A nighttime city skyline with several illuminated skyscrapers. Overlaid on the image is a network diagram consisting of various sized circles connected by thin lines, representing a collective or networked structure. The right side of the image is partially obscured by a white, curved shape that serves as a background for the text.

**None of us is as smart
as all of us.**

Using **Collective Intelligence** to
build teams of problem solvers

with your friend Brent Dixon



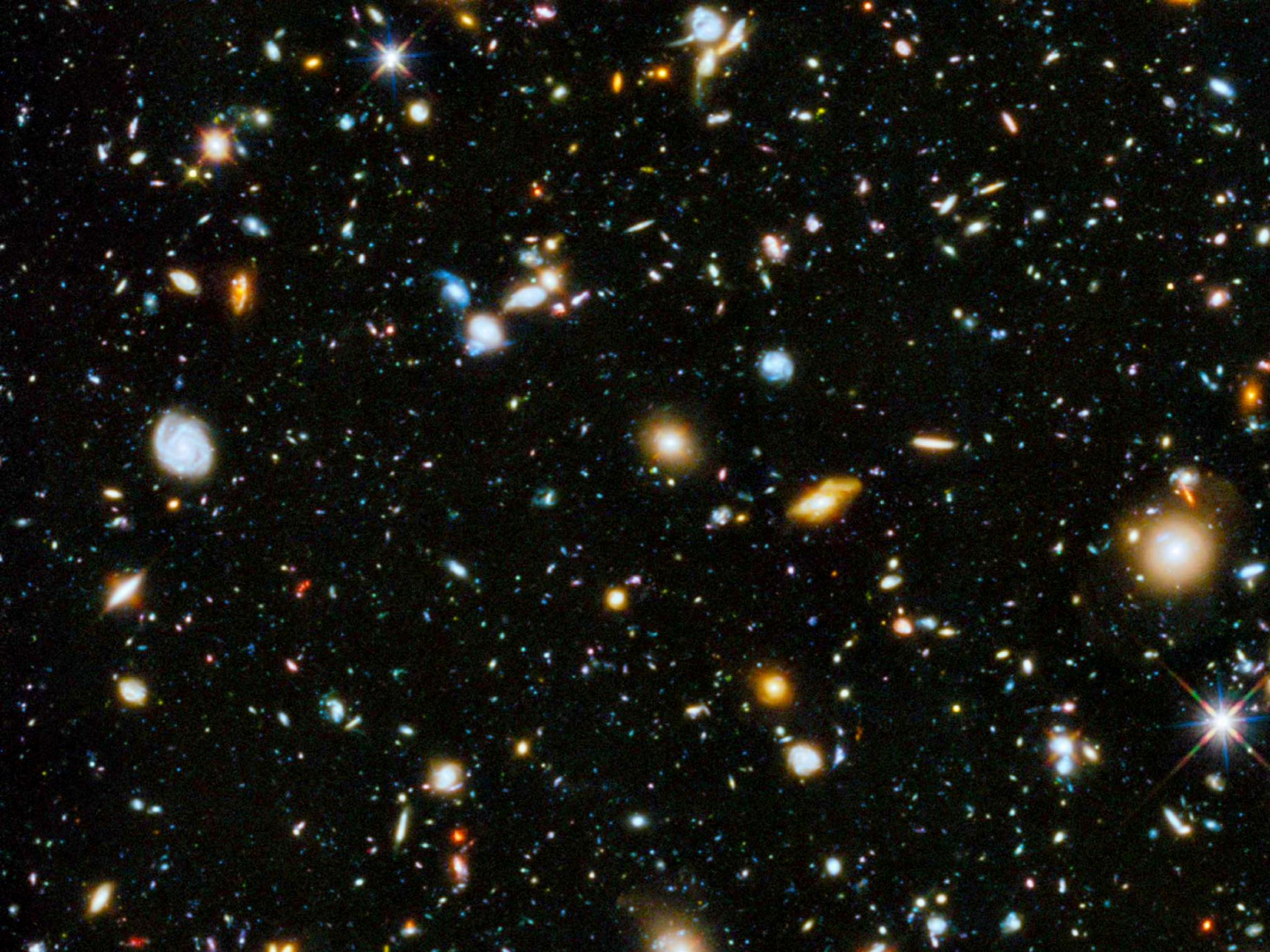
Credit Union Leadership Summit

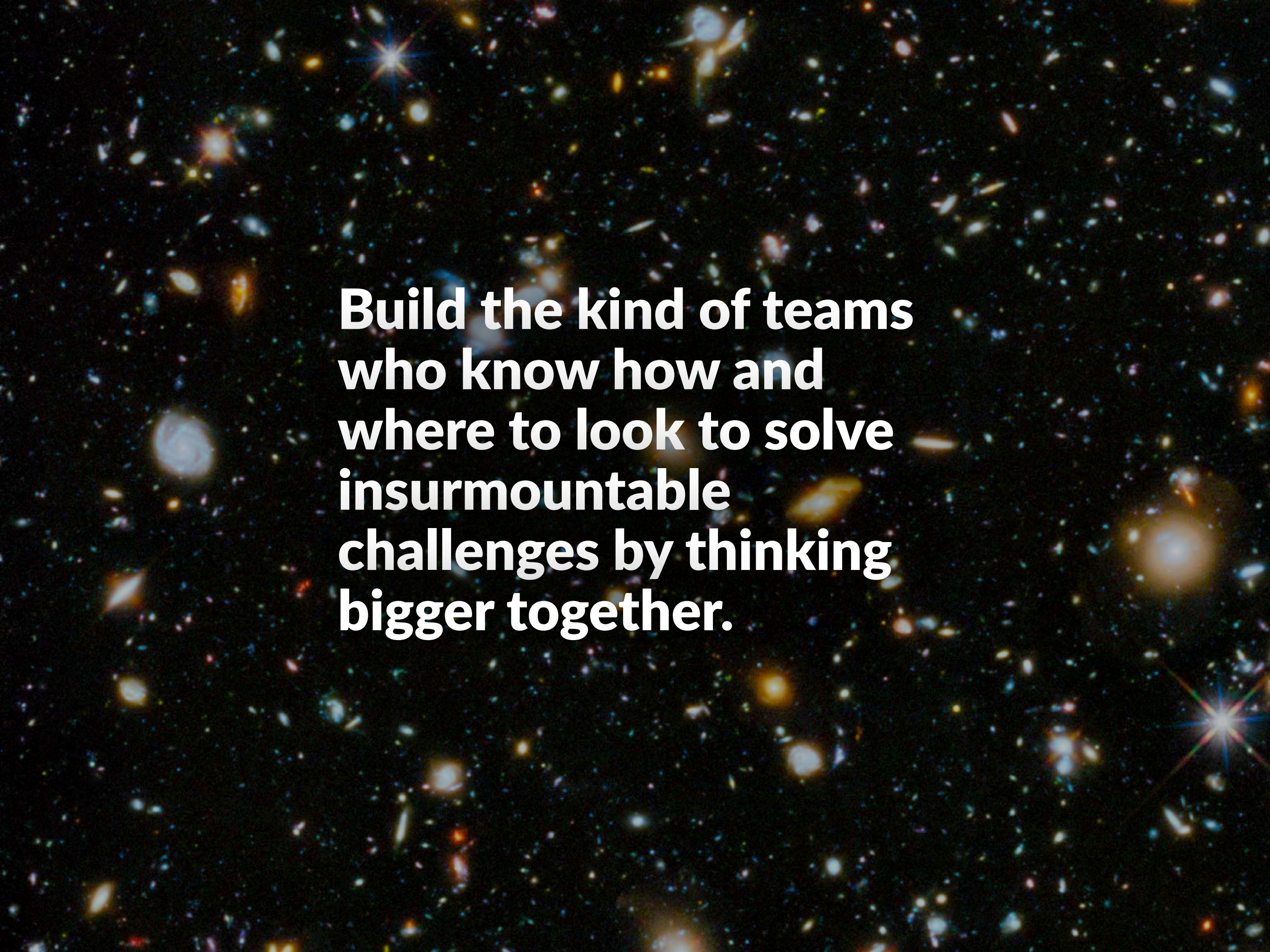


Dixon Strategic Labs
<http://dxn.is>



HUBBLE ULTRA DEEP FIELD EXPERIMENT





**Build the kind of teams
who know how and
where to look to solve
insurmountable
challenges by thinking
bigger together.**

TODAY'S ROADMAP

**WHAT IS
COLLECTIVE
INTELLIGENCE?**

**WHAT ARE ITS
PRINCIPLES?**

**HOW DO WE
DESIGN FOR IT?**





WHAT

IS COLLECTIVE INTELLIGENCE?





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**Talented individuals do
not make talented teams.**

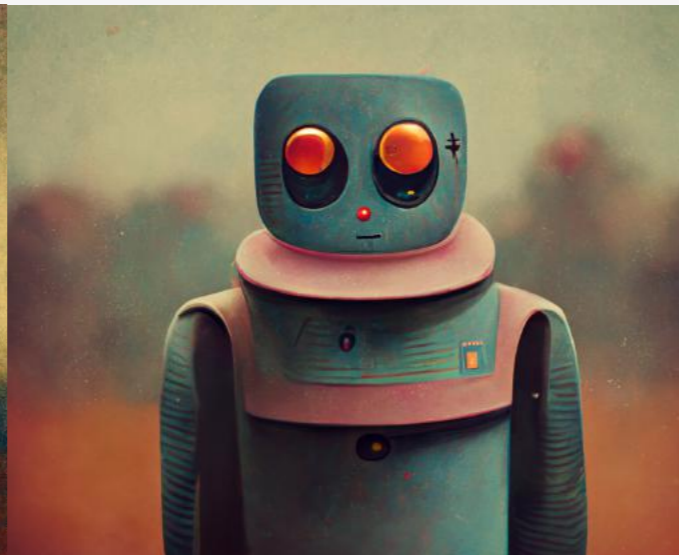
A team's collective intelligence is a much stronger predictor of the team's performance than the ability of individual members.

A group's ability to work together and coordinate effectively is often more crucial than a talent alone.

COLLECTIVE INTELLIGENCE IS



**people working
together**



**often with
technology**



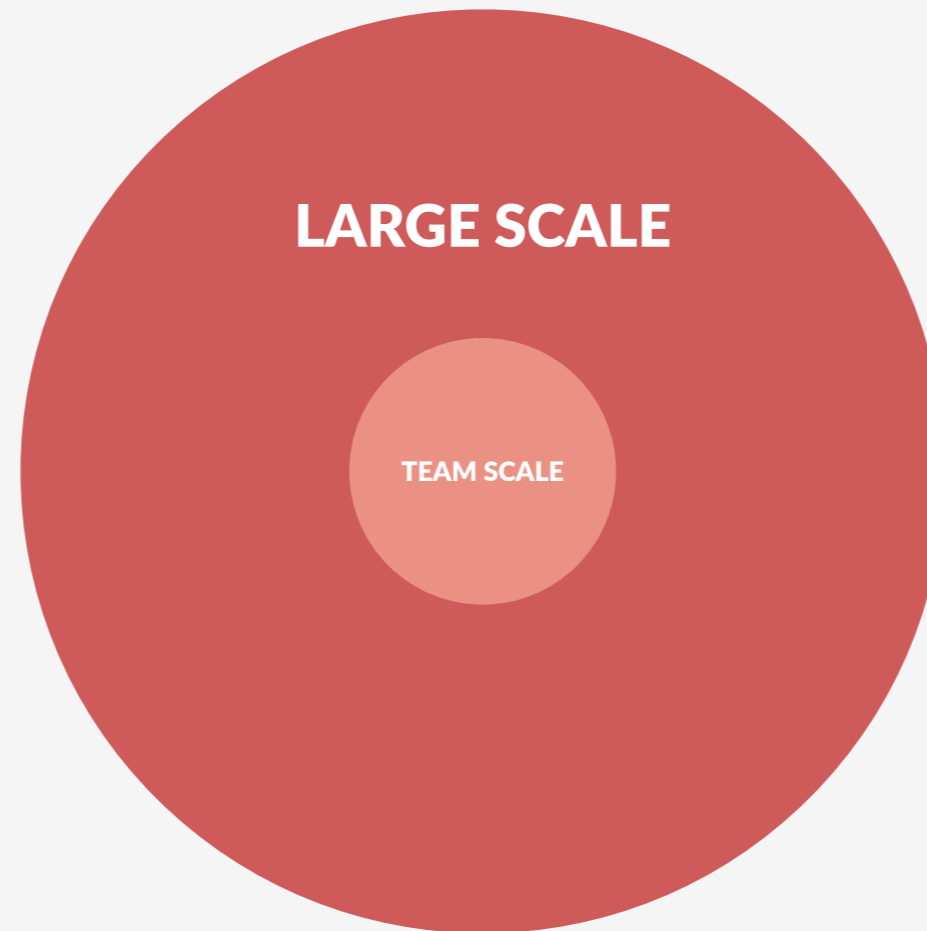
**to mobilize a wider
range of info, ideas,
& insights**



**to address
a challenge**



**Today we're going to talk about large scale
and team-scale collective intelligence.**



Everything that's true about large-scale CI is also true about team-scale CI.



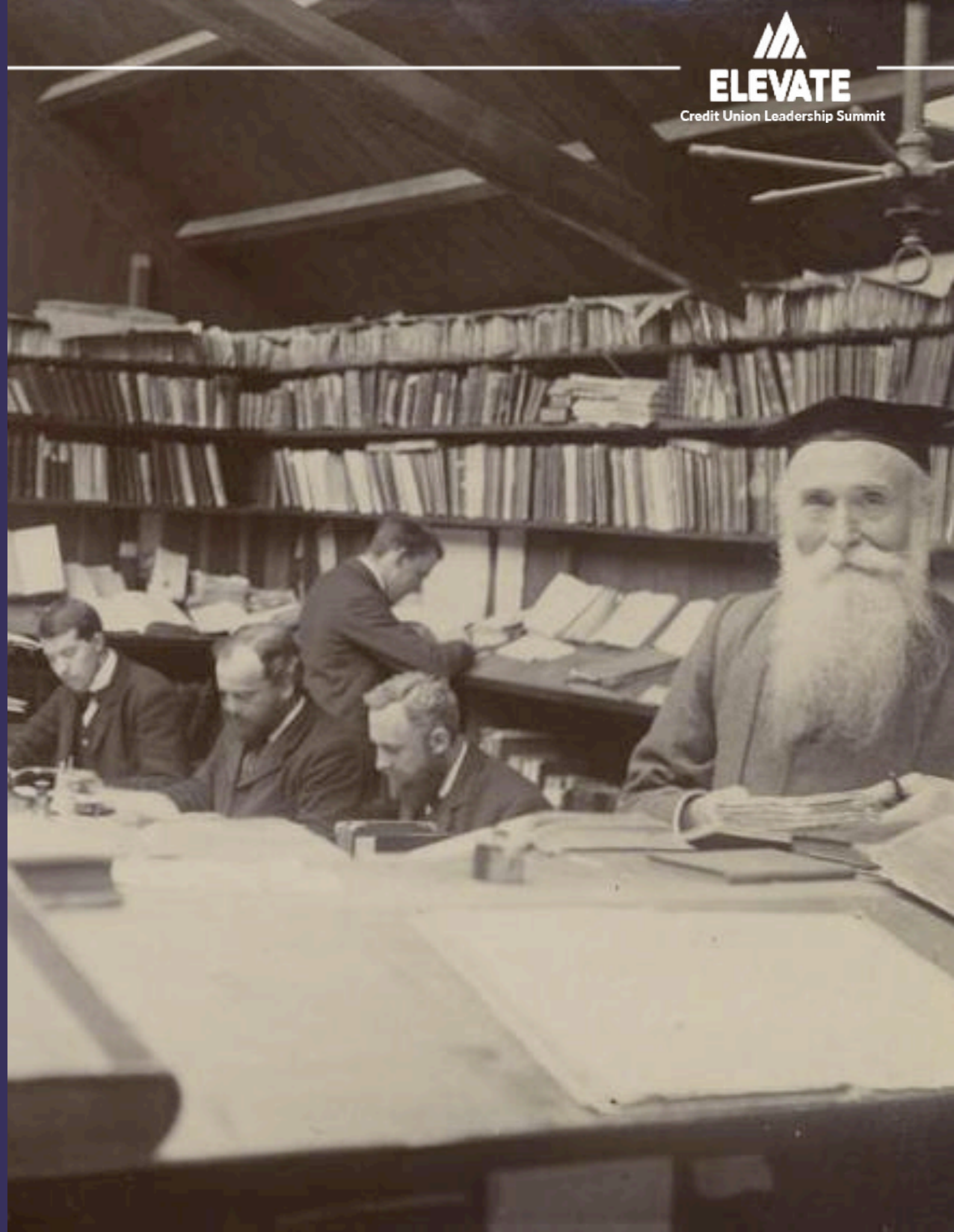


As an idea, it isn't new.

COLLECTIVE INTELLIGENCE IN HISTORY

19th Century

The Oxford English Dictionary



COLLECTIVE INTELLIGENCE IN HISTORY

Early 20th Century

How much does the cow weigh?





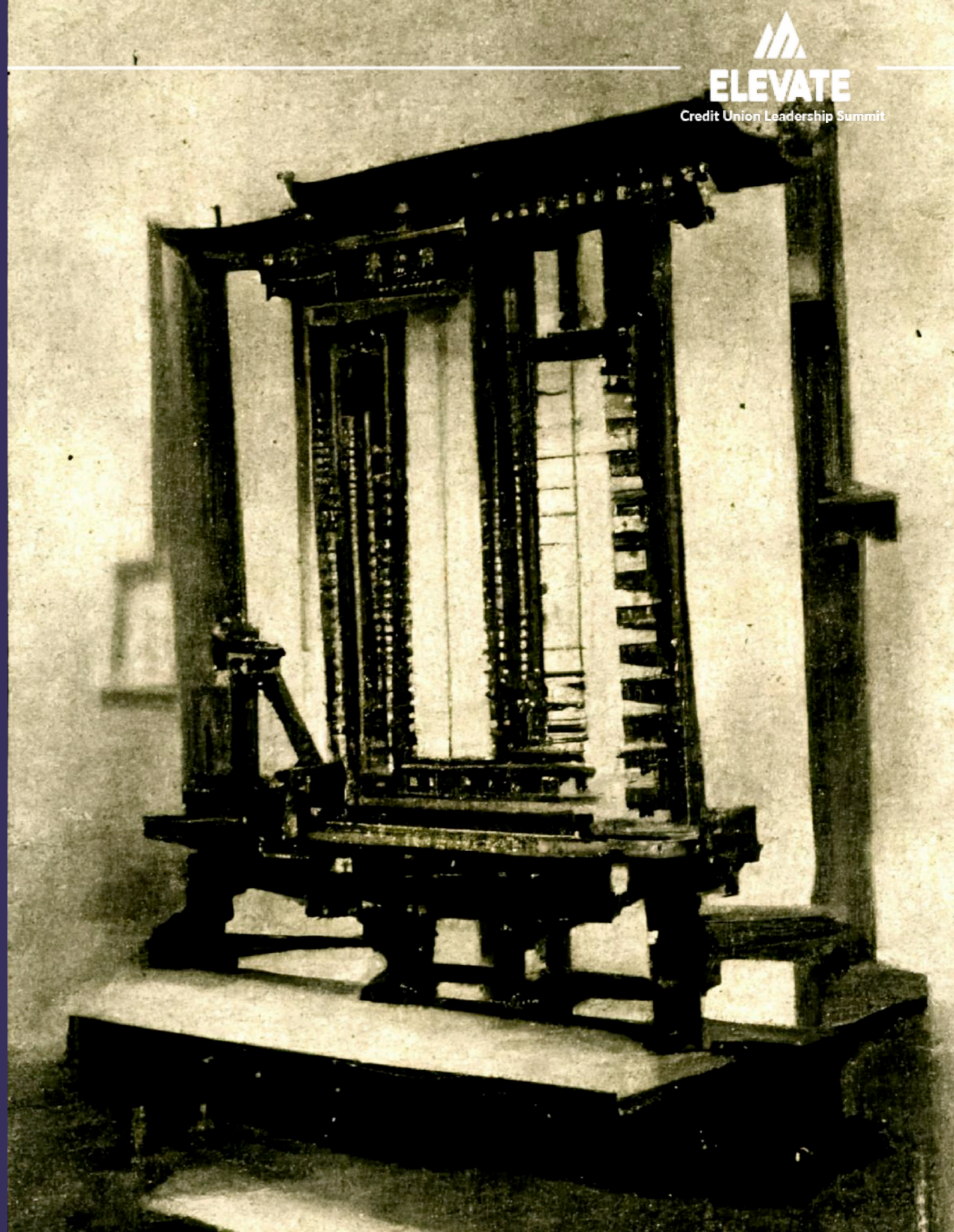
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COLLECTIVE INTELLIGENCE IN HISTORY

20th Century

Gandhi's loom design



COLLECTIVE INTELLIGENCE IN HISTORY

Today

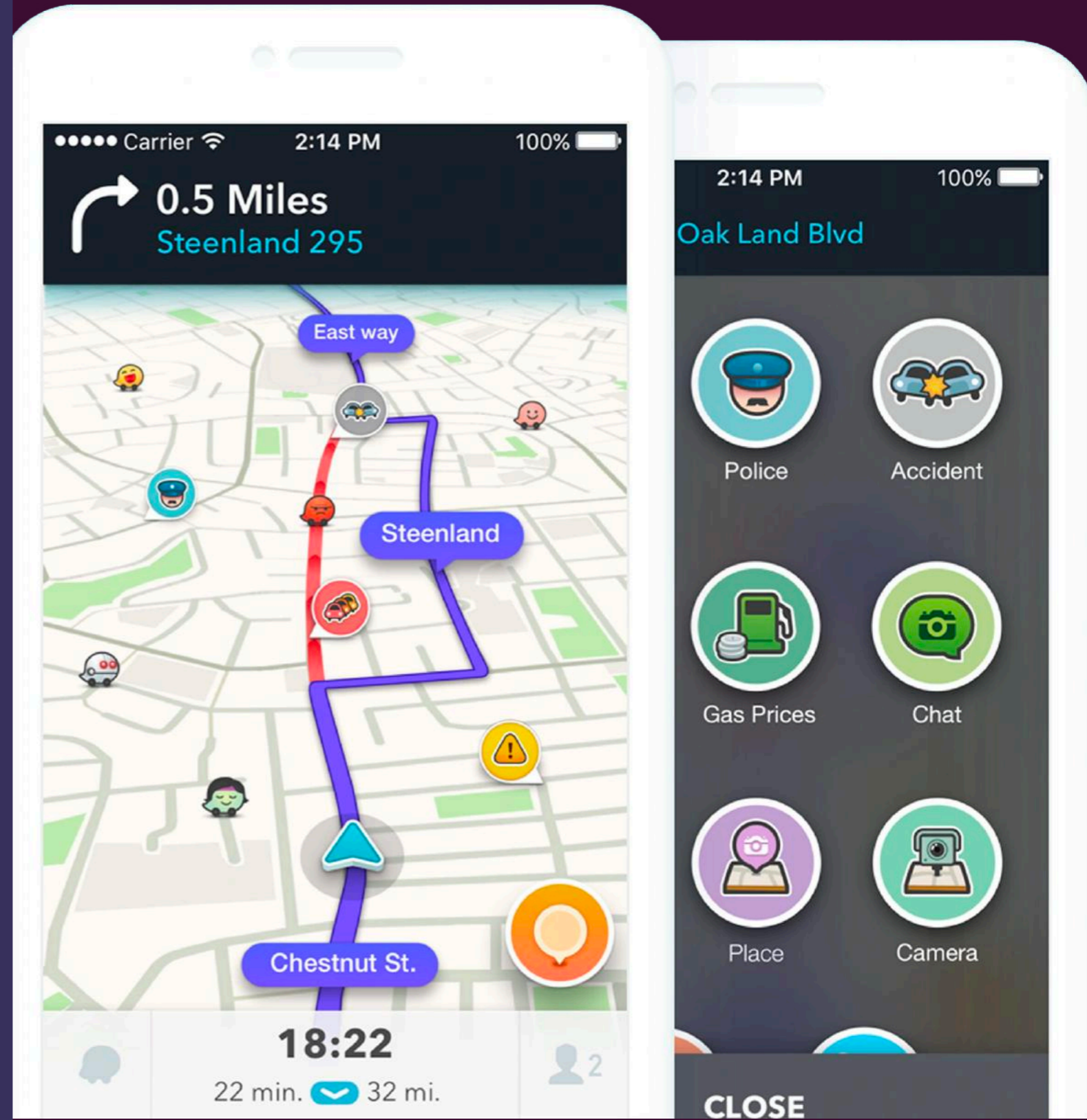
Wikipedia

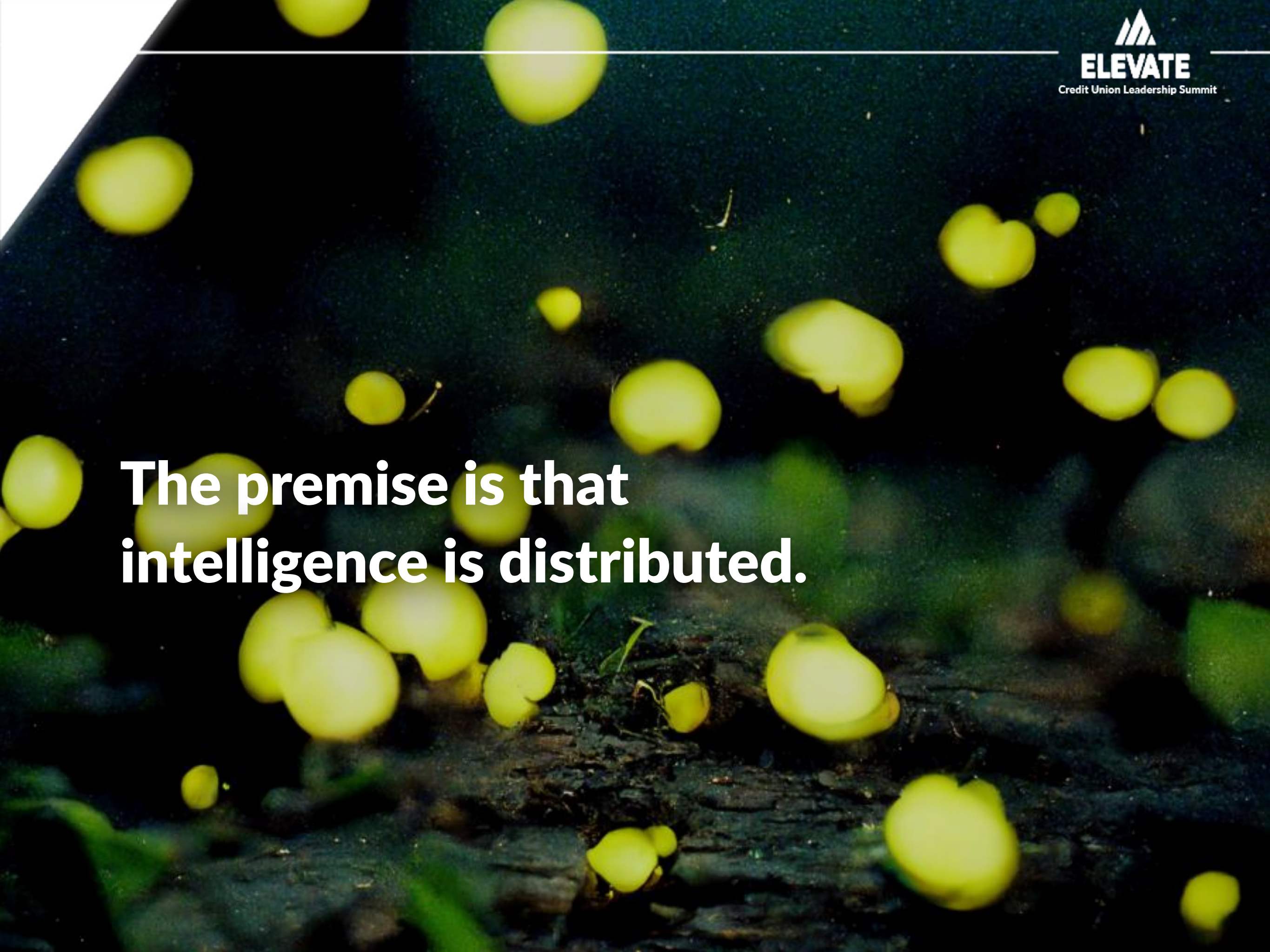


COLLECTIVE INTELLIGENCE IN HISTORY

Today

Waze (acquired by Google)



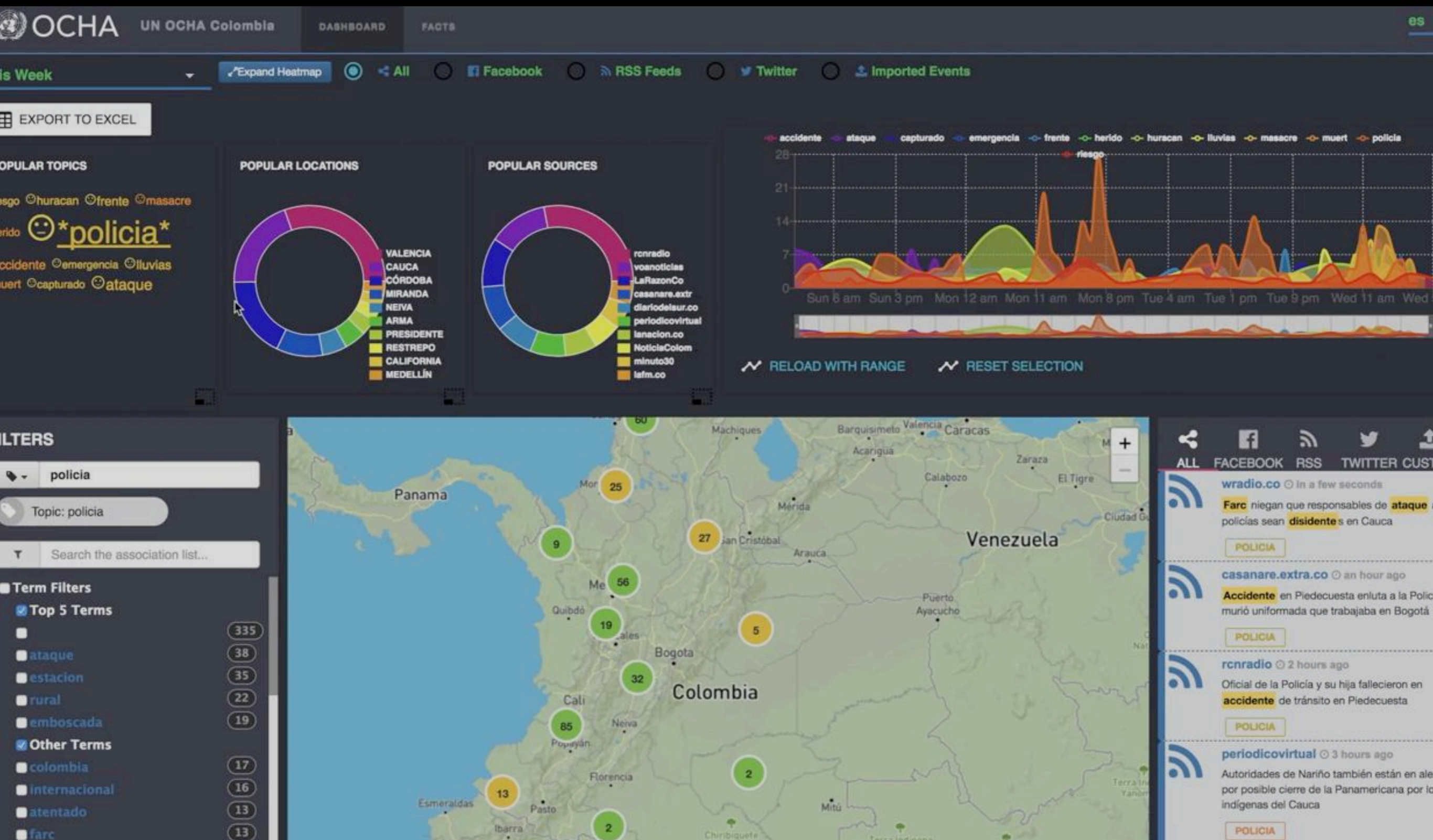


**The premise is that
intelligence is distributed.**




Technology can help tap into this collective intelligence by connecting people and ideas in new ways.

Collective intelligence has been used to solve a wide range of problems, from finding new treatments for diseases to mapping the spread of misinformation online to preventing fraud.



PREVENTING MONEY LAUNDERING WITH CI



Level: **L3** Alert ID: **3543076310SGD**
Account ID: **3543076310SGD**

What is the outcome? Recommend for STR No Issue

4 days remaining

Customer Profile

Customer ID : 4030005928 Name : James Potter

Type: Individual Occupation : BUSSV

Age: 40 yrs Segment : SG-PFS

Gender : Male DOB : 12/30/1978

Citizenship: Singapore NS Link: Yes

Domicile: SG Postal Code: 541123

Country: Singapore STR & Alert: 10 54

City: Singapore (All Time)

Associated Accounts

Account ID	Product	Account Age	Value (?)	Max Transaction Amount (12M)	STR (●) & Alert (●) Counts		
					3M	6M	12M
3543079853SGD	VISA	20 months	45,000	In: 2,500 Out: 2,500	6	12	20 24
6646272848SGD	Savings	49 months	40,000	In: 2,000 Out: 1,700	4	3 10	15 20
66527193921SGD	FD	1 months	25,000	In: 1,000 Out: 1,200	9	12	11 19

Account Risk Indicators 1 of 2

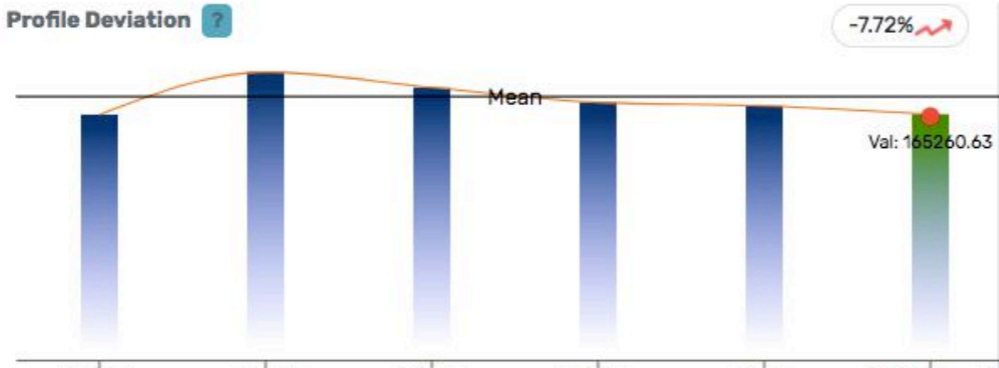
Rules

Cash Equivalent Deposits Amount Profile Deviation

Excessive Monthly Cash Deposit Volume

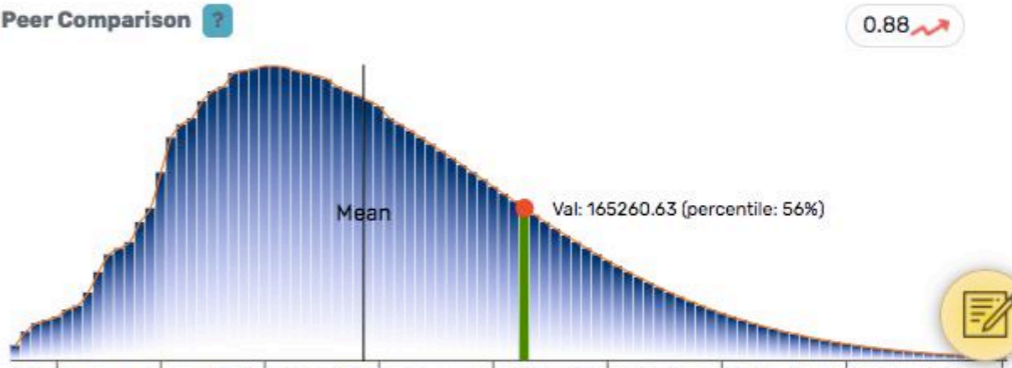
Risk Indicator: **Monthly amount of cash deposits**

Profile Deviation ?



-7.72%

Peer Comparison ?

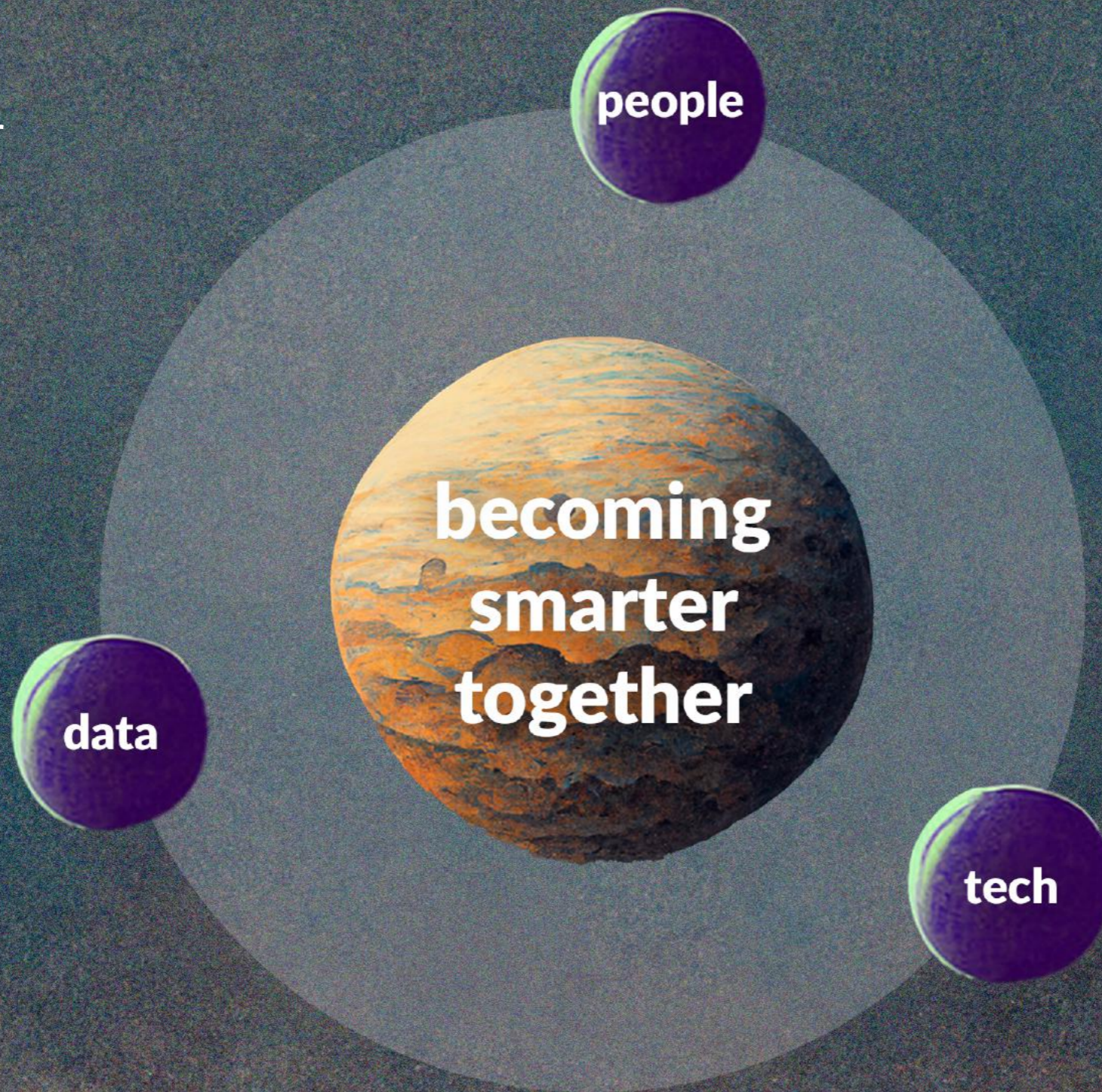


0.88



Why does it matter?

By bringing together diverse groups of people, data, and technology, we can create a collective intelligence that is greater than the individual parts in isolation.



**Have you ever wondered
how we managed to put
people on the moon...**



**...but as a society can't sort out
how to care for our elderly?**





Or how we can create machines that beat the world's best chess players...



...but are struggling to stem the tide of online hate?



$$P_n(m) = C_n^m \left(\frac{\lambda}{n}\right)^m \left(1 - \frac{\lambda}{n}\right)^{n-m}$$
$$= \frac{\lambda^m}{n^m} \frac{n(n-1)\dots(n-m+1)}{m!} \left(\frac{\lambda}{n}\right)^n \left(1 - \frac{\lambda}{n}\right)^{-m}$$
$$= \frac{\lambda^m}{m!} \cdot \frac{n-1}{n} \cdot \frac{n-2}{n} \dots \left(1 - \frac{\lambda}{n}\right)^n \left(1 - \frac{\lambda}{n}\right)^{-m}$$
$$= \frac{\lambda^m}{m!} \left(1 - \frac{\lambda}{n}\right)^n \left(1 - \frac{\lambda}{n}\right)^{-m}$$
$$\frac{1}{2\pi i} \int_L \frac{f(\beta) d\beta}{\beta - z}$$
$$\frac{\partial f}{\partial \beta} = \dots$$

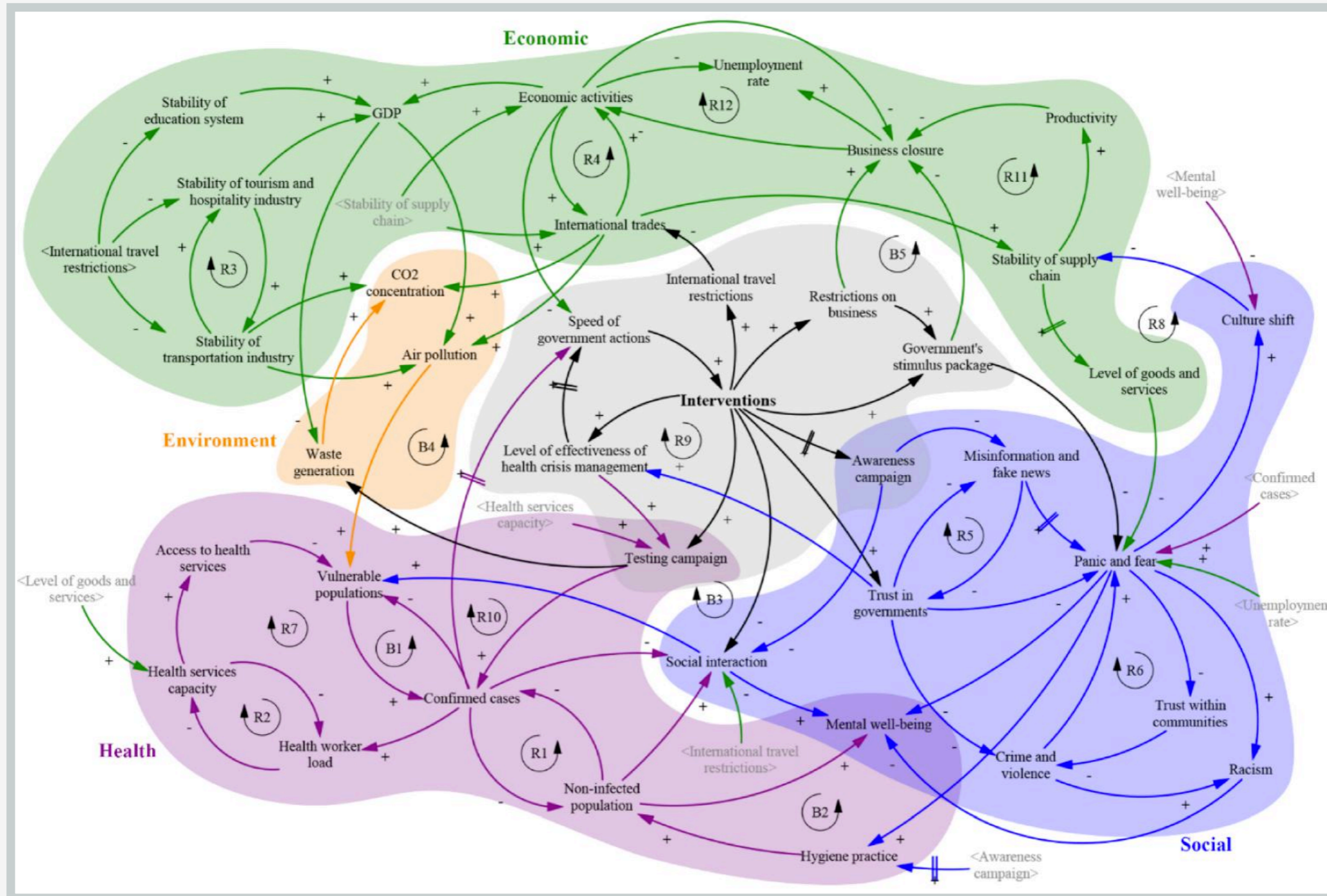
**The difference is
in the nature of
those challenges.**



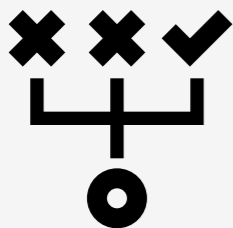
**But solving complex social,
environmental, economic or
political challenges is much harder.**

And you're working on all of these.

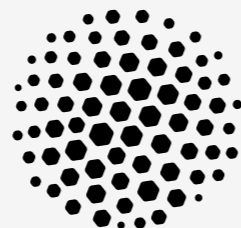
The most critical challenges facing us today are complex challenges.



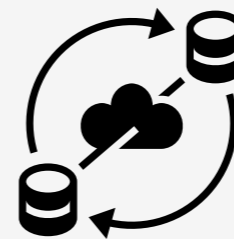
Solving complex problems requires new approaches to problem solving.



**harnessing collective
brainpower to generate
multiple solutions much
more quickly**



**facilitating space to
think, reflect and decide
collectively on a new
course of action**




**the capacity to harness
data for real-time
adjustments**



**orchestrating
knowledge that enables
others to act too**





To do this, we need to become skilled in mobilizing intelligence of all kinds.



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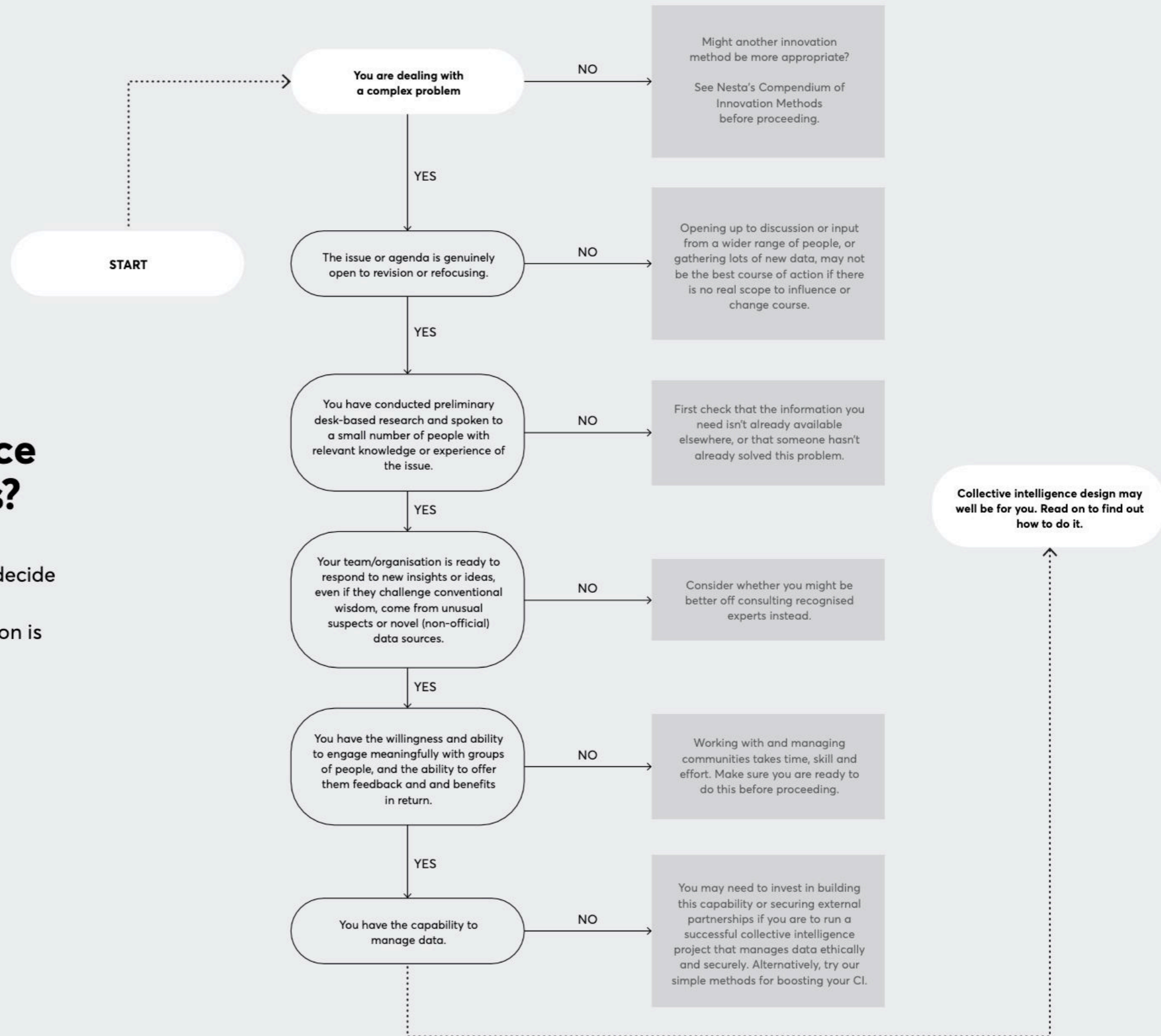
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A red and white life preserver is shown floating in a pool of water. The life preserver is circular with a red outer ring and a white inner ring. The water is a light blue color. The life preserver is positioned in the center of the frame, and the text is overlaid on the white inner ring.

**How can
collective
intelligence
help us?**

how do we know if collective intelligence design is right for us?

Use the following flowchart to help you decide if collective intelligence is right for your challenge and if your team or organisation is ready to use it.



HOW CAN COLLECTIVE INTELLIGENCE HELP US?



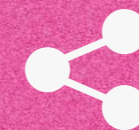
Better
understanding of
problems



Finding solutions
to a problem



More informed
and inclusive
decisions



Learning and
sharing what
works





Better understanding of problems

Hurricane Harvey Response



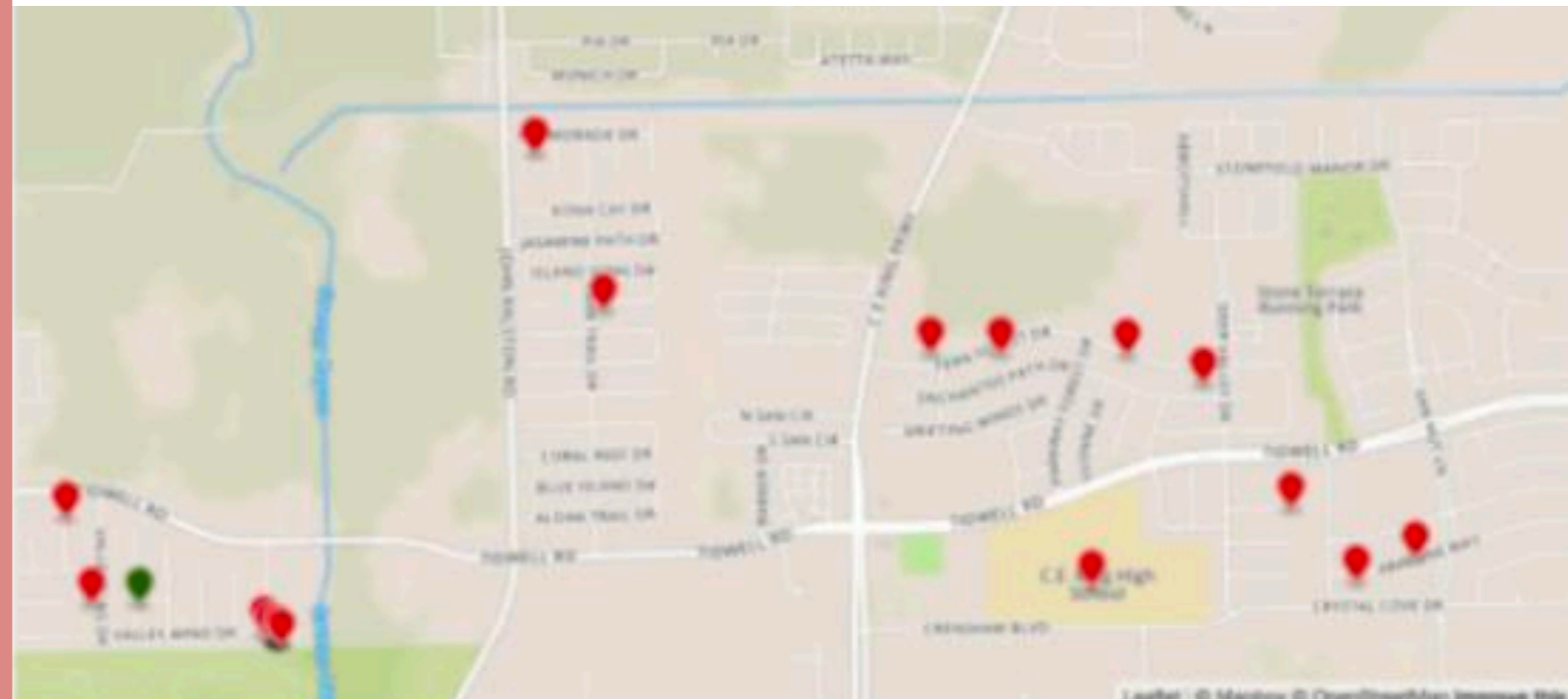
OG Otis Thorpe

@OG_Otis_Thorpe

Elderly man with heart problems... currently having chest pains... 9406 Islamorada Ct 77044
#HarveySOS

02:43 AM - 29 Aug 2017

← Reply ↻ Retweet ★ Favorite





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Finding solutions to problems

WeFarm



"When farmers come together, they can share knowledge and experiences about farming and succeed together. Everyone brings different skill sets to the table."



Finding solutions to problems

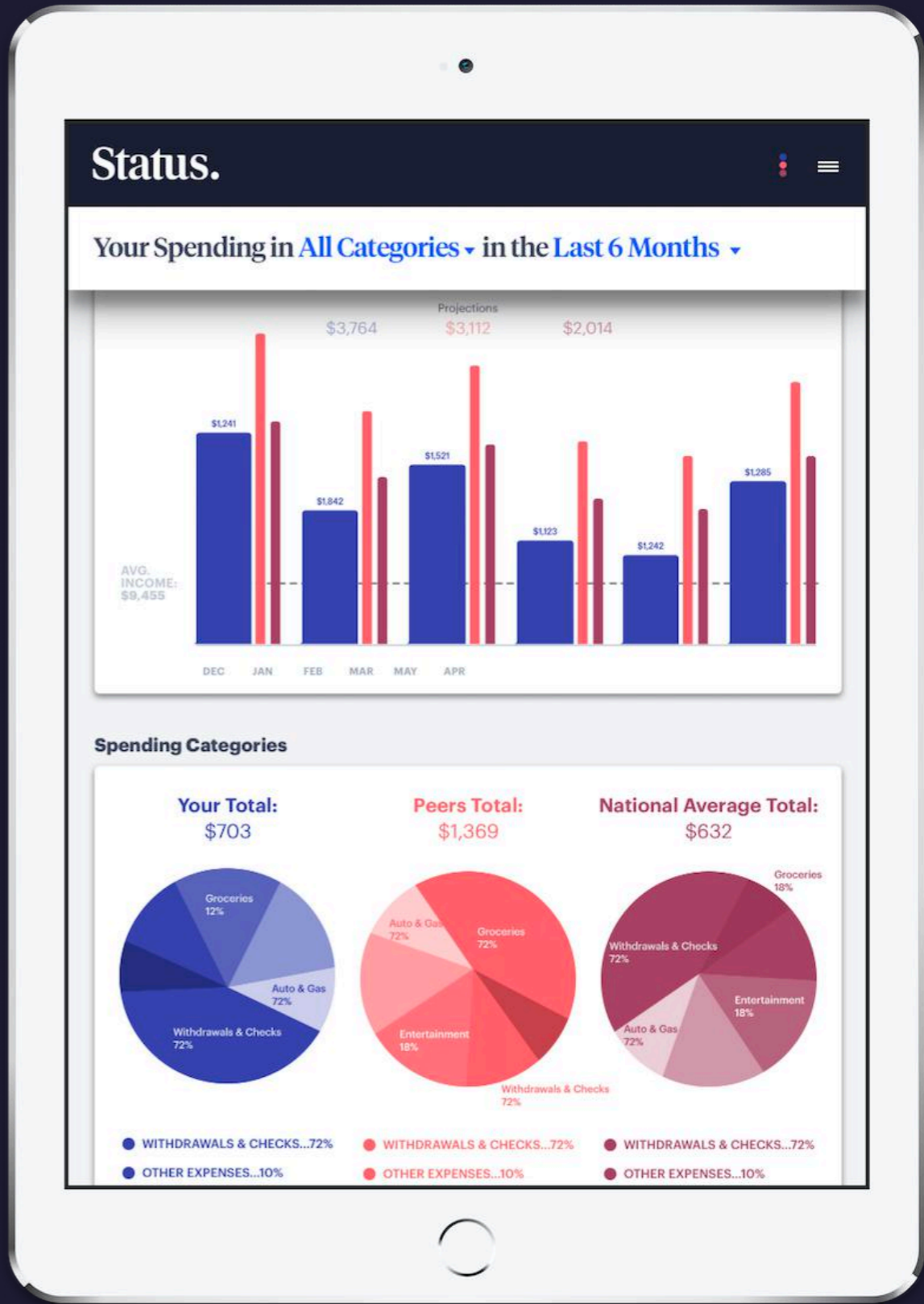
WeFarm



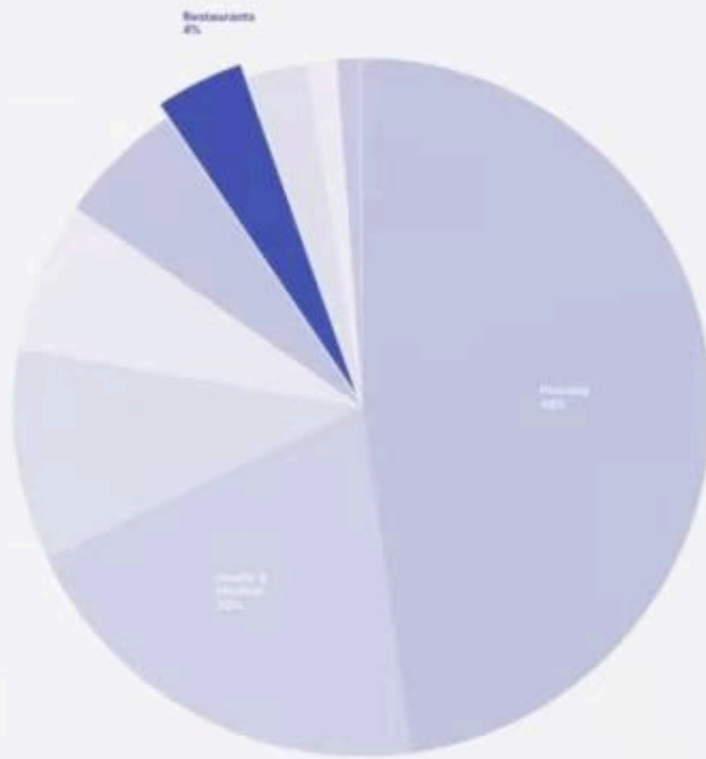


More informed and inclusive decisions

Status Money

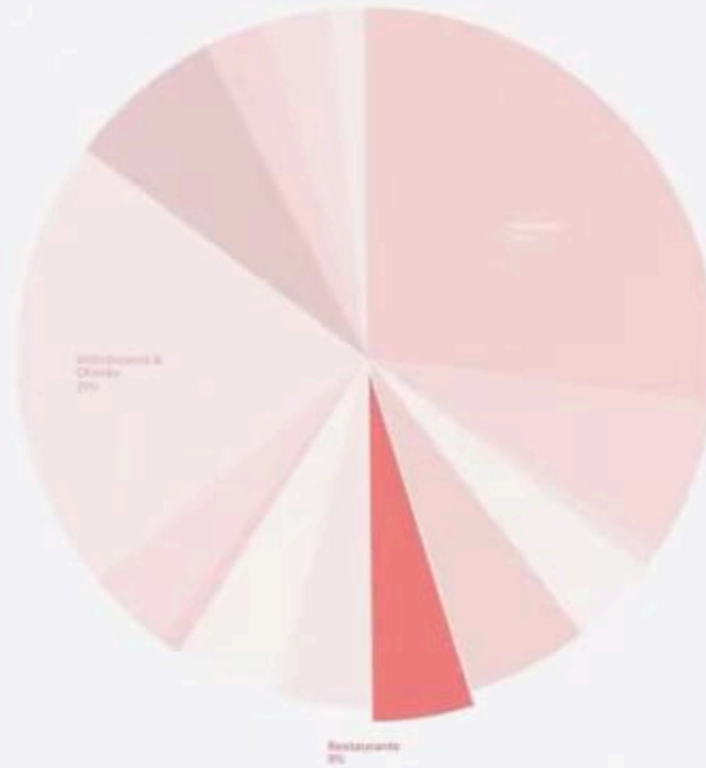


Your Total:
\$703



- HOUSING...48%
- HEALTH & MEDICAL...20%
- OTHER EXPENSES...10%
- UTILITIES & BILLS...7%
- GROCERIES...6%
- RESTAURANTS...4%
- TRAVEL...3%
- SHOPPING...2%
- FEES & INTEREST...1%
- ENTERTAINMENT...0.2%
- WITHDRAWALS & CHECKS...0%

Peers Total:
\$1,369



- HOUSING...37%
- HEALTH & MEDICAL...27%
- OTHER EXPENSES...15%
- UTILITIES & BILLS...8%
- GROCERIES...8%
- RESTAURANTS...5%
- TRAVEL...4%
- SHOPPING...3%
- FEES & INTEREST...0.4%
- ENTERTAINMENT...0%
- WITHDRAWALS & CHECKS...0%

National Average Total:
\$632



- HOUSING...27%
- HEALTH & MEDICAL...26%
- OTHER EXPENSES...17%
- UTILITIES & BILLS...7%
- GROCERIES...8%
- RESTAURANTS...7%
- TRAVEL...5%
- SHOPPING...14%
- FEES & INTEREST...2%
- ENTERTAINMENT...4%
- WITHDRAWALS & CHECKS...0%

Status Today

Your Net Worth
\$76,210

Your Peer Ranking
Top 15%

Your National Ranking
Top 13%

We document five effects of providing individuals with crowdsourced spending information about their peers (individuals with similar characteristics) through a FinTech app. First, users change their spending in the direction of their peers. Second, users' reaction is asymmetric—those who significantly overspend reduce their spending by 9%, while those who significantly underspend increase their spending by only 1%. Third, users' distance from their peers' spending affects the reaction monotonically in both directions. Fourth, lower-income users react more than others and cut their spending in excess of 30%. The corresponding value for higher-income users is 5%. Fifth, discretionary spending drives the reaction in both directions and especially cash withdrawals, which are commonly used for incidental expenses and anonymous transactions. We argue Bayesian updating, peer pressure, or the fact that bad news looms larger than (equally-sized) good news cannot alone explain all these facts.

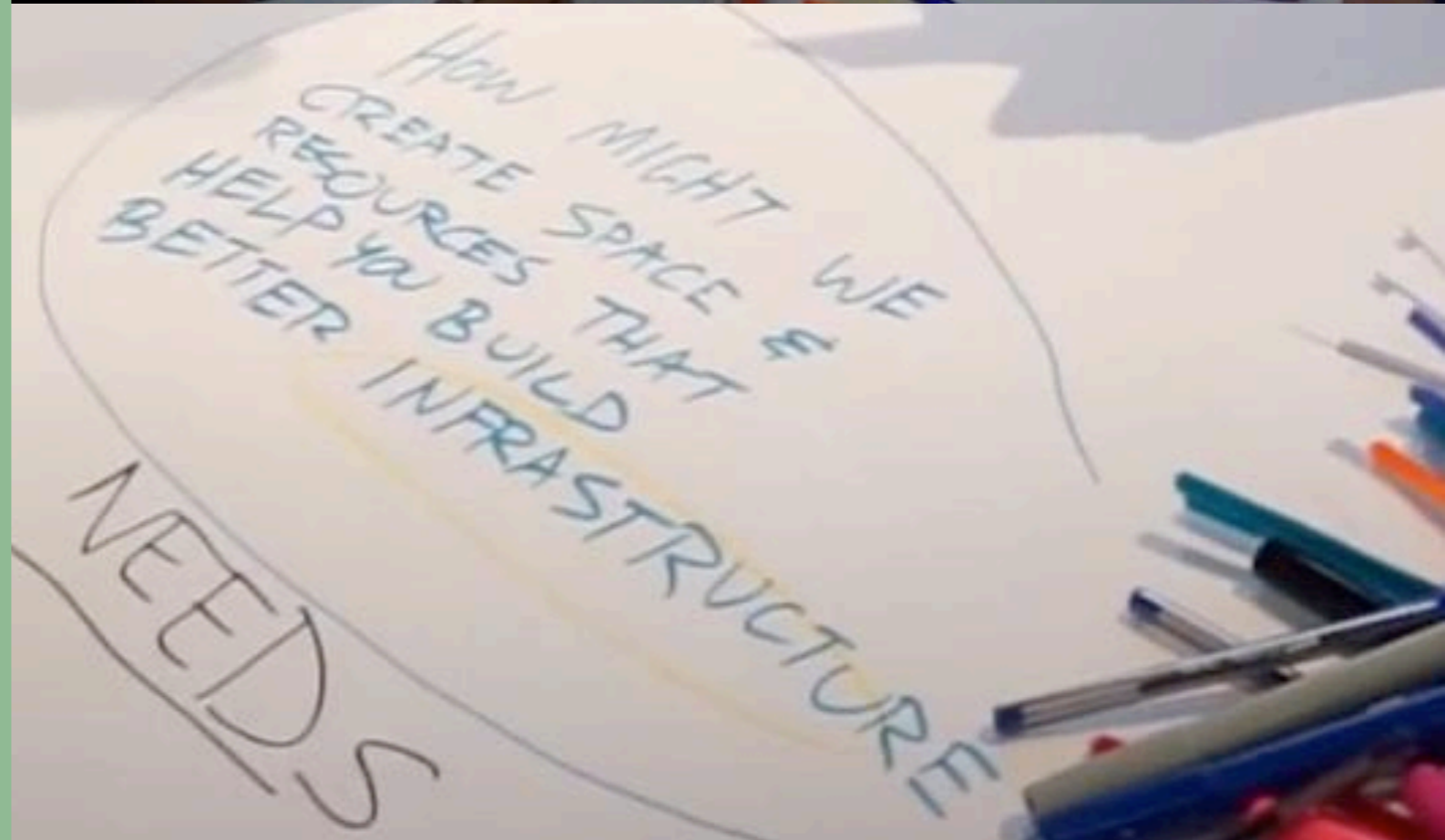
D'Acunto, Francesco, et al. "Crowdsourcing Financial Information to Change Spending Behavior." SSRN Electronic Journal, 2019, <https://doi.org/10.2139/ssrn.3339335>.

You've spent more than your peers this month



More informed and inclusive decisions

Greece Communitere





More informed and inclusive decisions

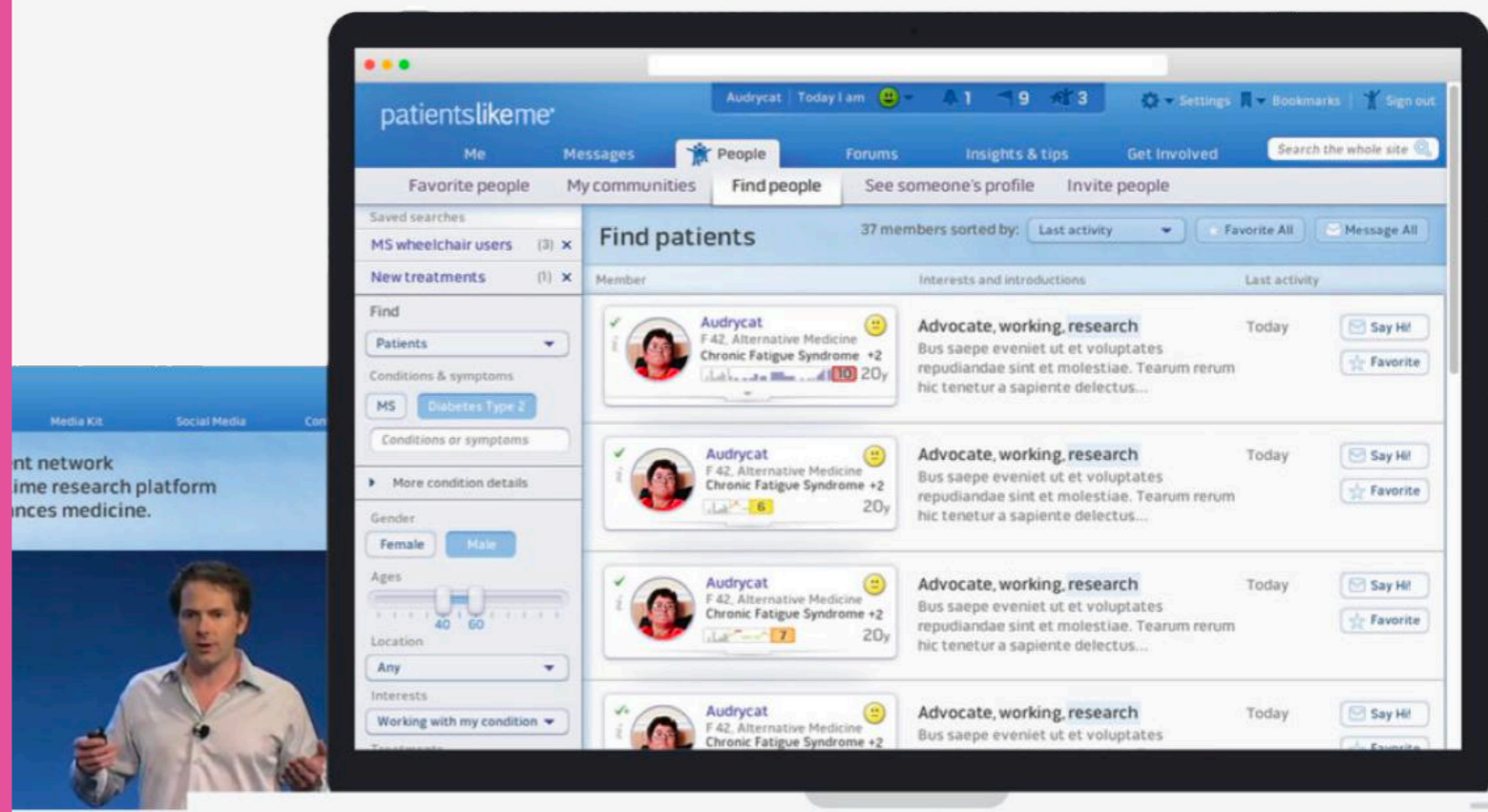
Greece Communitere



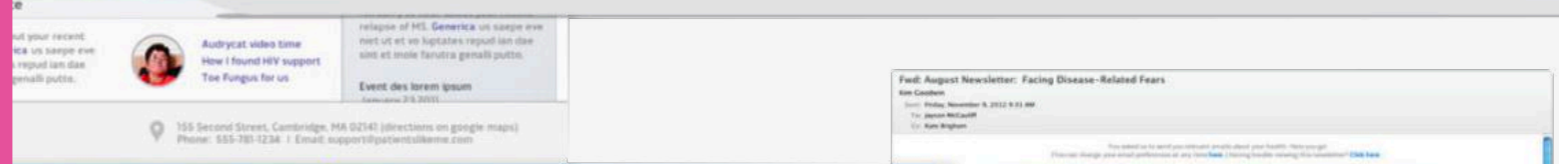


Learning and sharing what works

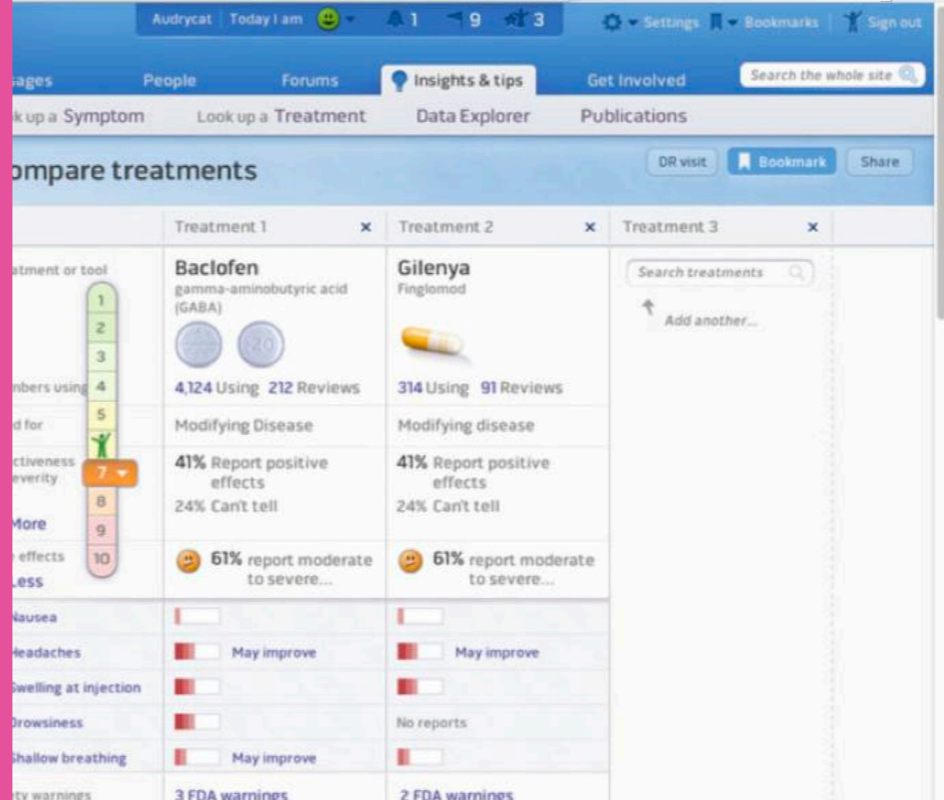
Patients Like Me



The screenshot shows the 'Find patients' section of the Patients Like Me website. It features a search bar with filters for 'Patients', 'Conditions & symptoms' (MS, Diabetes Type 2), 'Gender' (Female, Male), 'Ages' (40-60), and 'Location' (Any). The results list several members, each with a profile picture, name (Audrycat), age (42), gender (Female), and interests (Advocate, working, research). Each entry includes a bio snippet and a 'Say Hi!' button.

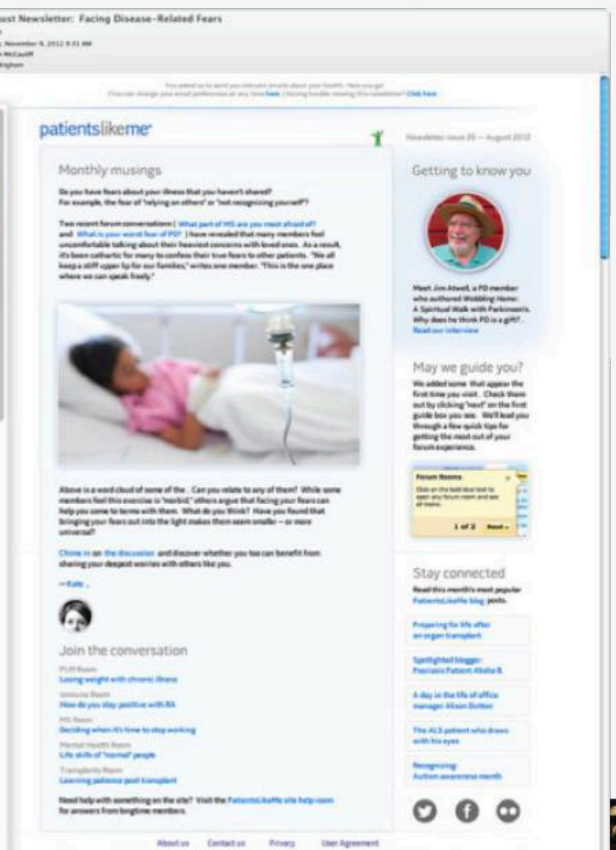


This section shows the footer and navigation area of the Patients Like Me website. It includes contact information for 155 Second Street, Cambridge, MA 02141, and a navigation menu with options like 'Look up a Symptom', 'Look up a Treatment', 'Data Explorer', and 'Publications'.



The screenshot displays the 'Compare treatments' interface. It compares two treatments: Baclofen (gamma-aminobutyric acid) and Gilenya (Finglomod). The comparison table includes details on the number of users, reviews, and reported effects.

Treatment 1	Treatment 2
Baclofen gamma-aminobutyric acid (GABA)	Gilenya Finglomod
4,124 Using 212 Reviews	314 Using 91 Reviews
Modifying Disease	Modifying disease
41% Report positive effects	41% Report positive effects
24% Can't tell	24% Can't tell
61% report moderate to severe...	61% report moderate to severe...

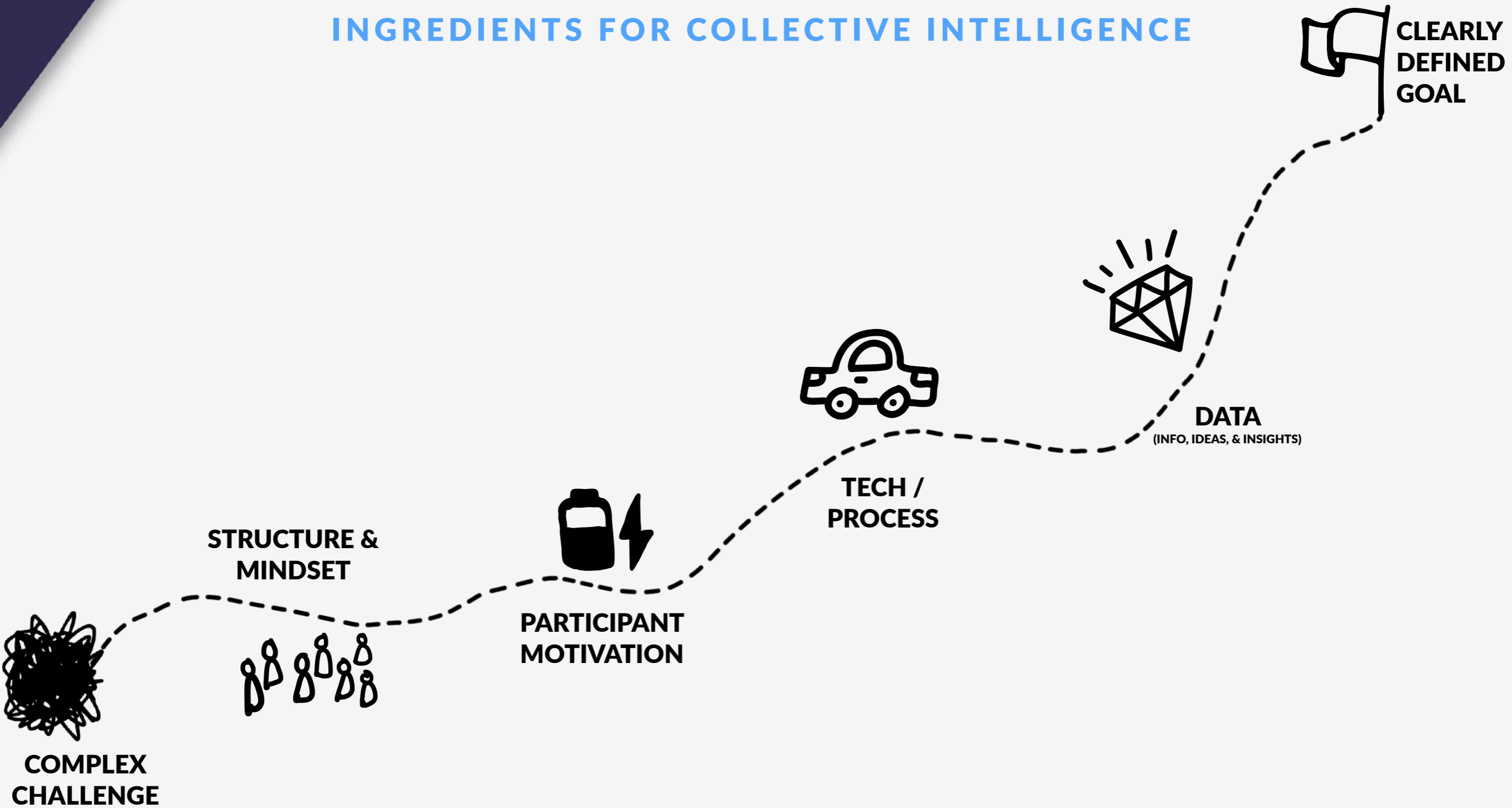


The screenshot shows an email newsletter from Patients Like Me. The header reads 'Fall: August Newsletter: Facing Disease-Related Fears'. The main content includes a 'Monthly musings' section with a quote about sharing fears, a 'Getting to know you' section featuring a member profile, and a 'May we guide you?' section with tips for getting the most out of the forum. The footer includes social media links and a 'Stay connected' section.



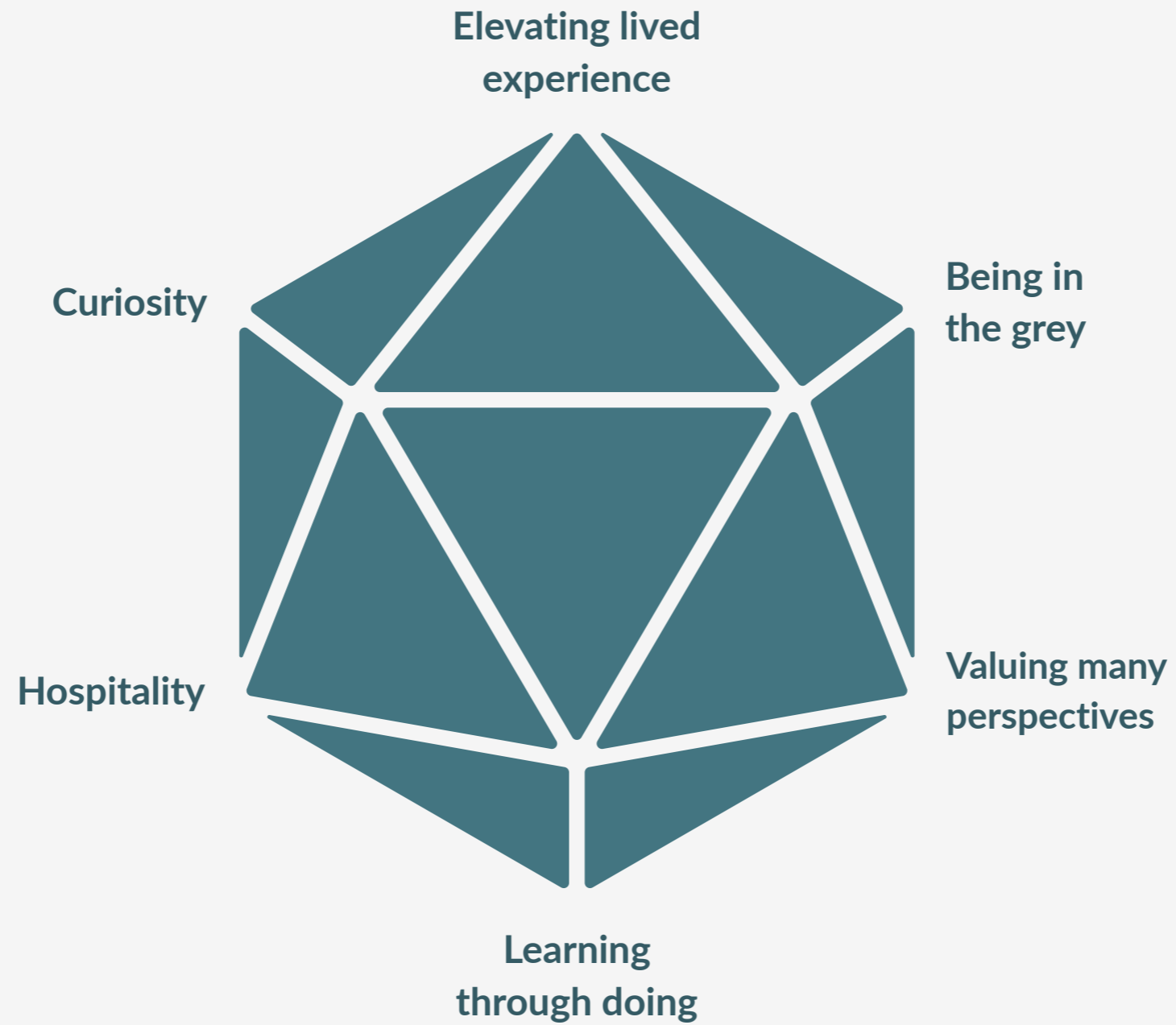
**What are the ingredients for
collective intelligence to develop?**

INGREDIENTS FOR COLLECTIVE INTELLIGENCE



MINDSETS

(Especially at the team level)

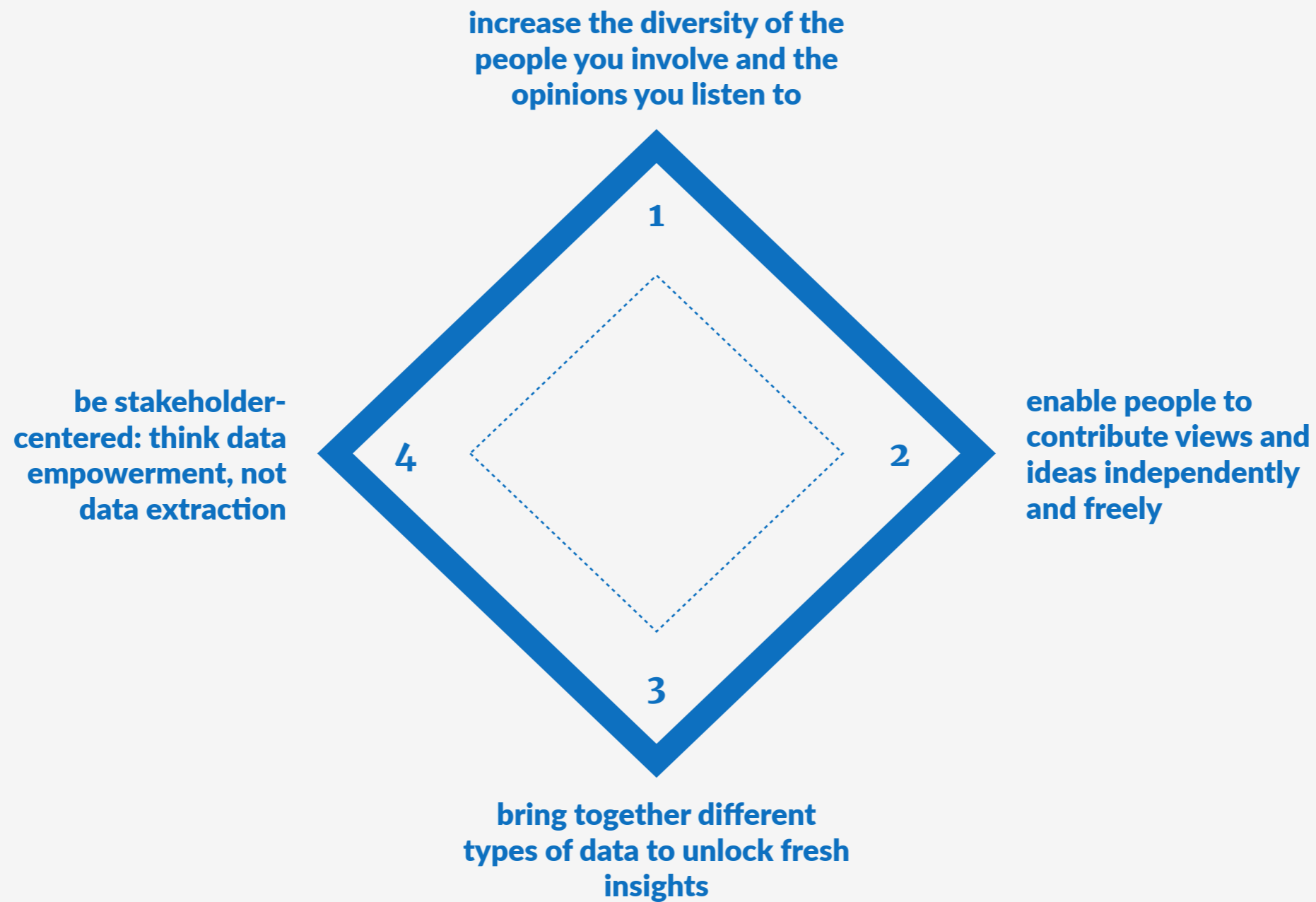




PRINCIPLES

OF COLLECTIVE INTELLIGENCE

PRINCIPLES OF COLLECTIVE INTELLIGENCE DESIGN



PRINCIPLES OF COLLECTIVE INTELLIGENCE DESIGN

- 1 ● increase the diversity of the people you involve and the opinions you listen to**

PRINCIPLES OF COLLECTIVE INTELLIGENCE DESIGN

- 2.** enable people to contribute views and ideas independently and freely.

PRINCIPLES OF COLLECTIVE INTELLIGENCE DESIGN

3

**bring together different
types of data to unlock
fresh insights**

PRINCIPLES OF COLLECTIVE INTELLIGENCE DESIGN

4.

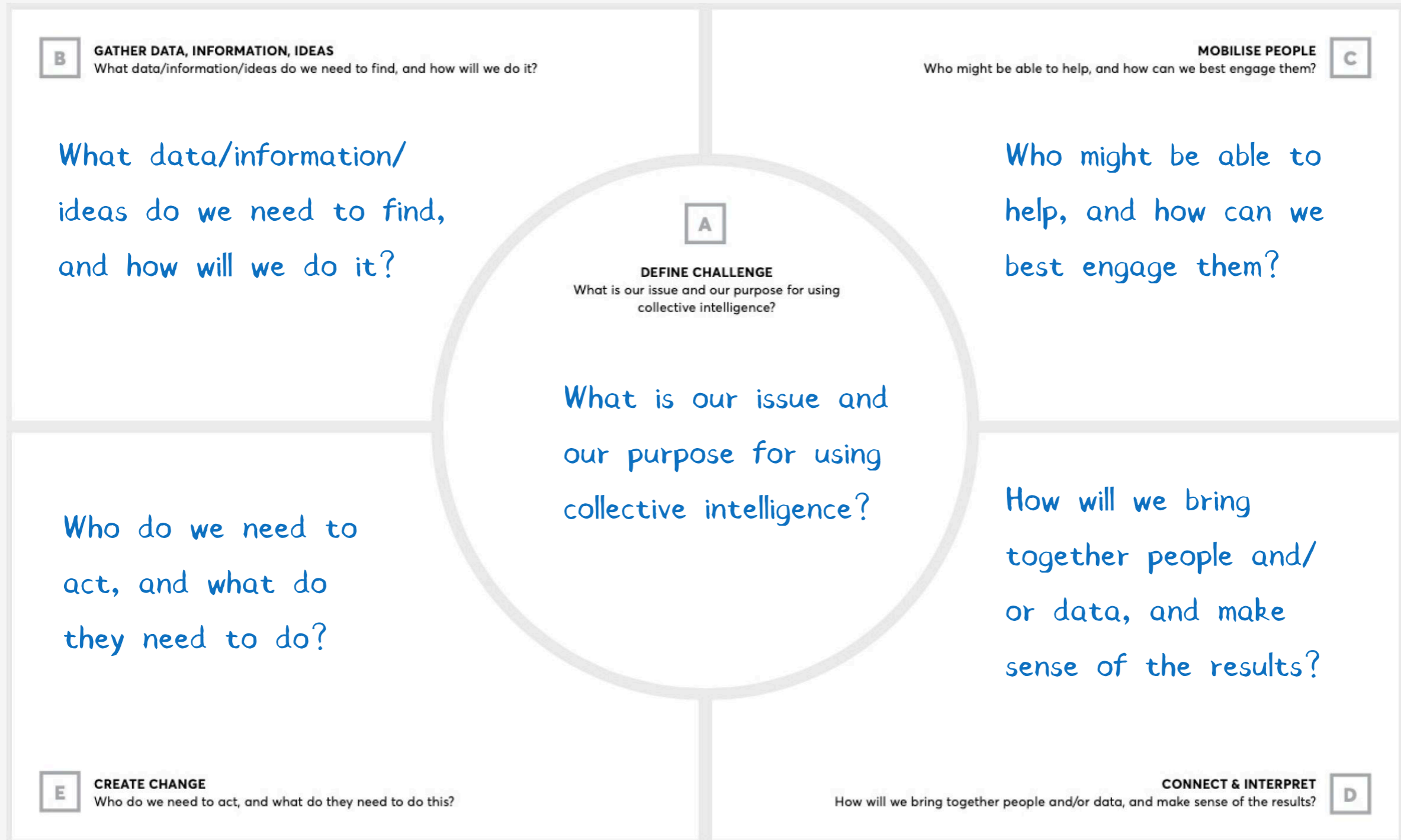
**be stakeholder-centered:
think data empowerment,
not data extraction**



DESIGN

FOR COLLECTIVE INTELLIGENCE

COLLECTIVE INTELLIGENCE DESIGN CANVAS



on/ideas
and how

Who m
help, o
best e



DEFINE CHALLENGE

What is our issue and our purpose for using collective intelligence?

What is our issue and our purpose for using collective intelligence?

act,
need

How w
togeth
data,
the re

on/ideas
and how

Who m
help, o
best e



DEFINE CHALLENGE

What is our issue and our purpose for using collective intelligence?

1. What is the issue we want to understand?
2. Who does the issue affect?
3. What is the change we want to bring about?
4. What is our timeframe for action?
5. What are our constraints?

act,
need

How w
togeth
data,
the re



GATHER DATA, INFORMATION, IDEAS

What data/information/ideas do we need to find, and how will we do it?

What data/information/
ideas do we need to find,
and how will we do it?

What

What

purpo



GATHER DATA, INFORMATION, IDEAS

What data/information/ideas do we need to find, and how will we do it?

6. What do we specifically need to know/find?
7. What data might help us understand our problem?
8. How will we collect this data?
9. Are there any ethical issues with collecting or using this data?

What

What

purpose



**STAKEHOLDER
GENERATED**

(e.g. WeFarm)



**OFFICIAL
DATA**

(e.g. NCUA data, CFPB's
FWB dataset), census data)



SENSOR DATA

(e.g. Walkmore..wearables)

DATA SOURCES



SATELLITE DATA

(e.g. [Harvesting.co](https://www.harvesting.co))



**WEB-SCRAPED
DATA**

(e.g. Humanitarian Dashboard)



**SOCIAL MEDIA
DATA**

(e.g. Harvey Rescue)



**ETHNOGRAPHIC
DATA**

(e.g. Communitere)



CROWDSOURCING

(e.g. WeFarm)



APIs

(e.g. Experian)



CHALLENGE PRIZE

(e.g. X-Prize)

**DATA
GATHERING**



MICROSURVEY

(e.g. Qualtrics)



**DATA
COLLABORATIVE**

(e.g. Tookitaki)



GAMIFICATION

(e.g. Foldit)



CROWDMAPPING

(e.g. Harvey Rescue)

MOBILISE PEOPLE



Who might be able to help, and how can we best engage them?

Who might be able to
help, and how can we
best engage them?

e for using

nd our
llective

MOBILISE PEOPLE



Who might be able to help, and how can we best engage them?

10. Who could help us understand our problem?
11. What do we want them to do?
12. How will we reach those people?
13. What might motivate them to be involved?

e for using

nd our
llective

nd our
ollective

How will we bring
together people and/or
data, and make sense
of the results?

CONNECT & INTERPRET

How will we bring together people and/or data, and make sense of the results?



nd our
ollective

14. How will people interact and share information?
15. How will we ensure everyone gets a chance to contribute?
16. How will we bring together our data (store/clean/process)?
17. How will we make sense of the data we've collected?
18. What biases might there be in our data?

CONNECT & INTERPRET

How will we bring together people and/or data, and make sense of the results?



What is
purpose
intelligence

Who do we need to
act, and what do
they need to do?



CREATE CHANGE

Who do we need to act, and what do they need to do this?

What is
purpose
intelligence

- 19. Who do we need to act on the collective intelligence, and what do we want them to do?
- 20. What do they need to see or know in order to do this?
- 21. How will we open up this data/ information to stakeholders?
- 22. How will we feedback to participants?
- 23. How will we know if we're on track and creating change?



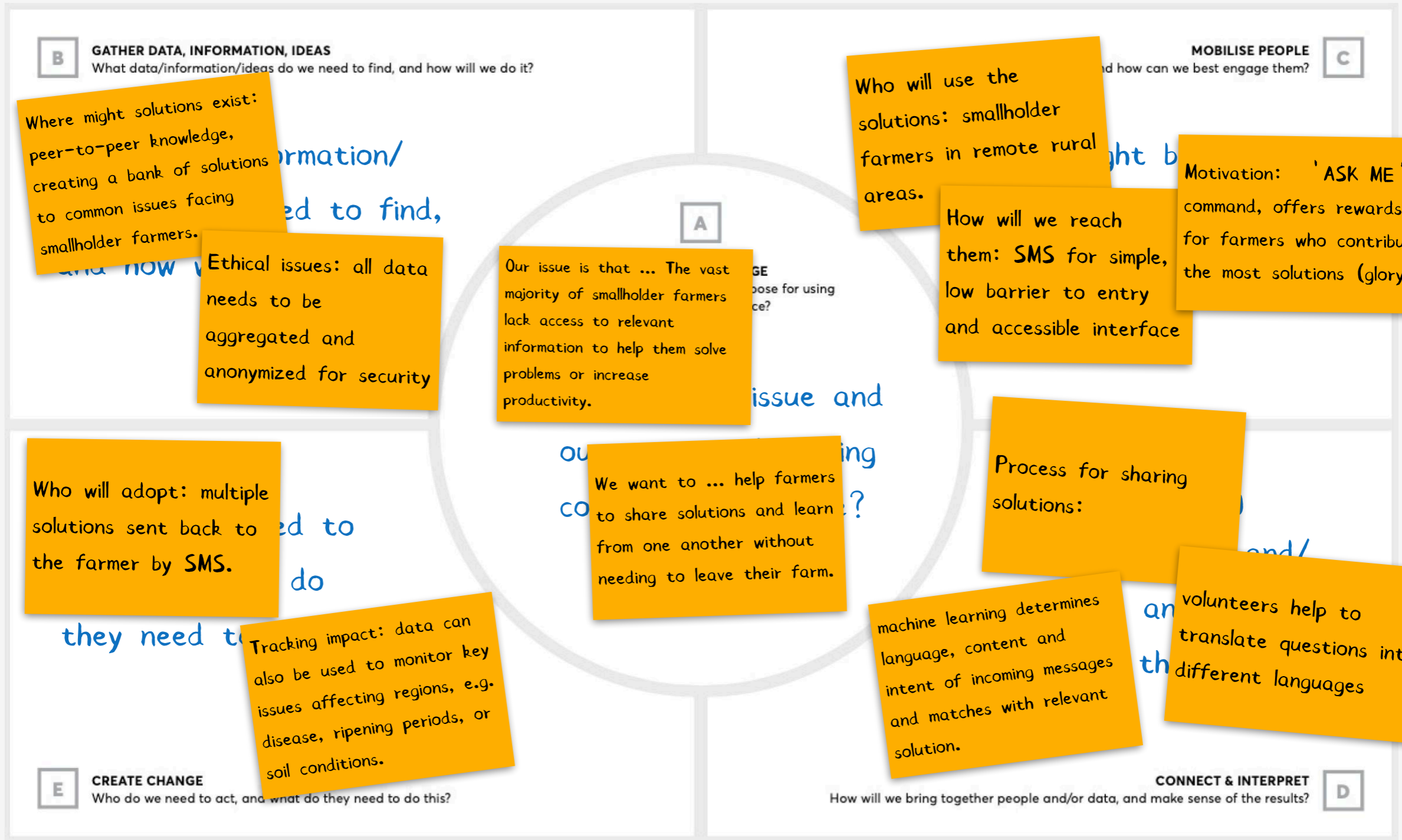
CREATE CHANGE

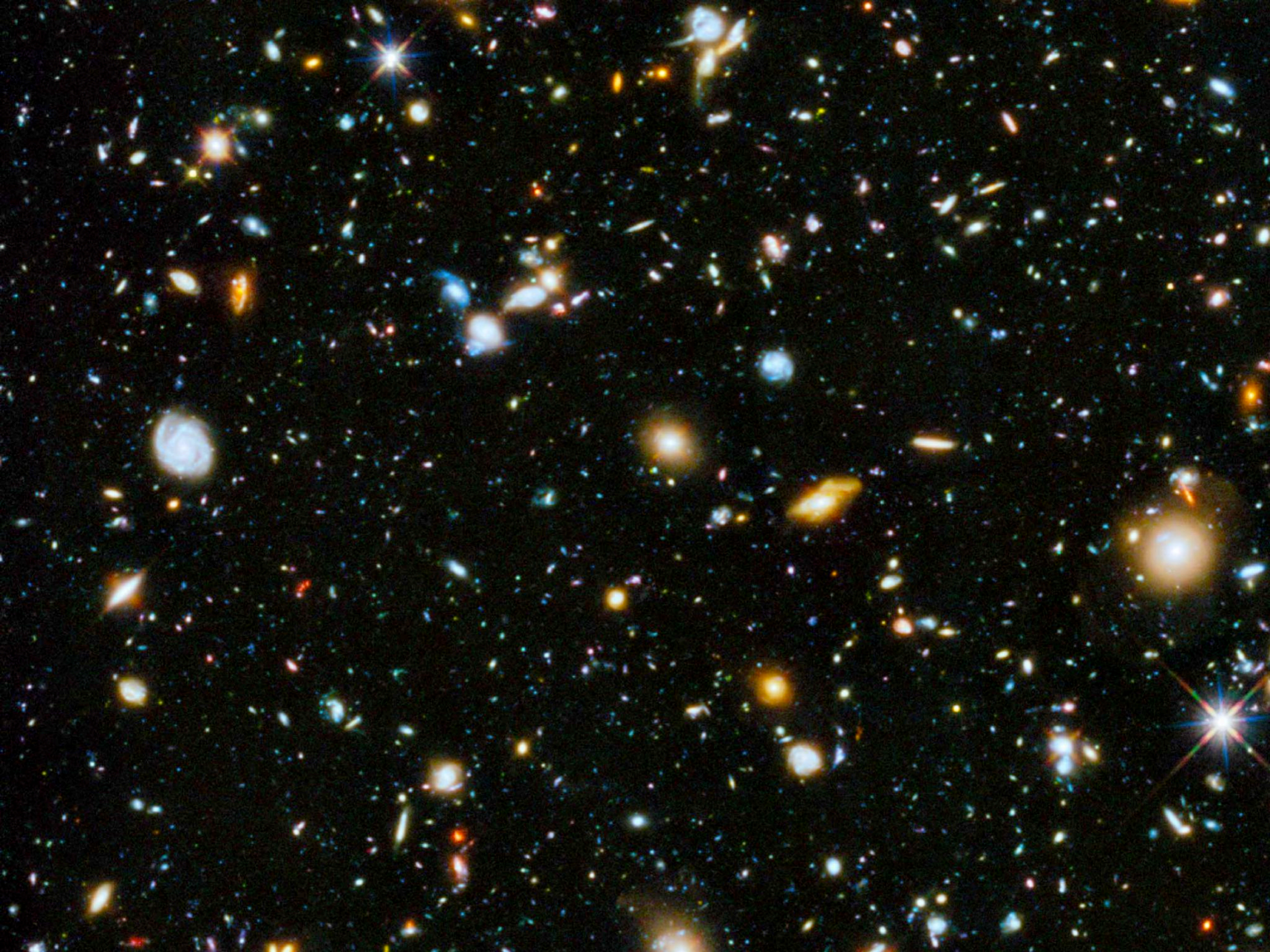
Who do we need to act, and what do they need to do this?

 wefarm



COLLECTIVE INTELLIGENCE DESIGN CANVAS





A nighttime city skyline with several illuminated skyscrapers. A network of blue circles and lines is overlaid on the image, suggesting a digital or technological theme. The background is dark blue, and the buildings are lit up with warm yellow and white lights.

THANK YOU.



Brent Dixon
brent@dxn.is
www.dxn.is



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Credit Union Leadership Summit