

**IT Security Market Map**

# Agenda

- **Executive Summary**
- Market Trends
- Financial Markets Perspective
- Technology Stack & Vendor Landscape

# Shea & Company Overview

## People ■ Industry Expertise ■ Process Excellence

<b>1</b>	<b>2</b>	<b>22</b>	<b>20+</b>	<b>&gt;65</b>
Firm focused exclusively on enterprise software	Offices in Boston and San Francisco	Professionals focused on the software industry	Years of experience amongst our senior bankers	Transactions completed representing billions of dollars in value

### Mergers & Acquisitions

- Sell-side and buy-side M&A advisory
- Divestitures
- Restructuring

### Private Placements & Capital Raising

- Late-stage venture, growth equity and buyouts
- Recapitalizations
- IPO advisory

### Corporate Strategy

- Corporate development advisory
- Balance sheet and capital structure review
- Fairness opinions

## Superior Outcomes

Shea & Company has advised on important transactions representing billions of dollars in value across the strategic acquirer and financial investor landscape with Clients in the U.S. as well as Canada, Europe and Israel

**SECUREAUTH**  
a portfolio company of  
**TOBA CAPITAL**  
has been acquired by  
**CORE SECURITY**  
Shea & Company served as the exclusive financial advisor to SecureAuth

**Ping Identity**  
has received an investment from  
**DFJ GROWTH**  
**W CAPITAL PARTNERS**  
Shea & Company served as the exclusive financial advisor to Ping Identity

**mimecast**  
has received an investment from  
**INSIGHT VENTURE PARTNERS**  
Shea & Company served as the exclusive financial advisor to Mimecast

**secure islands**  
has been acquired by  
**Microsoft**  
Shea & Company served as the exclusive financial advisor to Secure Islands

**LastPass**  
has been acquired by  
**LogMeIn**  
Shea & Company served as the exclusive financial advisor to LastPass

**SUPERION**  
a portfolio company of  
**V VISTA EQUITY PARTNERS**  
has merged with  
**TRITECH**  
Shea & Company served as the exclusive financial advisor to Superior and Vista Equity Partners

**BC Partners**  
has acquired  
**NAVEX GLOBAL**  
Shea & Company served as the exclusive financial advisor to BC Partners

**BriefCam**  
has been acquired by  
**Canon**  
Shea & Company served as the exclusive financial advisor to BriefCam

**CLEARLAKE CAPITAL**  
has made an investment in  
**EAGLEVIEW**  
a portfolio company of  
**V VISTA EQUITY PARTNERS**  
Shea & Company served as the financial advisor to Clearlake Capital

**IEQT**  
has acquired  
**Zemax**  
Shea & Company served as the exclusive financial advisor to IEQT

**mobility**  
a division of  
**Cellebrite**  
has been acquired by  
**ESW CAPITAL**  
Shea & Company served as the exclusive financial advisor to Mobility and Cellebrite

**mri**  
REAL ESTATE SOFTWARE  
has acquired  
**CML SOFTWARE**  
Shea & Company served as the exclusive financial advisor to MRI Software

**doxim**  
a portfolio company of  
**STRATTAM CAPITAL**  
has been acquired by  
**GI PARTNERS**  
Shea & Company served as the exclusive financial advisor to Doxim and Strattam Capital

**PERFORCE**  
a portfolio company of  
**SUMMIT PARTNERS**  
has been acquired by  
**CLEARLAKE CAPITAL**  
Shea & Company served as the exclusive financial advisor to Perforce and Summit Partners

**GUROBI OPTIMIZATION**  
has received an investment from  
**THOMPSON STREET CAPITAL PARTNERS**  
Shea & Company served as the exclusive financial advisor to Gurobi

**mri**  
REAL ESTATE SOFTWARE  
a portfolio company of  
**GI PARTNERS**  
has received a strategic investment from  
**TA ASSOCIATES**  
Shea & Company served as the exclusive financial advisor to MRI Software and GI Partners

**SOVOS**  
a portfolio company of  
**V VISTA EQUITY PARTNERS**  
has been acquired by  
**HgCapital**  
Shea & Company served as the exclusive financial advisor to Sovos Compliance and Vista Equity Partners

**GRANICUS**  
a portfolio company of  
**V VISTA EQUITY PARTNERS**  
has been acquired by  
**V VISTA EQUITY PARTNERS**  
Shea & Company served as the exclusive financial advisor to Granicus

# Executive Summary

## Security Software YTD 2018 Snapshot

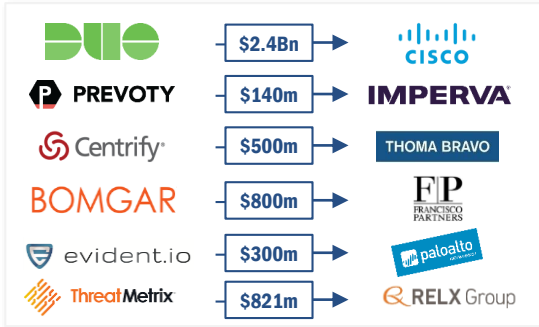
### M&A

M&A activity has been robust as larger security vendors expand their solutions through M&A; PE buyers have emerged in recent years as aggressive competitors for assets of scale

#### Most Active Acquirers (2010 - Present)



#### Notable Transactions



#### 2018YTD Deal Statistics

\$9.7B in Value  
88+ transactions  
Average EV/Revenue: 6.5x  
Average EV/EBITDA: 17.8x

### Private Capital Raising

Fundraising remains active, with a notable shift towards large rounds as newcomers demonstrate rapid growth via disruption

#### Prominent Investors (2010 - Present)



#### Private Funding



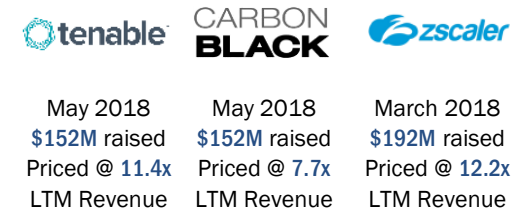
#### 2018 YTD Statistics

\$2.4Bn in capital raised YTD  
110+ transactions  
~2,000+ unique investors

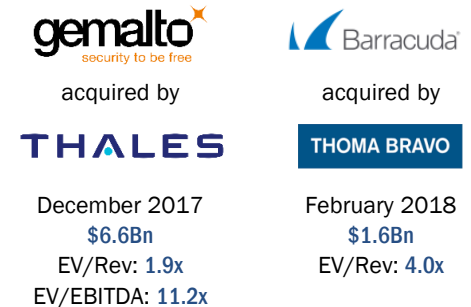
### Public Markets

Public market activity remains strong - Carbon Black and ZScaler both priced successful IPOs at the top or above their ranges and traded up significantly

#### IPOs



#### Take-Privates



#### Top Performers (1-Yr Price % Δ)

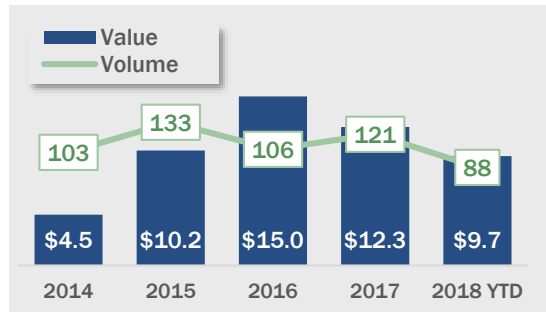


# Executive Summary

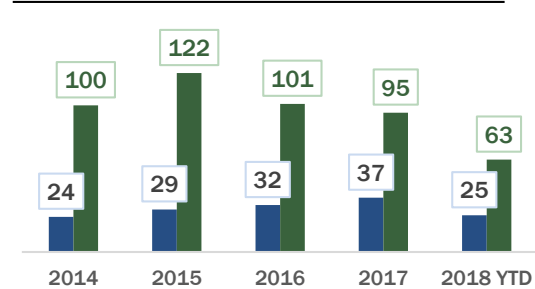
## By The Numbers

### M&A

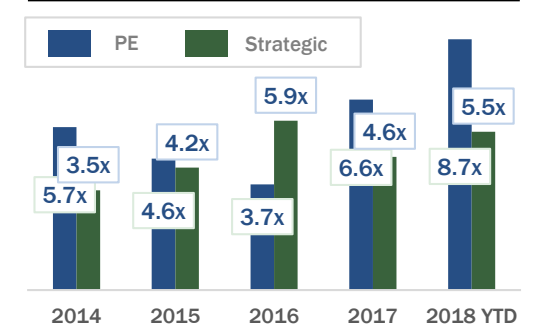
M&A: By Value & Volume (\$bn)



Deal Count: PE Vs Strategic

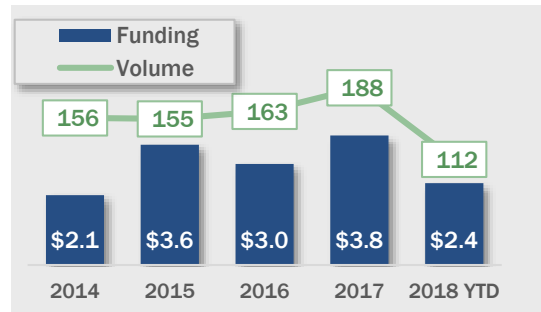


Avg. EV/Revenue: PE vs. Strategic

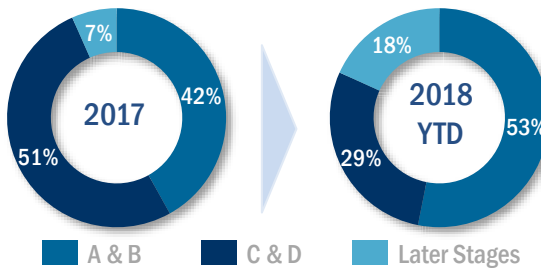


### Private Capital Raising

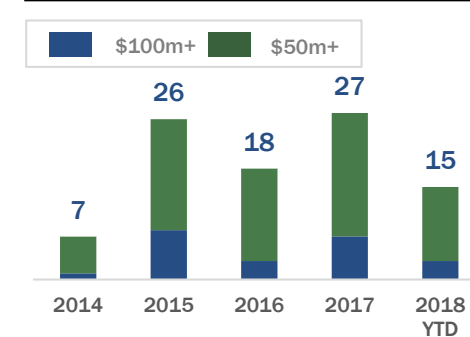
Cap Raises: By Funding & Volume (\$bn)



Funding By Series: 2017 vs. 2018 YTD

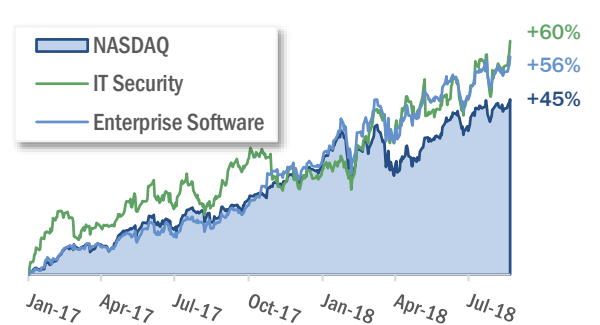


“Mega Rounds” Increasing Popularity



### Public Markets

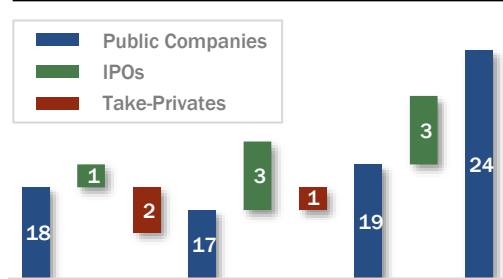
Relative Performance: 2017 - Present



Public EV / Revenue: 2017 - Present

	NASDAQ	ESW	Security
Min	2.7x	3.6x	5.1x
Mean	3.1x	4.4x	6.4x
Max	3.4x	5.2x	7.2x

Strong Pipeline of New Issues



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- **Market Trends**
- Financial Markets Perspective
- Technology Stack & Vendor Landscape

## Key Market Trends in Security

The security software market continues to rapidly evolve – increasing sophistication of threats from highly skilled and well funded state-sponsored and organized criminal attackers are resulting in breaches that cause massive financial, business and reputational damages. Organizations are attempting to respond as government enacts new, more stringent security regulations but a talent gap for skilled IT security professionals remains.

### Key Trends for 2018+

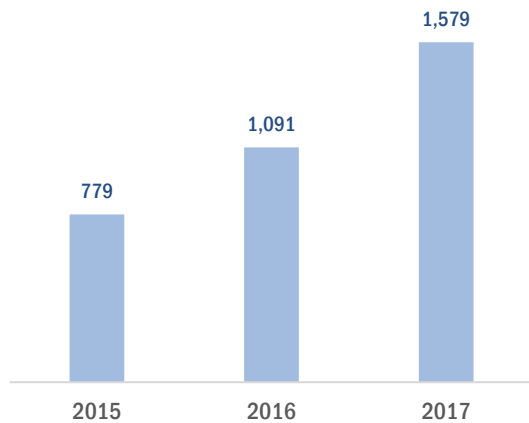
- |    |  |   |   |
|----|--|---|---|
| 1. | Current Threat Environment                       |    | <ul style="list-style-type: none"><li>▪ Growing number of threats and increasing sophistication of attacks</li><li>▪ Emergence of well funded organized crime and state-sponsored hacking groups</li></ul>  |
| 2. | The Impact of Data Breaches                      |    | <ul style="list-style-type: none"><li>▪ Massive financial, business and reputational damage associated with data breaches</li><li>▪ Increasing regulatory scrutiny resulting in potential penalties and legal risks</li></ul>   |
| 3. | Security Talent Gap is Growing                   |   | <ul style="list-style-type: none"><li>▪ As the number of threats grows, organizations are bolstering their defenses with security tools but often lack the resources to manage and monitor which is driving the need for automation and outsourcing</li><li>▪ Organizations are rushing to hire experienced IT security professionals but available talent is relatively scarce</li></ul> |
| 4. | Increasingly Stringent Regulatory Environment    |  | <ul style="list-style-type: none"><li>▪ Surge of new regulations addressing data privacy, most notably GDPR in the EU and CCPA in the US, as well as legacy regulations including Gramm-Leach-Bliley Act and HIPPA</li></ul>  |
| 5. | Private Equity Investment in Security Increasing |  | <ul style="list-style-type: none"><li>▪ Throughout the software sector PE buyers have become increasingly aggressive</li><li>▪ Historically private equity shied away from security, but over the last few years they have become a major consolidator, especially as traditional strategic buyers had been less active</li></ul>   |

## Market Trends

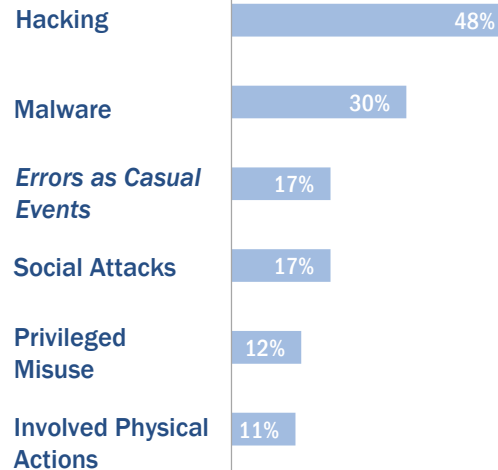
# #1. Current Threat Environment – Hit Rate of Incidents are Significantly Increasing

The volume of incidents have decreased over time, however the number of breaches has climbed significantly; hacking and malware remain the most popular tactic while SMBs, healthcare and accommodation / food services are the most common victims

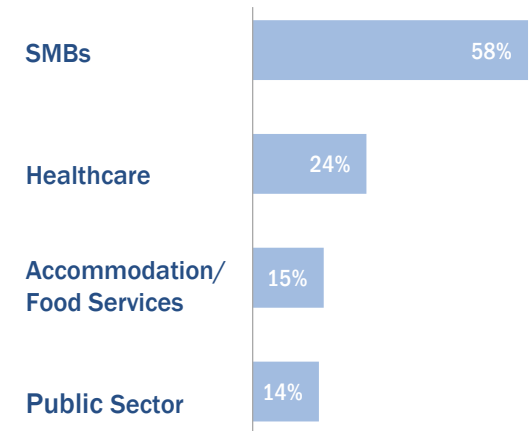
### Breaches Over Time



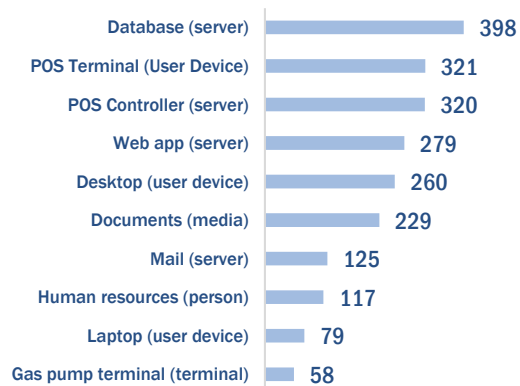
### Tactics Used



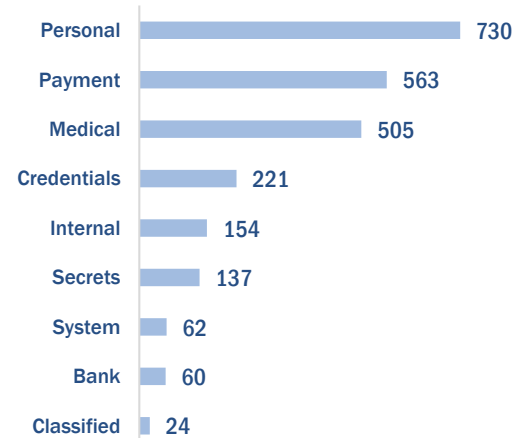
### Who Are the Victims



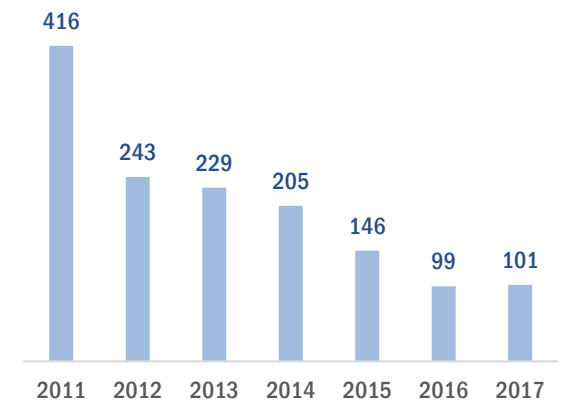
### Systems Targeted (# of breaches)



### Data Targeted (# of breaches)



### Dwell Time (days)



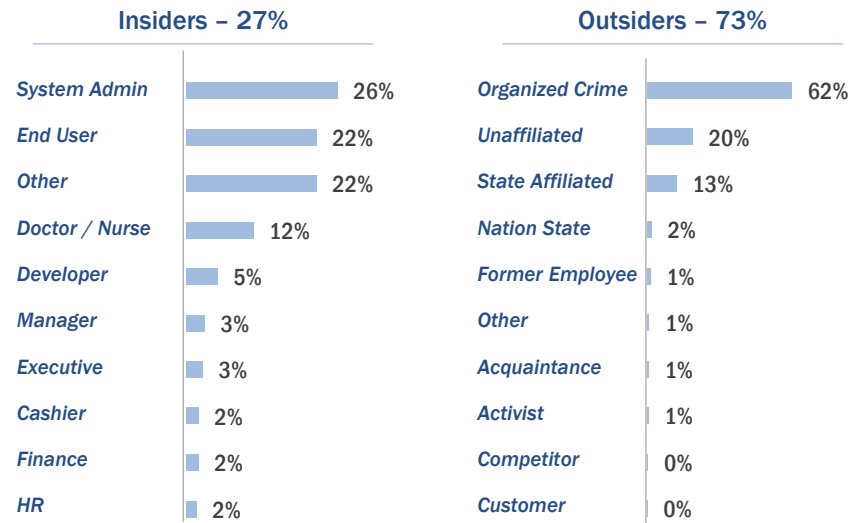


## Market Trends

# #1. Current Threat Environment – Who is Behind the Breaches

Breaches are driven by increasingly motivated, sophisticated and well-funded attackers, most notably organized crime groups and state-sponsored entities

### Who's Behind the Attacks



### Evolution of Hackers

- Historically, hackers were largely individuals seeking either personal monetary gains or notoriety
- Today the number of hackers has increased dramatically and hacker organizations are increasingly part of organized criminal enterprises or backed by government agencies
  - These organizations are well financed and significantly more sophisticated than 'independent' hackers
- With growing sophistication, cybercriminals have evolved from quick "smash-and-grab" tactics to targeted "long cons" (APTs) that are designed to go undetected, with the ultimate goal of becoming embedded in the target's infrastructure
- Ransomware is growing at alarming rates, driven by the ability to easily monetize disruptive downtime at the enterprise level

### Over 140 Countries With Some Level of Cyber Weapon Development Program:



- State-sponsored program consisting of 50-100k hackers - efforts have largely focused on IP theft
- Under 2015 Obama-Xi agreement, China committed to not stealing IP of US companies; China appears to be largely complying on IP, but their hacking operation remains quite active



- Sophisticated hacking operation largely focused on disinformation and propaganda
- Responsible for hacking DNC's database, leaking confidential info in advance of the 2016 US Presidential election



- Rapidly emerging cyber threat, Iran claims to have the world's second-largest cyber-army
- Well-trained in cyberespionage, often going undetected for long periods



- Israeli Intelligence Corps is an elite state-sponsored cyber group comprised of several thousand
- Responsible for Stuxnet (targeted Iranian nuclear facilities), Duqu and Duqu 2.0 (targeted Kaspersky and negotiations for the Iran Nuclear Deal)

Sources: Verizon

## Market Trends

# #2. The Impact of Data Breaches

Breaches can result in massive financial costs, business impact and reputational damage, each of which have been amplified by increased regulatory scrutiny resulting in potential penalties and legal risks

### # of Users Impacted



### Impact of Cyber Security Breaches

- **Reputational Damage:** Loss of consumer trust is a foremost concern for business; data breaches has the potential to seriously damage a company's brand and its relationships with all key stakeholders (customer, partners, suppliers, etc.)
- **Loss of Data & IP:** The loss of confidential corporate data and intellectual property can be extremely damaging, with companies losing years of effort and R&D investment in trade secrets or copyrighted material
- **Financial Losses:** Cyber crime costs small business disproportionately more than big businesses when adjusted for organizational size. For a large corporation, the financial impact of a breach is in millions whereas a small businesses shells out an average of \$38,000 to recover from a single data breach in direct expenses alone
- **Regulatory Risk:** The recently-introduced Data Security & Breach Notification Act proposes the mandatory disclosure of breaches within 30 days of discovery, with potential fines & personal prison sentencing for execs who hide breaches

Average cost of a data breach is \$3.6m, or \$141 per data record, which has decreased 10% over the past year

Average cost of a data breach in the United States is much higher at \$7.3m

Sources: Fortune.com, 2017 Study Ponemon Institute

## #2. The Impact of Data Breaches – Notable Incidents




**When:** May 2017

**Description:** Ransomware cryptoworm targeted computers running the MSFT Windows OS by encrypting data and demanding ransom payments in the Bitcoin

**Attack Vector:** EternalBlue, a network infection vector developed by the NSA and leaked by the Shadow Brokers, was used to breach the Microsoft Windows OS of the companies

**Scope:** Over 230k computers in over 150 countries were infected, companies including UK National Health Service, Telefonica, FedEx, and Deutsche

**Cost:** \$4bn+ estimated cost



**When:** July 2017

**Description:** Apache Struts was used to support the online dispute portal of Equifax where its customers went to log issues with their credit reports. The application vulnerability on of their websites led to a data breach and allowed hackers to take control of the website

**Attack Vector:** Breach by Apache Struts, an open-source web application framework for developing Java EE web applications.

**Scope:** Approximately 210,000 credit card account were hacked and more than 143m users have been affected till date.

**Cost:** \$1bn+ estimated cost



**When:** July & November 2016

**Description:** Hackers working for the Russian Government accessed the DNC's database, leaking confidential information to the public

**Attack Vector:** Breach by spear-phishing, used a fake webmail domain to trick recipients into changing their passwords granting hackers access credentials

**Scope:** First leak published nearly 20k emails of key staff members on WikiLeaks, followed by an additional leak of 8k emails

**Cost:** Major compromise to US National Security and democratic election processes



**Stuxnet**

**When:** June 2010

**Description:** Cyber weapon created by the US and Israeli governments in order to disrupt Iran's nuclear program by targeting Programmable Logic Controllers (PLCs) that control automation of electromechanical processes

**Attack Vector:** Exploited four zero-day vulnerabilities, targeting Windows OS and Siemens Step7 software

**Scope:** Targeted Iranian PLCs, ruining one-fifth of Iran's nuclear centrifuges

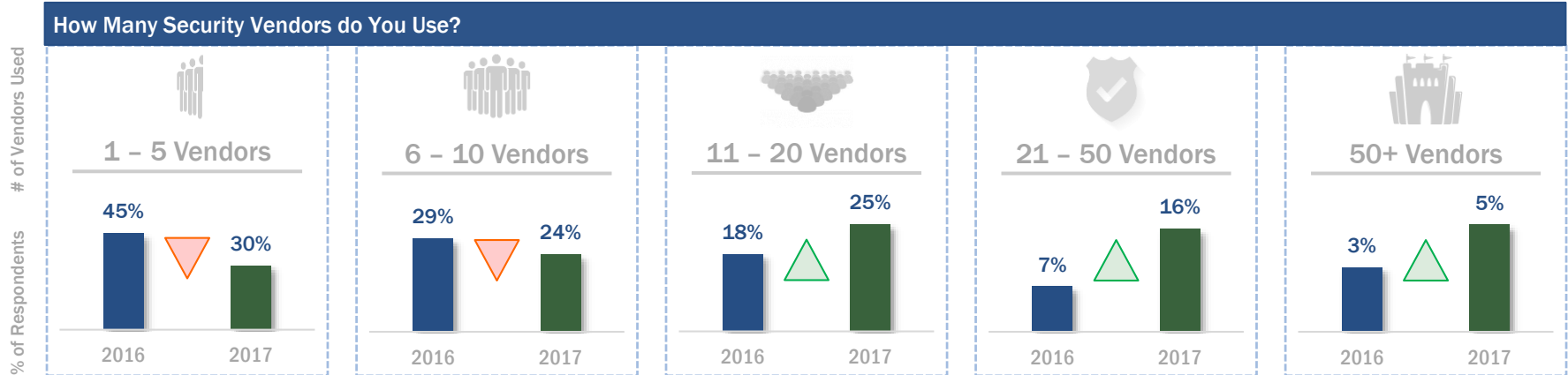
**Cost:** 2 Year delay to Iranian nuclear project

Timeline of Major Security Breaches		
Company	Stolen Data	Est. Impact
	Passport & photo IDs	119K users
	HIV patient data	12K patients
● 2018		
	Ransomware	400K devices
	Login credentials	Impact unclear
● 2017		
	DDoS attack on IoT	100K devices
	Login credentials	3Bn users
● 2016		
	Personal info	57m users
	Personal / contact	74m users
● 2015		
	Network security	145m users
	Credit card data	8,000 users
● 2014		

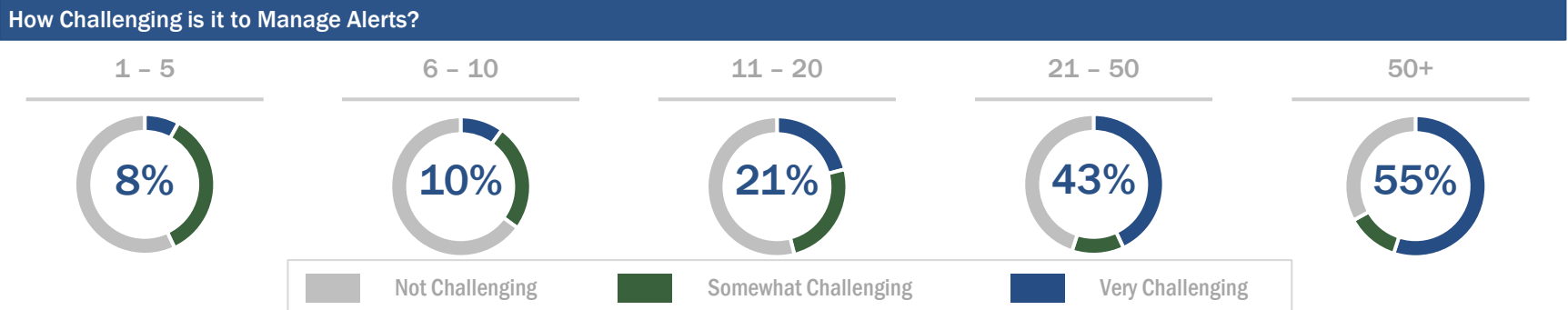
Market Trends

### #3. IT Security Talent Gap Continues to Grow as Organizations Search for Talent

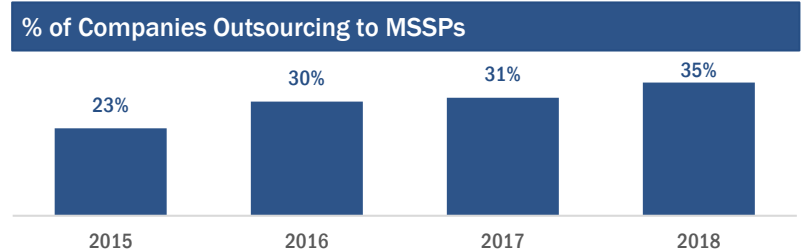
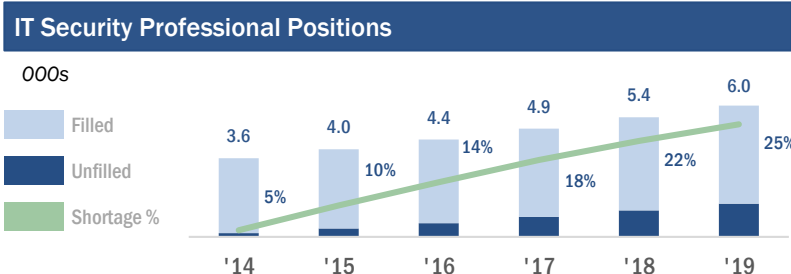
Organizations are implementing solutions from an increasing number of security vendors...



...which results in increasing complexity and management challenges...



...and a lack of internal resources, which is driving need for automation & outsourced services (MSSPs)



Source: Bank of America, Trustwave

## Market Trends

# #4. Increasingly Stringent Regulatory Environment

Surge of new regulations addressing data privacy, most notably GDPR in the EU and CCPA in the US, as well as legacy regulations including GLBA, HIPAA and PCI

### Overview of GDPR

**GDPR:** implemented on May 25, 2018, GDPR requires any organizations with access to EU citizens' personal information to be more transparent about collecting, retaining, sharing and destroying personal data

#### Empowers Citizens to:

- Access data & receive notifications that personal data is being collected
- Correct mistaken data
- Migrate data to another platform
- Restrict or prohibit processing
- Erase data & cease dissemination - "the right to be forgotten"

#### Requirements / Penalties:

- Penalties: 4% of revenue or €20M
- Demonstrate privacy by design
- Implement all adequate technical and organizational measures
- Mandatory appointment of data protection officer (DPO)

### Notable Recent Security Regulations

**California Consumer Privacy Act (CCPA):** broad consumer privacy act that takes effect in 2020; includes consumer notification of information being collected, the right to be forgotten and the right to opt out of having personal information sold

**Gramm-Leach-Bliley Act:** ended regulations preventing the merger of banks, brokerages and insurance companies, while enacting strict policy around the bank's use of clients' personal financial information













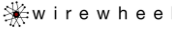
**HIPAA Security Rule:** set of set of security standards for the handling of electronic health care records

### GDPR by the Numbers<sup>[1]</sup>

- 40%** of organizations were not fully compliant for the GDPR rollout
- 54%** of CEOs noted GDPR as the *highest* data privacy / security priority...
- 38%** ...with another 38% stating it was one of several top priorities
- 50%** of data subjects on current European marketing lists will have been removed by 2020
- 68%** of organizations intend to invest \$1m - \$10m addressing the new regulations

<sup>1</sup>: Statistics from Digital Guardian, Gartner & PwC

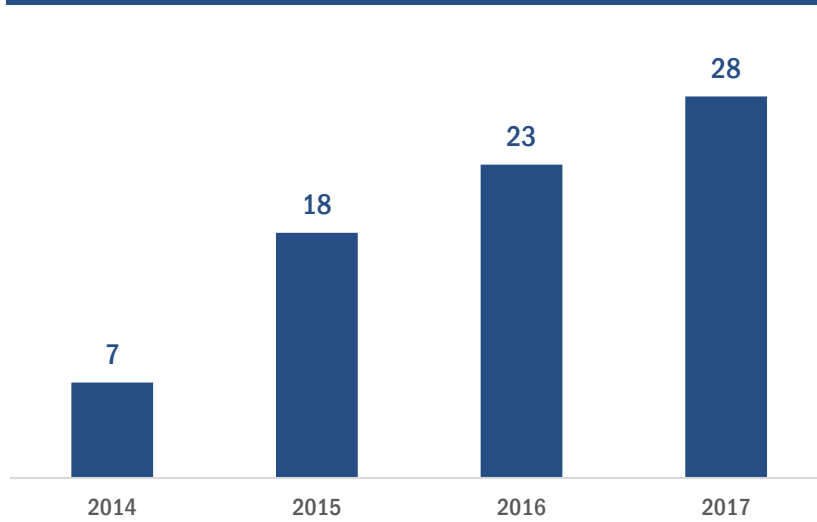
### Companies Addressing GDPR

Company	Funding	Overview
 BigID	\$30m	Centralized view of private data across all repositories within an organization
 INTEGRIS SOFTWARE	\$10m	Data privacy automation platform to meet the demand for a comprehensive data privacy solution
 Lockpath	\$8m	Private data control, policy incident and risk management
 OneTrust	-	GDPR compliance, validation & privacy protection platform
 PRIFENDER <small>EMBEDDED PRIVACY TECHNOLOGY</small>	\$5m	AI-driven personal data discovery, mapping, tracking & administration
 Privacera	\$400k	Discovery solution that can continuously scan and identify personal data as defined by GDPR
 R-sam	\$32m	Full GRC suite including pre-packaged solutions addressing long-term GDPR compliance
 SPIRION	-	Automates data discovery for GDPR data inventory and helps map all relevant GDPR data
 SureCloud	-	Third-party & incident management, cybersecurity and GDPR implementation roadmap tools
 trunomi	\$21m	Platform to comply with GDPR, manage customer consent and empower customers to share more data
 TrustArc <small>the new TRUSTE</small>	\$39m	GDPR training & policy management, compliance / privacy controls and verification reporting
 trusthub <sup>tm</sup>	-	Identifies where personal data resides
 wirewheel	\$10m	Combines deep privacy and data protection expertise to comply with GDPR

Market Trends

# #5. Private Equity Investment in Security Increasing

Deal Volume: PE-backed Security Deals



EV / Revenue Multiple: Financial Sponsors vs. Strategic Acquirers



Active PE Platforms and Add-Ons

<p><b>BOMGAR</b></p> <p><b>FP</b> FRANCISCO PARTNERS \$800m (Apr 18)</p>	<p><b>Avecto</b></p> <p><b>LIEBERMAN SOFTWARE</b></p> <p><b>Pitbull KeyHolder</b></p>
<p><b>Barracuda</b></p> <p><b>THOMA BRAVO</b> \$1.5b (Feb 18)</p>	<p><b>intronis</b></p> <p><b>sonian</b></p> <p><b>Sookasa</b></p> <p><b>PhishLine.com</b> Measured Security Awareness</p>
<p><b>CORE</b> SECUREAUTH SECURITY</p> <p>(Sep 17)</p>	<p><b>bayzï</b></p> <p><b>COURION™</b></p> <p><b>DAMBALLA</b></p> <p><b>SECURE RESET</b></p>
<p><b>OPTIV</b></p> <p><b>KKR</b> \$2.4b (Dec 16)</p>	<p><b>ADAPTIVE</b></p> <p><b>ADVANCIVE</b></p> <p><b>Comm Solutions</b> create.connect.secure.</p> <p><b>CONEXSYS COMMUNICATIONS LIMITED</b></p> <p><b>Decision Lab</b></p> <p><b>EVANTIX</b> IDENTIFYING THIRD-PARTY RISK</p>
<p><b>Ping Identity</b></p> <p><b>VISTA</b> EQUITY PARTNERS \$600m (Jun 16)</p>	<p><b>accells</b></p> <p><b>elastic beam</b> API scale and security</p> <p><b>Swirls</b></p> <p><b>Sxip IDENTITY</b></p> <p><b>UnboundID</b></p>
<p><b>WatchGuard</b></p> <p><b>FP</b> FRANCISCO PARTNERS</p> <p><b>VECTOR CAPITAL</b> \$129m (Jul 06)</p>	<p><b>BorderWare™</b></p> <p><b>Hexis CYBER SOLUTIONS</b></p> <p><b>datalink</b></p> <p><b>PERCIPIENT</b></p> <p><b>RapidStream.</b></p>

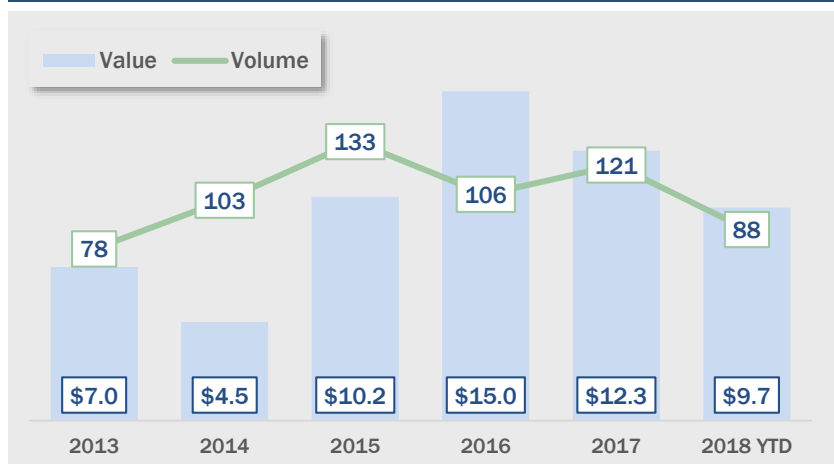
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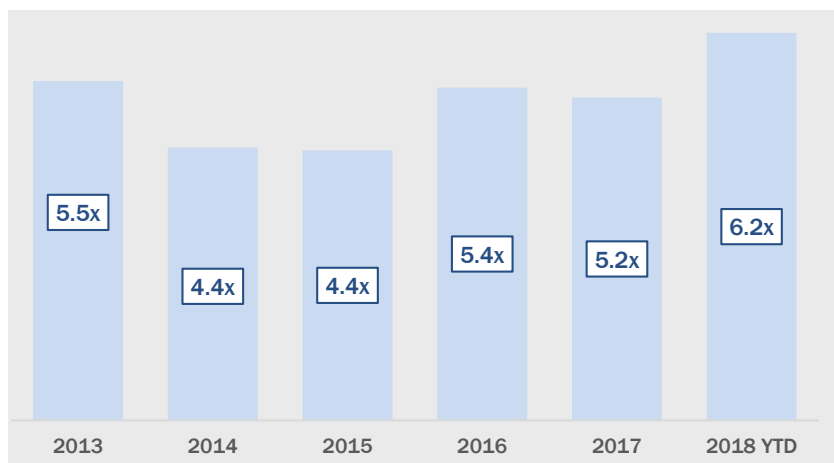
## Financial Markets Perspective

# M&A Activity

M&A Activity (\$ billions)



M&A Multiples - Average EV / LTM Revenue



Notable Activity (\$millions)

Date	Target	Acquirer	Enterprise Value
Aug '18	DUO	CISCO	\$2,350
Jul '18	PREVOTY	IMPERVA	\$140
Jul '18	Centrify	THOMA BRAVO	\$500 <sup>[a]</sup>
Mar '18	evident.io	paloalto	\$300
Mar '18	AVIGILON	MOTOROLA SOLUTIONS	\$1000
Mar '18	wombat security technologies	proofpoint	\$225
Feb '18	Phantom	splunk	\$350
Feb '18	COFENSE	BLACKROCK PAMPLONA CAPITAL MANAGEMENT	\$400
Jan '18	ThreatMetrix	RELX Group	\$821
Dec '17	D'CRYPT	StarHub	\$90
Nov '17	WEBLIFE	proofpoint	\$60
Jun '17	HEXADITE	Microsoft	\$100 <sup>[a]</sup>

Source: The 451 Group

[a]: 451 Research Estimates

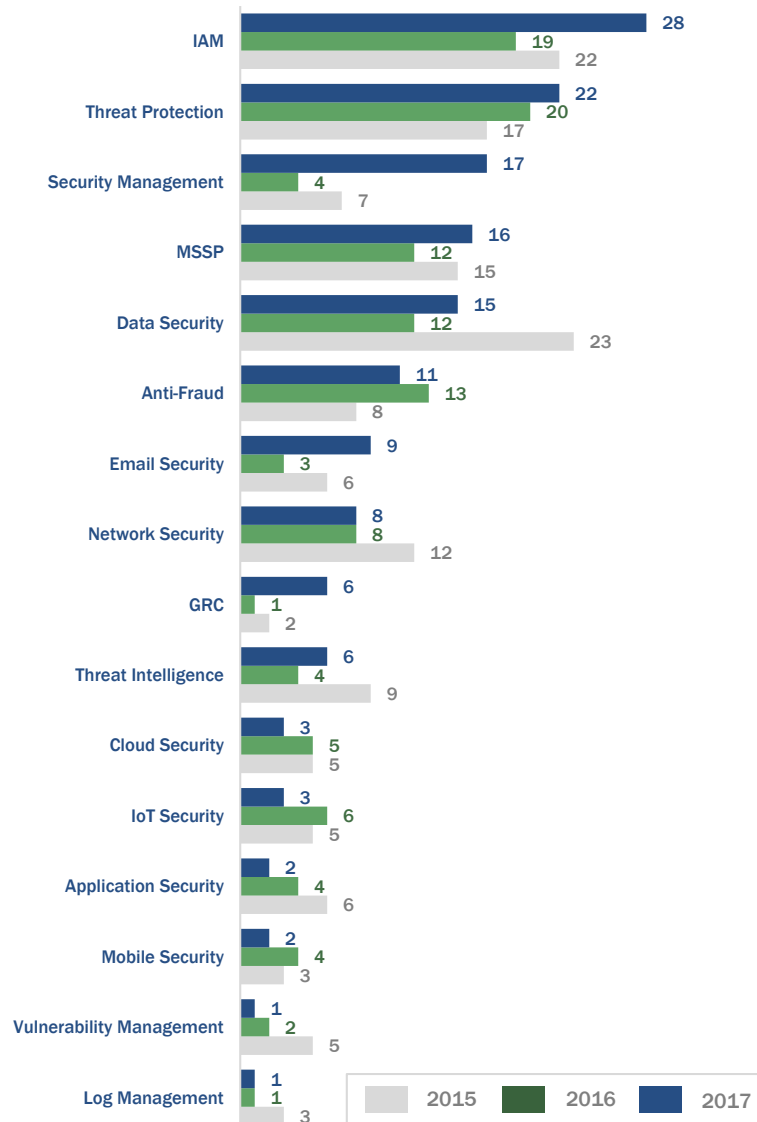
Note: EV / Revenue multiples greater than 20x are considered to be not meaningful



# Financial Markets Perspective

## M&A by Sector

M&A Volume By Sector (2015 - 2017)



Notable Targets























## Most Active Strategic Acquirers

### Active Acquirers: 2010 – Present

	Volume	Value (\$m)
	19	\$9,651
	17	\$636
	7	\$90
	6	\$173
	6	\$715
	4	\$174

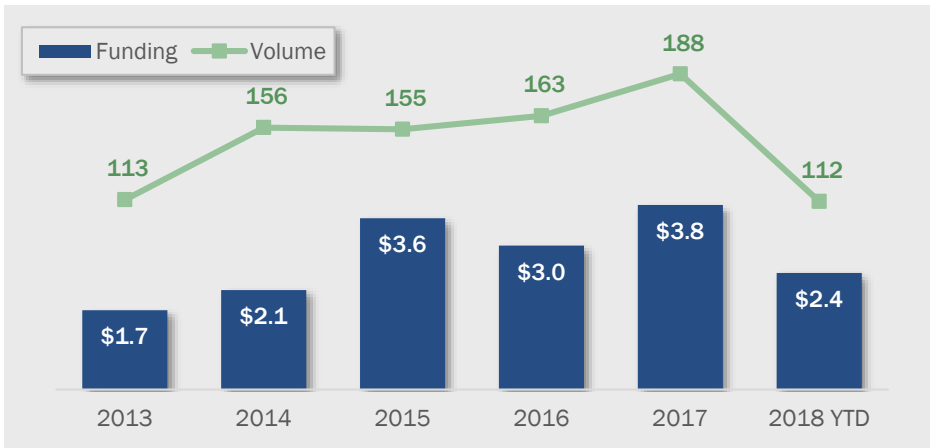
### Representative Transactions

Targets	Date	EV	EV/Rev
	Jul '17	\$200	-
	Jul '17	\$200	-
	Nov '16	\$2,300	3.5x
	Jun '16	\$2,300	7.8x
	Feb '18	\$216	5.6x
	Nov '17	\$60	nm
	Nov '17	\$110	-
	Oct '16	\$55	-
	Jun '18	\$17	1.7x
	Jun '16	\$28	4.7x
	May '15	\$34	0.4x
	May '18	\$55	9.1x
	Oct '15	\$85	-
	May '15	\$19	-
	Apr '18	\$90 <sup>[a]</sup>	nm
	Mar '18	\$300	-
	Feb '17	\$105	nm
	Mar '14	\$191	nm
	Apr '15	\$80 <sup>[a]</sup>	nm
	Feb '15	\$80	-

## Financial Markets Perspective

# IT Security Private Funding Activity

Private Funding Activity (\$ millions)



Active VC Investors (2010 - Present)

Investor	New Investments	Representative Investments
Accel	16	ACALVIO, CROWDSTRIKE, FORGEROCK, Lookout, CODE42, ForeScout, illumio, VECTRA
PALADIN CAPITAL GROUP	13	ANOMALI, COFENSE, ENDGAME, RISKSENSE, bugcrowd, CORE SECURITY, Karamba Security, White Ops
IQT IN-Q-TEL	13	ANOMALI, evident.io, Phantom, REDSEAL, CYLANCE, HYTRUST, REDOWL, ThreatMetrix
NEA	12	Barkly, CODE42, illusive, THREATQUOTIENT, CLOUDFLARE, hackerone, niara, VERIFLOW
INSIGHT VENTURE PARTNERS	10	4DCLOUD, DARKTRACE, LUMETA, Recorded Future, CYLANCE, FIREMQN, PREVALENT, thycotic
Redpoint	10	Caspida, ANGO, pindrop, SecNeo, Core OS, lastline, SentinelOne
KPCB	10	41STPARAMETER, PiCloud, SOPHOS, Core OS, ESINOSUN, Symantec
greylockpartners.	8	PiCloud, SUNGARD AVAILABILITY SERVICES, LUMIGENT

Notable Activity (\$ millions)

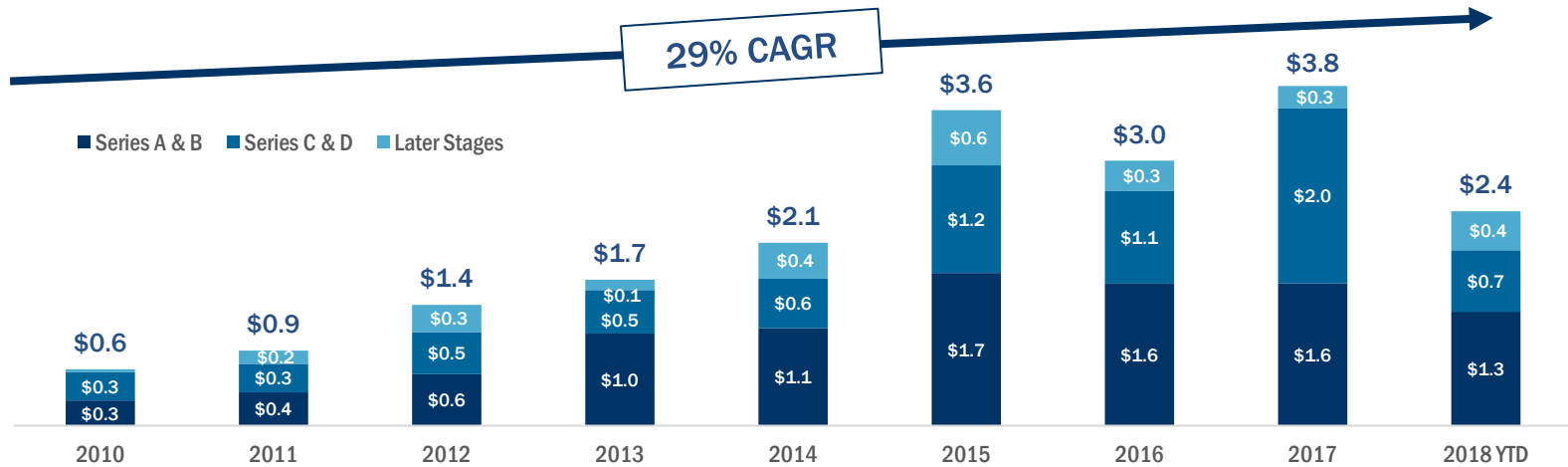
Date	Company	Amt. Raised	Total Funding
8/14/2018	exabeam	\$50	\$118
6/29/2018	BITSIGHT The Standard in SECURITY RATINGS	\$60	\$155
6/20/2018	CYLANCE	\$120	\$297
6/19/2018	CROWDSTRIKE	\$200	\$481
5/3/2018	IronNet Cybersecurity	\$78	\$111
4/17/2018	IONIC SECURITY	\$30	\$153
4/13/2018	RISKSENSE	\$8	\$22
4/13/2018	onapsis	\$31	\$61
3/27/2018	KENNA Security	\$25	\$51
3/2/2018	bugcrowd	\$26	\$52
2/27/2018	CyberX Trusted. Industrial. Cybersecurity.	\$18	\$29
2/20/2018	sparkcognition™	\$57	\$73
2/19/2018	MORPHISEC Moving Target Defense	\$12	\$22
2/16/2018	preempt	\$12	\$22
2/9/2018	DATAVISOR	\$40	\$69
1/29/2018	BehavioSec	\$18	\$27
1/17/2018	ANOMALI	\$40	\$97

# Financial Markets Perspective

## Financings by Stage

Private Funding Activity by Stage, 2010 – 2018 YTD (\$ billions)

While Series A rounds sank to a 5-year low in 2018, Cybersecurity remains a sector of interest for investors across all stages



Notable Fundraises: 2018 YTD

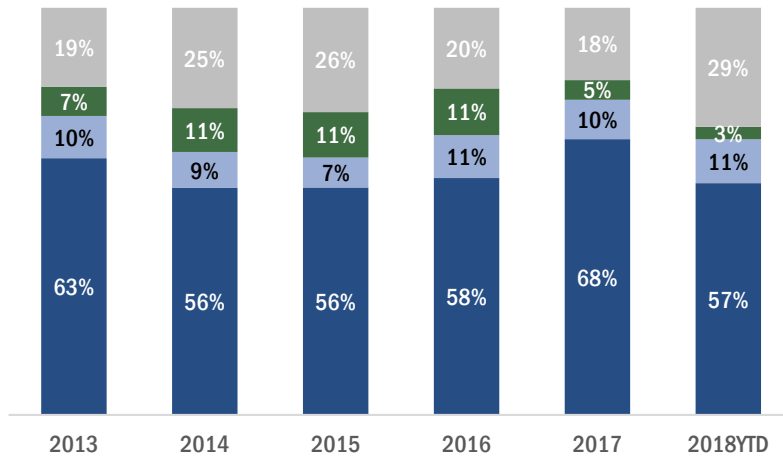
Series A	Series B	Series C	Series D	Series E+
<b>LogicHub</b> \$12m	<b>BehavioSec</b> \$18m	<b>onelogin</b> \$23m	<b>VECTRA</b> \$36m	<b>PAYFONE</b> \$23m
<b>lumin8</b> \$14m	<b>riskrecon</b> \$25m	<b>kenna</b> \$25m	<b>DATAVISOR</b> \$40m	<b>AGARI</b> \$40m
<b>PREVEIL</b> \$17m	<b>JASK</b> \$25m	<b>bugcrowd</b> \$26m	<b>exabeam</b> \$50m	<b>CYLANCE</b> \$120m
<b>RED BALLOON SECURITY</b> \$22m	<b>THETARAY</b> \$30m	<b>onapsis</b> \$31m	<b>BITSIGHT</b> \$60m	<b>CROWDSTRIKE</b> \$200m

# Financial Markets Perspective

## Financings by Geography

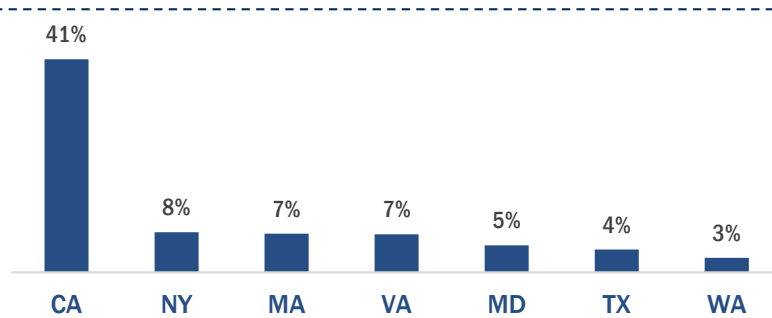
Cybersecurity Global Deal Share by Country (2013 - 2017)

While the U.S. continues to lead, Israel has become the 2<sup>nd</sup> most active nation in cybersecurity by deal count, globally



■ United States ■ Israel ■ United Kingdom ■ Other

Breakdown of US Cybersecurity Funding by Major States (2017)

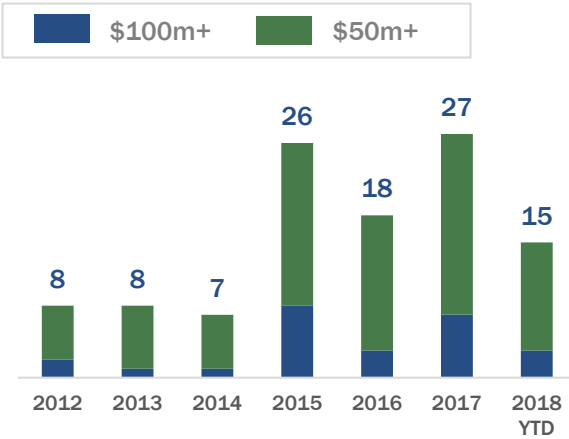


Notable non-US Security Vendors

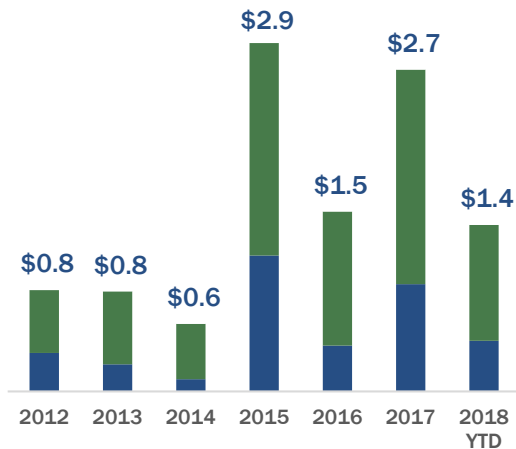
# Financial Markets Perspective

## Large Rounds & Large Valuations

Funding Rounds By Round Size



Funding Raised By Round Size (\$bn)



Source: Pitchbook

\*Represents latest known valuation (PitchBook)

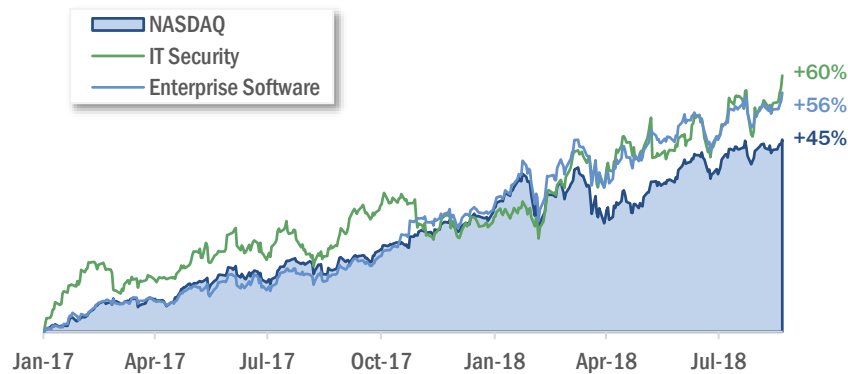
Private Unicorns

Company	Date	Last \$ / Total \$ Raised	Valuation	Investors
CROWDSTRIKE	Jun '18	\$200m / \$481m	\$3.4bn	Accel, capitalG, IVP, GENERAL ATLANTIC, WARBURG PINCUS, VENTURES
CYLANCE	Jun '18	\$120m / \$297m	\$1bn*	FEP, INSIGHT, IQT, SHARESPOST, KKR
TANIUM	May '18	\$175m / \$482m	\$5bn	ANDREESSEN HOROWITZ, FS INVESTORS, IVP, TPG, TRowePrice
illumio	Apr '17	\$125m / \$268m	\$1.2bn	8VC, Accel, ANDREESSEN HOROWITZ, BLACKROCK, formation, VALOR, GENERAL CATALYST
CLOUDFLARE	Sep '15	\$110m / \$182m	\$1.8bn	Baidu, capitalG, USV, PELION, NEA, venrock
Lookout	Feb '15	\$201m / \$331m	\$1.7bn	Accel, ANDREESSEN HOROWITZ, BLACKROCK, greylockpartners, khosla ventures, Index Ventures

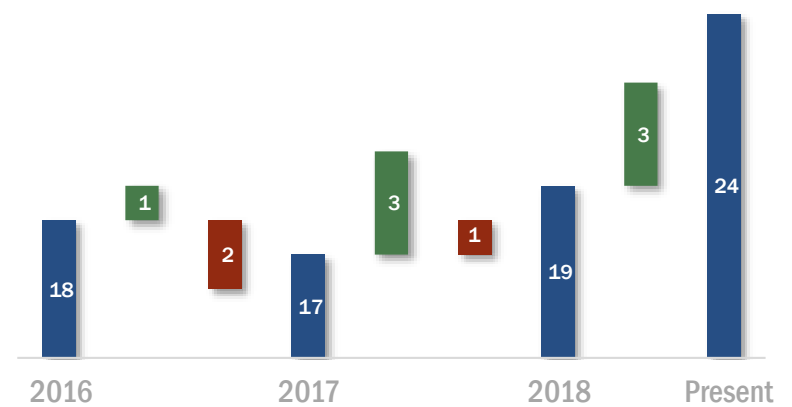
# IT Security Companies Continue to Perform Well in the Public Markets

IT Security is up 60% since 2017, outperforming both the NASDAQ and Enterprise software peers. Investors continue to ascribe premium multiples to security companies; the security index is trading at 7.2x revenue compared with 5.2x for Enterprise Software more broadly

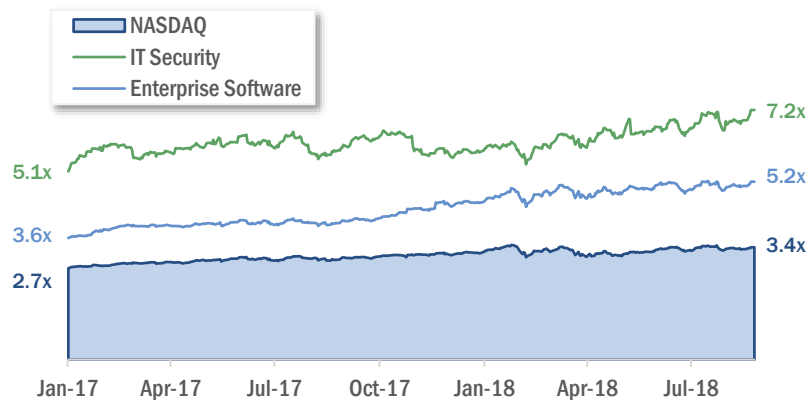
Relative Performance: 2017 – Present



Public Security Companies



EV/Revenue Multiples



EV / Revenue Trading Multiple

	NASDAQ	Enterprise SW	Security
Min	2.7x	3.6x	5.1x
Mean	3.1x	4.4x	6.4x
Max	3.4x	5.2x	7.2x

Sources: S&P Capital IQ, The 451 Group

Note: SheaCo Security Index includes CBLK, CHKP, CYBR, FEYE, FSCT, FTNT, IMPV, mime, MOBL, OKTA, OSPN, PANW, PFPT, QLYS, RPD, SAIL, SCWX, SOPH, SYMC, TENB, Trend Micro, VRNS, VRSN, ZS

## Strong Demand for Security IPOs

Public markets remain highly receptive to new cybersecurity issues, leading to a recent surge of new issues trading at premium valuations with a growing universe of private potential candidates at or approaching unicorn status

		Notable IT Security IPO Activity (\$ millions, except pricing data)					
		Date	Company	IPO Proceeds	IPO Price	EV / LTM Rev	Performance to Date
2018	↑	Jul '18	tenable	\$251	\$23	11.4x	46%
		May '18	Carbon Black.	\$152	\$19	7.7x	24%
		Mar '18	zscaler	\$192	\$16	12.2x	178%
2017		Nov '17	SailPoint	\$240	\$12	6.3x	160%
		Oct '17	ForeScout	\$116	\$22	4.0x	61%
		Apr '17	okta	\$187	\$17	9.6x	253%
2016		Apr '16	Secureworks®	\$112	\$14	5.5x	(6%)
2015		Jul '15	RAPID7	\$103	\$16	6.6x	128%
		Jun '15	SOPHOS	£352	£2	3.5x	96%
		Nov '15	mimecast	\$78	\$10	4.2x	314%
2014		Sep '14	CYBERARK	\$86	\$16	6.3x	364%
		Feb '14	VARONIS	\$106	\$22	7.0x	228%

### Private Players to Watch

**TANIUM.**  
 \$480m Raised  
 \$5B Valuation

**Lookout**  
 \$331m Raised  
 \$1.7B Valuation

**illumio**  
 \$268m Raised  
 \$1.2B Valuation

**CROWDSTRIKE**  
 \$480m Raised  
 \$1.1B Valuation

**cybereason**  
 \$190m Raised  
 \$625m Valuation

### Take-Privates

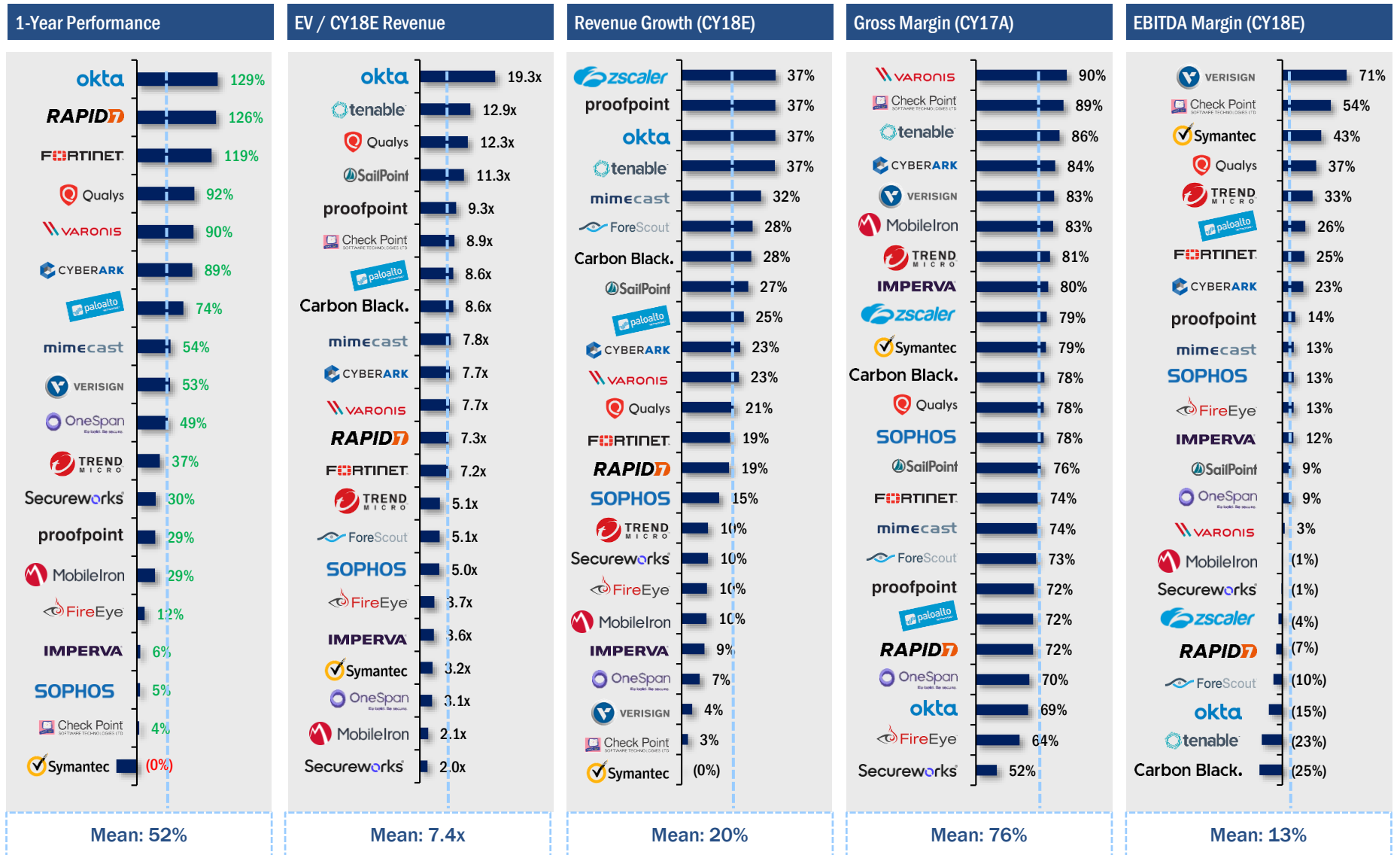
**Barracuda**  
 \$1,744m EV  
 4.0x Revenue

**imprivata**  
 \$544m EV  
 4.4x Revenue

Sources: S&P Capital IQ, 451 Research, Pitchbook



# Security Benchmarking Analysis: Valuation Factors



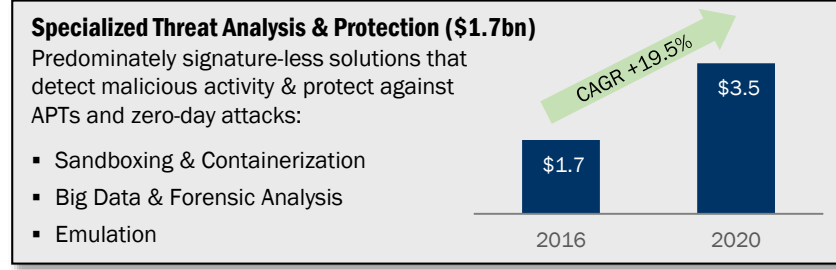
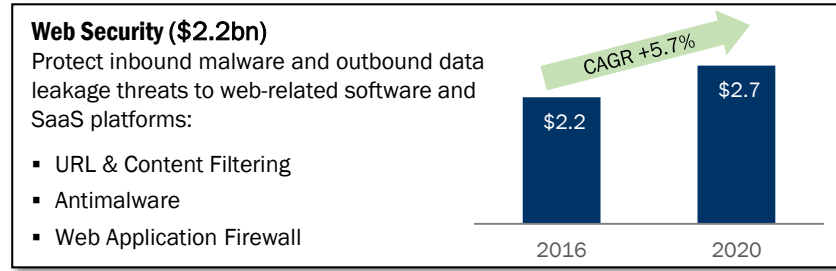
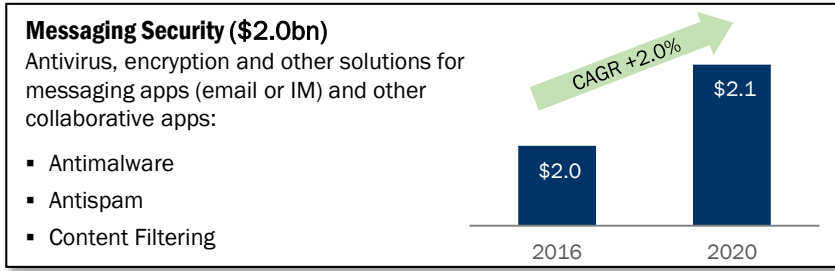
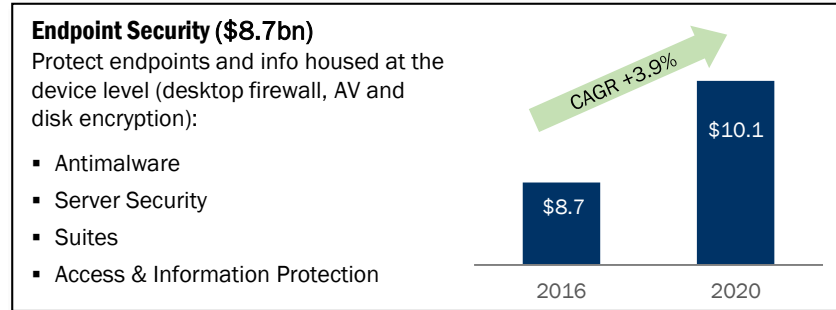
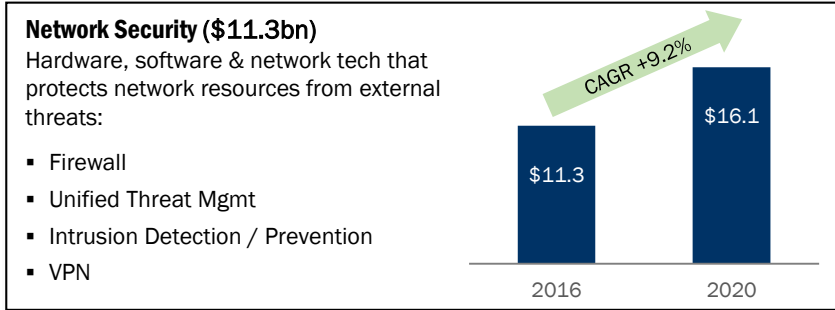
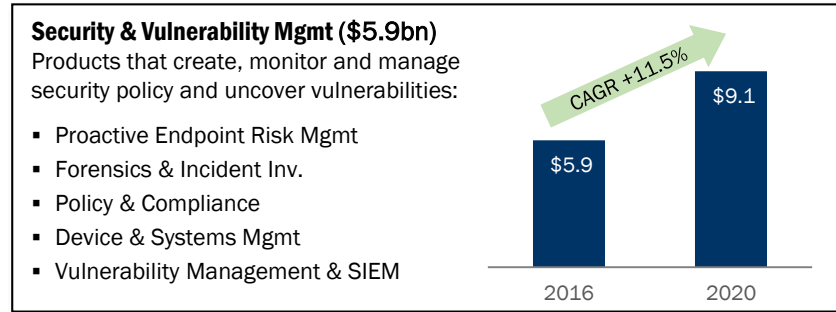
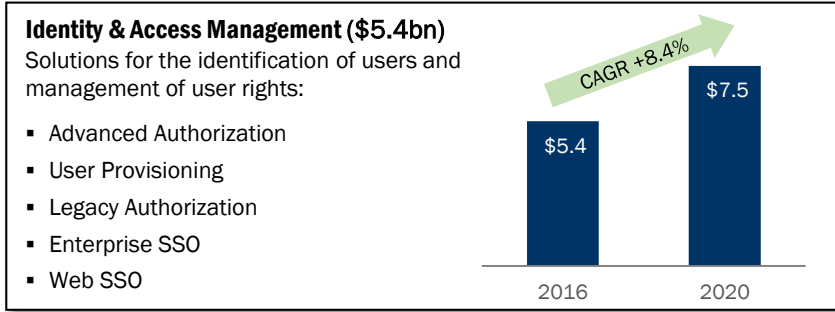
Trading Data as of 8/31/18

# Agenda

- Executive Summary
- Market Trends
- Financial Markets Perspective
- **Technology Stack & Vendor Landscape**

# Technology Stack & Vendor Landscape

## IT Security: Sector Snapshots



Technology Stack & Vendor Landscape

# IT Security Market Leaders by Sector

