AISP asemio

2024 Network Conference

Applying emerging technologies to preserve privacy and share data for social good.

Agenda

Welcome /Introductions

IDS vs. IDeS

Privacy-Preserving Record Linkage

Case Studies and Use Cases

Looking Forward

Q&A

About Asemio

Since 2013, our team has been working at the intersection of software and social good. Our team of technologists and consultants helps organizations, from nonprofits to philanthropy, better serve their communities with innovative, high quality technology solutions.

Entertaining you today:

All ChatGPT Generated, may or may not reflect actual superhero name or motto.

- Superhero Name: Data Sentinel
- Superhero Motto:"Unveiling the truth, one dataset at a time."

Ostensibly Real Name: Dr. Amy O'Hara, LinkedIn

- Superhero Name: Architech
- Superhero Motto: "Building the foundations of tomorrow, today."

Ostensibly Real Name: Aaron Bean, LinkedIn

- Superhero Name: EcoTech Maven
- Superhero Motto: "Innovation with purpose, transformation with empathy."

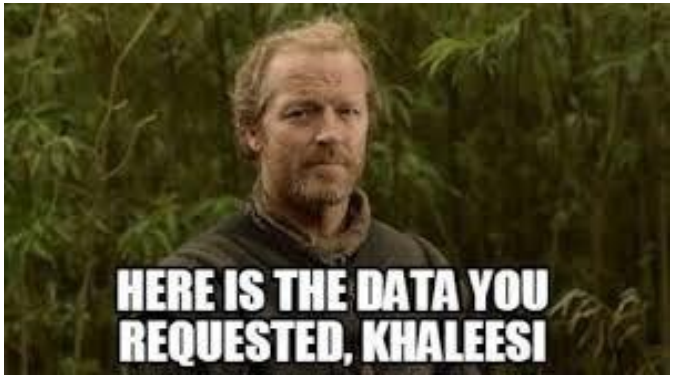
Ostensibly Real Name: Jessica England, LinkedIn

How do you feel in this situation?

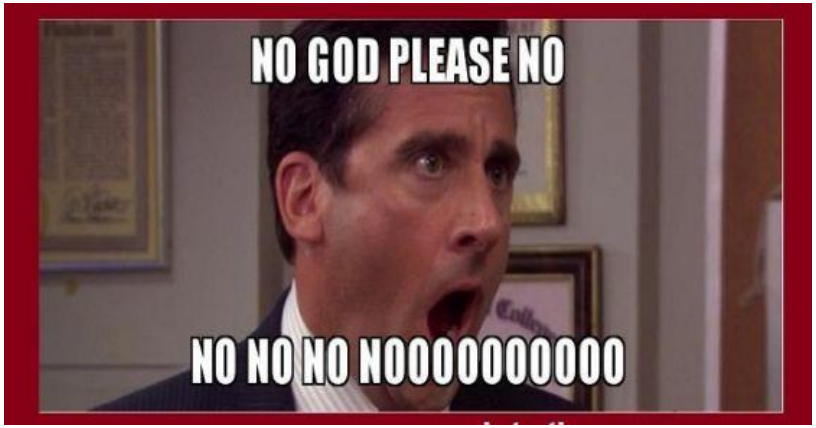
A **data sharing request** comes in from an agency partner, funding source, community members, co-worker, executive, policymaker …

"We've been invited to another **data sharing project/session/group**."

Is it more like this?



Or is it more like this?

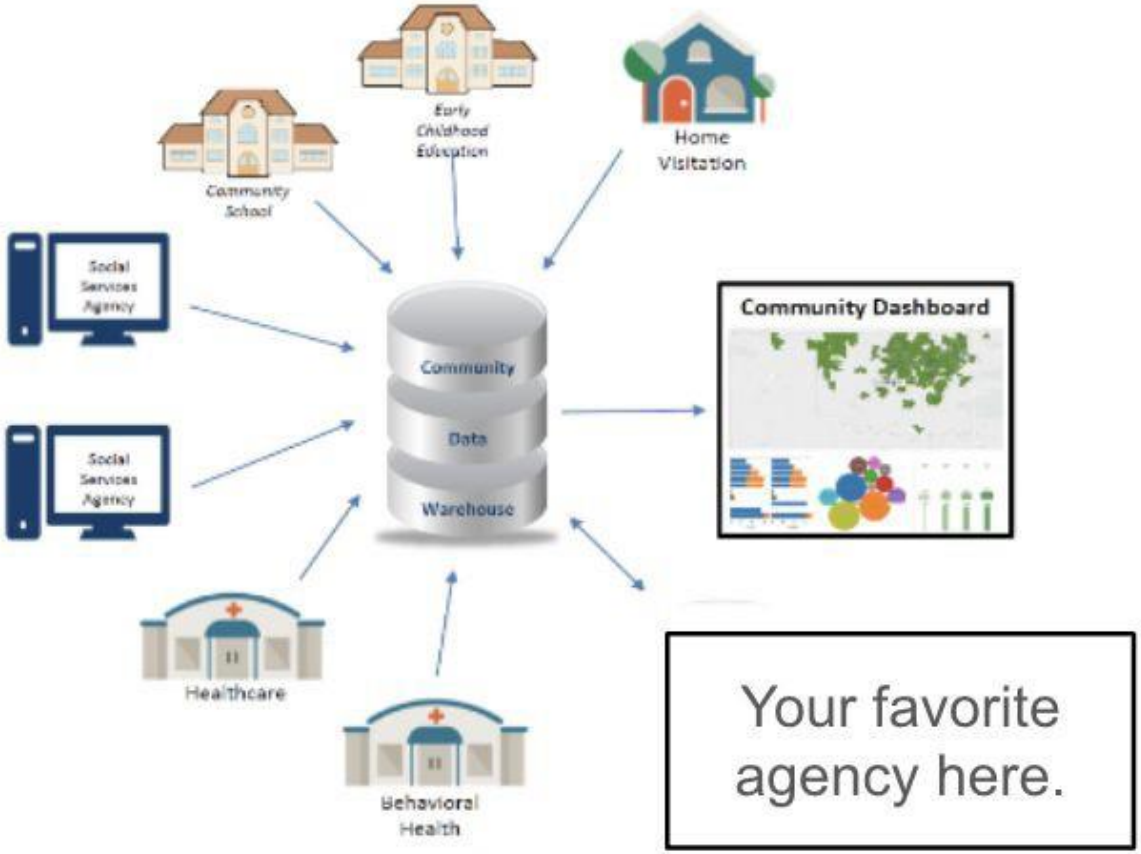


Ever wonder why technology often performs so poorly in helping us achieve our social policy goals?

“The difficulty lies not so much in developing new ideas as in escaping from old ones.” —**John Maynard Keynes**

IDS vs. IDeS

Vision: Community Data Ecosystem



Health Information Exchange

Health Information Exchange

Safety Net Clinic

Hospital

Hospital

Safety Net Clinic

County Health Department

Salesforce

Excel

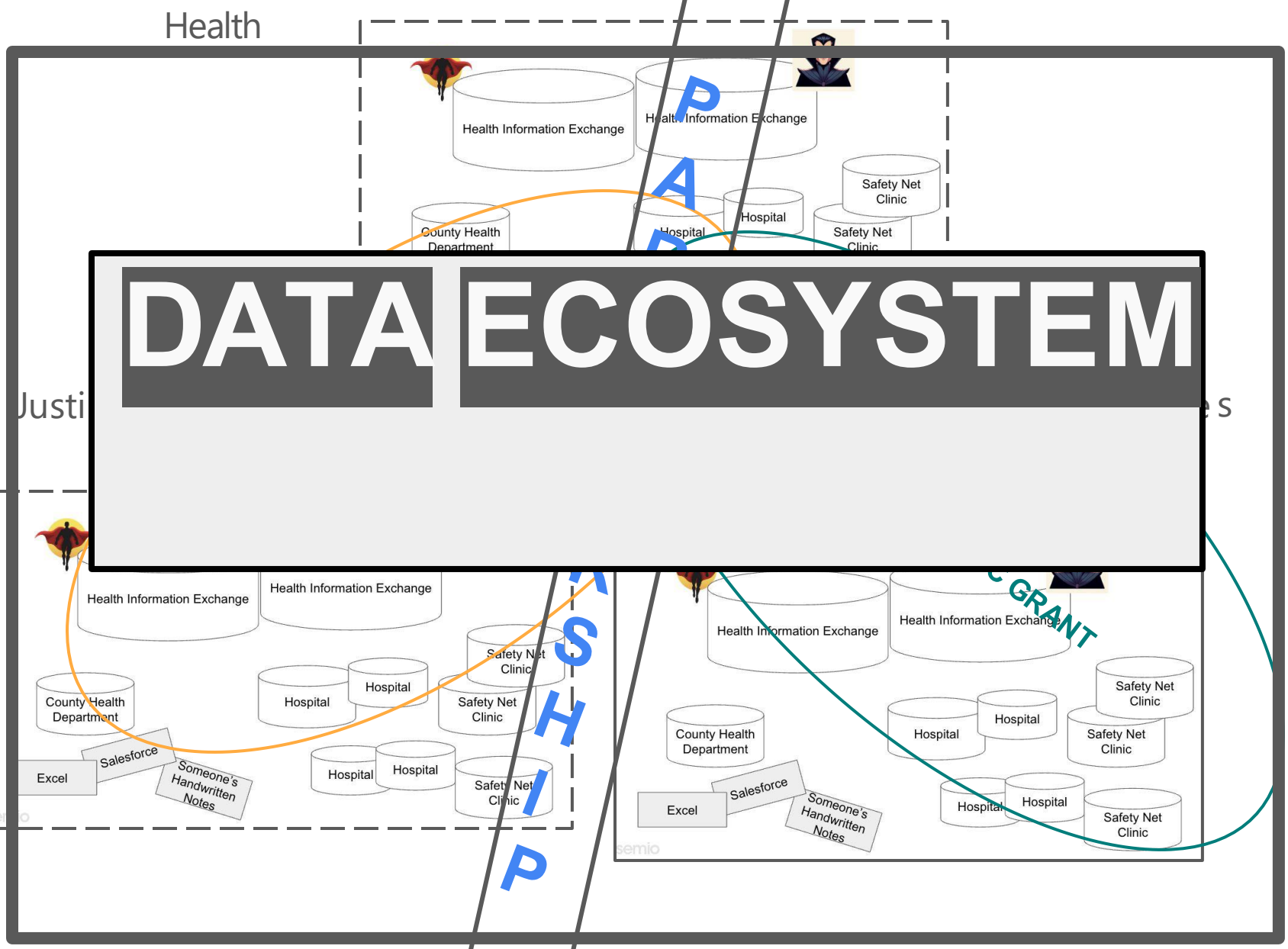
Someone's Handwritten Notes

Hospital

Hospital

Safety Net Clinic

DATA ECOSYSTEM



Framework Guidance

Aligning Tech and Policy: Frameworks

To enable modularity in design we need to design boundaries around the complexity. Here are two tools:

- **Data and Technology Pyramid**
- **Data Ecosystem Framework**


DATA
Using information to answer questions
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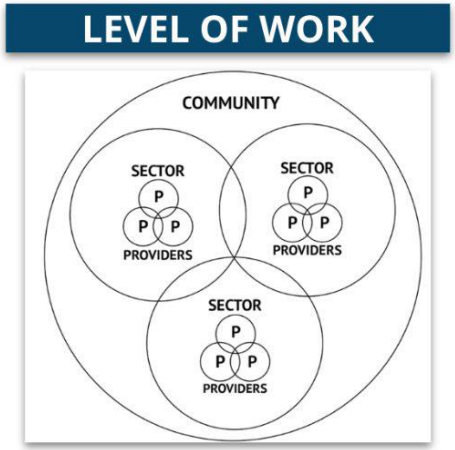
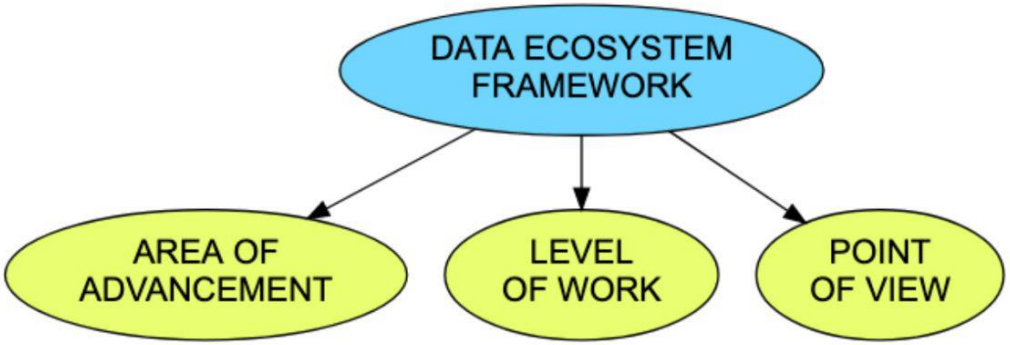
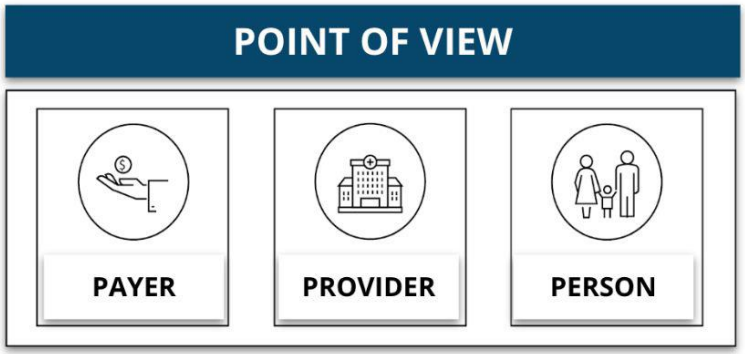
Data and Technology Pyramid
TECHNOLOGY
Using infrastructure to improve services
Predictive models based on linkages between datasets drive community-wide decision-making
5
Technology linkages across organizational boundaries enable advanced process automation
Information is used to analyze causality and adheres to best-practice data standards
4
Integrations enable cross-system reporting, workflow, and process automation
Information is used to track performance metrics and drive decision-making
3
Tools enable reporting, automation, and data validation
Information is collected, but its uses are still being defined
2
Tools are primarily focused on simple data capture
There is a lack of quantitative information
1
There is a lack of data capture tools
EFFICACY
EFFICIENCY

Data Ecosystem Framework

The 3 primary components are the Point-of-View, Level of Work, and Area of Advancement.







Privacy-preserving Record Linkage

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Data sharing is **broken**.

1. SLOW
2. DIFFICULT
3. RISKY

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What are PPTs and where do they fit into the privacy landscape?

From AISP Network Convening June 2022 – Key Topics in Privacy Preserving Technology Given by Dr. Amy O'Hara Georgetown Massive Data Institute and Aaron Bean, Asemio

DEFINITION

What are **privacy preserving technologies?**

PRIVACY PRESERVING TECHNOLOGIES (PPTs)

Also referred to as privacy-enhancing technologies (PETs), PPTs are technical approaches that **minimize use of and need for personal data**, including identifiers, **while supporting record linkage through privacy techniques**.

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VALUE PROPOSITION

Where do PPTs **fit into the privacy landscape?**

By more *quickly* meeting compliance, legal, and security concerns for extremely sensitive data:

REGULATORY SENSITIVITY

Examples: 42 CFR Part 2 entities, HIPAA/FERPA crossovers

SOCIAL SENSITIVITY

Examples: Domestic violence and legal service organizations

POLITICAL SENSITIVITY

Examples: Tribal, State, and Federal crossovers

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Different Methods

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Different PPT Methods

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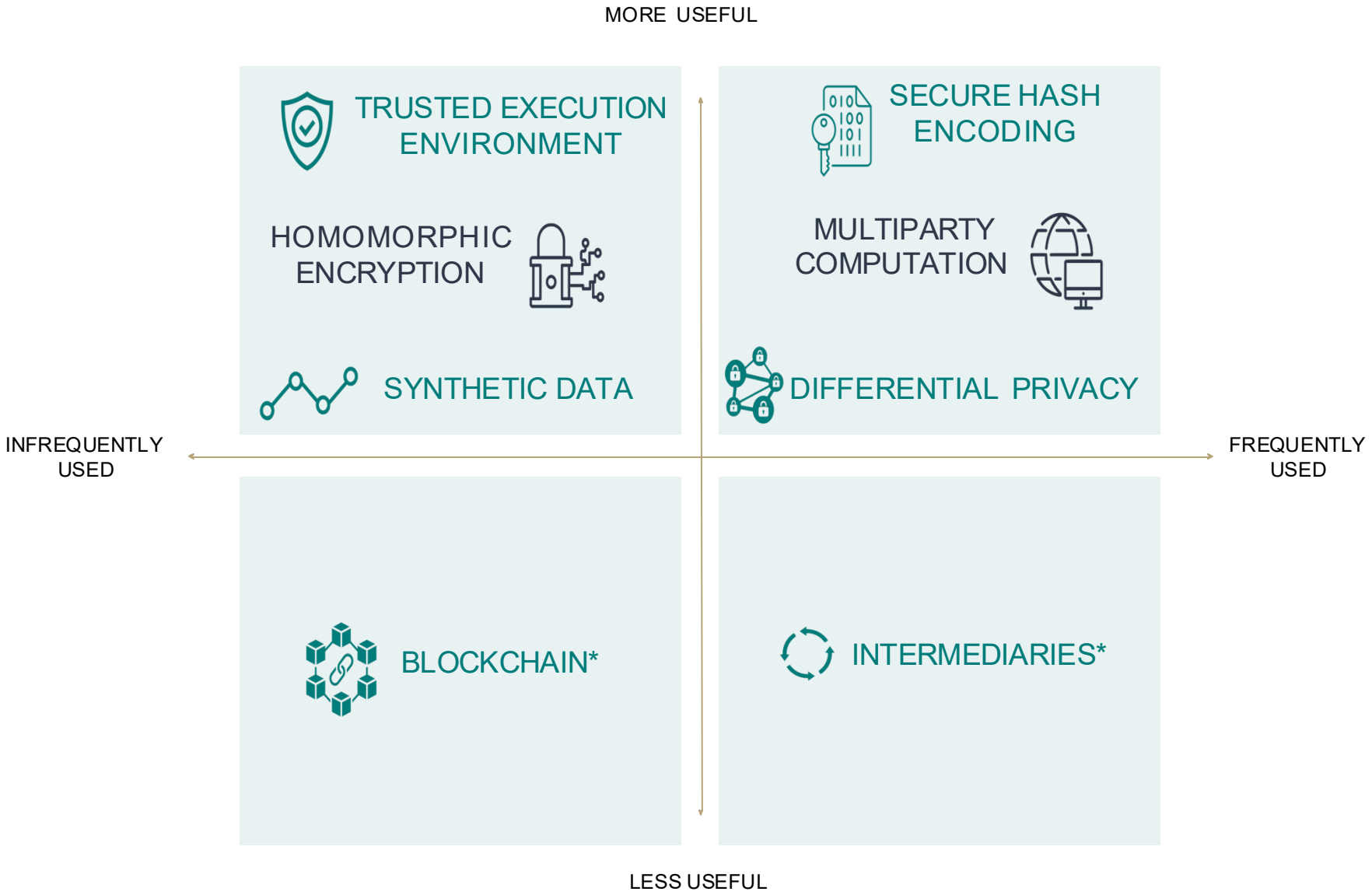

Broader Landscape

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Privacy Preserving Technology Landscape

From AISP Network Convening June 2022 – Key Topics in Privacy Preserving Technology Given by Dr. Amy O'Hara Georgetown Massive Data Institute and Aaron Bean, Asemio

Graphic Credit: [Datavant]

ASEMIO CASE STUDY

GEORGE KAISER FAMILY FOUNDATION
A supporting organization of Tulsa Community Foundation

BIRTH THROUGH EIGHT STRATEGY FOR TULSA

blue meridian partners

Community Level **Success** with Data Sharing

"How do we make data sharing **easier** and **more accessible** in Tulsa?"

THE RESULTS

Data from a **12-year period** accessed from **32** programs
Participation from **8** organizations
Insights to **5** community questions
½ the time invested when compared with traditional methods

…all achieved in ***2 months' time***

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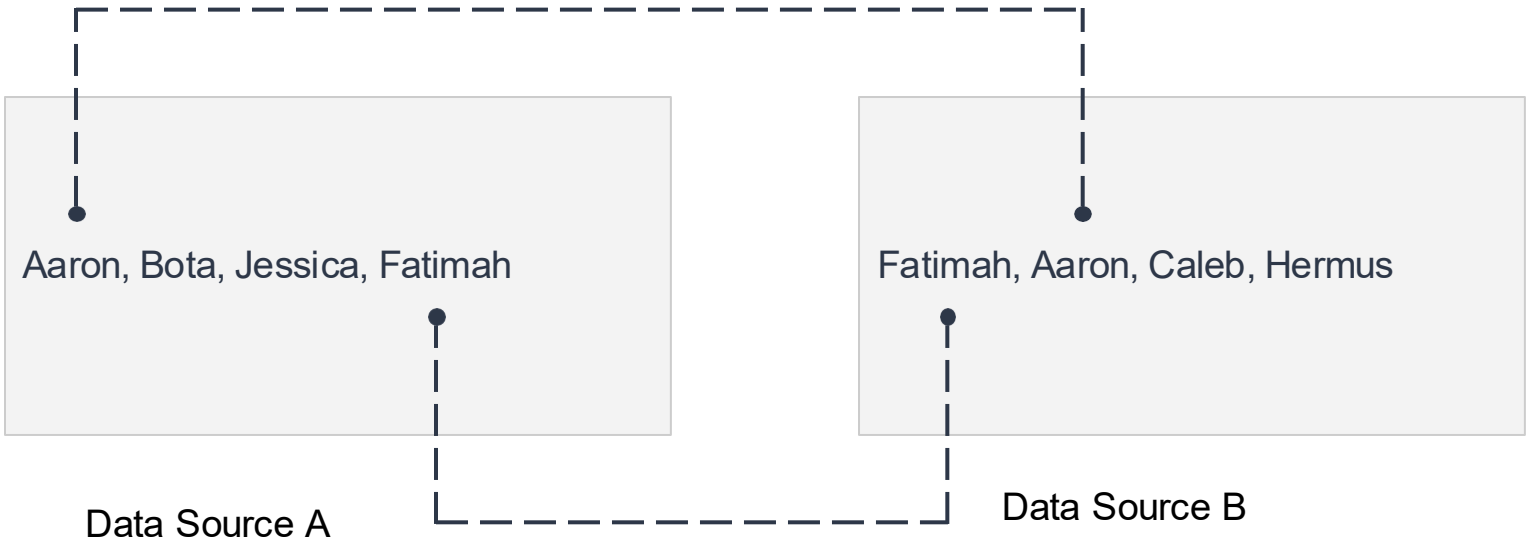
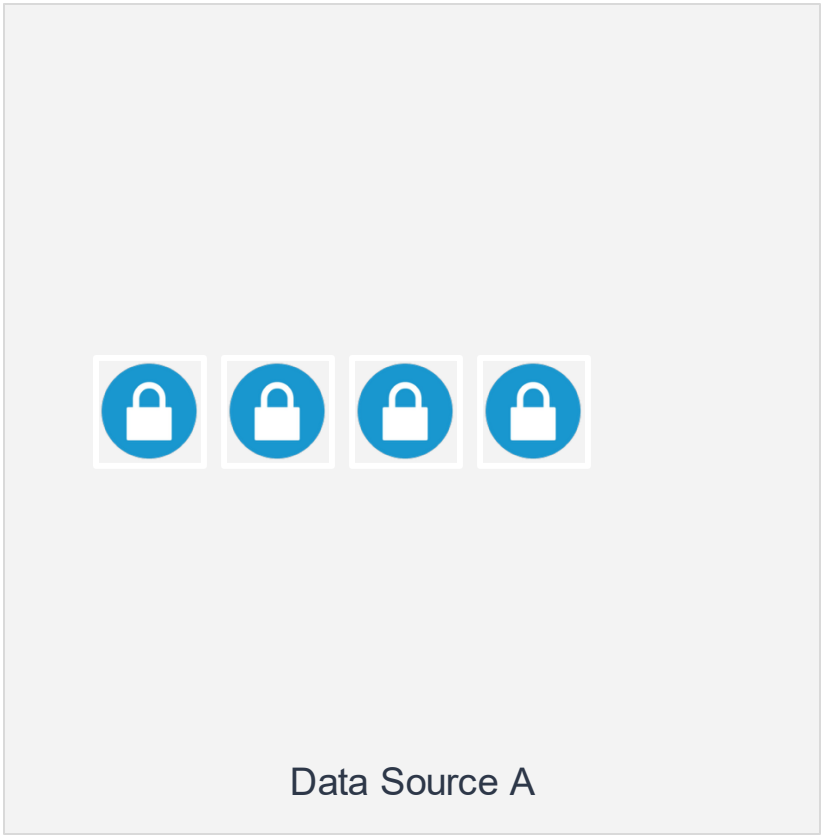
Introduction: Privacy-Preserving Record Linkage

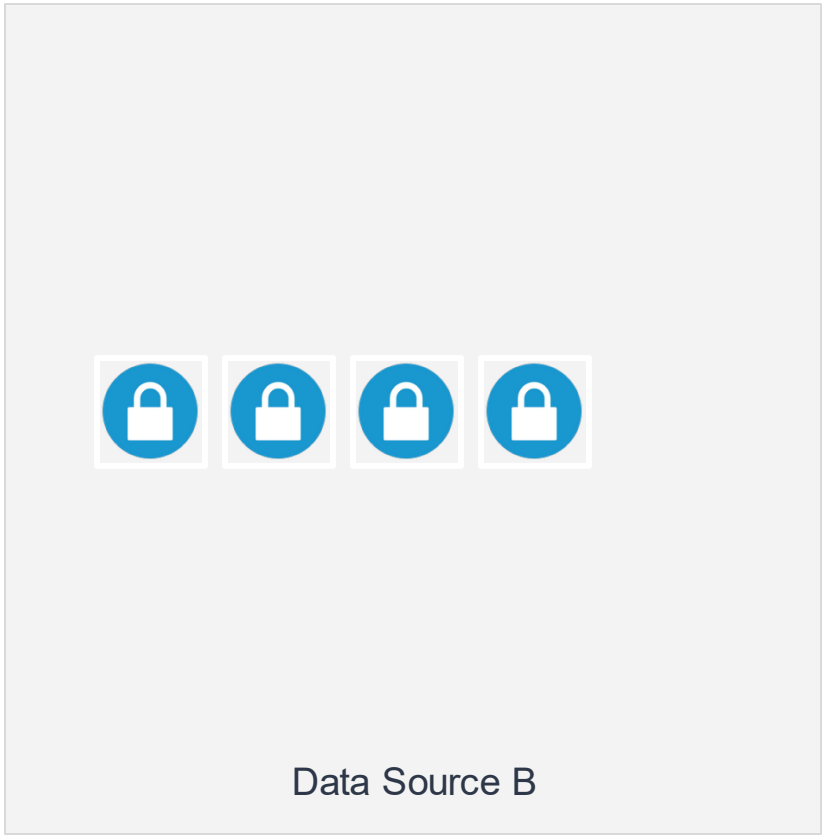
- Secure Hash Encoding
- How does it work?

Record Linkage: Plain Text Sharing

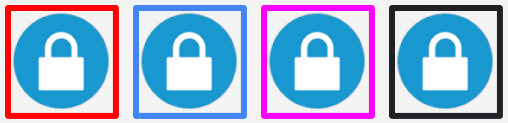


Record Linkage: Not Sharing Data

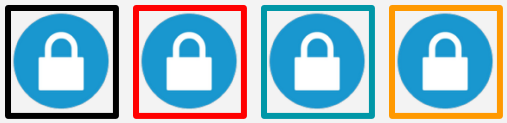




Record Linkage: Secure Hash Encoding

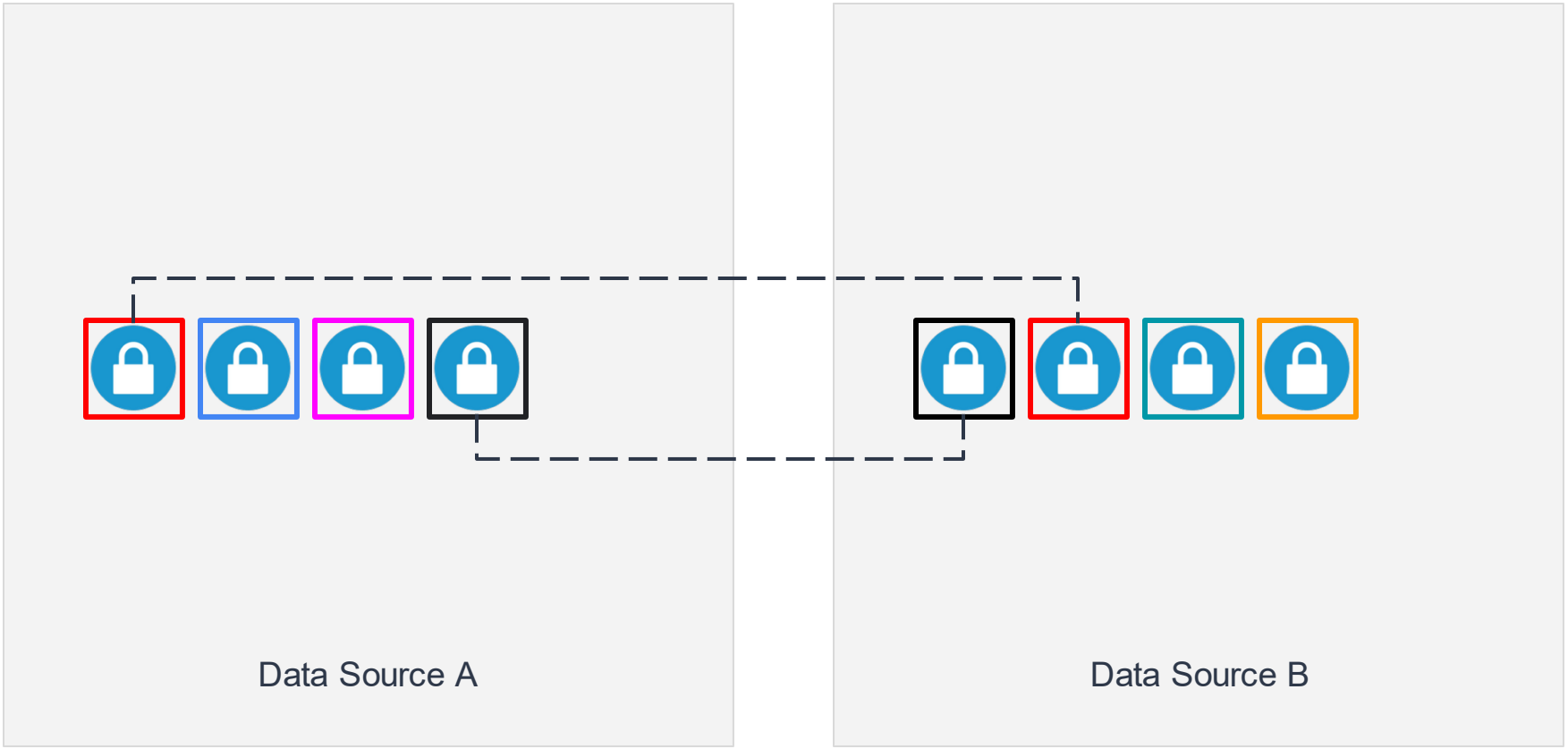


Data Source A



Data Source B

Link Records without sharing sensitive information



A Resilient Ecosystem Development Tool

- Balances privacy and utility
- Advances ethical and legal mandates
- Risk reduction of compromises and breaches
- Reduce research cycles by shortening governance cycles
- Access difficult to access data sources with added protection

Case Studies and Use Cases

Case Study #1: Proof of Concept

Early Childhood Consortium.

Highlights:

- Data from a 12-year period accessed from 32 programs
- Participation from 8 organizations
- Insights to 4+ community questions
- ½ the time invested when compared with traditional methods
- ***2 Months from initial meeting to community questions answered***

Example Questions

- What is the unique number of individuals served (i.e., total population) and the overlap between each pair of data contributors for all time?
- What are the differences in program completion rates for different racial, ethnic, and gender groups in 2018?
- What are the differences in outcome achievement rates for different racial, ethnic, and gender groups in 2018?
- How many individuals previously served by two early education providers have since been served by two other youth and adolescent providers?

Case Study #2: Food Insecurity

Collaboration with United Way to address and map out food insecurity pervasiveness.

Highlights

- Q: What is the unduplicated count of clients served and how many times did those clients visit? How many mouths fed, households, and units of service does this represent?
- 14 data contributors
- Highly variable levels of data system sophistication
- Significant variance in how clients, households, mouths fed were defined

Case Study #3: Evictions

Examining preventative measures in evictions through partnerships with school and civil justice systems.

Highlights

- Timely and necessary
- *Analytical to transactional data plane break*
- Actionable Insight Pattern Emergence
  - Aggregate across the district
  - Individual schools
  - Individual student notifications

Partners

Strive Together Backbone Organization, Policy Institute,
Early Childhood Funder,
School System

Case Study #4: Chronic Absenteeism

Using data integration to inform strategies to address chronic absenteeism. *(In motion)*

- ➔ Social Determinant Analysis between Medicaid recipients, United Way partners, and the school system
- ➔ Toolkit Guidance for distribution and training
- ➔ Considering transactional and analytical use cases

Q&A?