The computer says no!

Security as an enabler of the business

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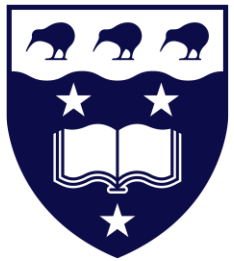

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Who am I?

- Current Principal consultant and Managing Director at PrivSec
- Ex-electrical engineer, SOC analyst, pentester, auditor, architect, security manager
- CISSP, CCSK, CCSP, PCIP, OSCP, CISA etc
- Have zero design skills ...
- I have a kid that says no a lot, so don't need it at work too

What this talk is about

- Security people like saying no
- Some examples of things that i've seen
- Constraints
- Understanding
- Tradeoffs
- What we can do

No is a two year olds favorite word

- And also security teams
- They are protective!
- They don't like change!
- But sometimes go for the easy answer
- How would you convince your child..?

The role of a security team

- Ensuring things are 'safe and secure'
- Might have a tendency to drift a wee bit out of bounds
- Make sure that we avoid threats to the CIA triad

The role of an individual contributor

- (Dev/ Architect/ Engineer etc)
- You're here to build
- To ship
- Gotta close those Jira tickets
- Trying to meet the functional business need

Security controls

- There are some great basics that we should have in place [read: OWASP Top 10]
- Patching
- Logging
- Strong access management
- Backups
- Strong encryption
- ...

What about when it's not obvious?

- Strong encryption is good!
- SSL scan says website == bad
- Restrict ciphers so only supports strong!
- But what about if the *most* important thing is that your app is available to a wider group of people

NEW ZEALAND / COVID-19

IT expert says My Covid Record app at risk of security breaches

10:56 am on 14 October 2021

Share this

When usability > security

- 'But we don't want MFA'
- Use case might be a really specific set of users: Elderly, minorities, CEOs, ?
- People might not have phones?
- People might not have *work* phones?
- Are there ways that we can work around this?
- Tokens, txt, email, one time passwords, device certs
- What is the information we're actually protecting?

Why do they say no?

- There's typically good intent!
- There might be some context in the background that *you* aren't aware of
- Pre-planning for that future use case you're not aware of
- You're trying to use technology the security team doesn't understand
- The singular security resource is *really* busy and hasn't quite got back to that design yet
- There was a bad experience last year with that technology at the org
- Something that sounds like that technology/ technique was in the news recently

'Don't use the word *Kiosk*'

- Back in 2012 there was a breach at MSD due to a poorly configured kiosk
- People *still* hurt when they hear the word 'kiosk' in Government
- Find a nicer way to talk about that non authenticated PC

Home / New Zealand

MSD shuts Winz kiosks after lax security exposed

APNZ

15 Oct, 2012 12:45 AM 3 mins to read

Resource constraints

- We're in a recession and teams are *tight* whether development or security
- There's going to be an ease in approving things that are 'easy' rather than 'different'
- And things that are 'different' may get immediate friction

Constrained by the process

- Some security teams are constrained by a process, or set of compliance activities
- Credit card processing == PCI
- Health data == HIPPA
- Difficulty often with a misunderstanding of the process/ standard
- Meeting organisational policies
- These sometimes give the opposite problem of actually getting lazy 'yes' rather than no
- ISO27k policy says - patch once a year, so we only patch once a year!

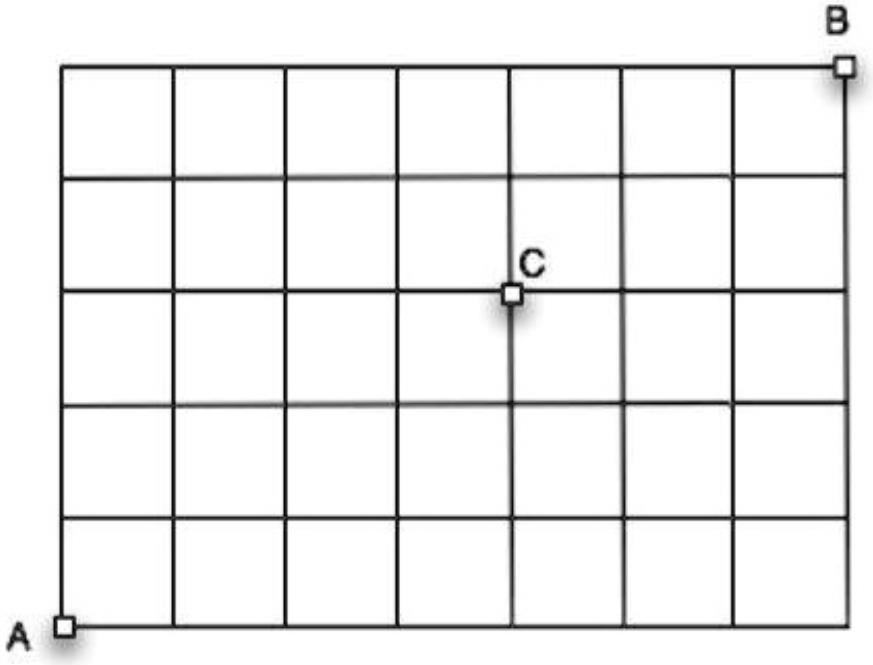
No understanding of the problem space

- How can you share the background of the solution?
- How can you share your understanding of the threat landscape effectively?
- Diagrams are great! But are even better when you can explain them!
- Try to avoid ambiguity
- Admit where you need help for input into controls - 'How have you seen that done before, and what would you recommend we do'.

Lots of paths from A to B

- There often isn't a clear cut answer

8. Consider the paths from A to B as described in the previous problem. How many different paths from A to B go through C?



So you need prod access

- ~~You want prod access so that you can have some more representative data~~
- Seems totally reasonable
- UAT is a dumpsterfire and has terrible quality of data
- But what's the *actual* problem?
- Can UAT be made closer to prod?
- Can you get a redacted extract to a reporting DB?
- Spin up another restricted environment for a few days?
- Get someone to generate some better test data
- Get a limited copy of prod data
- Rather than just giving prod access carte blanche

I want local admin

- EVERYONE want local admin EVERYWHERE
- But what are you actually trying to achieve?
- Is it just to install a single bit of software?
- You just want to get your job done, but the security team are worried that you then install a bunch of unapproved apps/ compromise your device/ ex-fill a bunch of data
- Are there other options? Is there some self-service tooling that can be used?

I want to use this new shiny toy/library/framework/security nightmare

- ~~There are so many great new tools available all the time!~~
- What is its differentiating feature from what was otherwise available?
- Be open to critique
- Be willing to show how *you* have confidence on it
- Does it have some type of reputation?
- Have you thought about the implications and how you could protect yourself from them?
- Is there a low-risk POC you can do to make security comfortable

Compensating controls

- Lots of compliance frameworks (think PCI) allow for the concept of compensating controls
- But make sure they're *actually* useful/ realistic/ address the treats that this thing is opening
- Could be logging, privileged access, a WAF, additional network controls, good config management

Bad example of compensating controls

- Have seen a lot of examples where people try and throw 'the kitchen sink' at problems when trying to explain why they're not doing something
- i.e. We can't patch this - we're going to put logging in place, without specifying logging on *what*.
- Lots of the time, when you actually look at the logs - they're just network logs etc.
- Can you restrict access to the unpatched thing?
- Can you air-gap it?
- Can you explicitly log who's hit the app?
- Are you aware of what the vulns are - and can you monitor if *those* are exploited on an IDS etc?

We need to step outside of this security guardrail

- Sometimes there might be guardrails put in place to do things well (i.e. ORMs)
- But it might not meet functionality needs
- So someone goes and mainlines string concatenation
- And squeely wins!
- How could that be avoided?

Someone else needs to be engaged

- What if there's a common capability that's not in place.
- You *should* have centralised logging in place a lot of the time
- But that common capability isn't available - so how do you work around that?
- There is lots of enterprise tooling/ common capabilities that can help out - password managers, code analysis tools, standard patterns, SIEMs, common infrastructure

POC it

- A really nice way to show a security person you know what you're talking about is to POC it
- Have been working with an architect on a SharePoint deployment
- Some interesting constraints in the org with DLP
- Being able to sit down and show in a POC environment the controls applied == a really easy approval process
- Demonstrate in a safe space rather than hypothetically talking about things

What happens when security says no

- Shadow IT proliferates
- 'Workarounds' are put in
- Bad design decisions are made
- Things become unusable
- An easier to explain, but worse solution can go into production
- Everyone has been to a website with innocuous data where the log in flow is TERRIBLE

Shadow IT

- Every org has a bad history of shadow IT
- Even if you don't think they do... they probably do and you just haven't found it yet!
- AI tools are a great example - 'the business hasn't got around to approving any tools yet' so everyone has just signed up to various tools and are using them without letting anyone know
- It's in a security teams best knowledge to have an open conversation with teams/ the business etc - so that this proliferates less

Can you provide secure alternatives

- From the perspective of the developer/ engineer/ architect
  - Is this the *only* way?
  - Are there alternatives?
- From the perspective of the security team -
  - Are you aware of different tools that could meet the same intent?
  - Is there something you're aware of from a future roadmap for the org etc?
- We all have different knowledge on what's being done more broadly at the organisation
- I.e. not comfortable with #radnewAItool, but ChatGPT is okay, because it has been vetted/ contract in place/ known commodity etc

Complexity can cause trouble

- Internal networks are frequently littered with good intentions (and remote code execution)
- Asset management is *hard*
- Sometimes the 'no' comes from a place of 'we don't believe there is capacity to maintain this solution
- The number of times we do a test on an environment, and the easy ways to get in are through some old unsupported app, or technology no longer maintained
- That was someone's 'yes' one day
- Can you remove complexity with your solution you're trying to push

Sometimes no is lazy

- It avoids understanding the problem the team is facing
- It's making it easier today (for probably a harder tomorrow)

We tell computers what to do, not the other way around

- How do you build in with automation easy ways for things to happen?
- Can you include checks in CI/CD pipelines for allowing faster deployment
- Can additional monitoring be put in place
- What other safeguards can be applied that give confidence without manual intervention?

How to say no effectively

- If it is a 'no' then why?
- What are the *real* risks?
- What are the *real* impacts?
- What are you trying to protect?
- Are there alternatives you're aware of?

The tradeoffs between security and useability

- We're typically always ending up for the same outcome
- There are multiple ways to get ot the outcome though
- What's going to be more sustainable, usable and meet security requirements
- For example PIM/ PAM can be a great solution to 'I need all the access' while giving appropriate oversight/ approvals/ logging etc depending on your specific scenario

Sometimes things need to change

- If you think it's the right decision, and that others are being unreasonable - you can push!
- Innovation does need to happen somewhere - how can you enable that?
- Justify your actions though - and try for some small wins.
- Are there alternatives/ a middle ground you can go to?

Summary - It can be hard!

- Be cognisent of the broader context (i.e. technical landscape)
- Be open to conversation - you'll need to collaborate
- Give yourself time to get it over the line
- Be prepared - design/ poc/ think through threat scenarios yourself
- Compensating controls? What can be done
- Strong business case - what does this allow the business to do
- Are there lessons I can show i've learnt from
- Be open to new/ different ways

Thanks

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(Thanks Jim R for helping out with presso)