

How to say we need a **redacted** detector (and specify such a thing)

Matthew Merzbacher

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DHS (TSA, CBP, ETC.) GOAL

→ More innovators working on security...

“The only way we can get these kind of capabilities is if we reach out to everyone. There's a lot of incredible technology out there and we're working toward reaching as much of it as possible.”

– *Dr. Reginald Brothers, DHS Under Secretary for Science and Technology*

→ How do we describe the problems to be solved without exposing gaps?

- SSI or Classified
- How do we say we need a tangerine detector without mentioning tangerines?

→ We can't, but we can still make progress

SOME APPROACHES

→ **Work on another problem (there are plenty)**

→ **Find a proxy solution**

- You need help with tangerines? Ask a monkey (monkeys love tangerines!)
- You need help with EDS image processing? Ask medical imaging experts!

→ **Hide the problem (each of these has issues)**

- Anonymize your data (Netflix)
- Simulate the problem (ALERT Task Orders)
- Mix it with a bunch of other “problems” (security through obscurity)

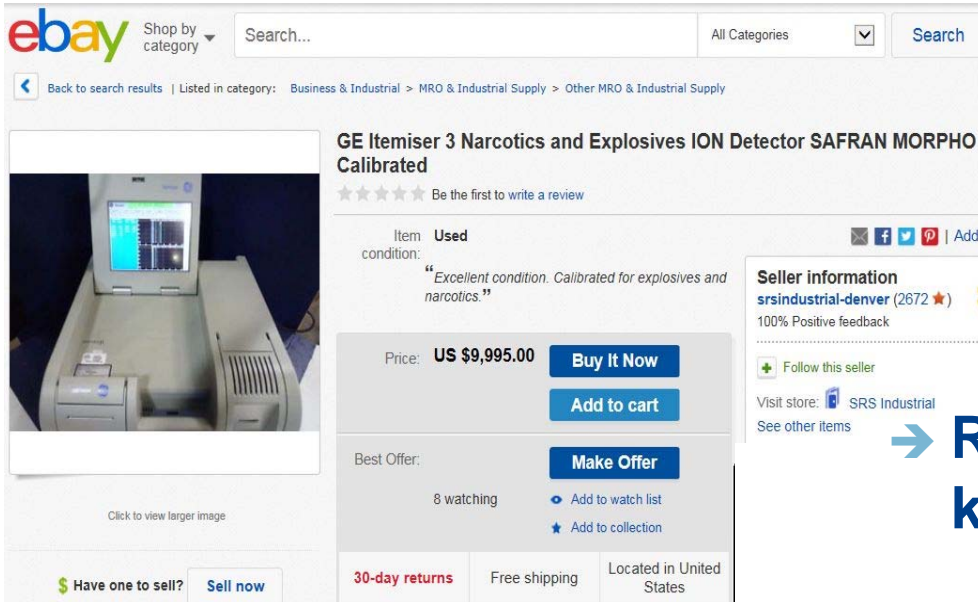


→ **Have people look for other kinds of (less-sensitive) citrus and transfer the solution to tangerines**



Ultimately, each requires an expert to vet the result

LESS-SAVORY WAYS TO SHARE THE PROBLEM



SHARE

f SHARE 3512

TWEET

ANDY GREENBERG SECURITY 08.20.14 9:00 AM
RESEARCHERS EASILY SLIPPED WEAPONS PAST TSA'S X-RAY BODY SCANNERS

→ Rely on third parties (“Everyone knows the issue”)

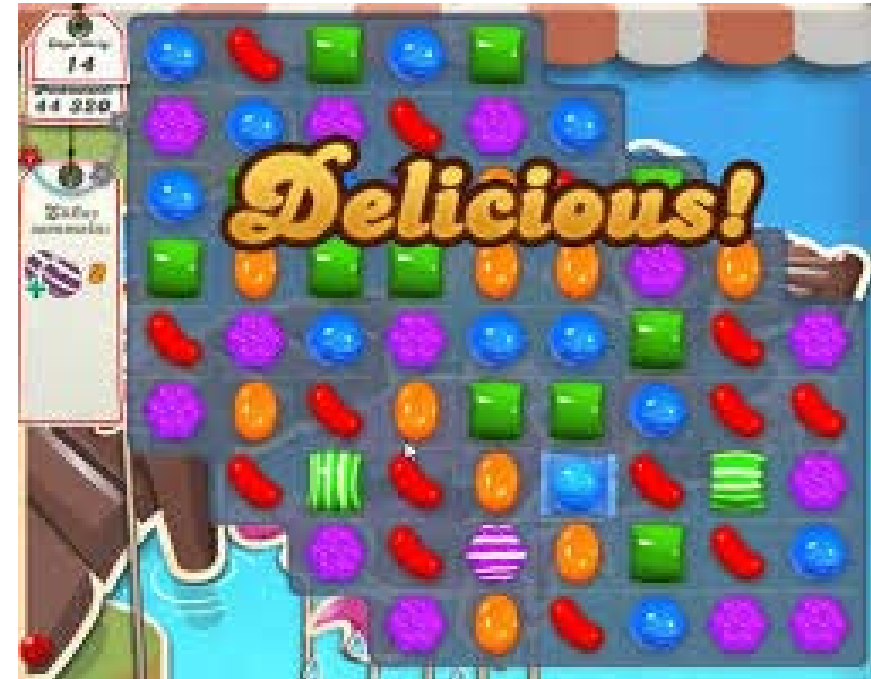
- How concerning is this?
- Should it be possible to buy/sell used security equipment on eBay?

→ Skirt around the problem without direct mention or admit “we have a tangerine gap!”



WE NEED TO BUILD NEW EXPERTISE

- **Simultaneously train and assess**
- **Build a network of trust**
 - Create an open “easy” problem
 - As solvers come forth:
 - Vet them
 - Offer access to increasingly hard problems
- **How far can we extend this model?**
 - “Purchase in App”



ADDITIONAL CONSIDERATIONS

→ Who can best describe the problem without bias?

- Gap Bias: Current experts may be jaded by experience (good and bad)
- Hammer Bias: Innovators are looking for nails
- Requirements Bias: We solve the problems we are asked to solve, not the ones that need solving

→ In what form do you want your tangerines detected?

→ Sensitivity dependent on problem and/or modality

→ Does having humans-in-the-loop matter?



WHAT ABOUT TEAM EFFORTS?

→ **Multiple innovators, working in harmonious concert**

→ **Does the problem decompose?**

- Does P_{FA} track with P_D and is it additive?

→ **Open Architecture**

→ **Challenges**

- Testing is a problem
- Integration is the problem
 - My peel-finder doesn't play nice with your seed-detector
- Who gets the blame?

BY THE WAY...

→ Are your innovators even that good?

- Google's not always so great at tangerine detection

