moving much faster than is likely understood by anyone who still looks at the information technology sector as an array of disparate hardware/software products cobbled together by hordes of vendors, value-added resellers (VARs), and customer IT admins in a do-it-yourself world.

- On the way down are Arista Networks Inc. (ANET), Cisco Systems Inc.'s (CSCO) enterprise networking division, Dell Technologies Inc. (DELL), IBM Corp. (IBM), and virtualization software vendor VMware Inc. (VMW), among many others.
- Access provided by the mobile carriers is morphing toward 5G speeds. Broadband and mobile provider Comcast Corp. (CMCSA)— backed up by ultra-fast fiber from Corning Inc. (GLW) connected to extremely fast optical equipment from the likes of Ciena Corp. (CIEN) and Cisco's optical networking division—is allowing faster mobile and remote work access for billions of endpoints. The continued emergence of Wi-Fi everywhere is also lifting CommScope Holding Co. Inc.'s (COMM) home broadband Touchstone gateways and its Ruckus wireless access point businesses, sources report.
- Home base for all data traffic is a platform on the major clouds at Amazon.com Inc. (AMZN) Web Services (AWS), Microsoft Corp. (MSFT) Azure and Alphabet Inc.'s (GOOG/GOOGL) Google Cloud Platform. This drives—and will continue to drive—the high growth of data management, real-time analytics, edge content delivery, cloud application performance visibility, and embedded security from the likes of Akamai Technologies Inc. (AKAM), Datadog Inc. (DDOG), Fastly Inc. (FSLY), ID management and security firm Okta Inc. (OKTA), and recently IPOed Snowflake Inc. (SNOW). These companies and others, like Splunk Inc. (SPLK), are providing new layers of service that threaten the entire traditional IT security industry while providing more and more compelling reasons for even the biggest of customers to continue to pare down—or turn off—their in-house IT networks.

The Ups and Downs of the New Connected World

Up:

Amazon, Google, Ciena, Comcast, CommScope, Cisco (optical group), Corning, Microsoft: Sources in the fiber backbone and edge access areas are bullish on the underpinnings of global connectivity and access gateways that allow mobile and remote work to flourish in the new pandemic-driven networking age. Ciena's fortunes took a battering in August but sources call the company a fundamental baseline for global fiber connectivity, with products that are increasingly important to network operators looking to upgrade terrestrial and undersea optical network speed and performance. Ciena will rebound rapidly, sources reported. Cisco's carrier and service provider optical division is seen as a rare bright spot for a company that is faced with the increasing decline of enterprise DIY networking. It takes fiber optic cable to connect everything end to end—from the mobile tower backhaul, undersea, on land, to the data center, and inside the data center—and sources maintain that Corning makes by far the best glass and that demand for its products is in the early stages as networks worldwide need to upgrade to meet data transport demands. A company that has not been heard from very much over the past few years—CommScope—is suddenly back in the mix because of broadband cable Wi-Fi gateways that can deliver five gigabits of download and a gigabit of upload speeds to cable customers via their new Touchstone devices. Blueshift Tech Trends' top wireless and broadband networking source called CommScope's broadband and Ruckus wireless Wi-Fi access equipment "the best on the market" and said the company was in position "to really benefit from the remote work situation" as mobile and remote workers need better, faster, and reliable access. That access discussion among sources led to several positive comments about Comcast's business cable

broadband division, which has set up direct link access to AWS, Microsoft Azure, and IBM via several data center companies that cross-connect Comcast customers into the cloud, allowing them and their employees to bypass in-house IT systems altogether from the SMB to large enterprise markets. Tied back to the global resources from the big three cloud companies, there is now a totally new way to construct flexible IT networking options without having to own, run, and maintain a big in-house system for organizations that do not have the specific need to do it themselves.

Akamai, Datadog, Fastly, Okta, Snowflake, Splunk: One key long-time Tech Trends source somewhat jokingly calls the layer that sits between the end network user and data in the cloud "Middle Earth." Other sources told this readily agreed. Why? Because seeing, using, interpreting, securing, and delivering data to and from cloud hosting over very fast wired and wireless networks requires a vast set of capabilities specifically tailored to deliver outcomes at the touch of, or click on, a screen. This layer takes the user on a journey from a mobile device across the aforementioned access and connectivity layer into servers—or serverless—systems deeply imbedded in the cloud and into data where they can work, or find what they want, often in milliseconds. With that in mind, sources all agree that the big growth area in IT networking over the next three to five years will be surrounding companies that can deliver on the needs of "Middle Earth." Datadog and Splunk will find enough business between them to continue to grow because the visibility into cloud-based network operations that the two provide—along with their increasing foray into data security—helps customers get away from in-house systems often running dozens of software/hardware licensing and support contracts and into configurations where they can effectively run a sprawling IT operation in the cloud by monitoring a few screens. This also will drive Snowflake's multi-cloud suite of software services. Sources were fast to point out, however, that, while these companies are in the right place at the right time, how they are valued by Wall Street might be drifting out of the realm of reality because the shift to what they deliver will be stretched out over a long period of time, as in-house network operators cannot make total cloud migrations overnight when they have been stuck in the DIY mindset for 25 years. Sources also emphasized that Fastly's edge content and website delivery network is positioned to deliver mobile content in a superior fashion. Pushing content from central big data center hosting closer to end users is not new. It was invented by Akamai when the company was founded in 1998. Sources in cloud content delivery and security report both Akamai and Fastly can profit in the next generation of content delivery networks because, while they overlap in several areas, Fastly has a different instant type of edge mobile delivery that can be changed on the fly, making it appealing to customers that want to target people with mobile devices on the move. "Middle Earth" is where Tech Trends sources see growth over the next few years, especially as mobile work replaces centralized work as the new normal.

Down:

Arista continues to try to add new capabilities on top of its core fast data center switching business via its acquisition of AI security threat detection firm Awake Security. Two leading Tech Trends security sources were very negative on the acquisition, calling it a "bad fit" for Awake because, as one put it, "it bakes in the premise that a customer will have to operate over Arista's expensive EOS [extensible operating system] network software and, likely, the physical switches themselves at a time when owning these kinds of proprietary setups is becoming increasingly too expensive." Arista has made other acquisitions questioned as poor fits by Tech Trends' networking sources, most notably the pickup of Big Switch Networks for network visibility—an area that overlaps with cloud visibility platforms from Datadog and Splunk. Sources said they see Arista trying to cater to a segment that is under increasing pressure: Software-defined networks (SDNs) owned or operated by individual enterprises. They again cite the company's heavy reliance on Microsoft as a customer as a negative risk factor, as Microsoft is a leading driver in open source network operating software that could eventually wean the global Azure cloud data center system away from the proprietary Arista EOS over the next few years.

Cisco: While sources said they see Cisco's carrier routing and optical business as somewhat of a saving grace (see above), they see the truncation of the company's once-lofty projections for DIY SDN shrinking rapidly in the direct endpoint to the cloud world. As a result, they also see sales of Cisco's core and edge switching portfolio and its associated communications and security products continuing to lag in sales—perhaps permanently. Sources said Cisco will have to reinvent itself in the face of IT as a service delivered by the big three clouds. Our Cisco sources report "very slow" sales in the current period, with the pandemic continually being cited as the key driver in the decline.

Dell, VMware: The two companies that are inexorably linked sell legacy products for too much money. Sources said they add too much complexity at a time when, as one put it, "customers are trying to lose complexity and licensing like they are a disease." Another was particularly scornful of VMware's continued attempts to "add more complex [stuff] to the mix when there is nobody to properly integrate their NSX platform even working at VMware." The newest target of source skepticism surrounding a VMware announcement is something called "Project Monterrey."

IBM: Sources report no new breakouts for IBM since previous recent Tech Trends reports. Several said the company is trying to push its cloud analytics business into more consumer-focused areas like online sports betting and fantasy sports, citing a licensing deal ESPN has made for an AI-driven fantasy football stats app using the Watson brand. They said IBM is setting another example of the company seeking new ways to expand its once exclusive brand into what one source described as "junk data analysis" that competes directly against AWS in things like "predicting the odds of a 55-yard field goal making it or not."

Background

Blueshift Research's Senior Technology Editor John Harrington interviewed 24 senior executive sources—all repeats from previous Tech Trends reports, 21 in the United States and three in the UK—regarding the significance of a new layer of IT business emerging as the next big growth area in networking at the expense of established hardware/software networking vendors. This report is the third on the topic since the beginning of the pandemic in March triggered a mass move to remote and mobile working. Interviews were conducted in August through September 30.

Key Quotes

- "If you aren't paying attention, you might be led to think that things will return to normal, whatever that happened to be from your vantage point, meaning that you may see budget cycles being restored once the COVID problem subsides, and allocations will again flow to Cisco or IBM as they once did. Or there will be large purchases of servers and storage, in the case of Dell. All the individuals employed running these networks will be back to work and things will be as they were. No. This will not be the case, as those days are over. They have passed as, as George Harrison once sung, all things must. Queue the rise of firms living in what we have nostalgically decided to call "Middle Earth." These are the companies that have sprung up in the geography between the endpoints—the users of networks—and the core places in the cloud where applications and data storage increasingly reside. The Middle Earth companies, such as your recently public Snowflake and the so-called observation software firms like Datadog and the rest, act on what is going on in the clouds as it relates to customers using the cloud. This is direct visibility and management control over applications and data regardless of where anything physically is hosted. They act on the data moving to the cloud, or back out of it, or doing things that concern the resting data stored there and these applications are simply going to become more relevant with each passing day as the remote work world morphs into normalcy and the daily commute to the large central office complex slides toward eventual extinction. What you will see will be what we have long been working toward setting up for our customers: small, scattered offices regionally where necessary workers may go to conduct various tasks, as everyone else works from wherever they happen to be over a secured access connection into the cloud. Conversely, as you bring up Fastly and Akamai, these are two firms that make the delivery from the cloud to the endpoint much faster, particularly in the mobile device world, were Fastly seems to have had the benefit of crystal ball a couple of years ago. They built their network on the edge with an eye directly on smartphones, which, of course, is precisely where we are now. The edge traversing through Middle Earth to the Motherland—meaning the cloud—and back again. I know that's a very odd-sounding way to describe it, but it is apt. The deviation through the on-premise network becomes increasingly moot and we are 100% in agreement. This has given us an enormous boost, as we have been touting the cloud as the way to go for five years or more. Our horse has finally come first." — CEO of a UK business to cloud integration firm

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> *CEO of a UK business to cloud integration firm*

- "I think it actually is a looming disaster for thousands of well-paid IT jobs in this country. The AI-driven software behind the cloud SaaS and analytics plays is converging on top of the fast access across mobile, with 5G and gig Wi-Fi, to set up the cloud as the anchor and the edge data center becomes your mobile device. Where does that leave all the people working at the incumbent vendors, their VAR channels, and inside the enterprise networks? Here's an up-to-the-minute

example. A couple of days ago, Microsoft was doing some internal upgrade to Office 365 and Teams and they took out login capability for millions of their cloud customers for several hours. The key here is that, had you been running licensed Office on your own servers and you had an outage, you might have been down for a lot longer than a few hours. Microsoft got it back up and running in a relatively short period of time. Instead of what happened being a negative, the turnaround to restore service proves that their platform replaces in-house admins. The server blocks and all the other network you used to buy and run yourself goes away over time—but so do jobs up and down the stack. We do not need [Cisco] CCIE engineers on our payroll anymore. We haven't had for three years now. We don't carry any VMware certs anymore because we are out of the data center server business. In our company, we have cut more than 20 different integration certified engineers and salespeople since 2017 because we are doing cloud services migrations on AWS and Azure. That's application workloads and storage. Our managed services layer is security and keeping the clients' cloud deployments operational. We deal with Okta and Crowdstrike [Holdings Inc./CRWD] as two of the key partners for endpoint and ID management and verification. We line up bandwidth, wired and wireless. We are a Comcast business direct to Azure and AWS partner. We are a T-Mobile [US Inc./TMUS] partner. Less than 10 years ago, we were a very big Cisco shop. Our situation is now typical. This spreads across the entire IT sector. It's automated, mobile, and the pandemic is sealing the fate of the old-line suppliers." — CEO of a West Coast network integration firm

- "The reason I think the pandemic has changed the way things are going to accelerate in wireless tech is not because it created an emergency. It is because wireless handled and is handling the emergency. Think about it. Without the technologies behind the mobile networks and Wi-Fi everywhere, everyone is screwed. Now wireless will take over everything. Not just 5G, but multi-gigabit Wi-Fi. This is why we are using so much CommScope on the Ruckus front. And they have a real shot at picking up considerable business with the cable broadband guys. We do tons with Comcast on the outdoor Wi-Fi front and I think you'll see CommScope is on the up. They have solid systems." — CEO of a wireless networking company operating in the United States, Canada, and South America

About the Author

John Harrington is an award-winning investigative reporter and veteran Wall Street researcher. John previously served as senior editor and senior researcher at OTR Global and was a three-time Emmy Award-winning TV journalist.

John brings expertise and relationships in internet networking, network security, fiber optic communications, and data center computing to Blueshift Research. John will contribute regularly, sharing deep insight into tech and communications trends, often before they are recognized by Wall Street.

Report Coverage Areas and Companies

Blueshift Research has been reporting on the following technology areas since Feb. 14, 2014, covering these public companies:

Cloud Computing/On-Demand Hosted IT (AMZN, CRM, GOOG/GOOGL, IBM, MSFT, ORCL, WDAY)

Enterprise IT Networking (ANET, CSCO, CTXS, DELL, FFIV, HPE, IBM, JNPR, MSFT, ORCL, RHT)

Data Security (CHKP, FEYE, FTNT, INTC, JNPR, MSFT, PANW, SYMC)

Data Storage/Management/Analysis (AMZN, BRCD, CSCO, GOOG/GOOGL, HPE, IBM, INTC, MSFT, NTAP, ORCL, PSTG, RHT, TDC, WDC)

Data Centers and Fiber Optic Networking (AMZN, CONE, DFT, DLR, EQIX, GOOG/GOOGL, IBM, INTC, MSFT, NVDA, QTS, ZAYO)

Fiber Network Construction and Implementation (ALU, CIEN, CSCO, DY, GLW, IESC, JNPR, NOK)

To access these reports, please contact your Blueshift Research sales representative or John Harrington.

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of the research. To the best of our knowledge and efforts, Blueshift confirmed that the underlying source(s) lawfully obtained the information shared with Blueshift and were entitled to provide such information to Blueshift without breaching a duty to another party. The data in this report has undergone review from Blueshift Research's Compliance Officer and has been approved for distribution to Blueshift Research's clients.