FS Club
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The Future Cybersecurity Landscape

John Ellingson, CTO, QWERX

Tuesday, 28 February 2023

A Word From Today's Chairman

Mike Wardle

CEO & Head of Indices

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Today's Agenda

- 15:00 – 15:05 Chairman's Introduction
- 15:05 – 15:25 Keynote Presentation – John Ellingson
- 15:25 – 15:45 Question & Answer

FS Club

Today's Speaker

John Ellingson

CTO

QWERX

FS Club

Yen

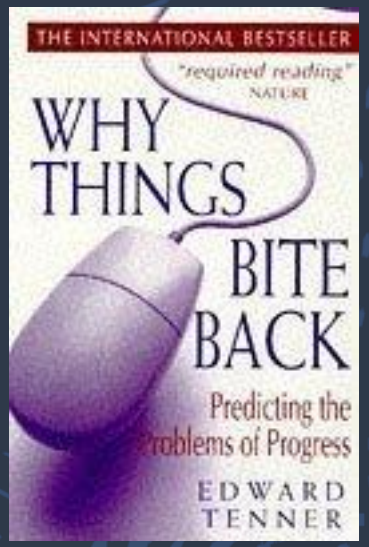
THE FUTURE CYBERSECURITY LANDSCAPE WITH QUANTUM COMPUTING

A CAUTIONARY TALE

HELLO QUANTUMIANS

GOODBYE NEWTONIANS

A CAUTIONARY TALE

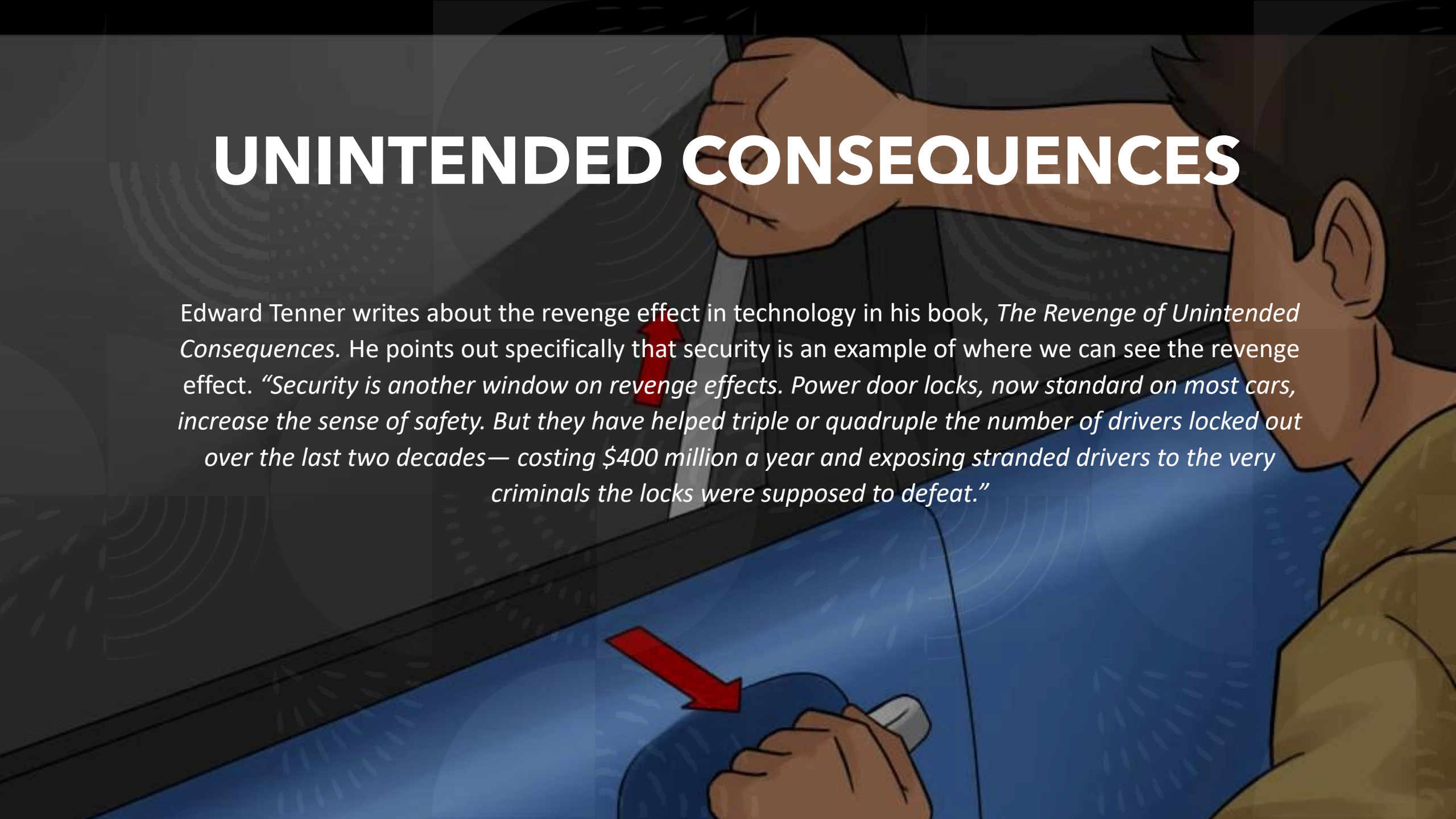


Why Things Bite Back: Technology and the Revenge of Unintended Consequences

The self-cancelling, self-frustrating side of human ingenuity, and what to do about it.

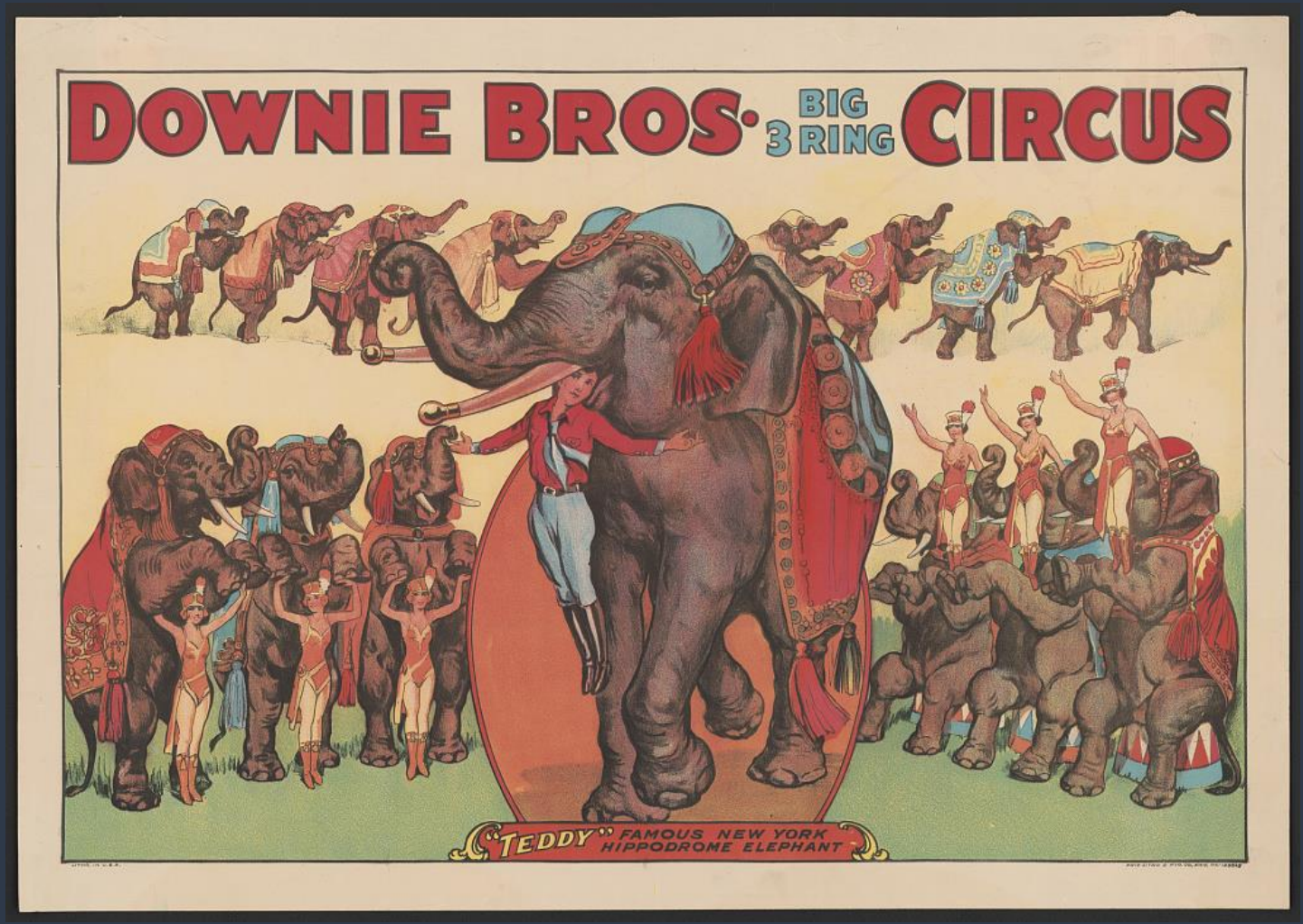
- https://www.edwardtenner.com/why_things_bite_back__technology_and_the_revenge_of_unintended_consequences_21108.htm

UNINTENDED CONSEQUENCES



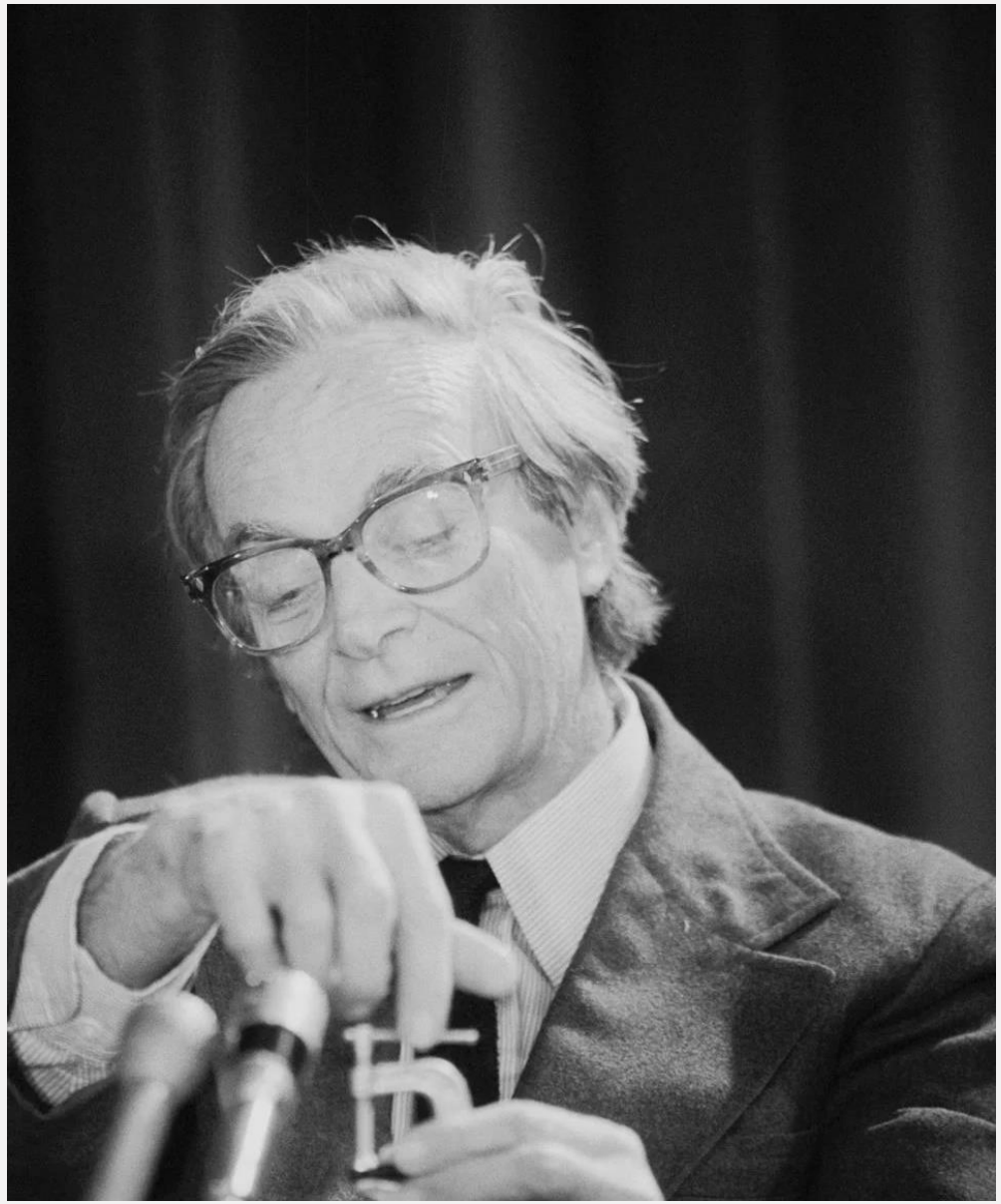
Edward Tenner writes about the revenge effect in technology in his book, *The Revenge of Unintended Consequences.* He points out specifically that security is an example of where we can see the revenge effect. *"Security is another window on revenge effects. Power door locks, now standard on most cars, increase the sense of safety. But they have helped triple or quadruple the number of drivers locked out over the last two decades— costing $400 million a year and exposing stranded drivers to the very criminals the locks were supposed to defeat."*

Most of my career I've been the guy with the shovel following the elephants!



O-RINGS & THE CHALLENGER

It was the O-Ring that was meant to seal the joint that could not expand fast enough on the cold morning of the Challenger launch that allowed the burn-through that caused the disaster.

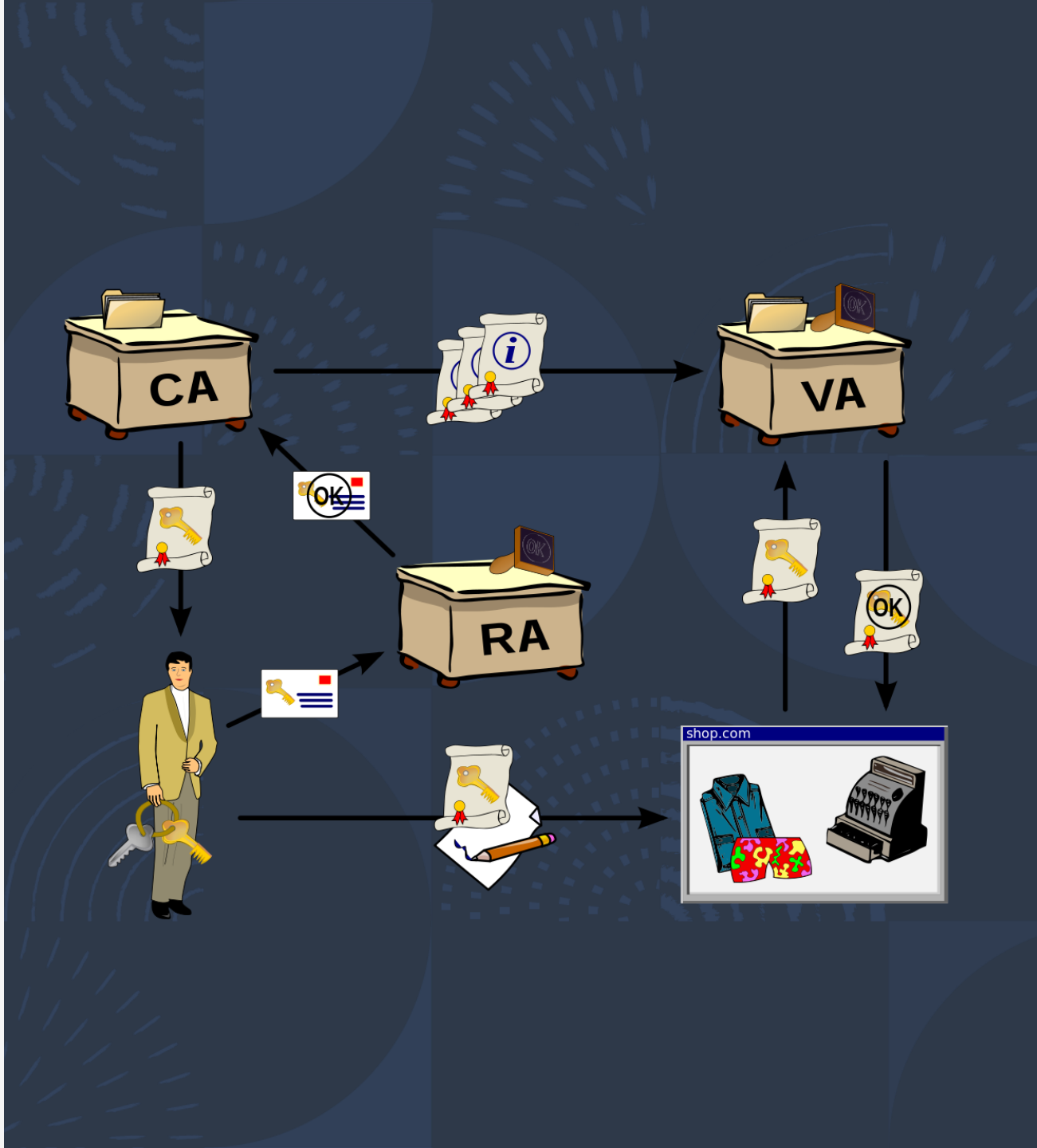


THE INVENTION OF THE SHIP

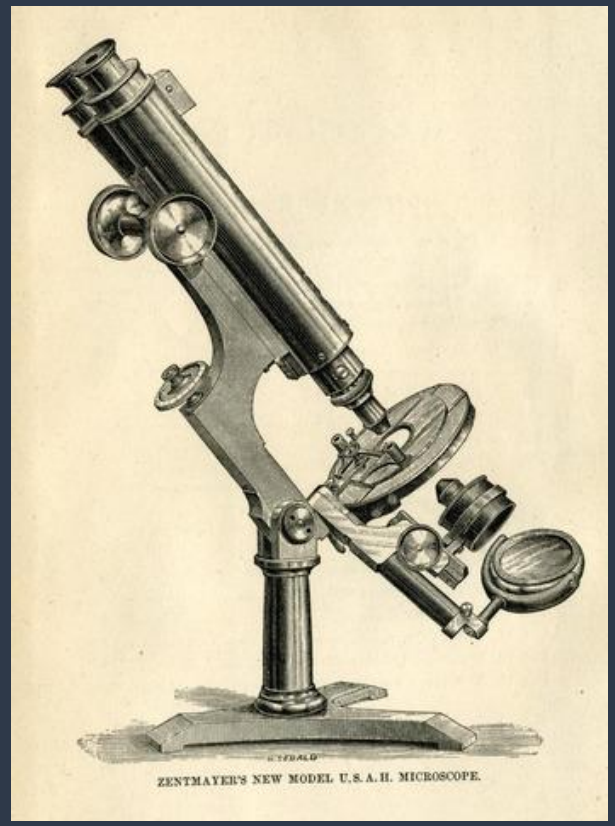
With the invention of ships, we also got the invention of the shipwreck!

PUBLIC KEY INFRASTRUCTURE

With the invention of PKI, we also invented the stolen credential and the massive data breach.

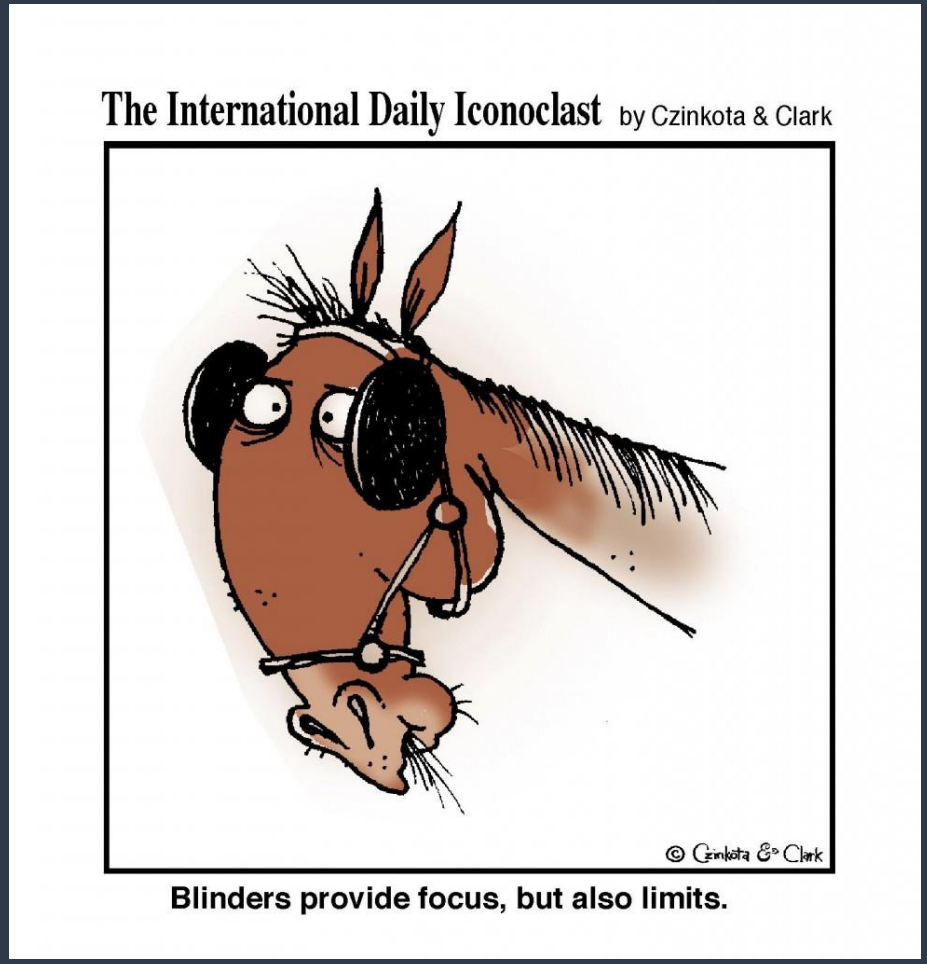


FOCUS



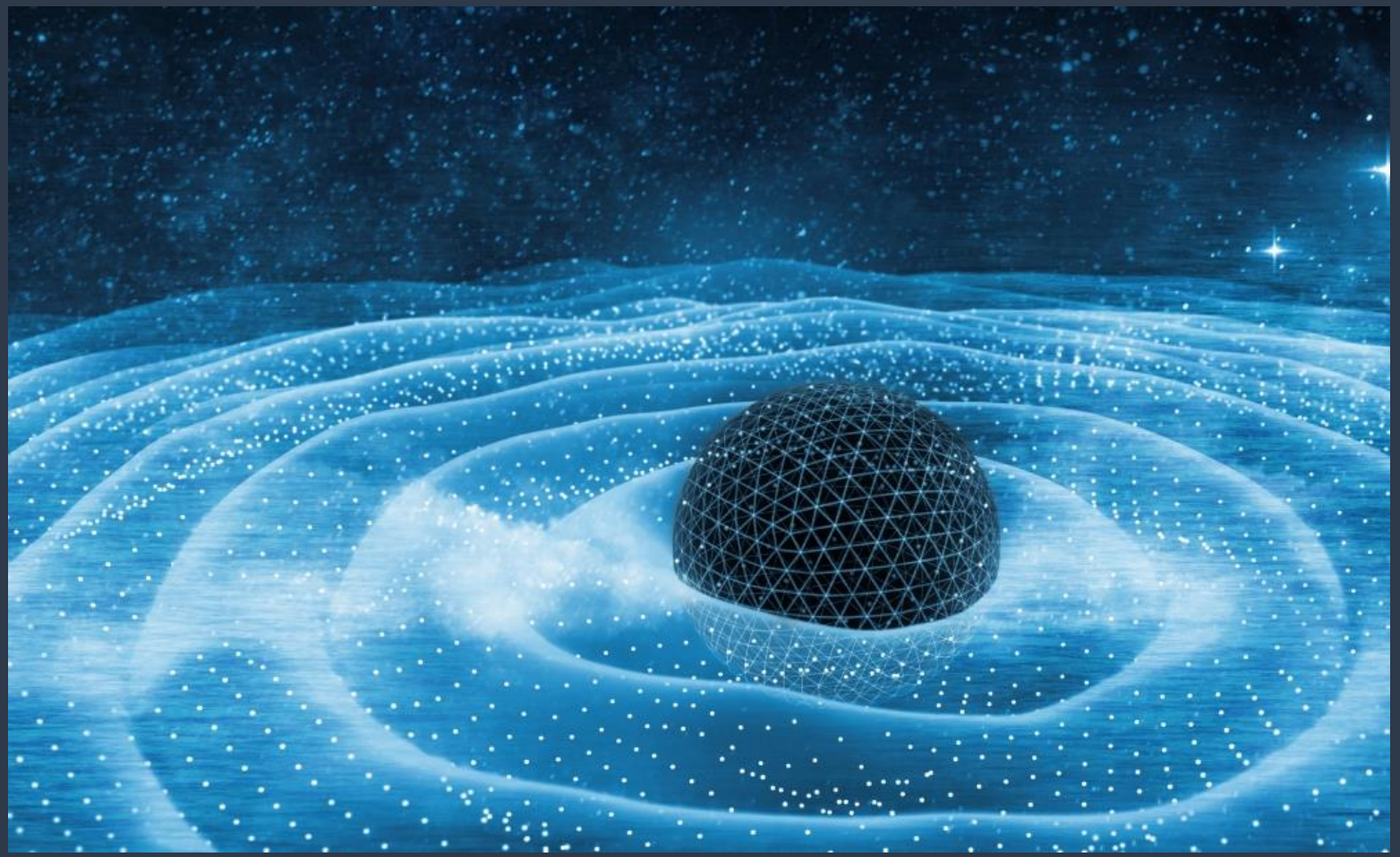
Systems don’t only operate as intended – but everyway possible.

BLINDERS



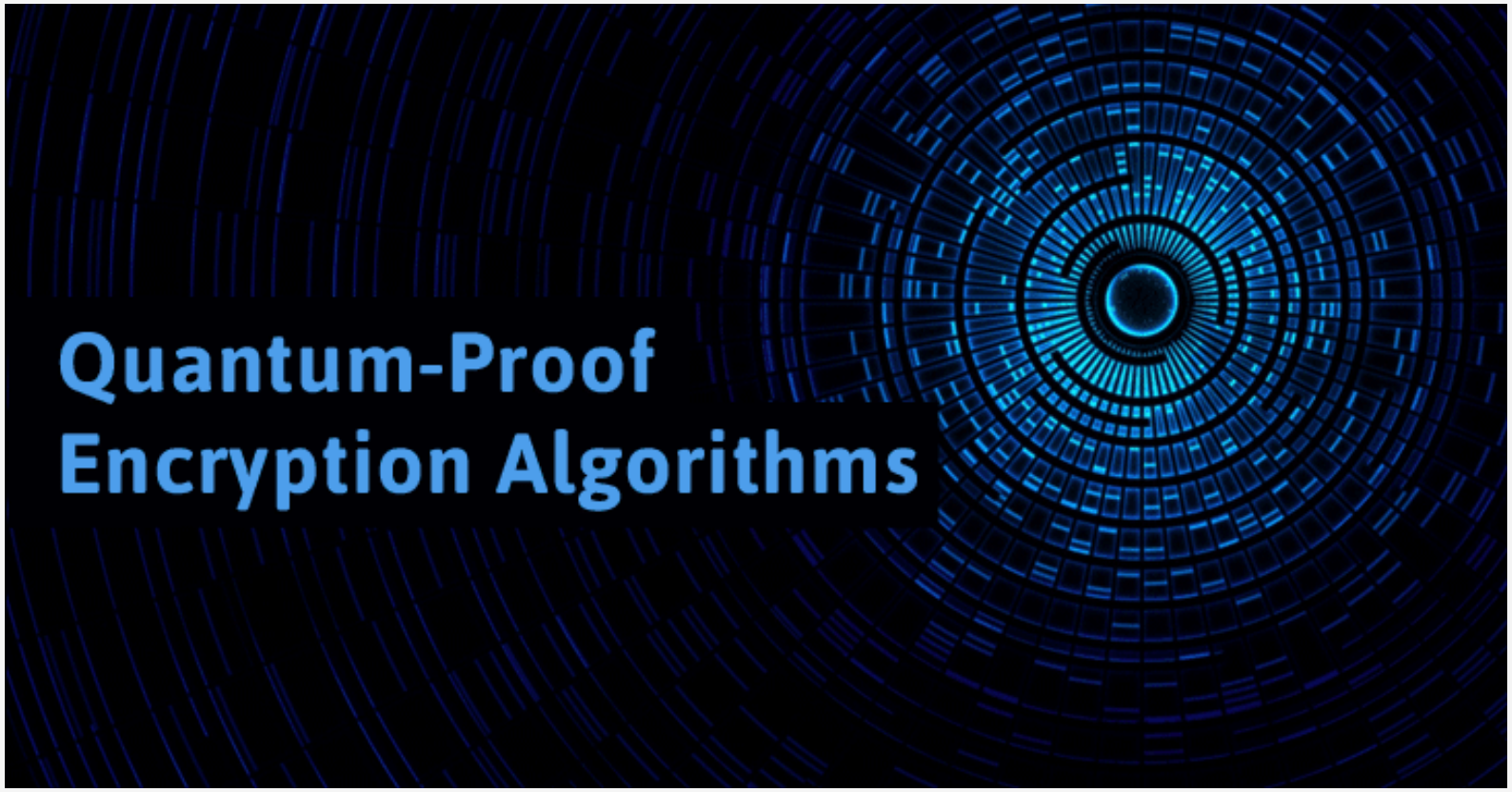
When making big changes, keep the blinder off!

A Sample Use Case – Securing Communications in Quantum Space



IS ANYONE BREAKING ENCRYPTION KEYS?

I could not find a single attack in which the attacker attempted to break cryptography by cracking the encryption key!



TOP 15 CYBER THREATS

enisa
EUROPEAN UNION AGENCY FOR CYBERSECURITY

1 
Malware

2 

Web-based attacks

3 
Phishing

4 
Web application attacks

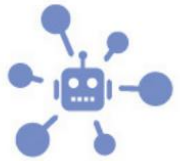
5 
Spam

6 
DDoS

7 
Identity theft

8 
Data breach

9 
Insider threat

10 
Botnets

11 
Physical manipulation, damage, theft and loss

12 
Information leakage

13 
Ransomware

14 
Cyberespionage

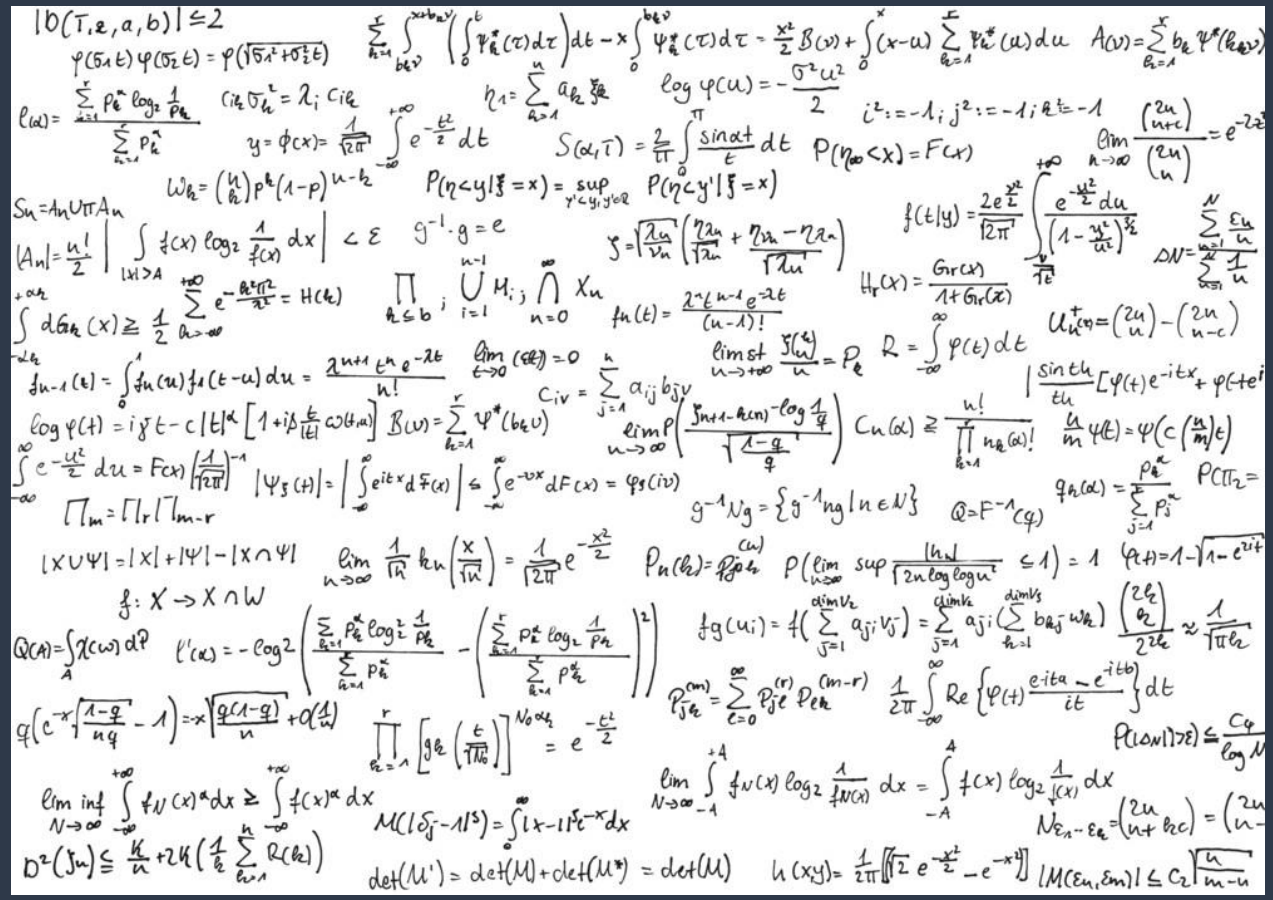
15 
Cryptojacking

Attack Surface

Network insecurities		Software bugs		Physical security loopholes		Social engineering-prone people	
Open ports	Weak protocols	Insufficiently secured in-house-developed applications	Vulnerable commercial programs (e.g., WordPress, etc.)	Rogue or dissatisfied current and former employees	Openly displayed login credentials (e.g., username-password combinations on sticky notes, etc.	Reused or recycled passwords	Unmonitored use of social media and unprotected personal devices

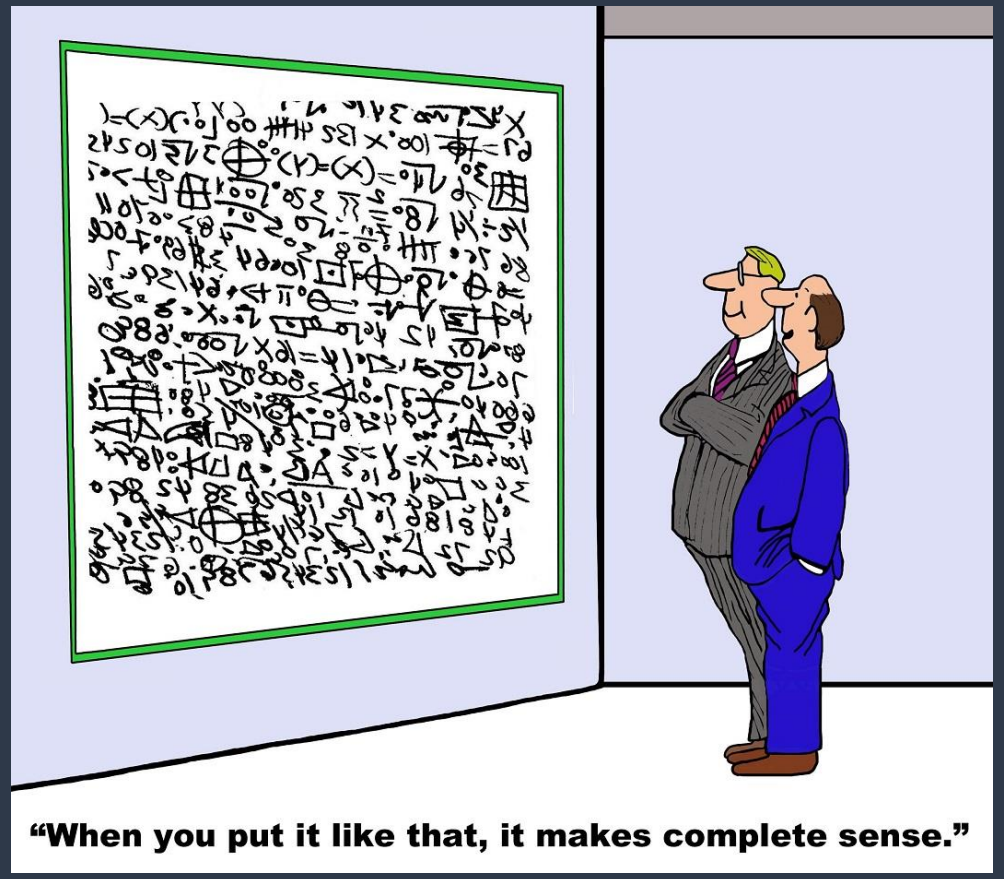
We have an opportunity to take a fresh look at how we do things.

DO WE REALLY NEED ALGORITHMS?



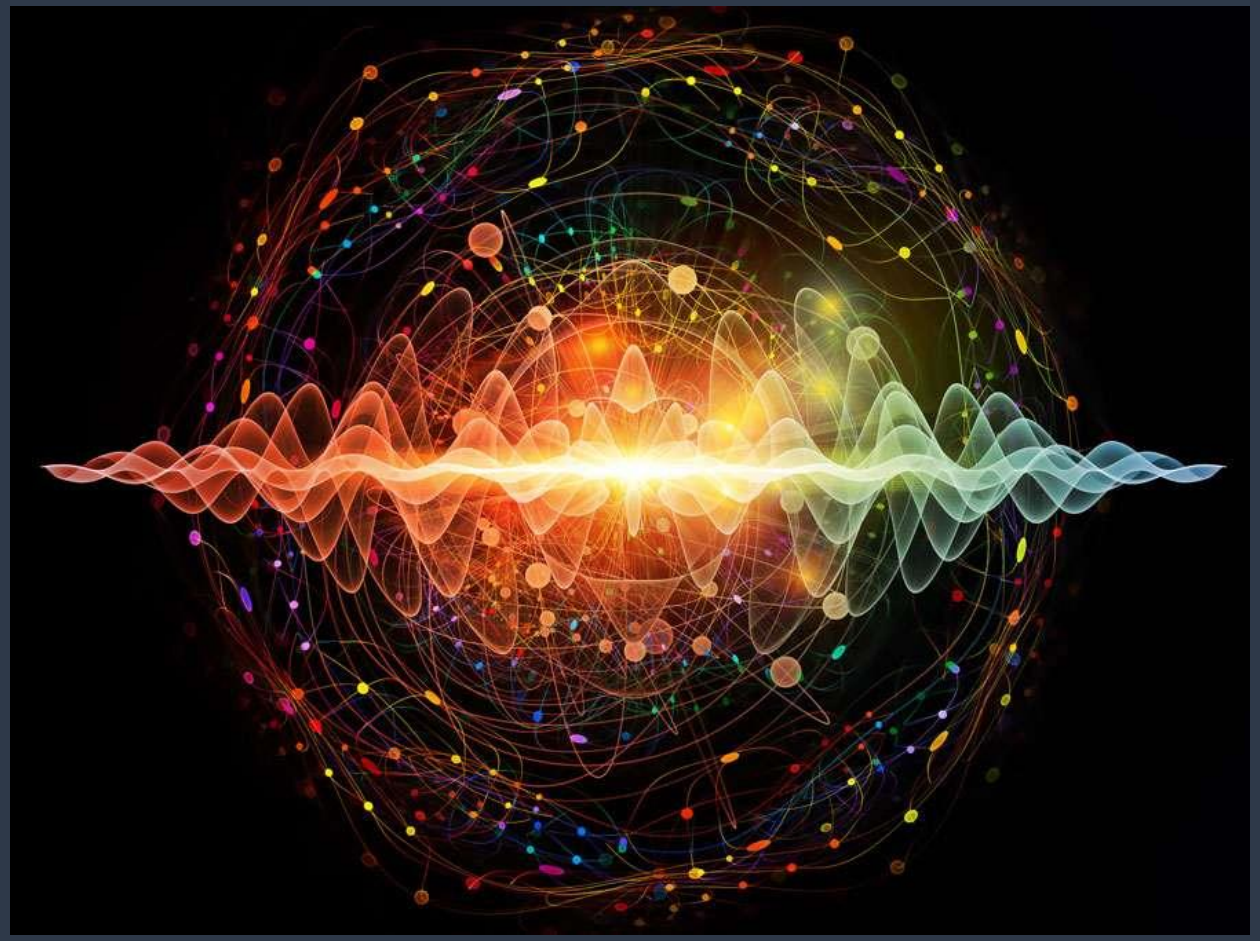
Is there a better alternative?

KISS



Observing as an alternative to measuring: to avoid a complicated quantum entanglement.

WHY NOT USE QUANTUM INFORMATION?



John Wheeler postulated that the universe is composed of information.

WHAT'S NEXT

- WE HAD C3PO

- NOW WE HAVE 3PQE

Probability, Predictability, Precision, Quantum Entropy

Erwin Schrödinger, alive again

Contact Information

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Comments, Questions & Answers

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Thank You For Participating

Forthcoming Events

- Thu, 02 Mar (11:00-11:45) Employee Share Plans And The Benefits For SMEs
- Mon, 06 Mar (11:00-11:45) Catastrophes – Are They Becoming Too Big To Insure? Are Cats Eating Reinsurers' Lunch?
- Tue, 07 Mar (10:00-10:45) What Is China's Growth Potential After Covid?
- Wed, 08 Mar (12:00-12:45) The Transformative Tree - Pongamia Agroforestry Systems

Visit https://fsclub.zyen.com/events/forthcoming-events/

Watch past webinars https://www.youtube.com/zyengroup