



# Time And Risk Dimensions In Security

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Once upon a time, there  
was a computer.



# Time horizons grew and splintered.

# Time horizons grew and splintered.



Milliseconds

# Time horizons grew and splintered.



Milliseconds



Human speed

# Time horizons grew and splintered.



Milliseconds



Human speed



Days/weeks

# Time horizons grew and splintered.



Milliseconds



Human speed



Days/weeks



Months

# Time horizons grew and splintered.



Milliseconds



Human speed



Days/weeks



Months



Years

We're unable to react  
in the appropriate  
timespan.

We're overdriving our  
headlights by quite a  
bit.

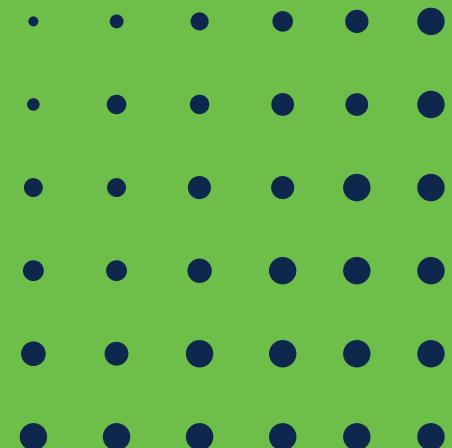
# Agenda

- 1 React better
- 2 Plan better
- 3 Plan to react better

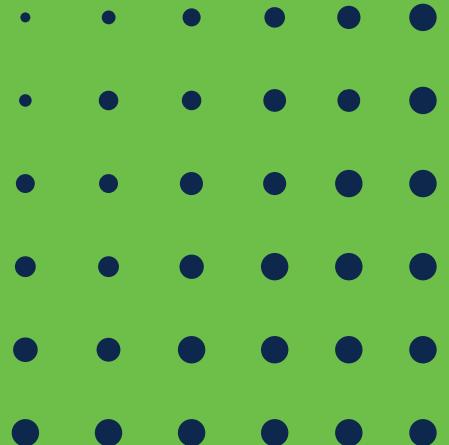
# Let's play with time.



# How do we react better?



# How do we use time to our advantage?



# Sounil Yu's Model: Distributed, Immutable, Ephemeral



**“New Paradigms For the Next  
Era of Security”**

**RSAC 2020**

# Distributed

DDoS resistant

Higher availability

# Immutable

Changes easier to detect  
and reverse

Higher integrity

# Ephemeral

Drives value of assets  
closer to zero

Protects against attacker  
persistence

# Distributed

DDoS resistant

Higher availability

# Immutable

Changes easier to detect  
and reverse

Higher integrity

# Ephemeral

Drives value of assets  
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Protects against attacker  
persistence

# Pets

- ▶ Given a pronounceable name.
- ▶ Taken to the vet when sick.
- ▶ Idiosyncracies indulged.





NFS server fine not responding

NFS server fine ok

# Cattle

- ▶ Given a designation.
- ▶ Shot or dumped when sick.
- ▶ No exceptions!





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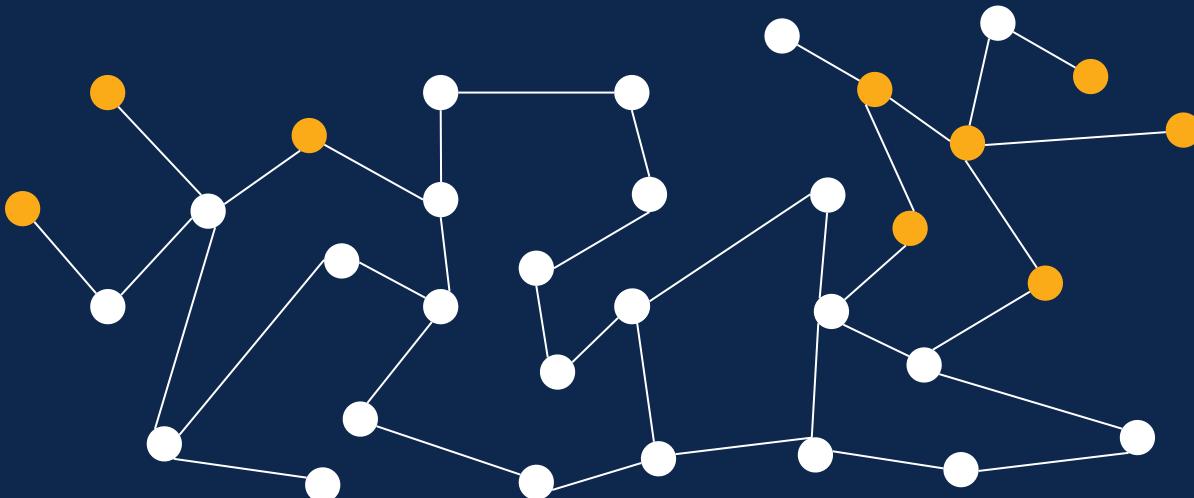
(alias “squiggy”)



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(alias "LDNSYB\_BACKUP")

# Make sure you have more cattle than pets.

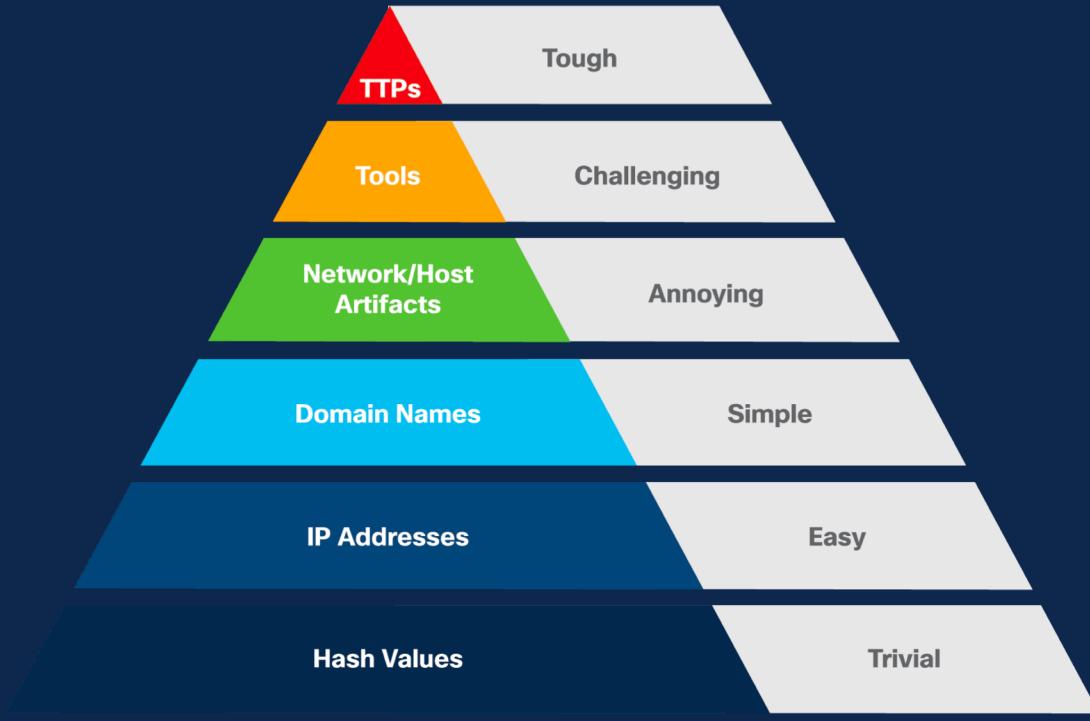


# Threat intelligence sharing.

It used to be that the defender had to be right all the time and the attacker only had to be right once.



Now the attacker has to be silent all the time and the defender only has to spot it once.



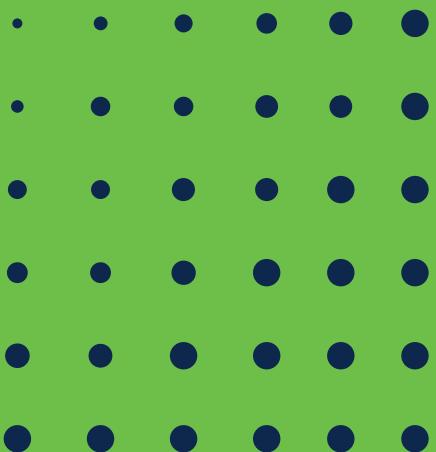
# David J. Bianco's Pyramid of Pain

# Reacting faster.

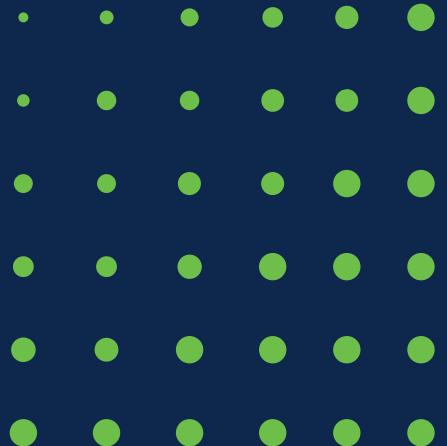
- ▶ When in doubt, swap it out.
- ▶ Minimize persistence for us, maximize it for the attacker.

- ▶ See once, share everywhere.
- 

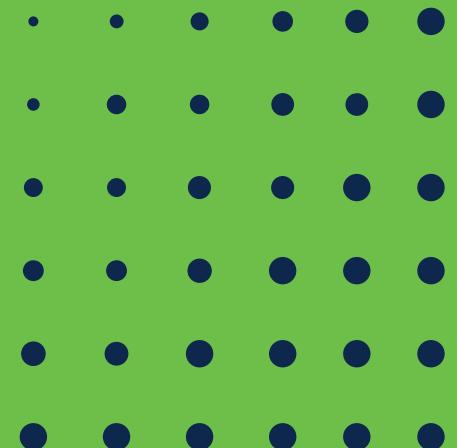
Automation goes best with  
certainty, precision, and  
commitment.



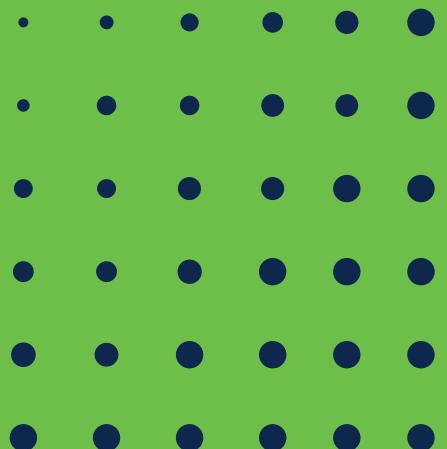
(By the way, this is why  
blockchain is not going to  
solve everything.)



# How do we plan better?



# How do we future-proof our security?



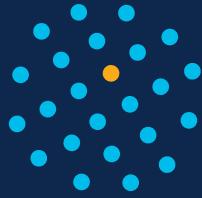
# Heather Vescent, Futurist



**“Imagining the Future of Security”**

**RSAC 2020**

# Things you need to know about the future:



You can't actually predict anything (unless you control it).



It's not just one future.



You don't know when something might happen.

S	Social	Demographics, Lifestyle, Education, Health
T	Technology	Rate of tech progress, Moore's Law
E	Economic	Growth, Stagnation, K-Waves, Markets
E	Environmental	Climate Change, Sustainability, Biodiversity
P	Political (incl Military)	Dominant views, military actors
V	Values	Traditional, Modern, Post-Modern, Integral

dapted and expanded from Dr. Peter C. Bishop and Andy Hines, 2013

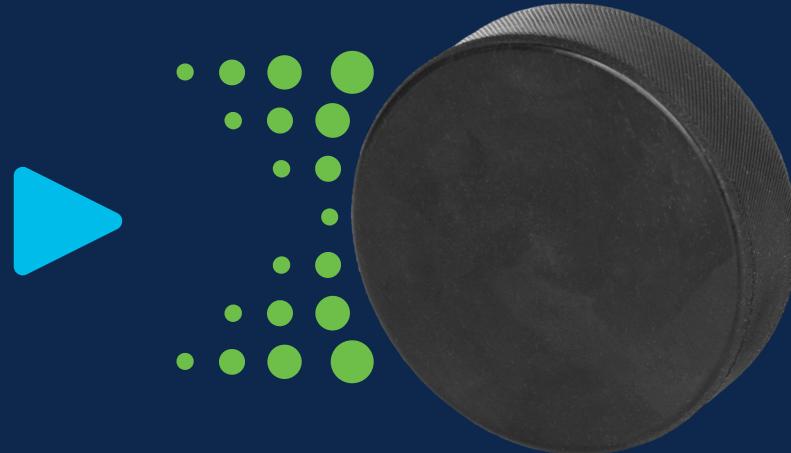
# Reverse your assumptions.

- ▶ Identify the constants we take for granted.
- ▶ Reverse each constant to identify potential disruption.
- ▶ Don't try to predict what form the disruption will take.



# Skating to where the puck will be.

- Easy to do when it's only been hit once.
- Try doing it ten minutes from now!



# What if everyone is a goalie?

- You don't have to care where the puck is.
- But you're not going to score any points either.



# Being ready for the future.

- Pick the future you want and try to backcast it (reverse engineering.)
- The solution might not be technology.

# The COVID-19 vaccine effort

- Bill and Melinda Gates Foundation will fund the manufacture of seven vaccine candidates in parallel.



Do you want  
precision or  
accuracy?

Accurate



Inaccurate

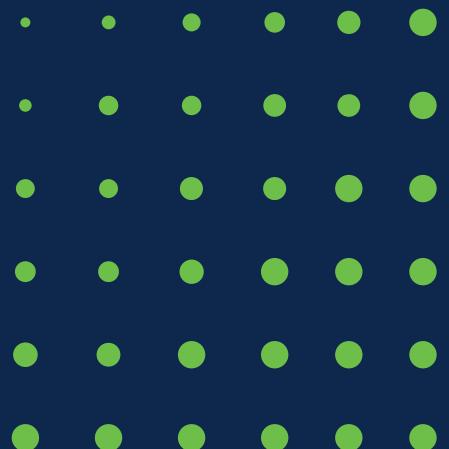


Imprecise

Precise

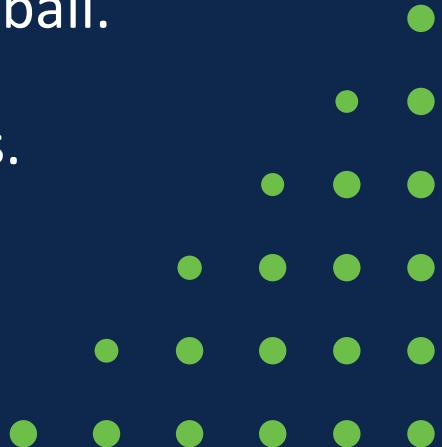
CREDIT: The Fair Institute

Are you trying to solve a  
problem or capture  
a market?



# Plan better.

- ▶ Reverse assumptions.
- ▶ Look beyond technology.
- ▶ Maximize flexibility, but keep your eye on the ball.
- ▶ Hedge your bets.

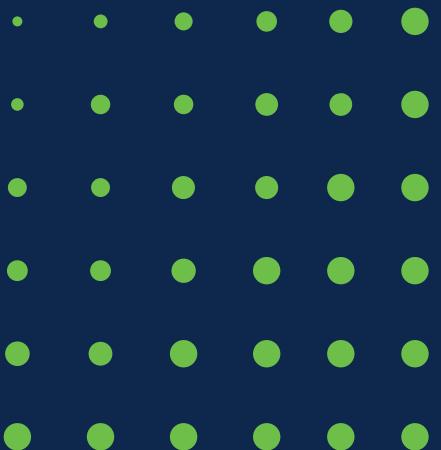


# Final thoughts...

- The problems we're dealing with today were created by solutions in our past.
- What new problems are we going to create for our future?



Let's create the future  
together.



 CISCO Secure

