

# Data Analytics to Improve Aviation Safety

## Singapore Aviation Safety Seminar 2018

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**26 March 2018**





- **Accidents**
- **TCAS-RAs**
- **Runway Incursions**
- **Loss of Separation**

## **Mandatory Reporting**

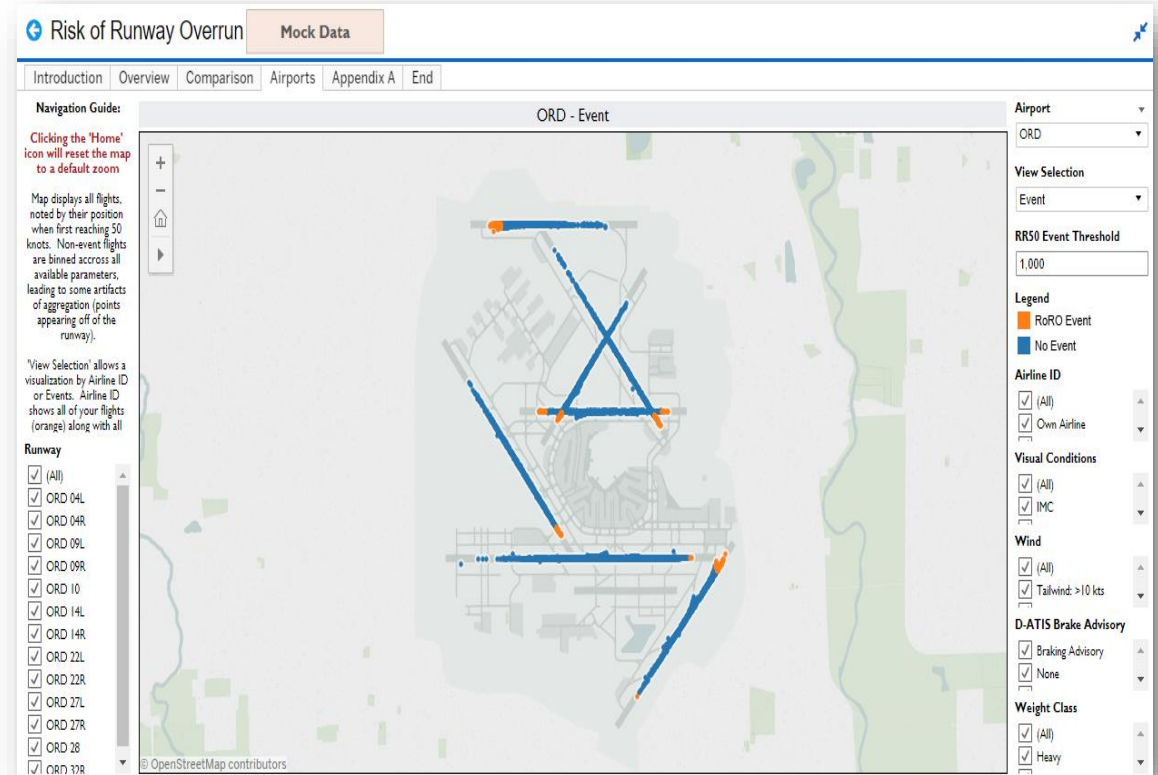
Move from **REACTIVE** Analysis

“What **WENT** wrong?”

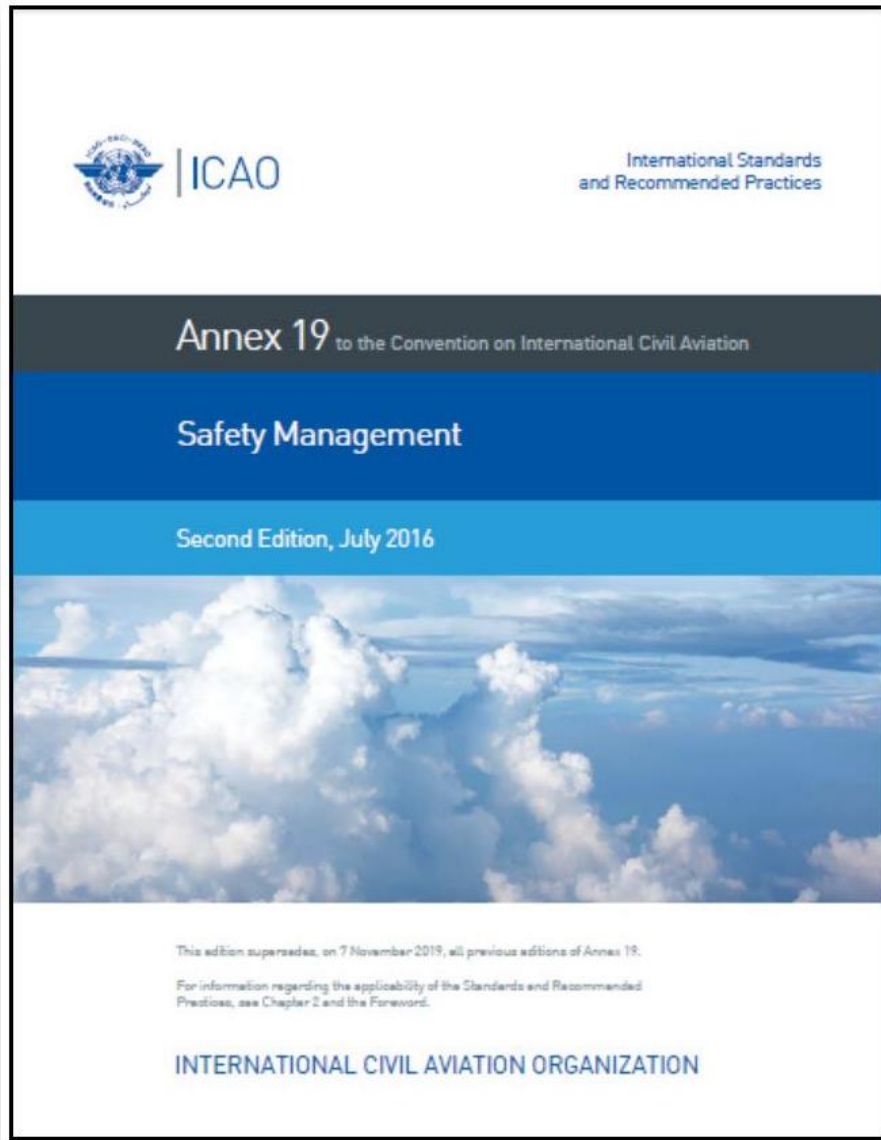


To **PREDICTIVE** Analysis

“What **COULD** go wrong,  
based on analysis of data?”







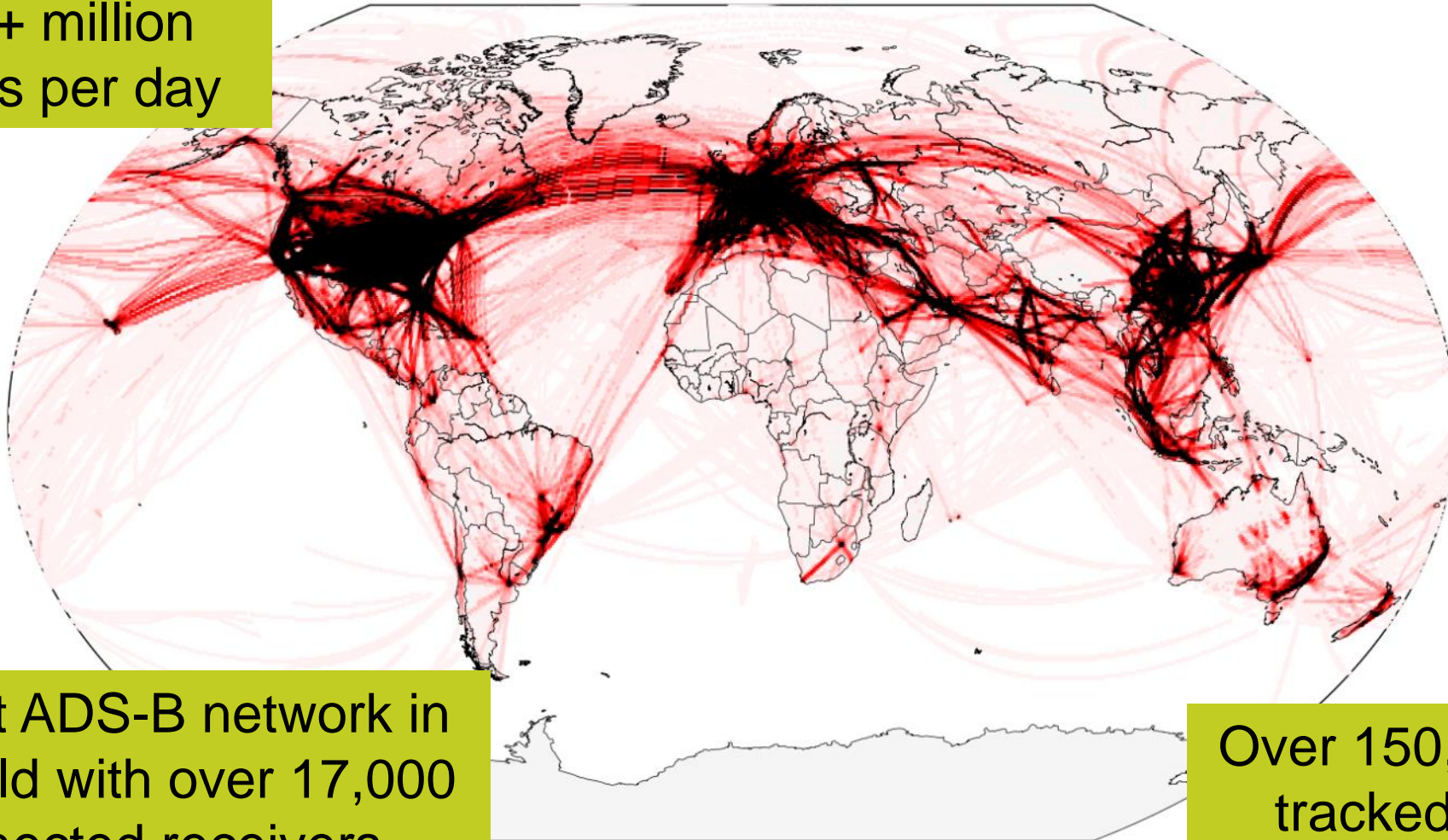
## Key Attributes

- Voluntary reporting
- Non-punitive
- Focus on near miss events
- Data driven



# Data Sources: Flight Radar 24

1.5+ million  
users per day

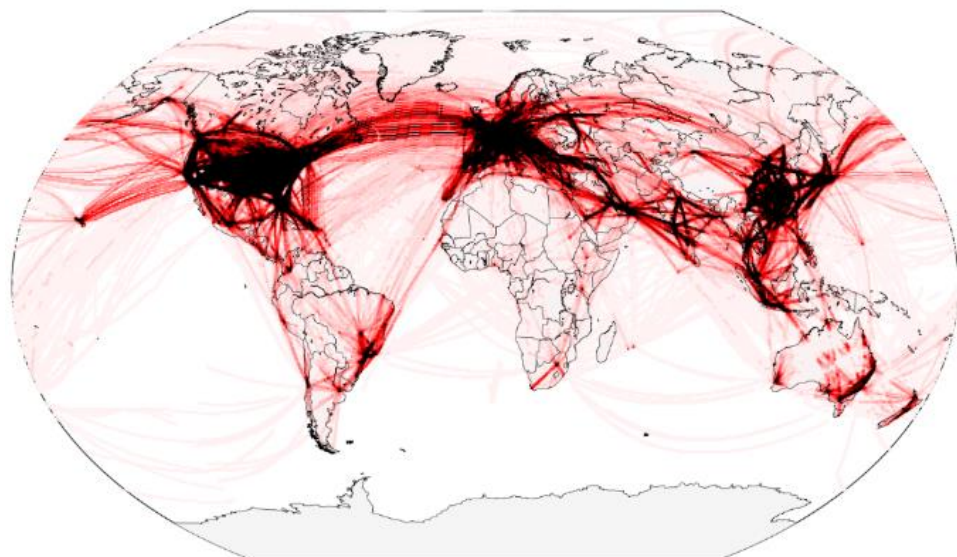


Largest ADS-B network in  
the world with over 17,000  
connected receivers

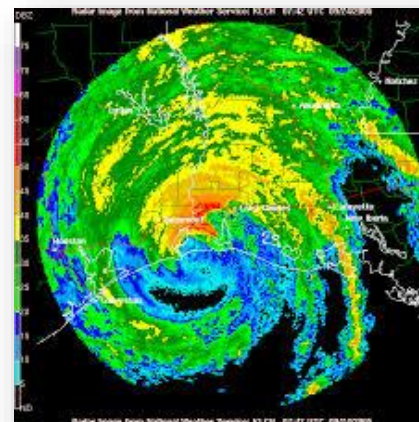
Over 150,000 flights  
tracked per day







**Flight Tracks**



**Weather**



**Terrain**



**Procedures**

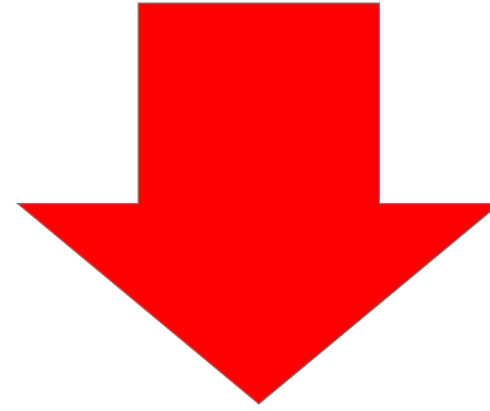


**Infrastructure**



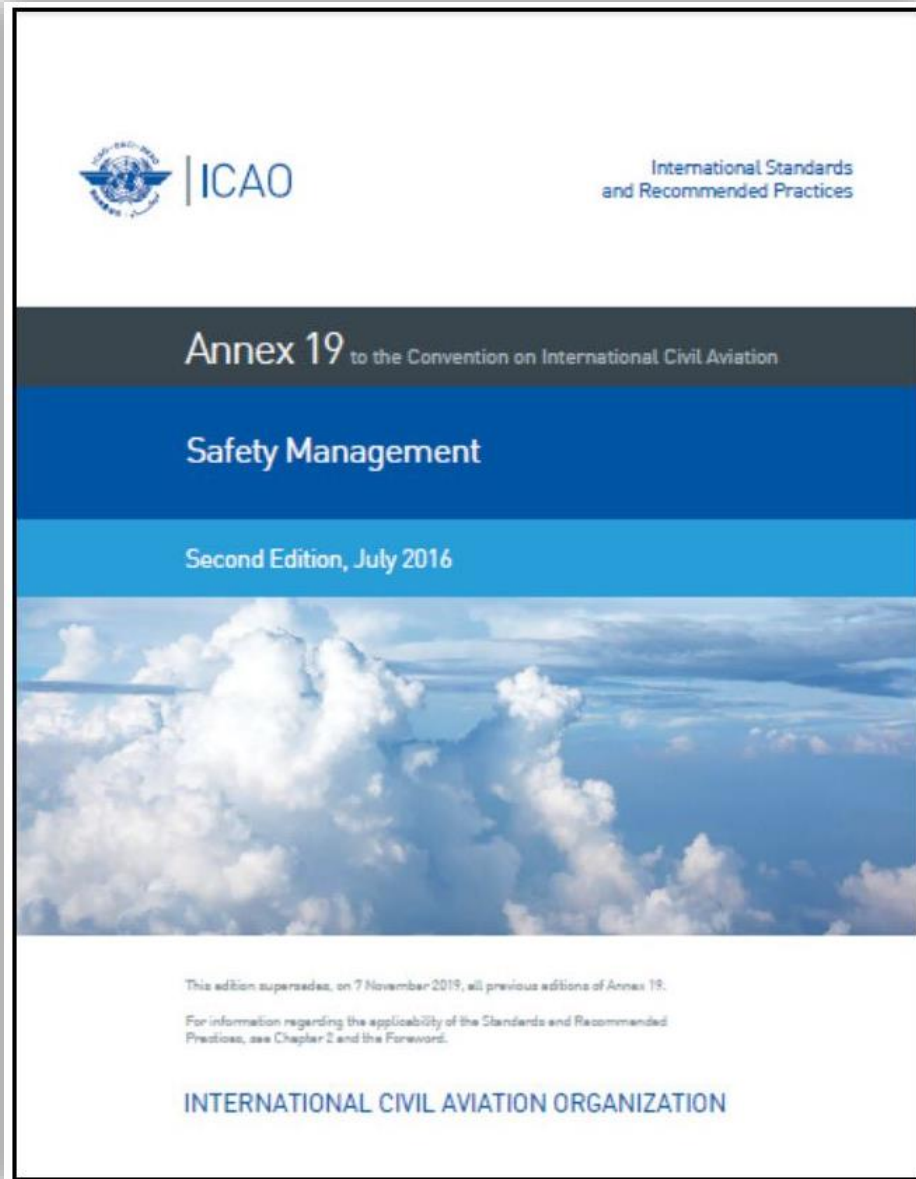


**Costs**



**Availability**

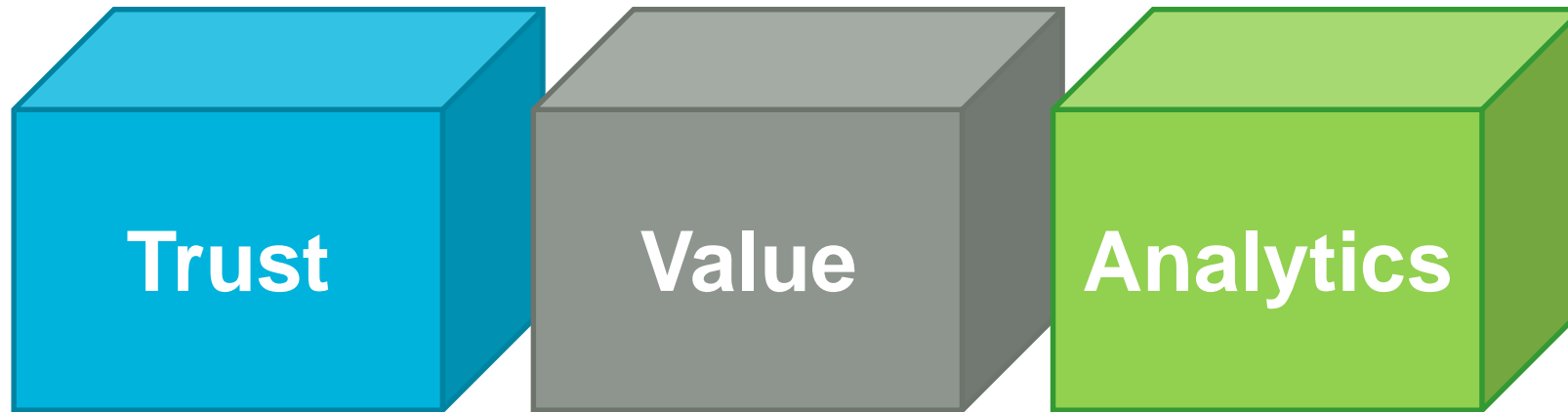




# Safety Information Exchange

- Across States
- Between States and Industry
- Across Industry

# Building Blocks for a Successful Safety Partnership



- Clear governance framework
- Information used only to advance safety

- Mutual benefits for all participants
- Actionable, unique insights

- Fusing diverse data sources
- Applying advanced analytical techniques



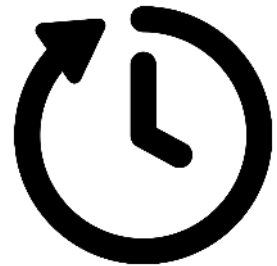
# Maximize the Benefits



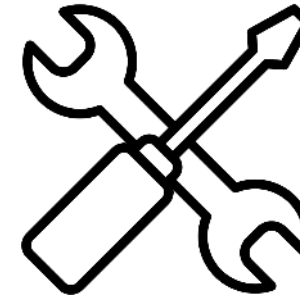
Identify rare events by  
increasing volume of data



Facilitate collaboration by  
providing common set of metrics

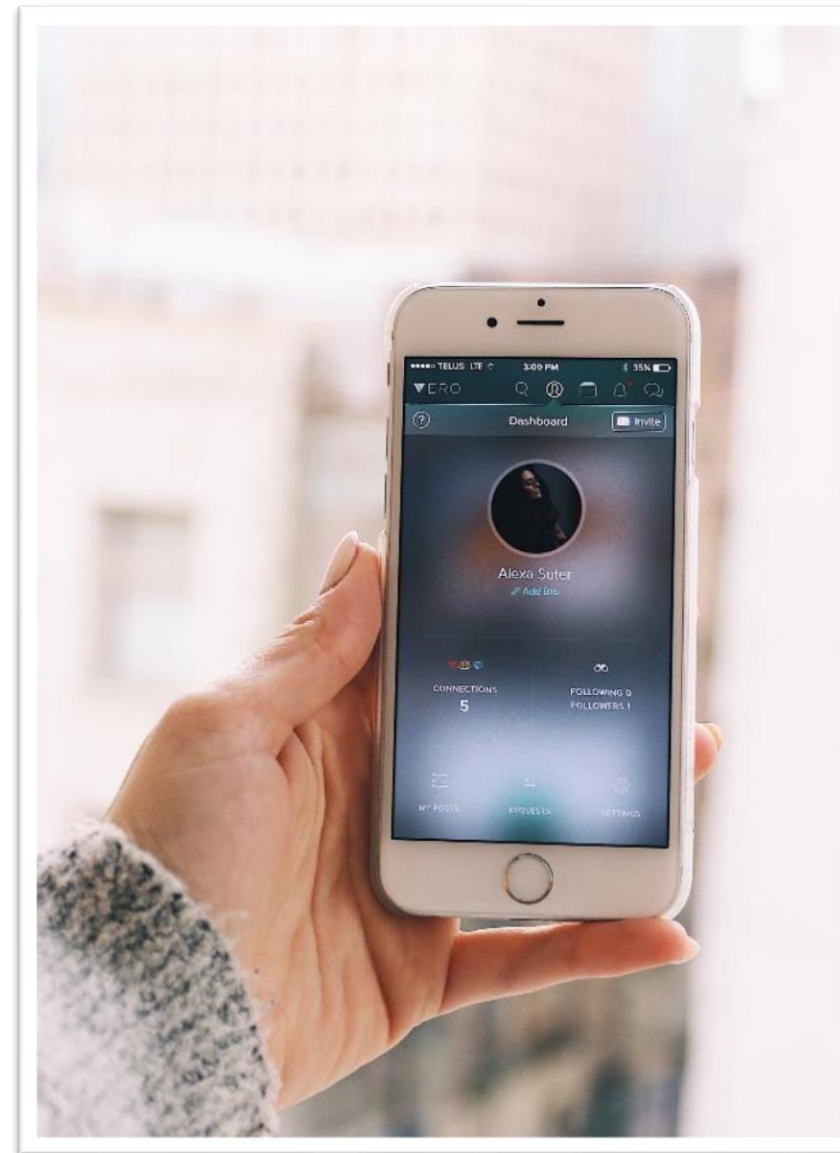
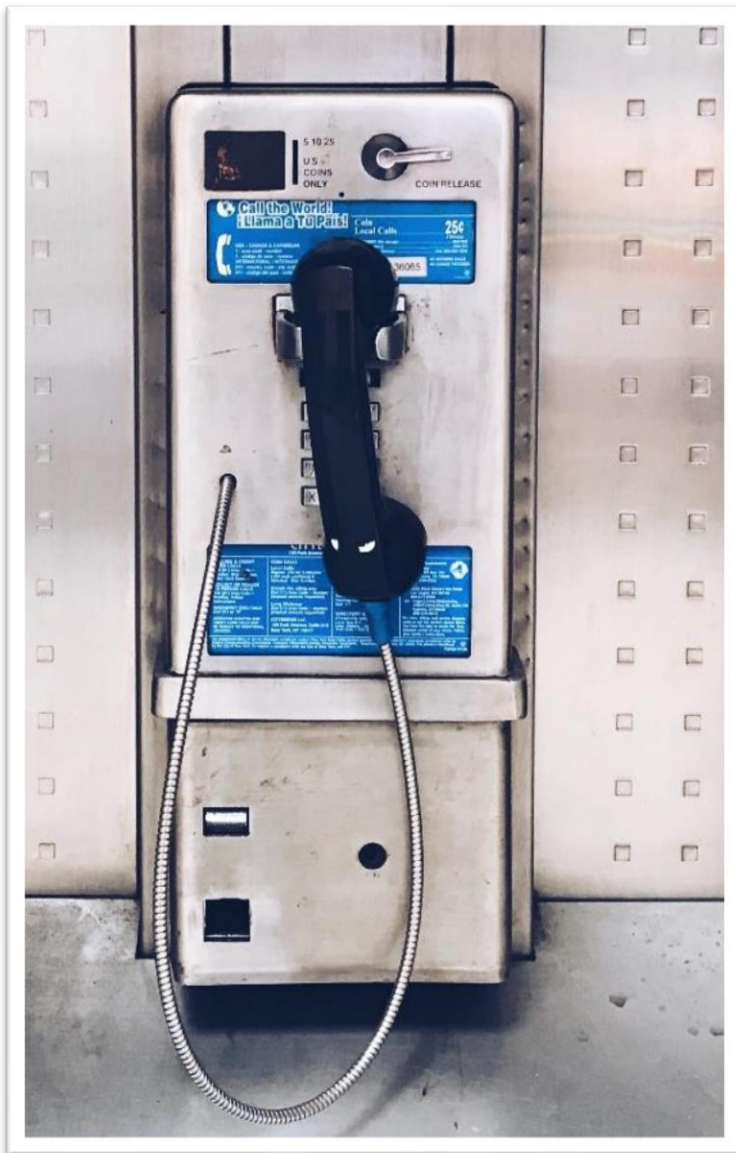


Accelerate learning by  
sharing best practices



Generate more effective mitigations  
with all stakeholders represented







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