

*“If there’s a recession-proof idea that’s not cyclical, it’s cybersecurity ... everything in our lives is going from analog to digital. When that happens the most important thing becomes protecting digital assets, and all these people trying to hack into companies and governments’ accounts are creating demand for cybersecurity products.”*

Menlo Ventures’ Venky Ganesan

## The Dynamic Cyber Security Investment World

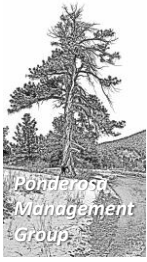
Dan Woolley  
Managing Director  
Ponderosa Mgt Gp  
Herndon, VA



## CSO Magazine

These top-level numbers summarize the cybersecurity industry over the past year and indicate what's in store for the next five years.

- **Cyber crime damage costs to hit \$6 trillion annually by 2021** up from \$3 trillion in 2015. This represents the greatest transfer of economic wealth in history, risks the incentives for innovation and investment, and will be more profitable than the global trade of all major illegal drugs combined.
- **Cybersecurity spending to exceed \$1 trillion from 2017 to 2021**. Global spending on cybersecurity products and services are predicted to exceed \$1 trillion over five years, from 2017 to 2021.
- **Cyber crime will more than triple the number of unfilled cybersecurity jobs**, which is predicted to reach 3.5 million by 2021. The cybersecurity workforce shortage is even worse than what the jobs numbers suggest. As a result, the cybersecurity unemployment rate has dropped to zero percent.
- **Human attack surface to reach 6 billion people by 2022**. As the world goes digital, humans have moved ahead of machines as the top target for cyber criminals. Cybersecurity Ventures predicts there will be 6 billion internet users by 2022 and more than 7.5 billion internet users by 2025. The hackers smell blood now, not silicon.
- **Global ransomware damage costs exceeded \$5 billion in 2017**. That's up from \$325 million in 2015 — a 15X increase in two years and expected to worsen.



# Cyber Security

Atlantic Council and the Zurich Insurance group estimates that cyberattacks could cost up to \$90 trillion by 2030 if cybersecurity fails to advance at a rapid pace.

The worldwide cybersecurity market is defined by market sizing estimates that range from \$75 billion in 2015 to \$170 billion by 2020. (CyberSecurity Ventures)

Cyber attacks costing businesses \$400 billion to \$500 billion + a year. (Lloyds of London)

**\$20 B**  
**2012**

**\$60B**  
**2014**

**\$95B**  
**2016**

**\$173B**  
**2020**

**\$220B +**  
**2024**

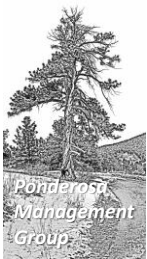
Cybersecurity workforce shortage to reach 3.8 million by 2020. (Michael Brown, CEO Symantec)

“...up to 80% of breaches may originate in the supply chain...” (SANS)

FY 2019 President’s Budget includes \$15 billion of budget authority for cybersecurity-related activities, a \$583.4 million (4.1 percent) increase above the FY 2018 Estimate.

U.S. Federal Government has spent \$100 billion on cybersecurity over the past decade.

Global spending on “cybersecurity” products and services, including “information security” will exceed **\$1 trillion cumulatively from 2017 to 2021** — and will grow by 12 to 15 percent year over year — according to a report from Cybersecurity Ventures.

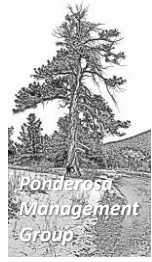


GLOBAL CYBERSECURITY EQUITY FUNDING SINCE 2013:

\$21 BILLION

ACROSS

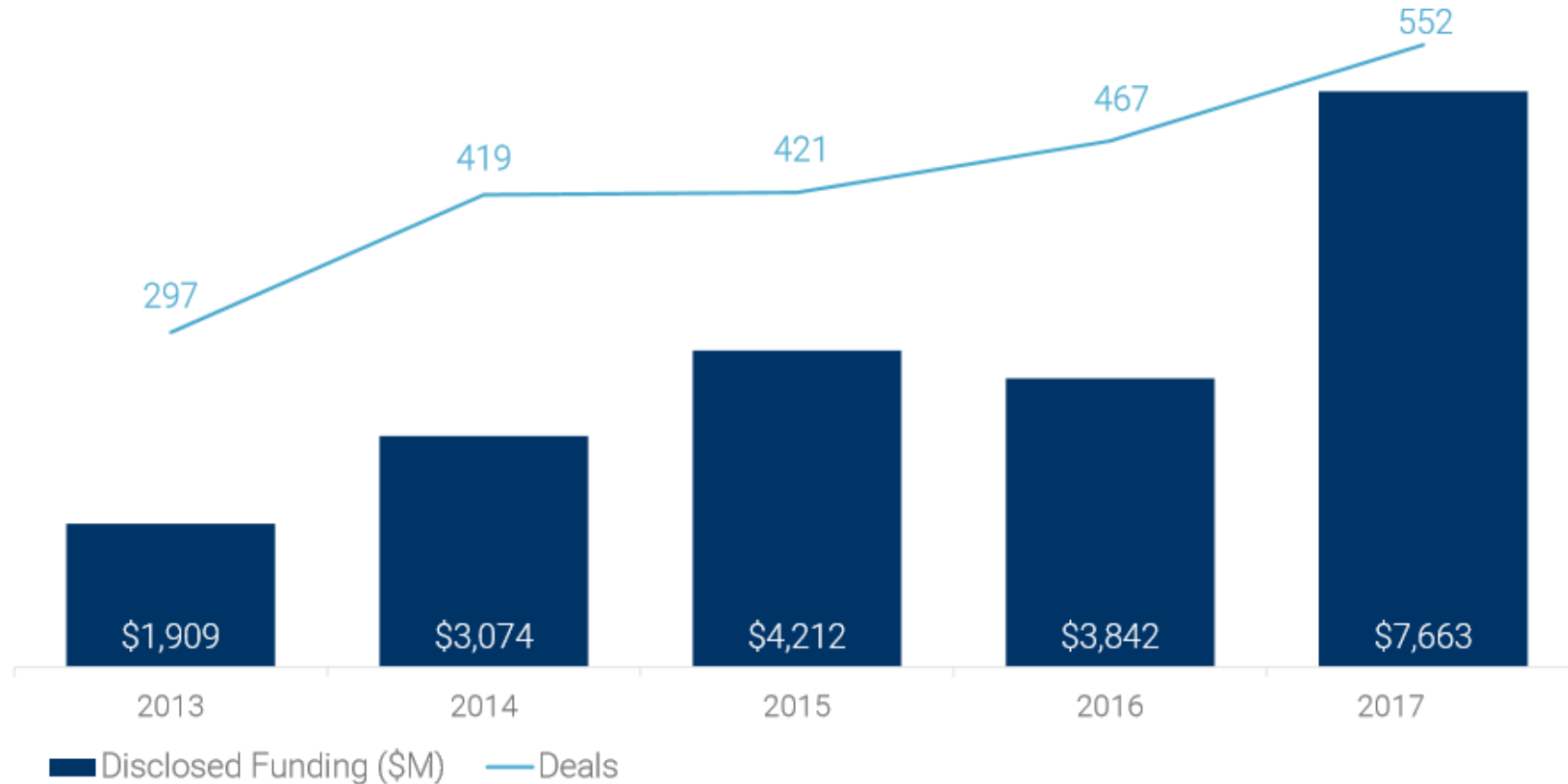
2,100 DEALS

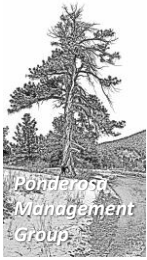


## DEALS AND FUNDING BEAT FORECASTS

# 2017 was a record year for cybersecurity

Annual global deals and financing 2013 – 2017

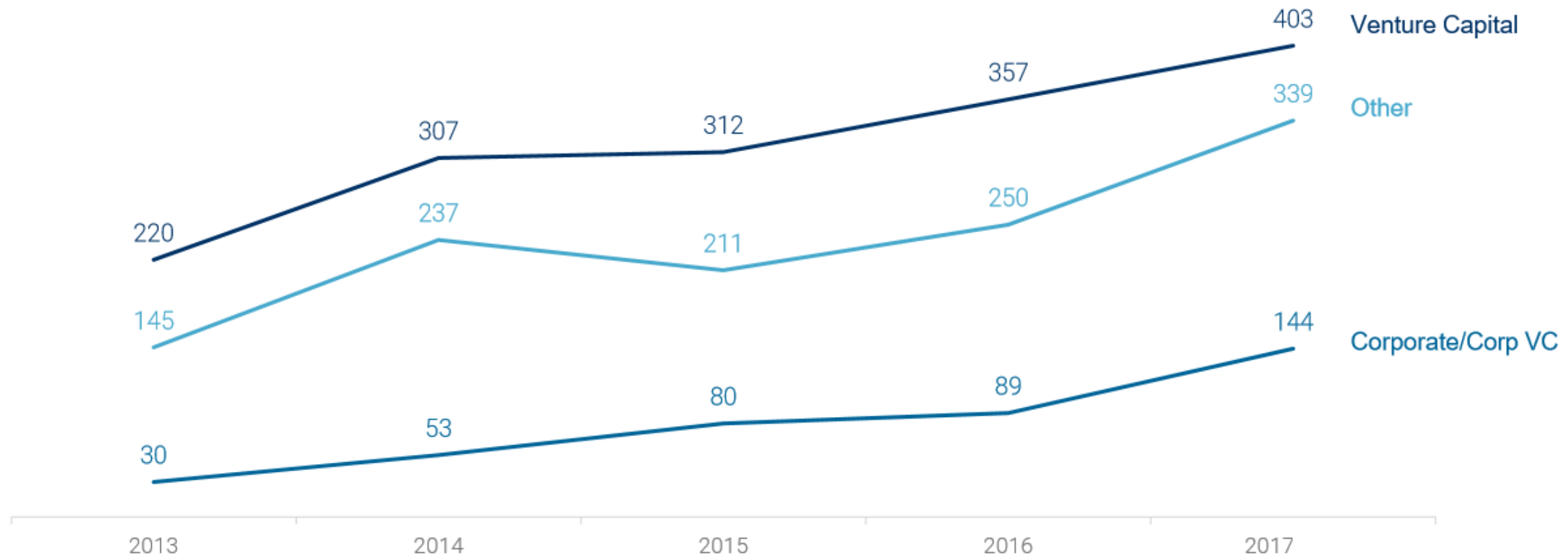


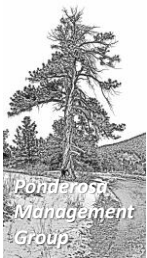


MORE INVESTORS ARE FLOCKING TO CYBERSECURITY THAN EVER BEFORE

# 2017 was a record year for unique investors

Annual number of 1<sup>st</sup> time investors in cybersecurity 2013 - 2017

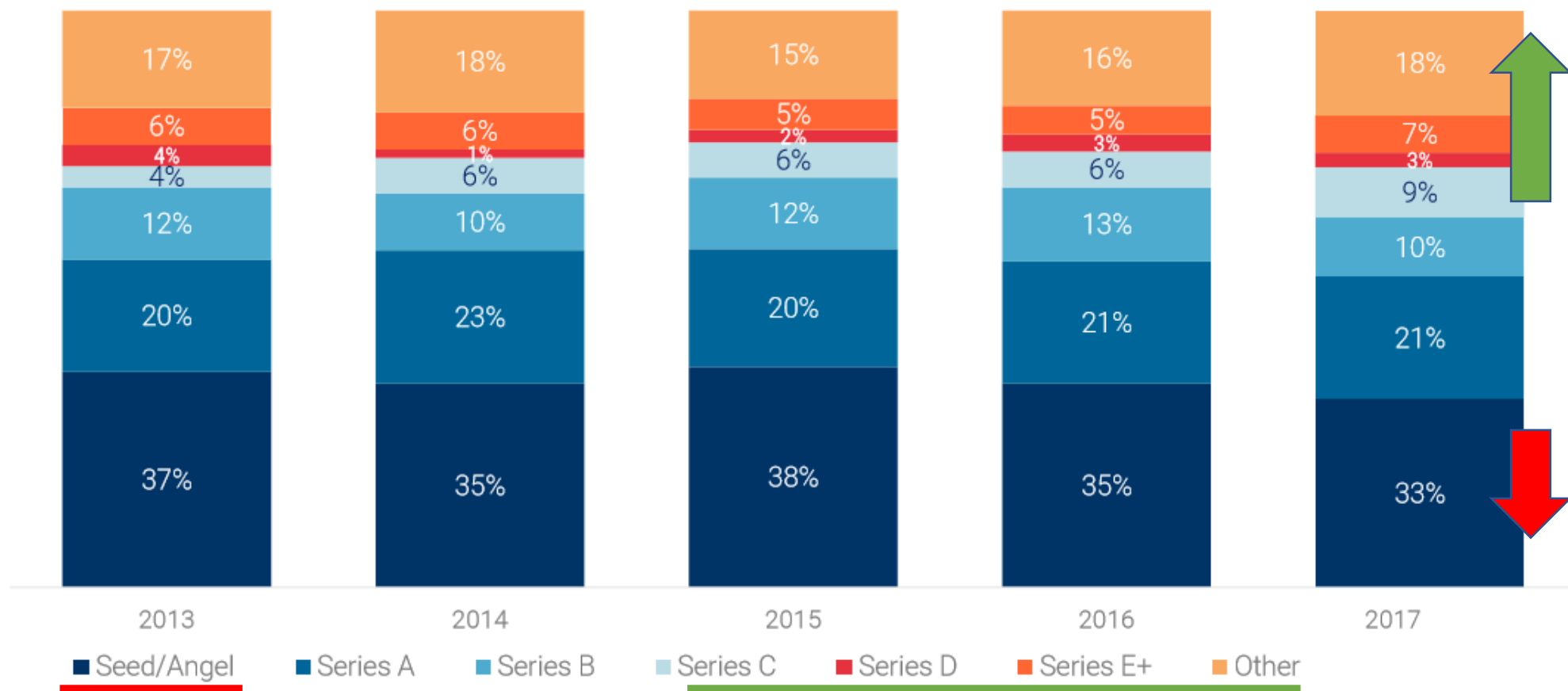


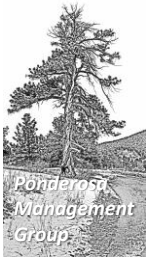


## INVESTORS SHOW RISING INTEREST IN GROWTH STAGE ROUNDS IN 2017

# Early-stage (Seed – Series A) deals fell to a 5-year low

Annual deal share by stage to private cybersecurity companies 2013 - 2017

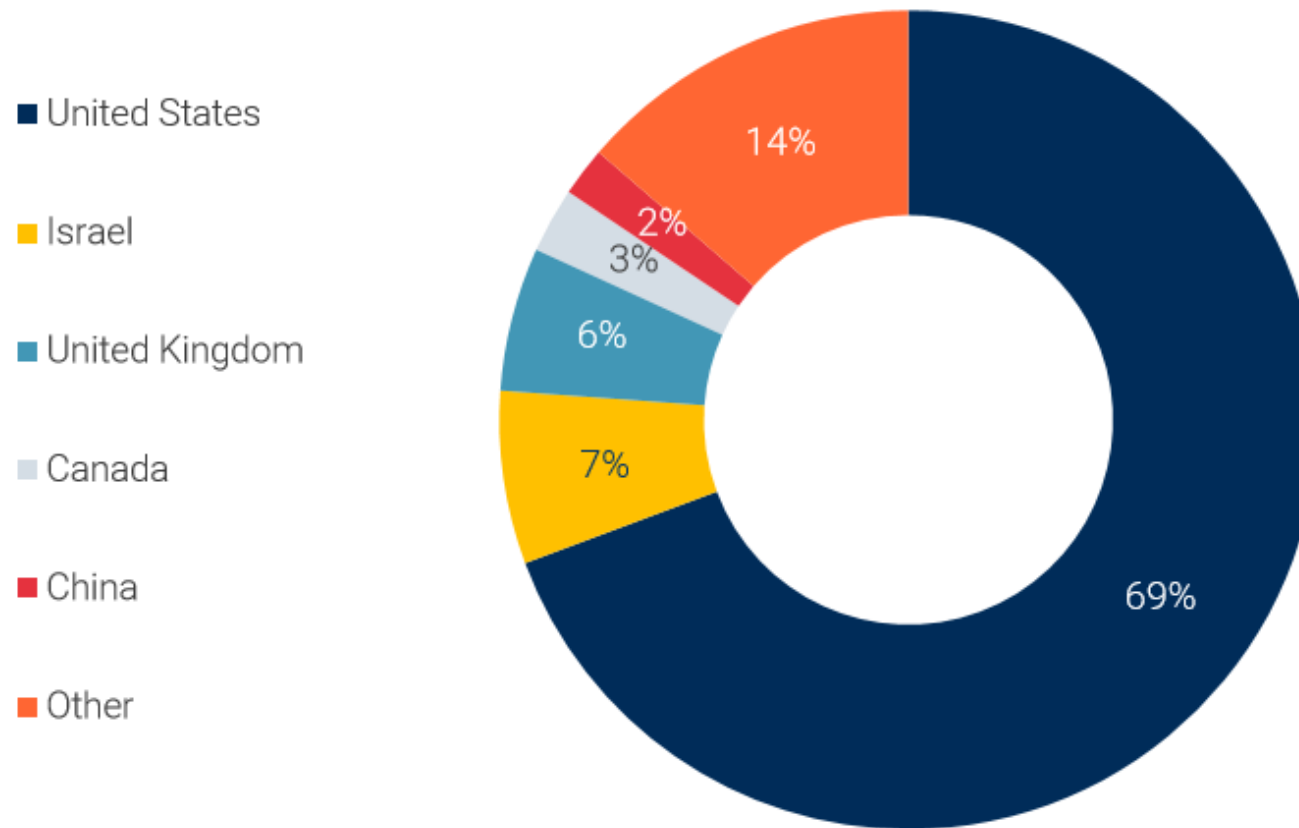




ISRAEL OFFICIALLY HAS THE 2<sup>ND</sup> MOST CYBERSECURITY DEALS GLOBALLY

# Well behind the US, Israel now tops the UK

Cybersecurity global deal share by country 2013 - 2017

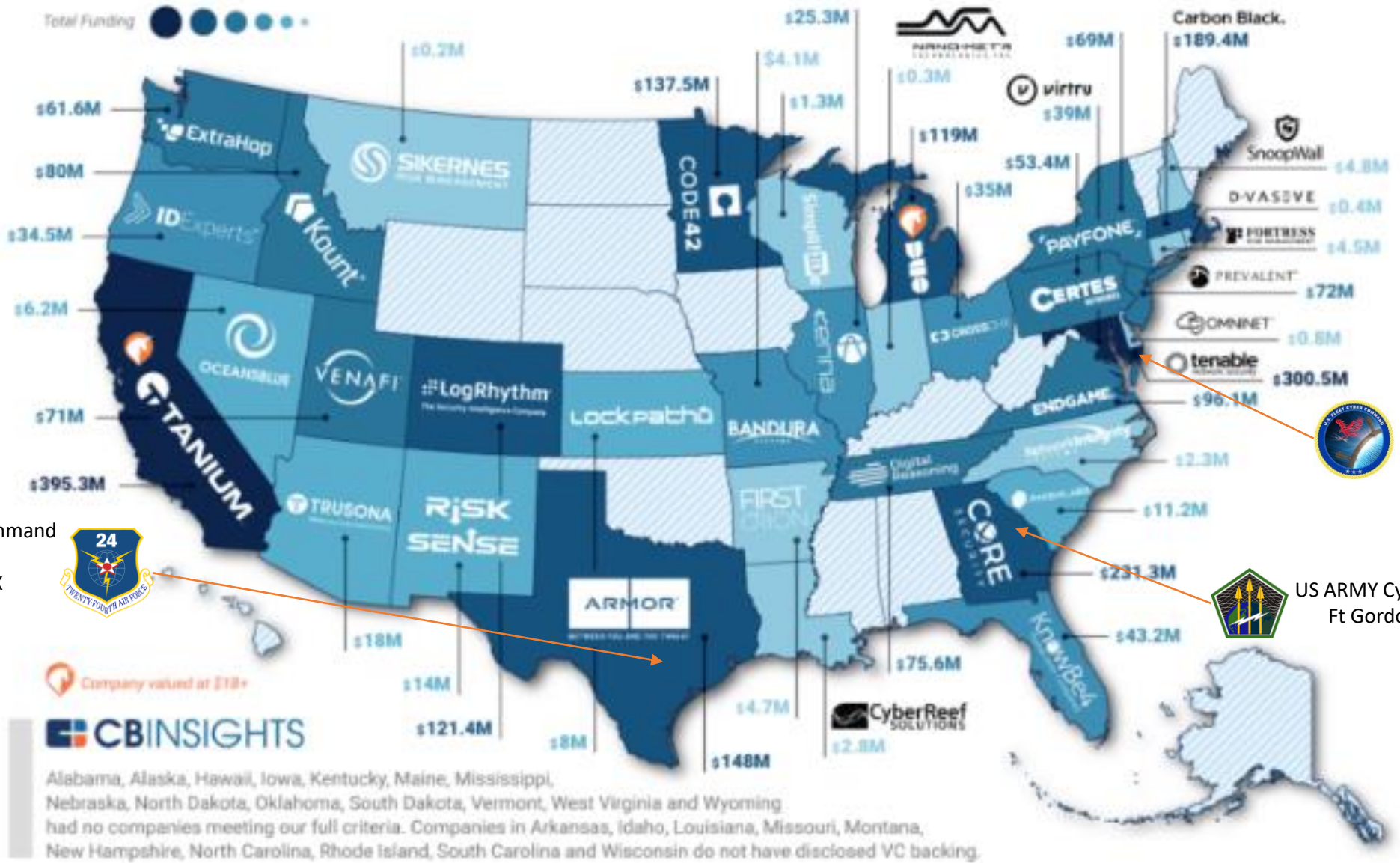






# UNITED STATES OF CYBERSECURITY STARTUPS

Most well-funded cybersecurity co. in each US state (as of Feb 2, 2018)



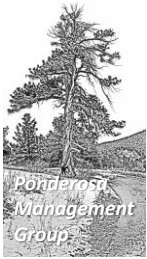
US Air Force Cyber Command  
HQ 24<sup>th</sup> AF  
Lackland, AFB, TX



US Fleet Cyber Command  
Ft Meade MD – new HQ  
USNA Annapolis MD

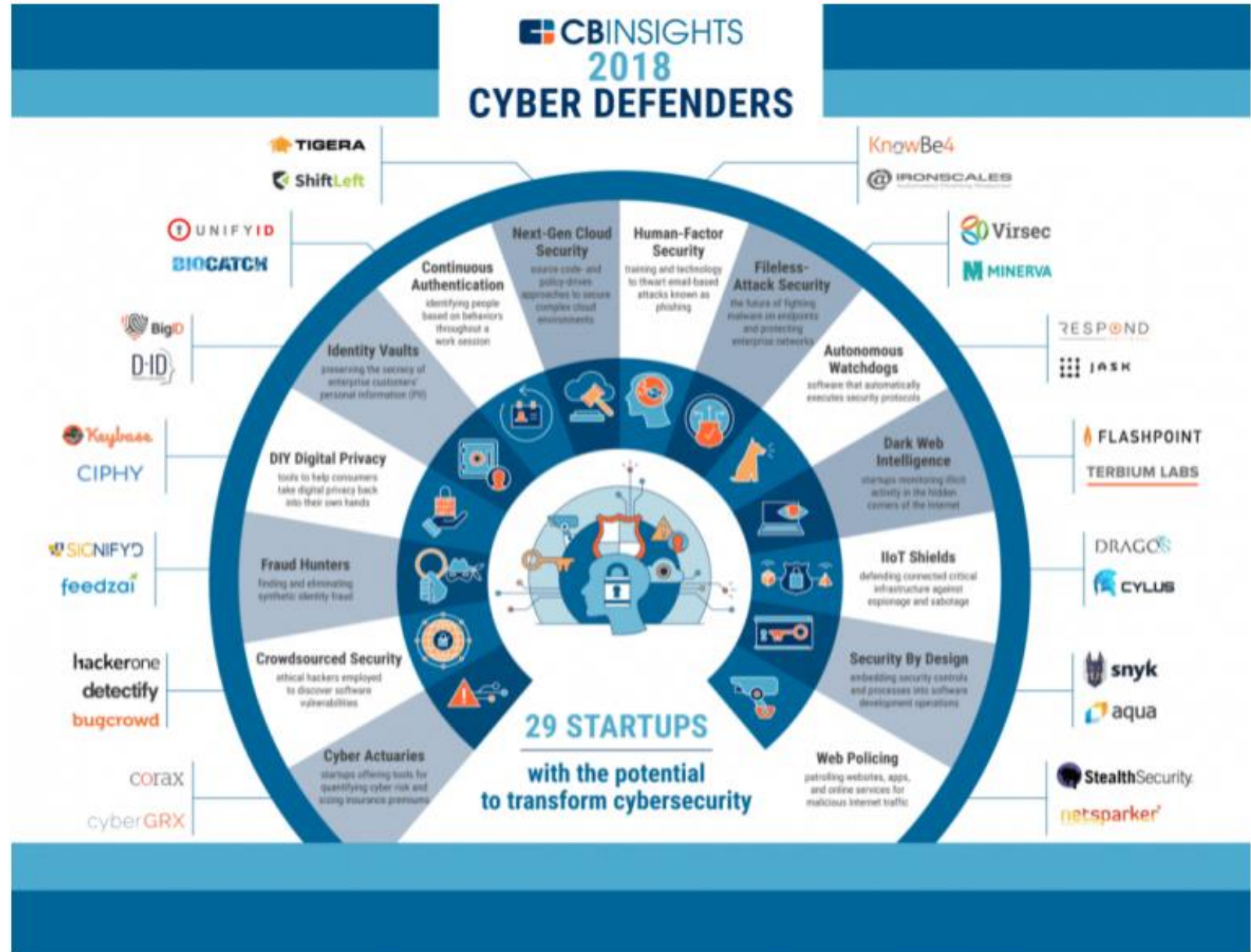


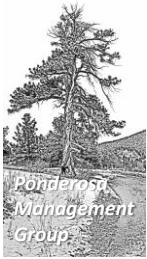
US ARMY Cyber Command  
Ft Gordon, Georgia



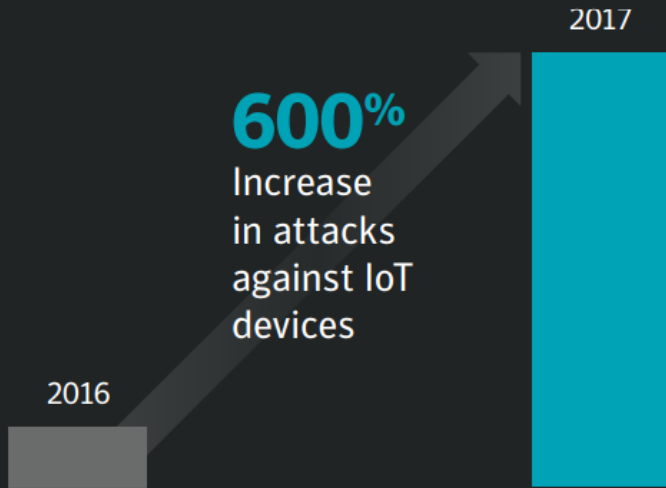
The cybersecurity sector is gaining momentum: in 2017, cybersecurity startups

- [raised a record \\$7.7B](#)
- across 552 deals
- including a record of 10 \$100M+ mega-deals.

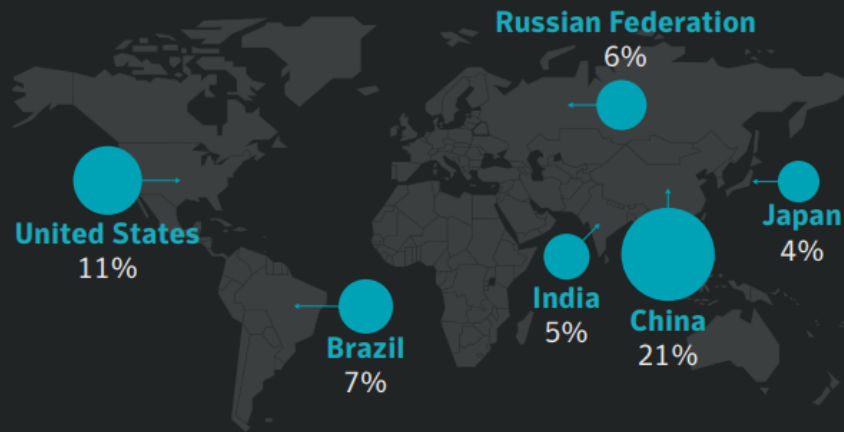




# IoT



## Attack Origin



	2018	2017	2016
1	IoT security	IoT security	The Internet of Things
2	GDPR	Security automation & orchestration	CxO issues
3	Cloud security	Malware & bad actor evolution	Politically motivated cyber-attacks
4	Cryptocurrency & blockchain	Ransomware evolution & escalation	Mobile security
5	Cyber-extortion & ransomware	Nation-state attacks	Cloud security
6	AI/ML and emerging security technologies	Cloud security	New cyber-attack vectors & targets
7	Nation-state cyber-activity	Regulation, governance & cyber-insurance	Ransomware & extortion
8	Scale & targeting of cyber-attacks	Mobile security	Security, privacy, law enforcement & cyber-insurance
9	Authentication & ID management	Industrial IoT & critical infrastructure	Malware evolution
10	CxO & business culture issues	Social engineering	Frequency and scale of cyber-attacks

## IOT/ IIOT CYBERSECURITY MARKET MAP

### CRITICAL INFRASTRUCTURE

- CyberX
- sparkcognition
- TEMPERED
- Indegy
- BAYSHORE
- IGNIC SECURITY
- EagleEye
- mPrest
- sentryo
- Bastille
- PFP
- PingThings
- NEXOPENSE
- SECURE RF
- SCADAfence
- NOZOMI
- THETARAY
- SENRIO
- CAMGIAN

### MOBILE PHONES

- okta
- wickr
- Lookout
- silent circle
- avast!
- ZIMPERIUM
- Skycure
- appthority
- AppDome
- TRUSTLOOK
- OPEN PEAK
- WOTUS

### CONNECTED DEVICES

- Auth0
- netskope
- mojo
- SECURITY AUTHORITY
- SECURITY INNOVATION
- BATBLUE
- MOCANA
- Rubicon
- ZingBox
- STEEL MOUNTAIN
- ihiji
- IMUBIT
- SECURITHINGS
- ICOM LABS
- MediCrypt
- BEAR Systems
- ZITOVault
- Itaru/Secure
- DELTA ID

### ENTERPRISE ENDPOINTS

- LogRhythm
- CYLANCE
- CROWDSTRIKE
- BUO SECURITY
- ForeScout
- CARBON BLACK
- Workspot
- Centrify
- CounterTack
- TANIUM
- SentinelOne
- CODE42
- Bromium
- bitglass
- Avecto
- INTERSET
- canary
- MORPHISEC
- nexthink
- LIGHTCYBER
- DIGITAL GUARDIAN

### CONNECTED CARS

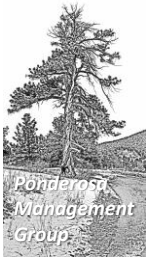
- Trillium
- ARGUS
- Karamba Security
- bamos
- VisualThreat

## FIVE SECTORS IN IOT/ IIOT CYBERSECURITY

We used the CB Insights database to identify 70+ private companies at the intersection of cybersecurity and connected hardware

There's been a big uptick in early-stage companies in this market in recent years. In fact, over half (56%) of the companies in our map received Seed/Angel financing in the last three years





Every [40 seconds](#) a business falls victim to a ransomware attack. Cybersecurity Ventures predicts that will rise to every 14 seconds ransomware damage costs will rise to \$11.5 billion by 2019. The FBI estimates that the total amount of [ransom payments](#) is approaching \$1 billion annually.

# Ransomware

**5.4B**  
WannaCry  
attacks blocked

**46%**  
Increase in new  
ransomware  
variants



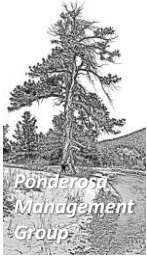
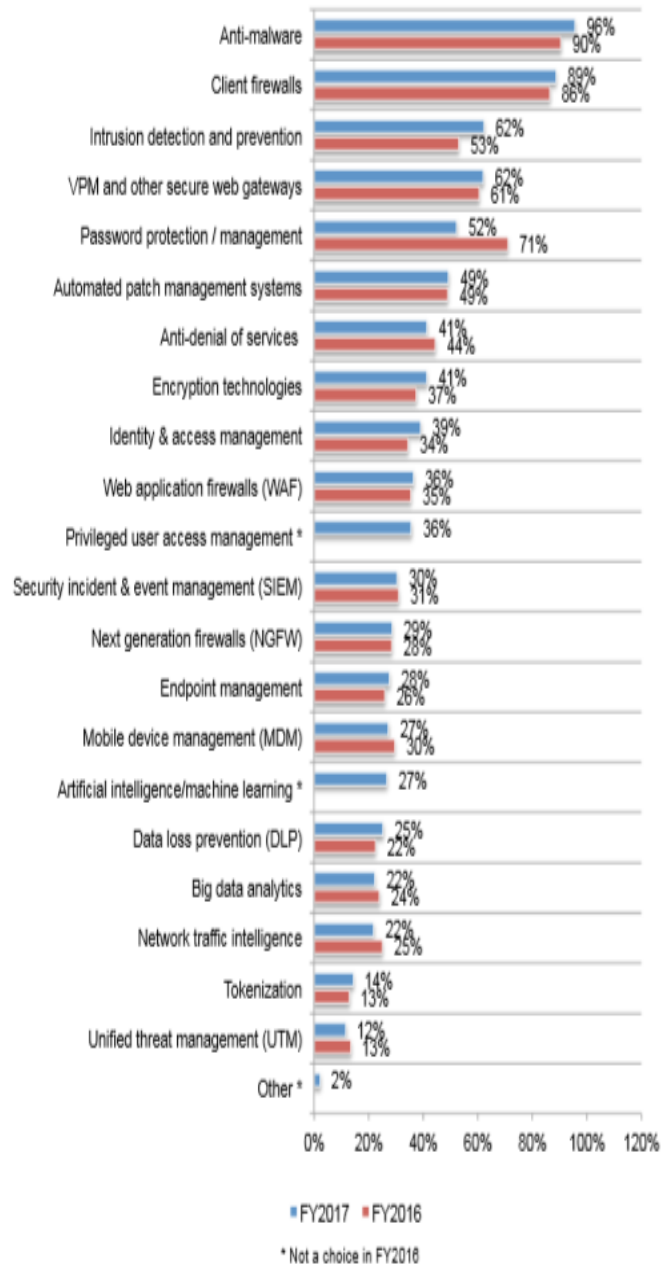


Figure 21. Security technologies considered essential and very important

More than one choice allowed



\* Not a choice in FY2016

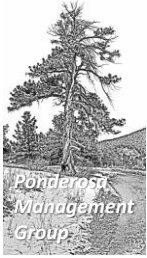
## What is the fastest growing cyberthreat? 80% say supply chain attacks

CrowdStrike found that two-thirds of respondents experienced a supply chain attack within the last year.

By [Laurel Deppen](#) | July 23, 2018, 7:26 AM PST

- 200% increase in 2017 supply chain attacks
- Targeted cyberattacks increased by 10%
- 90% of the attacks purely for intelligence-gathering, including spying, information-stealing, and surveillance
- Most of the attacks were nation-state sponsored groups.
- 10% of targeted attack groups wage disruptive attacks on their victims. 9% for financial gain,
- spear phishing is the main initial attack vector (71%) in all targeted attacks.

Dark Reading March 2018



# Managed Service Providers (MSP/MSSP)

- Global managed services market will grow from **\$107.17 billion in 2014 to \$193.34 billion by 2019** (CAGR) of 12.5%

Markets and Markets

Figure 1. Magic Quadrant for Managed Security Services, Worldwide



Source: Gartner (February 2018)

- **Small business:** IT service providers remotely monitor and manage customer networks, while increasingly shifting some customer workloads to third-party cloud providers like Amazon, Microsoft Azure and IBM.
- **Midmarket and Enterprise:** Here, MSPs typically work side-by-side with corporate IT departments, augmenting internal IT with a range of proactive, remote services.
- **Telcos and Cloud Services Providers:** Industry giants like Amazon, Microsoft, Rackspace and a range of telcos are integrating managed services into their cloud and hosted services.
- **Global Systems Integrators and IT Consulting Firms:** Accenture, Atos and CSC offer a range enterprise-class managed services. Even hardware giants like Dell Technologies, HP Enterprise and IBM also compete in that sector.

CHANNEL e2e Research

- North America (NA) is expected to be the largest MSP in terms of revenues generated
- Asia-Pacific (APAC) is expected to emerge as a high-growth market

# CYBERSECURITY MARKET MAP

## IOT/ IIOT SECURITY



## MOBILE SECURITY



## CLOUD SECURITY



## THREAT INTELLIGENCE



## BEHAVIORAL DETECTION



## DECEPTION SECURITY



## RISK REMEDIATION



## NETWORK & ENDPOINT SECURITY



## CONTINUOUS NETWORK VISIBILITY



## QUANTUM ENCRYPTION



## WEBSITE SECURITY



The over-hyped **cybersecurity industry** needs to **evolve and consolidate**, which will mean **failed startups and business models**.

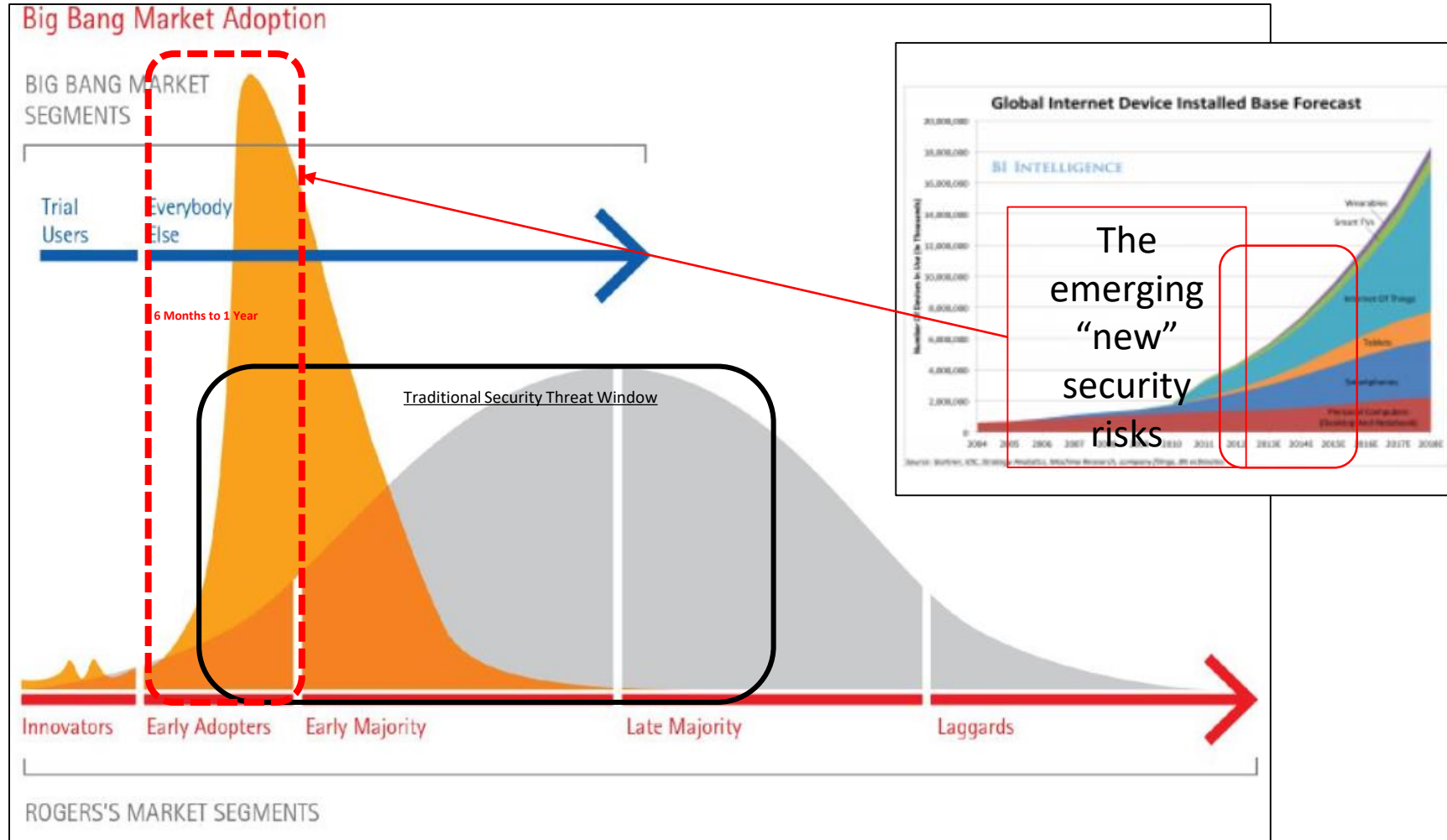
“It’s definitely overfunded, massively so,” said Ravi Viswanathan of VC firm New Enterprise Associates, speaking on a panel at [CB Insights’ Future of Fintech Conference](#) (Mar 2018)

“We need a few years for it to settle out but we’re probably going to see a lot of deaths in that space.”

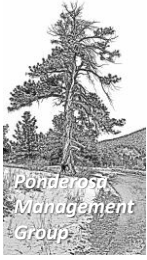
However, Viswanathan noted that on the flip-side this is an industry where **acquisitions are common**, and so there’s opportunities for good exits for successful companies



# Changing Security Threat Response Window – Time to Market



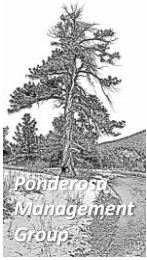




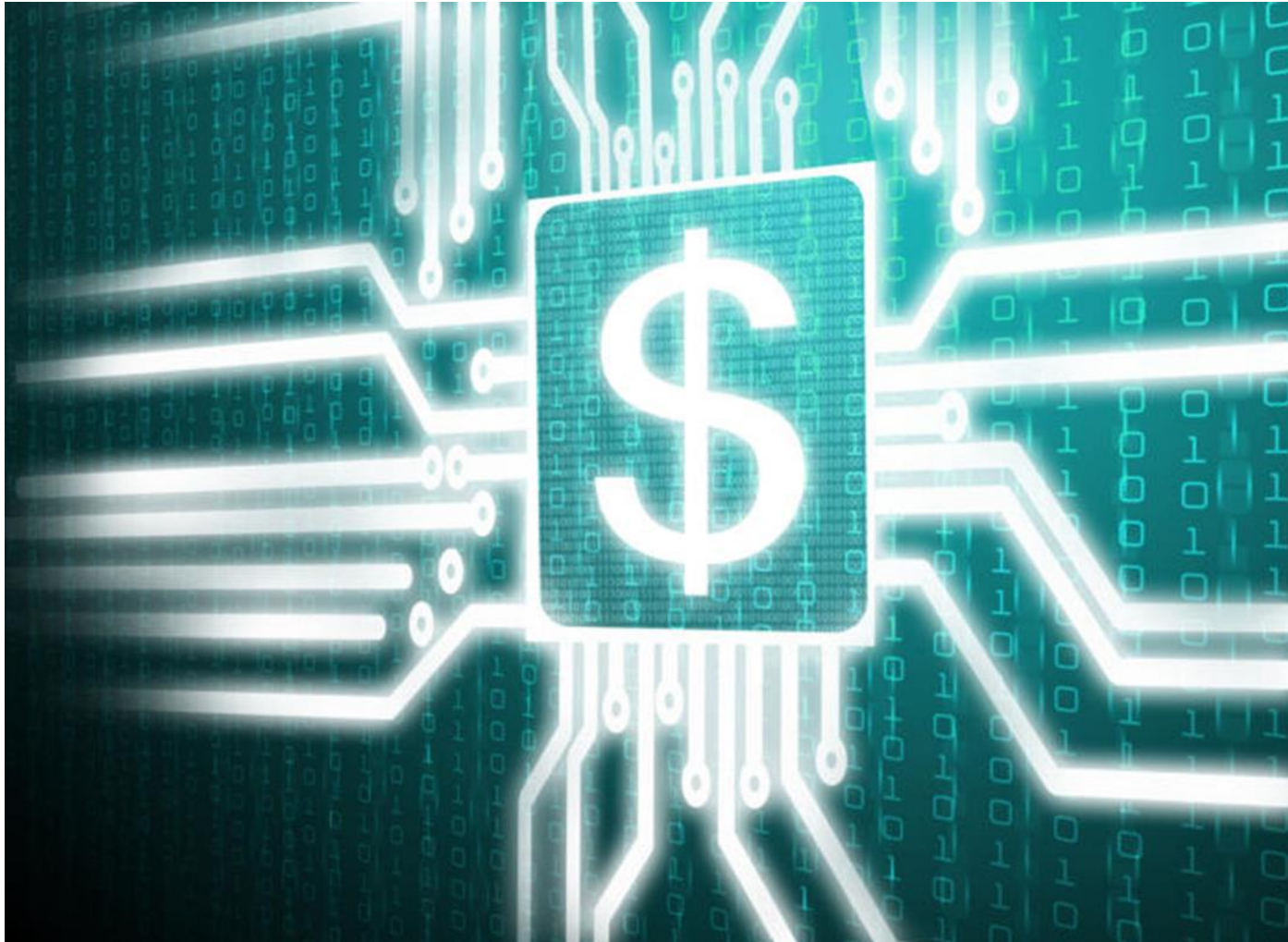
## What does it all mean?

In 2015, Ginni Rometty, IBM's chairman, president and CEO, said, "Cyber crime is the greatest threat to every company in the world."

Billionaire businessman Warren Buffet takes it a step further and says that cyber attacks are the number one problem with mankind, even worse than nuclear weapons.



... *“If there’s a recession-proof idea that’s not cyclical, it’s cybersecurity ...”*



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