

Telemedicine and Technical Risk Management

Peter House

2019 NRTRC Conference

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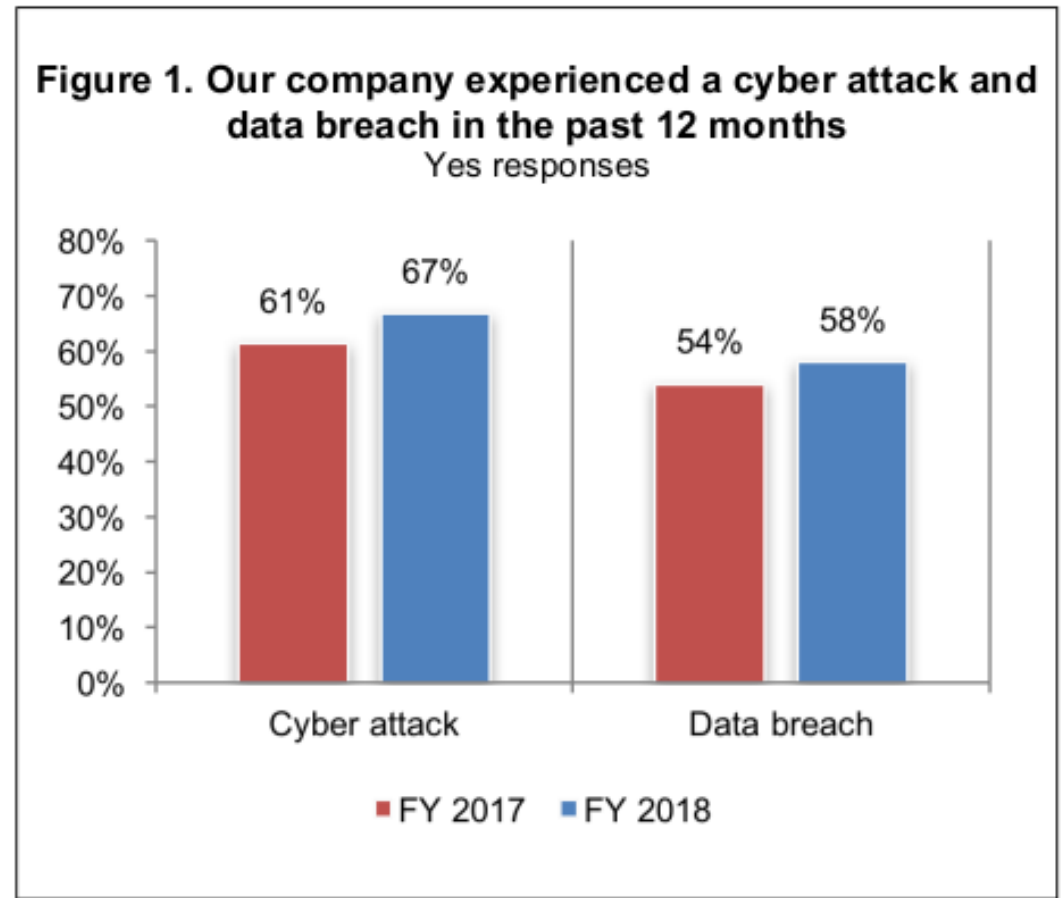
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About Me

- Working in technology for 20 years
- Working in risk management for 11 years
- Holds numerous industry certifications :
 - CompTIA Advanced Security Practitioner
 - CompTIA Cybersecurity Analyst
 - Information Technology Infrastructure Library (ITIL) v3
 - TOGAF 9.0 Enterprise Architecture
 - And so on, and so forth...

Current State of Cyber

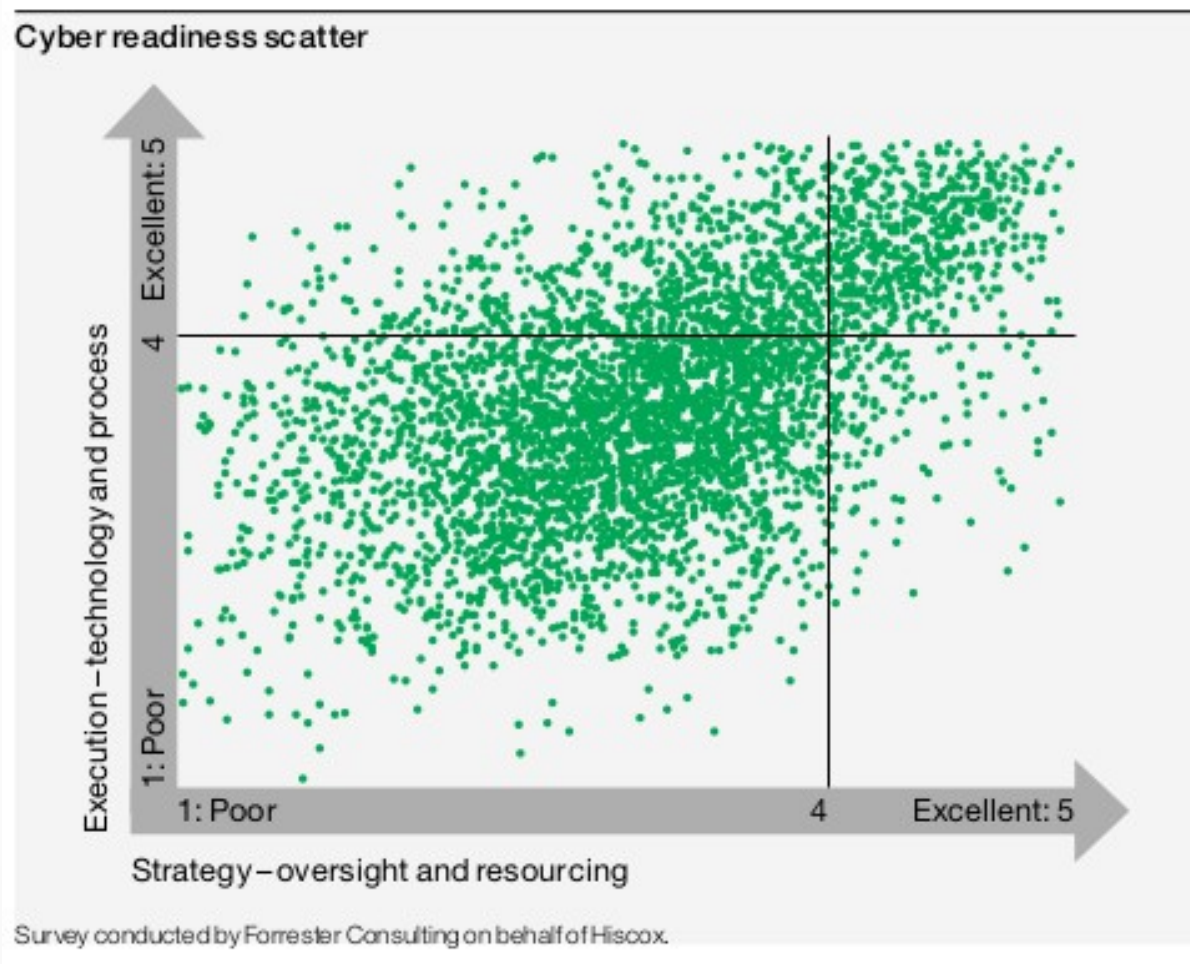
- Phishing attacks increased by 4% to 52%
- Advanced malware attacks increased by 8% to 24%
- Employee/contractor negligence increased as a root cause by 3% to 61%



**Source : 2018 State of Cybersecurity in Small & Medium Sized Businesses - Ponemon Institute, November 2018*

Level of Preparation

70% of organizations are considered to be cyber novices



**Source : 2018 Hiscox Cyber Readiness Report - Hiscox Ltd*

The Ground Floor



The Internet is a Public Place

5,076

TOP COUNTRIES



United States 5,076

TOP CITIES

| | |
|-------------|----|
| San Jose | 52 |
| Seattle | 28 |
| Houston | 20 |
| Minneapolis | 19 |
| Portland | 17 |

TOP SERVICES



Spectrum

Added on 2019-08-26 18:18:20 GMT

 United States, Torrance

HTTP/1.1 200 OK

Server: Netwave IP Camera

Date: Mon, 26 Aug 2019 18:19:20 GMT

Content-Type: text/html

Content-Length: 2574


Cache-Control: private

Connection: close



AT&T U-verse

Added on 2019-08-26 18:22:06 GMT

 United States, Aliso Viejo

HTTP/1.1 200 OK

Server: Netwave IP Camera

Date: Mon, 26 Aug 2019 18:22:06 GMT

Content-Type: text/html

Content-Length: 2574

Cache-Control: private

Connection: close

15 Years and Counting...

“Nobody is trying.”

“Nobody is trying,” said Sarah Zatkan, the Chief Scientist at the **Cyber Independent Testing Lab (CITL)**, a non-profit organization that conducts independent tests of software security. “We found no consistency in a vendor or product line doing better or showing improvement. There was no evidence that anybody is making a concerted effort to address the safety hygiene of their products,” she said.

Zatkan presented the findings of CITL’s extensive study in Las Vegas on Friday on the sidelines of the Black Hat and DEF CON conferences at an event hosted by **The Hewlett Foundation**. CITL was started by Sarah and her husband Peiter (aka “Mudge”) Zatkan. It bills itself as a kind of “Consumer Reports” for cyber security, partnering with that organization as well as The Ford Foundation, The Digital Standard and online payments firm Stripe.



Sarah Zatkan is the Chief Scientist at CITL

The CITL study surveyed firmware from 18 vendors including ASUS, D-link, Linksys, NETGEAR, Ubiquiti and others. In all, more than 6,000 firmware versions were analyzed, totaling close to 3 million binaries created from 2003 to 2018. It is the first longitudinal study of IoT software safety, according to Zatkan.

CITL researchers studied publicly available firmware images and evaluated them for the presence of standard security features such as the use of non-executable stacks, Address Space Layout Randomization (ASLR) and stack guards, which prevent buffer overflow attacks.

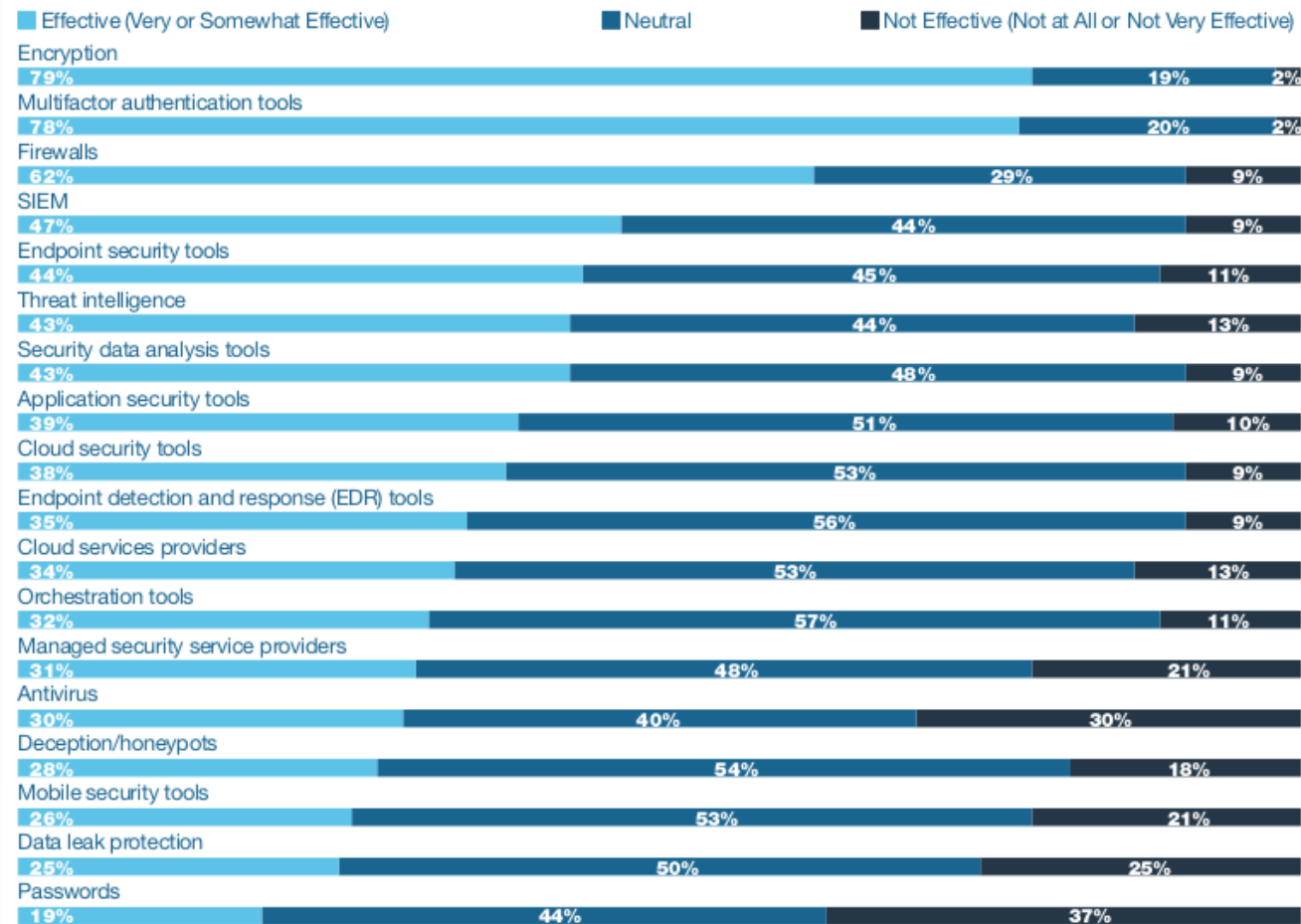
Virtual Care Risk

- Site to site connections
 - Home
 - Organizational
 - Mobile
- No visibility on « **cyber hygiene** »
- Potential entry point into a larger network

Cost Optimization

Effectiveness of Technologies in Protecting Data

Please rate the effectiveness of the following technologies in protecting enterprise data.



Base: 315 respondents in 2018; not asked in 2017

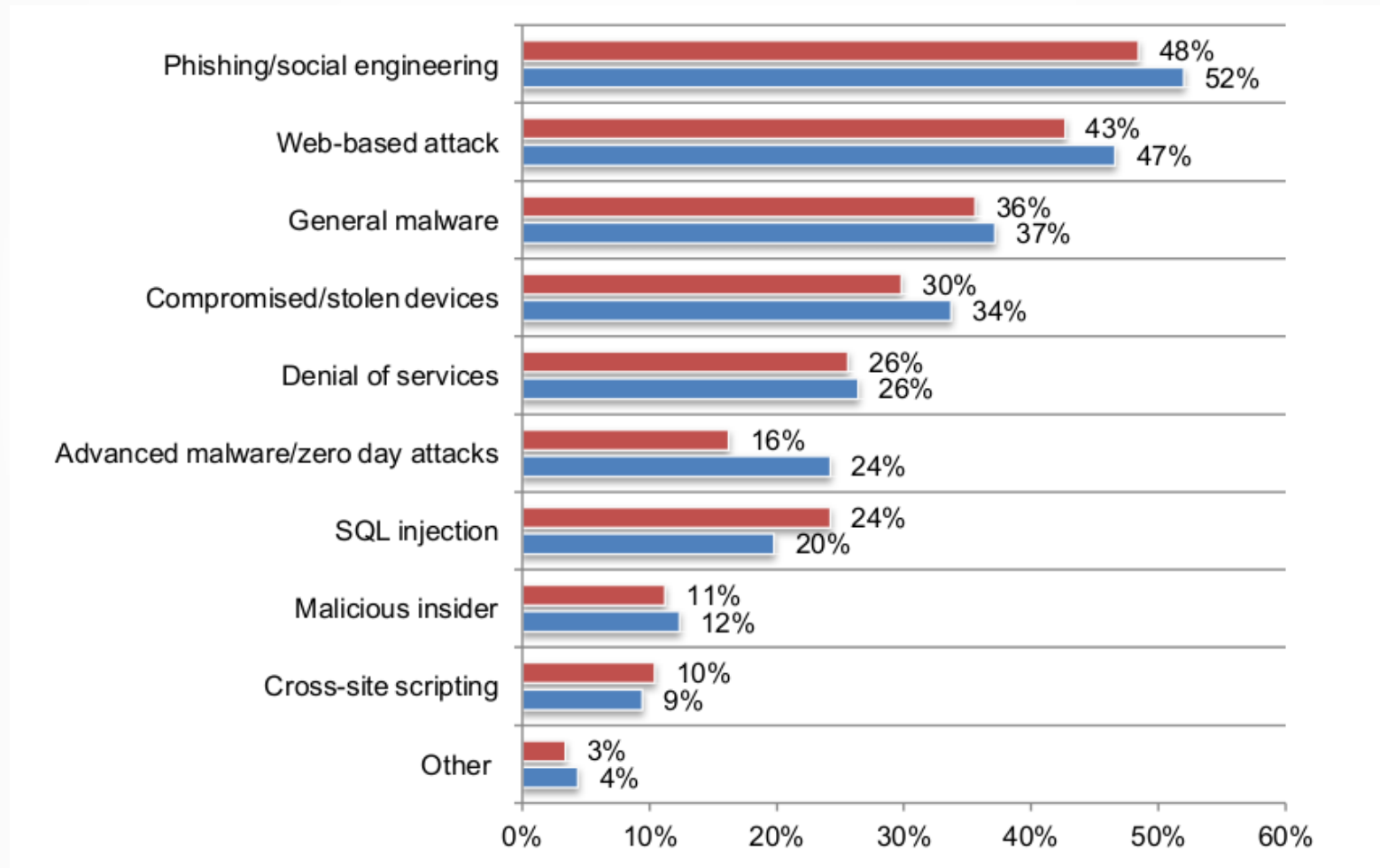
Data: UBM survey of security professionals, May 2018

*Source : BlackHat 2018 - Where Cybersecurity Stands 2018

Protecting Virtual Care Devices

- Invest in encryption
- Think beyond the standards
 - Network security monitoring and logging
 - Multi-factor authentication
- Segregate as much as possible
- Train and hold accountable staff and contractors

Humans: Complex Yet Simple



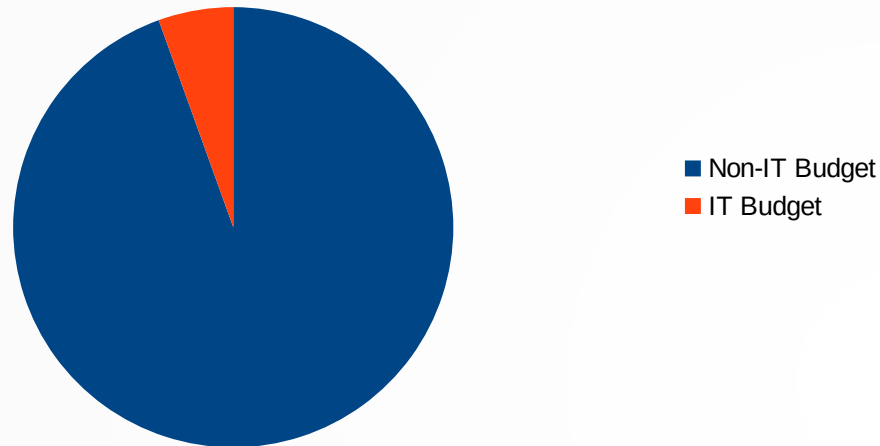
*Source : 2018 Hiscox Cyber Readiness Report - Hiscox Ltd

Strongly Consider

- General training and ongoing awareness programs :
 - Phishing
 - Social Engineering
- Specialized training IT staff or specialized IT vendors
- Developing a culture of respect (not fear) for cyber

Budget Considerations

IT as Percentage of Total Operating



- A healthy organization has an IT budget of approximately 5.5% of total operating*.
- Mature IT programs spend around 12.5% on cyber, in contrast to immature organizations at 10%**.
- Quick math :
 - .006875 % of total operating
 - 10 million operating budget means
 - \$550,000 on IT
 - \$68,750 on cyber

• *Gartner Press Release : Gartner Says Many Organizations Falsely Equate IT Security Spending With Maturity

• ** 2018 Hiscox Cyber Readiness Report - Hiscox Ltd

Regarding Insurance

- Complete applications accurately
- Gather backing for answers to application questions
- Exhibit due care over the life of the premium

Take Care, Take Care, Take Care

- Establish responsibility
- Require regular reporting
- Develop or enhance the culture of due care
 - Start with leadership
 - Start simply
 - Leverage gamification

We Don't Drive Tanks to Work

- Am I a target of opportunity or of intent?
- What are the consequences of a breach?
- What is the cost of downtime and recovery?
- What risk can I ... ?
 - Transfer
 - Mitigate
 - Accept

The Road Ahead

- 30 Days:

- Request and review reports on cyber-readiness
- Interview key staff/stakeholders on what keeps them up at night
- Review current cyberinsurance premium/options
- Initiate culture shift

- 6 months :

- Implement key missing risk mitigating technologies
- Establish reporting and responsibility structure and cadence
- Initiate training program
- Develop cyber protection strategy with key staff/stakeholders

- 1 year :

- Review program success
- Revise budget to meet best practices/your specific needs

THANK YOU