



Houlihan Lokey



Cybersecurity Quarterly Update

SECOND QUARTER 2023

Global Cybersecurity Team

U.S. Cyber Team



Keith Skirbe
Managing Director
Co-Head of U.S. Cyber
San Francisco



Bobby Wolfe
Director
Co-Head of U.S. Cyber
Miami



Tyler Deck
Senior Vice President
Boston



Rishabh Bansal
Associate
San Francisco



Patrick Wong
Financial Analyst
San Francisco

Capital Markets



Sean Fitzgerald
Managing Director
New York



Chris Hebble
Managing Director
Los Angeles

Global Cyber Reach



Mark Smith
Director
Head of U.K. Cyber
Manchester



Malte Abrams
Managing Director
Head of DACH Cyber
Frankfurt



Sara Napolitano
Managing Director
Head of France Cyber
Paris



Ido Zakai
Managing Director
Head of Tech, Israel
Tel Aviv



Gabrielle Worrall
Vice President
Manchester



Christie Adams
Financial Analyst
Paris



Samuel Pattison
Financial Analyst
Manchester

Financial Sponsors

26

Senior Bankers
Covering

~1,400

Investors

Cybersecurity Technology Expertise



Stephen Lee
Managing Director
Tech and Cyber Due Diligence
Chicago



Edouard Viot
Cybersecurity Consultant
Paris

Executive Summary: Q2 2023 in Review

- Tepid market conditions persisted into Q2 as M&A volume declined vs. the same period in both 2022 and 2021 while the financing environment saw a decline in both volume and number of deals vs. the past two years.
- Uncertainty remains the headwind to dealmaking given ongoing macroeconomic pressures (e.g., inflationary pressures, high interest rates, recession concerns, etc.), though many are optimistic for stabilization and a rebound in activity later in 2023 or in early 2024.
- Nonetheless, the 65 M&A deals in Q2 '23 remain in line with the past two years, likely driven by lower value tuck-in deals given the decline in announced deal value (i.e., average 83% decline vs. Q2 '22 and '21).
- The cybersecurity ecosystem continues to see exciting developments and delivers high-impact solutions, which will attract buyer and investor attention.

Q2 2023 Report Themes



Integration of generative AI capabilities remains a strategic imperative as organizations look to automate processes.



Continued shortage of cybersecurity talent remains a bottleneck, driving a focus on training and upskilling.



Enterprises looking to transition to the cloud require innovative security solutions in order to ensure smooth operations.

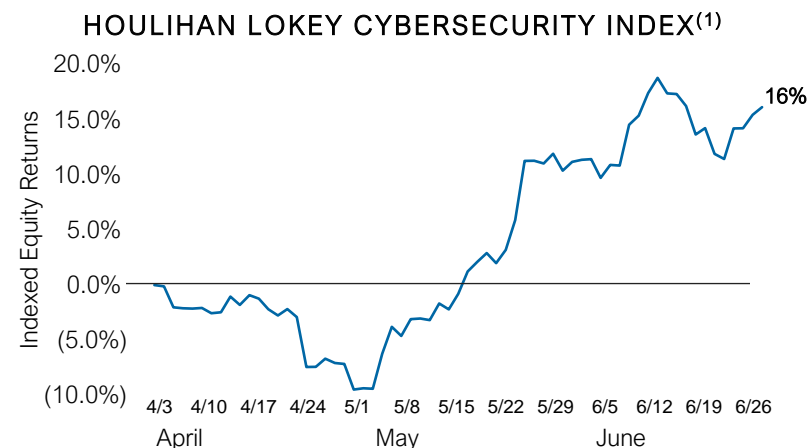


Cybercriminals exploiting new vulnerabilities as attack surface continues rapid expansion.



Security teams look to deploy more tools to combat the increasing velocity of cyberattacks.

A Strong Quarter for Public Companies



M&A Volume Substantially Drops From 2022 Levels

	Q2 '23	VS. Q2 '22	VS. Q2 '21
Volume	\$3.7B	↓ (82)% ⁽³⁾	↓ (84%)
# of Deals	65	↗ 2%	0%



Financing Levels Continue to Decline

	Q2 '23	VS. Q2 '22	VS. Q2 '21
Volume	\$2.0B	↓ (69%)	↓ (72%)
# of Deals	201	↓ (27%)	↓ (30%)



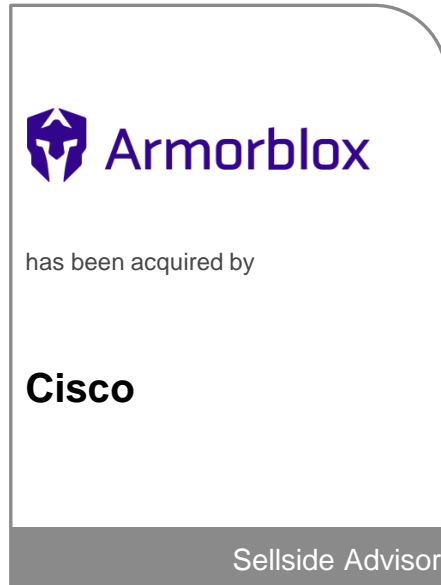
Source: S&P Capital IQ as of June 30, 2023.

(1) Houlihan Lokey Cybersecurity Index includes S, CRWD, ZS, PANW, FTNT, GEN, OKTA, BB, TENB, RPD, CYBR, DARK, QLYS, RSKD, ABST, MITK, WITH, FSECURE, AVGO, OTEX, SPLK, FFIV, CHKP, 4407, SWI, SCWX, CGNT, OSPN, and TLS.

(2) Houlihan Lokey served as the exclusive financial advisor to Armorblox in its sale to Cisco.

(3) Deal volume excludes Broadcom's announced acquisition of VMware.

Case Study: Houlihan Lokey Advises Armorblox Through High-Profile Cisco Acquisition



Quick Facts

- Headquarters: Sunnyvale, CA
- Management:
 - CEO/Co-Founder: DJ Sampath
 - CPO/Co-Founder: Anand Raghavan
 - Chief Architect/Co-Founder: Arjun Sambamoorthy
 - Chief Data Architect/Co-Founder: Chetan Anand
- Customers: 58K+
- Total Funds Raised: \$60M

Profile

- Armorblox, founded in 2017, secures enterprise communications over email and other cloud office applications and protects critical business workflows from compromise.
- Armorblox leverages deep learning algorithms, ML models, data science approaches, computer vision, and LLMs like GPT to understand the context of communications.
- Cisco delivers innovative software-defined networking, cloud, collaboration, and security solutions.
- The Security Business Group continues to grow and is focused on cloud-based security, AI-driven threat detection, and end-to-end security architectures.



Rationale

- This transaction will allow Cisco to leverage Armorblox's use of predictive and generative AI across its portfolio, unlocking broad security use cases beyond email and changing the way its customers understand and interact with its security control points.
- The Armorblox team will join the Security Business Group, where they will work closely to bring generative AI-powered experiences to Cisco's Security Portfolio.
- Raj Chopra, SVP and Chief Product Officer of the Security Business Group, highlighted how Cisco is taking an exciting step forward in executing its plans for an AI-first security cloud with its acquisition of Armorblox, a company that has pioneered the use of LLMs and natural language understanding in cybersecurity.

Our Role

- Houlihan Lokey served as the exclusive sellside advisor to Armorblox.
- This transaction underscores the team's deep domain expertise and continued success advising clients in the cybersecurity sector.
- Houlihan Lokey worked collaboratively with management to strategically position the business, including developing materials on the expansive potential of Armorblox's technology within the Cisco security portfolio in support of Cisco's internal business case, which was instrumental in securing the requisite buy-in.



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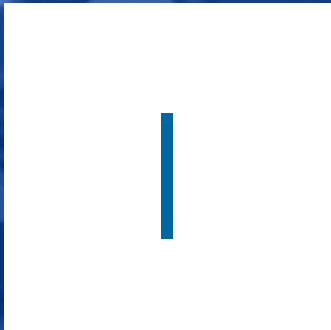
I Perspectives From the Front

II Capital Markets and Trends Update

III Conferences and Events

IV About Houlihan Lokey

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Perspectives From the Front



Houlihan Lokey



Create a Bridge for Legacy SIEM and Security Data Lakes

Anvilogic is a detection engineering and threat hunting platform that helps facilitate modern security data lake adoption by lowering the barrier to entry for data engineering skills, allowing SOC teams to adopt a flexible, scalable data lake strategy, and eliminating language barriers to rapidly detect threats across disparate data sources.

Improve Detection Coverage and Efficacy

Generative AI models are trained on normal behavioral patterns and mapped to MITRE ATT&CK, enabling SOC teams to better identify anomalies and potential threats in large-scale data more efficiently, leading to faster incident response and reduced false positives.

Reduce Cost and Time to Detect

Rebalance legacy SIEM and data monoliths to reduce costs and achieve more effective security operations by leveraging a security data lake that enables teams to more efficiently collect, normalize, enrich, and deploy quality detections across modern cloud and hybrid data lake architectures for enhanced security operations.

Increase Efficiency and Scale

Reduce detection development times and enhance response efficiency by leveraging an AI co-pilot that helps teams develop and deploy accurate, complex pattern-based detections in minutes across data platforms without requiring extensive software engineering or tool expertise, freeing up SOC teams for critical tasks.

“

ChatGPT is already helping security data lake adoption. While security data lakes are known to be up to 90% more cost-effective than legacy SIEMs as a data platform, they require data skills that are still rare in security orgs.

I've been particularly impressed with how Anvilogic created a detection engineering AI assistant that takes a question in plain English (“Where do we have PowerShell events that connect with a remote IP?”) and converts it to SQL for use in threat detection. This is the kind of product innovation that takes the raw potential of Snowflake for cybersecurity and democratizes it in a way that any size team can benefit.

— Omer Singer, Head of Cybersecurity Strategy, Snowflake

”



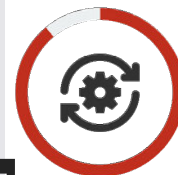
77%

Of surveyed security decision-makers desire **new ways to engineer detection rules**.



60%

Of security professionals surveyed feel **the time spent on detection engineering is more valuable than nearly any other activity that time could be used on**.



57%

Of surveyed security decision-makers feel their organization needs a **transformational or moderate amount of change in its SOC to mitigate business threats (over the next 12–24 months)**.

Critical Takeaways

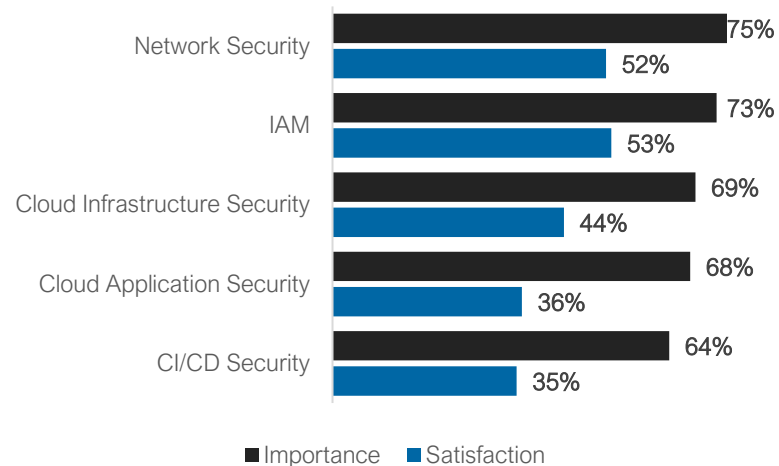
- Identity and access management (IAM) has become increasingly important to enterprises, especially as they navigate the transition to the cloud.
- Enterprises are experiencing a greater velocity of security incidents as adversaries develop new attack mechanisms, reducing the efficacy of cybersecurity defenses.
- AI/ML applications present both opportunities and threats for security teams as automation of security processes becomes an organizational priority.
- Persistent shortages of cybersecurity talent contribute to concern regarding the organizational ability to prevent and respond to cyberattacks and threats.

Resource Gaps

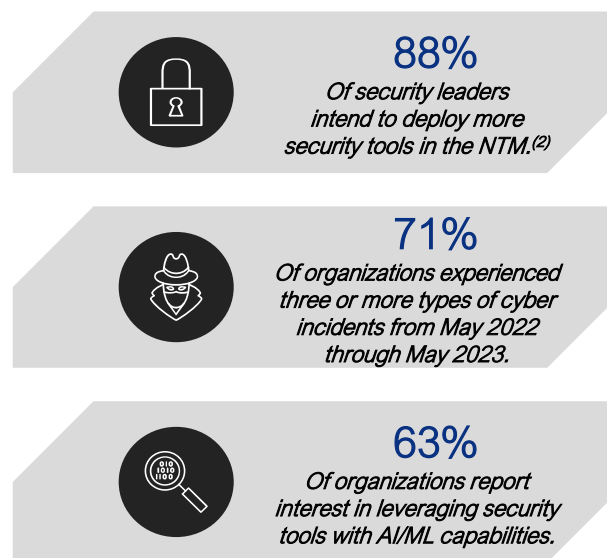
- The market for cybersecurity talent remains scarce—enterprise security leaders indicate an inability to attract, hire, and retain enough skilled cybersecurity professionals to fill their security needs.
- Security leaders report an erosion of cybersecurity efficacy, identifying a widening technological gap between threat actors and cyber defenses: **only 48% of security leaders indicated their cybersecurity defenses were effective against common security threats.**
- Midsized enterprises see a significant drop in budget growth, raising concerns about their ability to address current and emerging cybersecurity threats.

Perceived Security Solution Gaps⁽¹⁾

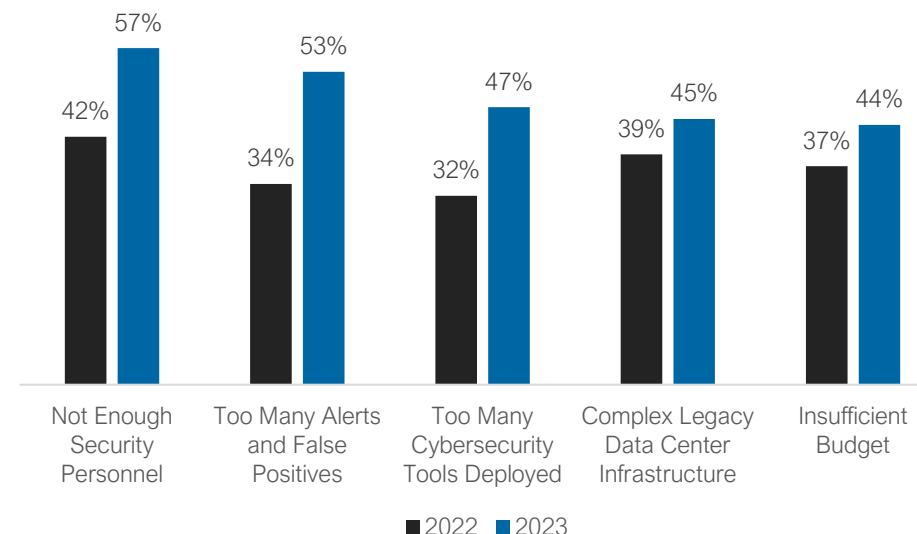
“Importance” vs. “Satisfaction” for Commercially Available Cybersecurity Tools



Key Stats



Security Posture Challenges Increasing vs. Prior Year



Source: Scale Venture Partners.

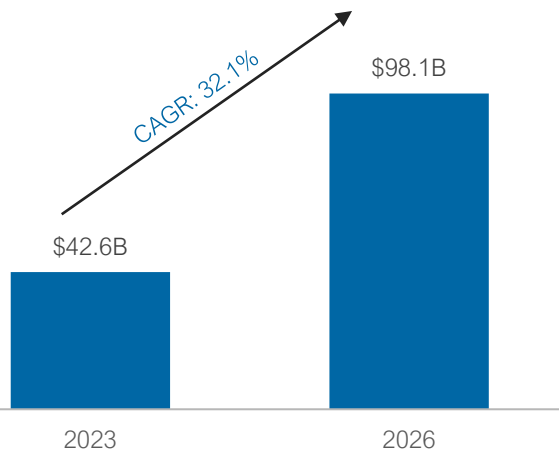
(1) Security leaders reported a disconnect between their perspective on the importance of a specific security tool and the ability of commercially available solutions to adequately satisfy that security leader's expectations, thus presenting a "gap" in perceived ability.

(2) NTM indicates next 12 months.

Generative AI Represents Massive Potential

- Already a large market opportunity, the generative AI market is expected to grow at a 32.1% CAGR between 2023 and 2026 based on current enterprise use cases.
- Generative AI-relevant use cases already present a significant enterprise opportunity—estimated to reach \$42.6 billion in 2023—with natural language interfaces offering the largest market due to customer service and sales automation use cases.
- The potential of generative AI to expand the total addressable market of AI software to consumers and new user personas in the enterprise represents an additional upside to current forecasts.

GENERATIVE AI MARKET SIZE



Sources: Company websites, PitchBook.

Selected Current Use Cases



Threat Intelligence and Prediction

- Models can analyze massive amounts of historical data and generate insights that aid in predicting and understanding emerging threats.



Detecting Generative AI Text in Attacks

- Identifying AI-generated text in attacks can help to detect phishing emails, polymorphic code, and atypical email address senders, checking if underlying links in text lead to known malicious websites.



Anomaly Detection

- LLMs aid in anomaly detection by modeling normal system behavior and identifying deviations from established patterns.

Industry-Wide Adopters of Generative AI



Targeted Threat Hunting



VESPR Validate



Charlotte AI



Detect and Respond



Intelligence Platform



Security AI Workbench



MLSec Platform



Open AI



ScorecardX



Purple AI



Veracode Fix

Generative AI in Cybersecurity Report



For detailed information please see Houlihan Lokey's recent report:

[Generative AI: The Next Frontier in Cybersecurity](#)

OUR PREDICTIONS

Hackers-for-Hire



- With the expectation of a global recession, there is a risk of an increasing supply of hackers-for-hire in search of pay.
- The proliferation of cybercrime worldwide and the use of software-as-a-service models permit criminals to share tactics easily, lowering the barrier to entry for less experienced hackers.

Supply Chain Risks



- Nearly 40% of organizations worldwide are expected to experience cybersecurity incidents within their supply chains.
- Application programming interfaces (APIs) are expected to continue to be tested, as organizations rely heavily on third-party partners.

WHAT HAPPENED

- Losses from cybercrime are expected to surge in the next five years, rising from approximately \$8 trillion in 2022 to approximately **\$11 trillion in 2023** and potentially reaching approximately \$24 trillion by 2027.⁽¹⁾
- 81% of cybersecurity experts believe that sophisticated ransomware attacks are on the rise, accompanied by an **average cost of \$1.9 million per ransomware attack** in 2023.⁽²⁾

- By 2025, **45% of enterprises** across the globe will have suffered a software supply chain attack—a threefold rise from 2021.⁽³⁾
- Organizations that closely align their cybersecurity programs to business objectives are **18% more likely to achieve target revenue growth** and market share and improve customer satisfaction as well as **26% more likely to lower the cost** of cybersecurity breaches/incidents.⁽⁴⁾

WHAT WE DID NOT PREDICT

Identity Fabric Infrastructure Will Be Critical for a Cloud Transition

The prevalence of remote work has prompted issues of user and endpoint tracking, demonstrating a need for identity orchestration software.



“What the market wants, what the buyers want, [and] what the customers want is...one integrated access management platform that will do access management across all the resources, apps, on-premise apps, cloud apps, [and] servers.

— Todd McKinnon, CEO and Co-Founder, Okta

- Identity fabric is aligned with cybersecurity mesh architecture, which is perceived to be the enterprise security gold standard.
- Integrating identity fabric can mitigate cybersecurity risk, unify siloed applications, and simplify the user experience without sacrificing compliance or security posture.
- By 2027, **identity fabric immunity principles will prevent 85% of new attacks** and thereby reduce the financial impact of breaches by 80%.⁽⁵⁾

Sources: Gartner, “Top Strategic Cybersecurity Trends for 2023”; IBM, “Cost of a Data Breach Report 2022”; Grip Security, “Identity Fabric: Why it’s Important for Identity Security.”

(1) World Economic Forum, “Here’s what your organization needs to know about cyber insurance.”

(2) Packetlabs, “239 Cybersecurity Statistics (2023).”

(3) Infosecurity Magazine, “Reviewing the UK Government Call for Views on Supply Chain Threats.”

(4) Accenture, “State of Cybersecurity Resilience 2023.”

(5) Gartner, “Gartner Identifies the Top Cybersecurity Trends for 2023.”

Cyber Research Summary

Breach Overview

Company Description: Healthcare payments management

Date of Breach: February 2023

What Happened: Russian hacking group Clop exploited a zero-day vulnerability in a third-party MFT file transfer tool, affecting Intellihartx (ITx) and more than 130 other organizations, exposing sensitive information such as names, addresses, diagnoses, medications, and demographic information

Months Since Last Breach at ITx: More than four months

Key Stats⁽¹⁾⁽²⁾



~490K
Total users affected



130+
Organizations using the MFT file transfer tool targeted by the attack

2023 Prediction Tracking

Attack Methodology and Rationale



Clop exploited a pre-authentication remote code execution vulnerability in Fortra's GoAnywhere MFT, which ITx uses for patient file transfer, to gain access to a variety of sensitive data that could be used to extort the target using the threat of a public data release.



The data that was leaked is highly sensitive—beyond causing a loss of consumer trust for ITx, the nature of the compromised data could lead to future crimes, including identity theft.

Expert Opinions and Commentary



"Clop has been active since February 2019... Its characteristic ransomware-as-a-service (RaaS) TTP makes it one of the most successful ransomware groups in the past few years. Unlike other RaaS groups, Clop unabashedly and almost exclusively targets the healthcare sector. In 2021 alone, 77% (959) of its attack attempts were on this critical infrastructure industry."

— U.S. Department of Health and Human Services



- Healthcare is particularly vulnerable to cyberattacks, owing to their high propensity to pay a ransom, the value of patient records, and often inadequate security.⁽³⁾

Data Breaches

The Outcome

The breach led to potential financial losses, reputational damage, and legal implications for ITx as well as necessitating the notification of all affected parties and the offering of credit monitoring services.



A patient has filed a class action lawsuit that seeks monetary damages for alleged violations of federal regulations, including the Health Insurance Portability and Accountability Act's security standards.⁽¹⁾



ITx learned of the Fortra problem on February 2 and started notifying those potentially affected on April 11.



ITx stated that it has implemented additional measures to harden security for its use of the GoAnywhere platform.

Key Takeaways



Healthcare Organizations Continue to Be Targeted

Due to sensitive customer data, cybercriminals breach healthcare organizations with more frequency than targets in any other industry, recording 340+ breaches in 2022.⁽²⁾



Don't Be a Victim

Professionals recommend that cybersecurity teams in healthcare educate and train staff to reduce the risk of social engineering attacks, reassess enterprise risk against potential vulnerabilities, develop a cybersecurity roadmap, and implement a security plan.

Sources: Bloomberg Law, "Health-Care Payment Firm ITx Sued Over File-Transfer Data Breach"; The HIPAA Journal, "Intellihartx Victim of Fortra GoAnywhere Hack: 490,000 Individuals Affected"; American Health Association, "HC3: Sector Alert."

(1) Bloomberg Law, "Health-Care Payment Firm ITx Sued Over File-Transfer Data Breach."

(2) Identity Theft Resource Center, "2022 Data Breach Report."

(3) Department of Health and Human Services, "HC3: Sector Alert."

Data Breaches: MOVEit

Cyber Research Summary

Breach Overview

Company Description:	Managed file transfer software
Date of Breach:	May 2023
What Happened:	Ransomware group exposed vulnerability in file transfer tool and stole sensitive user data
Software Enterprise Users:	1,700 ⁽¹⁾
Developer Users:	3.5 million ⁽¹⁾

Key Stats⁽²⁾

200+
Organizations impacted by the vulnerability

17.5M+
Potential customer data exposures

33
Data breach disclosures

2023 Prediction Tracking

Attack Methodology and Rationale



The Russian-based Clop ransomware group claims responsibility for the data breaches, exploiting a zero-day vulnerability in the MOVEit software, allowing the group to access and extract sensitive user information.



As typical with ransomware attacks, Clop stole sensitive information, seeking payment for its return or would otherwise release it.

Expert Opinions and Commentary



“Nobody knows the full extent of this, and that’s the way these cyber compromises work...Once you’re compromised, there begins an arduous process of ‘How far in did they get in?’ and ‘What did they take?’ That’s typically weeks, and sometimes months.”

— Robert Cattanach, Partner at Dorsey & Whitney

- Cyber experts believe that the ransomware group had been aware of the MOVEit file vulnerability for at least two years, meticulously planning a sophisticated approach that would inflict the most damage possible.

Data Breaches

The Outcome



- Progress Software, the provider of the MOVEit tool, issued a patch for the zero-day vulnerability and encouraged all customers to disable all HTTP traffic to MOVEit domains.
- NIST gave the incident a severity rating of 9.8 out of 10.



- A subsequent series of SQL vulnerabilities were discovered in MOVEit, which Progress Software claims had not been exploited.
- Enterprises remain on alert, as the number of victims continues to increase, and the long-term ramifications are yet to be fully felt.

Key Takeaways



More Adoption of Active Defense Solutions Required

Companies will increasingly adopt active defense solutions that can quickly identify a malicious actor, disable access, and quickly identify and restore compromised data.

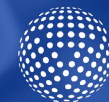


Routine Maintenance and Increased Visibility

Organizations need to engage more proactively in security assessments and invest in applications that provide a greater level of visibility into security posture.



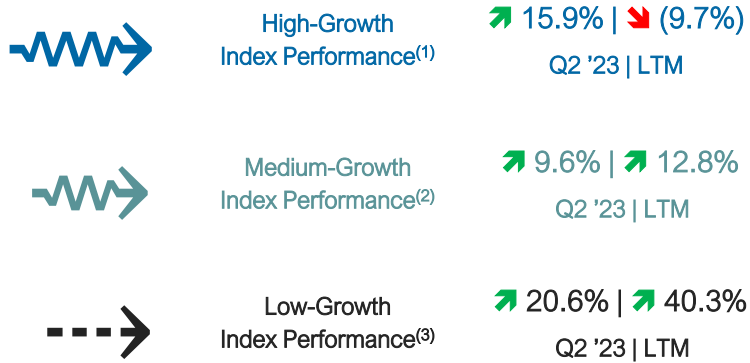
Capital Markets and Trends Update



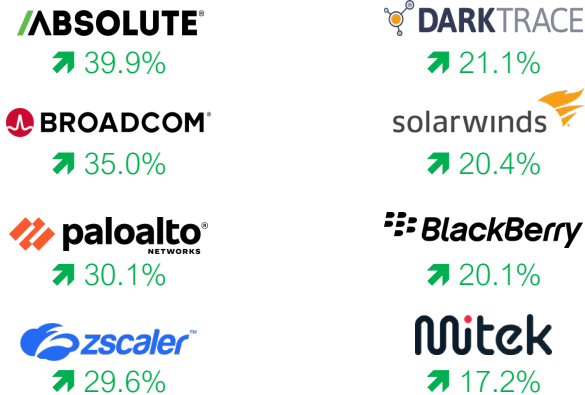
Cybersecurity Dashboard

Public Market Environment

Strong Q2 performance from the sector, especially lower-growth businesses with strong profitability profiles, demonstrates a public market focus on efficient growth.

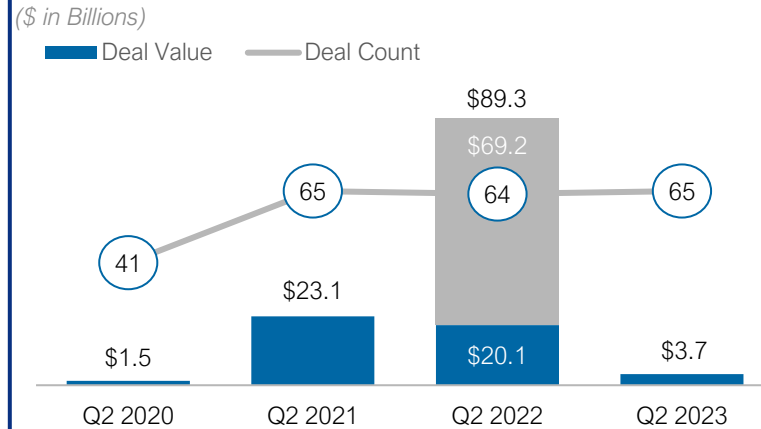


Selected Cybersecurity Performance Q2 2023



M&A Environment

Drastic pullback in large transactions with consistent volumes highlights strategic dealmaking in a difficult funding environment.

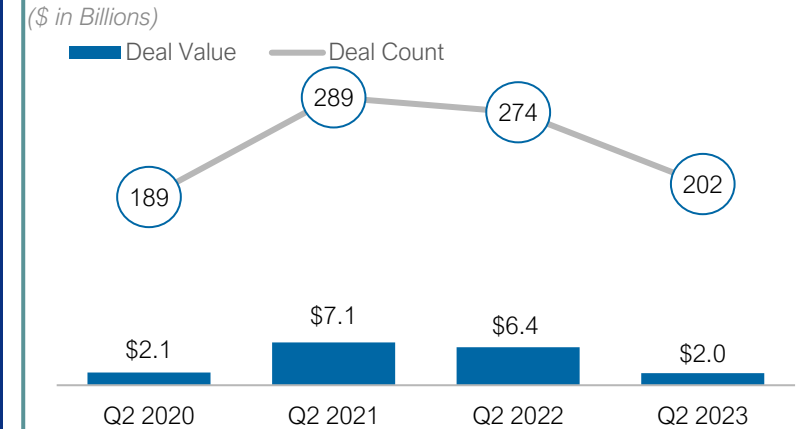


Selected Q2 Transactions

Ann. Date	Acquirer	Target	EV	EV/Rev
Jun-27	HashiCorp	BLUBRACKET	NA	NA
May-31	cisco	Armorblox Houlihan Lokey	Conf.	Conf.
May-11 ⁽⁴⁾	ABSOLUTE	CROSSPOINT CAPITAL	\$870	NA
May-16	IBM	P L A R	\$60	NA
Apr-26	F-Secure	Lookout	\$223	NA

Private Funding Environment

A more constrained private funding environment necessitates capital efficiency, especially in the context of the simultaneous decrease in M&A deal value.



Selected Q2 Financings

Ann. Date	Investor	Target	Amt.	Val.
Jun-27	PALADIN CAPITAL GROUP	CALYPSO AI	\$23	\$58
Jun-23	TIGERGLOBAL	Unit21	\$45	\$700
Jun-23	Accel	cyera	\$100	\$500
Jun-23	BainCapital	blackpoint	\$190	NA
May-23	SAPPHIRE VENTURES	HUNTRESS	\$66	\$660

Source: S&P Capital IQ as of June 30, 2023.

Note: 2022 M&A deal volume includes Broadcom's pending acquisition of VMware.

(1) High-growth cybersecurity includes S, CRWD, and ZS.

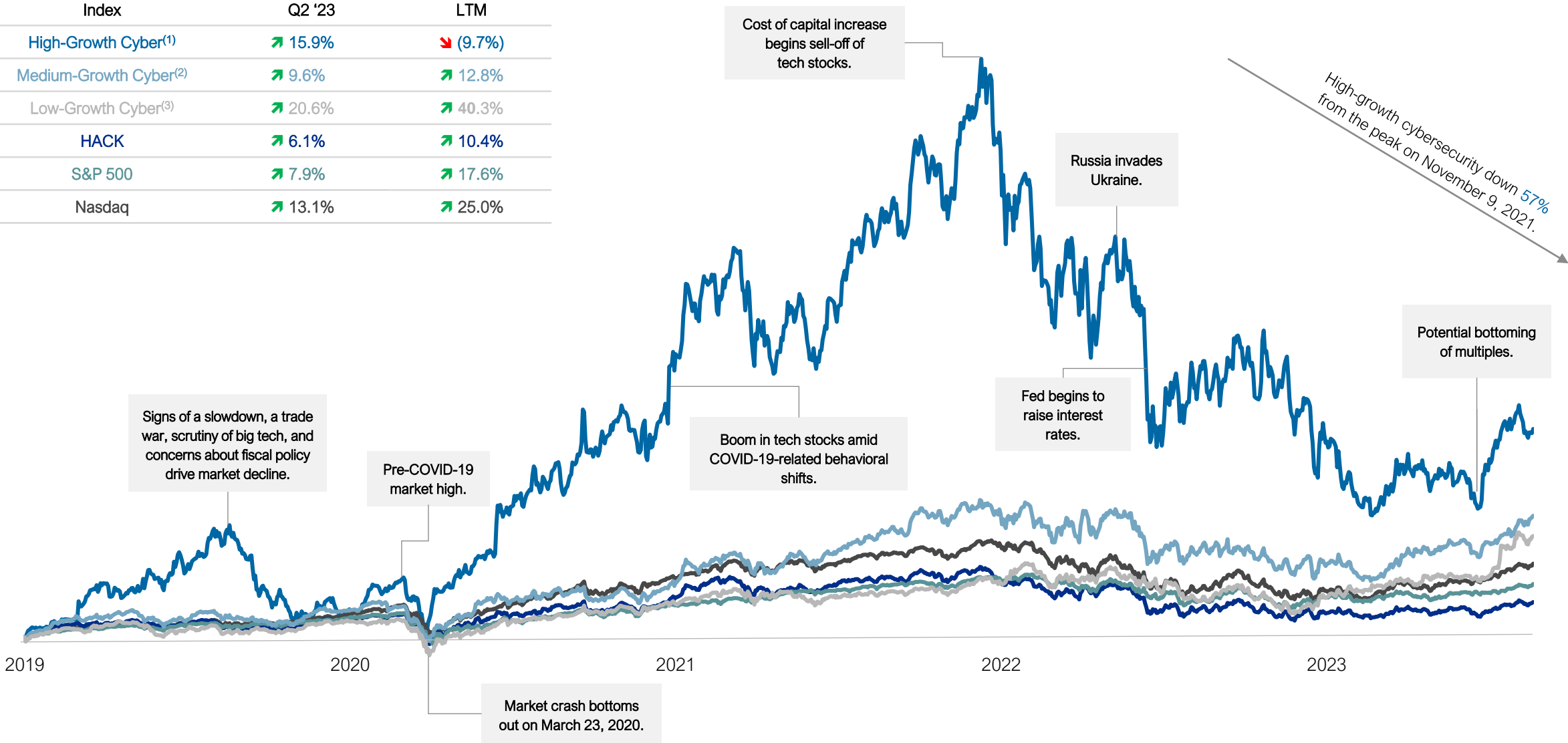
(2) Medium-growth cybersecurity includes PANW, FTNT, QLYS, CYBR, TENB, GEN, OKTA, RPD, DARK, ABST, MITK, BB, FSECURE, WITH, and RSKD.

(3) Low-growth cybersecurity includes AVGO, SPLK, SCWX, TLS, CGNT, CHKP, 4704, SWI, FFIV, OTEX, and OSPN.

(4) Transaction pending.

High-, Medium-, and Low-Growth Cybersecurity Post Strong Quarter, Outpacing S&P 500 Returns

Index	Q2 '23	LTM
High-Growth Cyber ⁽¹⁾	↗ 15.9%	↘ (9.7%)
Medium-Growth Cyber ⁽²⁾	↗ 9.6%	↗ 12.8%
Low-Growth Cyber ⁽³⁾	↗ 20.6%	↗ 40.3%
HACK	↗ 6.1%	↗ 10.4%
S&P 500	↗ 7.9%	↗ 17.6%
Nasdaq	↗ 13.1%	↗ 25.0%

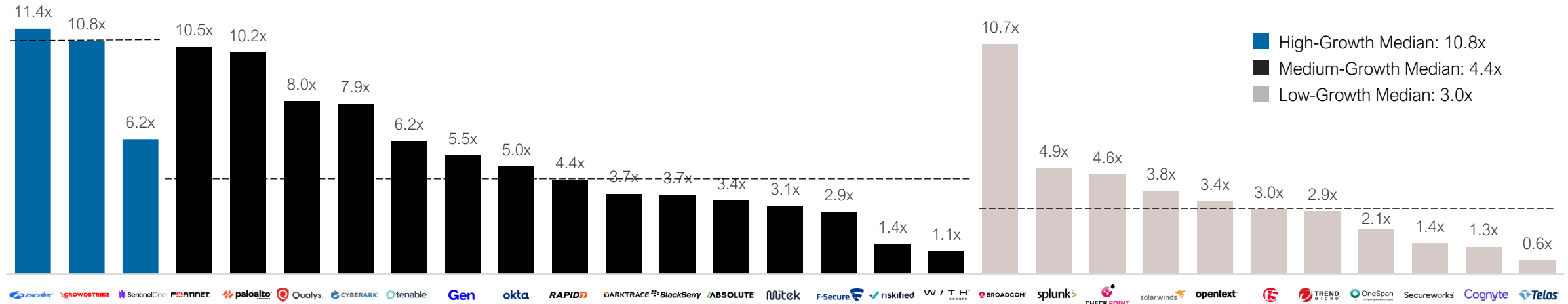


Source: S&P Capital IQ as of June 30, 2023.

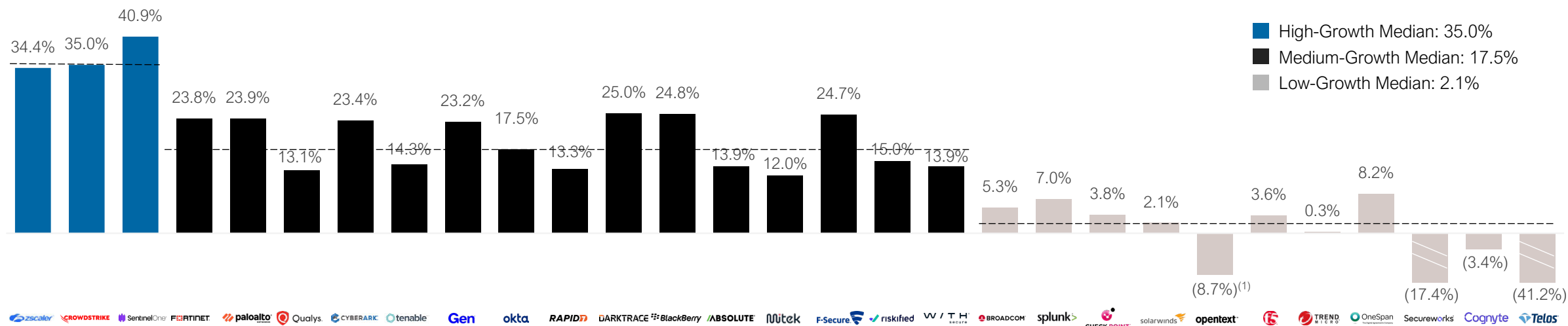
(1) High-growth cybersecurity includes S, CRWD, and ZS.
 (2) Medium-growth cybersecurity includes PANW, FTNT, QLYS, CYBR, TENB, GEN, OKTA, RPD, DARK, ABST, MITK, BB, FESURE, WITH, and RSKD.
 (3) Low-growth cybersecurity includes AVGO, SPLK, SCWX, TLS, CGNT, CHKP, 4704, SWI, FFIV, OTEX, and OSPN.

Public Company Benchmarking: Cybersecurity Software

EV/2023E Revenue



CY 2022A–2023E Revenue Growth



Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023.

Note: All financials are calendarized to a December year-end. Sorted by EV/2023E revenue.

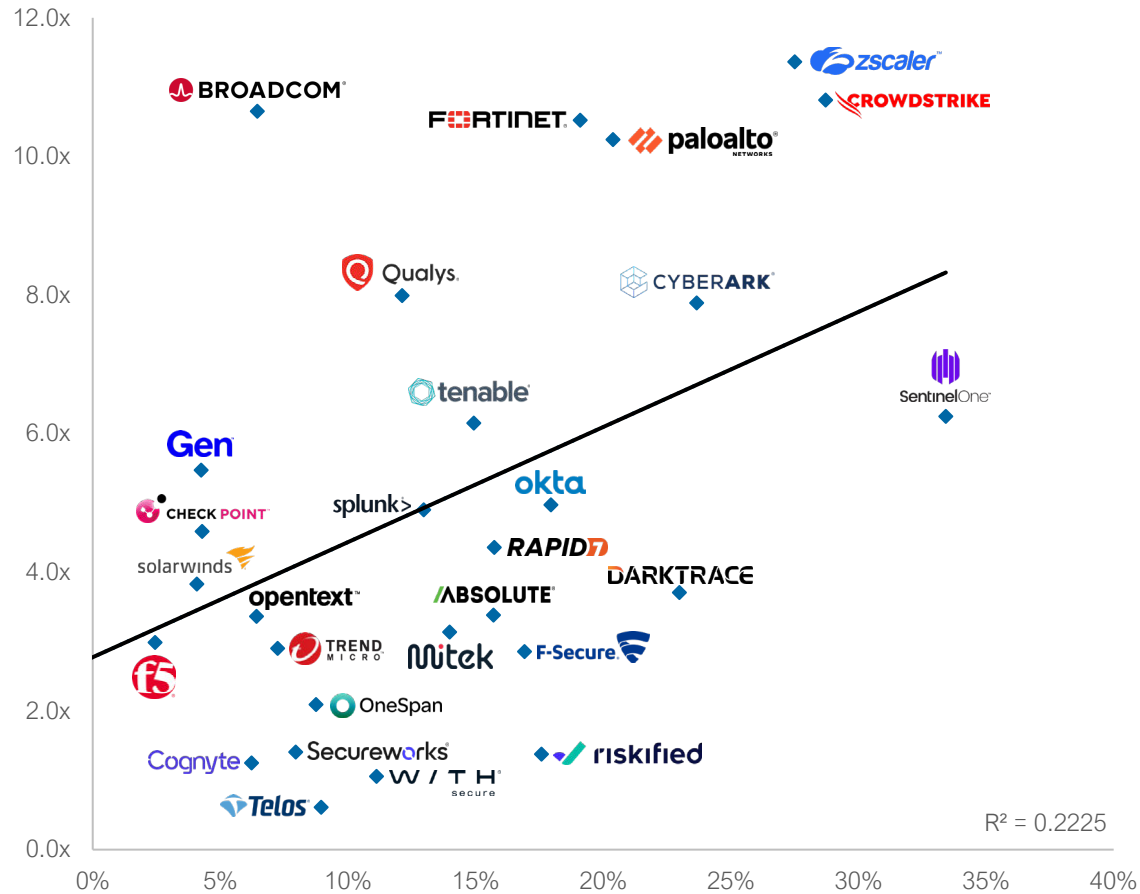
(1) OpenText's financials are presented on a pro forma basis, adjusted for its acquisition of Micro Focus.

Public Investors Remain Focused on Growth and Profitability

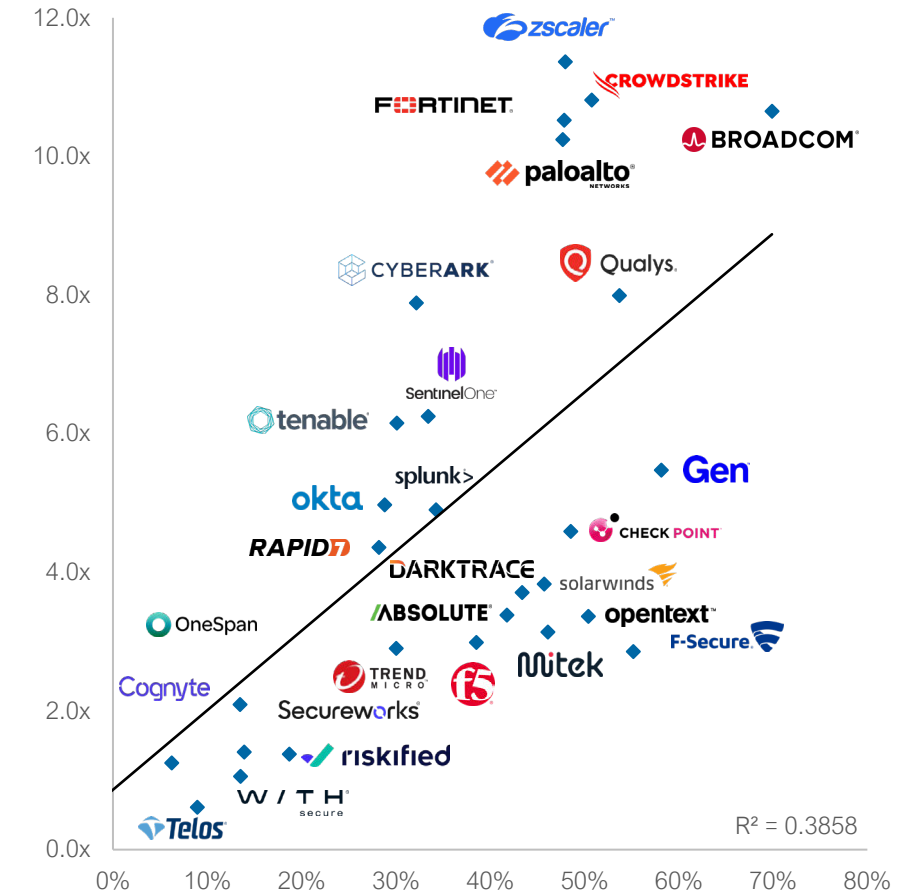
Low-Revenue Growth	Medium-Revenue Growth	High-Revenue Growth
Mean: 7% 3.5x	Mean: 14% 5.1x	Mean: 30% 9.5x
Median: 6% 3.0x	Median: 16% 4.4x	Median: 29% 10.8x

Below Rule of 40	Above Rule of 40
Mean: 12% 3.5x	Mean: 15% 6.6x
Median: 11% 3.0x	Median: 15% 5.0x

EV/'23E Revenue to '24/E'23E Revenue Growth



EV/'23E Revenue to Rule of 40

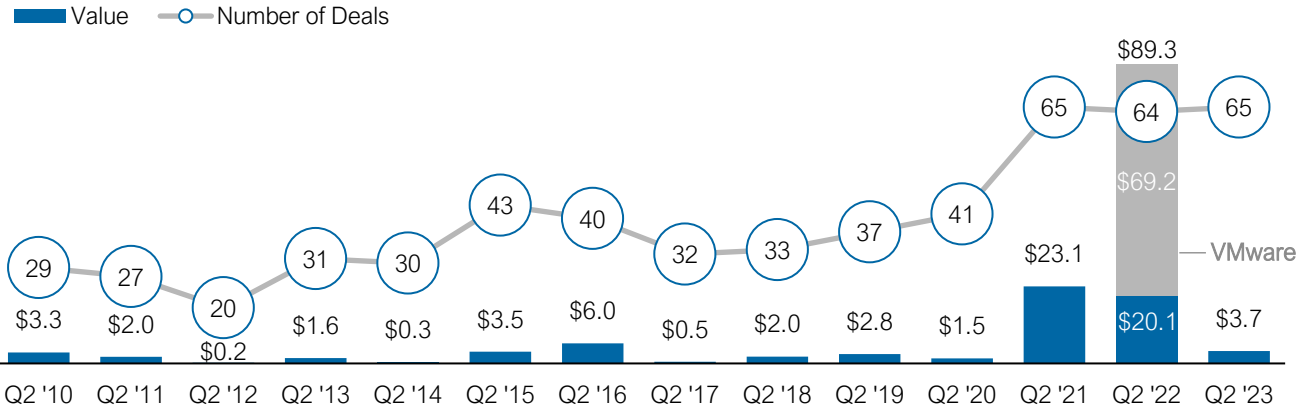


Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023.
 Notes: All financials are calendarized to a December year-end. BB is included in the calculation for R² but is not included in the charts due to having negative values for revenue growth and the Rule of 40.

Cybersecurity M&A Activity

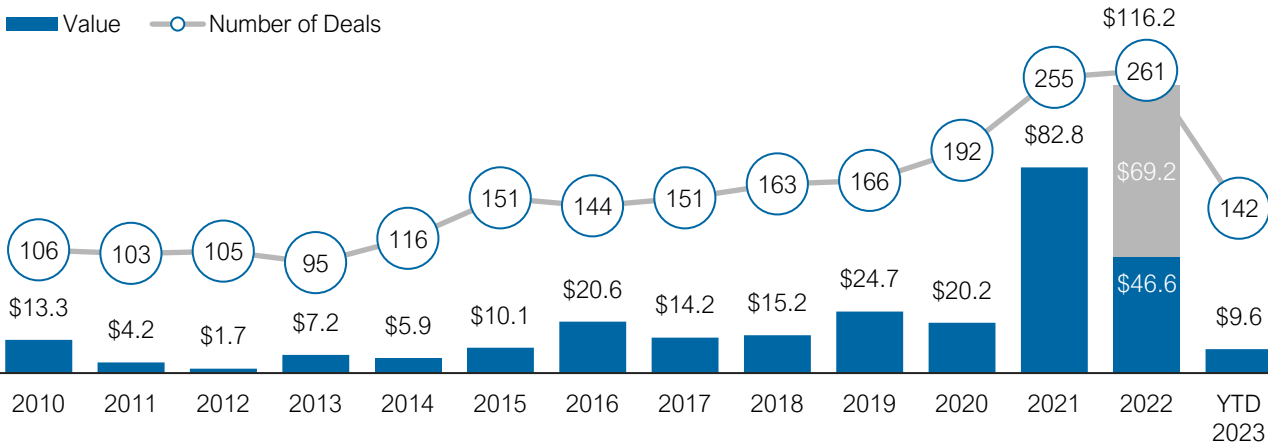
Historical Q2 M&A Summary

(\$ in Billions)



Annual M&A Summary

(\$ in Billions)



Selected M&A Transactions

(\$ in Millions)

Ann. Date	Acquirer	Target	EV	EV/Rev
Jun-23	REVEALD	EPIPHANY SYSTEMS	NA	NA
Jun-23	HashiCorp	BLUBRACKET	NA	NA
May-23	CISCO	Armorblox <small>Houlihan Lokey</small>	Conf.	Conf.
May-23	emudhra <small>Trust Delivered</small>	Ikona Tech	\$12	1.8x
May-23	ripple	METACO	\$250	NA
May-23 ⁽¹⁾	CROSSPOINT CAPITAL	ABSOLUTE	\$870	3.9x
May-23	IBM	P L A R	\$60	NA
May-23	Boecore	LA JOLLA LOGIC <small>Celebrating 40 Years of Leadership</small>	NA	NA
Apr-23	F-Secure	Lookout	\$223	5.7x
Apr-23	SMILE IDENTITY	appruve	NA	NA
Apr-23	Akamai	neosec	NA	NA
Apr-23	ZEROFOX	LOOKINGGLASS	\$26	NA

Sources: PitchBook, 451 Research as of June 30, 2023.

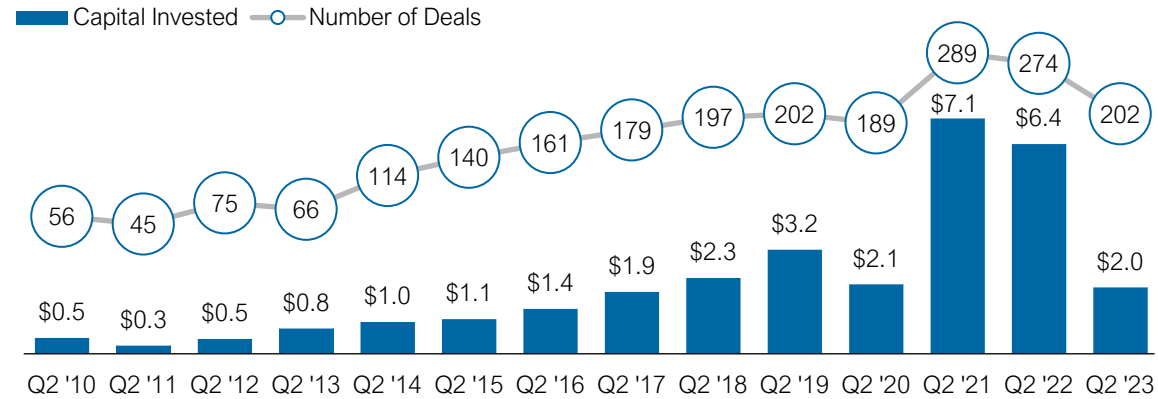
Notes: NA indicates not available; NM indicates not meaningful. 2022 M&A deal volume includes Broadcom's acquisition of VMware.

(1) Transaction pending.

Cybersecurity Financing Activity

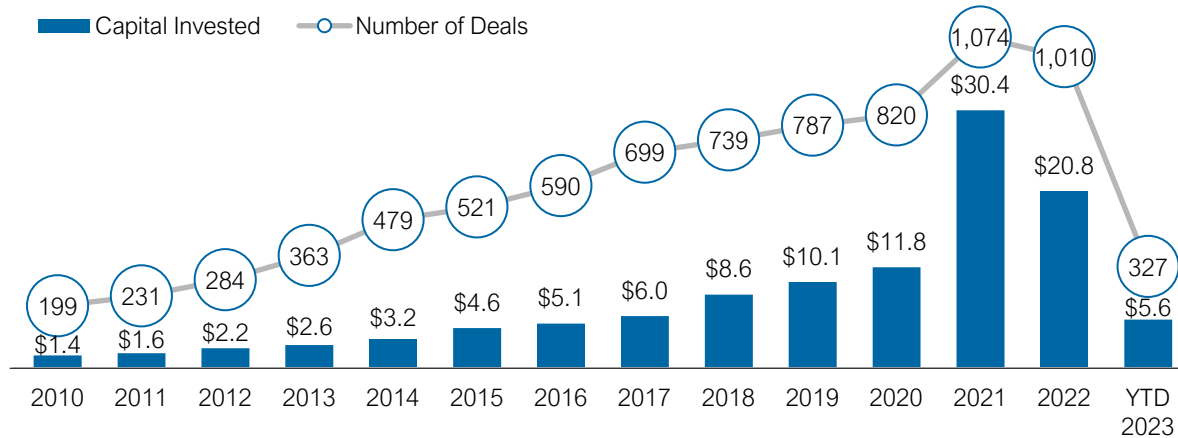
Historical Q2 Financing Summary

(\$ in Billions)



Annual Financing Summary

(\$ in Billions)



Selected Minority Transactions

(\$ in Millions)

Ann. Date	Lead Investor	Target	Amount	Valuation	Total Raised
Jun-23	South Park Commons, TIGERGLOBAL	Unit21	\$45	\$700	\$92
Jun-23	Accel	cyera	\$100	\$500	\$160
Jun-23	INSIGHT PARTNERS, Moore Strategic Ventures, LLC	SHIFT5	\$83	NA	\$106
Jun-23	BainCapital	blackpoint	\$190	NA	\$214
May-23	PayPal Ventures	Magic	\$52	NA	\$83
May-23	SAPPHIRE VENTURES	HUNTRESS	\$60	\$660	\$160
May-23	METROPOLITAN	SOURCEPASS	\$65	NA	\$65
Apr-23	CORNET VENTURES, SYN: VENTURES	halcyon	\$50	NA	\$69
Apr-23	ENERGY IMPACT PARTNERS	CORONET	\$75	\$575	\$178
Apr-23	SORENSEN CAPITAL	SAFE	\$50	\$180	\$96
Apr-23	Viking	ID.me	\$132	\$1,632	\$373
Apr-23	SoftBank	cybereason	\$100	NA	\$845

FINANCIAL SPONSORscape: Cybersecurity Portfolio Companies





Conferences and Events



Recent Conferences and Events

Infosecurity Europe

- Infosecurity Europe is the biggest gathering of the information security industry in Europe.
- Each year, the community comes together to share innovation, learn from each other, test and benchmark solutions, build relationships to drive new business, and connect with colleagues.

258

Exhibitors

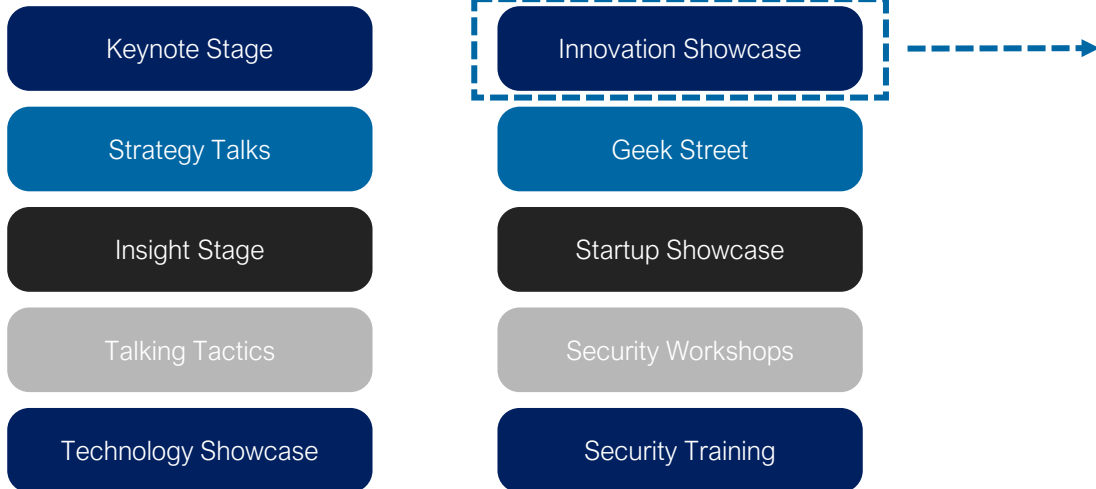
23

Strategy talk sessions

250+

Speakers across three days

Conference Offerings



Upcoming Conferences and Events

Selected Keynote Speakers



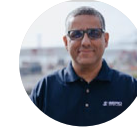
Andrew Rose
Resident CISO, EMEA
Proofpoint



Ilona Simpson
CIO, EMEA
Netskope



Yuval Wollman
President
CyberProof



Bentsi Benatar
CMO, Co-Founder
Sepio



Brad Freeman
Director of Technology
SenseOn



Nadir Izrael
CTO, Co-Founder
Armis



Dan Benjamin
CEO, Co-Founder
Dig Security



Dr. Niklas Hellemann
CEO
SoSafe



Henning Christiansen
CISO
Ottobock



Stephen Boyer
CTO, Co-Founder
BitSight

Angoka Wins U.K.'s Most Innovative Cyber SME

- The competition, held by the U.K. Department of Science, Information, and Technology, demonstrates the rapid pace of innovation in cybersecurity.
- Angoka offers IoT security solutions that safeguard machine-to-machine communication across smart air mobility, smart land mobility, and critical national infrastructure.
- These solutions facilitate the adoption of IoT solutions, such as autonomous driving and drone control, that will become highly relevant going forward.

ANGOKA

PREVIOUS WINNERS



Recent Conferences and Events

- Black Hat is an internationally recognized cybersecurity event series providing the most technical and relevant security research.
- These multi-day events provide the security community with the latest cutting-edge research, developments, and trends.
- Attendees can gain hands-on experience and deepen their knowledge through a variety of training opportunities, including beginner- and advanced-level courses.

Black Hat USA 2023



The event includes four days of training and a two-day main conference featuring more than 100 selected Briefings, dozens of open-source tool demos in Black Hat Arsenal, Dark Reading, and more.



Black Hat CISO Summit is an approval-only event that brings together top security executives from global corporations and government agencies for a full day of unique discussions.



Key topics in the conference include AI and ML, AppSec, cloud security, cryptography, human factors, malware, mobile security, network security, policy, and privacy.

SUSTAINING PARTNERS



Upcoming Conferences and Events



Core Black Hat 2023 Features



Black Hat Briefings

Provides security professionals with a place to learn the very latest in information security risks, research, and trends.



Black Hat Trainings

Offers individual technical courses with topics ranging from the latest in penetration testing to exploiting web applications and defending and building SCADA systems.



Black Hat Certified Pentester

In partnership with The SecOps Group, Black Hat now has its own certification: Black Hat Certified Pentester.



Black Hat Business Hall

Solution providers and startups showcase the latest technologies and security services.

Recent Conferences and Events

Interested in attending the 2023 Global Tech Conference?
[CLICK TO REGISTER](#)

3 October
2023

New York | Lotte New York Palace

14 March
2024

London | London Hilton on Park Lane

Upcoming Conferences and Events

WHAT TO EXPECT AT THE EVENT

- **Panel Discussions From CEOs at High-Growth Companies:** A wide range of speakers will share their insights about navigating current market conditions and positioning their companies for future success across a variety of technology sectors.
- **Featured Speakers:** The conference will feature high-profile speakers and candid panel discussions with distinguished tech thought leaders, discussing a variety of topical themes.
- **Targeted One-on-One Meetings:** Houlihan Lokey will arrange targeted, one-on-one meetings for presenting companies over the course of the conference, advising on prospects, meeting structure, and materials and coordinating any follow-up.
- **Networking Opportunities:** Join an audience of strategic, financial, and institutional investors as well as other capital providers for lunch and end-of-day cocktails.

100+

PARTICIPATING
COMPANIES

700+

CONFERENCE
ATTENDEES

TARGETED

ONE-ON-ONE MEETINGS
WITH INVESTORS AND
STRATEGIC PARTNERS

The background features a hand holding a globe, overlaid with a complex network of lines and nodes, symbolizing global connectivity and technology. The entire scene is set against a dark blue background with subtle bokeh effects.

IV

About Houlihan Lokey



Houlihan Lokey



Houlihan Lokey is the trusted advisor to more top decision-makers than any other independent global investment bank.

2,595 Global Employees ⁽¹⁾	36 Locations	\$6.5 Billion Market Cap ⁽²⁾	HLI LISTED NYSE	\$1.8 Billion Revenue ⁽³⁾	~25% Employee-Owned	No Debt
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Corporate Finance

- No. 1 Global M&A Advisor Under \$1 Billion
- Leading Capital Markets Advisor Raising More Than \$100 Billion in Past Five Years

Rank	Advisor	Deals
1	Houlihan Lokey	381
2	Rothschild	369
3	JP Morgan	217

Source: Refinitiv. Excludes accounting firms and brokers.

Financial Restructuring

- No. 1 Global Restructuring Advisor
- \$3.0 Trillion of Aggregate Transaction Value Completed

Rank	Advisor	Deals
1	Houlihan Lokey	58
2	PJT Partners	30
3	Lazard	29

Source: Refinitiv.

Financial and Valuation Advisory

- No. 1 Global M&A Fairness Opinion Advisor Over the Past 25 Years
- 1,000+ Annual Valuation Engagements

Rank	Advisor	Deals
1	Houlihan Lokey	1,232
2	JP Morgan	1,030
3	Duff & Phelps, A Kroll Business	938

Source: Refinitiv. Announced or completed transactions.

Financial Sponsors Coverage

- No. 1 Global Private Equity M&A Advisor
- 1,000+ Sponsors Covered Globally

Rank	Advisor	Deals
1	Houlihan Lokey	242
2	Lincoln International	192
3	Deloitte	190

Source: PitchBook.

Houlihan Lokey + 7 MILE ADVISORS

Houlihan Lokey has agreed to acquire 7 Mile Advisors, an independent advisory firm that provides a range of services to clients across the IT services sector.

The transaction, signed on July 7, will further enhance Houlihan Lokey's deep industry expertise in IT services and expands the firm's geographic footprint.

HQ: Charlotte, NC Employees: ~30 Managing Directors: 5

(1) As of June 30, 2023.
 (2) As of July 2023.
 (3) LTM ended June 30, 2023.

Our Tech M&A Team Is No. 1 Globally With Unparalleled Reach

**2022 M&A Advisory Rankings
All Global Technology Transactions**

Rank	Advisor	Deals
1	Houlihan Lokey	116
2	Goldman Sachs	106
3	Morgan Stanley	79
4	Rothschild	76
5	JP Morgan	75

Source: Refinitiv.
Excludes accounting firms and brokers.

**2022 M&A Advisory Rankings
U.S. Technology Transactions
Under \$1 Billion**

Rank	Advisor	Deals
1	Houlihan Lokey	49
2	Goldman Sachs	37
3	Morgan Stanley	37
4	Rothschild	33
5	JP Morgan	32

Source: Refinitiv.
Excludes accounting firms and brokers.



- AMERICAS**
- Atlanta
 - Baltimore
 - Boston**
 - Chicago
 - Dallas
 - Houston
 - Los Angeles**
 - Miami**
 - Minneapolis
 - New York**
 - San Francisco**
 - São Paulo
 - Washington, D.C.

- EUROPE AND MIDDLE EAST**
- Amsterdam
 - Antwerp
 - Dubai
 - Frankfurt**
 - London
 - Madrid
 - Manchester**
 - Milan**
 - Munich
 - Paris**
 - Stockholm**
 - Tel Aviv**
 - Zurich

- ASIA-PACIFIC**
- Beijing
 - Fukuoka
 - Gurugram
 - Hong Kong SAR
 - Mumbai**
 - Nagoya
 - Shanghai
 - Singapore
 - Sydney**
 - Tokyo**

Local Technology team

*According to data provided by Refinitiv.

Deep Cybersecurity Experience Across the Ecosystem

<p>Transaction Pending</p> <p>CARLYLE has agreed to acquire a majority stake in</p> <p>NEVERHACK formerly known as PROPHETCY</p> <p>a portfolio company of</p> <p>IK Partners</p> <p>Buy-side Advisor</p>	<p>Armorblox</p> <p>has been acquired by</p> <p>Cisco</p> <p>Sell-side Advisor</p>	<p>XALIENT accelerate your business</p> <p>has received investment from</p> <p>VOLPI CAPITAL</p> <p>Sell-side Advisor</p>	<p>THRIVE a portfolio company of</p> <p>COURT SQUARE</p> <p>HoldCo PIK Notes Acquisition Financing</p> <p>Exclusive Placement Agent</p>	<p>ROHDE & SCHWARZ Cybersecurity SAS</p> <p>has been acquired by</p> <p>total specific solutions</p> <p>Sell-side Advisor</p>	<p>i proof</p> <p>has received a growth equity investment of \$70,000,000 from</p> <p>SEP SUMERU EQUITY PARTNERS</p> <p>Financial Advisor</p>	<p>SVERICA</p> <p>has made a strategic investment in</p> <p>SHADOW DRAGON</p> <p>Buy-side Advisor</p>
<p>Acumera</p> <p>has received a strategic growth investment from</p> <p>PEAK ROCK CAPITAL</p> <p>Sell-side Advisor*</p>	<p>tresorit</p> <p>has been acquired by</p> <p>SWISS POST</p> <p>Sell-side Advisor*</p>	<p>CVC</p> <p>has invested in</p> <p>Acronis</p> <p>Financing Advisor*</p>	<p>Bridewell CONSULTING</p> <p>has received an investment from</p> <p>gcp</p> <p>Sell-side Advisor*</p>	<p>IDIQ</p> <p>has sold a majority stake to</p> <p>CORSAIR CAPITAL</p> <p>Sell-side Advisor*</p>	<p>netwrix</p> <p>has received an equity investment from</p> <p>updata PARTNERS</p> <p>Financial Advisor</p>	<p>Threema.</p> <p>has entered into a partnership with</p> <p>Afinum</p> <p>Sell-side Advisor*</p>
<p>LIVINGBRIDGE</p> <p>has invested in</p> <p>TitanHQ</p> <p>Buy-side Advisor*</p>	<p>DSwiss SECURE DIGITAL SERVICES</p> <p>has sold a minority stake to</p> <p>Verium</p> <p>Sell-side Advisor*</p>	<p>Acronis</p> <p>structured equity investment led by</p> <p>Goldman Sachs</p> <p>Financing Advisor*</p>	<p>NC4</p> <p>has been acquired by</p> <p>everbridge</p> <p>Sell-side Advisor</p>	<p>MARLIN EQUITY PARTNERS</p> <p>has sold a majority stake in</p> <p>QUALITEST to Bridgepoint</p> <p>Sell-side Advisor*</p>	<p>NTT Security</p> <p>has acquired</p> <p>WhiteHat SECURITY</p> <p>Buy-side Advisor</p>	<p>Acquisition Financing</p> <p>inside secure</p> <p>has acquired</p> <p>verimatrix</p> <p>Financing Advisor*</p>
<p>Tintri</p> <p>has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy Code, to</p> <p>DDN STORAGE</p> <p>Company Advisor</p>	<p>dealflo</p> <p>has been acquired by</p> <p>OneSpan</p> <p>Sell-side Advisor*</p>	<p>DATA SYNC TECHNOLOGIES</p> <p>has been acquired by</p> <p>CLEAR CREEK GROUP</p> <p>Sell-side Advisor*</p>	<p>BLUECAT</p> <p>has been acquired by</p> <p>MDP MADISON DEARBORN PARTNERS, LLC</p> <p>Sell-side Advisor</p>	<p>BOMGAR</p> <p>a portfolio company of</p> <p>THOMA BRAVO</p> <p>Financial Advisor</p>	<p>SURGENT</p> <p>has been acquired by</p> <p>QUEST SOFTWARE</p> <p>Sell-side Advisor*</p>	<p>TRUST DIGITAL</p> <p>has been acquired by</p> <p>McAfee</p> <p>Sell-side Advisor*</p>

Tombstones included herein represent transactions closed from 2010 forward.

*Selected transactions were executed by Houlihan Lokey professionals while at other firms acquired by Houlihan Lokey or by professionals from a Houlihan Lokey joint venture company.

How Houlihan Lokey Can Help


Our firm is extremely well-equipped to help our clients navigate uncertain times. We respond quickly to challenging situations and are constantly helping clients to analyze, structure, negotiate, and execute the best possible solutions from both a strategic and a financial perspective.

What We Offer

1  Corporate Finance

- Mergers and Acquisitions
- Capital Markets
- Private Funds Advisory
- Board Advisory Services

We are widely recognized as a leading M&A advisor to the mid-cap and have long-standing relationships with capital providers, including commercial banks and other senior credit providers, insurance funds, asset managers, and mezzanine fund investors. Few other investment banks maintain the breadth of relationships and capital markets intelligence that we do.

2  Financial Restructuring

- Company Advisory
- Special Situations
- Distressed M&A
- Liability Management
- Creditor Advisory

We have the largest restructuring practice of any global investment bank. Since 1988, we have advised on more than 1,500 restructuring transactions (with aggregate debt claims in excess of \$3.0 trillion). We served as an advisor in 12 of the 15 largest bankruptcies from 2000 to 2022.

3  Financial and Valuation Advisory

- Portfolio Valuation and Fund Advisory
- Transaction Opinions
- Corporate Valuation Advisory Services
- Transaction Advisory Services
- Real Estate Valuation and Advisory
- Dispute Resolution Consulting

Over five decades, we have established ourselves as one of the largest financial and valuation advisory firms. Our transaction expertise and leadership in the field of valuation help inspire confidence in the financial executives, boards of directors, special committees, investors, and business owners we serve.

Why We're Different



No. 1 for Global and U.S. Under \$1B Tech M&A*



Significant Experience With Financing Markets



Senior-Level Commitment and Dedication



Deep, Industry-Specific Expertise



Superior Work Product/Technical Abilities



Creativity, Imagination, Tenacity, and Positivity

*Source: Refinitiv. Excludes accounting firms and brokers.

Other Houlihan Lokey Cyber Sector Reports

Generative AI in Cybersecurity Report



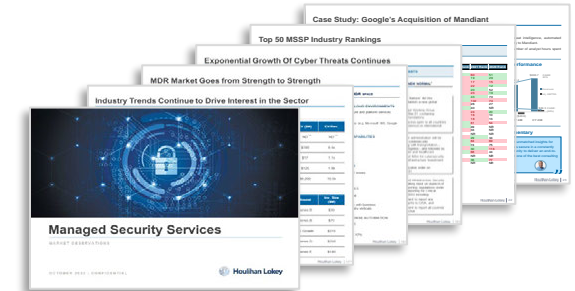
European Cybersecurity Ideabook



Identity Sector Report



Managed Security Services Report



To gain access to these decks, please reach out to the following:

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Managing Director
Co-Head of U.S. Cyber
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Keith.Skirbe@HL.com



Bobby Wolfe
Director
Co-Head of U.S. Cyber
Miami
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Tyler Deck
Senior Vice President
Boston
TDeck@HL.com

Global Cyber Reach



Mark Smith
Director
Head of U.K. Cyber
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Malte Abrams
Managing Director
Head of DACH Cyber
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Ido Zakai
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Sara Napolitano
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Cyber Tech Expertise



Stephen Lee
Managing Director
Tech and Cyber Due Diligence
Chicago
SJLee@HL.com



Edouard Viot
Cybersecurity Consultant
Paris

Yearly Conferences





V




Appendix



Houlihan Lokey

High-Growth Cybersecurity Trading Metrics

(\$ in Millions, Except Price per Share)







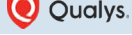



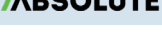




Company	Stock Price	52-wk High	% of 52-wk High	YTD Stock Performance	Cash and ST Inv.	Equity Mkt Cap	Enterprise Value	EV/Revenue			EV/EBITDA		
								CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E
 CROWDSTRIKE	\$146.87	\$205.73	71.4%	42.2%	\$2,930	\$34,642	\$32,718	14.6x	10.8x	8.4x	NM	NM	38.1x
 zscaler	146.30	194.21	75.3%	32.8%	1,968	21,056	20,590	15.3x	11.4x	8.9x	NM	NM	43.6x
 SentinelOne	15.10	30.00	50.3%	3.6%	718	4,265	3,718	8.8x	6.2x	4.7x	NM	NM	NM

Top Quartile	\$27,759	\$26,654	14.9x	11.1x	8.7x	NM	NM	42.2x
Mean	\$19,928	\$19,009	12.9x	9.5x	7.3x	NM	NM	40.8x
Median	\$21,056	\$20,590	14.6x	10.8x	8.4x	NM	NM	40.8x
1st Quartile	\$12,661	\$12,154	11.7x	8.5x	6.5x	NM	NM	39.5x

Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023. Notes: All financials are calendarized to a December year-end. NM indicates not meaningful, not disclosed, or EV/EBITDA >30x or <0x. Sorted by Enterprise Value. Growth categorizations are based on 2022A–2023E revenue growth breakpoints; high-growth ≥ 30%, medium-growth >10% or <30%, low-growth ≤ 10%.

Medium-Growth Cybersecurity Trading Metrics

(\$ in Millions, Except Price per Share)







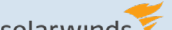




Company	Stock Price	52-wk High	% of 52-wk High	YTD Stock Performance	Cash and ST Inv.	Equity Mkt Cap	Enterprise Value	EV/Revenue			EV/EBITDA		
								CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E
 paloalto	\$255.51	\$256.83	99.5%	84.6%	\$3,958	\$83,820	\$78,137	12.7x	10.2x	8.5x	NM	35.8x	31.2x
 FORTINET.	75.59	76.27	99.1%	55.8%	2,879	60,355	57,545	13.0x	10.5x	8.8x	NM	37.5x	30.7x
 Gen	18.55	26.83	69.1%	(14.2%)	750	11,575	20,955	6.7x	5.5x	5.3x	14.4x	9.6x	9.7x
 okta	69.35	110.94	62.5%	(0.3%)	2,370	11,053	10,855	5.8x	5.0x	4.2x	NM	NM	38.8x
 CYBERARK	156.33	165.18	94.6%	23.8%	914	6,383	5,761	9.7x	7.9x	6.4x	NM	NM	NM
 tenable	43.55	52.55	82.9%	14.9%	617	4,894	4,805	7.0x	6.2x	5.4x	NM	44.9x	35.3x
 Qualys.	129.17	162.36	79.6%	15.8%	334	5,007	4,426	9.0x	8.0x	7.1x	26.8x	19.1x	17.1x
 RAPID7	45.28	74.88	60.5%	29.5%	262	2,676	3,384	4.9x	4.4x	3.8x	NM	40.6x	30.2x
 BlackBerry	5.54	6.99	79.4%	66.8%	516	3,216	3,156	4.6x	3.7x	4.1x	NM	NM	47.0x
 DARKTRACE	3.92	7.13	55.0%	22.9%	380	2,570	2,243	4.6x	3.7x	3.0x	NM	21.4x	14.8x
 ABSOLUTE	11.45	12.99	88.1%	6.3%	50	594	830	3.9x	3.4x	2.9x	NM	14.4x	11.2x
 Nitek	10.84	11.95	90.7%	11.6%	90	496	528	3.5x	3.1x	2.8x	11.9x	10.1x	8.6x
 F-Secure.	2.55	3.76	67.9%	(14.1%)	13	433	423	3.6x	2.9x	2.4x	10.2x	8.5x	6.4x
 riskified	4.86	6.73	72.2%	5.4%	477	831	414	1.6x	1.4x	1.2x	NM	NM	NM
 W / T H secure	1.28	2.88	44.3%	(12.5%)	52	219	173	1.2x	1.1x	1.0x	NM	NM	39.7x

Top Quartile	\$8,718	\$8,308	8.0x	7.0x	5.9x	17.5x	37.1x	35.3x
Mean	\$12,941	\$12,909	6.1x	5.1x	4.5x	15.9x	24.2x	24.7x
Median	\$3,216	\$3,384	4.9x	4.4x	4.1x	13.2x	20.2x	30.2x
1st Quartile	\$713	\$679	3.7x	3.3x	2.8x	11.5x	11.2x	11.2x

Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023. Notes: All financials are calendarized to a December year-end. NM indicates not meaningful, not disclosed, or EV/EBITDA >30x or <0x. Sorted by Enterprise Value. Growth categorizations are based on 2022A–2023E revenue growth breakpoints; high-growth ≥ 30%, medium-growth >10% or <30%, low-growth ≤ 10%.

Low-Growth Cybersecurity Trading Metrics

(\$ in Millions, Except Price per Share)




Company	Stock Price	52-wk High	% of 52-wk High	YTD Stock Performance	Cash and ST Inv.	Equity Mkt Cap	Enterprise Value	EV/Revenue			EV/EBITDA		
								CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E
 BROADCOM	\$867.43	\$921.78	94.1%	56.7%	\$11,553	\$367,790	\$385,854	11.2x	10.7x	10.0x	19.3x	16.8x	15.8x
 splunk >	106.09	116.84	90.8%	22.2%	2,463	17,350	19,175	5.2x	4.9x	4.3x	NM	24.2x	20.4x
 opentext	41.55	43.25	96.1%	38.1%	1,400	11,228	19,163	3.1x	3.4x	3.2x	10.3x	8.4x	7.2x
 CHECK POINT	125.62	135.93	92.4%	(1.0%)	1,686	15,597	11,098	4.8x	4.6x	4.4x	12.2x	10.6x	9.9x
 Palo Alto Networks	146.26	174.38	83.9%	1.0%	755	8,854	8,392	3.1x	3.0x	2.9x	16.7x	8.8x	8.1x
 TREND MICRO	48.03	63.28	75.9%	2.3%	1,738	6,717	4,946	2.9x	2.9x	2.7x	11.5x	12.6x	11.9x
 solarwinds	10.26	11.37	90.3%	8.9%	141	1,658	2,815	3.9x	3.8x	3.7x	14.6x	9.4x	8.8x
 Secureworks	7.23	11.38	63.5%	15.1%	95	613	539	1.2x	1.4x	1.3x	NM	NM	21.9x
 OneSpan <small>The Digital Agreements Company</small>	14.84	19.25	77.1%	27.9%	107	598	497	2.3x	2.1x	1.9x	NM	NM	40.8x
 Cognyte	6.09	6.23	97.8%	90.9%	68	433	377	1.2x	1.3x	1.2x	NM	NM	NA
 Telos	2.56	12.51	20.5%	(50.7%)	112	173	78	0.4x	0.6x	0.6x	NM	NM	NM

Top Quartile	\$13,413	\$15,131	4.3x	4.2x	4.0x	16.2x	14.7x	20.4x
Mean	\$39,183	\$41,176	3.6x	3.5x	3.3x	14.1x	13.0x	16.1x
Median	\$6,717	\$4,946	3.1x	3.0x	2.9x	13.4x	10.6x	11.9x
1st Quartile	\$605	\$518	1.7x	1.8x	1.6x	11.7x	9.1x	8.8x

Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023. Notes: All financials are calendarized to a December year-end. NM indicates not meaningful, not disclosed, or EV/EBITDA >30x or <0x. Sorted by Enterprise Value. Growth categorizations are based on 2022A–2023E revenue growth breakpoints; high-growth ≥ 30%, medium-growth >10% or <30%, low-growth ≤ 10%.

High-Growth Cybersecurity Operating Metrics

(\$ in Millions, Except Price per Share)

Company	Stock Price	Equity Mkt Cap	Enterprise Value	Revenue			EBITDA			Revenue Growth			EBITDA Margin		
				CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E	2021–2022A	2022A–2023E	2023–2024E	CY 2022A	CY 2023E	CY 2024E
 CrowdStrike	\$146.87	\$34,462	\$32,718	\$2,241	\$3,026	\$3,895	(\$118)	\$632	\$859	54.4%	35.0%	28.7%	NM	20.9%	22.1%
 Zscaler	146.30	21,056	20,590	1,348	1,812	2,310	(272)	336	473	56.8%	34.4%	27.5%	NM	18.5%	20.5%
 SentinelOne	15.10	4,265	3,718	422	595	794	(374)	(154)	(27)	106.1%	40.9%	33.4%	NM	NM	NM

Top Quartile	\$27,759	\$26,654	\$1,795	\$2,419	\$3,102	(\$195)	\$484	\$666	81.5%	38.0%	31.1%	NM	20.3%	21.7%
Mean	\$19,928	\$19,009	\$1,337	\$1,811	\$2,333	(\$255)	\$271	\$435	72.5%	36.8%	29.9%	NM	19.7%	21.3%
Median	\$21,056	\$20,590	\$1,348	\$1,812	\$2,310	(\$272)	\$336	\$473	56.8%	35.0%	28.7%	NM	19.7%	21.3%
1st Quartile	\$12,661	\$12,154	\$885	\$1,203	\$1,552	(\$323)	\$91	\$223	55.6%	34.7%	28.1%	NM	19.1%	20.9%

Medium-Growth Cybersecurity Operating Metrics

(\$ in Millions, Except Price per Share)




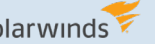


Company	Stock Price	Equity Mkt Cap	Enterprise Value	Revenue			EBITDA			Revenue Growth			EBITDA Margin		
				CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E	2021–2022A	2022A–2023E	2023–2024E	CY 2022A	CY 2023E	CY 2024E
paloalto	\$255.51	\$83,820	\$78,137	\$6,156	\$7,628	\$9,183	\$245	\$2,181	\$2,507	26.7%	23.9%	20.4%	4.0%	28.6%	27.3%
FORTINET	75.59	60,355	57,545	4,417	5,469	6,513	\$1,069	\$1,533	\$1,872	32.2%	23.8%	19.1%	24.2%	28.0%	28.7%
Gen	18.55	11,575	20,955	3,107	3,827	3,990	\$1,454	\$2,192	\$2,150	12.9%	23.2%	4.2%	46.8%	57.3%	53.9%
okta	69.35	11,053	10,855	1,858	2,183	2,574	(\$662)	\$185	\$280	37.7%	17.5%	17.9%	NM	8.5%	10.9%
CYBERARK	156.33	6,383	5,761	592	730	903	(\$136)	\$19	\$77	17.7%	23.4%	23.7%	NM	2.6%	8.5%
tenable	43.55	4,894	4,805	683	781	898	(\$43)	\$107	\$136	26.3%	14.3%	14.9%	NM	13.7%	15.2%
Qualys	129.17	5,007	4,426	490	554	621	\$165	\$232	\$258	19.1%	13.1%	12.1%	33.7%	42.0%	41.6%
RAPID7	45.28	2,676	3,384	685	776	898	(\$70)	\$83	\$112	28.0%	13.3%	15.7%	NM	10.7%	12.5%
BlackBerry	5.54	3,216	3,156	690	861	771	(\$87)	\$11	\$67	(7.1%)	24.8%	(10.4%)	NM	1.3%	8.7%
DARKTRACE	3.92	2,570	2,243	484	605	744	\$35	\$105	\$152	38.5%	25.0%	23.0%	7.2%	17.3%	20.4%
ABSOLUTE	11.45	594	830	215	245	284	\$9	\$58	\$74	38.7%	13.9%	15.7%	4.0%	23.6%	26.1%
Mitek	10.84	496	528	150	168	192	\$44	\$52	\$62	18.9%	12.0%	14.0%	29.4%	31.0%	32.1%
F-Secure	2.55	433	423	119	148	173	\$41	\$50	\$66	(1.8%)	24.7%	16.9%	34.8%	33.6%	38.3%
riskified	4.86	831	414	261	301	353	(\$105)	(\$15)	\$4	14.0%	15.0%	17.6%	NM	NM	1.1%
W / T H secure	1.28	219	173	144	164	182	(\$44)	(\$15)	\$4	(2.6%)	13.9%	NA	NM	NM	2.4%

Top Quartile	\$8,718	\$8,308	\$1,274	\$1,522	\$1,739	\$105	\$209	\$269	30.1%	23.9%	18.8%	34.0%	31.0%	30.4%
Mean	\$12,941	\$12,909	\$1,337	\$1,629	\$1,885	\$128	\$452	\$521	19.9%	18.8%	14.6%	23.0%	22.9%	21.8%
Median	\$3,216	\$3,384	\$592	\$730	\$771	\$9	\$83	\$112	19.1%	17.5%	16.3%	26.8%	23.6%	20.4%
1st Quartile	\$713	\$679	\$238	\$273	\$319	(\$79)	\$34	\$67	13.5%	13.9%	14.2%	6.4%	10.7%	9.8%

Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023. Notes: All financials are calendarized to a December year-end. NM indicates not meaningful, not disclosed, or EV/EBITDA >30x or <0x. Sorted by Enterprise Value. Growth categorizations are based on 2022A–2023E revenue growth breakpoints; high-growth ≥ 30%, medium-growth > 10% or < 30%, low-growth ≤ 10%.

Low-Growth Cybersecurity Operating Metrics

(\$ in Millions, Except Price per Share)

Company	Stock Price	Equity Mkt Cap	Enterprise Value	Revenue			EBITDA			Revenue Growth			EBITDA Margin		
				CY 2022A	CY 2023E	CY 2024E	CY 2022A	CY 2023E	CY 2024E	2021–2022A	2022A–2023E	2023–2024E	CY 2022A	CY 2023E	CY 2024E
 BROADCOM	\$867.43	\$367,790	\$385,854	\$34,412	\$36,229	\$38,565	\$20,005	\$23,029	\$24,465	20.7%	5.3%	6.4%	58.1%	63.6%	63.4%
splunk >	106.09	17,350	19,175	3,654	3,911	4,418	(126)	794	941	36.7%	7.0%	13.0%	NM	20.3%	21.3%
opentext	41.55	11,228	19,163	6,234	5,693	6,058	1,867	2,272	2,664	(0.4%)	(8.7%)	6.4%	30.0%	39.9%	44.0%
 CHECK POINT	125.62	15,597	11,098	2,330	2,418	2,521	909	1,050	1,116	7.5%	3.8%	4.3%	39.0%	43.4%	44.2%
 TREND MICRO	146.26	8,854	8,392	2,709	2,808	2,877	502	952	1,038	1.6%	3.6%	2.4%	18.5%	33.9%	36.1%
 solarwinds	10.26	1,658	2,815	719	735	765	192	299	318	0.1%	2.1%	4.1%	26.7%	40.8%	41.6%
Secureworks	7.23	613	539	463	383	413	(111)	(42)	25	(13.4%)	(17.4%)	7.9%	NM	NM	6.0%
 OneSpan <small>The Digital Agreements Company</small>	14.84	598	497	219	237	258	(7)	4	12	2.1%	8.2%	8.7%	NM	1.8%	4.7%
Cognyte	\$6.09	433	377	312	301	320	(90)	(11)	-	(34.2%)	(3.4%)	6.2%	NM	NM	NM
 Telos	\$2.56	173	78	217	128	139	(\$49)	(\$23)	(\$13)	(10.5%)	(41.2%)	8.9%	NM	NM	NM

Top Quartile	\$13,413	\$15,131	\$3,181	\$3,359	\$3,647	\$706	\$1,001	\$1,077	5.1%	4.5%	8.3%	36.7%	41.4%	44.0%
Mean	\$39,183	\$41,176	\$4,815	\$4,959	\$5,287	\$2,138	\$2,611	\$2,817	1.2%	(3.7%)	6.9%	32.9%	33.3%	31.6%
Median	\$6,717	\$4,946	\$1,697	\$1,703	\$1,826	\$192	\$392	\$416	1.6%	2.1%	6.4%	28.3%	36.9%	36.1%
1st Quartile	\$605	\$518	\$388	\$342	\$367	(\$70)	(\$3)	\$18	(5.5%)	(6.0%)	5.3%	25.6%	22.3%	21.3%

Source: Trading multiples are based on share price, other market data, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2023. Notes: All financials are calendarized to a December year-end. NM indicates not meaningful, not disclosed, or EV/EBITDA >30x or <0x. Sorted by Enterprise Value. Growth categorizations are based on 2022A–2023E revenue growth breakpoints; high-growth ≥ 30%, medium-growth >10% or <30%, low-growth ≤ 10%.

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