What Security can learn from Design
(An Intro to Design Thinking)

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We are Nguyet & Doug

Collectively, we have lived in and analyzed the worlds of Design and Security for a combined 36 years.
Let us know if this sounds familiar:

- You must **challenge the status quo** to succeed
- You spend a lot of time **examining unusual and unintended behaviors**
- Despite amazing technology, success is often dependent on **a few skilled humans**
- Your area of expertise is often an **afterthought** at a lot of companies
- You are much more **effective** if included at the beginning of the process
Hypothesis

Security is the Yin to Design’s Yang
Reframe problems – there are a number of very well known cognitive biases that can limit our thinking and restrict our choices. Indeed, studies have even shown that the way we frame things can play a significant part in whether we get started or procrastinate. By reframing our problems we can often look at situations in a new light and come up with much better solutions to them.

Adi Gaskell - 5 Steps To Help You To Design Your Life
Reframing

If you solve security problems for *people*,

You are a designer
But wait.

I can’t draw. I don’t do graphics.

How am I a designer?
Design isn’t just UX or UI, or about colors, fonts, and images.

It’s about problem solving.
“Everyone is a designer. Not everyone is a good designer. Everyone can become a better designer.”

-Jared Spool
How might we improve security solutions by applying insights from the design industry?

What are the tools and techniques that Security can Learn from Design?
Phases of Design Thinking according to Stanford Design School

1. Empathize
2. Define
3. Ideate
4. Prototype
5. Test
What is Design Thinking?
Human-Centered Design

Successful solutions start with human desires.

The best solutions emerge at the intersection of these three lenses.
WHAT IS DESIGN THINKING?

IBM The Loop

OBSERVE  REFLECT  MAKE
WHAT IS DESIGN THINKING?

IDEO

Inspiration  Ideation  Implementation

Credit: IDEO
WHAT IS DESIGN THINKING?

Stanford School of Design

Empathize
Learn about the users

Define
Sharpen key questions

Ideate
Brainstorm and create solutions

Prototype
Build representations of one idea

Test
Test and gain user feedback
The Methodology

UNDERSTAND → DEFINE → IDEATE → PROTOTYPE → TEST
This is not a linear process

UNDERSTAND

DEFINE

IDEATE

PROTOTYPE

TEST
A set of activities

All of these methods suggest sets of activities that a team can work through to define problems, brainstorm, and build consensus on a solution.

*Talk prototype with CapSec DC members*
Design Thinking Activities

More constructed according to the needs of the workshop. This framework is flexible, and can be done in 1 week, 1 or 2 days or half day according to your needs.
Understanding is gaining an empathic insight into the people you're designing for and the challenges they are experiencing.
Define

Defining is unpacking the findings from your Understand phase into needs and insights.
And then turning those needs into problem statements.
Ideating is generating a large number of ideas. Not perfect ideas, but lots of potential answers and solutions. **No judgement.** No evaluation.

This is the time to let imaginations run wild!
Prototyping is making your ideas real so that you can communicate them. It pushes your understanding of what’s possible.

This is about learning, not about getting it right the first time.
Testing your prototype is putting it in the hands of the right people to gather feedback and maximize your learning.
Real life feelings

Stefanie Di Rossi - [https://ithinkidesign.wordpress.com/2012/01/18/a-brief-history-of-design-thinking-the-theory-p1/](https://ithinkidesign.wordpress.com/2012/01/18/a-brief-history-of-design-thinking-the-theory-p1/)
How can we apply this in the security field?
Does this sound familiar, round 2

- You are told to implement a technology
- The “problem” is based on what’s affordable or available
- Implement dictated solution instead of exploring ideas
- End up with frustration and unhappy users
Understand
Are you identifying with people in your organization?
Did you get diverse input from different sources?

Define
Are you tackling solvable problems?
If not, can you reframe them?

Ideate
Don’t just accept the first idea.
Conduct structured brainstorming.

Prototype
Are you trying out ideas small before you go big?
Are you getting feedback before committing to final solution?

Test
Are you testing with your users and listening to feedback?
Are you solving the right problem?
Red Teaming Design Thinking: Risks and Assumptions

- How can we use this on the problems we face?
- Design Thinking needs to work with other systems
- Design Thinking doesn’t work for every challenge
Prototyping Design Thinking to Evolve

- You can point to leaders who are trying this.
- You can start small (a prototype) and grow as you empower people.
- You can ally with people trained in Design and work alongside them.
How to get started

- Talk to the people affected by the choices you make.
- Engage your team and embrace different points of view.
- Seek out designers in your organization & include them.
- Participate in Design Thinking workshops at your company.
- Hire Design Facilitators.
- Use the process on yourself!
Remember,
You are a designer.
This is just the beginning of our journey.

We thank you for taking it with us.
Design Thinking Workshop

Friday at 9:15 am - 10:45 am

Lowther Room

LIMITED CAPACITY
Thank you!

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Resources for further learning

Stanford “D” School: https://dschool.stanford.edu/resources

IBM: https://www.ibm.com/design/thinking/page/framework


Google Ventures Design Sprint: https://www.gv.com/sprint/

Design thinking origin story plus some of the people who made it all happen

How I stopped Worrying and Learned to Love Design Thinking - Christina Wodtke
Resources for further learning

Books:

*The Sprint Book* by Jake Knapp - [https://www.thesprintbook.com/](https://www.thesprintbook.com/)

*Designing Your Life* by Bill Burnett & Dave Evans: [https://designingyour.life/](https://designingyour.life/)

*Ruined by Design* by Mike Monteiro: [https://www.ruinedby.design/](https://www.ruinedby.design/)