



Security Debt

Running With Scissors

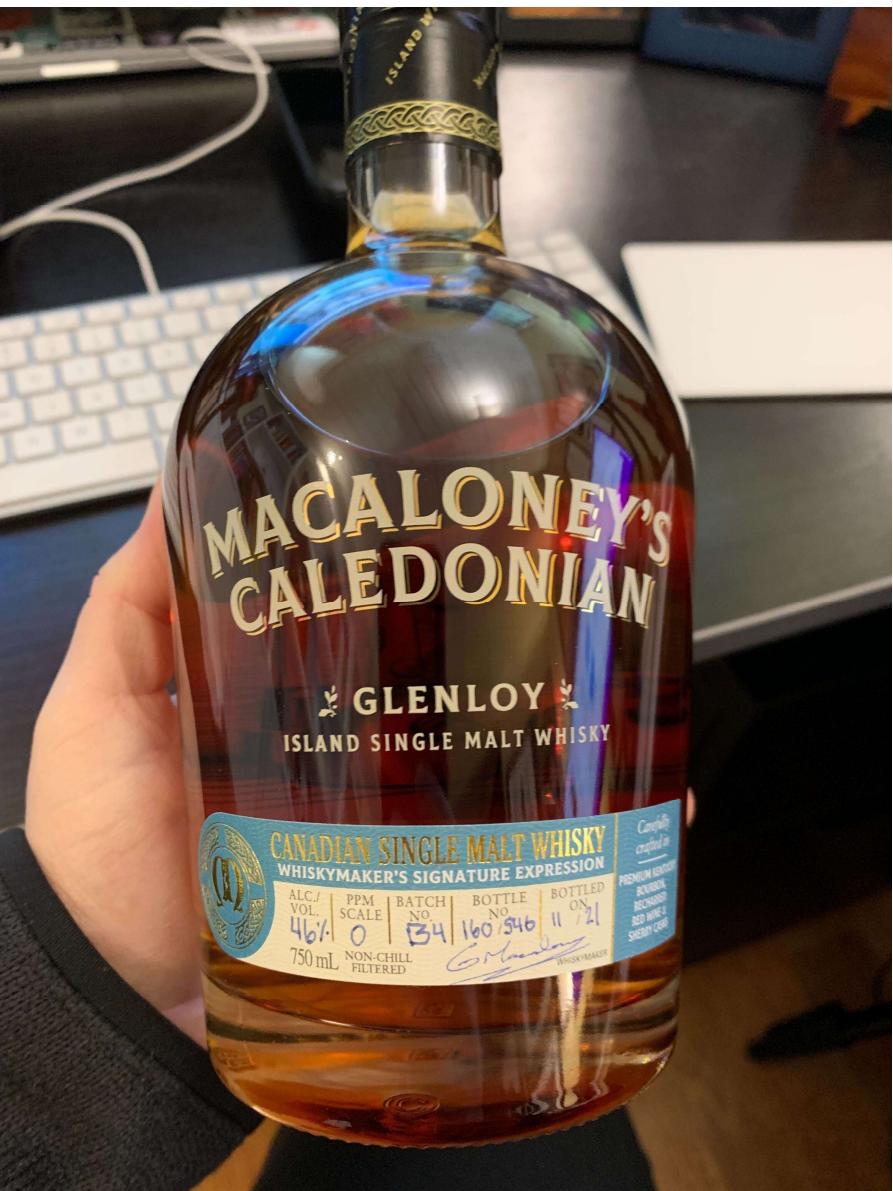
Dave Lewis
Global Advisory CISO
January 22, 2023



WHOAMI

- Dave Lewis
- Global Advisory CISO, Cisco
- Hacker
- Grey Beard
- Coffee Drinker
- Whisky Distillery Co-Owner
- Soccer Club Co-Owner





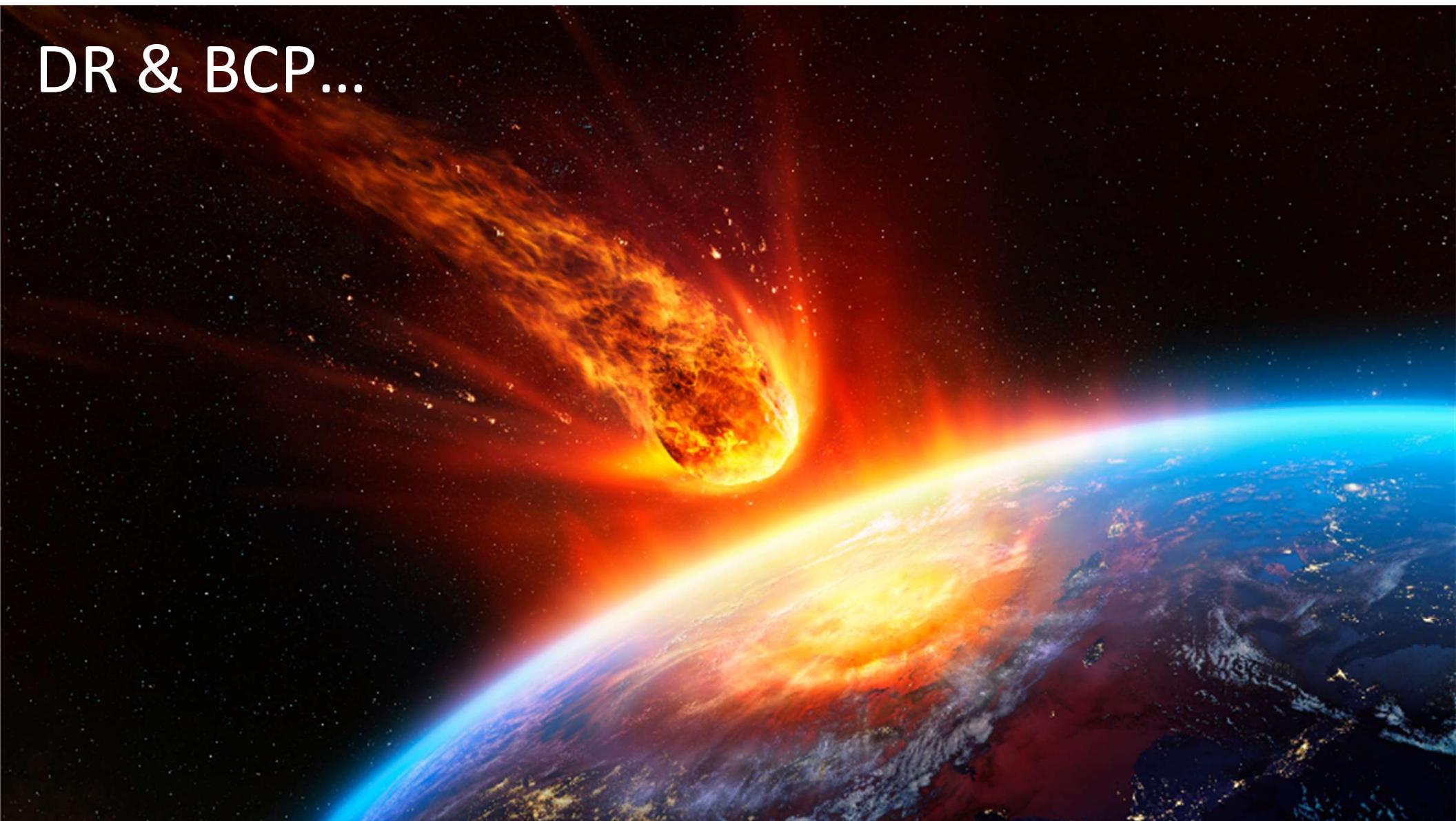




Castles Don't Scale



DR & BCP...



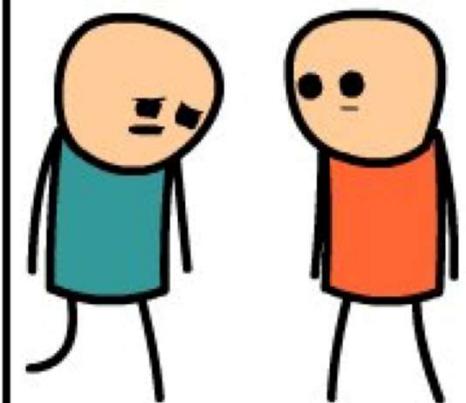




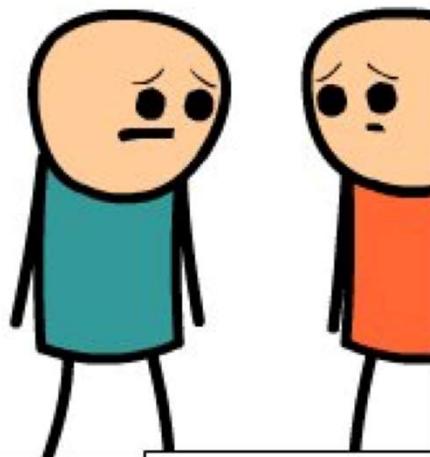




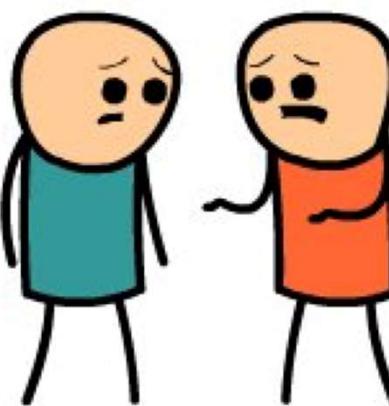
I GOT THE DOCTOR'S
RESULTS BACK AND...



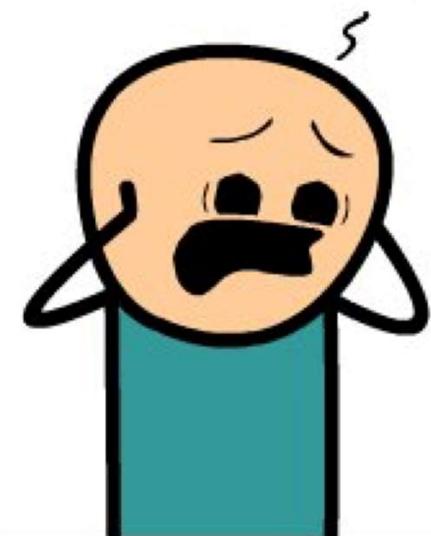
I'M **CANADIAN**.



I'M SO SORRY.



OH NO! IT'S
SPREADING!



Cyanide and Happiness © Explosm.net



hackers must



hackers must **have tools**

hackers must **know**

hackers must **read books**

hackers must **die**

hackers must **have apps**

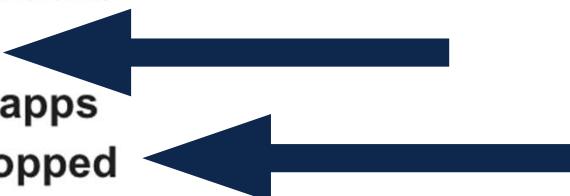
hackers must **be stopped**

why hackers must **eject the sjws**

ethical hackers must **obtain**

all hackers must **die**

movies that hackers must **watch**



Report inappropriate predictions



SPAWAR



...
CISCO



BMO



The Challenge



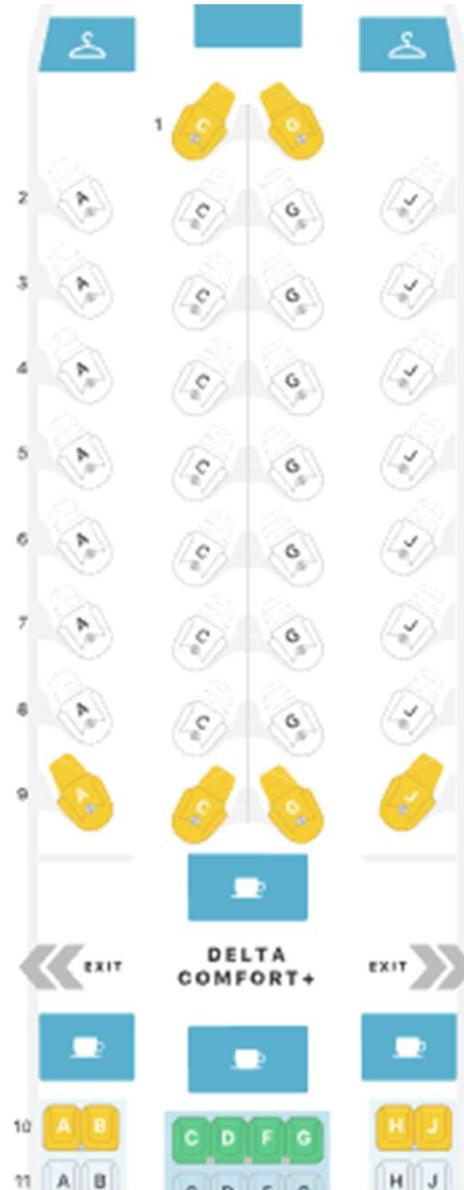
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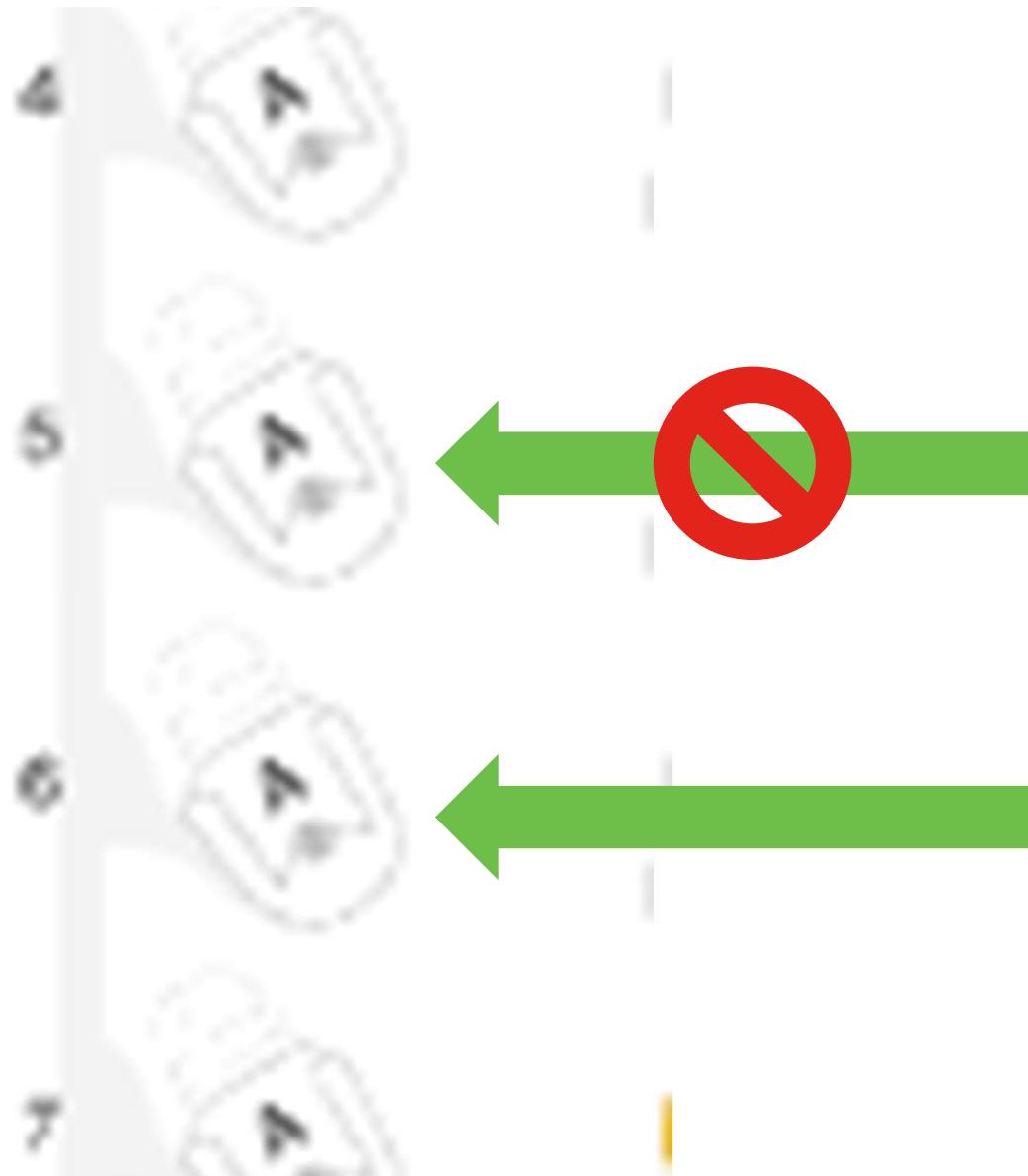


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AMS ATL 01:27PM



The Flight Manifest



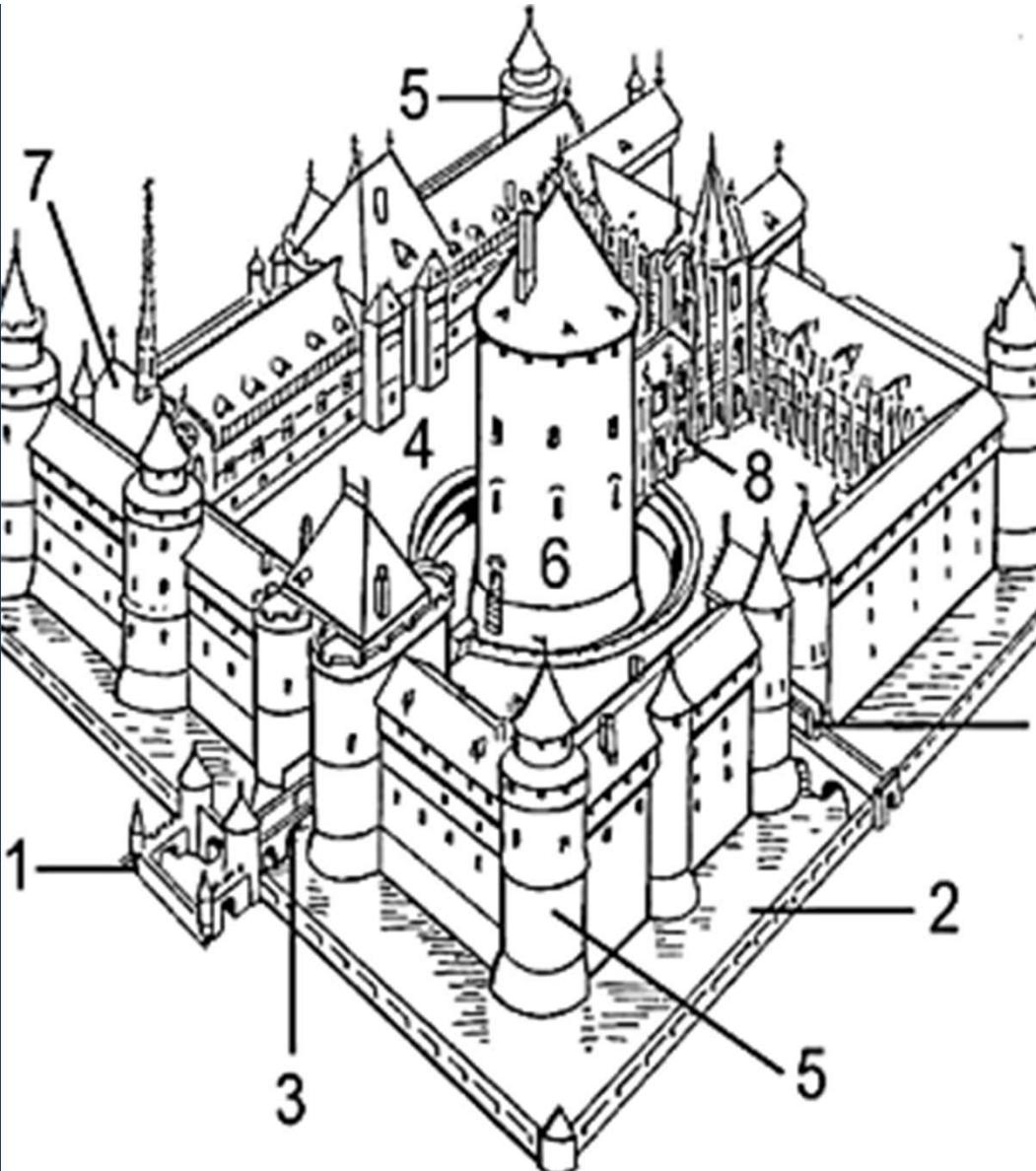


So Close...





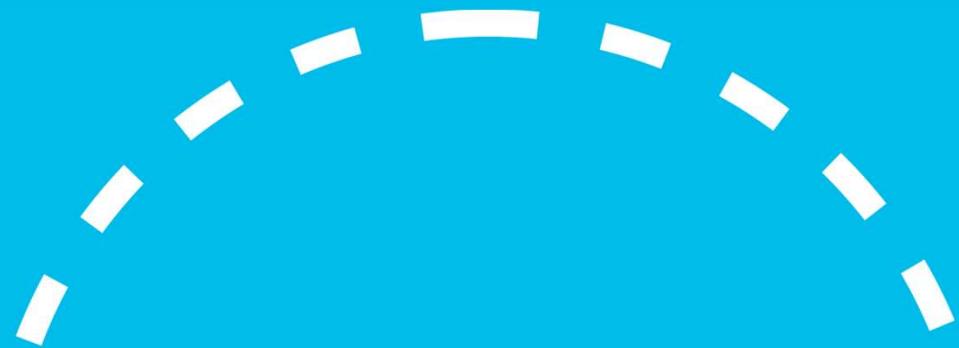
Resilience requires the ability to manage change, which may be positive or negative.



- Leadership buy-in
- Recognize the problem areas
- Invest in your people
- Converge information security with operational technology
- Have a security-by-design mentality
- Implement multi-factor authentication (MFA) everywhere

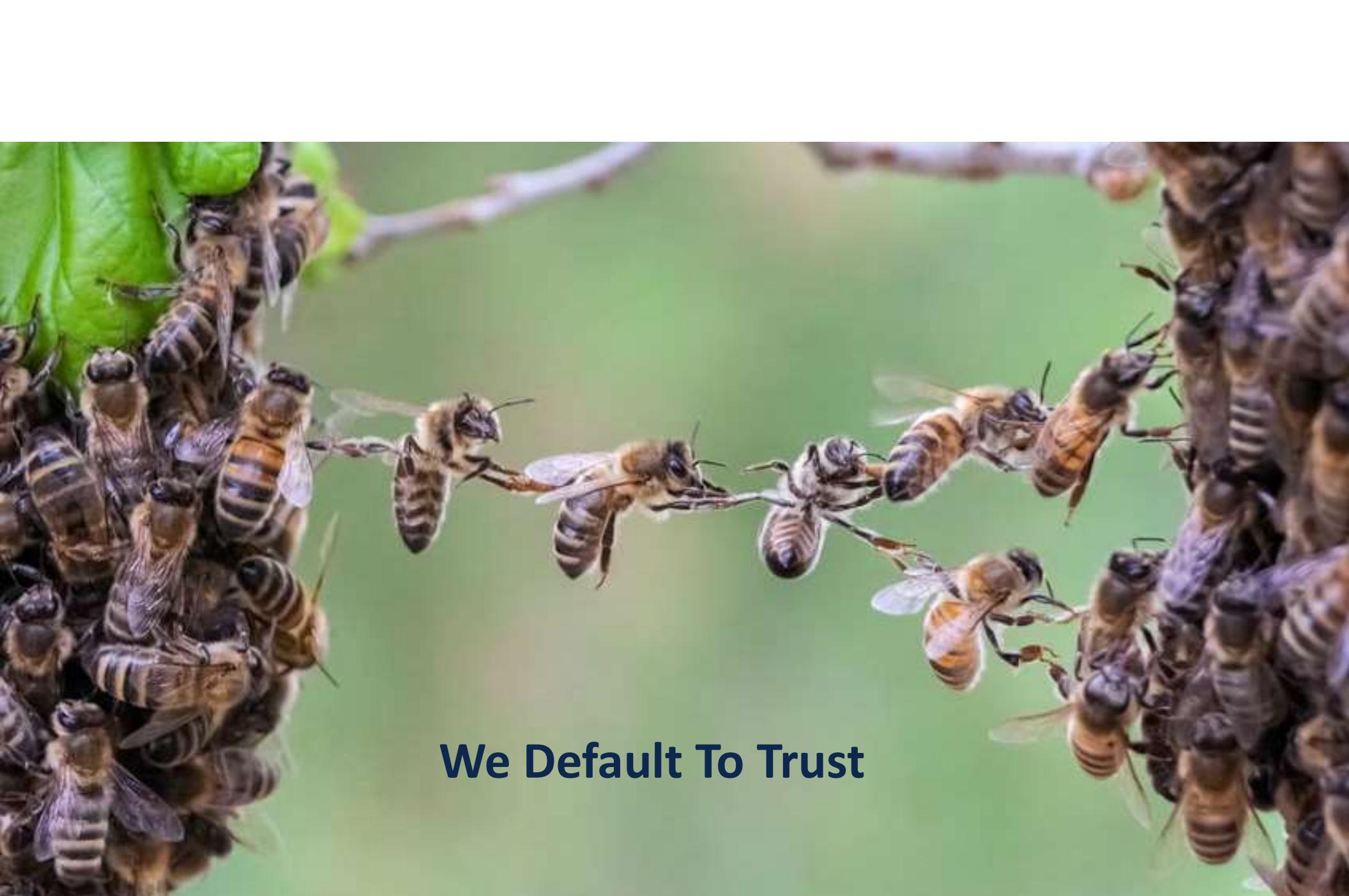


Don't trust something
just because it's on the
“inside” of your firewall









We Default To Trust



Defining Security Debt

A photograph of a person's hand reaching upwards from the surface of a body of water. The hand is positioned palm-up, with fingers spread. A significant splash of white foam and water droplets erupts from the wrist area, creating a central vertical axis of motion. The background consists of a vast, calm sea under a sky filled with scattered, soft-edged clouds. The lighting suggests either early morning or late afternoon, with a warm glow on the horizon.



How Did We Get Here?

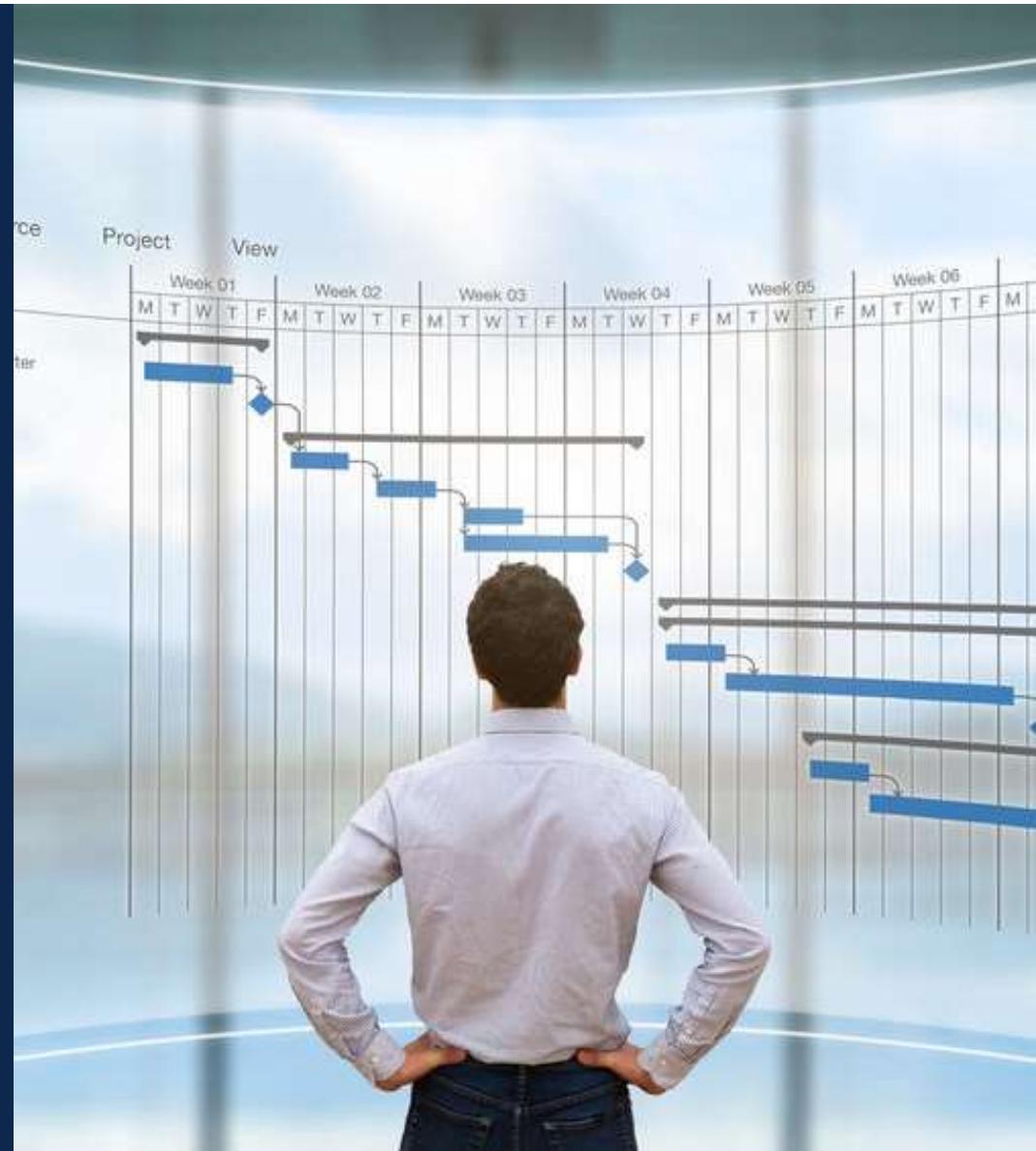


Beige Desktop?





The Project Managers

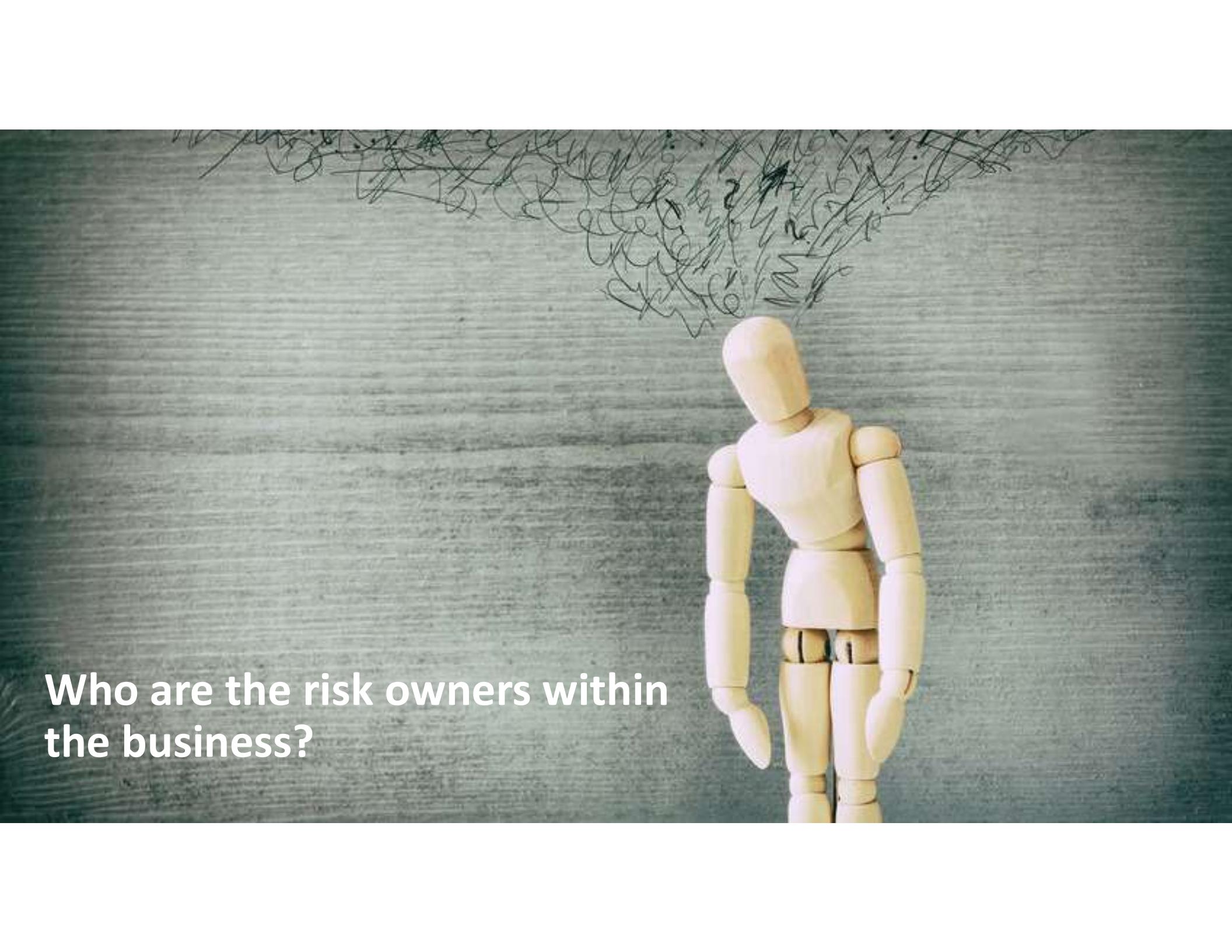


What are the business priorities?



What is important from the business context?



A wooden mannequin stands in the foreground, facing away from the camera towards a chalkboard. The chalkboard features a simple black and white drawing of a tree with a trunk and branches. The background is a dark, textured surface.

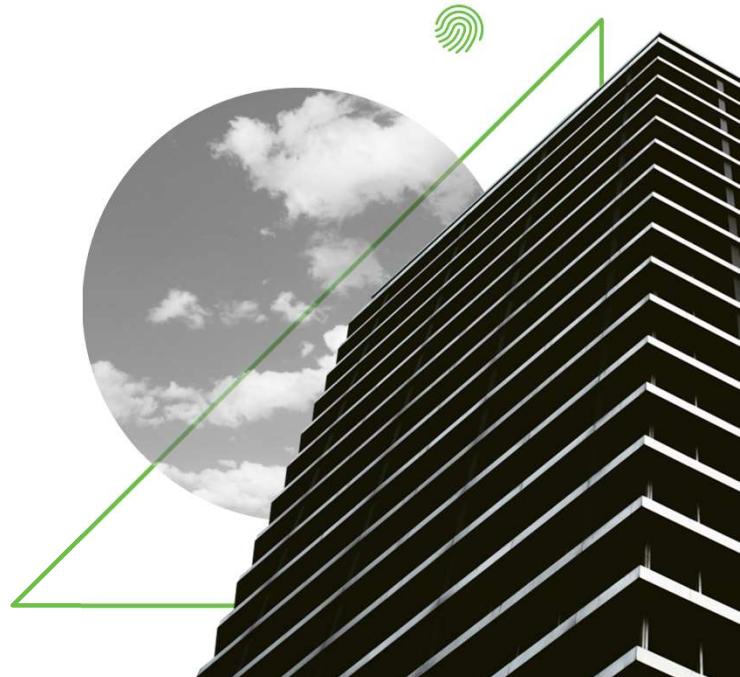
**Who are the risk owners within
the business?**

Can we measure the current state, quantify the debt, and how we can improve it?



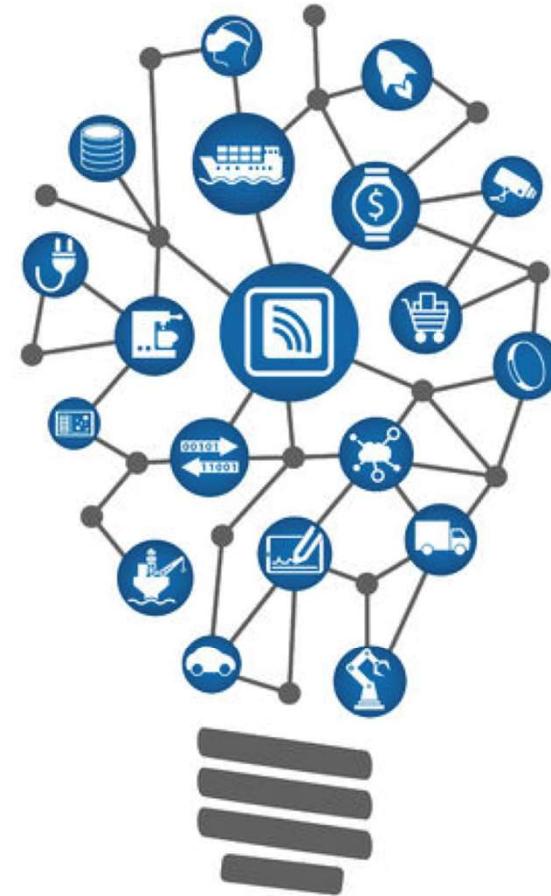
Compound Interest

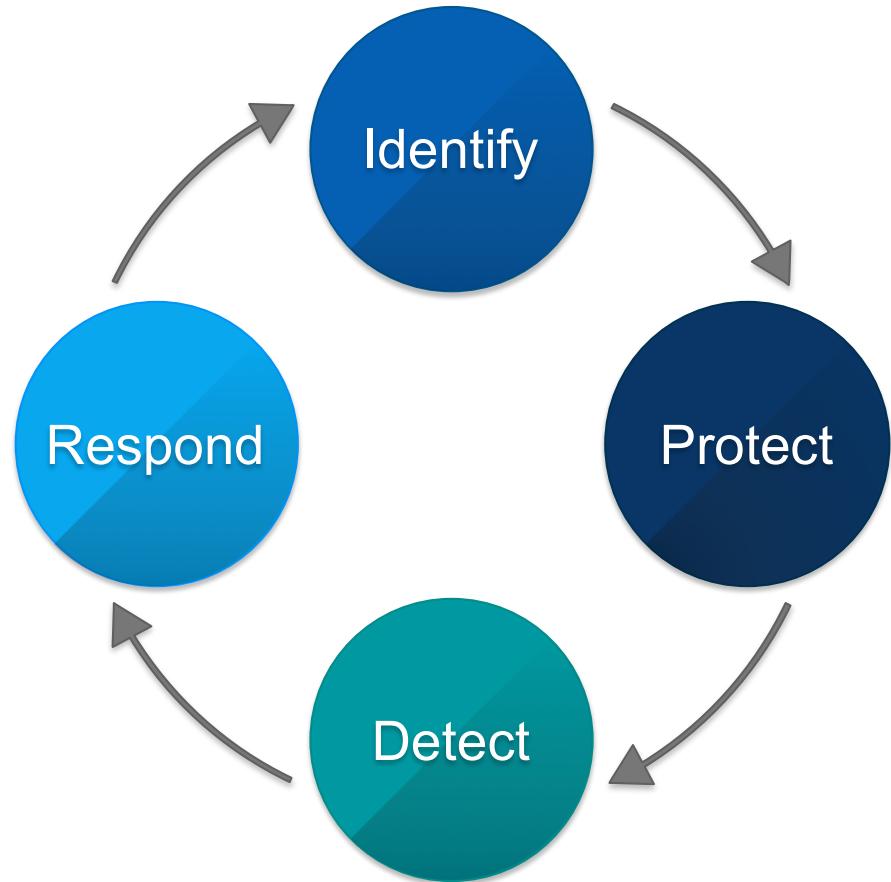
- Risks left unaddressed
- The years pass
- More software is added to the mix
- Layers of risk
- Danger grows with time and inaction



How IoT Drives Costs Higher

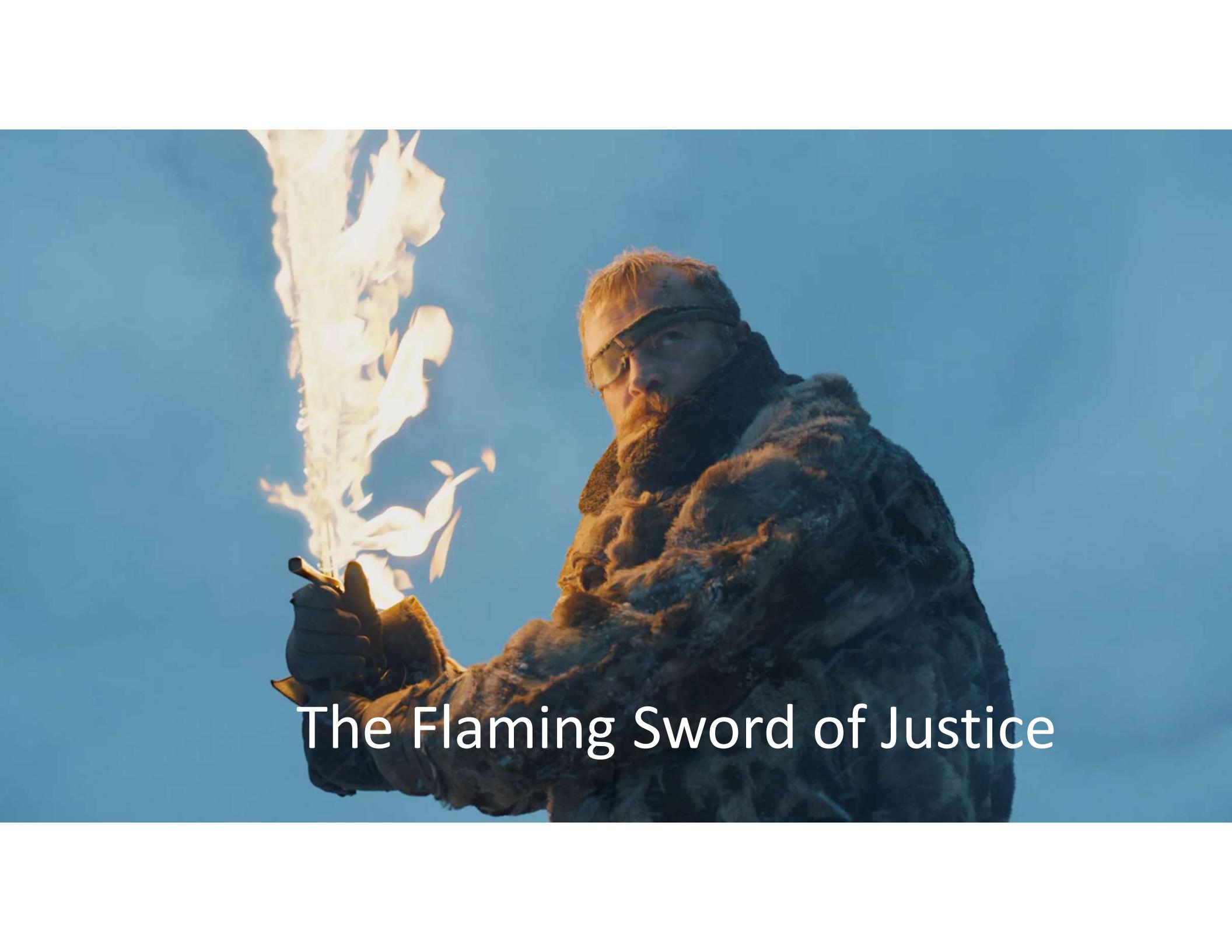
INTERNET OF THINGS









A man with a beard and a headband, wearing a dark fur-trimmed coat, holds a long, flaming sword. The flames are bright yellow and orange, casting a warm glow on his face and coat. He is looking off to the side with a serious expression. The background is a solid blue.

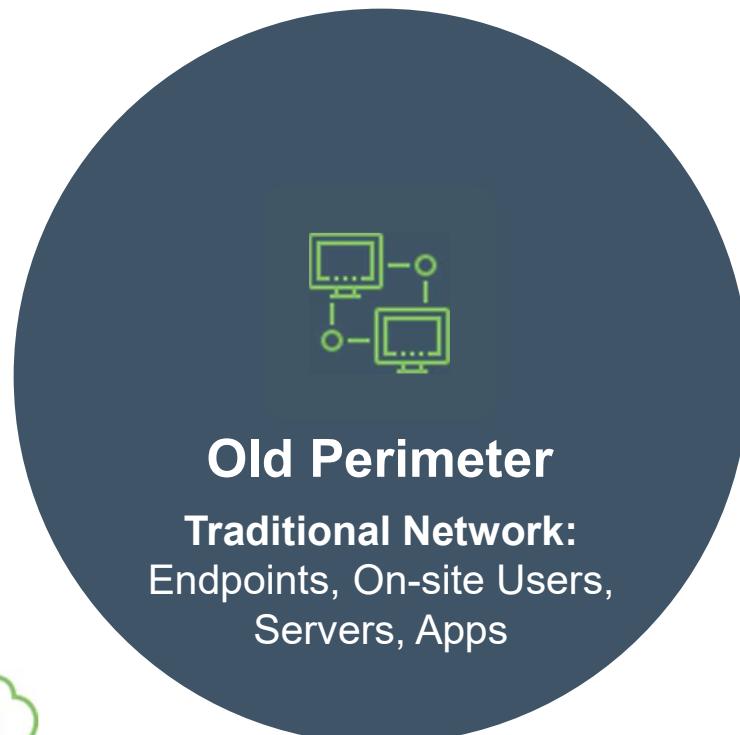
The Flaming Sword of Justice

The Flaming Sword of Justice

- Old School approach
- Dated
- Ineffective



New Perimeter



Remote Employees

Cloud Applications

Mobile Devices

Hybrid Cloud

Personal Devices

Vendors & Contractors

Data Breaches



81%

Of breaches involve stolen or
weak **credentials**

70%

Of breaches involve
compromised **devices**

Sources: 2020 Verizon DBIR, 2019 IDC Research

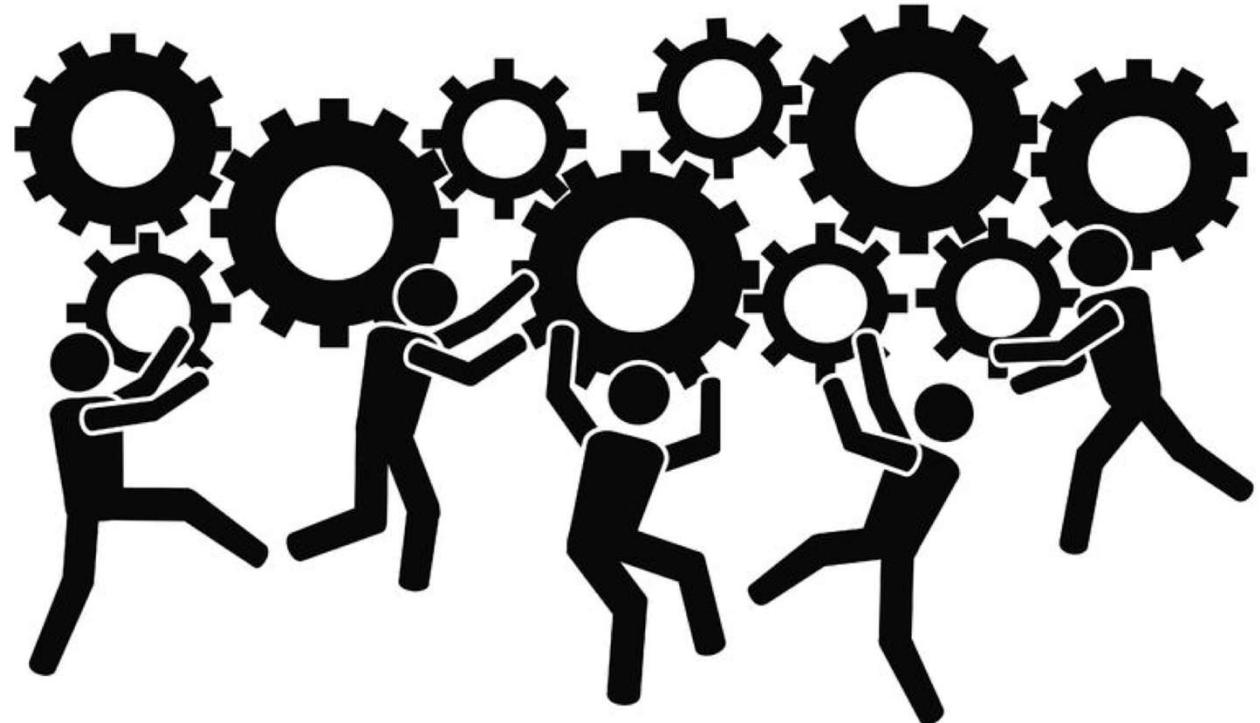
Continuous Trusted Access



Security As Part of the Mission

Developers need to see security as a core competency of their skill set and mission

All stake holders need to be a part of the solution!



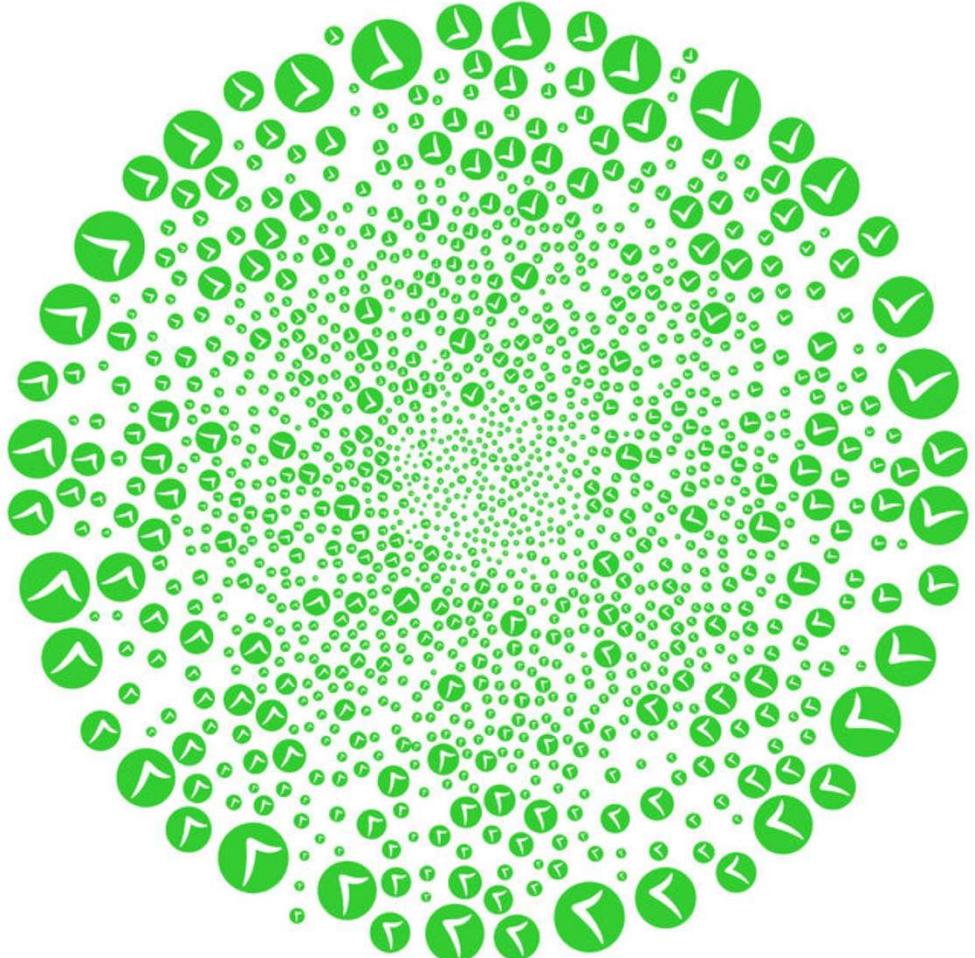
Bailing Wire & Duct Tape



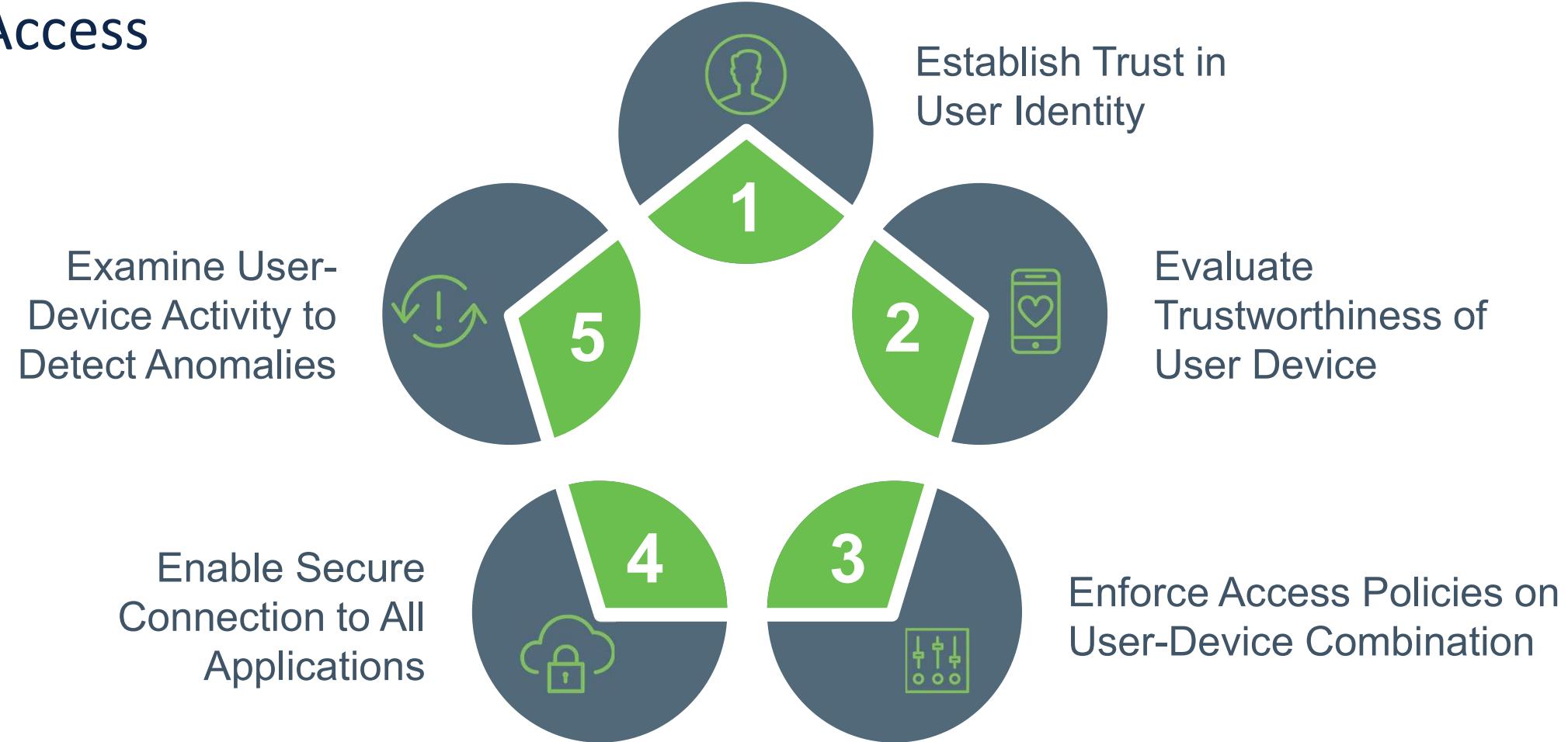


Trust But Verify

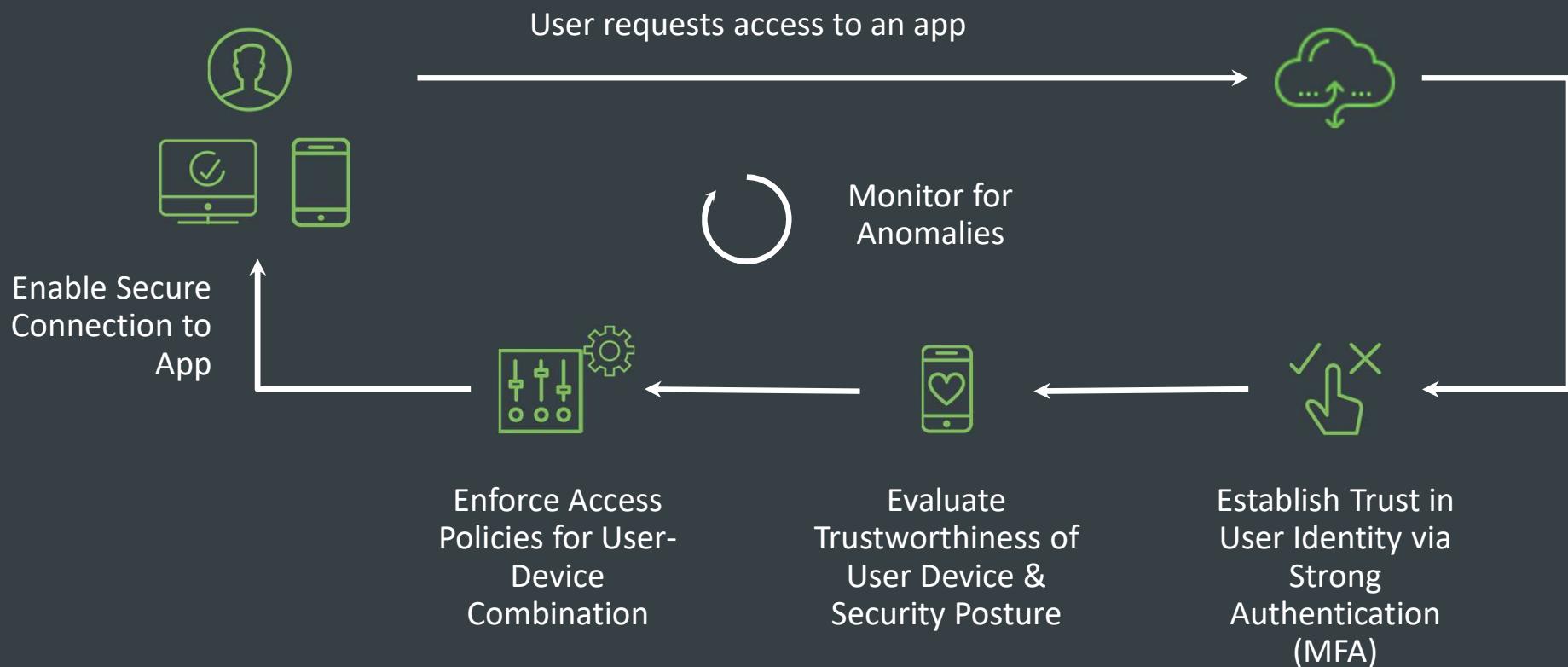
- Establish Trust In User Identity
- Evaluate Devices
- Secure Application Connections
- Sanitize Your Inputs
- Sanitize Your Outputs
- Patch Patch PATCH



Five Steps to Zero Trust Access

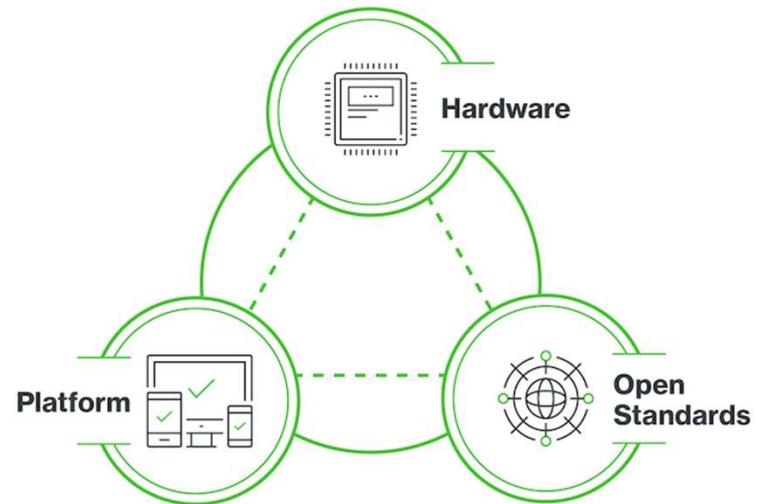


Zero Trust Access

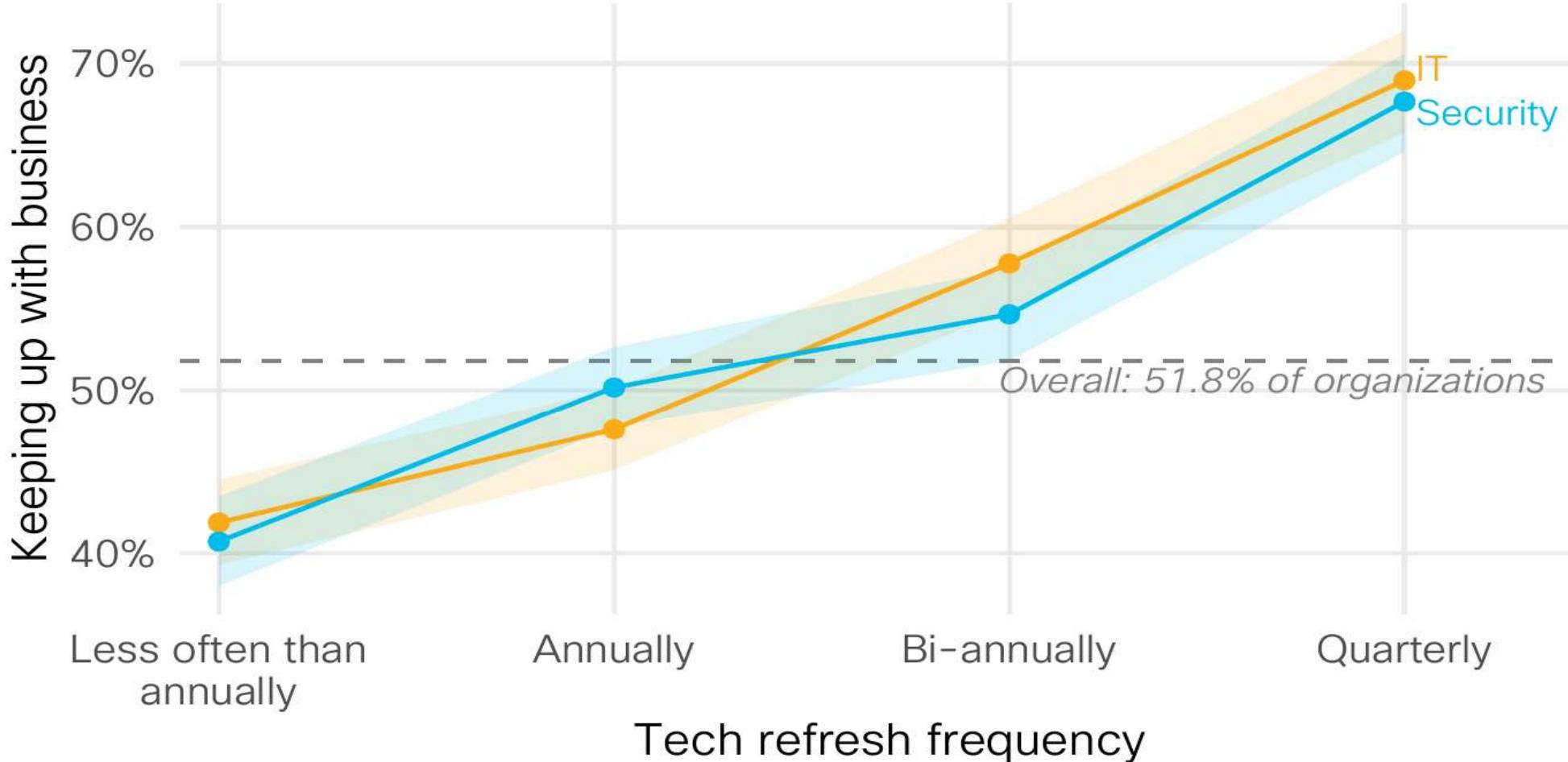


Weauthn

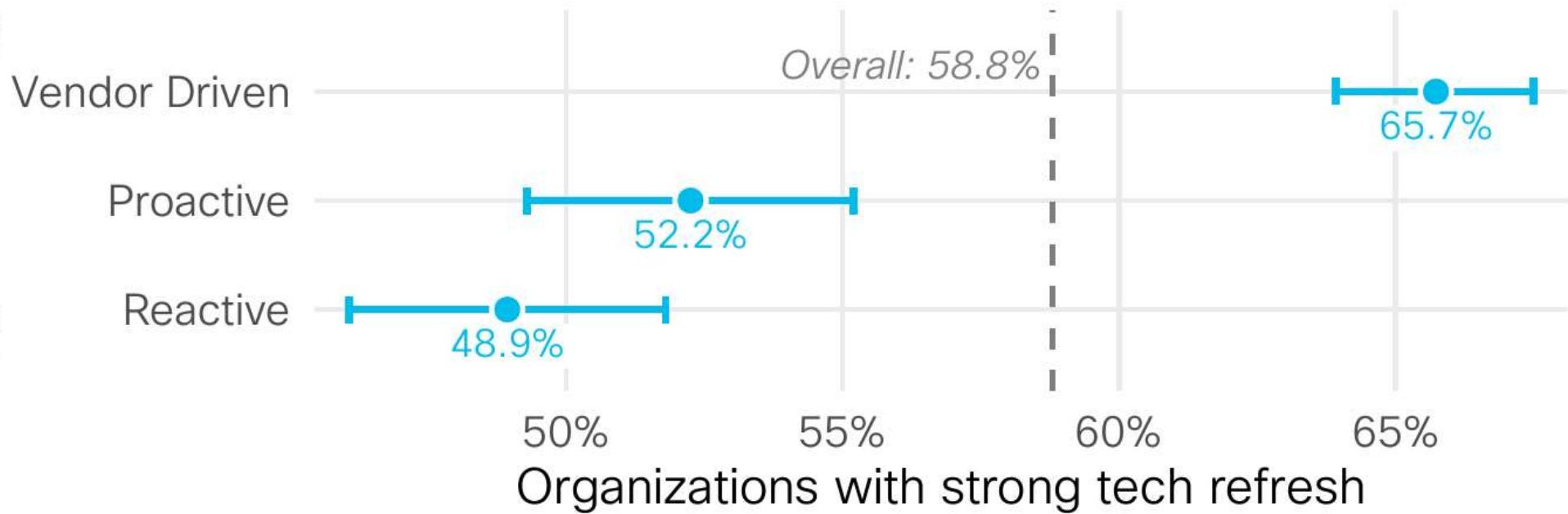
Biometric Authentication Ecosystem







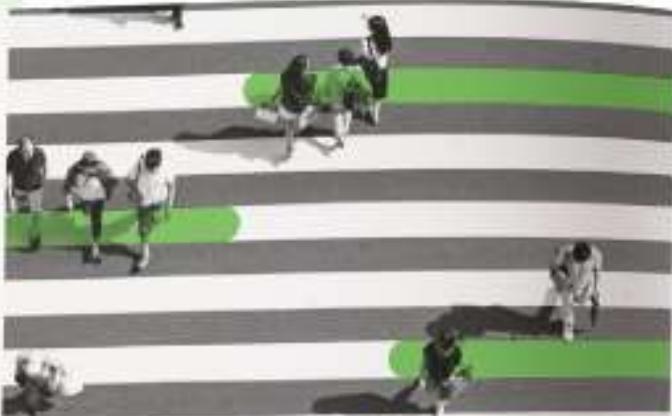
Upgrade strategy



Source: Cisco Security Outcomes Study



Source: Cisco Security Outcomes Study



2.0

Democratizing Security

The demand for security has never been greater. The expectation for accessibility is high. Safety and security continue to rise. Demand for enterprises must be more unique and flexible access. A secured strategy should be based on accessibility more than just convenience. There is a clear need to implement methods based on accessibility, security, convenience, as the core, and risk management principles respectively.

"The goal of security is to identify and mitigate risks to assets and data. This includes threat detection, and other Trusted Access methods. The traditional security paradigm is no longer sufficient to protect against the growing threat landscape. A new approach is needed to ensure security and accessibility for all users."

Wendy Nather
Principal Security Architect, Duo



Streamlining
Identity Services with
Duo

THE 2021 DUO Trusted Access Report

The Road to a Passwordless Future

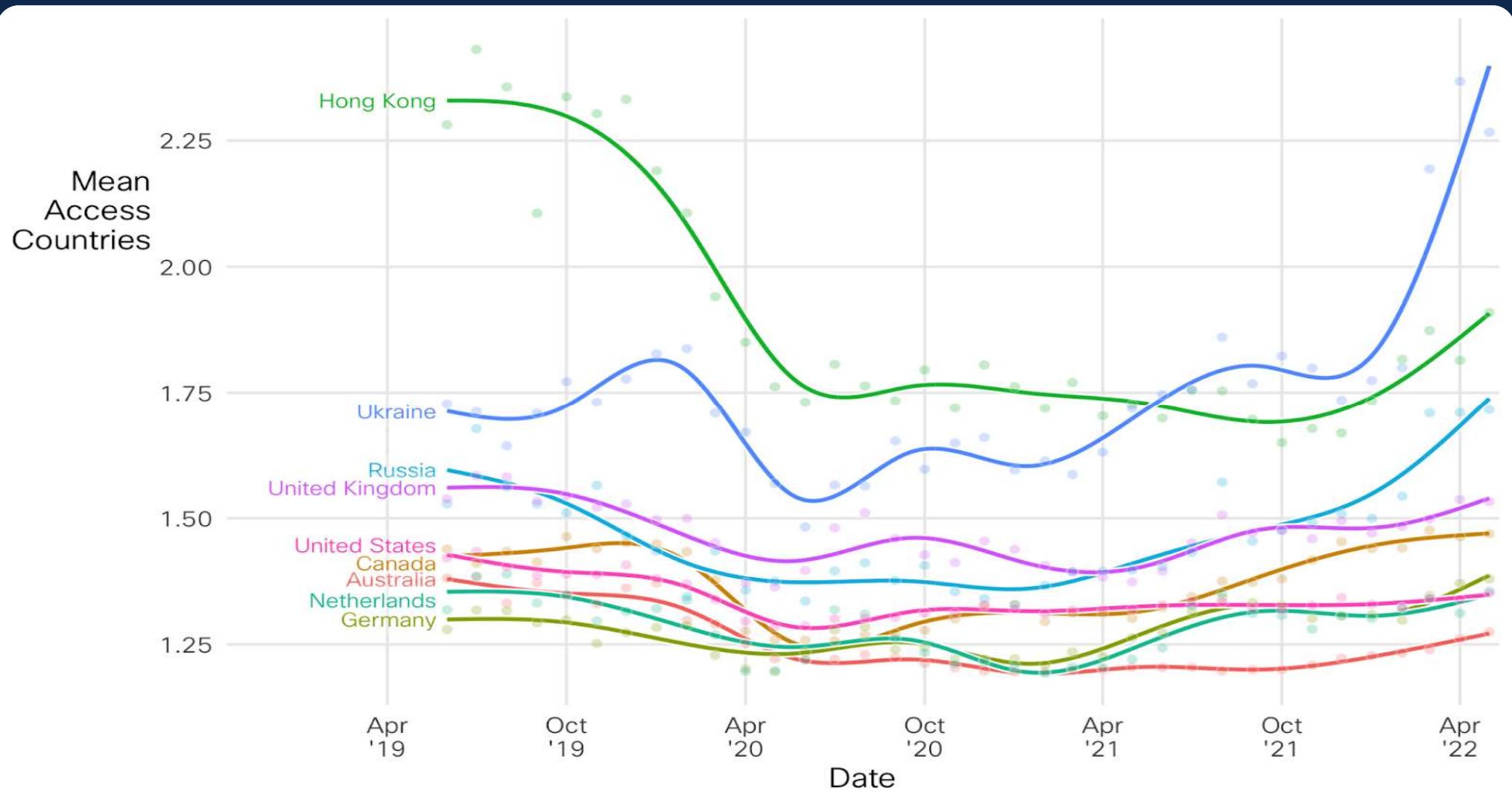
Duo is the leading provider of multi-factor authentication (MFA) and digital identity solutions. Our mission is to help organizations protect their users and data from cyber threats. We believe that security should be simple, secure, and accessible to everyone. That's why we created Duo. Our platform integrates with leading identity providers like Okta, OneLogin, and Ping Identity. We also offer a range of MFA options, including SMS, push notifications, and biometric authentication. Our products are used by thousands of organizations around the world, including Fortune 500 companies, government agencies, and educational institutions.

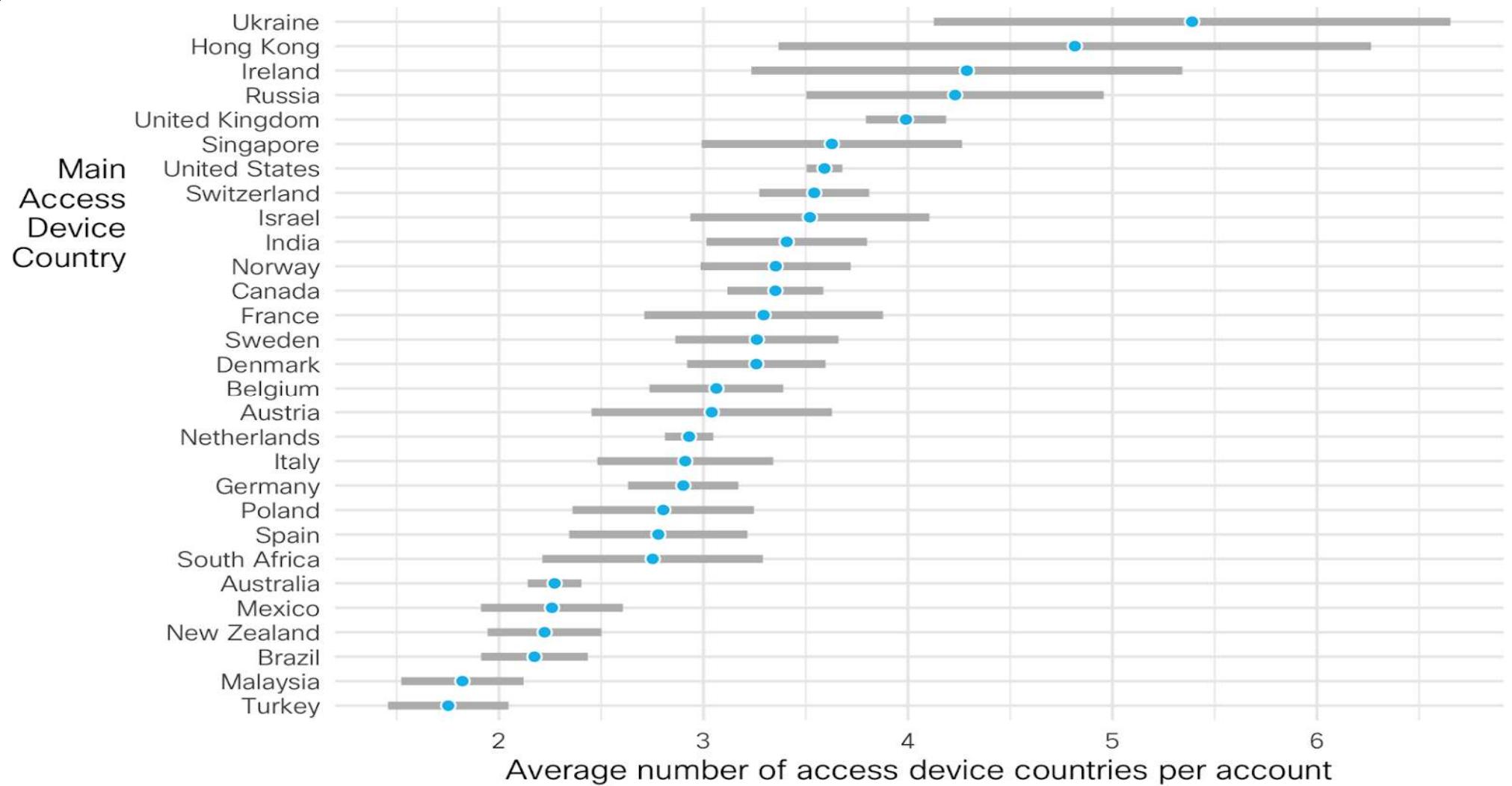
Democratizing security and accessibility are fundamental to Duo's mission. We believe that security should be accessible to everyone, regardless of their technical expertise. That's why we've made our products easy to use and easy to integrate. We also offer a range of support options, including 24/7 customer support, training, and consulting services.

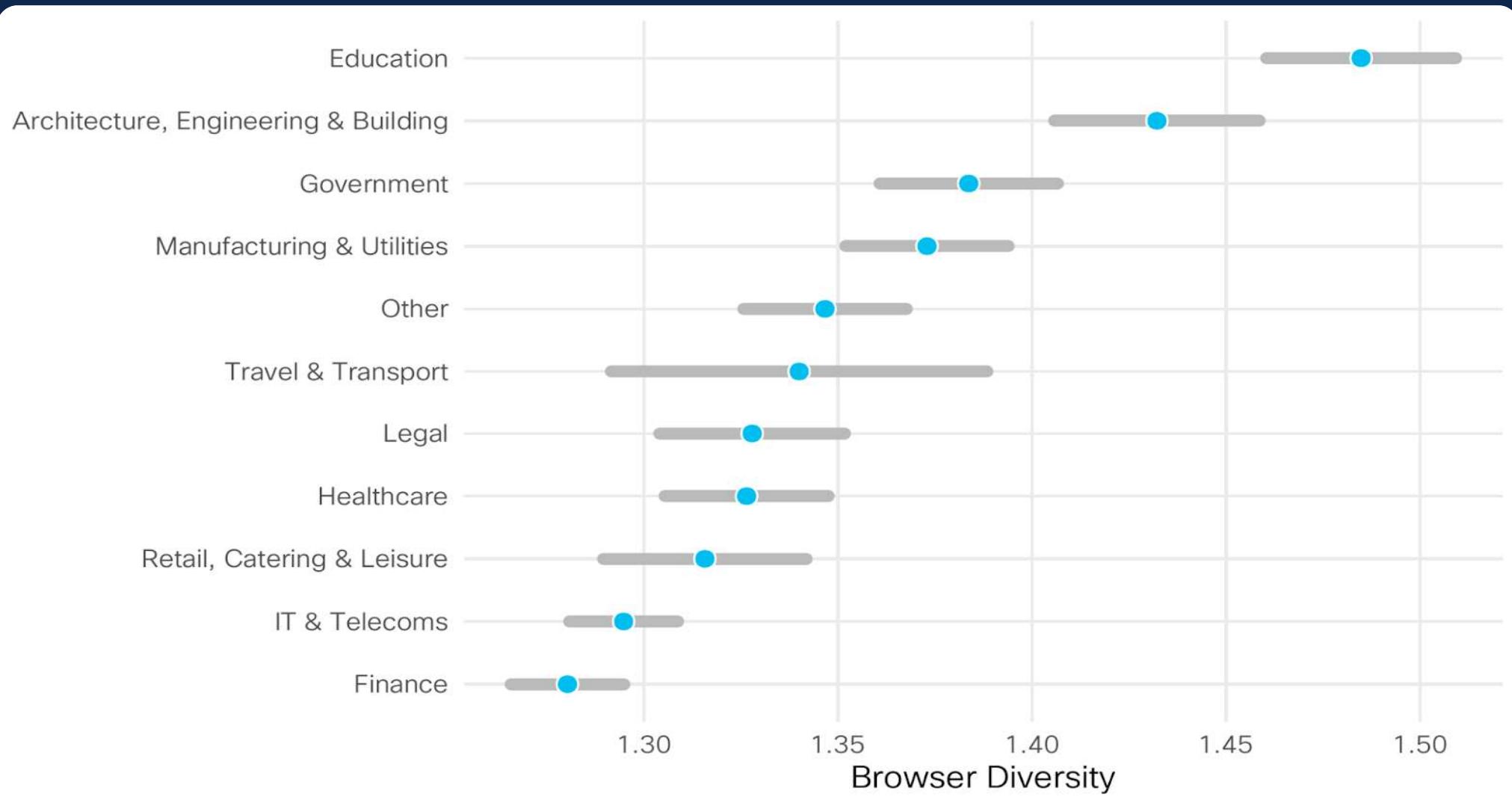
Today, Duo is a global leader in MFA and digital identity solutions. We're committed to helping organizations protect their users and data from cyber threats. We believe that security should be simple, secure, and accessible to everyone. That's why we created Duo. Our platform integrates with leading identity providers like Okta, OneLogin, and Ping Identity. We also offer a range of MFA options, including SMS, push notifications, and biometric authentication. Our products are used by thousands of organizations around the world, including Fortune 500 companies, government agencies, and educational institutions.

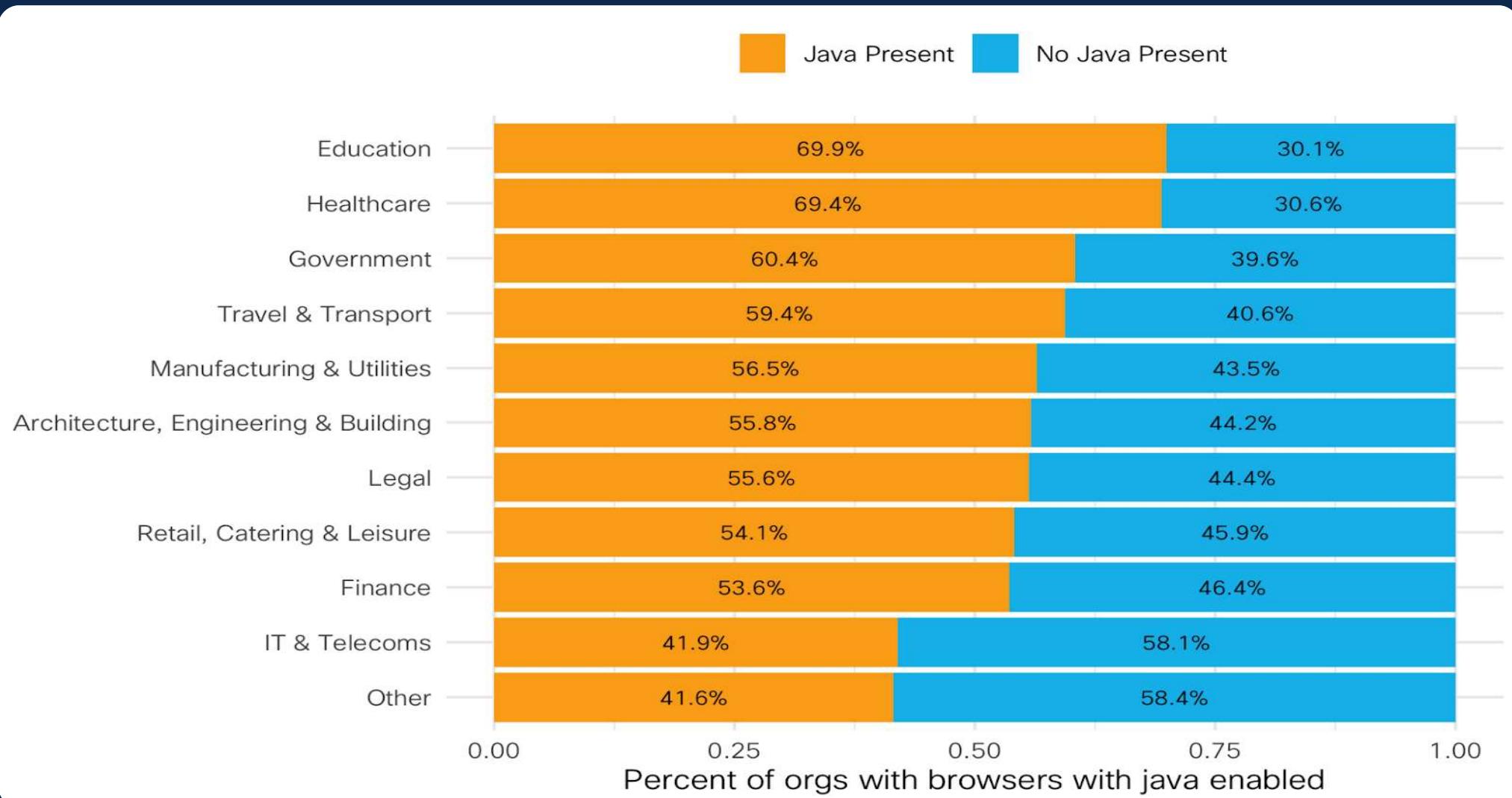
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DUO  SECURE

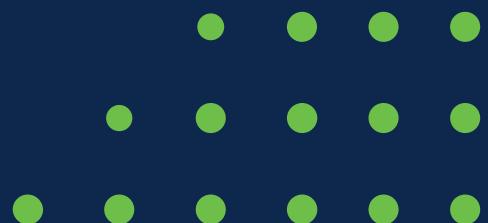








This still lingers ...



Democratizing Security



Do your parents use PGP?



Build to Fail

- As with any IT implementation failure will come
- Make your applications/infrastructure resilient
- Don't build for five nines
- Build to fail



Secure Resilient Systems

- Supply chain has many points that can be exploited along the way
- It is important to have a supply chain that can adapt
- A Zero Trust framework can help achieve a more secure enterprise



Zero Trust Shopping List



- Asset Inventory.
- User Management.
- Device Management through uniform security policy.
- Defined Repeatable Process.
- User and Entity Behavior Analytics.
- Network Zone Segmentation.
- Helmets for darts?

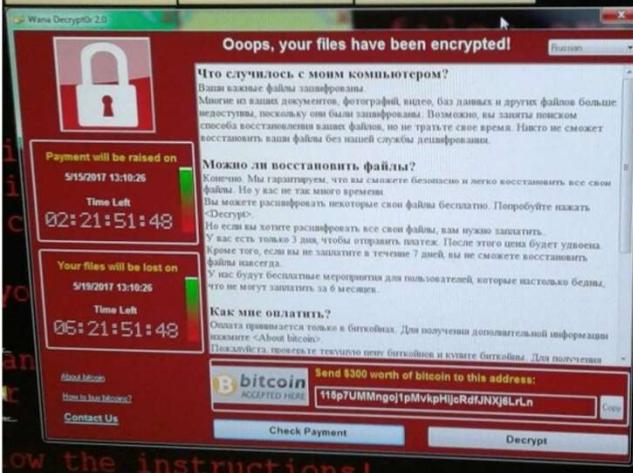
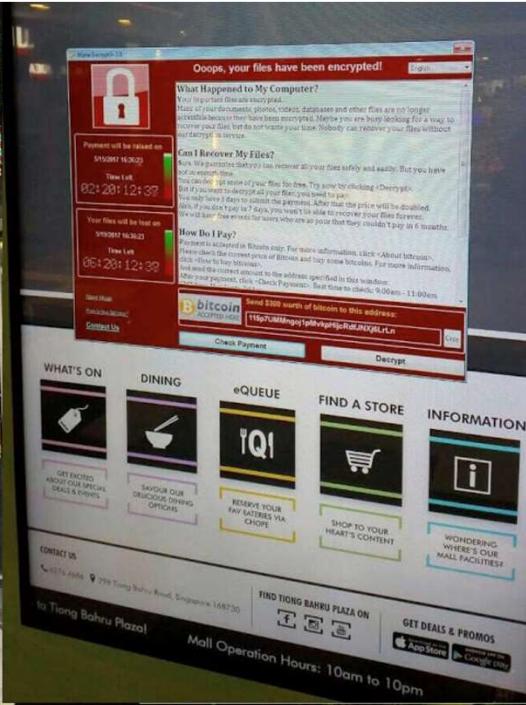
How We Often See The World





Law of Unintended Consequences





We Worry About The Threats



We Arrive At Analysis Paralysis





Lessons Learned...

Wrapping Up...





Power of Trust
& Resilience

Community: Safety in Numbers



Grow From Here...





Build a safe and secure future

Grazie per l'attenzione!

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