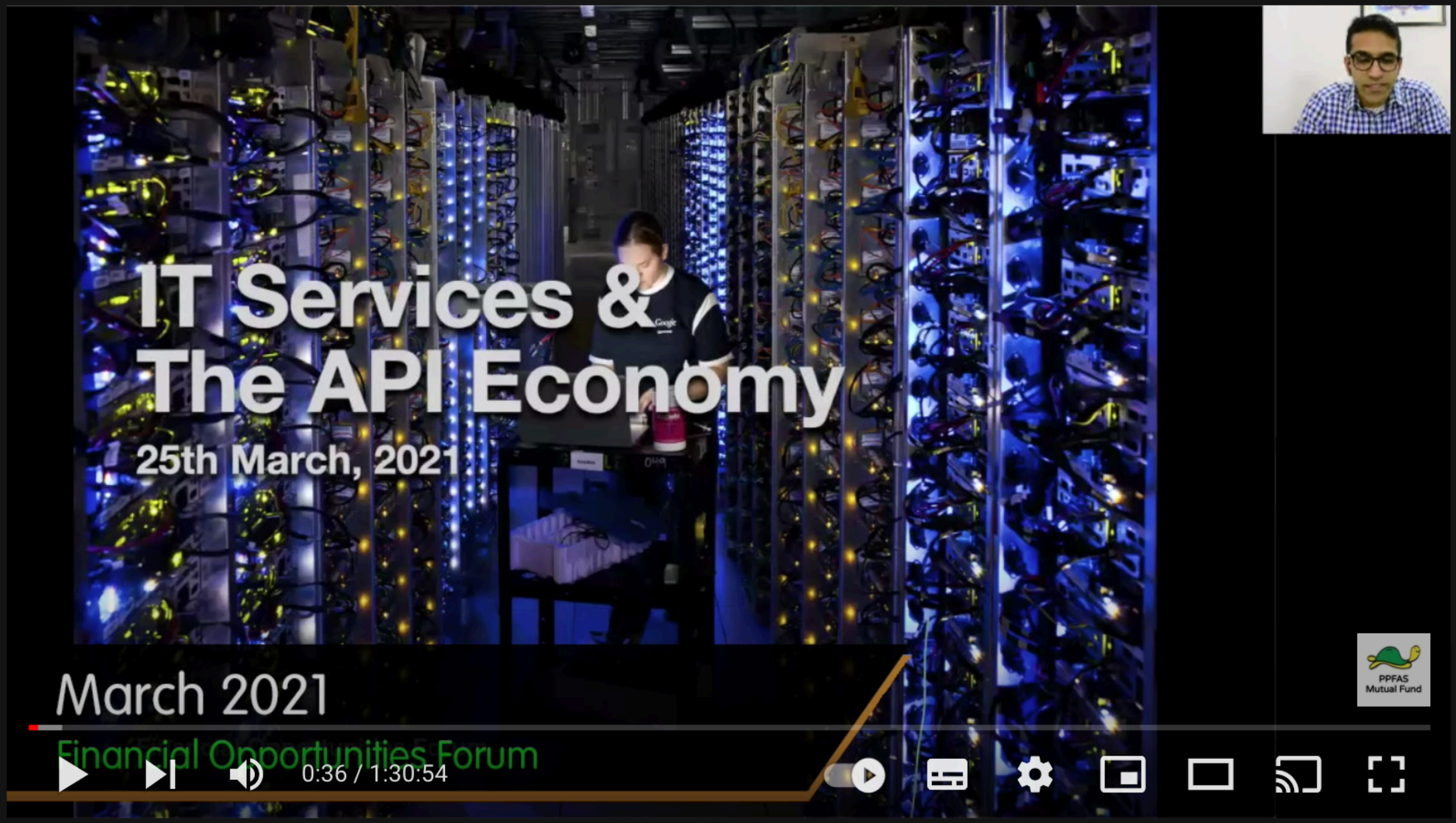
The Business of Cyber Security

Financial Opportunities Forum

PPFAS FOF | Raunak Onkar | Dec 2021



IT Services & The API Economy

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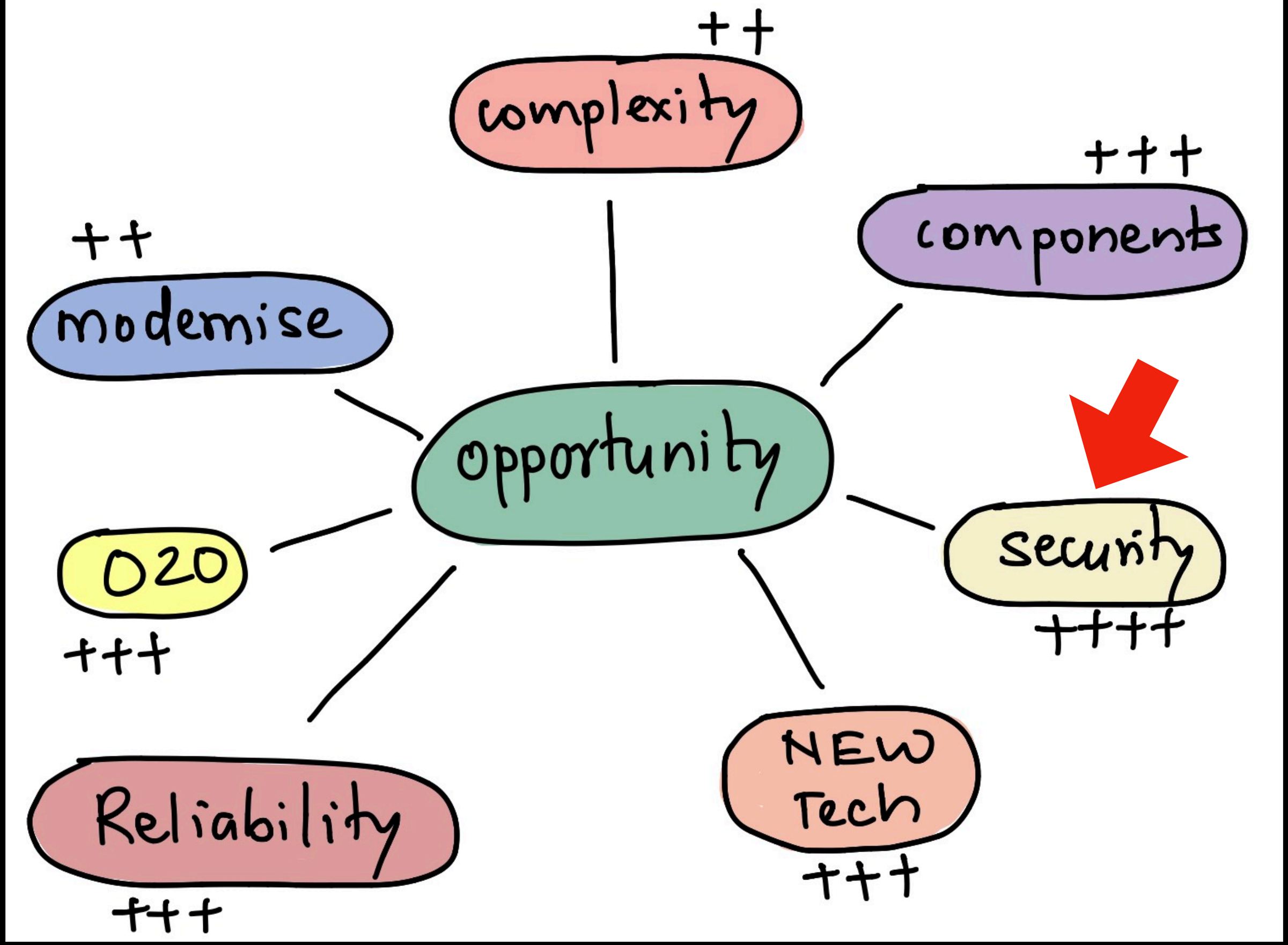
++
complexity
+++
components
++
modernise
opportunity
O2O
+++
Security
++++
Reliability
+++
NEW
Tech
+++

Business of Cyber (in)Security

- Attack Surfaces
- Threat Actors
- The Business
  - Enterprise Software & Consulting
  - Personal Software
- Zero Day Exploits
- The Weakest Link
- Protecting Ourselves

Attack Surfaces

Potential Entry Points to stage an attack

“In humanity’s relentless drive for convenience & economic growth, we have developed a dangerous level of dependency on networked systems in a very short space of time.”

- Misha Glenny (Dark Market)

Kevin Kelly
@kevin2kelly

When you see the adjective "smart" applied to things, as in smart home, smart clothes, smart toys, smart phone -- substitute the term "hackable." They always come together.

12:01 PM · Dec 13, 2018 · Twitter Web Client

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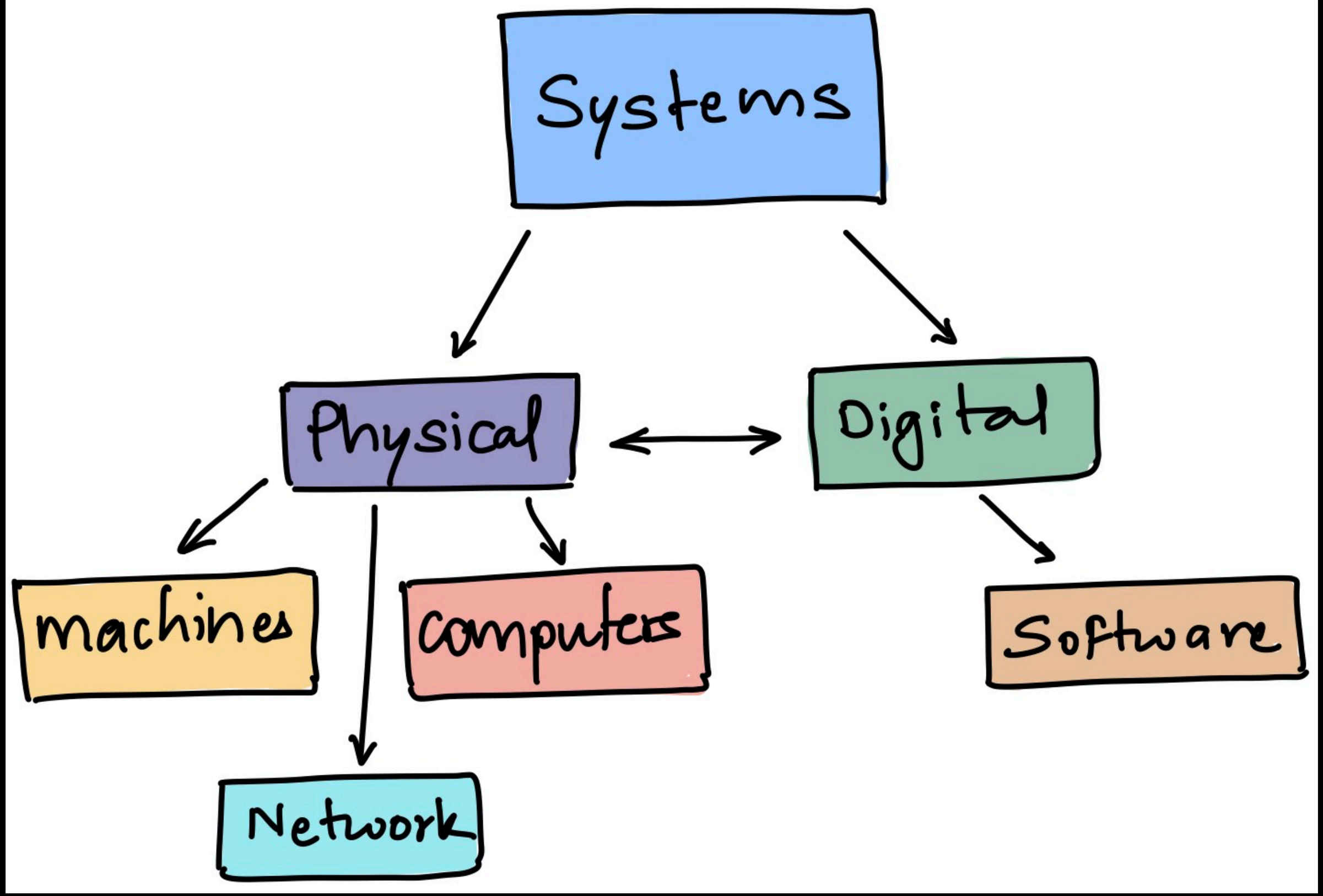
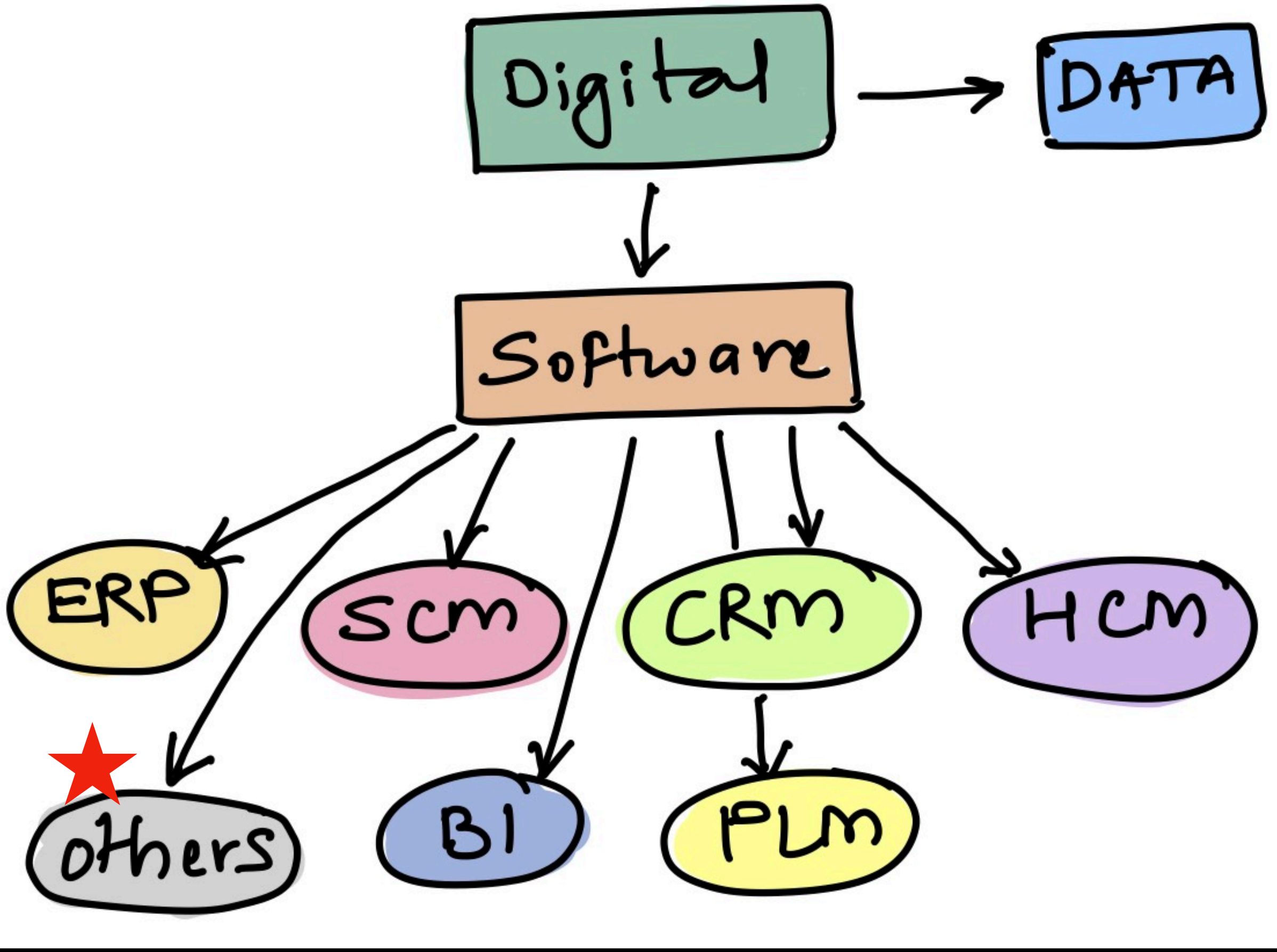
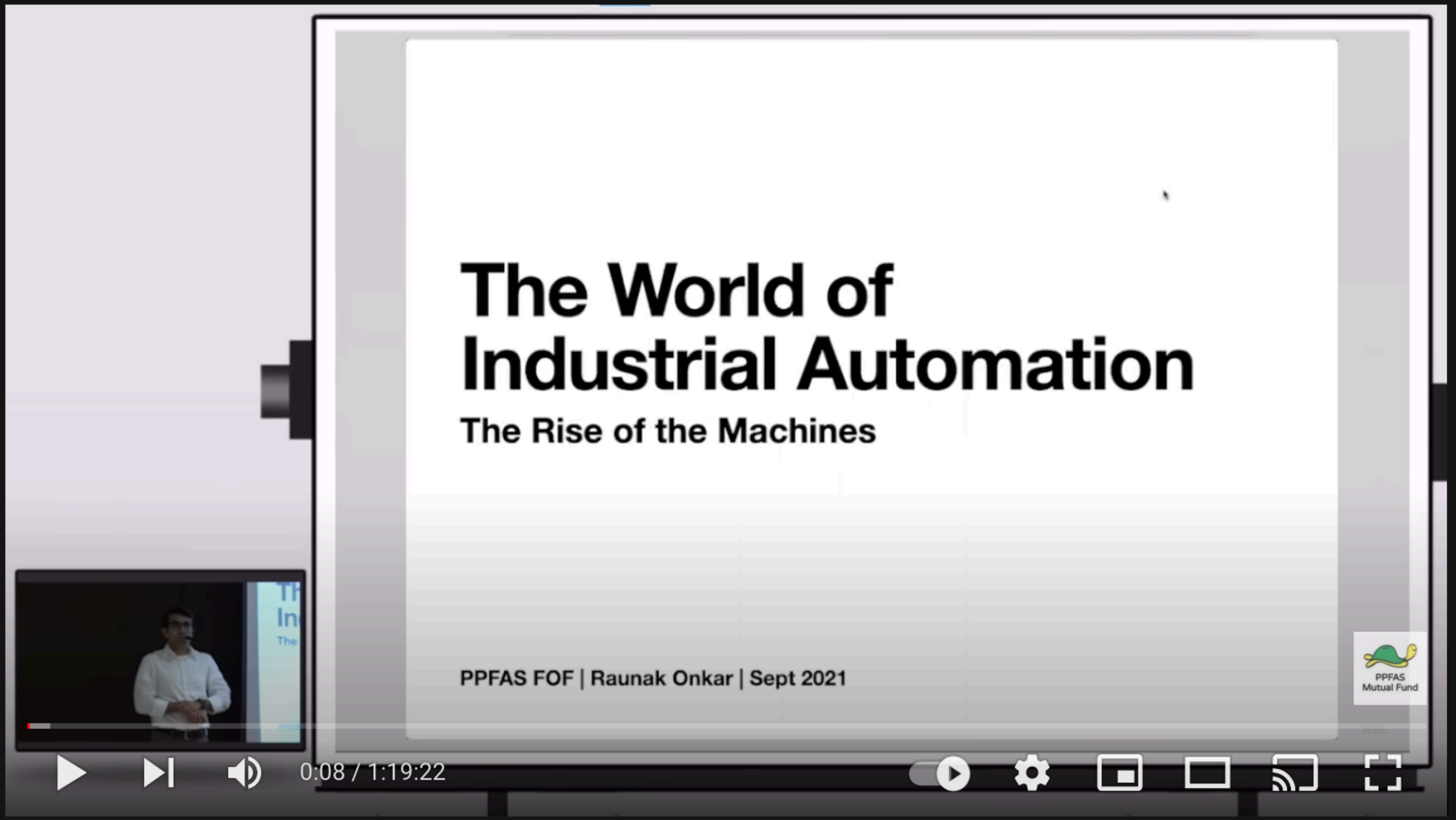

Systems
Physical
Digital
machines
computers
Network
Software


Digital
DATA
Software
ERP
SCM
CRM
HCM
others
BI
PLM



The World of Industrial Automation

35,102 views • 15 Nov 2021

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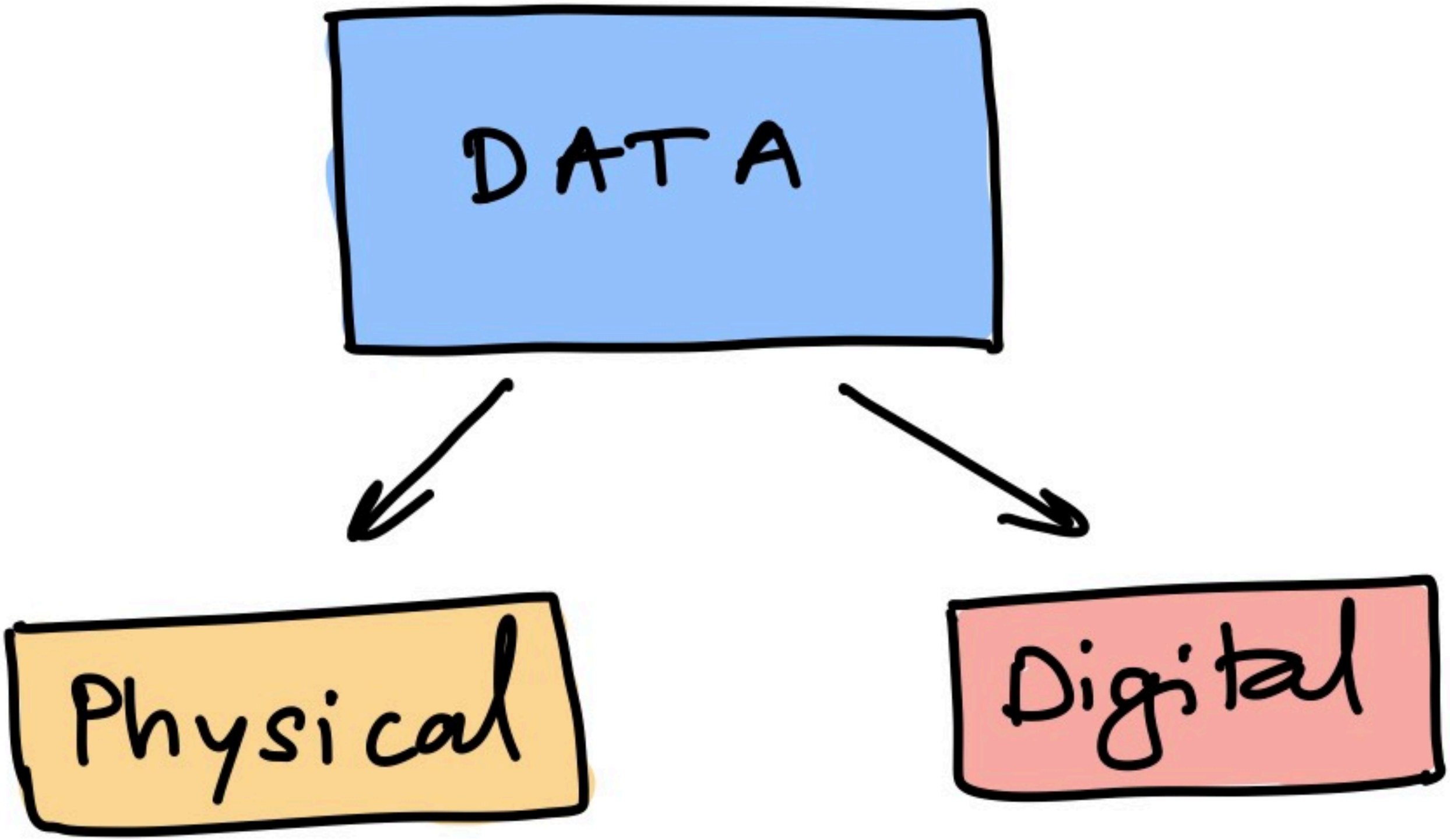
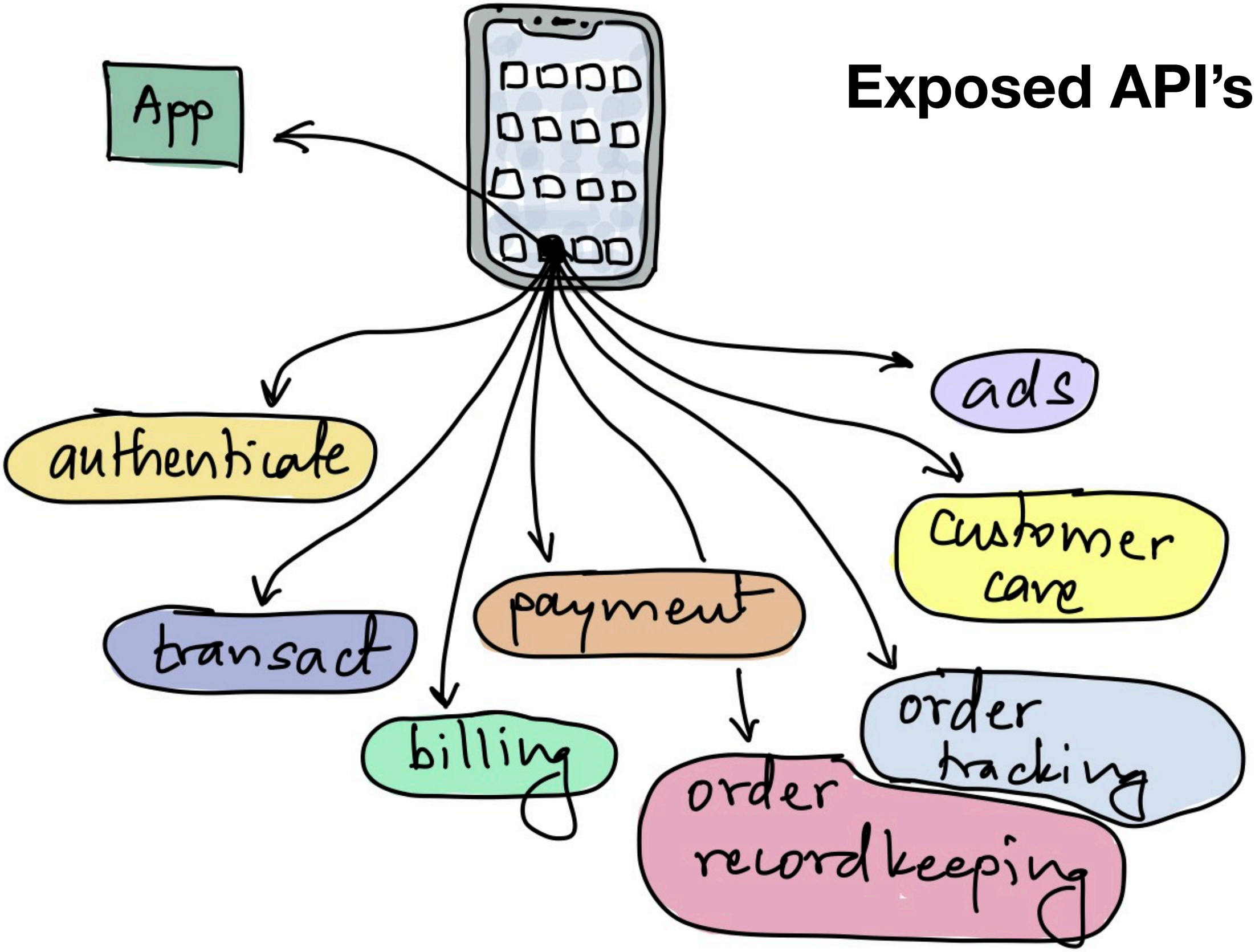
Blackhat

Film by Michael Mann

- Action Thriller Film
- Hacking Industrial Equipment
- Tracking the hack globally
- Sophisticated hacking tools used by Governments
- Organised crime aspect


DATA
Physical
Digital

Exposed API's



Supply Chain Hack

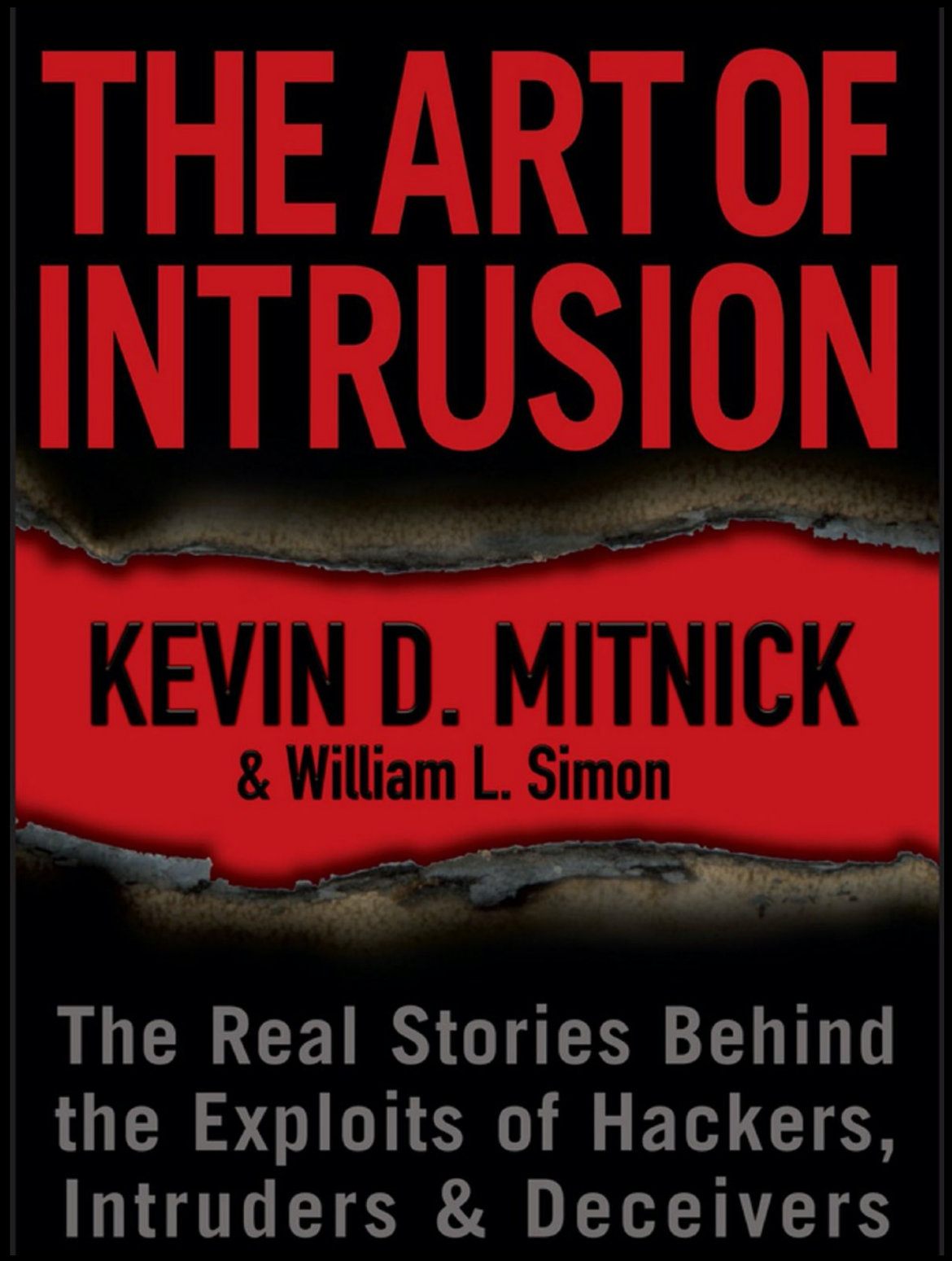
Hacking a software used by many

- Potentially Invisible
- Impact across several industries, sectors & even Governments
- Purpose
    - Espionage
    - Sabotage
    - Disruption / Ransomware
    - Intellectual Property Theft
- Solarwinds, Kaseya, Microsoft Exchange Server, etc

The Art of Intrusion

By Kevin Mitnick

- Hacker & Security Consultant
- Convicted for Financial Data Theft
- Writes about tools & techniques used by Hackers to get inside systems



Threat Actors

Who are these hackers & Why do they do it?

Threat Actors

- Cyber Criminals
- Nation-states / Governments
- Hacktivists / Terrorists
- Trolls & Thrill seekers
- Insiders & Competitors

“If you’re good at something, never do it for free…” - The Joker

Cyber Criminals

- Financial Data Theft
- Identify Theft
- Ransomware (Crypto)
- Data Brokers
- Organised Crime

Dark Market

By Misha Glenny

- British Journalist
- Tracks Organised Crime & Cyber Crime
- Book is about global organised cybercriminals & how they operate

Nation state / Government

- Cyber Warfare
- Diplomacy
- Intimidation / Interference
- Espionage
- Data Theft

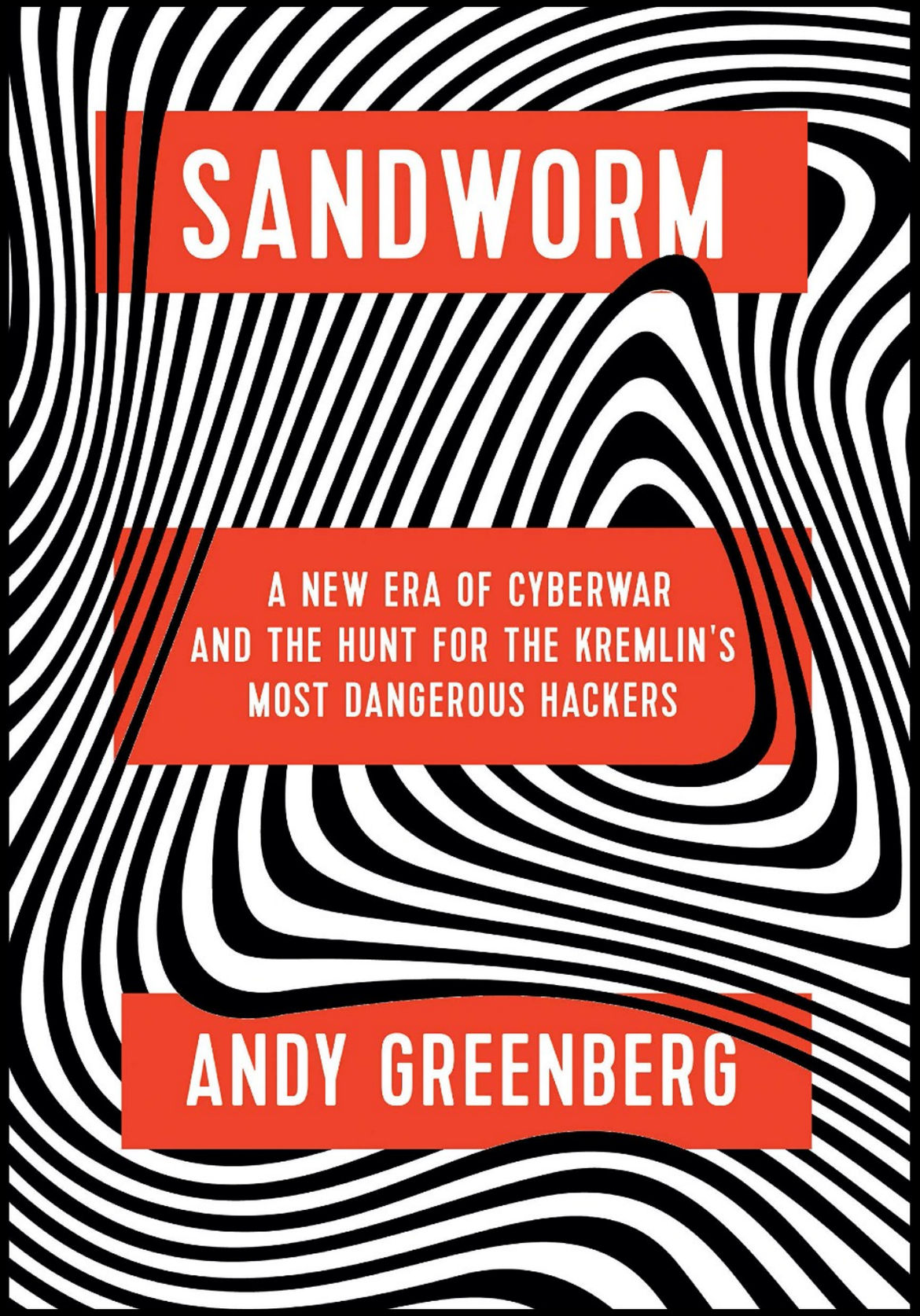
The Perfect Weapon
HBO Documentary

- New form of warfare
- Using cyberattack as a diplomatic tool
- “*Prepared for a Higher Form of War*”

Sandworm

By Andy Greenberg

- Tech Journalist for Wired Magazine
- Covers attacks on Ukraine interfering in their elections
- Radiation monitoring systems
- Public Utilities



Agents of Chaos

HBO Documentary

- 2016 Election Interference by Russia
- Possibilities to disrupt the democratic process
- Social Media Bots & disinformation campaigns

NSO Group & Pegasus

- Spyware as a Service
- Legitimate software / services provider with export authorisation
- Zero-click Surveillance
- US Entity List

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THE TIMES

DHAWAN (86 N.O.) PLAYS A SKIPPER'S KNOCK & ISHAN KISHAN SCORES 59 ON ODI DEBUT AS INDIA THRASH SL BY 7 WICKETS WITH 80 BALLS TO GO 18

Spyware used to snoop on mins, oppn, journalists, bizmen: Report

'Activists Also Among 300 Indians Targeted'

Times News Network

New Delhi: Spyware Pegasus, which is sold by the NSO Group of Israel, may have been used to conduct surveillance on about 300 Indians, including two serving Cabinet ministers at the Centre, three opposition leaders, a Constitutional authority, government officials, scientists and about 40 journalists, according to French media nonprofit, Forbidden Stories, and Amnesty International.

The list also included activists, businessmen and those from the legal fraternity. A number registered in the name of a sitting Supreme Court judge was also on the database, although it was unclear if the judge was still using it for Whatsapp and other messaging services, The Wire, a web portal which was part of the global media project involving 16 other outlets, reported late Sunday evening.

▶ Snoop link 2nd time, P 12

THE PEGASUS PROJECT

- Paris-based media nonprofit Forbidden Stories and Amnesty International accessed a leaked database of thousands of phone numbers across the world targeted by a spyware called Pegasus
- They shared the data with global media organisations as part of a collaborative investigation called Pegasus Project
- An Israeli company called NSO Group makes Pegasus, a spyware capable of extracting data from a phone
- According to the report, at least 2 Union Cabinet ministers, 3 opposition leaders, a Constitutional authority, government officials, scientists and over 40 journalists in India were targeted

Govt denies unauthorised surveillance

The government on Sunday categorically denied any unauthorised surveillance, saying official agencies have a well-established protocol for interception, which includes sanction and supervision only in national interest. It said news reports on the use of Pegasus software and allegations regarding government surveillance on specific people have no concrete basis or truth. "In the past, similar claims were made about Pegasus use on WhatsApp. Those also had no basis," said a government statement. P 12

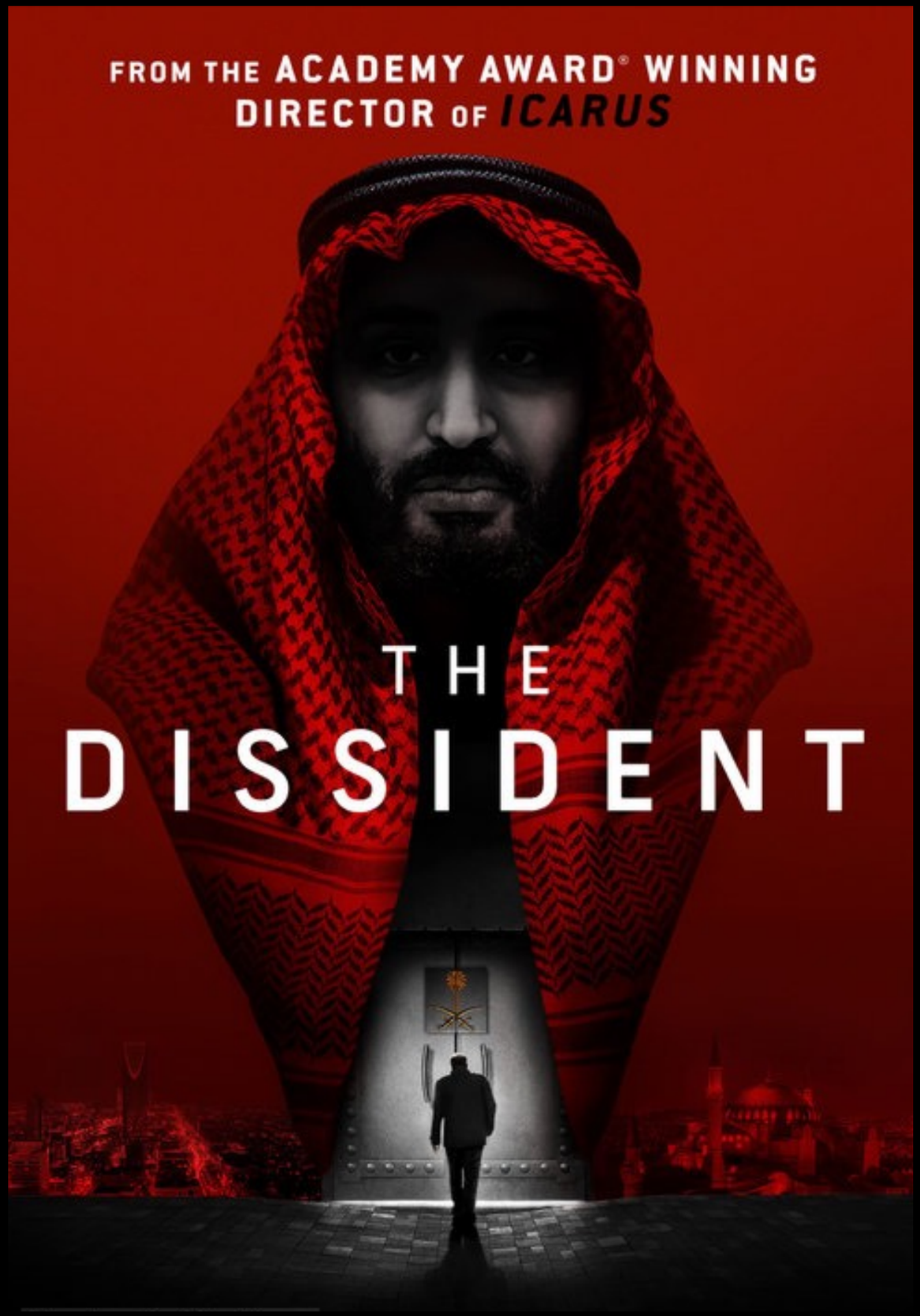
Cong snubs objections by Capt & netas, appoints Sidhu PCC chief

Times News Network

PRIYANKA'S DECISIVE SAY

Fuel prices set to drop as OPEC+ to boost supply

Crude prices are expected to come down shortly as the OPEC+ grouping on Sun-


FROM THE ACADEMY AWARD® WINNING DIRECTOR OF ICARUS
THE DISSIDENT

A SHOWTIME DOCUMENTARY FILM
FROM
ACADEMY AWARD® WINNING EXECUTIVE PRODUCER
ALEX GIBNEY
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RICK ROWLEY
THE EXILE AND MURDER OF JAMAL KHASHOGGI
KINGDOM OF SILENCE
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SHOWTIME DOCUMENTARY FILMS jigsaw

Threat Actors

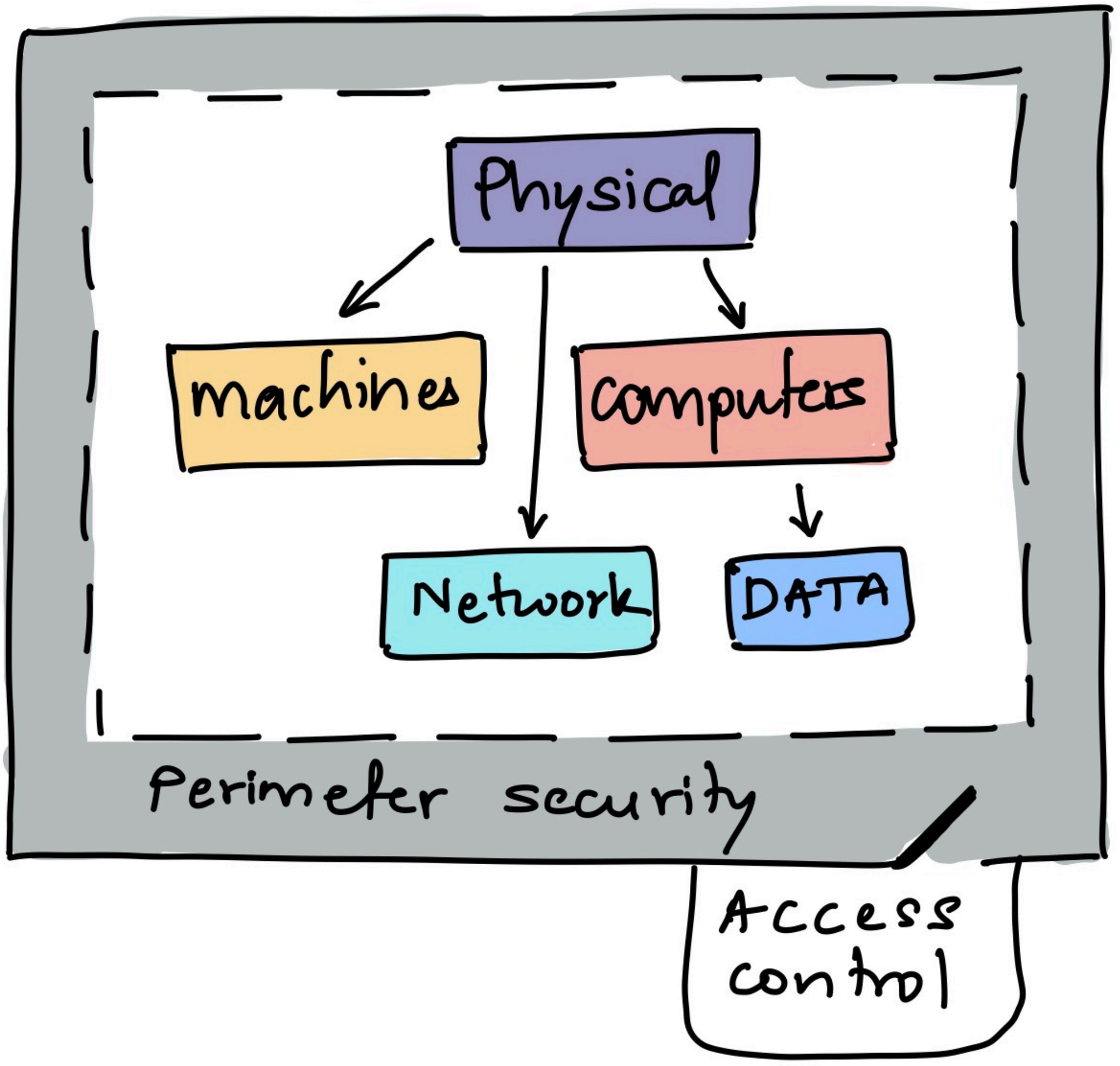
- ~~*Cyber Criminals*~~
- ~~*Nation-states / Governments*~~
- Hacktivists / Terrorists
- Trolls & Thrill seekers
- Insiders & Competitors

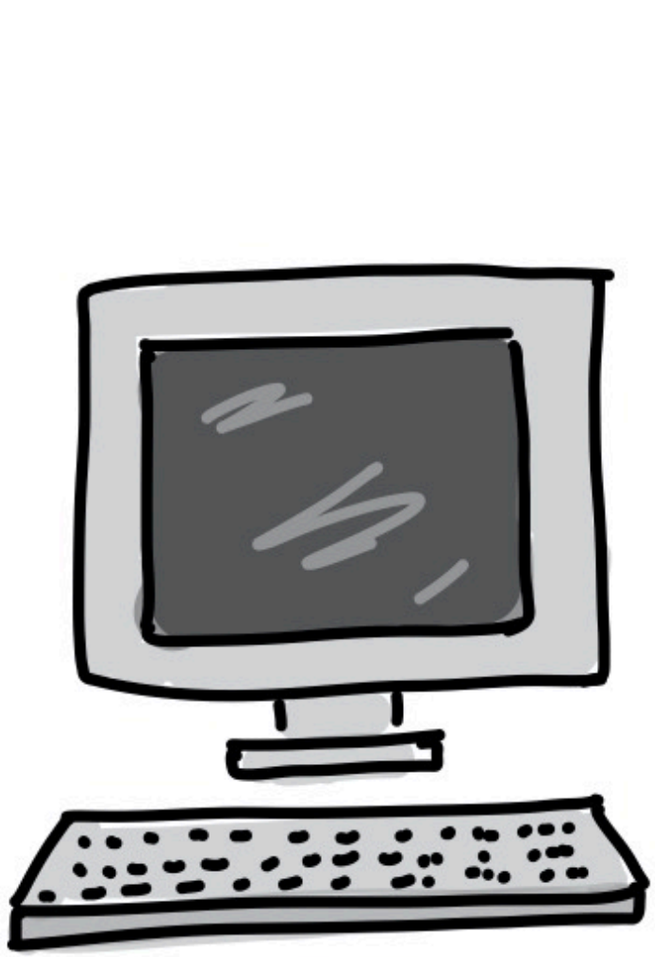
The Business

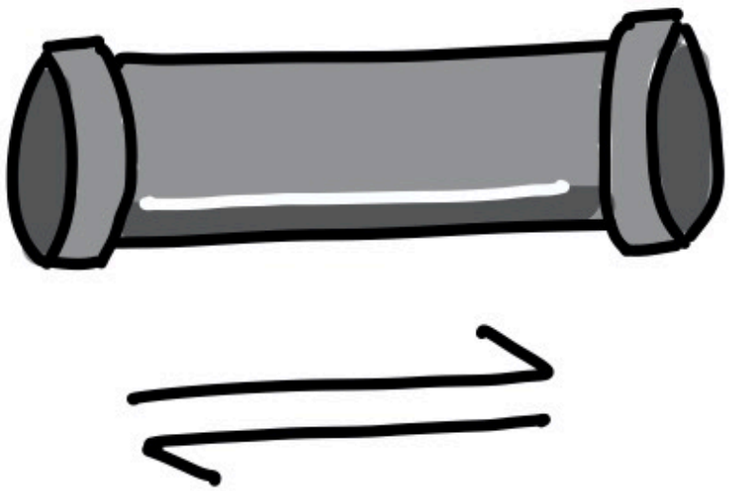
The legitimate part of Cybersecurity Industry

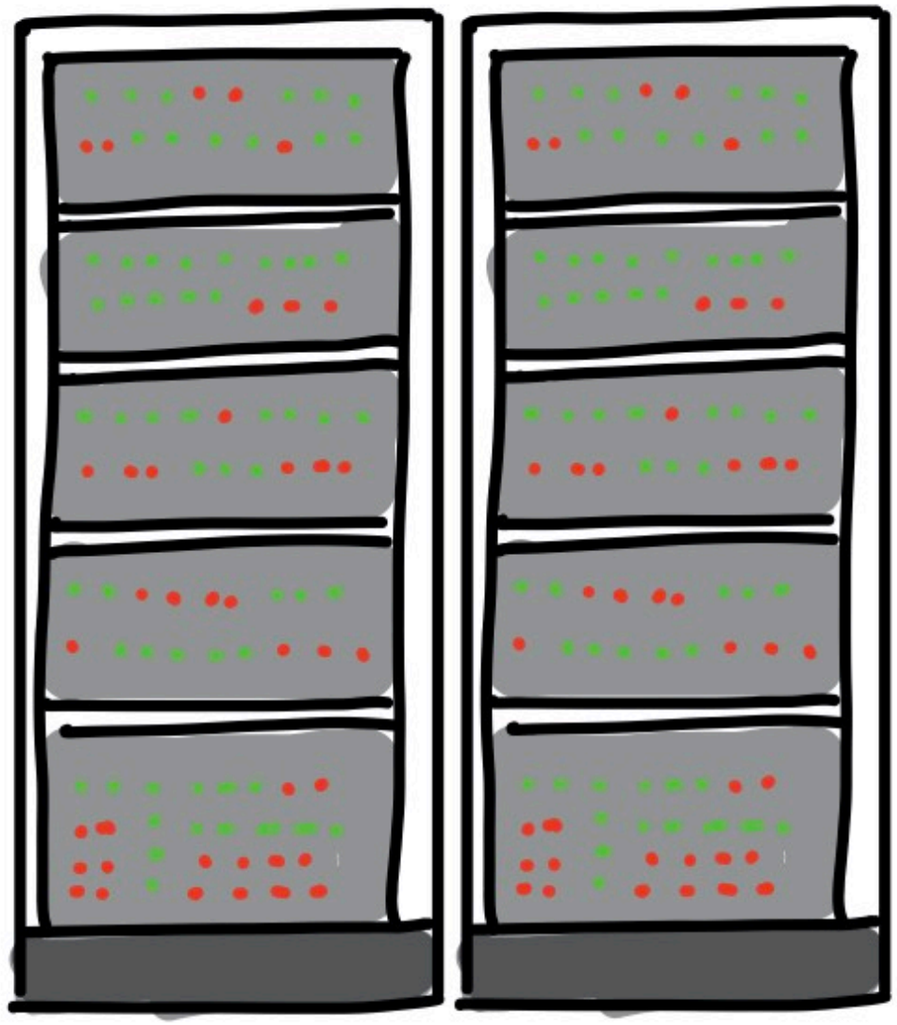
“There are only two types of companies—those that know they’ve been compromised, and those that don’t know.”

Dmitri Alperovitch (Co-Founder of Crowdstrike)


Physical
machines
computers
Network
DATA
Perimeter security
Access control







Endpoint

Network

Servers

The Business

- Personal Software
- Enterprise Software
  - Identity management
  - Endpoint security
  - Network traffic security
- Testing & Consulting

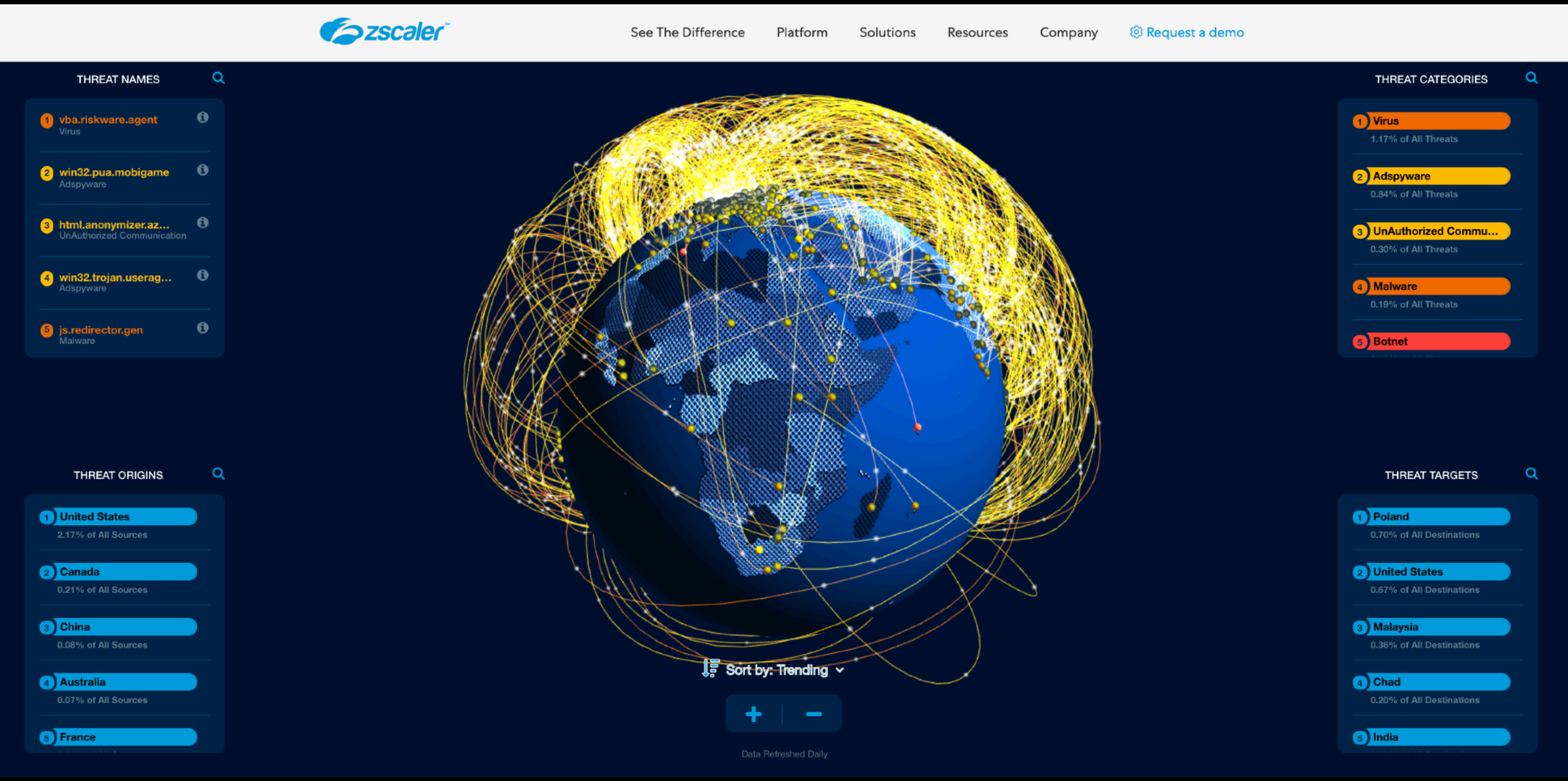
Hype / Trend?

$ Mn	MCap	Revenue	PAT	Gross Margin	PAT Margin	5 Yr Avg RoCE	P/E	P/S	Country
Fortinet	54,581	2,594	554	77%	21%	23%	98.5	21.0	US
Palo Alto Networks	52,300	4,557	-510	70%	-11%	-6%		11.5	US
Crowdstrike	47,037	1,285	-211	73%	-16%	-10%		36.6	US
Cloudflare	43,300	588	-216	76%	-37%	-14%		73.6	US
Zscaler	42,700	761	-297	76%	-39%	-15%		56.1	US
OKTA	33,800	1,151	-683	70%	-59%	-20%		29.4	US
Akamai	18,700	3,402	604	64%	18%	10%	31.0	5.5	US
Splunk	17,600	2,517	-1,337	75%	-53%	-20%		7.0	US
Check Point Software	15,170	2,131	826	88%	39%	25%	18.4	7.1	Israel
Norton LifeLock	15,000	2,689	886	84%	33%	20%	16.9	5.6	US
F5 Networks	14,200	2,603	331	81%	13%	21%	42.9	5.5	US
Avast	8,400	931	288	78%	31%	16%	29.2	9.0	Czech Republic
McAfee	4,700	1,826	650	71%	36%	15%	7.2	2.6	US
Mandiant	4,100	1,001	-222	64%	-22%	-11%		4.1	US
Quickheal	174	45	13	95%	28%	15%	13.8	3.9	India

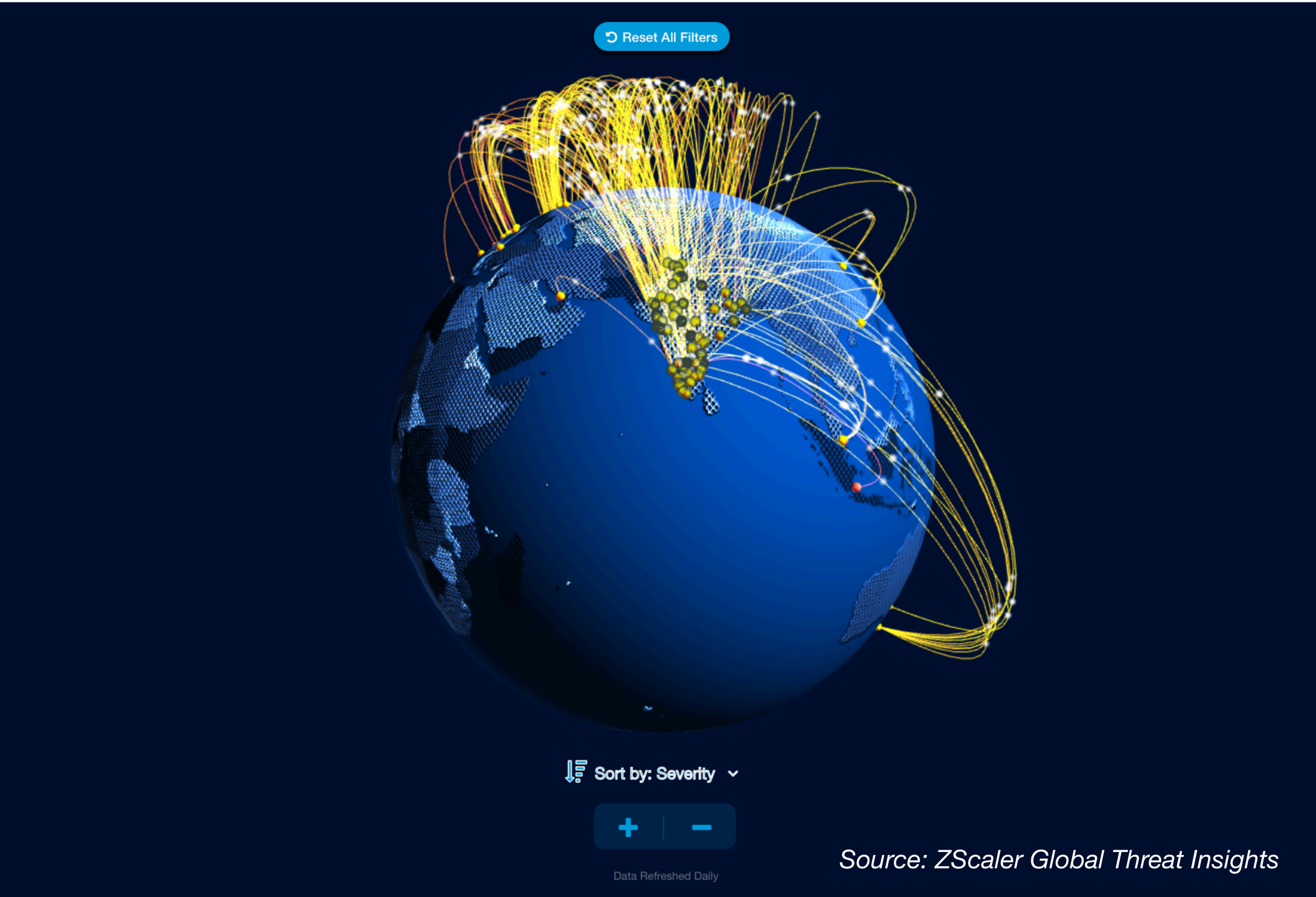
Source: Company Filings

Why pay for this?

- Can’t DIY vs Talent
- Data Protection
- Data & User Privacy
- Regulatory Requirement
- Transactional Security
- Latency & Availability
- Integrations with other vendors



Source: ZScaler Global Threat Insights



Source: ZScaler Global Threat Insights

FUD

Fear - Uncertainty - Doubt

Zero Day Exploits

The threats no one know about?

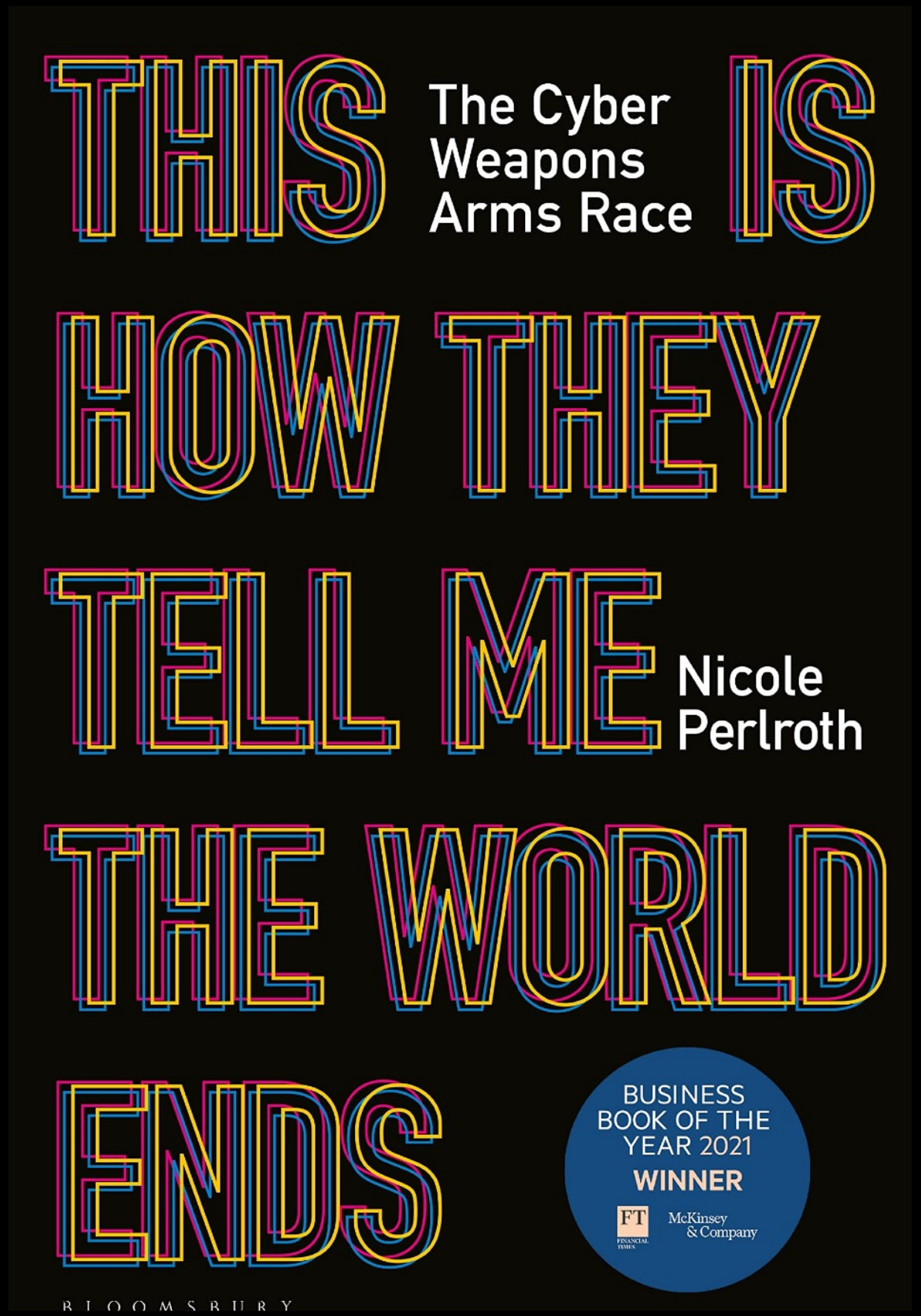
Zero Days
Documentary

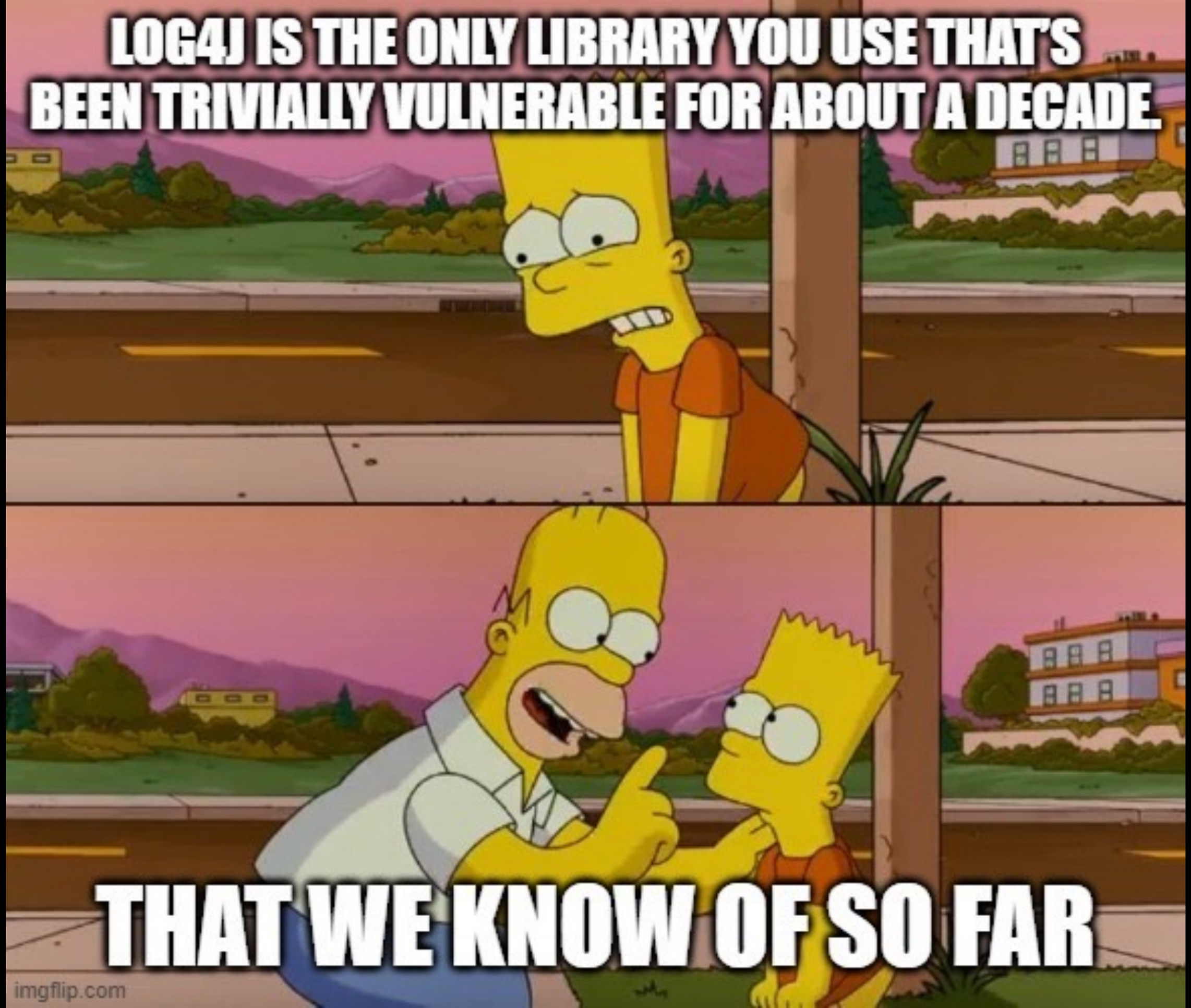
- Stuxnet Execution
- Exploiting ‘zero day vulnerabilities’ in popular softwares
- Made this form of warfare acceptable & expected.

This is how they tell me the world ends

By Nicole Perlroth

- Zero Days market
- Cyber weapons brokers & arms race
- Flat World
- Cyber Offence & Defence

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“Move Fast & Break Things”

OR

“Move Slow & Fix Things”

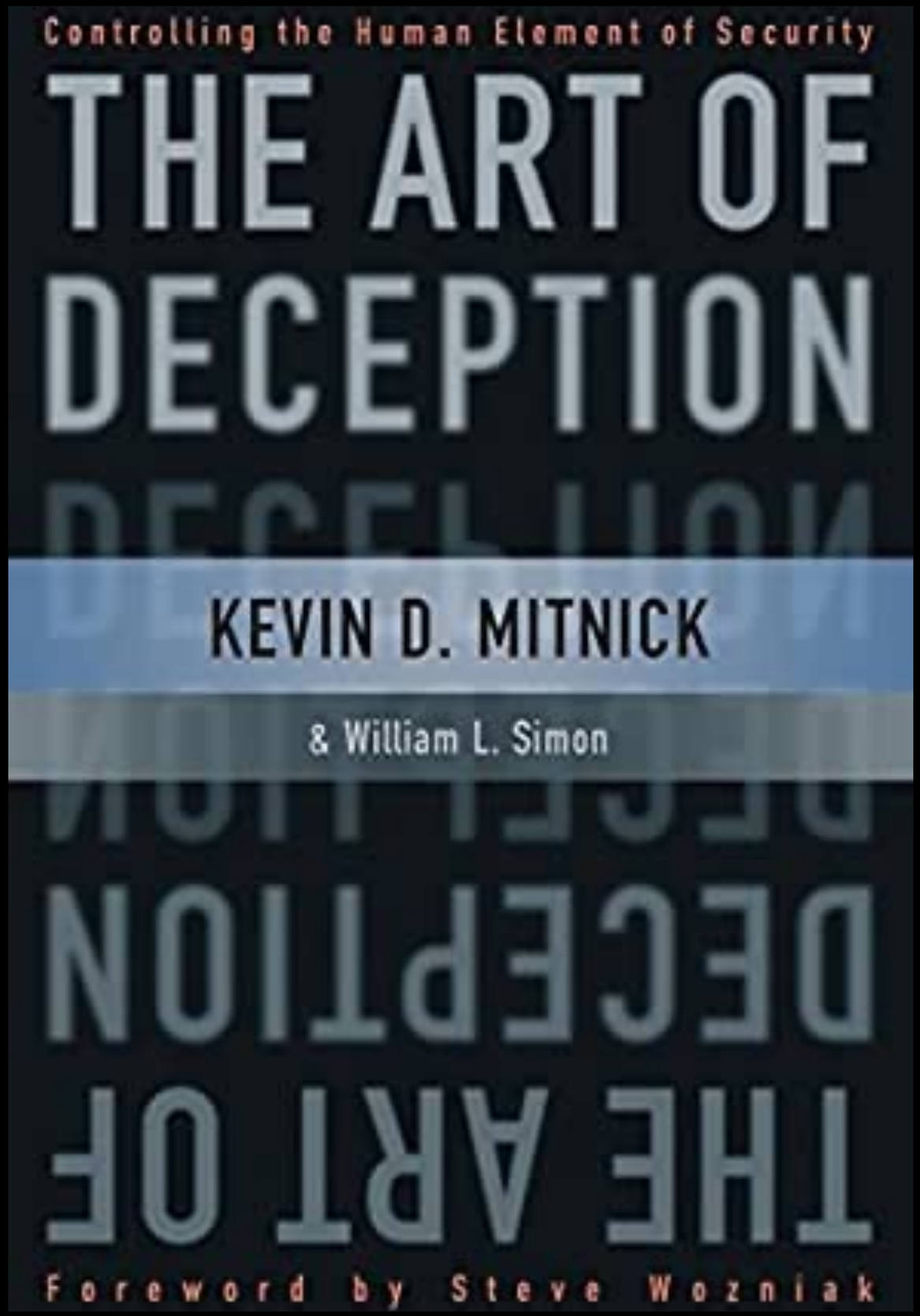
The Weakest Link

The chain is only as strong as its weakest link.

The Art of Deception

By Kevin Mitnick

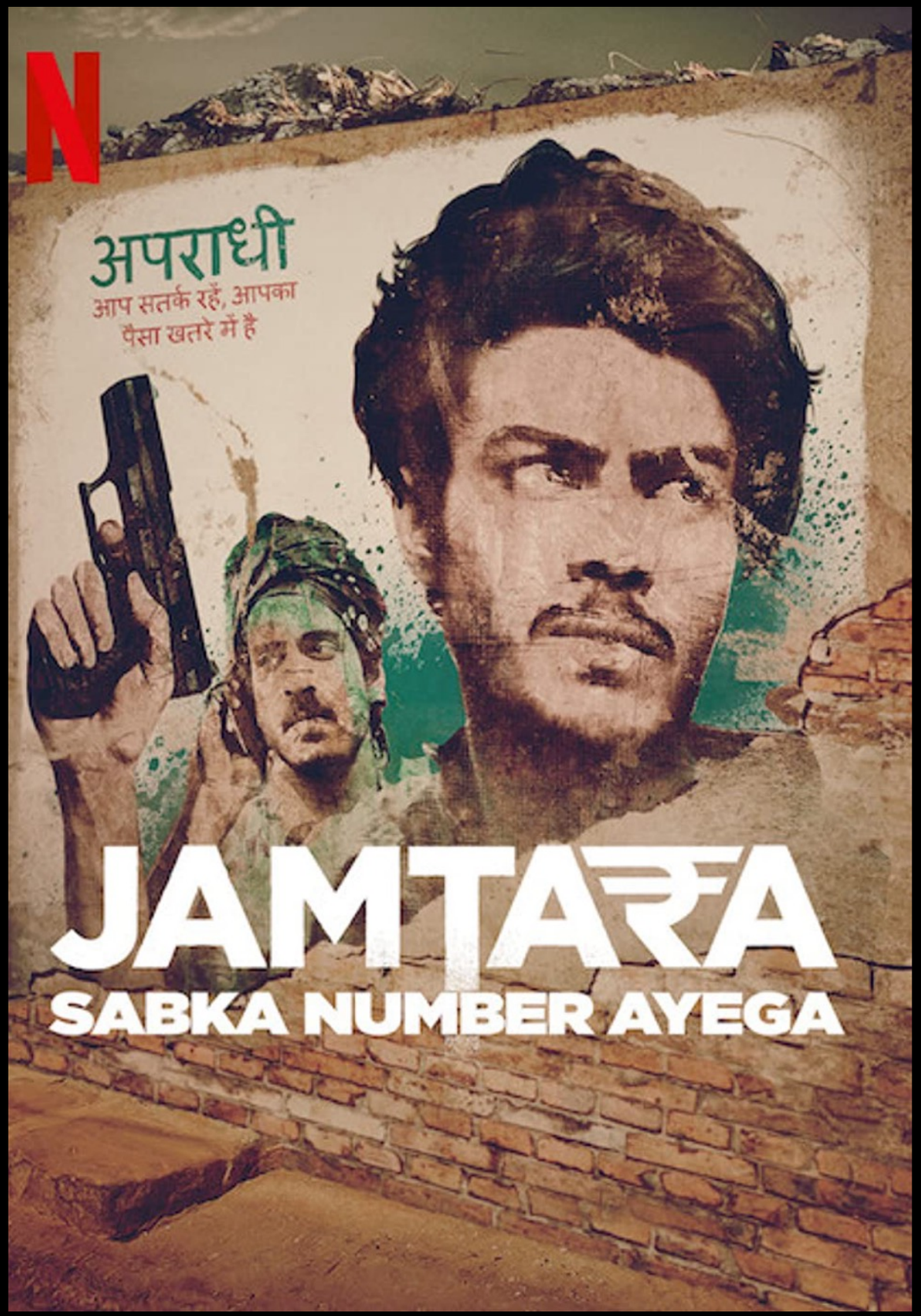
- Social engineering
- No Hacking Needed
- Most difficult to Stop
- High success rate



Jamtara

Netflix Series

- Phishing attack
- Unorganised to Organised market :)



Protecting Ourselves

Do we stand a chance?

Protecting Ourselves

Make it harder for the hacker to hack you…

- Don’t use pirated software
- Update all softwares we use regularly
- Remove unwanted or unused softwares from our devices
- Use complex passwords & change frequently
- Use different passwords for different online services & 2FA
- Check / Double check the links we click on
- Don’t give personal information / PIN / OTP over phone / text
- Check / Double check app permissions allowed by us
- Pray 🙏🏽

Thank you

Happy to take questions…