

FOCUS Telecom
Technology and Services Group
Enterprise-Focused
Telecom Technology
Quarterly

Summer 2019 Report

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FOCUS

Investment Banking

Strategic, Personal, Dedicated

Investment Banking and Advisory Services
FOCUS Investment Banking LLC is a leading investment bank with specialized telecom technology and services expertise, concentrating on providing highly tailored services to emerging middle market and larger organizations in this sector:

Mergers & Acquisition Advisory
Corporate Development Consulting
Strategic Partnering & Alliances
Capital Financing, Debt & Equity
Corporate Valuations

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Enterprise-Focused Telecom Technology Quarterly

By Richard Pierce, Managing Director and Telecom Technology and Services Team Leader, FOCUS Investment Banking LLC

FOCUS believes that the Enterprise-Focused Telecom Technology sector is one of the most exciting in Telecom. Businesses today have an unprecedented opportunity to enhance operating efficiency and reduce costs by converging separate voice and data networks, empowering remote and mobile workers, extending communications to harsh outdoor and industrial environments, enhancing customer service and moving applications to a hosted or “cloud” environment. However, to achieve these benefits organizations must overcome a host of non-trivial challenges including bandwidth management, quality of service prioritization and monitoring, device proliferation and network security. While many of the largest players in the communications equipment industry are indeed helping to meet these challenges, we believe there is significant innovation among middle market technology providers and ample opportunities for them to create meaningful value for their shareholders. FOCUS is proud of its commitment to the Enterprise-Focused Telecom Technology sector and we are excited about the prospects for middle market companies in this space.

The FOCUS Telecom Technology and Services group consists of four professionals with a mix of backgrounds that include both C-level operating expertise and experience at leading middle market investment banks. The FOCUS Telecom team is uniquely qualified to help middle market clients reach their strategic objectives because the group:

- Devotes significant senior level resources to executing transactions for lower middle market clients,
- Has a breadth of knowledge that covers most segments of the telecom industry,
- Has bankers with C-level operating experience in the telecom industry,

- Has a proven transaction methodology for delivering results,
- Is equally comfortable with buy side and sell side M&A,
- Leverages an experienced team of research professionals,
- Has a national presence with coverage of both East and West coasts.

Sub Sector Definitions

Enterprise Networking: Enterprise-grade switches and routers (wireline and wireless), enterprise CPE and application and bandwidth management tools such as WAN optimization and application acceleration

Industrial Networking and M2M: Ruggedized equipment designed for communications in harsh environments as well as equipment utilized for machine-to-machine communications

Network Management: Software used by enterprises to manage and monitor their voice communications and data networks

Network Security: Software applications designed to identify and protect against a wide variety of network security-related threats

Unified Communications and Contact Center: PBXs, videoconferencing-related products and software products designed to enhance the efficiency of contact center networks.

Summary Comments

Public Markets

Taken as a whole, the Focus Enterprise-Focused Telecom Technology Index (EFTTI) had a relatively uneventful three-month reporting period with a drop of 0.9%. This underperformed both the S&P 500 and NASDAQ, which gained 1.2% and 1.0%, respectively, over the same time period. Even though the EFTTI was relatively flat this period, this masked larger movements in the various sub sectors. Four of the five EFTTI sub sectors delivered returns below that of the sector as a whole, while one (Unified Communications and the Contact Center) was sharply higher. The situation looks more optimistic for the 12-month period, where the 23.5% gain in the EFTTI significantly outperformed both the 5.8% gain in the S&P 500 and the 6.6% gain in the NASDAQ. Sector multiples are meaningfully higher than they were a year ago. The sector revenue multiple went from 3.9x to 4.8x, while the sector EBITDA multiple increased from 16.1x to 20.3x.

Enterprise Networking

After a strong performance in the spring, the Enterprise Networking sub sector dipped 2.2% in our summer reporting period. A majority (seven) of the 12 stocks in the index were actually in positive territory, including double digit gains at A10 Networks and Aerohive Networks. However, losses at the larger market cap names like Arista Networks, Cisco and F5 Networks dragged the sub sector into negative territory. Year-over-year, the sub sector is the second best performer in the EFTTI with an increase of 23.6%. Much of this can be attributed to the performance of Cisco, which is up 31.0% in the past 12 months. Sub sector multiples closed out the period at 4.2x revenue and 15.1x EBITDA. Both of these are higher than year-ago multiples of 3.6x revenue and 13.2x EBITDA.

Industrial and M2M

The Industrial and M2M sub sector plummeted 13.5% this period. This marks the third straight period where the Industrial and M2M sub sector has been the worst performing sub sector in the EFTTI. Belden, CalAmp, Sierra Wireless and Telit Communications all suffered double digit losses. The lone bright spot was Inseego, which posted a 13.8% gain. The situation is just as bleak for the full year period with the sub sector dropping 24.2% over this time frame. Once again Inseego bucked the downward trend to nearly triple over the past year, while Lantronix also enjoyed a strong gain of nearly 30%. Sub sector multiples are lower than they were a year ago. The revenue multiple fell from 1.4x to 1.2x, while the EBITDA multiple dropped from 11.7x to 9.6x.

Network Management

The Network Management sub sector was the EFTTI's second worst performing sub sector this period with a three month drop of 7.3%. Three of the four stocks in the index were in negative territory, including steep declines at both NetScout and SolarWinds. On the plus side, MobileIron shot up 16.4% in the current reporting period. Even with this recent decline, sub sector performance still remained strong for the full year with a 12-month gain of 13.3%. Once again MobileIron led the way with a gain of nearly 50%. Multiples are also higher year-over-year, with the revenue multiple closing out the period at 4.7x (compared to 3.8x a year ago) and the EBITDA multiple ending at 19.5x (up from 14.6x a year ago).

Network Security

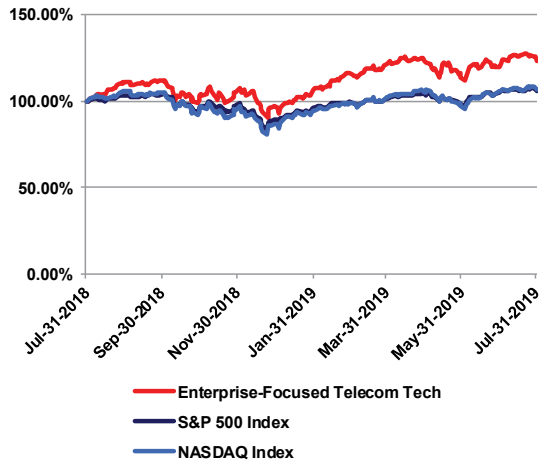
The Network Security sub sector returned to negative territory with a loss of 2.2% this reporting period. Only six of the 17 stocks in the index were in the black. Nevertheless, the sub sector was still able to boast yet another IPO with the entry of CrowdStrike into the public markets. For the full year, the Network Security sub sector still delivered a strong performance with a gain of 18.4%. Multiples also continued to increase year-over-year. The sub sector revenue multiple jumped from 5.7x to 6.8x, while the sub sector EBITDA multiple increased from 35.2x to 48.6x.

Unified Communications and the Contact Center

The Unified Communications and the Contact Center sub sector was the EFTTI's top performing sub sector this period. Furthermore, with a three month gain of 16.2%, it was the only sub sector to deliver a positive return. This outperformance is largely due to newly public Zoom Communications, which lived up to its moniker with a gain of more than 30% in the past three months. Liveperson also delivered a double digit return of 13.2% this reporting period. On the other hand, "old school" vendor Avaya did not fare particularly well as its stock dropped 36.9%. Turning to the full year period, the sub sector is up just more than 50% for the full year. This makes it the best performing sub sector year-over-year as well. Not surprisingly, sub sector multiples are quite a bit higher than they were at this same time last year. The revenue multiple is now 7.3x (up from 2.6x a year ago) and the EBITDA multiple is 58.3x (up from 21.2x a year ago).

Enterprise-Focused Telecom Technology: Public Market Summary

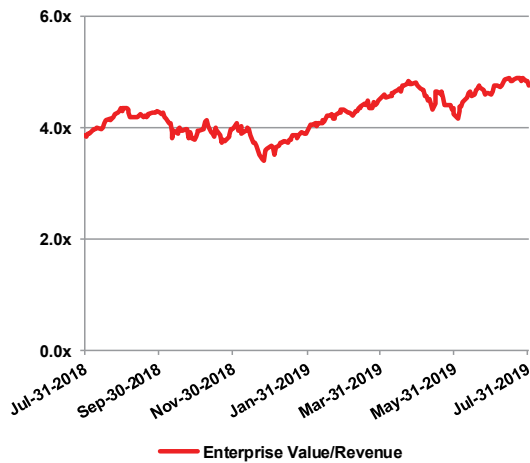
Twelve Month Index Returns



Sector and Sub Sector Returns

	12 Month	3 Month
Enterprise-Focused Telecom Tech	23.5%	-0.9%
Enterprise Networking	23.6%	-2.2%
Industrial and M2M	-24.2%	-13.5%
Network Management	13.3%	-7.3%
Network Security	18.4%	-2.2%
Unified Comms & Contact Center	50.5%	16.2%
S&P 500	5.8%	1.2%
NASDAQ	6.6%	1.0%

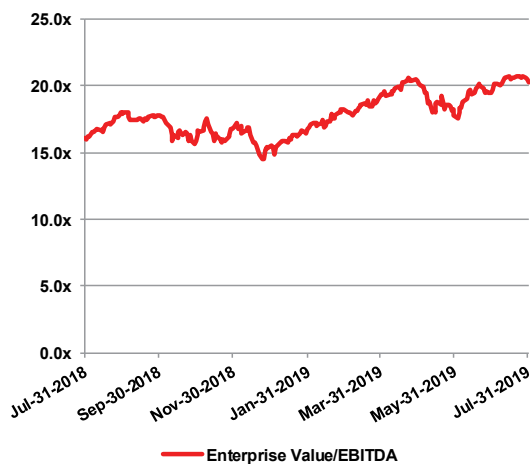
Revenue Multiple Trends



Sector and Sub Sector Revenue Multiples

	7/31/2019	7/31/2018
Enterprise-Focused Telecom Tech	4.8x	3.9x
Enterprise Networking	4.2x	3.6x
Industrial and M2M	1.2x	1.4x
Network Management	4.7x	3.8x
Network Security	6.8x	5.7x
Unified Comms & Contact Center	7.3x	2.6x

EBITDA Multiple Trends



Sector and Sub Sector EBITDA Multiples

	7/31/2019	7/31/2018
Enterprise-Focused Telecom Tech	20.3x	16.1x
Enterprise Networking	15.1x	13.2x
Industrial and M2M	9.6x	11.7x
Network Management	19.5x	14.6x
Network Security	48.6x	35.2x
Unified Comms & Contact Center	58.3x	21.2x

Source: Capital IQ

Summary Comments

M&A

M&A activity picked up significantly in the Enterprise-Focused Telecom Technology sector in our summer reporting period. The sector notched 46 deals with a total announced transaction dollar volume of \$2.4 billion over the past three months. For the year, we now count 97 total transactions. This means that the frenetic pace of M&A activity this period was enough to bring the sector back on pace to have a similar number of transactions to what we have been seeing in recent years. However, with year-to-date announced transaction dollar volume of only \$5.6 billion, 2019 is still lagging recent years based on this unit of measure.

Enterprise Networking

Extreme Networks followed up its 2016 acquisition of Zebra Networks with another acquisition in the wireless LAN space. In this case, the target was Aerohive Networks, which Extreme purchased for \$228 million. We also saw VMware acquire application delivery controller vendor Avia Networks. In the sub sector's final transaction, Shenzhen Division acquired customer premise networking vendor Shenzhen Shuangying Weiye Technology.

Industrial and M2M

The Industrial and M2M sub sector had two transactions this reporting period, both of which were small. Lantronix acquired M2M networking vendor Maestro & FALCOM Holdings for \$4.9 million. In addition, Westermo Teleindustri purchased Neratec for \$5.0 million. Neratec makes local area network products for industrial applications.

Network Management

The lone transaction in the Network Management sub sector this period was Pico Quantitative Trading's acquisi-

tion of Corvil. Corvil makes SaaS for data network performance monitoring.

Network Security

With 33 transactions in the past three months, the Network Security sub sector was definitely the primary reason for the uptick in M&A activity in the Enterprise-Focused Telecom Technology sector. Palo Alto Networks was particularly active with its \$410 million acquisition of Twistlock and its \$47 million acquisition of PureSec. FireEye also made a relatively significant acquisition, reeling in Verodin for \$250 million. Other prominent security specialists that inked acquisitions this period were Imperva, Proofpoint and Zscaler. Larger technology companies also helped drive activity, with Cisco Systems purchasing Sentryo and Microsoft buying BlueTalon. Interestingly, with all of this strategic activity, the transaction with the largest announced transaction dollar volume actually belonged to a private equity firm. This was the Insight Venture Partners acquisition of Recorded Future for \$780 million.

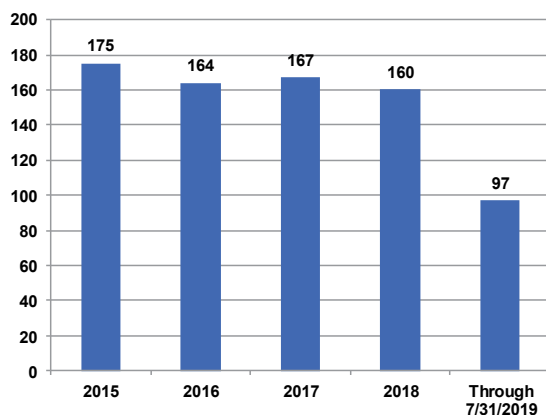
Unified Communications and the Contact Center

Activity in the Unified Communications and the Contact Center sub sector picked up dramatically this period. We counted a total of seven transactions. Five of these were in the contact center side of the sub sector. These included acquisitions by Calabrio and Pegasystems as well as new platform investments from Marlin Equity and NH Investment & Securities. However, while the Unified Communications portion of the sub sector only accounted for two deals this period, these deals had the largest announced dollar volumes in the sub sector. The first of these was the acquisition of communications platform-as-a-service com-

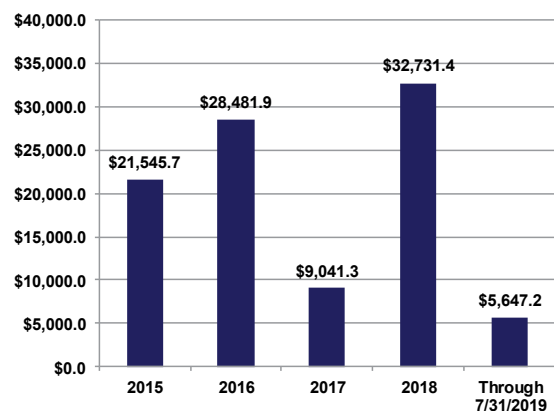
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Enterprise-Focused Telecom Technology: M&A Summary

M&A Activity: Number of Transactions



M&A Activity (\$ Value of Transactions in Millions)



pany Wavecell by 8x8 for \$125 million. In addition, consolidator Enghouse Networks acquired video-conferencing company Vidyo for \$40 million.

Transactions with Announced Multiples

We had four transactions with announced multiples this period. The two highest multiple transactions were the 8x8 acquisition of Wavecell for 3.9x revenue and the Extreme Networks acquisition of Aerohive Networks for 1.5x re-

venue. The Wavecell transaction did not have an announced EBITDA multiple, while the EBITDA multiple for the Aerohive Networks transaction was “Not Meaningful” because the target had negative EBITDA. In addition, in the Industrial and M2M sub sector Westermo Teleindustri acquired Neratec for 0.8x revenue. Finally, Enghouse Systems’ pickup of videoconferencing specialist Vidyo was accomplished at a multiple of 0.7x revenue.

Announced Transactions (5/1/19 – 7/31/19)

Acquiror	Target	Sector	Date Announced	Purchase Price	Description
JAMF Software	Digita Security	Security	7/31/19	NA	Provides endpoint cybersecurity protection software, extensions and plugins for macOS users.
Microsoft Corporation	BlueTalon	Security	7/29/19	NA	Provides enterprise user authorization and user access control cybersecurity software for use in Hadoop and SQL databases.
J2 Global	Safer Social	Security	7/25/19	NA	Provides VPN and cybersecurity SaaS via desktop and mobile applications to businesses and consumers globally.
WGSN	Jumpshot	Security	7/22/19	\$60.8	Security software offering solutions for viruses, spyware, trialware, pop-ups, bloated toolbars, etc.
Quadrum Capital	DataExpert	Security	7/19/19	NA	Develops software for cyber-crime prevention and data security.
WALLIX Group	Simarks Software	Security	7/17/19	\$1.5	Endpoint privilege elevation and delegation management software to protect against ransomware and malware.
8x8	Wavecell	Unified Comms & Contact Center	7/17/19	\$125.0	Communications platform-as-a-service software that enables SMS, chat, push notifications, voice and video communications.
J2 Global	StackPath (Highwinds Capital and Cloak Holdings Assets)	Security	7/15/19	NA	Provides unified threat management and firewall SaaS for businesses.
Braes Capital	Siege Technologies	Security	7/10/19	NA	Defensive cyber security solutions for private and government sectors.
Pico Quantitative Trading	Corvil	Network Management	7/9/19	NA	Data network performance monitoring and analytics SaaS for financial markets.
Lantronix	Maestro & FALCOM Holdings	Industrial and M2M	7/8/19	\$4.9	Designs, manufactures, and sells satellite receivers, trackers, modems, routers, and gateways for M2M and IoT applications.
Westermo Teleindustri	Neratec Solutions	Industrial and M2M	7/8/19	\$5.0	Hardware, software and wireless local area network products for industrial applications.
Certified Security Solutions	Evolium Technologies	Security	7/2/19	NA	Designs and develops digital identity management software solutions.
Exabeam	SkyFormation	Security	7/2/19	NA	Cloud application, SaaS, IaaS and PaaS threat detection software that integrates with security and event management systems.
Extreme Networks	Aerohive Networks	Enterprise Networking	6/26/19	\$228.4	Cloud networking and enterprise Wi-Fi solutions including wireless access points, branch routers and switches.
NetScout Systems	Eastwind Communications	Security	6/20/19	NA	Cloud-based network breach detection systems that monitor networks and detect traffic anomalies and potential breaches.
NH Investment & Securities	Minds Lab	Unified Comms & Contact Center	6/19/19	NA	Omni-channel AI contact center software platform that integrates its analysis systems with agents and Chatbots.
VMware	Avi Networks	Enterprise Networking	6/13/19	NA	Application delivery controller functionality SaaS for datacenters and private and public cloud network environments.
J2 Global	Encrypt.me	Security	6/6/19	NA	Multi-platform virtual private network encryption SaaS that enables users to encrypt data when connecting to the Internet.
Cisco Systems	Sentryo	Security	6/6/19	NA	IIoT/OT device visibility and cybersecurity management software for industrial control system networks.
Elastic	Endgame	Security	6/5/19	\$234.0	Endpoint security software that provides features for detection and prevention of phishing, ransomware and malware.
Imperva	Distil	Security	6/4/19	NA	Cloud and appliance-based bot detection and mitigation software and SaaS for businesses.
Sophos	Rook Security	Security	6/3/19	NA	Cybersecurity software focused on managed detection, monitoring, intelligence, response and orchestration.
Calabrio	Teleopti	Unified Comms & Contact Center	6/3/19	NA	Workforce management SaaS with a focus on call centers, back offices and retail stores.

Announced Transactions (5/1/19 – 7/31/19) *continued*

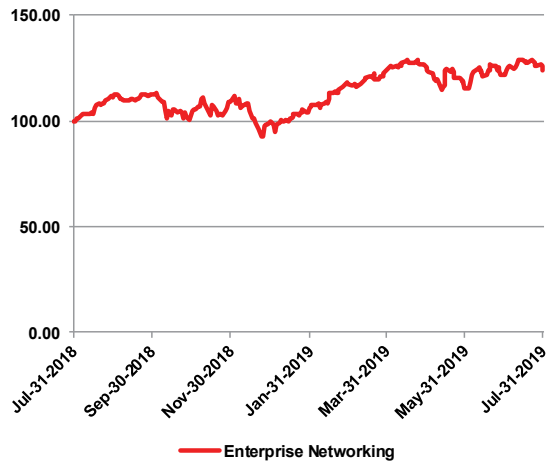
Acquiror	Target	Sector	Date Announced	Purchase Price	Description
Sdipitech	Cryptify	Security	5/31/19	NA	Software solutions for secure end-to-end mobile communication.
Avast Software	TrackOFF	Security	5/31/19	NA	Software to protect users' identities and personal data available online.
Zscaler	Appslate	Security	5/30/19	NA	Browser isolation SaaS for businesses that secures corporate endpoints from attacks generated from web-based applications.
Insight Venture Partners	Recorded Future	Security	5/30/19	\$780.0	Machine learning-enabled threat intelligence SaaS for the aggregation and immediate reporting of web-based threats.
Palo Alto Networks	PureSec	Security	5/29/19	\$47.0	Offers serverless application security SaaS for businesses.
Palo Alto Networks	Twistlock	Security	5/29/19	\$410.0	Enterprise container and cloud native cybersecurity management PaaS to protect applications and firewalls and test vulnerabilities.
FireEye	Verodin	Security	5/28/19	\$250.2	Automated security attack simulation SaaS for enterprises to assess the effectiveness of existing security controls.
NetApp	Cognigo	Security	5/27/19	NA	Cyber security solutions that enforce security policy and respond to internal and external security threats in real time.
S&T	Kapsch CarrierCom	Security	5/23/19	NA	Critical network solutions including security solutions such as firewalls, anti-virus and application security.
ZenDesk	Smooch Technologies	Unified Comms & Contact Center	5/22/19	NA	Omni-channel cloud-based customer messaging SaaS for enterprises and small-to-medium-sized businesses.
KnowBe4	CLTRe	Security	5/21/19	NA	Security analytics and management SaaS that analyzes employee compute habits and provides reports on enterprise security culture.
Shenzhen Division	Shenzhen Shuangying Weiye Technology	Enterprise Networking	5/16/19	\$60.3	Manufactures communication equipment including ethernet switches, routers, XPON, wireless terminals, EoC and home plug.
Enghouse Systems	Vidyo	Unified Comms & Contact Center	5/14/19	\$40.0	Enterprise-class video software solutions that support visual communications across diverse end-points and networks.
Pegasystems	In the Chat Communications	Unified Comms & Contact Center	5/13/19	NA	Customer service platform that unifies text messaging, social media and Web, mobile and in-app chat.
genua	cognitix	Security	5/11/19	NA	Real-time threat intelligence and protection platform.
Sectigo	Icon Laboratories	Security	5/9/19	NA	Cross-platform security solutions for embedded OEMs and IoT device manufacturers.
Swisscom	United Security Providers	Security	5/9/19	NA	Cyber security platform consisting of a secure entry server and network authentication system.
AppRiver	Cirius Messaging and DeliverySlip	Security	5/8/19	\$14.0	Provides email encryption, e-signatures and secure file sharing solutions.
Kaseya International	ID Agent	Security	5/6/19	NA	Identity theft prevention, access management, anti-malware, dark web monitoring and threat intelligence SaaS for MSPs.
Proofpoint	Meta Networks	Security	5/6/19	\$120.0	Zero trust network access provider.
iWelcome	UNLOQ Systems	Security	5/6/19	NA	Distributed authentication and authorization systems that secure access to apps and portals without passwords.
Marlin Equity Partners	Puzzel	Unified Comms & Contact Center	5/5/19	NA	Multi-tenant contact center as a service platform that enables customer interactions across voice, email, chat and social media.

Announced Transactions with Revenue Multiples (8/1/18 – 7/31/19)

Acquiror	Target	Sector	Date Announced	Purchase Price	Revenue Multiple	EBITDA Multiple	Description
8x8	Wavecell	Unified Comms & Contact Center	7/17/19	\$125.0	3.9 x	NA	Communications platform-as-a-service software that enables SMS, chat, push notifications, voice and video communications.
Westermo Teleindustri	Neratec Solutions	Industrial and M2M	7/8/19	\$5.0	0.8 x	NA	Hardware, software and wireless local area network products for industrial applications.
Extreme Networks	Aerohive Networks	Enterprise Networking	6/26/19	\$228.4	1.5 x	NM	Cloud networking and enterprise Wi-Fi solutions including wireless access points, branch routers and switches.
Enghouse Systems	Vidyo	Unified Comms & Contact Center	5/14/19	\$40.0	0.7 x	NA	Enterprise-class video software solutions that support visual communications across diverse end-points and networks.
SolarWinds	Samange	Network Management	4/11/19	\$350.0	17.5 x	NA	IT asset and help desk management SaaS for businesses with features for AI-based ticket routing and workflow automation.
Progress Software	Ipswitch	Network Management	3/28/19	\$225.0	3.0 x	NA	Network management, file transfer and messaging software to monitor network activity and performance and transfer files.
Casa Systems	NetComm Wireless	Industrial and M2M	2/21/19	\$97.1	0.7 x	9.7 x	Fixed wireless broadband and wireless machine-to-machine and IoT terminating devices.
Carbonite	Webroot	Security	2/7/19	\$618.5	2.9 x	NA	Anti-malware and firewall software and SaaS for managed service providers, businesses and consumers.
Zix Corporation	AppRiver	Security	1/15/19	\$271.0	2.8 x	23.3 x	Microsoft-based email security and managed messaging SaaS and services for enterprises.
Marchex	Callcap	Unified Comms & Contact Center	11/26/18	\$35.0	4.6 x	NA	Machine learning-based call tracking and monitoring services and call recording for marketing and sales-related analysis.
BlackBerry	Cylance	Security	11/16/18	\$1,400.0	10.8 x	NA	AI-based IT security management SaaS for businesses with features for intrusion protection against malware and viruses.
AMETEK	Telular	Industrial and M2M	11/1/18	\$525.0	3.2 x	NA	M2M mobile asset management SaaS for businesses to track systems and sensors throughout their enterprise.
Thoma Bravo	Imperva Networks	Security	10/10/18	\$1,731.6	5.0 x	NM	Provides database, file and Web application security software and SaaS for businesses globally.
Vonage	NewVoiceMedia	Unified Comms & Contact Center	9/20/18	\$350.0	6.4 x	NA	IVR, speech recognition, call center, voiceXML and voice conferencing and call handling software for enterprises.
Sangoma	Digium	Unified Comms & Contact Center	8/24/18	\$28.0	0.9 x	NA	VoIP phone systems, gateways and related hardware and open source unified communications software.

Sub Sector Analysis: Enterprise Networking

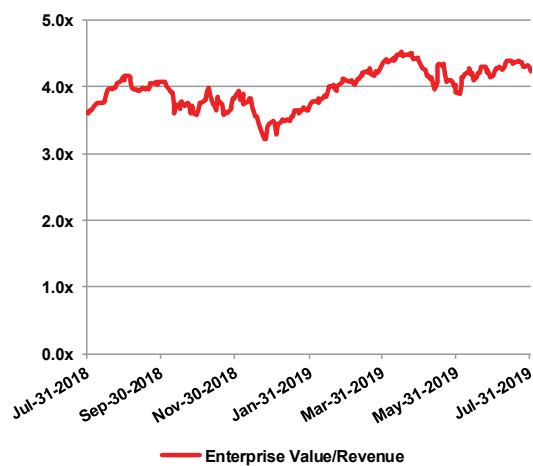
Twelve Month Index Returns



Company Returns

	12 Month	3 Month
Enterprise Networking Index	23.6%	-2.2%
A10 Networks	12.1%	17.3%
Accton	29.2%	1.7%
Aerohive Networks	11.0%	31.4%
Arista Networks	6.9%	-12.4%
Cisco	31.0%	-1.0%
Citrix	-14.3%	-6.7%
D-Link	1.5%	-8.9%
Extreme Networks	-4.2%	1.8%
F5 Networks	-14.4%	-6.5%
NetGear	-48.6%	9.1%
Radware	-0.2%	1.1%
Unizyx Holding (Zyxel)	89.5%	8.5%

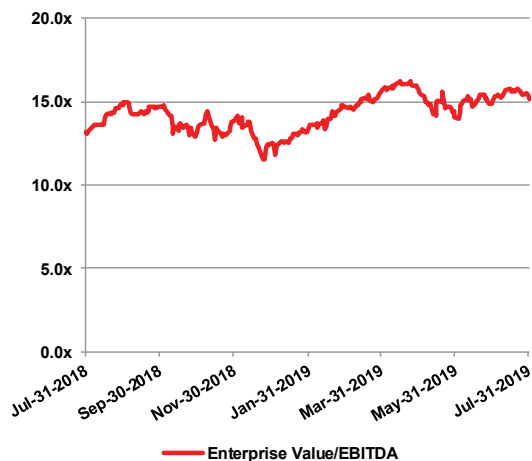
Revenue Multiple Trends



Company Revenue Multiples

	7/31/2019	7/31/2018
Enterprise Networking Index	4.2x	3.6x
A10 Networks	2.1x	1.6x
Accton	1.5x	1.3x
Aerohive Networks	1.2x	1.0x
Arista Networks	8.3x	9.1x
Cisco	4.4x	3.5x
Citrix	4.3x	5.3x
D-Link	0.3x	0.3x
Extreme Networks	1.0x	1.1x
F5 Networks	3.5x	4.4x
NetGear	0.8x	1.7x
Radware	4.1x	4.4x
Unizyx Holding (Zyxel)	0.4x	0.2x

EBITDA Multiple Trends



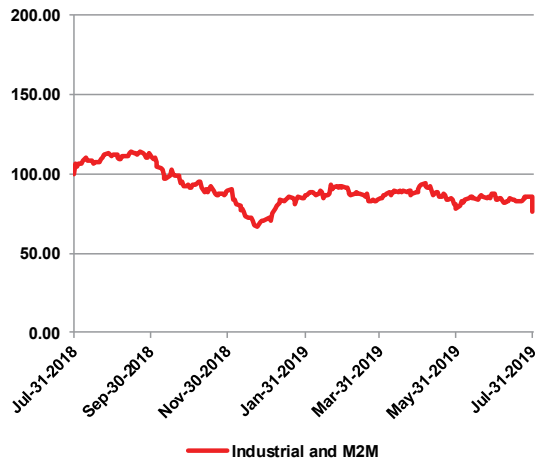
Company EBITDA Multiples

	7/31/2019	7/31/2018
Enterprise Networking Index	15.1x	13.2x
A10 Networks	NM	NM
Accton	17.0x	14.9x
Aerohive Networks	NM	NM
Arista Networks	24.8x	28.6x
Cisco	14.6x	11.7x
Citrix	16.2x	17.4x
D-Link	28.6x	33.9x
Extreme Networks	21.0x	13.1x
F5 Networks	11.6x	14.4x
NetGear	12.0x	54.2x
Radware	37.2x	193.1x
Unizyx Holding (Zyxel)	NM	NM

Source: Capital IQ

Sub Sector Analysis: Industrial Networking and M2M

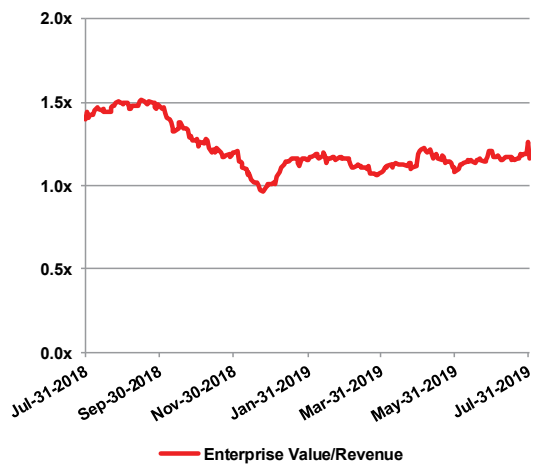
Twelve Month Index Returns



Company Returns

	12 Month	3 Month
Industrial and M2M Index	-24.2%	-13.5%
Belden	-29.8%	-18.2%
CalAmp	-51.0%	-23.6%
Digi International	-2.7%	2.0%
Inseego	176.6%	13.8%
Lantronix	28.8%	-5.5%
Sierra Wireless	-26.9%	-11.3%
Telit Communications	-5.9%	-17.6%

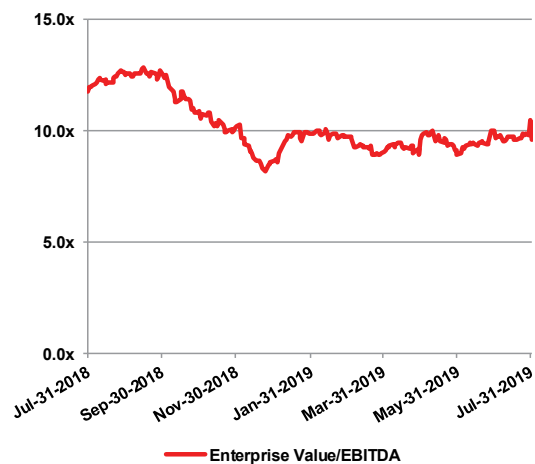
Revenue Multiple Trends



Company Revenue Multiples

	7/31/2019	7/31/2018
Industrial and M2M Index	1.2x	1.4x
Belden	1.3x	1.6x
CalAmp	1.4x	2.1x
Digi International	1.2x	1.5x
Inseego	2.6x	1.2x
Lantronix	1.2x	0.9x
Sierra Wireless	0.5x	0.7x
Telit Communications	0.7x	0.8x

EBITDA Multiple Trends



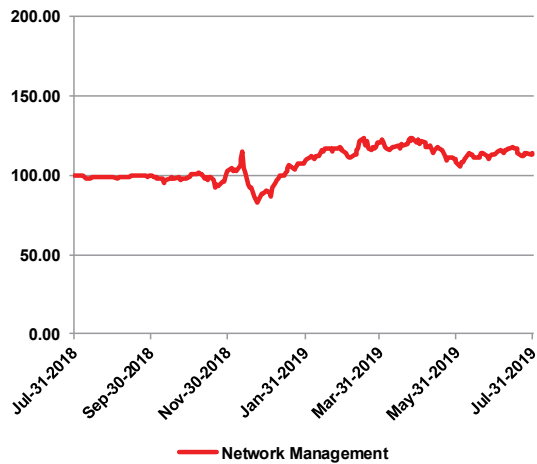
Company EBITDA Multiples

	7/31/2019	7/31/2018
Industrial and M2M Index	9.6x	11.7x
Belden	7.1x	8.8x
CalAmp	13.4x	28.0x
Digi International	10.6x	18.7x
Inseego	50.9x	35.2x
Lantronix	22.1x	23.2x
Sierra Wireless	14.9x	15.3x
Telit Communications	59.3x	NM

Source: Capital IQ

Sub Sector Analysis: Network Management

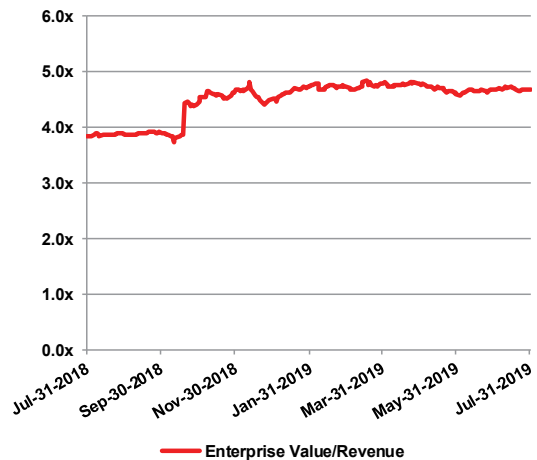
Twelve Month Index Returns



Company Returns

	12 Month	3 Month
Network Management Index	13.3%	-7.3%
CA	7.8%	-0.5%
MobileIron	46.8%	16.4%
NetScout	-2.8%	-11.4%
SolarWinds	NA	-8.3%

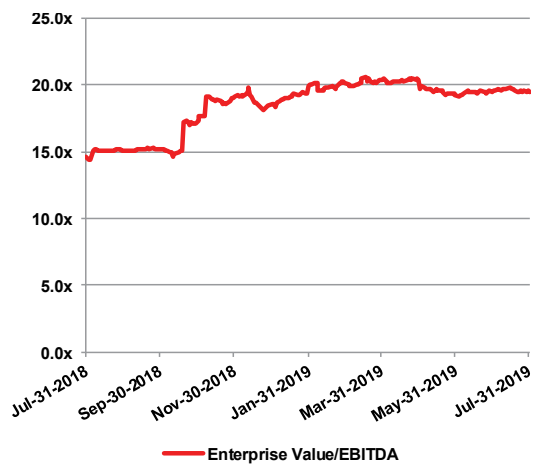
Revenue Multiple Trends



Company Revenue Multiples

	7/31/2019	7/31/2018
Network Management Index	4.7x	3.8x
CA	0.4x	0.3x
MobileIron	3.3x	2.1x
NetScout	2.3x	2.4x
SolarWinds	8.2x	NA

EBITDA Multiple Trends



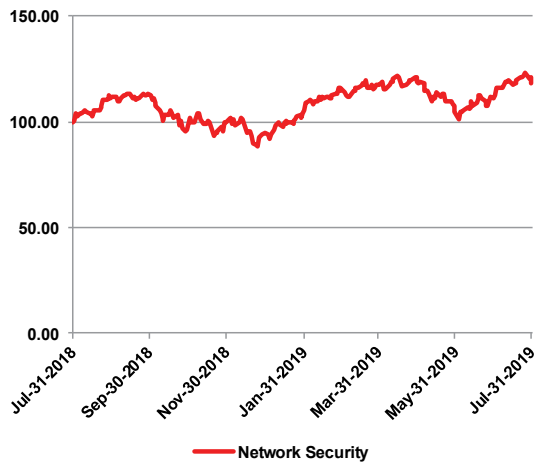
Company EBITDA Multiples

	7/31/2019	7/31/2018
Network Management Index	19.5x	14.6x
CA	9.3x	7.2x
MobileIron	NM	NM
NetScout	14.7x	15.4x
SolarWinds	34.7x	NA

Source: Capital IQ

Sub Sector Analysis: Network Security

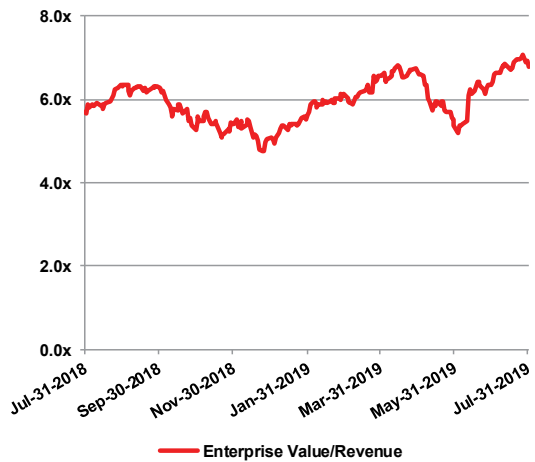
Twelve Month Index Returns



Company Returns

	12 Month	3 Month
Network Security Index	18.4%	-2.2%
Carbon Black	-10.4%	35.4%
Checkpoint	-0.6%	-7.3%
Cheetah Mobile	-61.7%	-48.3%
CrowdStrike	NA	NA
CyberArk	128.8%	7.7%
FireEye	-3.4%	-6.4%
Fortinet	27.7%	-14.0%
Palo Alto Networks	14.3%	-9.0%
Proofpoint	10.7%	0.6%
Qualys	-0.6%	-4.1%
Rapid7	118.1%	11.6%
SecureWorks	-6.9%	-38.5%
Sophos	-16.0%	14.2%
Symantec	6.6%	-10.9%
Tenable	-16.2%	-30.2%
Trend Micro	-25.5%	-11.9%
Zscaler	138.7%	23.4%

Revenue Multiple Trends



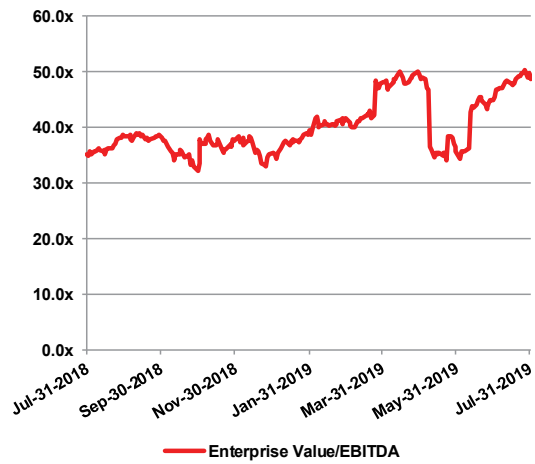
Company Revenue Multiples

	7/31/2019	7/31/2018
Network Security Index	6.8x	5.7x
Carbon Black	5.4x	9.3x
Checkpoint	7.9x	8.5x
Cheetah Mobile	0.1x	1.1x
CrowdStrike	62.4x	NA
CyberArk	13.0x	6.3x
FireEye	3.8x	3.6x
Fortinet	6.4x	5.7x
Palo Alto Networks	7.4x	7.6x
Proofpoint	8.7x	9.6x
Qualys	10.4x	12.0x
Rapid7	10.1x	5.2x
SecureWorks	1.7x	2.0x
Sophos	3.8x	4.8x
Symantec	3.3x	3.2x
Tenable	6.9x	13.4x
Trend Micro	3.7x	4.8x
Zscaler	37.5x	20.7x

Source: Capital IQ

Sub Sector Analysis: Network Security *continued*

EBITDA Multiple Trends



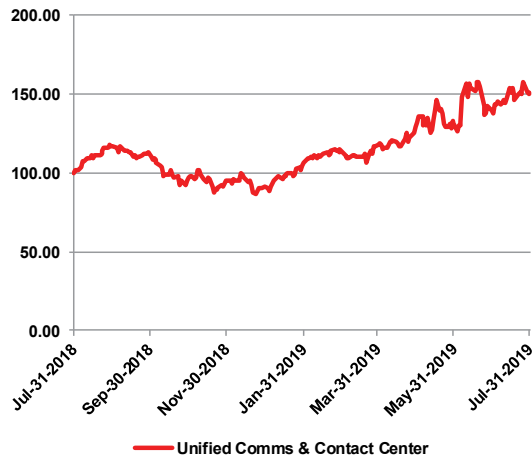
Source: Capital IQ

Company EBITDA Multiples

	7/31/2019	7/31/2018
Network Security Index	48.6x	35.2x
Carbon Black	NM	NM
Checkpoint	16.9x	16.8x
Cheetah Mobile	1.0x	6.7x
CrowdStrike	NM	NA
CyberArk	70.4x	54.8x
FireEye	NM	NM
Fortinet	38.9x	43.0x
Palo Alto Networks	139.3x	2667.2x
Proofpoint	NM	NM
Qualys	34.1x	45.9x
Rapid7	NM	NM
SecureWorks	NM	NM
Sophos	33.9x	113.2x
Symantec	15.7x	17.1x
Tenable	NM	NM
Trend Micro	11.5x	14.1x
Zscaler	NM	NM

Sub Sector Analysis: Unified Communications and Contact Center

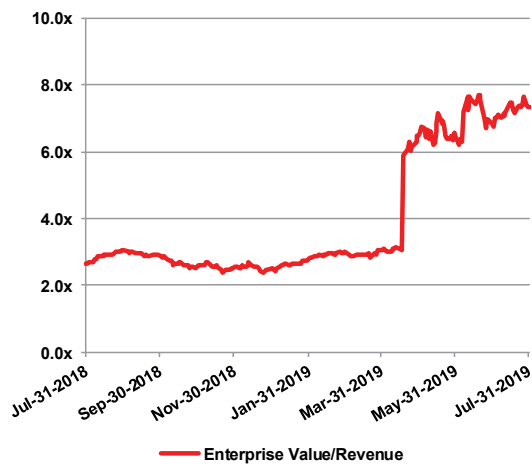
Twelve Month Index Returns



Company Returns

	12 Month	3 Month
Unified Comms & Contact Center Index	50.5%	16.2%
Avaya	-41.5%	-36.9%
ClearOne	-36.5%	1.9%
eGain	-40.5%	-22.5%
Enghouse Systems	-11.7%	7.9%
Five9	54.8%	-7.0%
Liveperson	43.1%	13.2%
Verint	28.9%	-4.2%
Zoom	NA	31.8%

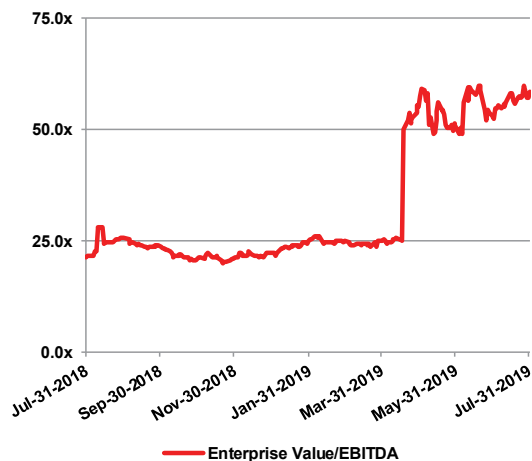
Revenue Multiple Trends



Company Revenue Multiples

	7/31/2019	7/31/2018
Unified Comms & Contact Center Index	7.3x	2.6x
Avaya	1.3x	1.7x
ClearOne	1.2x	0.6x
eGain	3.1x	5.8x
Enghouse Systems	5.0x	5.7x
Five9	9.9x	8.0x
Liveperson	7.5x	5.8x
Verint	3.4x	2.7x
Zoom	64.6x	NA

EBITDA Multiple Trends



Company EBITDA Multiples

	7/31/2019	7/31/2018
Unified Comms & Contact Center Index	58.3x	21.2x
Avaya	9.2x	13.5x
ClearOne	NM	NM
eGain	39.2x	214.2x
Enghouse Systems	17.2x	21.2x
Five9	145.6x	166.0x
Liveperson	NM	215.2x
Verint	22.9x	23.1x
Zoom	1364.2x	NA

Source: Capital IQ

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