# Unlocking Data and Unleashing Its Potential

**Jake Porway**
Founder and Executive Director,
DataKind
@jakeporway

# Unlocking Data and Unleashing Its Potential

**Melinda Rolfs**
Senior Director of Data and Analytics, MasterCard Center for Inclusive Growth
@CNTR4growth

**Greg Bloom**
Chief Organizing Officer, Open Refferal Initiative
@Open_Referral

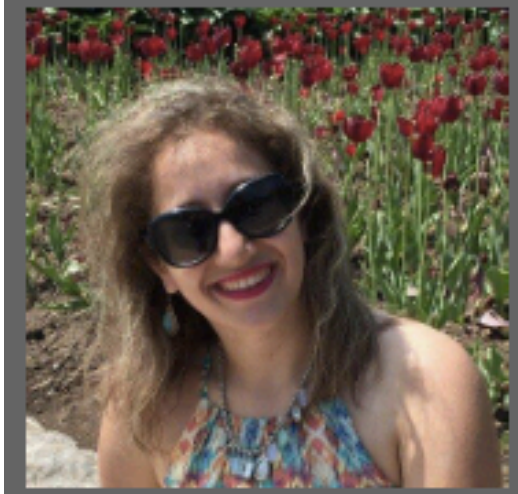
**John Wilbanks**
Chief Commons Officer, Sage Bionetworks
@wilbanks

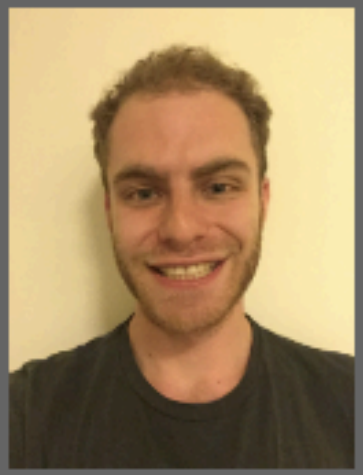
**ST Mayer**
Head of Public Sector Work, Code for America
@codeforamerica

Unleashing The Power of Data

DataKind
Harnessing the power of data science in the service of humanity.

Moulton Niguel Water





# Moulton Niguel Water District Project
# DataCorps Team

Water Demand Forecaster | Recycled water supply and demand | About

Model type

Linear regression

Number of days of history

0 | 1,188 | 4,745

0 475 950 1,425 1,900 2,375 2,850 3,325 3,800 4,275 4,745

Number of days to forecast

15 | 1,825

1 184 367 550 733 916 1,099 1,282 1,465 1,648 1,825

Forecast confidence band (%)

1 | 95

1 11 21 31 41 51 61 71 81 91 99

Max daily recycled water supply (mg)

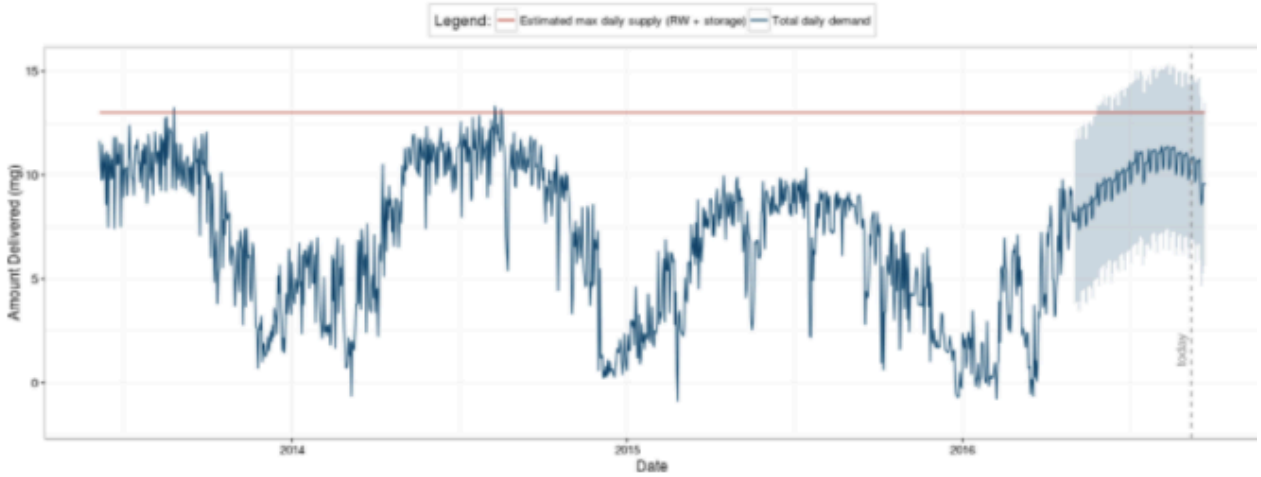
10

Max daily storage supply (mg)

3

Demand excess probability limit (%)

1 | 50 | 99




Between today and 2016-09-21 there is a

**50 percent chance**

demand will exceed supply for

**at least 1 days**

totalling

air mozilla
LOOK AHEAD

DATA ON PURPOSE

DO GOOD DATA

# Bridging the Data Divide


**Melinda Rolfs**

Director of Data and Analytics

mastercard. Center for Inclusive Growth

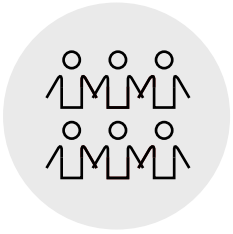
@CNTR4growth | www.mastercardcenter.org

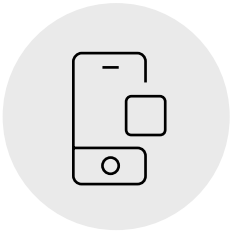
Billions of people around the world are trapped in a poverty of access, cut off from the basic essentials they need to thrive

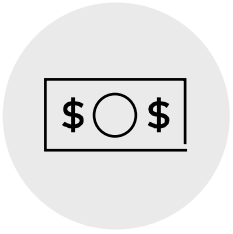
# About the Mastercard Center

Our mission is to advance **sustainable and equitable economic growth** and **financial inclusion** around the world

Combine **expertise, data, technology** and **philanthropic investments** to empower a community on the front lines of inclusive growth





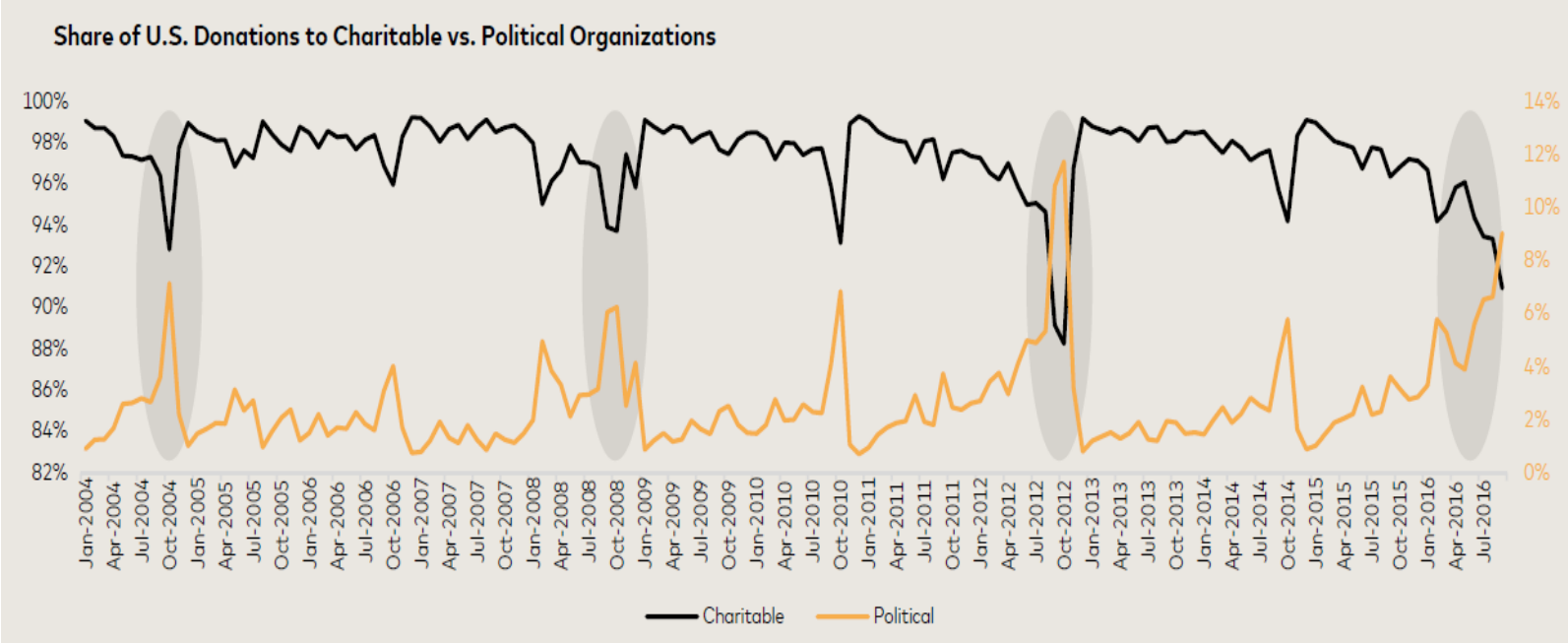


# Donation Insights

Closing the Information Gap in Charitable Giving

## Which Factors Impact Giving?

There appears to be a substitution effect among charitable and political donations during U.S. election cycles.



# Donation Insights

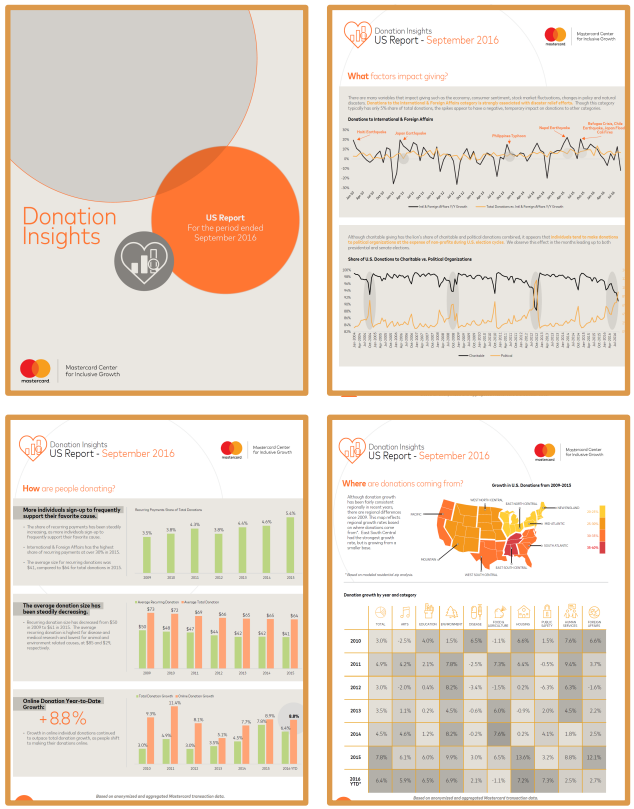
## Closing the Information Gap in Charitable Giving

### Download the report and dataset

mastercardcenter.org

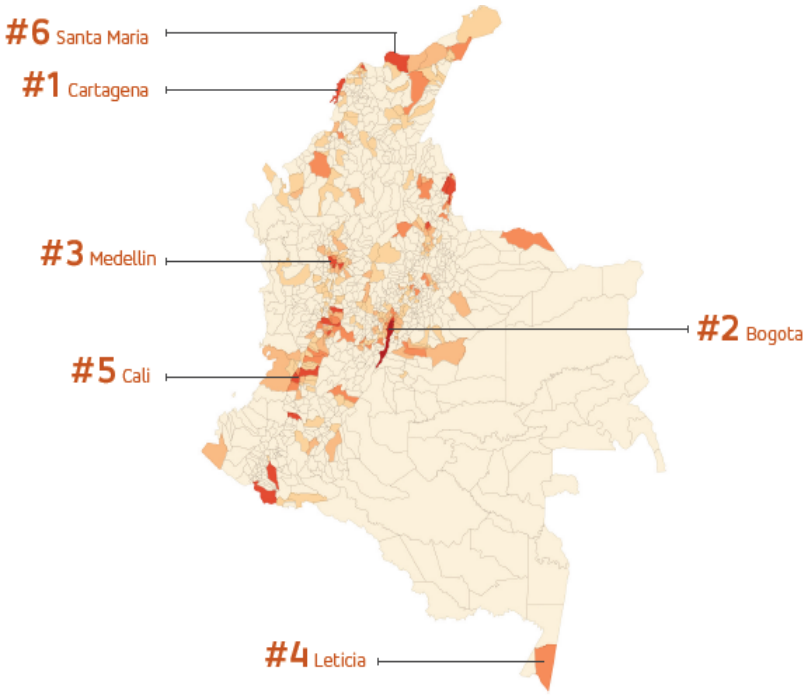
### Share your learnings

donationinsights@mastercard.com



# Tourism & Inclusive Growth

## Mastercard data-driven insights reveal a better understanding of how foreign tourism impacts economies

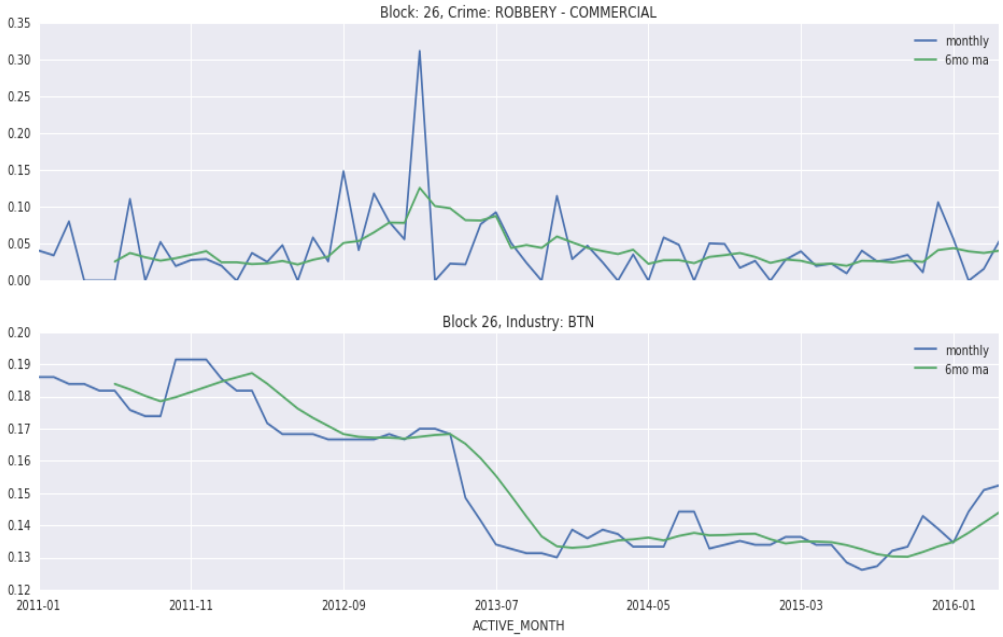



- Harvard researchers are using the Mastercard's transaction data to better understand which destinations are most popular, which countries tourists come from and the types of retail sectors that benefit.
- Illustrates to policymakers how the benefits of promoting tourism as a development strategy can be spread more equitably around a country.

**Based on Mastercard's anonymized and aggregated transaction data*

# Crime & Commerce

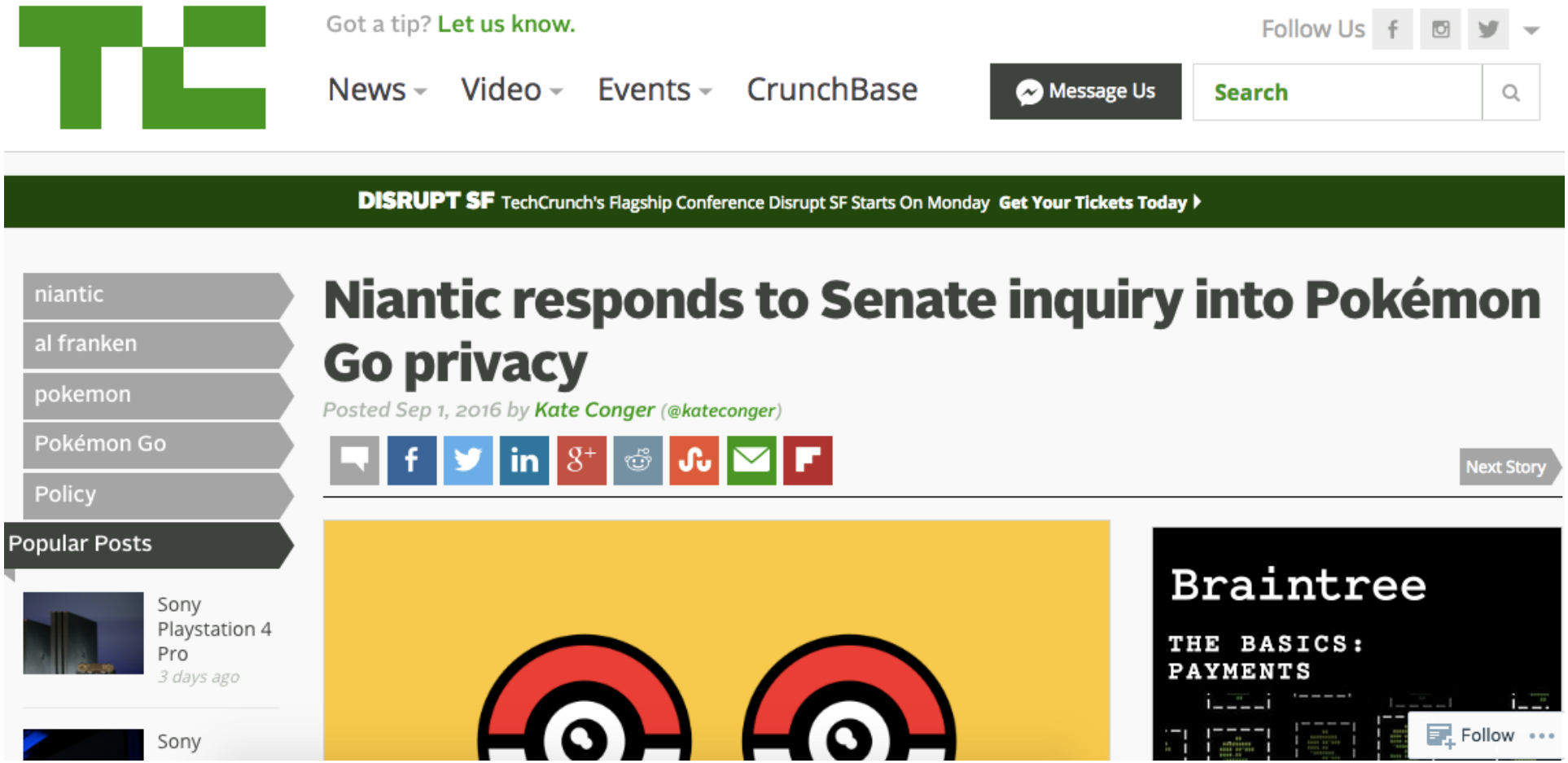
- **Combined Mastercard's data** with open source Baltimore crime data. Defined blocks, then computed merchant densities and commercial robberies for each block.
- **Analysis can help to quantify** lost tax revenue from spikes in crime
- **Joined White House Data-Driven Justice initiative**, an effort to help local jurisdictions leverage data and analytics to improve the criminal justice system




**Based on Mastercard's anonymized and aggregated transaction data*

DATA ON PURPOSE

DO GOOD DATA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Message Us
Search
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al franken
pokemon
Pokémon Go
Policy
Popular Posts
Sony Playstation 4 Pro
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Sony
Niantic responds to Senate inquiry into Pokémon Go privacy
Posted Sep 1, 2016 by Kate Conger (@kateconger)
Next Story
Braintree
THE BASICS:
PAYMENTS
Follow

9:41 AM
100%
Get Lucky (feat. Pharrell...
Daft Punk - Random Access Memories
History
iTunes Radio
Now Playing
Featured Stations
Music Heard at WWDC
Trending On Twitter
Pop Hits Summer Songs
Edit
My Stations
Rihanna Radio
Adorn Radio
Clear
History
Done
Played
Wish List
Rihanna Radio
Pretty Girl Rock
Want U Back
Lonely (Old...
Next to Me (Jame...
Music Heard at WWDC
11th Dimension
Wavin' Flag (Coca...
If I Lose Myself

aboutthedata.com

Home Contact us Help Categories My Account

Review and edit the marketing data about you below. Acxiom collects data from a variety of sources such as public records, surveys, and online and offline registrations. The accuracy and completeness of the data is determined by these sources. The data may not be complete and in some cases the data may not be current due to the timing of updates from these sources. Please remove or correct any data that is in error.

| Element | Details | Action |
|---|---|---|
| Date of Birth | Remove this data about me for online marketing purposes (Was: [redacted]) | Edit/Remove |
| Gender | Male | Edit/Remove |
| Ethnicity | Caucasian/White | Edit/Remove |
| Education | Remove this data about me for online marketing purposes (Was: Completed Graduate School) | Edit/Remove |
| Occupation | Remove this data about me for online marketing purposes (Was: Professional/Technical) | Edit/Remove |
| Marital Status | Remove this data about me for online marketing purposes (Was: Inferred Single) | Edit/Remove |
| Number of Adults | 1 Adult | Edit/Remove |
| Political Party | Remove this data about me for online marketing purposes (Was: Voter - Democratic) | Edit/Remove |

Back to Categories »

| | | |
|---|---|---|
| $499.99 | 1 | Edit/Remove |
| Total Offline Purchases - $500-$999.99 | 1 | Edit/Remove |
| Average Dollars Spent Per Online Purchase | 130 | Edit/Remove |
| Total Online Dollars Spent | 1042 | Edit/Remove |
| Total Number of Online Purchases | 8 | Edit/Remove |
| Total Online Purchases - Under $50 | 2 | Edit/Remove |
| Total Online Purchases - $50-$99.99 | 1 | Edit/Remove |
| Total Online Purchases - $100-$249.99 | 4 | Edit/Remove |
| Total Online Purchases - $250-$499.99 | 1 | Edit/Remove |
| Total Number of Purchases | 17 | Edit/Remove |

https://xkcd.com/1390/

Altmetric: 50 Views: 3,180 Citations: 2 More detail »

PDF Share Share Tools

Editorial | OPEN

# Smartphones as new tools in the management and understanding of Parkinson's disease

Andrew D Trister, E Ray Dorsey & Stephen H Friend

> *"Variability is the law of life..."—Osler, 1903.*[1]

Parkinson's disease (PD) has been traditionally characterized by the motor symptoms of disease such as tremor, altered gait, and bradykinesia, with a well-established pathophysiology related to loss of dopaminergic neurons

Associated Content

*Scientific Data* | Data Descriptor

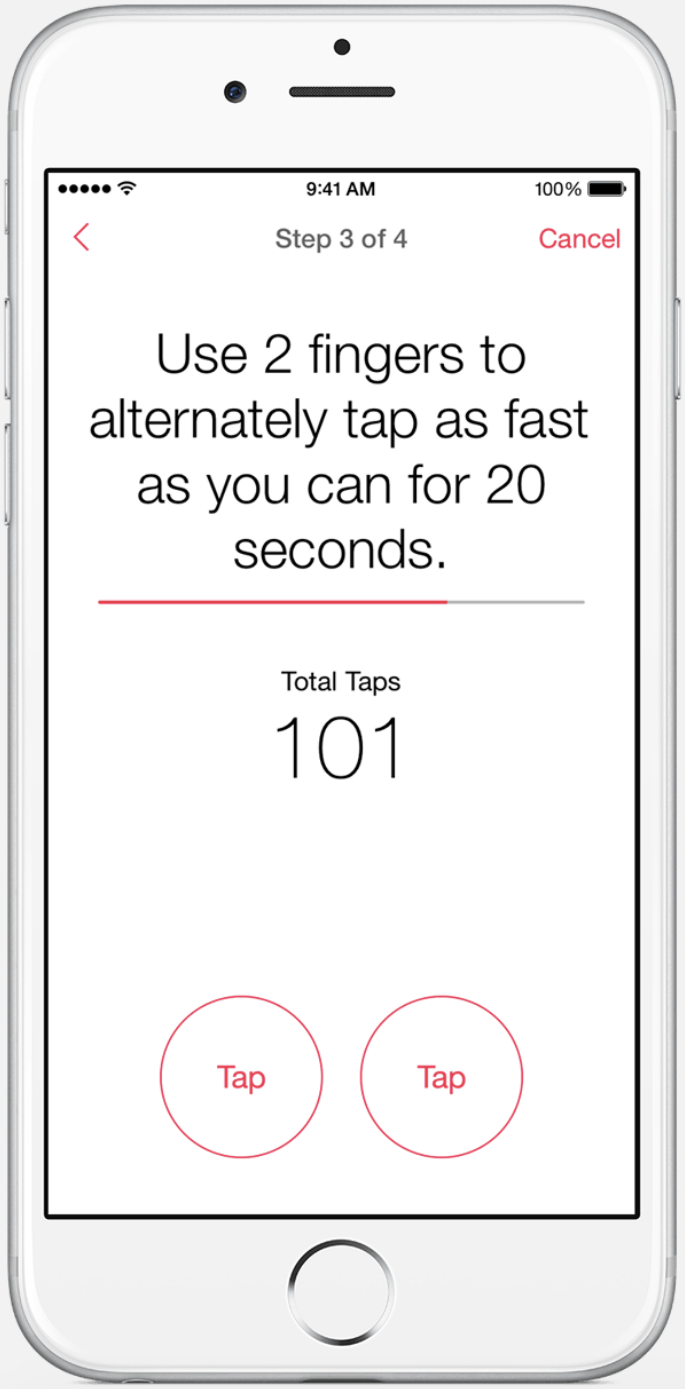
The mPower study, Parkinson disease mobile data collected using ResearchKit

Brian M. Bot, Christine Suver [...] Andrew D. Trister

Sections | Info

References

Author information




●●○○○ Verizon 2:59 PM 49%

## Activities

Today, March 30

To start an activity, select from the list below.

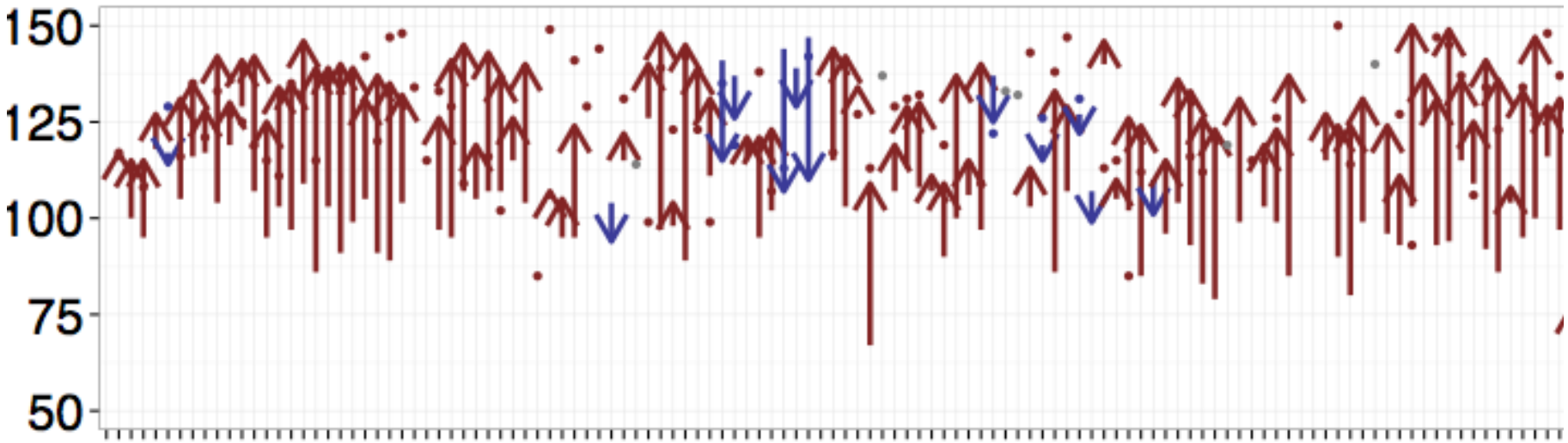
- Tapping Activity — 30 Seconds — 3
- Voice Activity — 20 Seconds — 3
- Walking Activity — 1.5 Minutes — 3
- Memory Activity — 2 Minutes
- My Thoughts — (Anytime) 2 Questions
- Study Feedback — (Anytime) 1 Question

12 Activities | Dashboard | Learn | Profile

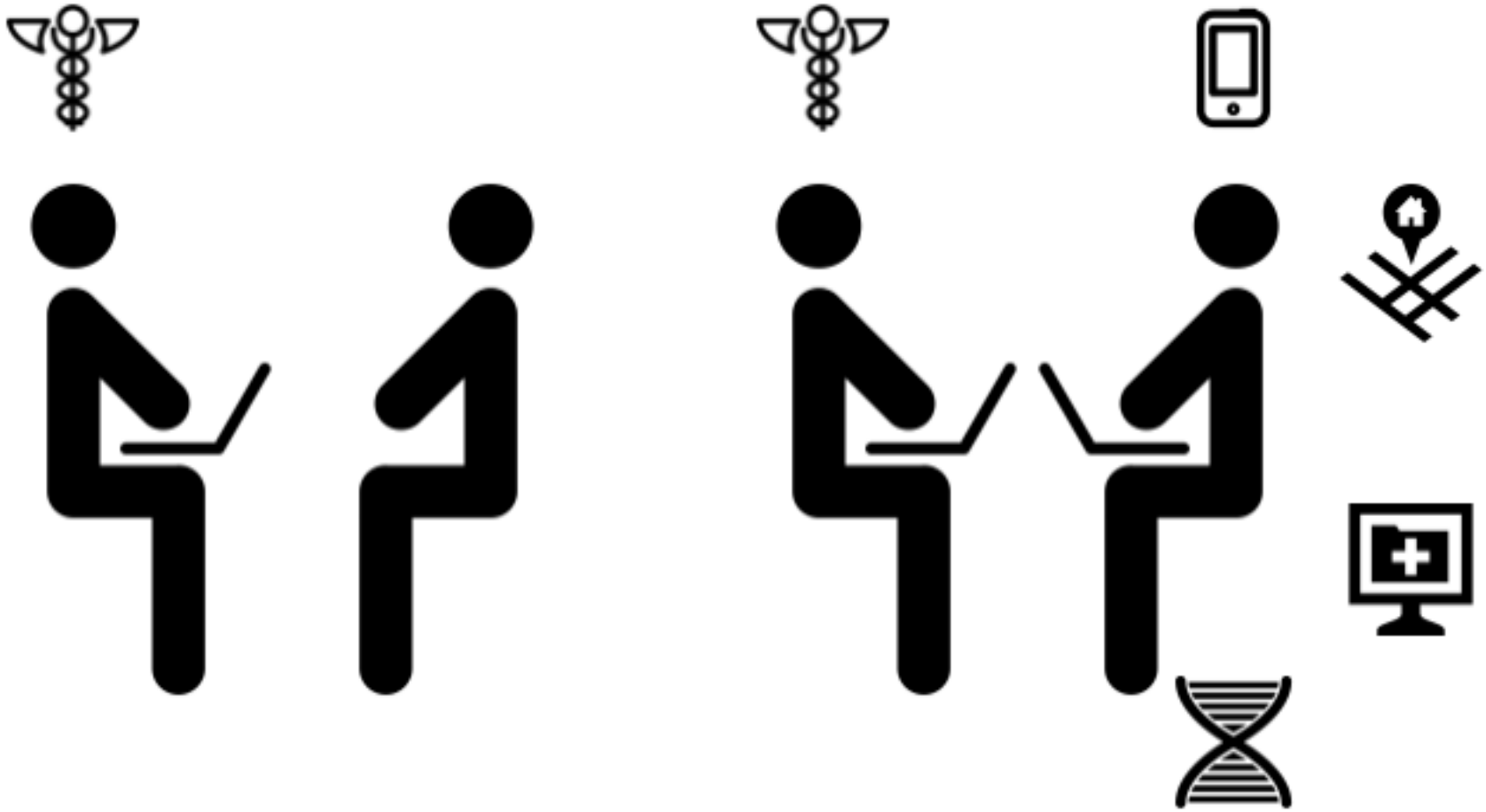
# high-dimensional data

| Traditional Measures | First-order Features |
|---|---|
| Number of Taps | Number of taps, Mean tapping interval, Median tapping interval, Minimum tapping interval, maximum tapping interval, Standard deviation of tapping interval, Kurtosis of tapping interval, Interquartile range of tapping interval, Interquartile range of right button X, Range right button X ,Standard deviation right button X, Interquartile range of left button X, Range left button X ,Standard deviation left button X, Interquartile range of right button Y, Range right button Y ,Standard deviatiion right button Y, Interquartile range of left button Y, Range left button Y ,Standard deviation left button Y, Correlation X and Y, Skew tapping interval, No-button tapping frequency |

# effects of medication / daily variation



# power shift. but to whom?

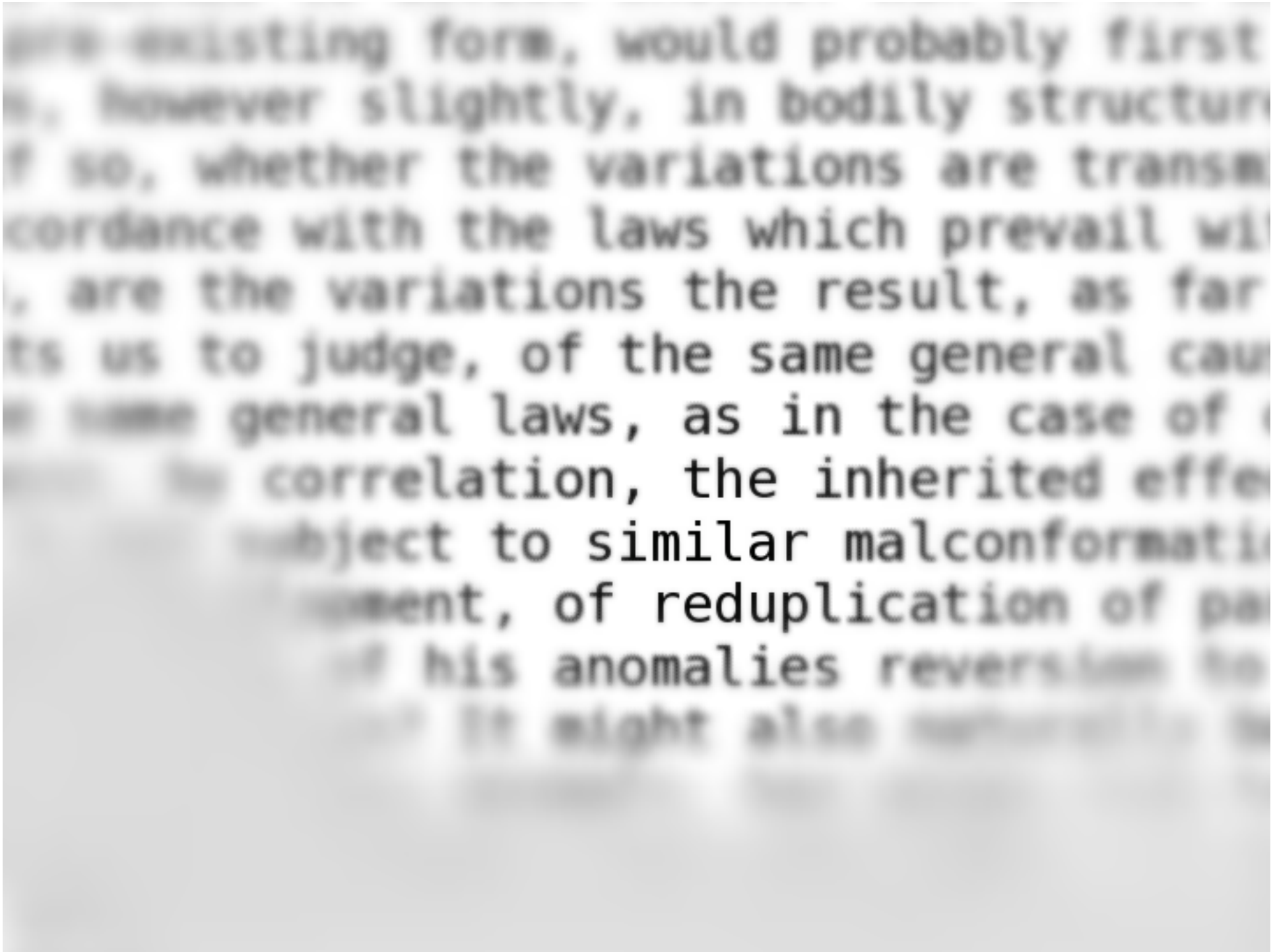


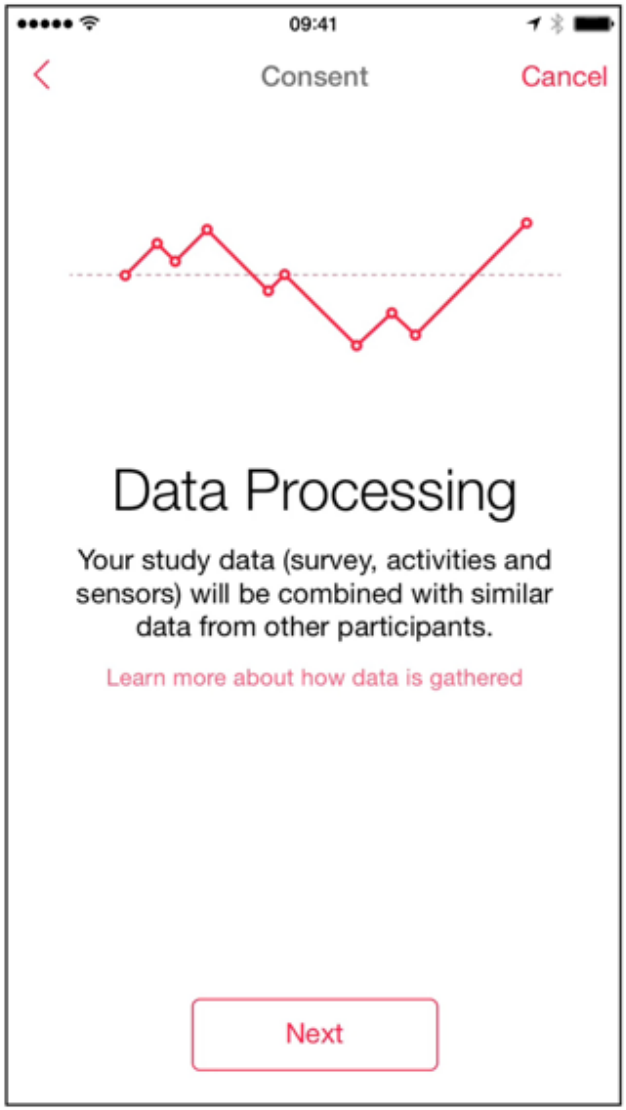
*LAW & DISORDER —*

# TOS agreements require giving up first born—and users gladly consent

**Study says participants also agreed to allow data sharing with NSA and employers.**

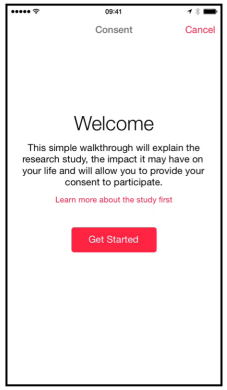
DAVID KRAVETS - 7/12/2016, 6:20 PM



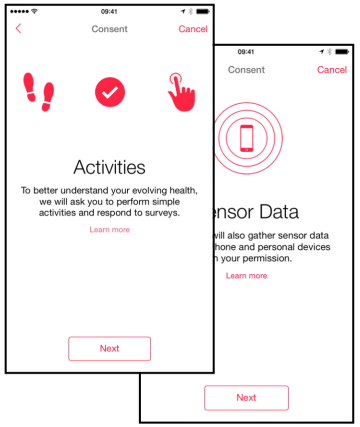



we do interaction design everywhere, except where we need it the most.

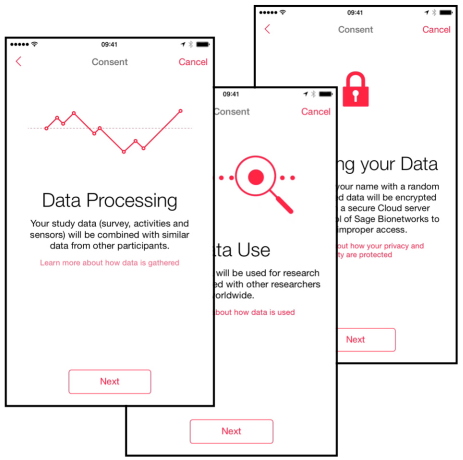
# “human readable”



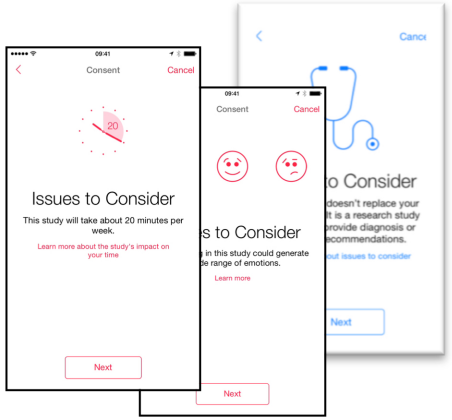

Welcome



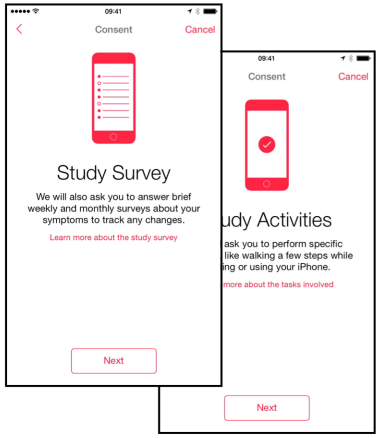

The research



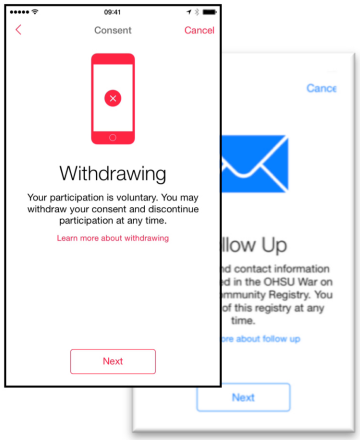

Your Data



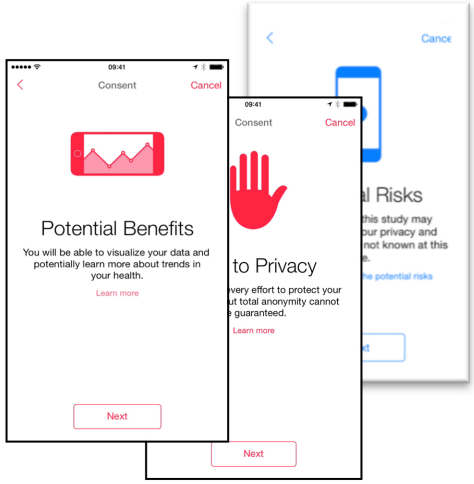

impact on your life- Issues



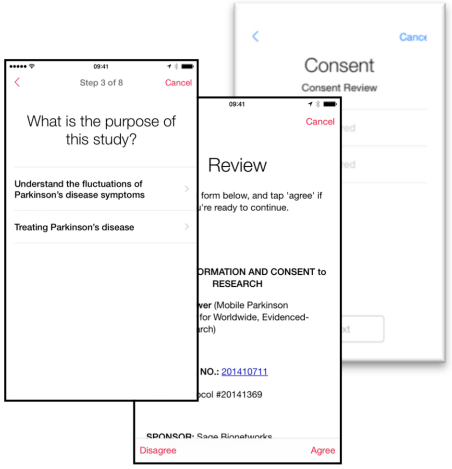

What is involved




Your rights




Potential risks and benefits




Comprehension- Review & Consent

I WILL NOT RE-IDENTIFY

I WILL NOT SHARE

I WILL NOT USE FOR ADVERTISING

I WILL KEEP SECURE

I WILL PROTECT PRIVACY

I WILL PUBLISH OPEN ACCESS

I WILL REPORT ANY BREACHES

I WILL CREDIT PARTICIPANTS

I WILL FOLLOW THE LAW

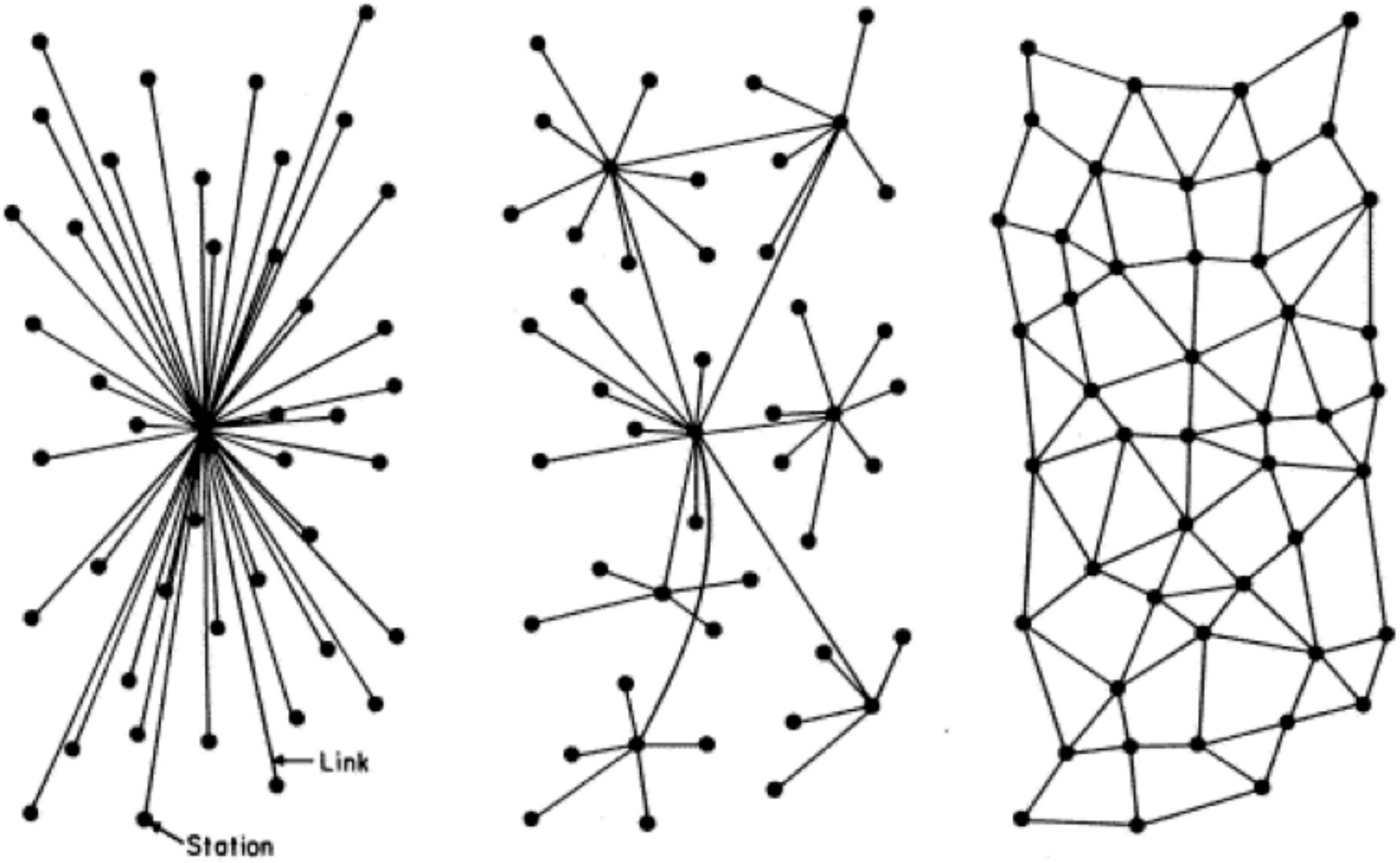



FIG. 1 — Centralized, Decentralized and Distributed Networks

DATA ON PURPOSE

DO GOOD DATA

Greg Bloom |@**greggish**

Open Referral | @**open_referral**

**www.openreferral.org**

# Community Resource Directories and the future of knowledge and democracy

Bread for the City
helping people

OPEN REFERRAL

Bread for the City™
helping people

OPEN REFERRAL

# The Problem

It’s hard to see the safety net.

OPEN REFERRAL

Bread for the City

## Community Resource Directory Data:

**WHICH** agencies?

**WHAT** services?

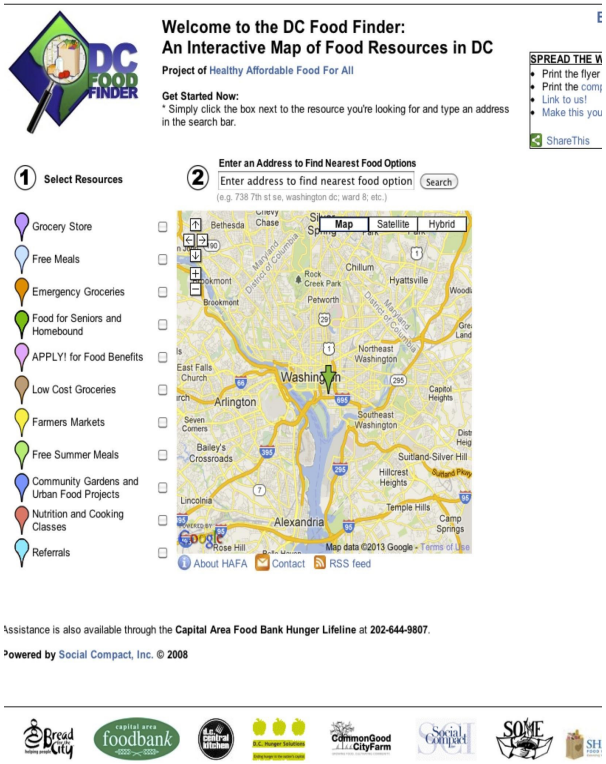
**WHERE** are they located?

**WHEN & HOW** are they accessed?

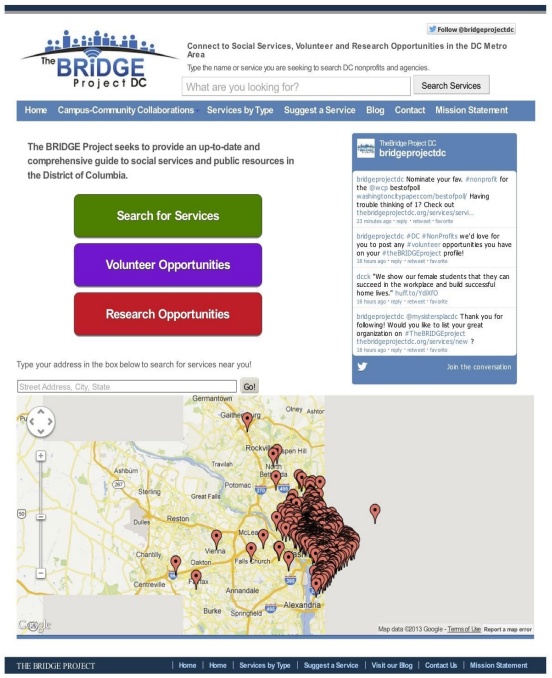
OPEN REFERRAL

## PROLIFERATING RESOURCE DIRECTORIES:

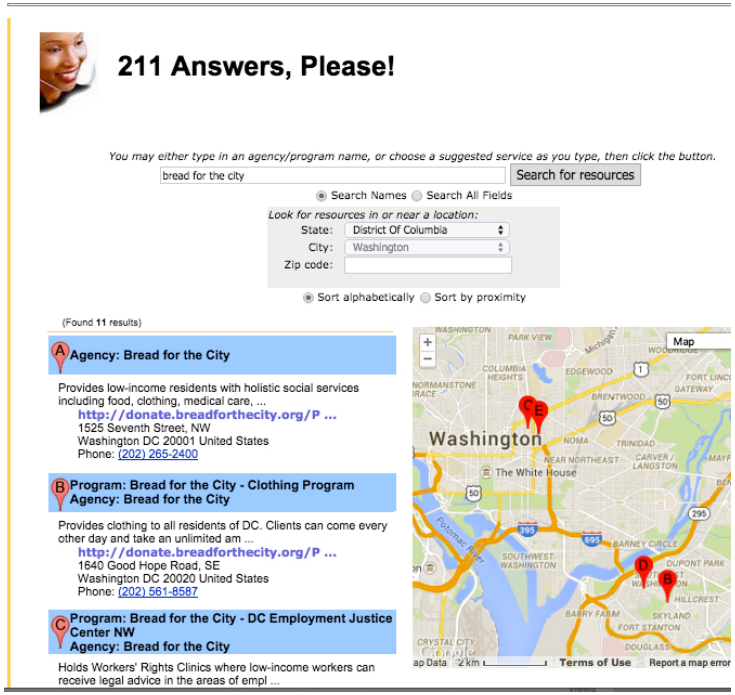
### DC Food Finder




### DC BRIDGE

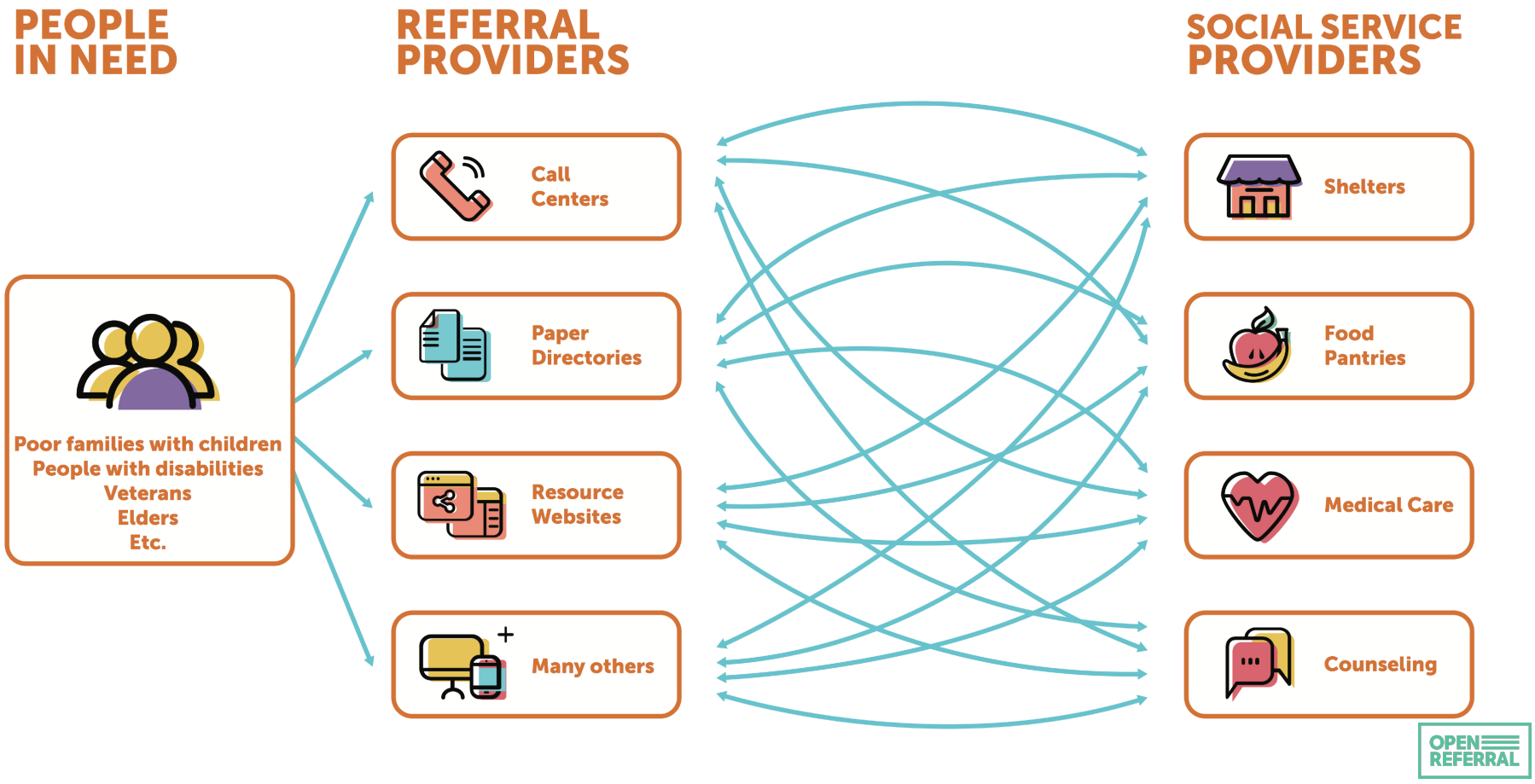



### DC 211



## THIS IS A VERY OLD PROBLEM.

## A LANDSCAPE OF SILOS: CHAOTIC, WASTEFUL, INEFFECTIVE



# FRAGMENTED DATA:

## CATS *A Woman's Place*

CATS helps those most in need get off the street, achieve stability and establish permanent housing by providing compassionate, culturally sensitive services and stays of 4-18 months.
**www.catsinc.org**

### To Get Connected

**Contact Persons:** Case Manager on duty
**Phone:** (415) 487-2140 **Fax:** (415) 703-8931
**Email:**
Transitional Housing: kim@awpcats.org
Substance Abuse: scott@awpcats.org
Program Coordinator: nicole@awpcats.org
**Specific Intake Days and Times:**
M-Sa, 8am-4pm.
**Facility Hours:** 24 hours/7 days. Business hours: 8:00am to 4:00pm; Drop-in 9:00am to 4:30pm.
**Location:** 1049 Howard St. San Francisco, CA 94103
**Notes:** No referral needed. Drop-in between 9am and 4:30pm.

### Things To Know

**Languages Spoken:** Spanish, English.
**What to Bring:** TB Clearance.
**Accessibility:** Wheelchair accessible. Other disabilities are accommodated.
**Client fees, if any:** Emergency shelter clients do not pay program fees. Clients in Substance Abuse or Transitional Housing pay 30% of income based on HUD guidelines.
**Eligible Population:** All Women, MTF Transgender people, Pregnant women. Program does not serve FTM Transgender individuals.
**Faith Based:** No.

**Direct Services:** Emergency Shelter; Transitional Housing; Access to Internet (no computers available, wireless only); Food/Prepared Meals; Hygiene/Personal Care Items; Phones (no voicemail; Shower Facilities; Substance Abuse Treatment; Medical Care (provided on-site by Tom Wadell (Tuesday and Thursday) Health Care for the Homeless). Referrals to other resources available as needed.

THE BAR ASSOCIATION OF SAN FRANCISCO

## *Community Awareness & Treatment Services, Inc. (CATS) – A Woman's Place*

1049 Howard St. (between 6th & 7th), 94103
1171 Mission St. 94103 Administrative Office
415-487-2140
415-703-9657 (Fax)
24-hours/7-days

CATS is an entry level emergency shelter for homeless women. The shelter provides on-site services including breakfast, lunch and dinner, referrals, housing and medical information, substance abuse counseling, and case management. Staff are available for one-on-one peer counseling with guests on a 24-hour basis. Can accommodate 40 women. Women should come in and ask for a bed. All clients must be under case management.

The Care program allows women to stay for up to 18 months. Fees include 30% of income (no fee for one-night stays). Must be seen for an appointment by an intake worker to be put on the waiting list. The Primary Substance Abuse Program is based on the 12 steps of Alcoholics Anonymous and offers 30-to 120-day stays.



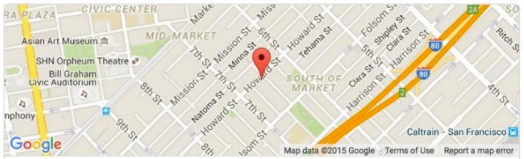
ST. ANTHONY'S
Hope Served Daily

BACK LINK-SF

## A Woman's Place

Welcome
Women

Services
Shelter




1049 Howard St.

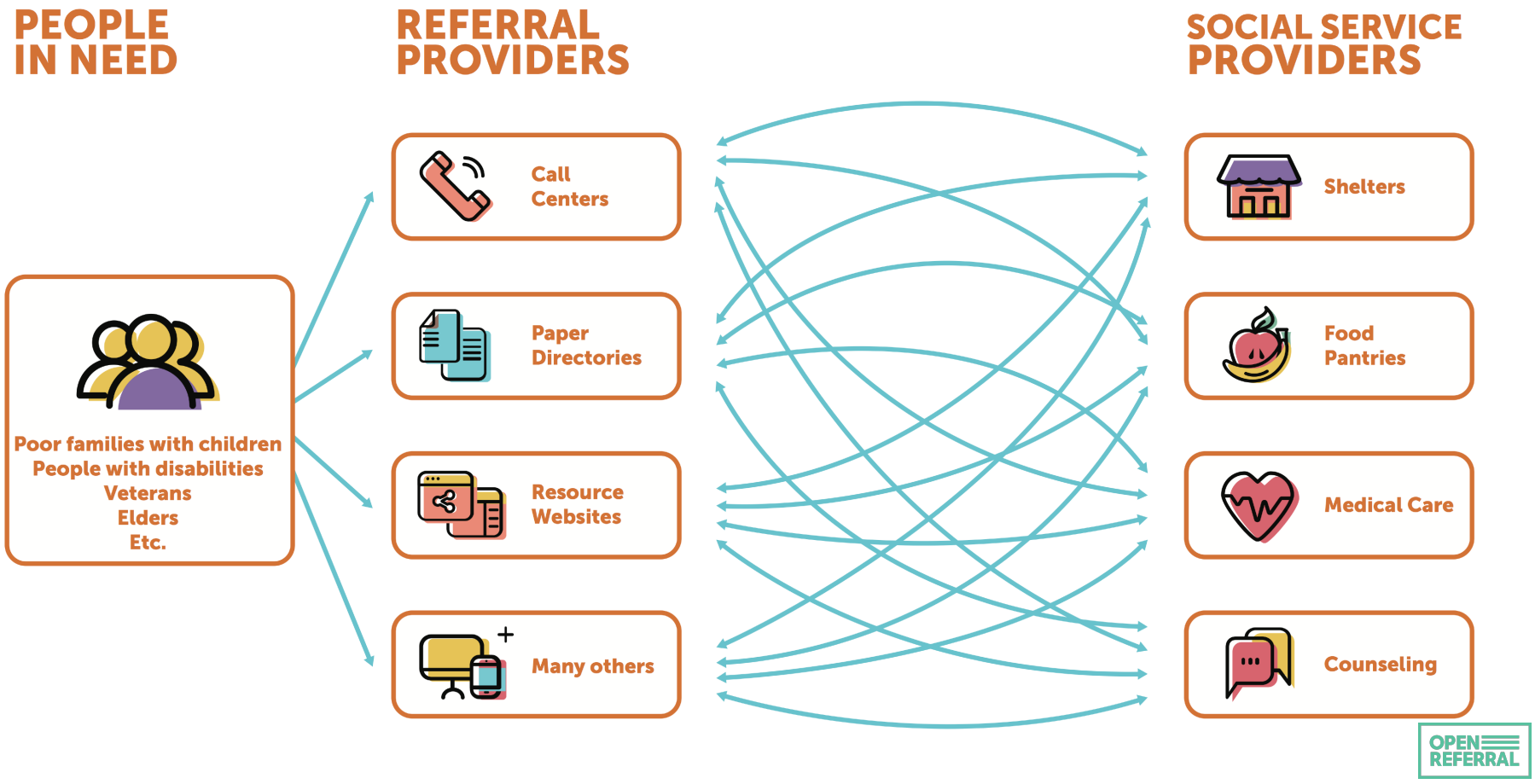
**Call** 415-487-2140
**Website** http://www.catsinc.org/programs.html
**Directions**

Women's Shelter

Emergency and longer-term women's shelter
**Every day:** 24 Hours

**Notes:**
5 beds for women in crisis (rape or domestic violence); stay up to 7 days. 16 shelter beds; stay varies. 16 beds in supportive housing (5 for HIV+ women); stay up to 18 months. 8-bed substance abuse program for any woman 18+; stay 1-4 months.

## A LANDSCAPE OF SILOS: CHAOTIC, WASTEFUL, INEFFECTIVE



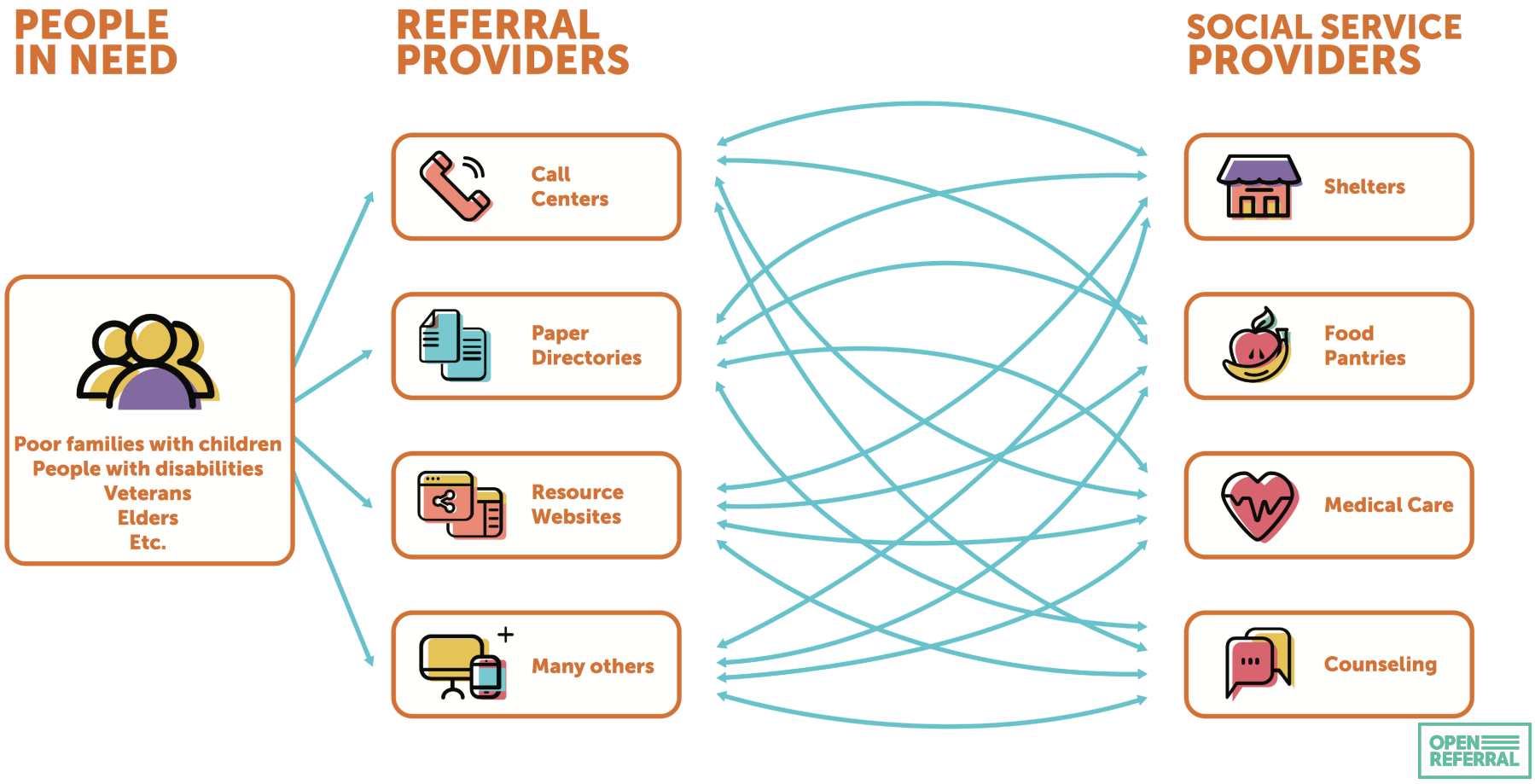
Bread for the City™
helping people

OPEN REFERRAL

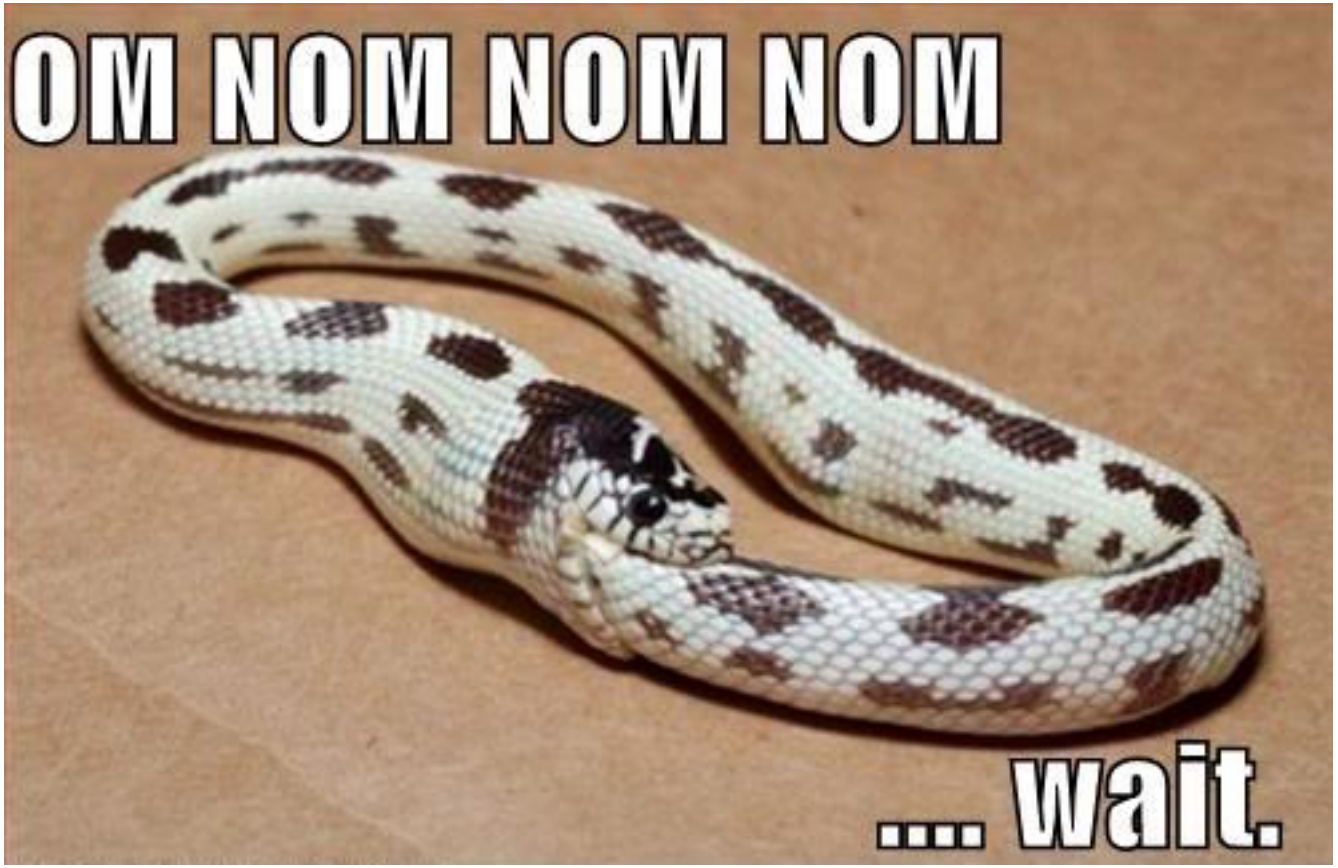
**Organizations that help people in need often don't *need* more people asking for help.**

OPEN REFERRAL

## A LANDSCAPE OF SILOS: CHAOTIC, WASTEFUL, INEFFECTIVE



## HISTORY, REPEATING:



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## The Commons: Shared Resources, Resolvable Dilemmas

'At any time that individuals may gain from the costly action of others, without themselves contributing time and effort, **they face collective action dilemmas *for which there are coping methods.***"

Nobel Laureate **Elinor Ostrom**

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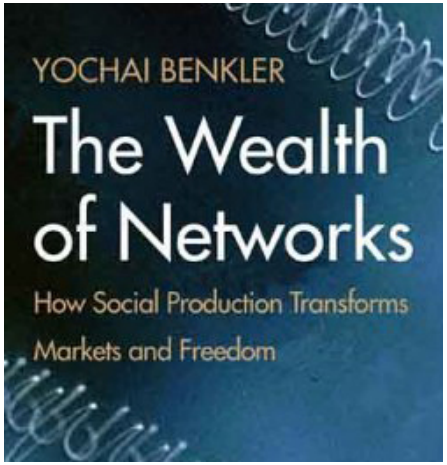
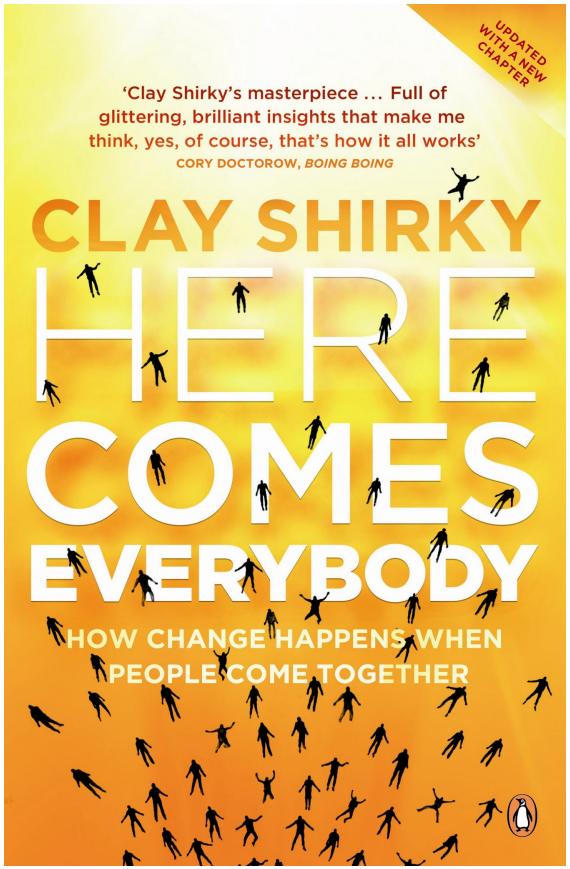
## Commons-Based Peer Production

Linux™

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# Our Vision

**A healthy information ecosystem**
in which **people can find what they need**,
in **whatever way works best** for them.

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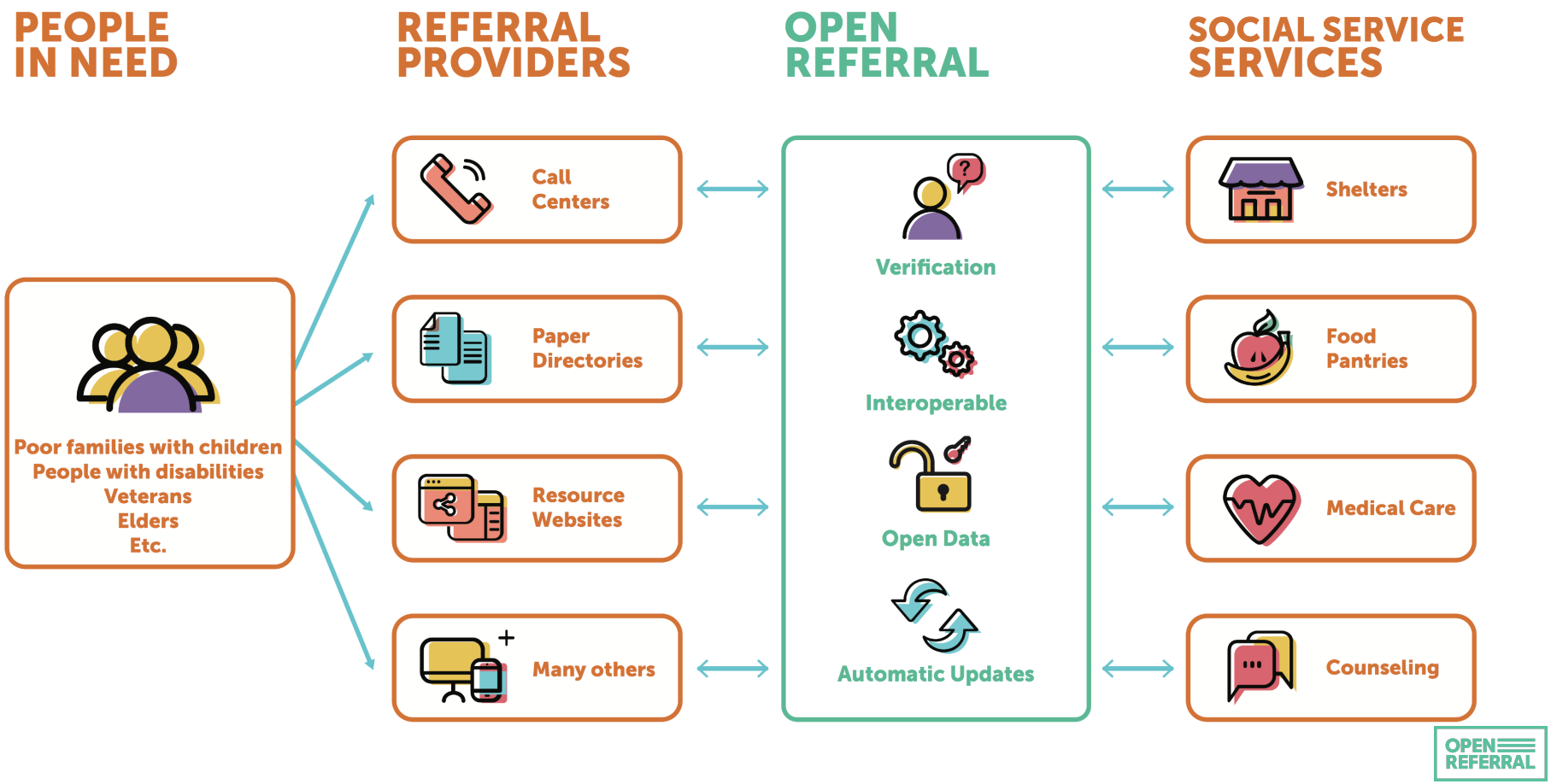
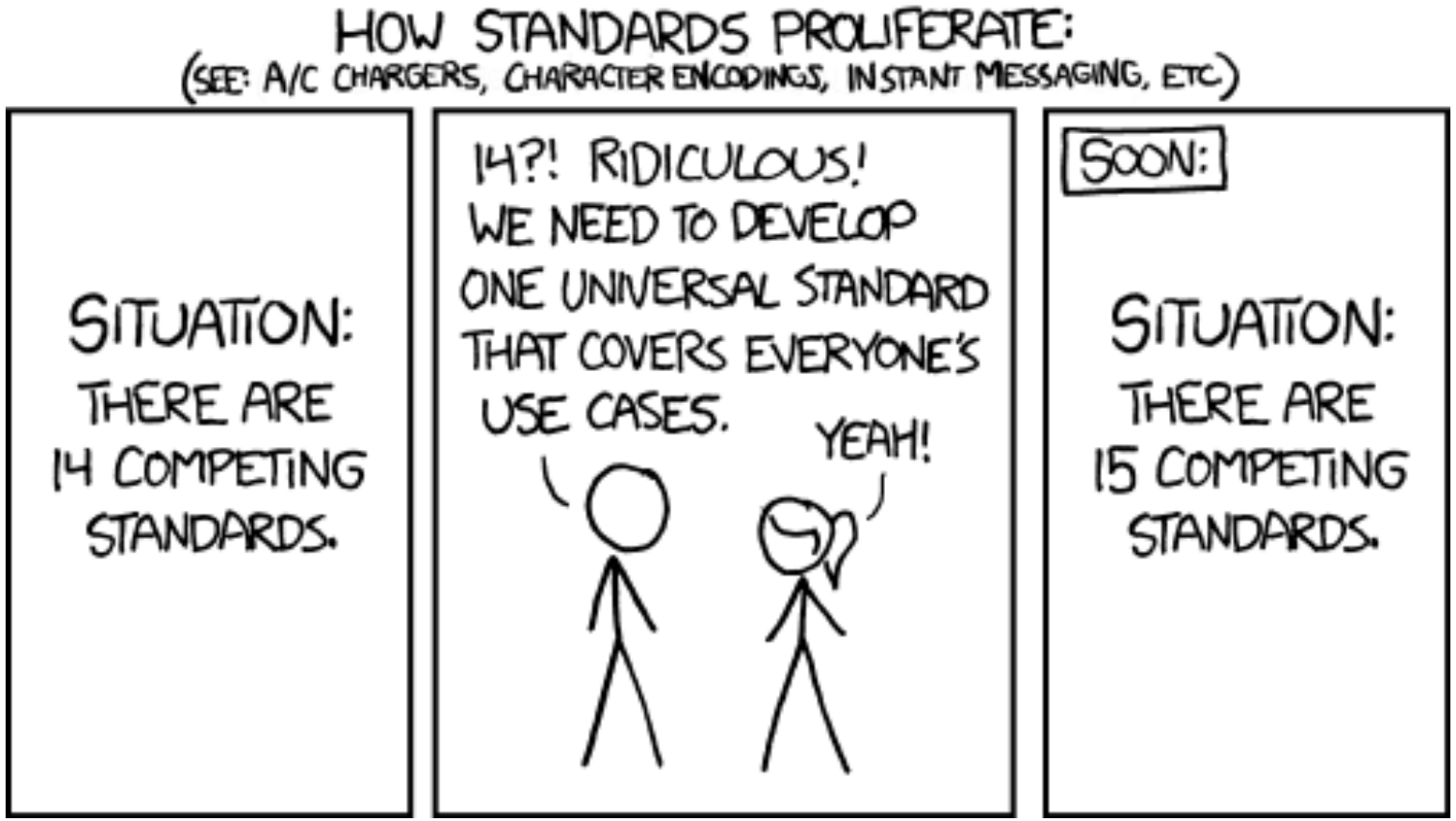
## A HEALTHY ECOSYSTEM: ACCESSIBLE, INTEROPERABLE, SUSTAINABLE



## EASIER SAID THAN DONE (XKCD #927)

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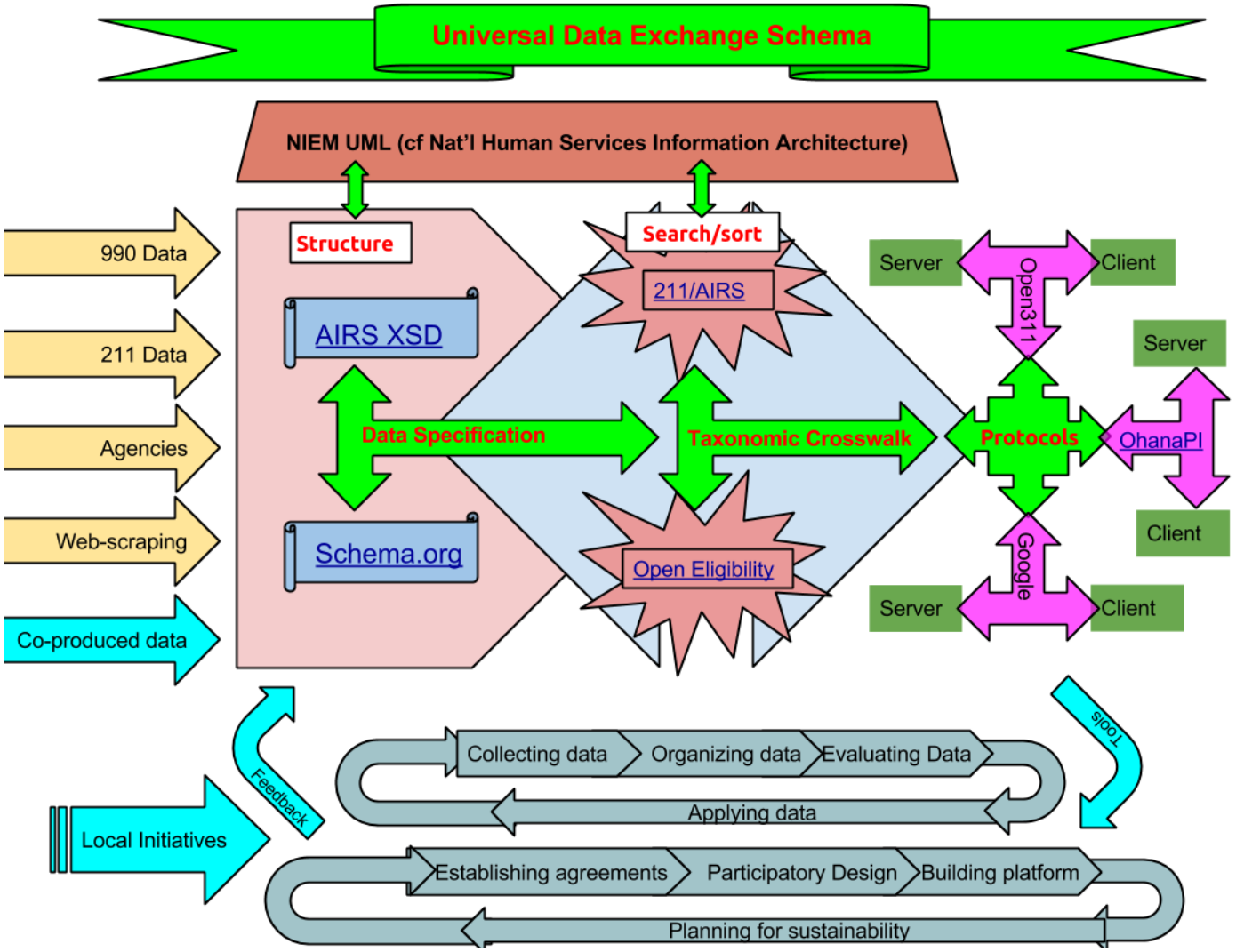
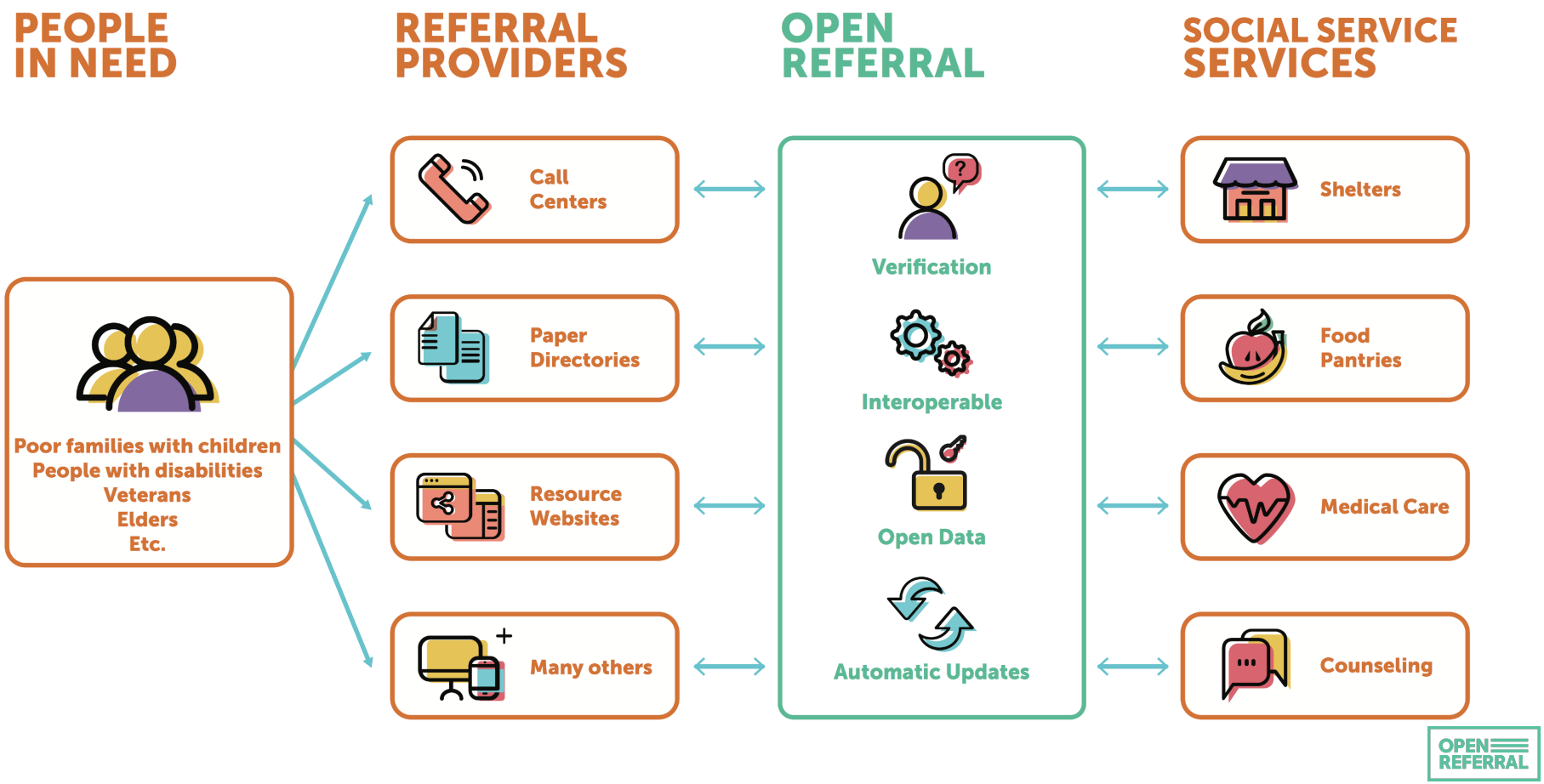
## We developed the Human Services Data Specification: an exchange format to bridge old and new

# !!!!


Universal Data Exchange Schema
NIEM UML (cf Nat'l Human Services Information Architecture)
990 Data
211 Data
Agencies
Web-scraping
Co-produced data
Structure
AIRS XSD
Schema.org
Data Specification
Search/sort
211/AIRS
Open Eligibility
Taxonomic Crosswalk
Server
Client
Open311
Server
Protocols
OhanaPI
Client
Google
Server
Client
Feedback
Tools
Local Initiatives
Collecting data
Organizing data
Evaluating Data
Applying data
Establishing agreements
Participatory Design
Building platform
Planning for sustainability

## A HEALTHY ECOSYSTEM: ACCESSIBLE, INTEROPERABLE, SUSTAINABLE



# Goals

Local pilots to move the world

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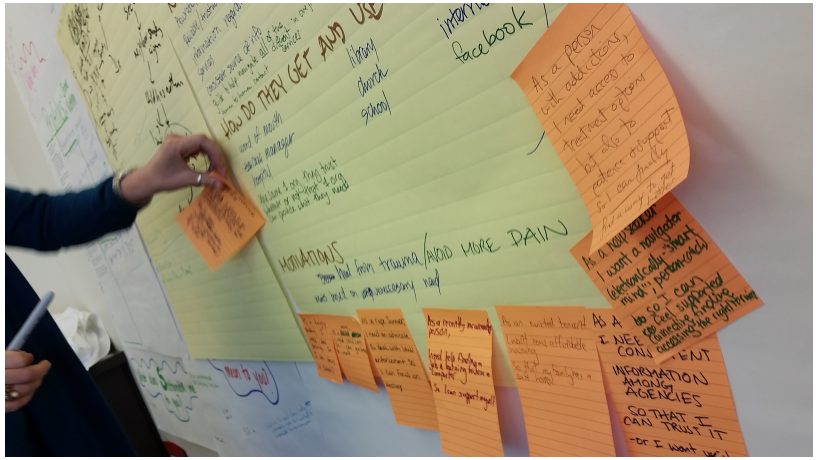
# Multi-stakeholder participatory research and deliberation



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## Our Partnerships in 2017:

CIVIC HALL LABS

AIRS™
*Setting the Standards for Information and Referral Services*

markets FOR GOOD
Powered by digitalIMPACT

benetech
TECHNOLOGY SERVING HUMANITY

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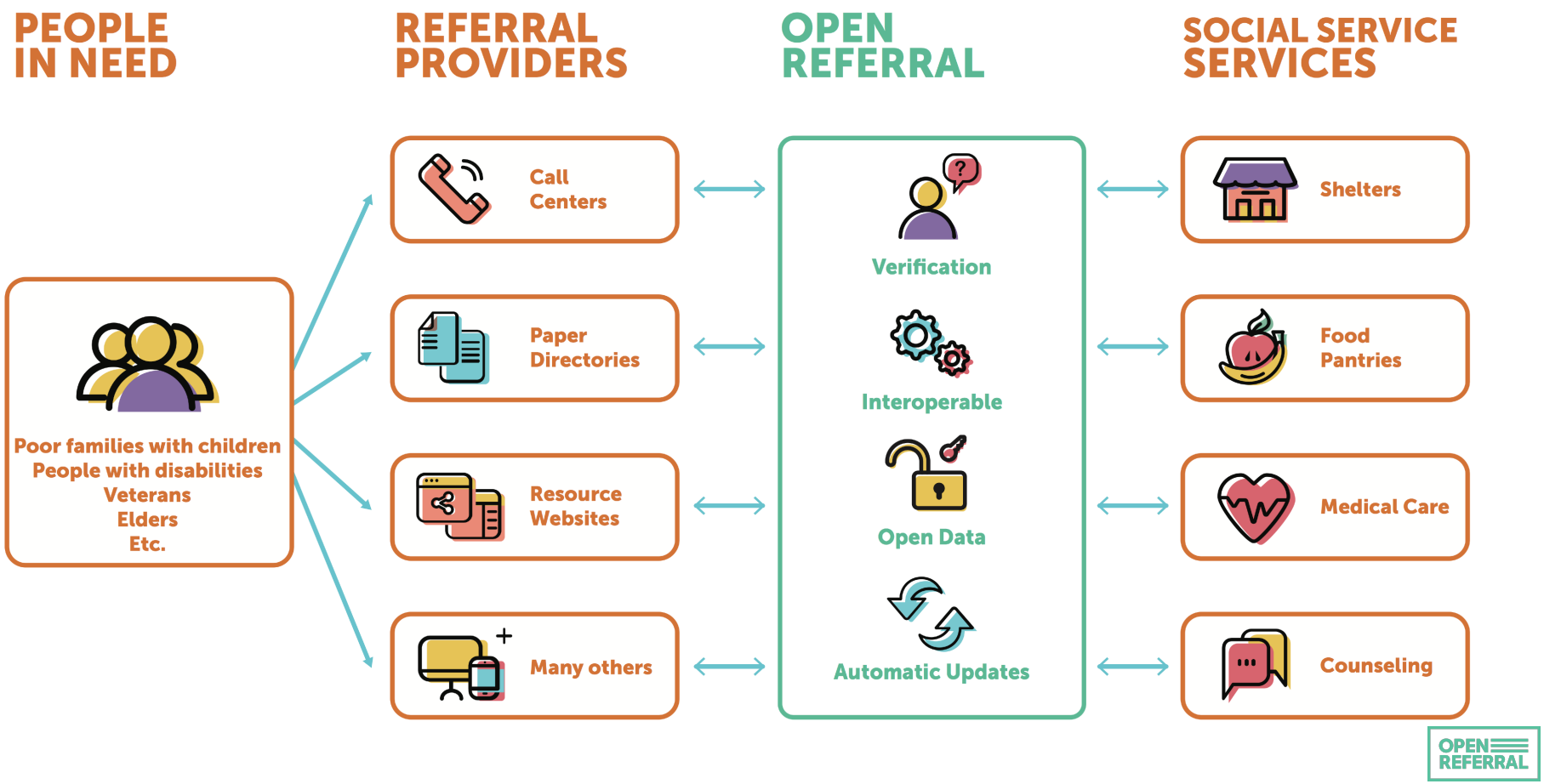
## A HEALTHY ECOSYSTEM: ACCESSIBLE, INTEROPERABLE, SUSTAINABLE



*Thanks for listening.*

*Let's talk.*

**Greg Bloom: bloom@openreferral.org | 202.643.3648.**

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# CODE for AMERICA

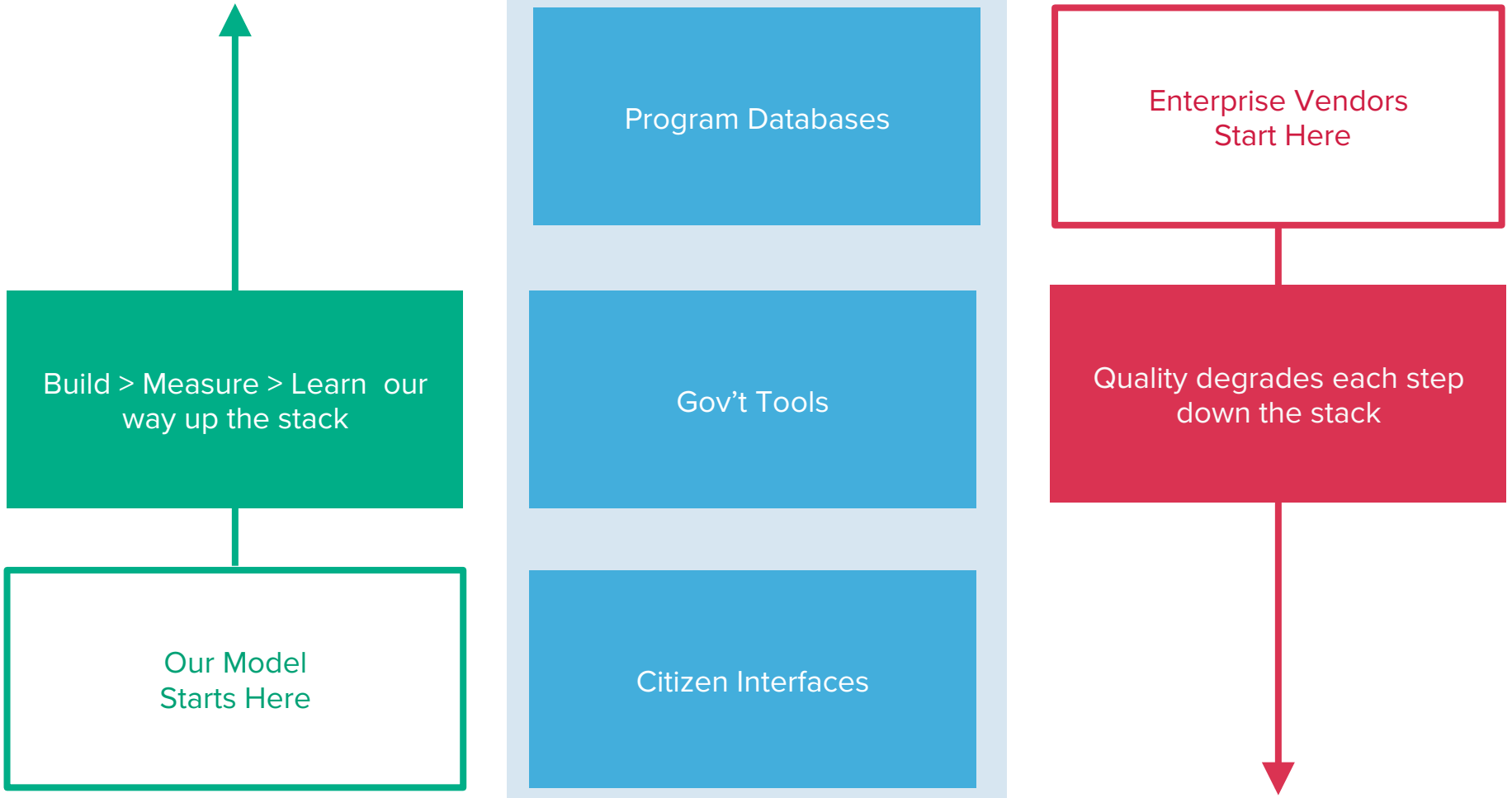
ST Mayer, Chief Program Officer
stmayer@codeforamerica.org

The two biggest levers for improving people's lives at scale are **technology** and **government.**

We put them together.

- Empathy
- Outcomes

"The Department of Defense uses 8-inch floppy disks in a legacy system that coordinates the operational functions of the nation's nuclear forces." ***- 2016 GAO report***

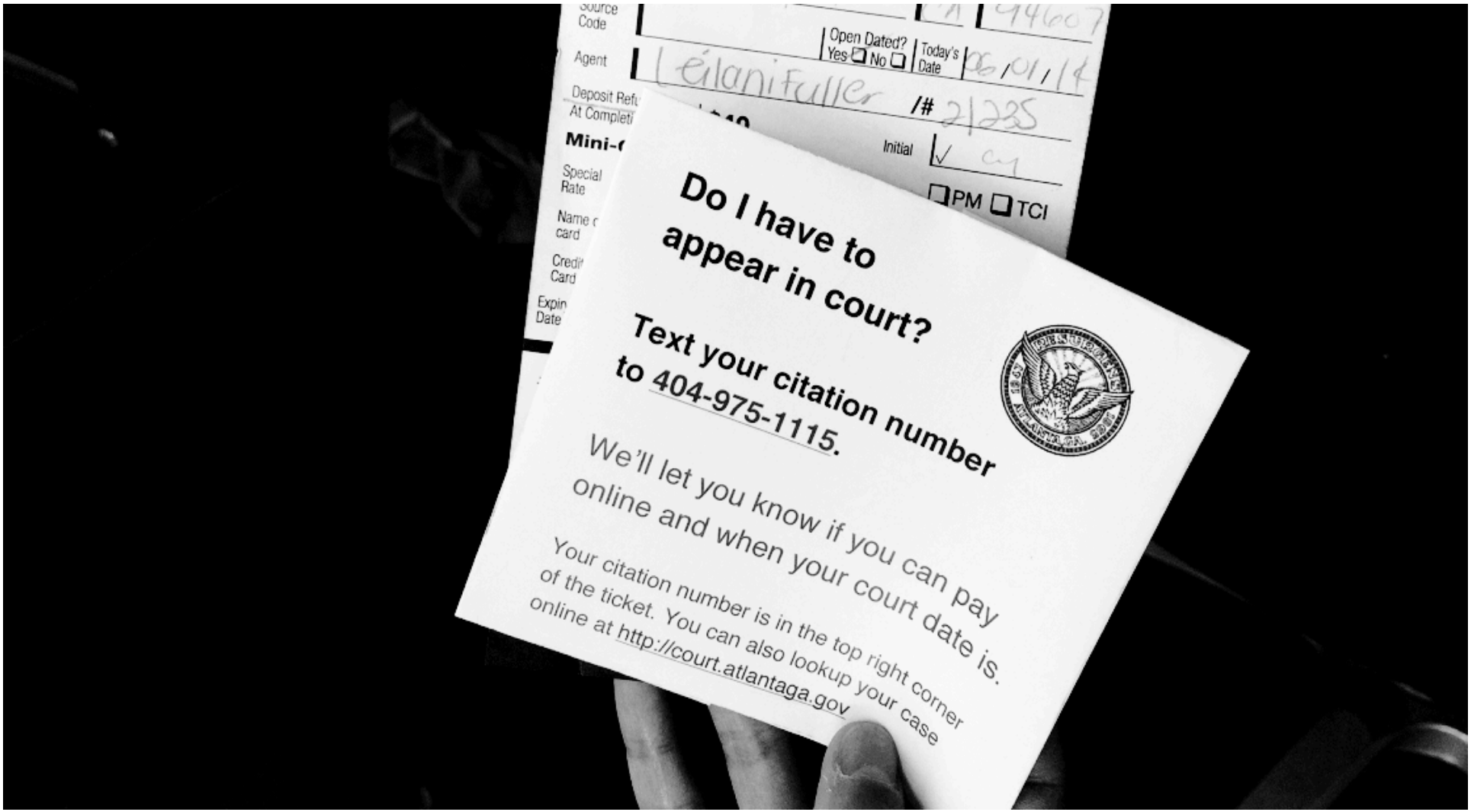

Build > Measure > Learn our way up the stack
Our Model Starts Here
Program Databases
Gov't Tools
Citizen Interfaces
Enterprise Vendors Start Here
Quality degrades each step down the stack

# Government data is collected to:

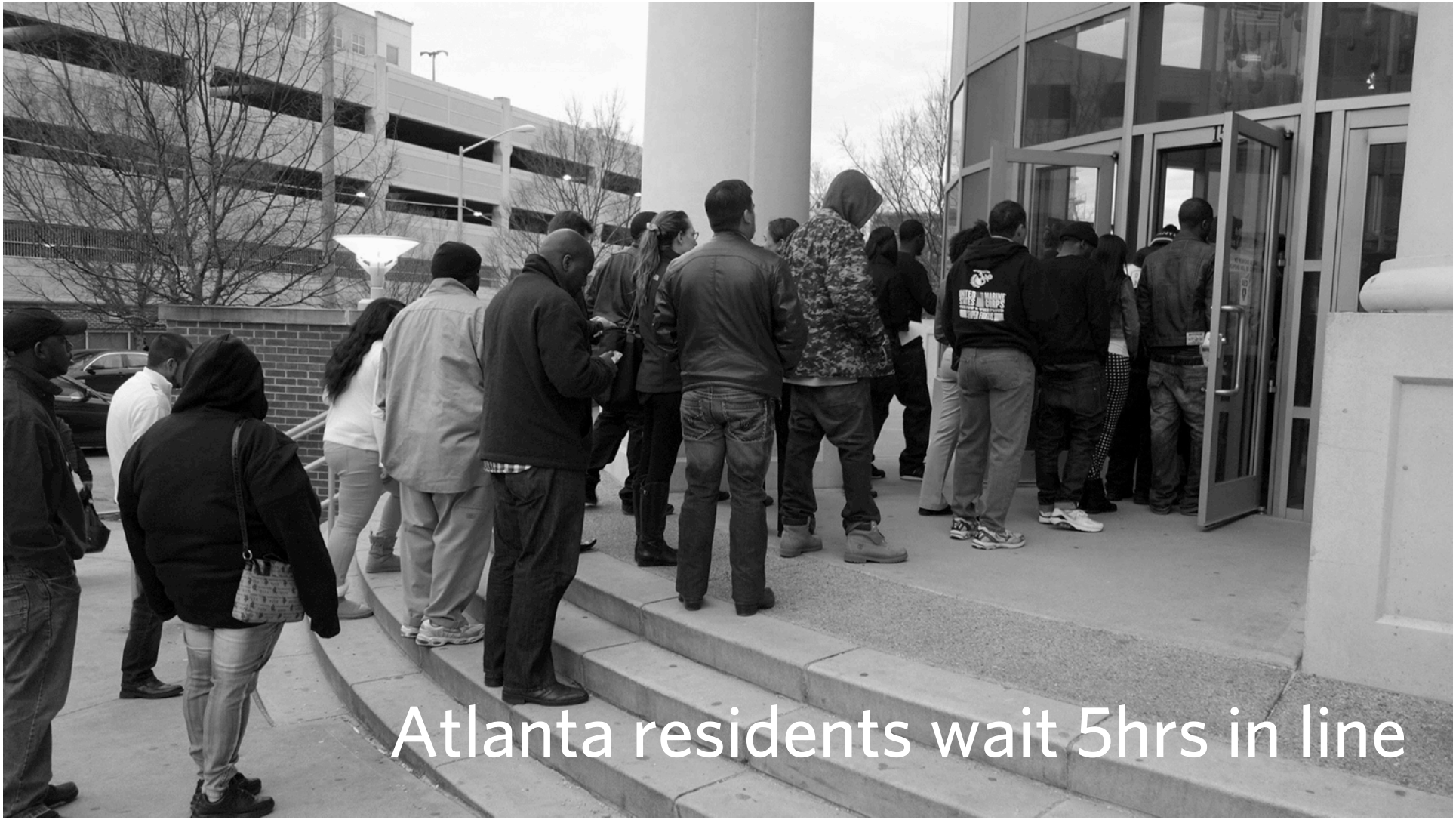
- Prevent fraud and abuse
- Pass an audit = compliance
- Move information from one agency to another
- Monitor and regulate

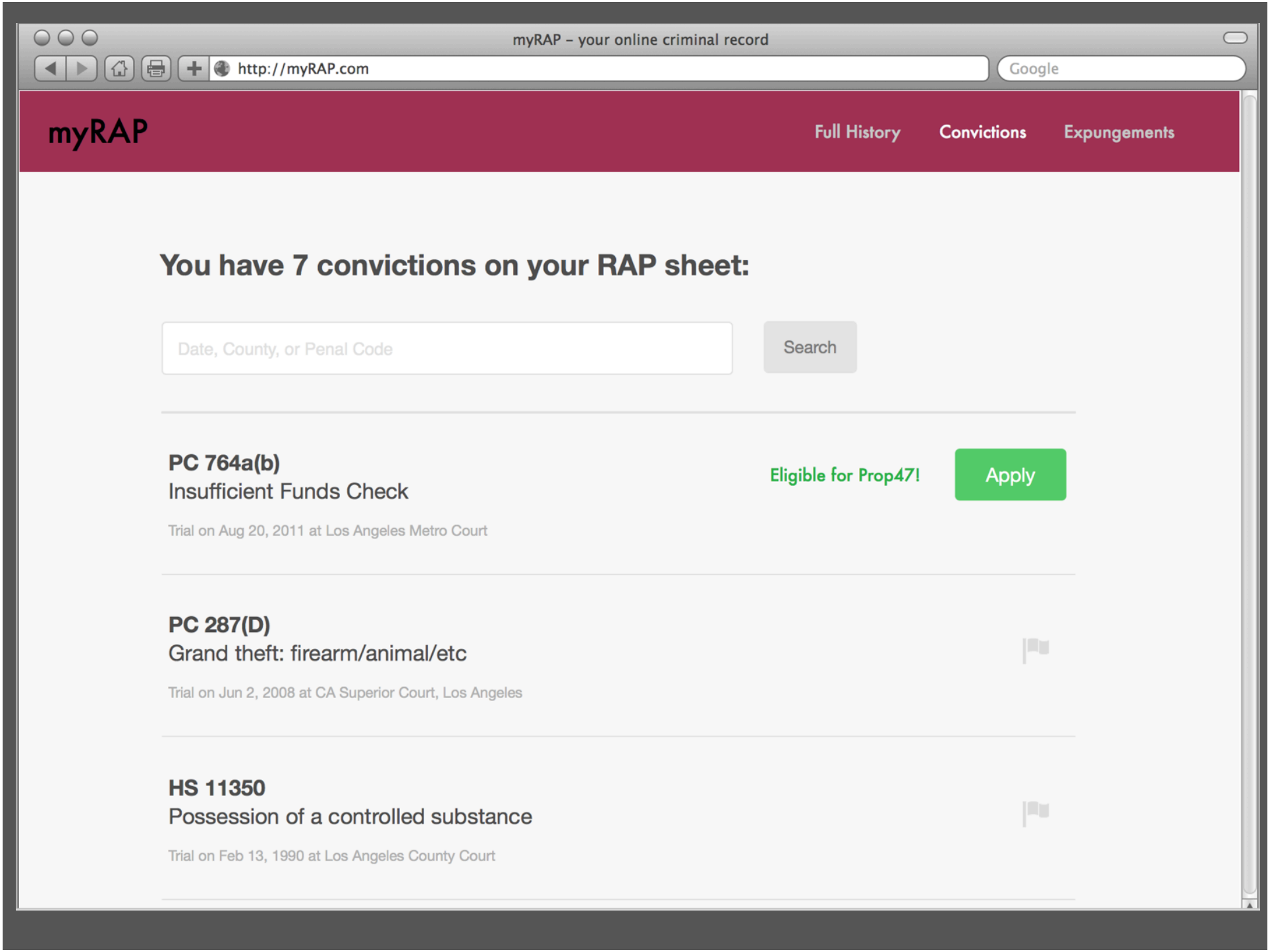
# Start at the End

What you want to accomplish with the data really, really matters!


Source Code
Open Dated? Yes ☐ No ☐
Today's Date
Agent
Deposit Refu
At Completi
Special Rate
Name c
card
Credi
Card
Expin
Date
Initial
☐PM ☐TCI
Do I have to appear in court?
Text your citation number to 404-975-1115.
We'll let you know if you can pay online and when your court date is.
Your citation number is in the top right corner of the ticket. You can also lookup your case online at http://court.atlantaga.gov

T-Mobile
17:26
Messages (404) 975-1115 Contact
Text Message
Today 17:25
4766238
Your're eligible to pay now and skip court. Just call (404) 658-6940 or visit court.atlantaga.gov.
Otherwise, your court date is Monday, Jul 21st at 11:00:00 AM, in courtroom 1A.

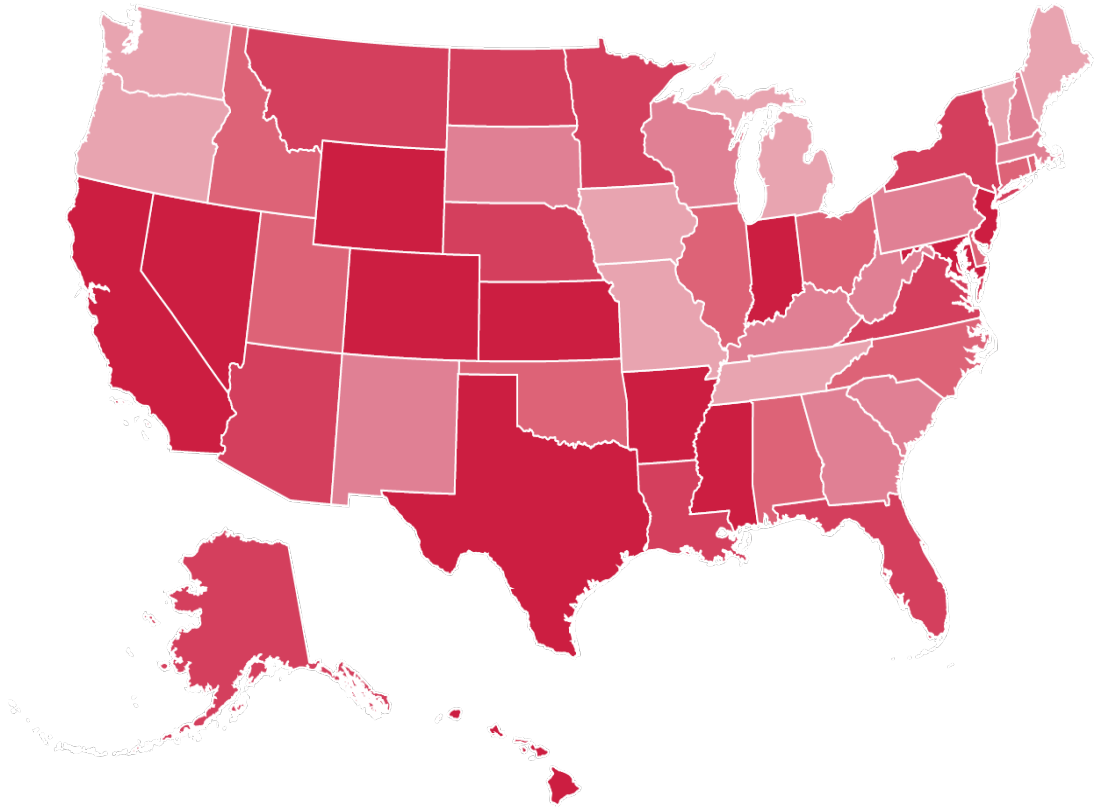

Atlanta residents wait 5hrs in line


myRAP – your online criminal record
http://myRAP.com
Google
myRAP
Full History
Convictions
Expungements
You have 7 convictions on your RAP sheet:
Date, County, or Penal Code
Search
PC 764a(b)
Insufficient Funds Check
Eligible for Prop47!
Apply
Trial on Aug 20, 2011 at Los Angeles Metro Court
PC 287(D)
Grand theft: firearm/animal/etc
Trial on Jun 2, 2008 at CA Superior Court, Los Angeles
HS 11350
Possession of a controlled substance
Trial on Feb 13, 1990 at Los Angeles County Court

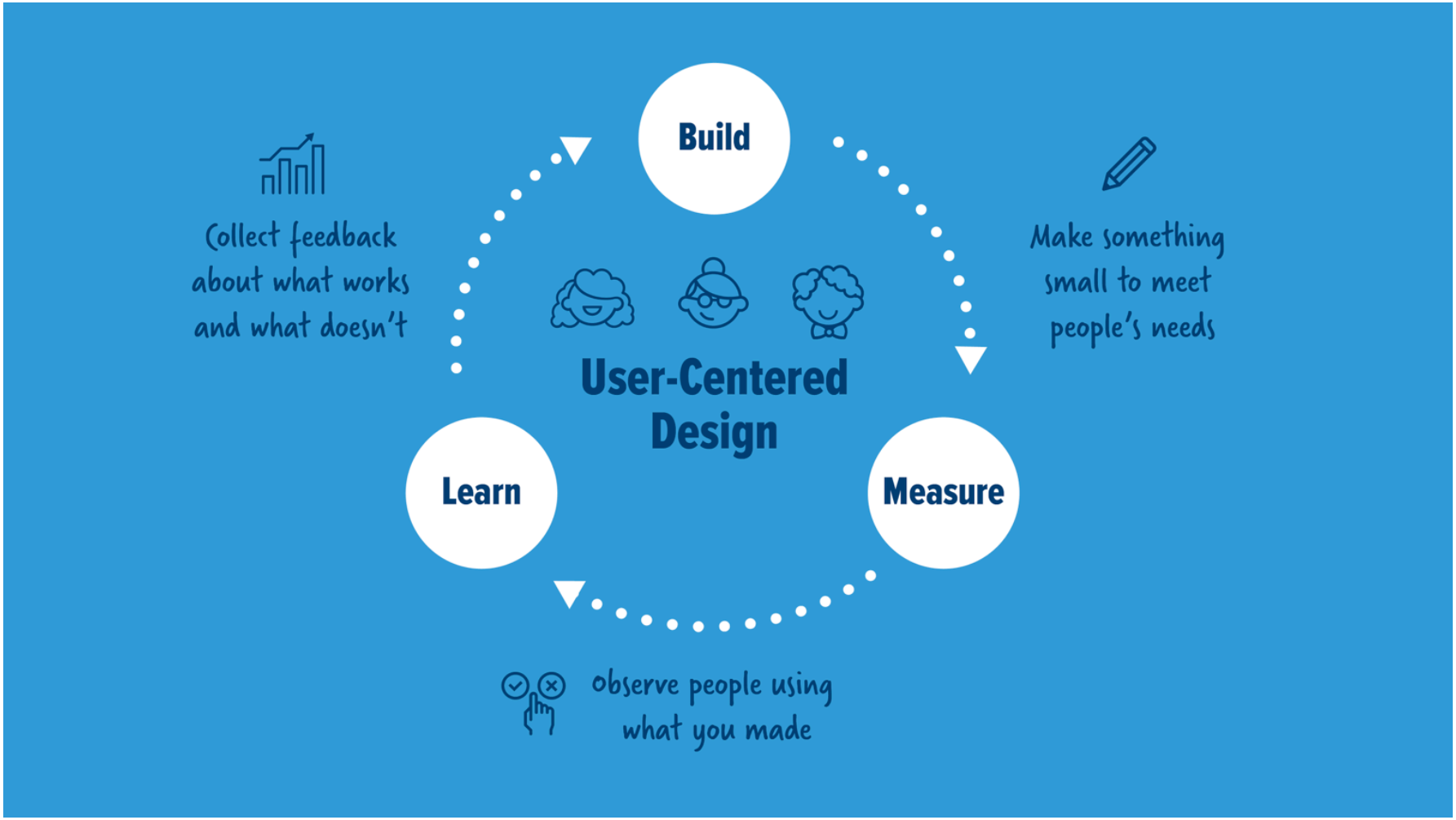
California Department of Justice has over 29 million criminal records
0536 9941
TO
0324 4142
Spacesaver

Get help putting food on the table
Apply for food stamps in 10 minutes
Apply now →

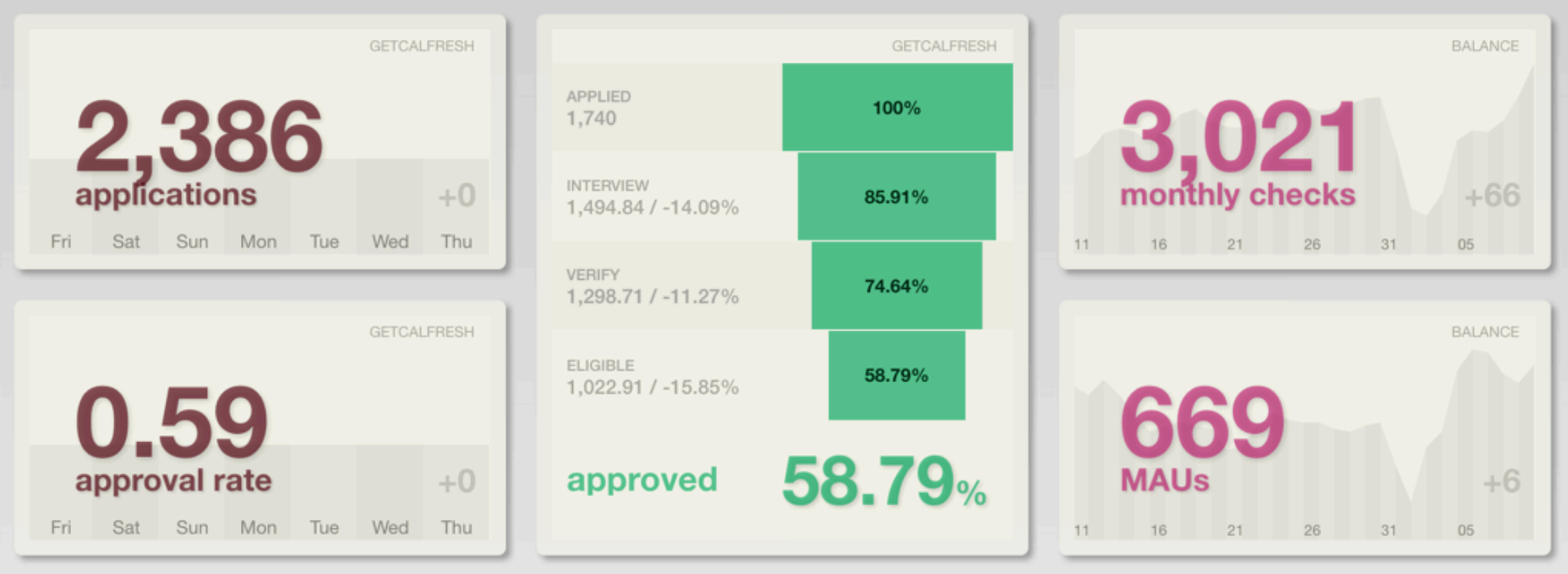
# CA SNAP Enrollment Rate is Low



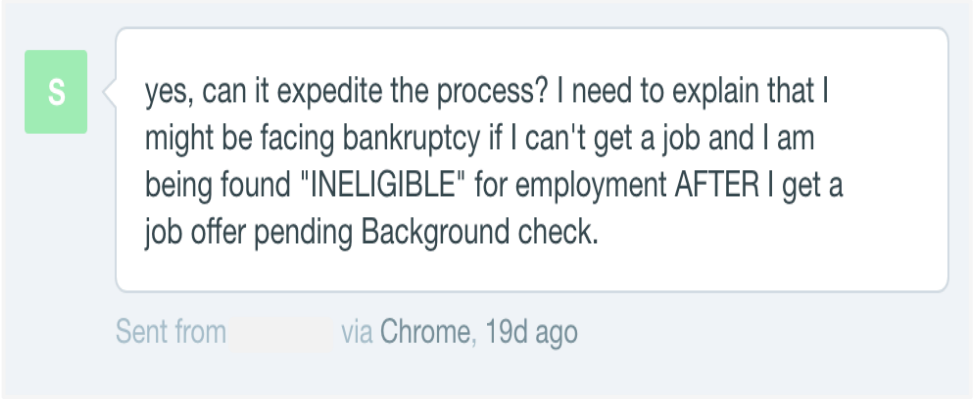
# We are Collecting Data All the Time

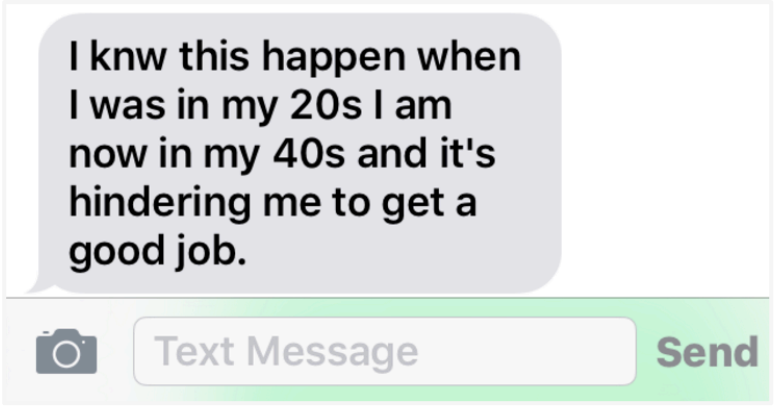


# How People Experience a Process



# Texts from Our Clients





*“Efficiency in government is a matter of social justice.”*

- **John Norquist**

# Governments can:

- Make sure they own access to the data they collect
- Collect data with a focus on how they might use it later on
- Engage others in thinking how they might use it to achieve shared goals
- Make the cost of access visible

# People outside government can:

- Share the data you collect
- Help government access the data they have
- Consider an MVP
- Be creative
- Be transparent
- Know the data may not exist

# Audience Q&A

**Melinda Rolfs**
Senior Director of Data and Analytics, MasterCard Center for Inclusive Growth
@CNTR4growth

**Greg Bloom**
Chief Organizing Officer, Open Refferal Initiative
@Open_Referral

**John Wilbanks**
Chief Commons Officer, Sage Bionetworks
@wilbanks

**ST Mayer**
Head of Public Sector Work, Code for America
@codeforamerica