

Cybersecurity

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Speaker's Science Forum

Aotearoa New Zealand

Human-Centred Cyber Security


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THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

Agenda

- Phishing
- The global scale of the problem
- Why this is so hard to counter
- Our approach: human-centred cyber security

From: GlobalPay <VT@globalpay.com> 
Subject: Restore your account
Date: February 7, 2014 3:47:02 AM MST
To: David

1 Attachment, 7 KB

Save ▼

Dear customer,

We regret to inform you that your account has been restricted.

To continue using our services please download the file attached to this e-mail and update your login information.

© GlobalPaymentsInc



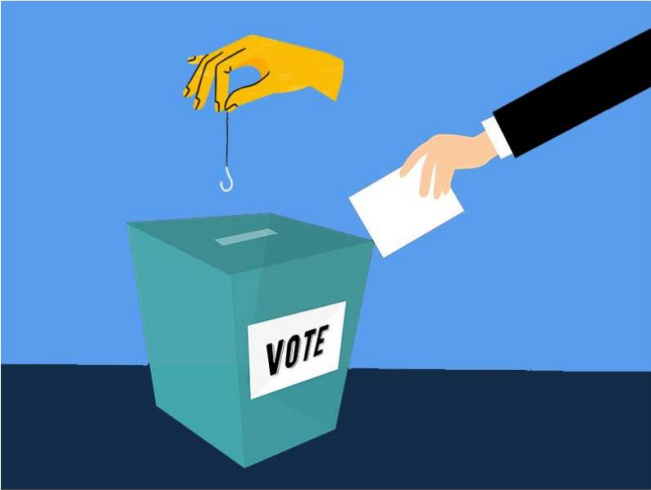
[update2816.html \(7 KB\)](#)

What is phishing

- Social engineering
- Through email
- Lures victims to perform an action
 - provide information
 - downloads
 - click links

Spear Phishing: The Greatest Threat to Democracy

by Brad | Jul 30, 2019 | Phishing



NEWS

From Burisma to Democratic candidates, phishing emails remain security threat

From Burisma to Democratic candidates, phishing emails remain security threat

Email-based cyberattacks remains a tried-and-true way for hackers to try to obtain access to computer systems and files.

Jan. 16, 2020, 9:08 AM NZDT
By David Ingram

Cracking computer systems is hard. Cracking people? Not as hard.

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The Observer
Cybercrime



Sirin Kale
Sun 1 Aug 2021 10:00 BST



It's quite feasible to start a war': just how dangerous are ransomware hackers?



Cybercrime - Source: Photo: Kristian Depoot/Photo 12

CRIME POLITICS TERRORISM CYBERCRIME
NATIONAL COUNTER-TERRORISM AND SECURITY COORDINATOR RANSOMWARE + MORE TAGS
MONDAY, JUNE 28, 2021 - 17:01

Ransomware a threat to national security, says Dutch counterterrorism office

Ransomware attacks have the capacity to destabilize the Netherlands and is a threat to national security, the National Coordinator for Security and Counterterrorism (NCTV) said in its annual report on cybersecurity, released on Monday. It is the first time the office has categorized the cyber crime as endangering national

NEW ZEALAND / TECHNOLOGY

Waikato DHB cyber attack: Hospital goes retro with IT systems still down

6:22 pm on 19 May 2021

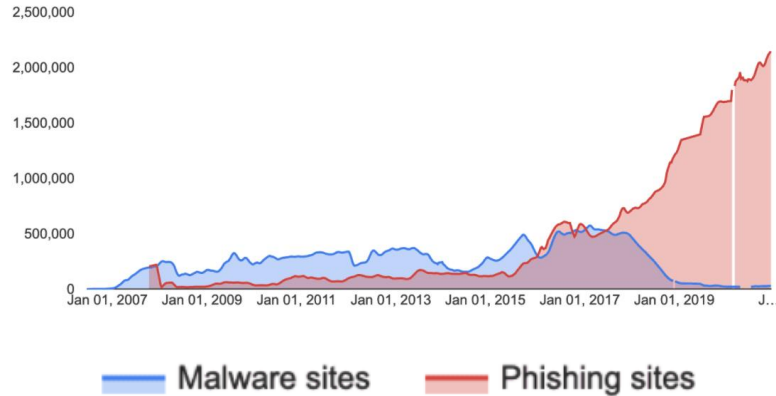
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The entire public health system is on high alert tonight after the cyber attack that crashed the Waikato District Health Board's computers and phones.



Growth is exponential



Phishing cost US \$20b in 2021

Expected to cost US \$260b p.a. in 2031

Bloomberg



Photographer: Samuel Cor

Cybersecurity

Hackers Breached Colonial Pipeline Using Compromised Password

By [William Turton](#) and [Kartikay Mehrotra](#)

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◆ WSJ NEWS EXCLUSIVE | [BUSINESS](#)

JBS Paid \$11 Million to Resolve Ransomware Attack

Meat supplier's U.S. chief says firm paid cybercriminals in bitcoin to avoid more disruptions

By [Jacob Bunge](#)

Updated June 9, 2021 8:27 pm ET

Why is phishing still a problem?

We have technical solutions

- Protect against hackers but don't apply to phishing
 - Encryption
 - Access Control
- Prevention
 - Filtering emails and links
 - Detecting intelligence gathering
- Real-time monitoring
 - Analysing processes for unusual activity
 - Anomaly detection

Cyber training mostly unsuccessful in preventing phishing – study

by [Gabriel Olano](#)
17 Jul 2021

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Traditional cyber defences are apparently not enough to prevent cyberattacks such as phishing, with 54% of all victims having anti-phishing training and 49% having perimeter defences in place at the time of attack, a global study by cloud storage firm Cloudian revealed.

The study called for organisations to place greater attention on putting systems in place that enable quick data recovery in the event of an attack, without paying ransom.

According to Cloudian, many organisations spend large portions of their cybersecurity budget on defensive

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How can insurers build their digital strategies?

LATEST NEWS

Flood-stricken areas face “many, many months” of recovery

Executive says insurers will no doubt respond to increasing flood risk over time

How long does it take to get a Level 5 certificate?

Adviser group urges the industry to begin the process as soon as possible

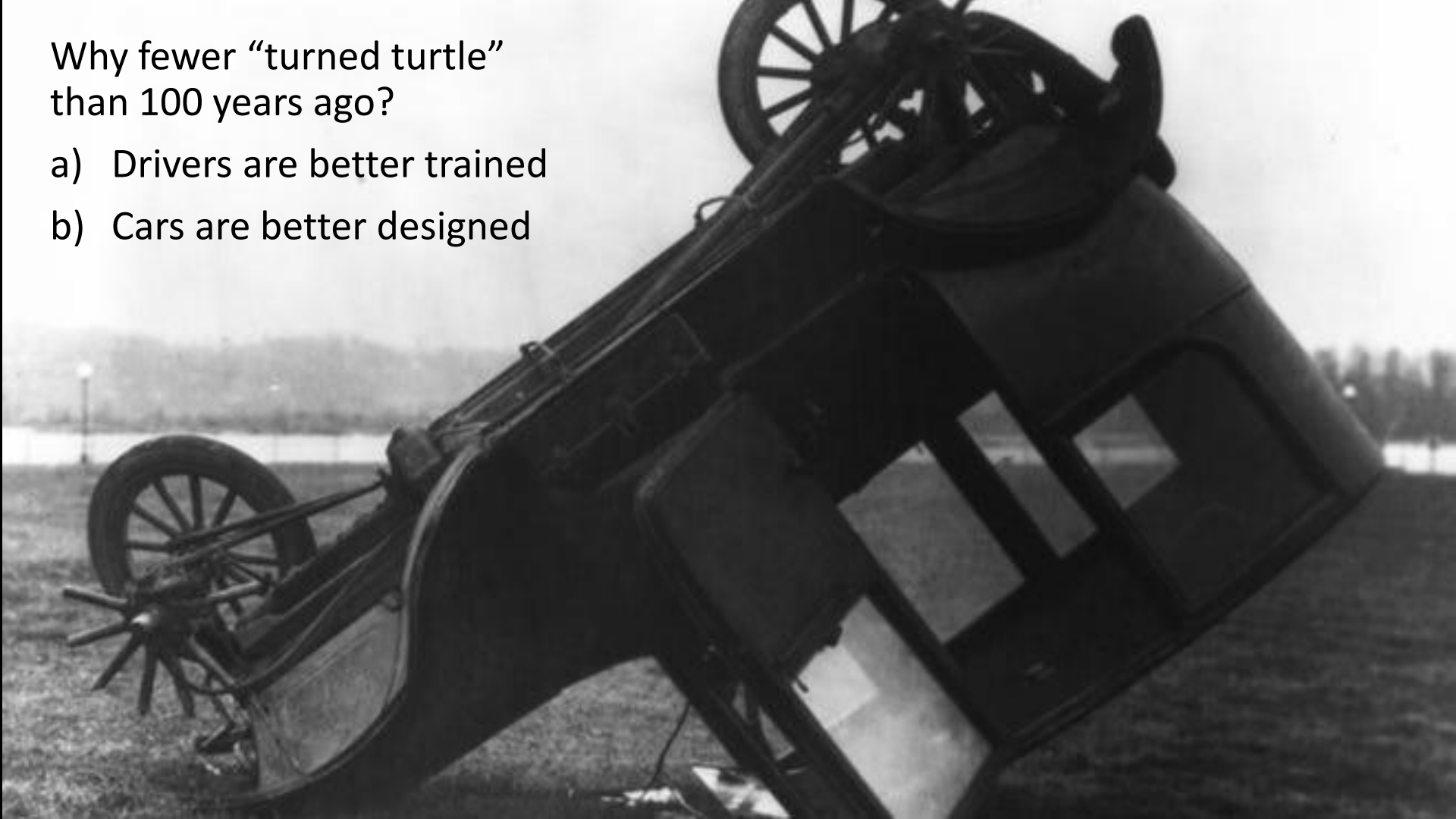
National slams Labour for failing on cyber resilience

Criticism follows New Zealand slipping in a recent UN cybersecurity ranking

What makes people susceptible

Why fewer “turned turtle”
than 100 years ago?

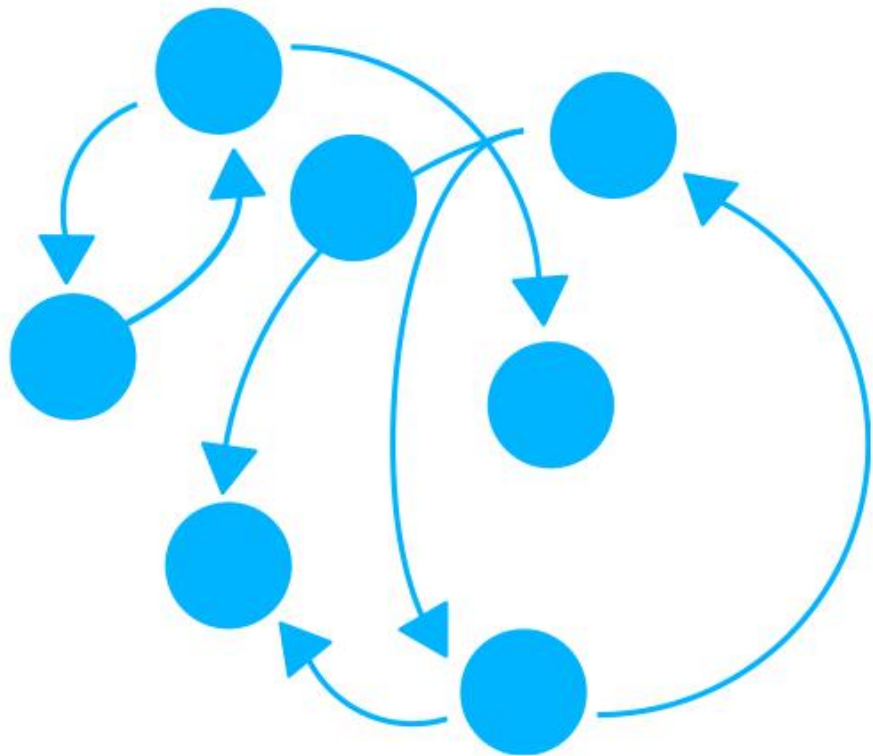
- a) Drivers are better trained
- b) Cars are better designed



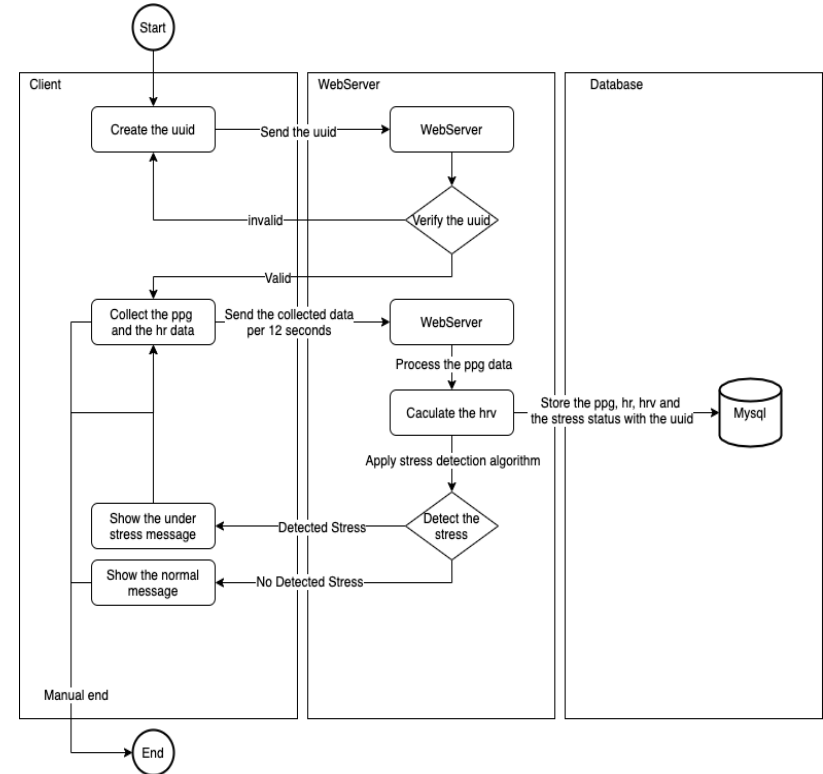
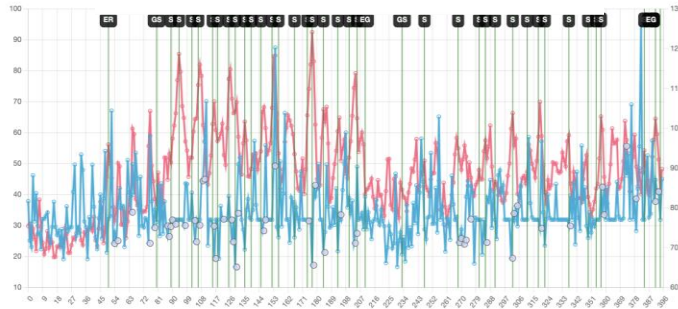
Traditional thinking

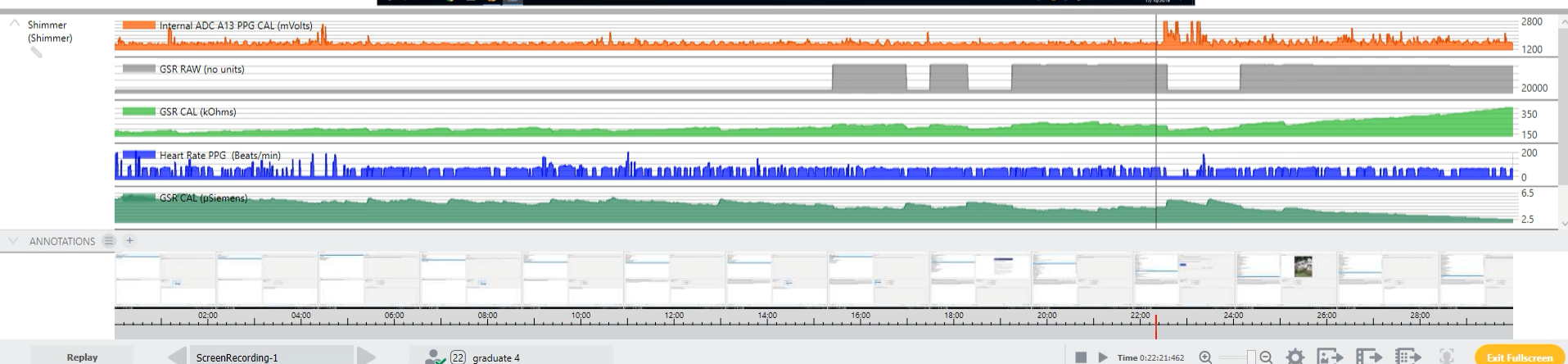


Systems thinking



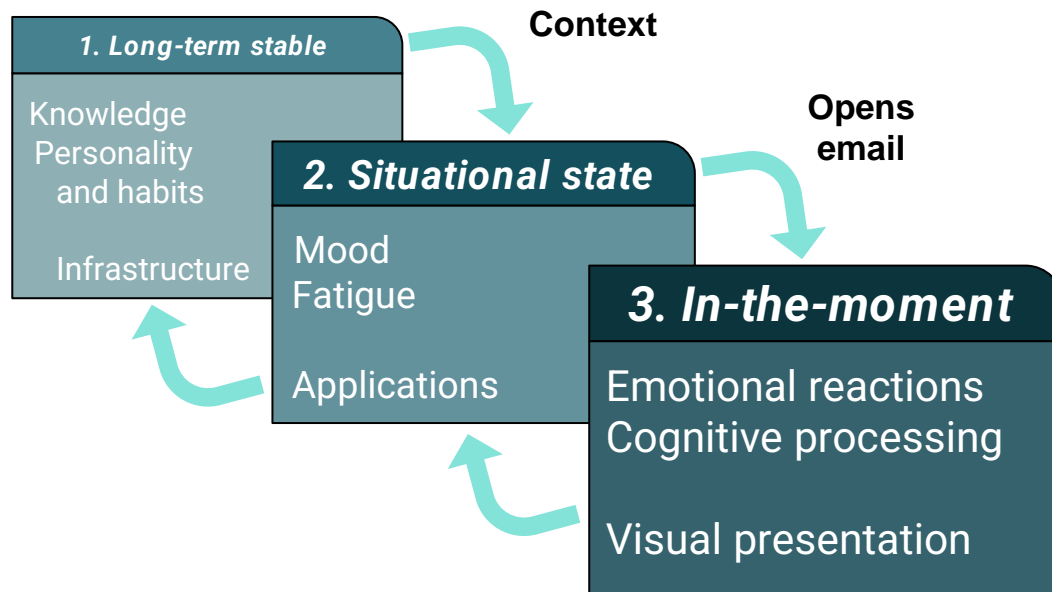
Biometrics can help us understand susceptibility



[illegible]

Phishing Susceptibility Model

Opportunities for support change over time



Why do we do this

- Phishing is not going away
- No digital borders so can't have a “national” solution
- Need innovation to support people to mitigate risk



CYBER SECURITY FOUNDRY



Hub for transdisciplinary research on
cyber security

Thanks and please get in touch with us!

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University of Canterbury

**Another presentation on Cyber Security?
No, a presentation on Information Security!**



Speaker's Science Forum

Wellington

11 August 2021

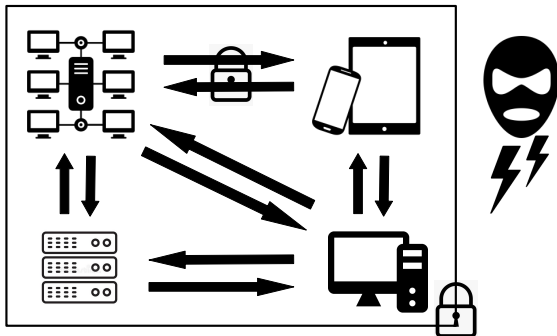


- ▶ I am a lecturer at Computer Science and Software Engineering department within the University of Canterbury.
- ▶ I work on Information Security, and specifically on Cryptography.

What is the difference between Cyber Security and Information Security ?

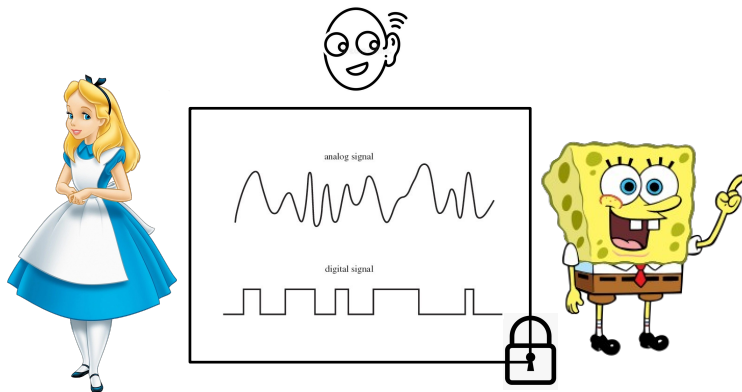
Defining Cyber Security

Cybersecurity is all about **protecting** data that is found in **electronic form** (e.g. computers, servers, networks, mobile devices) from being compromised or attacked.



Defining Information Security

Information Security is concerned with **making sure** data **in any form** is kept secure.

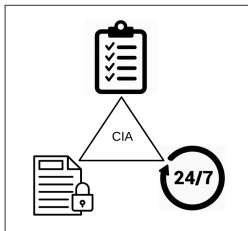


Are they so different?



Cyber Security:

- ▶ Protecting against unauthorized **electronic** access to the data.

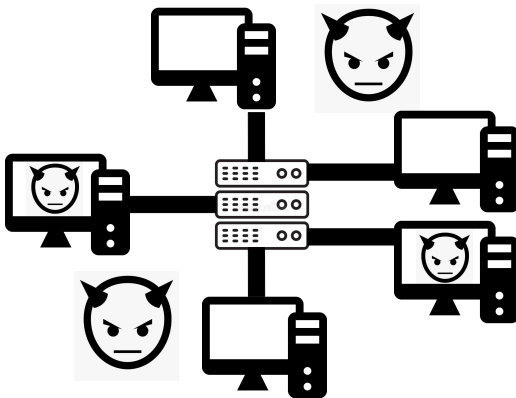


Information Security:

- ▶ Protecting the **confidentiality, integrity** and **availability** of the data.

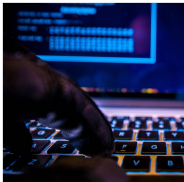
Why Information Security?

To protect the technology and information assets by **preventing**, **detecting** and **responding** to threats, both internal and external.



Kaseya ransomware attack: Millions demanded in ransom as businesses scramble to stem impact

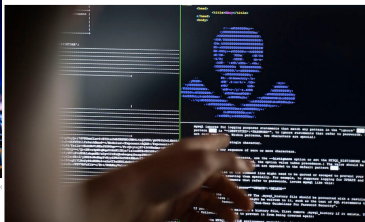
5.06.2021 06:43 PM



Those behind the global ransomware attack have reportedly demanded millions in ransom for the return of their systems. Photo / 123rf

JULY 6, 2021

3 minutes to read

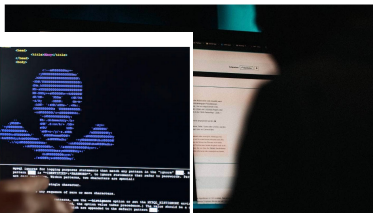


IF SECURITY SCIENTISTS BEING TRAINED IN RANSOMWARE AT THE ATHENS CYBER SECURITY CENTRE IN GERMANY (PHOTO: FRANK RUNDMORST/PICTURE ALLIANCE VIA GETTY IMAGES).

What should New Zealand be doing to fight ransomware cyber-attacks?

Kindergarten group Whānau Manaaki falls victim to Kaseya ransomware attack

Tom Pullar-Strecker · 14:28, Jul 05 2021



123rf

ing responsible for the Kaseya compromise.

<https://www.nzherald.co.nz/nz/kaseya-ransomware-attack-millions-demanded-in-ransom-as-businesses-scramble-to-stem-impact/ZEVUH4BEMFK5CSPT5JQ5SQMYE/>
<https://thespinoff.co.nz/society/06-07-2021/what-should-new-zealand-be-doing-to-fight-ransomware-cyber-attacks/>
<https://www.stuff.co.nz/business/125654088/kindergarten-group-whanau-manaaki-falls-victim-to-kaseya-ransomware-attack>

An email from UC IT Services last year:

“From 9am on 15th October [2020], we will be disabling TLS 1.0 and 1.1 support for UC Remote Access via `go.canterbury.ac.nz` for security reasons.

To connect, your browser and operating system will need to support TLS 1.2 or 1.3.”

- ▶ TLS is a protocol for secure communication over the Internet
- ▶ You use TLS as soon as you are browsing on the Internet
- ▶ TLS 1.0 and 1.1 have been **deprecated since several years** (well before 2020)!

NZ businesses versus Information Security?



- ▶ The Christchurch-based cryptocurrency exchange **Cryptopia** was founded by Rob Dawson and Adam Clark in 2014.
- ▶ An online platform where one type of cryptocurrency (e.g. Bitcoin) can be traded for another (e.g. Ethereum).
- ▶ Done through a “trading pair” which is essentially the market between the two cryptocurrencies allowing users to trade one for the other.
- ▶ These exchanges take custody of a user’s funds to trade.

NZ businesses versus Information Security!!!

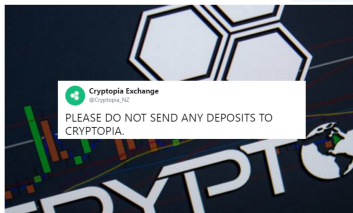
SECURITY
by Felipe Erazo

Feb 20, 2021

13099



Troubled NZ Crypto Exchange Cryptopia Suffers Another Hack in the Midst of Liquidation Process



How New Zealand company Cryptopia
lost over \$20 million from a hack



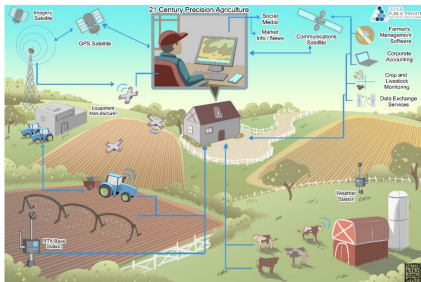
Shona Kane | Staff Writer
Cryptopia

<https://thespinoff.co.nz/business/28-05-2019/how-new-zealand-company-cryptopia-lost-over-20-million-from-a-hack/>

<https://news.bitcoin.com/troubled-nz-crypto-exchange-cryptopia-suffers-another-hack-in-the-midst-of-liquidation-process/>

2018 Public-Private Analytic Exchange Program

Threats to Precision Agriculture



- ▶ US Department of Homeland Security
- ▶ “As the complex threat environment continues to evolve and loom, the Department will embody the relentless resilience of the American people to ensure a safe, secure, and prosperous Homeland.”

https://www.dhs.gov/sites/default/files/publications/2018%20AEP_Threats_to_Precision_Agriculture.pdf

Information Security is needed!



- ▶ Most businesses/individuals have information that needs **protection**.
- ▶ Threats are **everywhere** and attacks are getting more **impressive**.
- ▶ Security breaches are **expensive**:
 - ▶ Data breaches cost an average of \$3.86 million in 2020¹
- ▶ Information security is **required**:
 - ▶ USA Federal Information Security Management Act
 - ▶ EU General Data Protection Regulation

¹Ponemon Institute

The end!



Thank you for your attention!

Contact me: clementine.gritti@canterbury.ac.nz

Kia ora, thanks for attending!

Speaker's Science Forum

Aotearoa New Zealand

Questions welcome.

