



# BUILDING SECURE SHARING SYSTEMS THAT TREAT HUMANS AS FEATURES NOT BUGS

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- 1. The status quo – data deserts**
- 2. A socio-technical look at secure sharing**
- 3. A tale of two futures**



**The Bubble Charts Keep  
Getting Bigger....**

# Proliferation



**TARGETS**



**TACTICS &  
TOOLS**



**ACTORS**

Assume  
Breach

Privacy  
is Dead

**Fatalism**

Humans are  
the Weakest  
Link



## The Data Hoarding Epidemic

- Data becomes locked down due to concerns over data breaches and non-compliance fines
- As a range of third-party data compromises continue, the lack of trust limits data sharing and collaboration



## Data Silos Everywhere

1. Hurts the bottom line - Limits ability to reap business value from the data
2. Hurts security - Decreases visibility, situational awareness, and quality of the data used for analyses
3. Fragments the community - Deters trust, communication, and collaboration

# The Rise of the Data Deserts

A vast, undulating desert landscape with golden sand dunes under a clear blue sky. The foreground shows intricate, wavy patterns in the sand, likely created by wind. The dunes stretch into the distance, creating a sense of depth and isolation.

For researchers and analysts, this  
creates a data scarcity problem



# Real-world Consequences

“Unreported attacks leave local governments, law enforcement and cybersecurity firms unaware of the extent of the problem, hindering their ability to focus their resources and fully understand the evolving nature of the threat..”

“Unreported ransomware leaves authorities, experts in the dark” Christian Vasquez,  
PoliticoPro, 1 October 2019

**There's a mountain of marketing material,  
but a dearth of high-quality, vetted data.**

**Without more data, researchers and analysts  
are only seeing a portion of the pie.**

**Source: University of Tulsa Professor Tyler Moore**

<https://www.washingtonpost.com/news/powerpost/paloma/the-cybersecurity-202/2019/04/18/the-cybersecurity-202-this-is-the-biggest-problem-with-cybersecurity-research/5cb7a231a7a0a46fd9222a47/>

**Exponential  
growth in  
variety,  
velocity,  
volume, and  
veracity of data**

**Researchers  
and analysts  
lack access  
to the 'right'  
data**

**A Data Paradox?**

**How can we create secure sharing systems and processes to strengthen defenses, innovate, and deliver value?**

Replying to @martijn\_grooten

Yep however the trend is that you can't tell the users they're the weakest link anymore because it is supposedly counterproductive so the new thing is how to inform them of it but in a way where they get the idea but not what they're being told.



**Martijn Grooten** @martijn\_grooten · 21h

Replying to @martijn\_grooten

This wasn't about "users being the weakest link". Not at all. I mean, they are, but that's a feature not a bug. This is about systems and processes.



Replying to @martijn\_grooten

Yep however the trend is that you can't tell the users they're the weakest link anymore because it is supposedly counterproductive so the new thing is how to inform them of it but in a way where they get the idea but not what they're being told.

# Building the Systems and Processes for Secure Sharing

**1. Incentives**

**2. Trust**

**3. Usability**

# Building the Systems and Processes for Secure Sharing

**1. Incentives**

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Incentives

For too long  
sharing  
systems have  
relied on  
information  
flowing only in  
one direction

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**Networks – density, structure, size,  
directionality – affect incentives of  
members and the quality of information  
available to them**



The secure sharing system must demonstrate reciprocity and the mutual benefits of sharing relevant data

**Create a networked system with  
incentives where:**

**FUD < FOMO**

# Building the Systems and Processes for Secure Sharing

**1. Incentives**

**2. Trust**

**3. Usability**

**Mistrust over what an organization  
may do with the data– and how  
they secure the data – eliminates  
incentives for sharing**



**Trust is foundational to any effective socio-technical system**

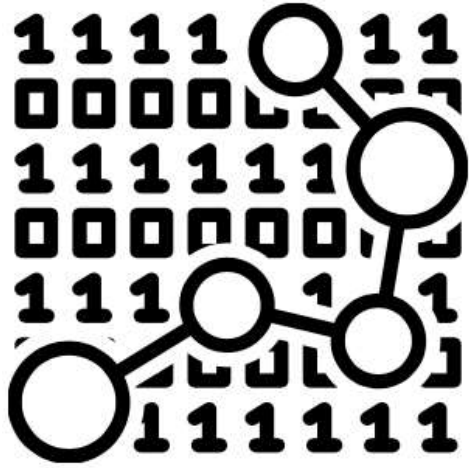


# Weaving a Networked Web

**Trust requires human interaction, building a reservoir of social capital that supports the propensity....to self-organize into groups and associations.**



**Shifting security narrative:  
zero trust and deny by  
default**



Data



Devices &  
Applications



Users/Identity

Focus on least access/privilege  
and authentication

**Technical  
system built on  
the absence of  
trust**

**Social system  
for data  
sharing with  
increasing  
reliance on  
trust**

**A Trust Paradox?**

# Building the Systems and Processes for Secure Sharing

**1. Incentives**

**2. Trust**

**3. Usability**



# Riding the Usability Wave |

## INFOSEC STARTUP BINGO: 2019 EDITION

Threat(s)	Context(ual)	ML & AI	Discover(y)	Real-time
Cyber	Insights	Seamless(ly)	Comprehensive	Simplify
Intelligence	Scalable	AUTO-MATION	Actionable	"Platform"
Deep	Orchestrated	Empower(s)	Prioritization	Behavioral
Visibility	Workflow	Advanced	Unknown	Continuous(ly)

Credit: Kelly Shortridge, VP Product at Capsul8

<https://medium.com/@kshortridge/infosec-startup-buzzword-bingo-2019-edition-d067fb1316cb>

# 'Demystifying' Usability for Secure Sharing

## Customizable Data Protection

- 'Seamless' encryption with greater control – access, revocation, etc.
- 'Seamless' anonymization

## Visual Cues and Controls

- Tech element - Offers transparency for what is protected, who can access it, access controls & revocation
- Human element – Requires determining who can access what data, when, and where

## Sharing Communities

- Tech element - Secure enclaves, controls, etc.
- Human element – Processes and organizational structure

## Impact on Security & Privacy

- Must be an enabler and enhance security/privacy
- Can be core source of innovation and advancement
- Can foster trust through transparency





**Design**

**User experience**

**If secure sharing systems do not  
integrate into workflows, the  
'solution' will be circumvented or  
ignored**

**Usability can be a force multiplier in  
building trust and fostering secure sharing  
systems**



# Security & Privacy at a Crossroads



# A Tale of Two Futures

**Assume  
Breach**

**Privacy  
is Dead**

**Fatalism**

**Humans are  
the Weakest**

**The data silos, reactive  
postures, and fear....**

**Are being  
replaced with  
collaboration,  
trust, and  
secure sharing  
systems**

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SECURITY & PRIVACY

# Why Companies Are Forming Cybersecurity Alliances


by Daniel Dobrygowski

SEPTEMBER 11, 2019

Cyber Peace Institute  
Global Cyber Alliance  
VirusTotal  
Tech Accord  
Open Frameworks

Cyber Threat Alliance  
Charter of Trust  
Secure Enclaves  
Paris Call  
ISACs





Secure sharing systems & collaboration are foundational to determining which future emerges

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# Thanks!

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