the Collective Intelligence Design Playbook: activities

tools, tactics and methods to harness the power of people, data and technology to solve global challenges

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01

design your collective intelligence project

Now you're ready to start designing your collective intelligence project, here's how to get going.

- With your group, identify which collective intelligence purpose will help you tackle your challenge.
- Find the correct navigation page in the playbook:
    - **understand problems** on p.52;
    - **seek solutions** on p.56;
    - **decide and act** on p.60;
    - **learn and adapt** on p.64.
- Print out the collective intelligence design canvas template (A3 or A2) and the specific design questions relevant to your selected purpose.
- Use the navigation page to see which activities are suggested, and pick those that you think will be most useful for your group and project. You should use them to explore the design questions in greater depth.
- Print out any prompt cards or worksheets you need.
- Work through the design questions set out at each stage with your group. Identify someone to be the group facilitator.
- Populate your canvas as your group answers the design questions. Allow time for reflection and iteration.
- Use activities such as prototyping to bring your project to life and identify any aspects that are missing or need to be changed.

Navigation Page

collective intelligence design canvas template

collective intelligence project design canvas

This canvas will help you paint a quick picture with your team of the main elements of your collective intelligence project.

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B **GATHER DATA, INFORMATION, IDEAS**
What data/information/ideas do we need to find, and how will we do it?

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

A

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

E **CREATE CHANGE**
Who do we need to act, and what do they need to do this?

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

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Navigation Page

understand problems

Use these pages to find relevant design questions and activities for your collective intelligence project design session.

purpose:

- Use collective intelligence to Understand Problems by generating contextualised insights, facts and information on the dynamics of a situation.

common characteristics:

- Connects multiple types of data (e.g. satellite data with crowdsourced mapping of a location).
- Uses novel data sources or proxy data (e.g. light source data to measure GDP).
- Often involves crowdsourcing data (e.g. experiences or information) from people.
- May use machine intelligence to analyse combined datasets or create models.

design questions:

- Answer these design questions to complete the collective intelligence design canvas to Understand Problems.

activities:

- Mix and match activities that will help you to answer the design questions if you're stuck or if you want to explore in more depth. The table shows which are relevant if you are designing for Understand Problems. You can find these organised by design stage in this playbook.

understand problems key questions

This guide provides some key design questions that your team will need to answer.

A DEFINE CHALLENGE

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

What is the issue we want to understand?

Who does the issue affect?

What is the change we want to bring about?

What is our timeframe for action?

What are our constraints?

B GATHER DATA, INFORMATION, IDEAS

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

What do we specifically need to know/find?

What data might help us understand this problem?

How will we collect this data?

Are there any ethical issues with using this data or involving people?

C MOBILISE PEOPLE

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

Who could help us understand this problem?

What do we want people to do?

How will we reach those people?

What might motivate them to be involved?

D CONNECT & INTERPRET

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

How will people interact and share information?

How will we make sure people can contribute independently and freely?

How will we bring together our data (store, clean, process, share)?

How will we make sense of the information we collect?

What biases might there be in our data?

E CREATE CHANGE

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

Who do we need to act on the collective intelligence, and what do we need them to do?

What do they need to see or know in order to do this?

How will we open up this data/information to citizens?

How will we feedback to participants?

How will we know if we're on track and creating change?

COLLECTIVE INTELLIGENCE DESIGN ACTIVITIES TO UNDERSTAND PROBLEMS

A DEFINE CHALLENGE	B GATHER DATA, INFORMATION, IDEAS	C MOBILISE PEOPLE	D CONNECT & INTERPRET	E CREATE CHANGE
A1. Challenge Definition - Worksheet	B1. Data Mapping - Worksheet	C1. Unique Perspectives - Worksheet	D1. Connect Methods - Prompt Cards	E1. Create Change Methods - Prompt Cards
A2. Issue Map - Worksheet	B2. Data - Prompt Cards	C2. People - Prompt Cards	D2. Overcoming Biases - Guide	E2. Prototyping Techniques - Guide
A3. Stakeholder Map - Worksheet	B3. Gather Data Methods - Prompt Cards	C3. Engagement Plan - Worksheet	D3. Crowd Facilitation - Guide	E3. Prototype Testing - Worksheet
A4. Cover Story - Worksheet	B4. Data Ethics - Worksheet	C4. Personass - Worksheet	D4. Data Flow - Worksheet	E4. Theory of Change - Worksheet
		C5. Incentives and Retention - Worksheet	D5. Interpret Methods - Prompt Cards	
			D6. Visualizing Citizen-Generated Data - Guide	

CASE STUDY: **PETABENCANA.ID**

PetaBencana.id, is a project that combines data from hydraulic sensors with citizen reports over social media including via Twitter, to produce a flood map for cities in Indonesia. The system is programmed to react when someone in Jakarta tweets the word 'banjir' (flood) and tags @PetaJkt. PetaBencana.id automatically replies, and asks them to confirm the tweet with geotagged photos. The platform then combines all incoming reports with official data from the city government to build up-to-the-minute, online flood maps, which are then made publicly available. Through producing real-time maps of urban flooding, PetaBencana.id represents a major advance on previous static PDF maps.

The page opposite provides an illustration of a project design canvas using the example of PetaBencana. It is not exhaustive, but is intended to give you an idea of how to start filling in the canvas.

understand problems project design canvas
Example: **PetaBencana**

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A — DEFINE CHALLENGE
What is our issue and our purpose for using collective intelligence?

Our problem is that… *Jakarta is vulnerable to flooding which affects the daily life of citizens (from traffic disruption to school closures)*

We want to … *help Jakarta city residents and the disaster response agency better understand where flooding is happening across the city so that they can respond appropriately*

B — GATHER DATA, INFORMATION, IDEAS
What data/information/ideas do we need to find, and how will we do it?

What we need to know: *location, severity and time of flooding*

Data sources: *Twitter and official government data*

Method for gathering data:

- *use Twitter API to scrape Tweets that use #banjeri (floods); citizen-generated reports to @PetaJkt*
- *data collaborative with government disaster agency*

C — MOBILISE PEOPLE
Who might be able to help, and how can we best engage them?

Who can help: *residents of Jakarta*

Motivation: *people already trying to help each other by sharing info on floods on Twitter (purpose). Peta Bencana makes that more effective*

D — CONNECT & INTERPRET
How will we bring together people and/or data, and make sense of the results?

How people interact: *residents submit and verify flood reports with geo-location tagged photos*

Storing/processing data: *CognityCityOSS*

Making sense of information: *real-time online flood map (GIS)*

E — CREATE CHANGE
Who do we need to act, and what do they need to do this?

Who will act: *national management disaster agency to prioritise response - ensure software meets agency's SOP*

Opening up the data: *website and app for residents to see and report flooding in real time*

Navigation Page

seek solutions

Use these pages to find relevant design questions and activities for your collective intelligence project design session.

purpose:

- Use collective intelligence to Seek Solutions by finding novel approaches or tested solutions from elsewhere. Or incentivise innovators to create new ways of tackling the problem.

common characteristics:

- Searches academic/scientific literature for proven approaches.
- Connects with other organisations/individuals who might already be working on this issue.
- Invites a wide range of potential innovators to find a new/better solution.
- Sometimes using machine learning tools (including text analysis) to sift data more quickly and/or rank results.

design questions:

- Answer these design questions to complete the collective intelligence design canvas to Seek Solutions.

activities:

- Mix and match activities that will help you to answer the design questions if you're stuck or if you want to explore in more depth. The table shows which are relevant if you are designing for Seek Solutions. You can find these organised by design stage in this playbook.

seek solutions key questions

This guide provides some key design questions that your team will need to answer.

A DEFINE CHALLENGE

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

What is the issue we want to solve?

Who does the issue affect?

What is the change we want to bring about?

What is our timeframe for action?

What are our constraints?

B GATHER DATA, INFORMATION, IDEAS

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

What solution(s) are we looking for?

Where might solutions already exist?

What methods will we use to find solutions?

Are there any ethical issues to consider?

C MOBILISE PEOPLE

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

Who could create a solution?

What do we want people to do?

How will we reach those people?

What incentive(s) will we offer to people for sharing their solutions?

D CONNECT & INTERPRET

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

What is the process for people to share their solutions?

How can we support people to contribute ideas effectively?

Who will judge which ideas to support or test?

E CREATE CHANGE

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

Who will adopt successful solutions or help them scale?

What will be our approach to partnership or intellectual property?

How will we feedback to contributors?

How will we know if we're on track to creating change?

COLLECTIVE INTELLIGENCE DESIGN ACTIVITIES TO SEEK SOLUTIONS

A DEFINE CHALLENGE	B GATHER DATA, INFORMATION, IDEAS	C MOBILISE PEOPLE	D CONNECT & INTERPRET	E CREATE CHANGE
A1. Challenge Definition - Worksheet	B3. Gather Data Methods - Prompt Cards	C1. Unique Perspectives - Worksheet	D1. Connect Methods - Prompt Cards	E2. Prototyping Techniques - Worksheet
A2. Issue Map - Worksheet	B4. Data Ethics - Worksheet	C2. People - Prompt Cards	D3. Crowd Facilitation - Guide	E3. Prototype Testing - Worksheet
A3. Stakeholder Map - Worksheet	B5. Solutions Brief - Worksheet	C3. Engagement Plan - Worksheet	D5. Interpret Methods - Prompt Cards	E4. Theory of Change - Worksheet
A4. Cover Story - Worksheet	B6. Solutions Readiness - Guide	C4. Personass - Worksheet	D7. Collective Decisions - Guide	E5. Collaboration Agreement - Worksheet
	B7. Mapping Solutions - Worksheet	C5. Incentives and Retention - Worksheet		
	B8. Finding Solutions - Guide	C6. Challenge Call to Action - Worksheet		

CASE STUDY: **WEFARM**

Wefarm is a free peer-to-peer service that enables small-scale farmers in Kenya, Uganda, and Tanzania to share information via SMS, without the internet and without having to leave their farm. Wefarm's network allows small-scale farmers to ask each other questions on anything related to agriculture and then receive crowdsourced bespoke content and ideas from other farmers around the world within minutes. The questions can be asked in any language and messaging is free of charge. It's now the world's largest farmer-to-farmer digital network, with more than 1 million farmers using it in Kenya and Uganda, sharing more than 40,000 questions and answers daily.

The page opposite provides an illustration of a project design canvas using the example of Wefarm. It is not exhaustive, but is intended to give you an idea of how to start filling in the canvas.

A — DEFINE CHALLENGE

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

Our issue is that … *The vast majority of smallholder farmers lack access to relevant information to help them solve problems or increase productivity.*

We want to … *help farmers to share solutions and learn from one another without needing to leave their farm.*

B — GATHER DATA, INFORMATION, IDEAS

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

Where might solutions exist: *peer-to-peer knowledge, creating a bank of solutions to common issues facing smallholder farmers.*

Ethical issues: *all data needs to be aggregated and anonymised for security*

C — MOBILISE PEOPLE

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

Who will use the solutions: *smallholder farmers in remote rural areas.*

How will we reach them: *SMS for simple, low barrier to entry and accessible interface*

Motivation: *'ASK ME' command, offers rewards for farmers who contribute the most solutions (glory)*

D — CONNECT & INTERPRET

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

Process for sharing solutions:

- *machine learning determines language, content and intent of incoming messages and matches with relevant solution.*
- *volunteers help to translate questions into different languages*

E — CREATE CHANGE

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

Who will adopt: *multiple solutions sent back to the farmer by SMS.*

Tracking impact: *data can also be used to monitor key issues affecting regions, e.g. disease, ripening periods, or soil conditions.*

Navigation Page

decide and act

Use these pages to find relevant design questions and activities for your collective intelligence project design session.

purpose:

- Use collective intelligence to Decide and Act by making decisions with, or informed by, collaborative input from a wide range of people and/or relevant experts.

common characteristics:

- Brings together a diverse range of stakeholders who are affected and/or knowledgeable about an issue.
- Often involves online or in-person group deliberation on an issue.
- May include voting and ranking of peer ideas or organisational policies.
- May be combined with collaborative group exploration to understand the problem and seek solutions.
- Sometimes uses machine learning tools such as natural language processing to cluster or summarise information.

design questions:

- Answer these design questions to complete the collective intelligence design canvas to Decide and Act.

activities:

- Mix and match activities that will help you to answer the design questions if you're stuck or if you want to explore in more depth. The table shows which are relevant if you are designing for Decide and Act. You can find these organised by design stage in this playbook.

decide and act key questions

This guide provides some key design questions that your team will need to answer.

A — DEFINE CHALLENGE
What is our issue and our purpose for using collective intelligence?

What is the decision we need to make?

Who is affected by this decision?

What is the change we want to bring about?

What is our timeframe for action?

What are our constraints?

B — GATHER DATA, INFORMATION, IDEAS
What data/information/ideas do we need to find, and how will we do it?

What do we specifically need to know or find to make this decision?

How will we collect this information?

Are there any ethical issues we need to consider?

C — MOBILISE PEOPLE
Who might be able to help, and how can we best engage them?

Who do we need to involve in the decision?

What do we want people to do?

How will we reach those people?

What might motivate them to be involved?

D — CONNECT & INTERPRET
How will we bring together people and/or data, and make sense of the results?

What type of decision do we need?
(e.g., consensus, majority)

How will we bring together people to share opinions and ideas?

How will people contribute or interact?

What do people need to know or have to contribute effectively?
(e.g. will we provide factual information on the subject and guidelines for participation?)

How will we make sure people can contribute independently and freely?

How will we make sense of all the information or ideas we receive?

E — CREATE CHANGE
Who do we need to act, and what do they need to do this?

Who will need to act on the ideas and information, and what do we need them to do?

What do they need to see or know in order to do this?

How might we share this information with citizens to enable them to act on this issue?

How will we know if we're on track to creating change?

COLLECTIVE INTELLIGENCE DESIGN ACTIVITIES TO DECIDE AND ACT

A DEFINE CHALLENGE	B GATHER DATA, INFORMATION, IDEAS	C MOBILISE PEOPLE	D CONNECT & INTERPRET	E CREATE CHANGE
A1. Challenge Definition - Worksheet	B3. Gather Data Methods - Prompt Cards	C1. Unique Perspectives - Worksheet	D1. Connect Methods - Prompt Cards	E1. Create Change Methods - Prompt Cards
A2. Issue Map - Worksheet	B4. Data Ethics - Worksheet	C2. People - Prompt Cards	D2. Overcoming Biases - Guide	E2. Prototyping Techniques - Guide
A3. Stakeholder Map - Worksheet		C3. Engagement Plan - Worksheet	D3. Crowd Facilitation - Guide	E3. Prototype Testing - Worksheet
A4. Cover Story - Worksheet		C4. Personass - Worksheet	D5. Interpret Methods - Prompt Cards	E4. Theory of Change - Worksheet
		C5. Incentives and Retention - Worksheet	D6. Visualising Citizen-Generated Data - Guide	
			D7. Collective Decisions - Guide	
			D8. ORID Framework - Guide	
			D9. Generative Decision-Making - Guide	
			D10. Open Space - Guide	
			D11. Group Dialogue - Guide	

CASE STUDY: **VTAIWAN**

vTaiwan is a hybrid online and offline consultation process used by the Taiwanese government to crowdsource citizen priorities and achieve consensus among competing perspectives. It does this by creating several stages, including an initial 'objective' stage for crowdsourcing facts and evidence, and a 'reflective' stage using mass deliberation tool Pol.is, which encourages the formation of 'rough consensus'. Finally, key stakeholders are invited to a live-streamed, face-to-face meeting to draw up specific recommendations. vTaiwan's achievements to date include: a crowdsourced bill successfully passed through parliament on Closely Held Company Law; the resolution of a disagreement between civil society activists on the topic of internet alcohol sales; and the ratification of several items on ridesharing (Uber) regulations.

The page opposite provides an illustration of a project design canvas using the example of vTaiwan. It is not exhaustive, but is intended to give you an idea of how to start filling in the canvas.

A DEFINE CHALLENGE

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

Our problem is that: *ridesharing is causing disruption of the local taxi industry in Taiwan. It is also largely unregulated.*

We want to: *help ministers to decide on new regulations for ridesharing that achieve consensus among diverse stakeholders affected by the industry.*

B GATHER DATA, INFORMATION, IDEAS

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

What do we need to know: *statistics and key facts about ridesharing from different government departments.*

Method for gathering data:

- *create live documents containing key definitions to avoid misunderstanding.*
- *ask ministries to publish data in user-friendly format.*

C MOBILISE PEOPLE

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

Key stakeholders: *taxi drivers, Uber drivers, unions, business representatives and passengers.*

How do we reach those people*: use newsletter, digital marketing (e.g. Facebook Ads) and online forum to recruit participants and raise awareness.*

Motivation: *targeted audiences have a stake in the issue (purpose)*

D CONNECT & INTERPRET

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

Bringing people together*: participants asked to reflect on facts gathered in the previous stages*

How people interact: *use online deliberation tool Pol.is to gather reflections, ideas and suggestions from key stakeholders.*

Type of decisions: *highest consensus statements on Pol.is (80 per cent or more) taken forward to live-streamed face-to-face discussion with key stakeholders*

E CREATE CHANGE

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

Who will act: *recommendations sent to relevant government department for final decision*

Sharing information: *all information from the consultation made fully open (e.g. transcripts ,videos, open data) to improve legitimacy and trust*

Navigation Page

learn and adapt

Use these pages to find relevant design questions and activities for your collective intelligence project design session.

purpose:

- Use collective intelligence to Learn and Adapt by gathering data to monitor the implementation of initiatives, and share knowledge to improve the ability of others.

common characteristics:

- Mobilises data generated by citizens - either actively through crowdsourcing or passively (e.g., through call detail records).
- Combines multiple sets and types of data.
- Creates open repositories of data and/or tools.
- May use machine learning algorithms to identify patterns in data and automate adjustments.

design questions:

- Answer these design questions to complete the collective intelligence design canvas to Learn and Adapt.

activities:

- Mix and match activities that will help you to answer the design questions if you're stuck or if you want to explore in more depth. The table shows which are relevant if you are designing for Learn and Adapt. You can find these organised by design stage in this playbook.

learn and adapt key questions

This guide provides some key design questions that your team will need to answer.

A — DEFINE CHALLENGE

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

What knowledge do we want to create?

Who are we creating knowledge for?

What is the change we want to bring about?

What is our timeframe for action?

What are our constraints?

B — GATHER DATA, INFORMATION, IDEAS

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

What specifically do we need to know?

What data might help us answer these questions?

How will we collect this information?

Are there any ethical issues we need to consider with using this data or involving people?

C — MOBILISE PEOPLE

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

Who might be able to help us answer our questions?

What do we want people to do?

How will we reach those people

What might motivate them to be involved?

D — CONNECT & INTERPRET

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

How will people contribute or interact?

How will we make sure people can contribute independently and freely?

How will we bring together our data (store, clean, process, share)?

How will we make sense of the data and knowledge we collect?

What biases might there be in our data?

E — CREATE CHANGE

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

Who do we want to act on the knowledge we create, and what do we need them to do?

How will we document our knowledge and make it available for others to use?

How will we know if we're on track to creating change?

COLLECTIVE INTELLIGENCE DESIGN ACTIVITIES TO LEARN AND ADAPT

A DEFINE CHALLENGE	B GATHER DATA, INFORMATION, IDEAS	C MOBILISE PEOPLE	D CONNECT & INTERPRET	E CREATE CHANGE
A1. Challenge Definition - Worksheet	B1. Data Mapping - Worksheet	C1. Unique Perspectives - Worksheet	D1. Connect Methods - Prompt Cards	E1. Create Change Methods - Prompt Cards
A2. Issue Map - Worksheet	B2. Data - Prompt Cards	C2. People - Prompt Cards	D2. Overcoming Biases - Guide	E2. Prototyping Techniques - Guide
A3. Stakeholder Map - Worksheet	B3. Gather Data Methods - Prompt Cards	C3. Engagement Plan - Worksheet	D3. Crowd Facilitation - Guide	E3. Prototype Testing - Worksheet
A4. Cover Story - Worksheet	B4. Data Ethics - Worksheet	C4. Personass - Worksheet	D4. Data Flow - Worksheet	E4. Theory of Change - Worksheet
		C5. Incentives and Retention - Worksheet	D5. Interpret Methods - Prompt Cards	E6. Dataset Nutrition Label - Guide
			D6. Visualising Citizen-Generated Data - Guide	
			D12. Study Circle - Guide	

CASE STUDY: **HUMAN DX**

The Human DX is an online platform that aggregates and ranks medical expertise about medical cases and possible diagnoses. It crowdsources teaching cases and advice from thousands of doctors and also asks them to rank each other's entries to identify those that the community find most useful to learn from. Cases are collected using structured data entry to capture the clinical decision making process in a standardised format. This is used to train a machine learning system and make the information easily searchable. The cases are turned into quizzes for medical students to help them test, learn and improve their diagnostic reasoning. The project is already impacting both medical training and clinical decision-making.

The page opposite provides an illustration of a project design canvas using the example of HumanDx. It is not exhaustive, but is intended to give you an idea of how to start filling in the canvas.

learn and adapt project design canvas

Example: **Human Dx**

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B — GATHER DATA, INFORMATION, IDEAS

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

Data / information needs:

- *a diverse set of medical cases with symptoms*
- *possible diagnoses for submitted cases*
- *info on learning habits and needs of medical students*

Method for gathering data: *online crowdsourcing of diagnoses and medical cases*

C — MOBILISE PEOPLE

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

Who can help: *doctors, medical students, professional healthcare bodies, medical schools*

Methods: *gamification to improve learning experience of users*

Motivation: *improving diagnostic capabilities (purpose), supporting training throughout medical careers (expertise), peer recognition (glory)*

A — DEFINE CHALLENGE

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

Our problem is that… *Global medical knowledge on medical cases, symptoms and diagnosis is distributed and siloed, which leads to inconsistent clinical decision making.*

We want to: *help physicians and medical students worldwide learn and improve diagnostic capabilities, and empower others with the world's collective medical insight.*

E — CREATE CHANGE

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

Who will act:

- *doctors contribute cases and diagnoses, review cases submitted by others through platform*
- *students use the app the improve diagnostic ability with quizzes*

Make available for others: *searchable open repository of cases and diagnoses. Use API to develop new uses*

D — CONNECT & INTERPRET

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

How people interact: *upvoting or peer-ranking to interpret the relevance of diagnoses*

Bring data together: *moderation and peer review to ensure the quality of submissions*

Interpret: *machine learning analysis to identify patterns of learning*

02

collective intelligence design activities

A

STAGE:
DEFINE CHALLENGE

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

This stage will help you spell out your reason for using collective intelligence and help you to articulate the goal of your project. It is important because it will help you craft a guiding purpose for your project, which is necessary if you need to inspire others to join you. Collective intelligence involves many different approaches, methods and tools, and it can be easy to get caught up in simple technical fixes. Completing this stage will help you keep focused on the outcome.

pointers for reflection and discussion:

- Try to do some desk-based research about your issue before commencing your collective intelligence project. It might be that the solutions you want, or the information you need has already been created by someone else.
- Consider what is the purpose of your collective intelligence project and review the relevant navigation guidelines in section 4 (Understand Problems, Seek Solutions, Decide and Act, Learn and Adapt).
- Once you are clear about the problem that needs to be worked on, an important step is to describe, at least roughly, how it works as a system. What are the key factors that may be feeding into the problem? How much do we know about them? Who has the power to influence them?
- The Issue Map and the Stakeholder Map can help a team and others to get a fuller sense of the issue. All of these can be thought of as hypotheses to be tested, partly through looking at the data and partly through talking to relevant people in the system. The mappings can be repeatedly returned to as a shared mental model of the problem, its causes and potential solutions. Don't skip over this stage.
- Try to describe your challenge using the following formula. Our problem is that…[insert a short description of your problem]. We want to understand/find a solution to/decide/learn (delete as appropriate) [what?]

challenge definition

The Challenge Definition Worksheet is used to help you clearly define the challenge to be addressed. It helps you examine your issue from a number of angles, as well as articulate the wider context. The key aim is to capture, compare and discuss different viewpoints before focusing on a clear challenge on which you can base the rest of your collective intelligence project. Consider working on the Challenge Definition Worksheet with a diverse range of other stakeholders, as this will usually bring up different perspectives and insight than just working with immediate team members.

TIME FRAME
60 - 90 mins

GROUP SIZE
4 - 8 people

MATERIALS
Challenge Definition Worksheet, 1 - 2 markers, bluetack

INSTRUCTIONS:

1. Quickly review the Challenge Definition Worksheet questions

2. Answer each question by capturing responses on post-it notes. Stick your answers in the appropriate sections.

    a. Regarding question 2 use a Stakeholder Map Worksheet (A3) and People Prompt Cards (C2) if you need help to identify the right people.

    b. Regarding question 3 use the Issues Map Worksheet (A2) if you need help to identity the underlying factors.

    c. Regarding question 4 use the Data Mapping Worksheet (B1) and Data Prompt Cards (B2) to consider what data is, or could be relevant.

    d. Regarding question 5 use the format "Our challenge is that… we want to help [who?] to understand/find/decide/learn [what?]" or use the Challenge Call to Action Worksheet (C6).

    e. Regarding question 6 use the Cover Story Worksheet (A4) to help you consider what is the purpose of your collective intelligence project?

    f. Regarding question 7 sketch out a quick timeline and budget.

3. When you've completed your first draft of the worksheet review the post-its and write up your final answers to the questions directly on the worksheet. However, if you need some reflection time, review the post-its at a later date or share with others before writing up.

4. When you've completed your first draft of the Challenge Definition Worksheet transfer the main points onto your Collective Intelligence Project Design Canvas in the Define Challenge stage.

REFERENCE:
ADAPTED FROM NESTA DIY TOOLKIT, PROBLEM DEFINITION

challenge definition

Key questions to consider when defining and designing your collective intelligence project.

1. What is the issue you want to address?

2. Who does your issue affect and how?

3. What factors shape this issue and have the greatest impact?

4. What evidence do you have about this issue?

5. Now reframe your initial issue as a collective intelligence challenge.

Our problem is that…

We want to help [who] to understand/find a solution to/decide/learn (delete as appropriate) [what].

6. If we are successful, what is the change we will have brought about?

7. What is your timeline, milestones, budget and constraints?

REFERENCE:
ADAPTED FROM NESTA DIY TOOLKIT, PROBLEM DEFINITION

STAGE:
DEFINE CHALLENGE

A1

issue map

Issue Mapping is a visual way to capture the different interconnected issues linked to a central or core issue. Everything is captured on a single 'poster' helping participants to see the issue at a systems level.

TIME FRAME
60 - 120 mins

GROUP SIZE
10 - 40 people

MATERIALS
Flipchart sheets, 3-4 markers, sticky dots for voting, masking tape

INSTRUCTIONS:

1. Start with making a (very) large canvas by sticking a 8-10 flipchart sheets together - see the layout on the next page.
2. At the edges put some labels that represent broader categories of potential drivers (e.g. political, economic, social, technology, environmental, legal).
3. Then write the issue you would like to explore in the middle (e.g. urban flooding in informal settlements).
4. You may assign two participants who will map out the drivers (as a facilitator you should guide the conversation)
5. Then ask participants: "What's driving or causing this issue?"... one person at a time may give a suggestion. To avoid the group being dominated by loud/confident people we suggest you enforce a 'turn taking rule'. After one person has made one suggestion, the next person may then make one. This means everyone can have their say.
6. When a participant mentions a possible cause, the mappers draw a line from the category (you may also ask participants what category it goes under) to the centre, and add a brief description. Encourage groups to write a short phrase rather than a single word or two. "Sustained economic growth in China" gives a better sense of change than "the economy".
7. It is important to mention that there is no right or wrong answer; all drivers mentioned are relevant for consideration as a potential cause.
8. Once all the drivers are mapped out, you may ask participants to vote for what they consider to be the key drivers (the most important). Depending on group size, they may select 2 or 3. They can use sticky dots to indicate their choices. Have a brief discussion about each one, and ask for evidence they have or how they might find it.
9. Once they have the key drivers, you may ask them: "Where would you intervene?" "Where are the leverage points?" "Where could we make the biggest difference?" Remind the group that in a system you may need to do multiple interventions at the same time to shift it.

issue map

What is the issue we want to i. understand ii. solve iii. make a decision on or iv. create knowledge about?

TECHNOLOGICAL

ENVIRONMENTAL

ECONOMIC

SOCIAL

ISSUE FOR EXPLORATION

POLITICAL

LEGAL

OTHER POTENTIAL DRIVERS

INSTITUTIONAL

stakeholder map

This worksheet helps to make tangible who has a stake in the issue. Specifically it helps identify: who causes or indirectly influences the issue, who is affected by it (directly or indirectly), and how these actors are related.

TIME FRAME
60 - 120 mins

GROUP SIZE
3 - 8 people

MATERIALS
Stakeholder map, post-its, 3-4 markers, masking tape

INSTRUCTIONS:

1. Starting at the centre, answer 'What is the issue you are trying to resolve?'
2. Move to the next question and get people to call out answers as you capture responses on post-its.
3. Keep working your way out spending 5 - 10 minutes on each question.
4. Draw connections between your stakeholders using arrows to show the flow of value, resources, data, knowledge, influence between them. This will help you to see the relationships as a whole.
5. Use the answers from this worksheet to help you complete the Challenge Definition Worksheet (A1) and transfer the relevant information to the Collective Intelligence Project Design Canvas.

REFERENCE:
NESTA STATES OF CHANGE, MAPPING STAKEHOLDERS TOOL AND ODI DATA ECOSYSTEMS MAPPING TOOL

stakeholder map

Who does your issue affect? Who might already have, or could create solutions?

REFERENCE:
NESTA STATES OF CHANGE, MAPPING STAKEHOLDERS TOOL AND ODI DATA ECOSYSTEMS MAPPING TOOL

cover story

The Cover Story Worksheet is a newspaper style mock-up describing how the future could be if your challenge is successfully addressed.

TIME FRAME
45 mins

GROUP SIZE
3 - 8 people

MATERIALS
Blank Cover Story Worksheet,
10 coloured markers

INSTRUCTIONS:

1. Work in groups on one template together imagining the best case scenario for your issue (30 mins).

2. The object of the activity is to complete the template using post-its before writing up:

   a. 'Headlines' convey the substance of the cover story.

   b. 'Paragraph' tells the story 10 years from now.

   c. 'Sidebars' reveal interesting aspects of the cover story.

   d. 'Quotes' can be from anyone related to the story.

   e. 'Images' support the content with illustrations.

   It can be helpful to search online for examples of local/national newspaper headlines to get inspired.

3. If there are multiple groups, reconvene and take turns to present back the story and the supporting elements (5 mins).

4. Note any common themes and areas of agreement, differences, insights or concerns.

5. Finally transfer the main future considerations identified through using this worksheet to your Collective Intelligence Project Design Canvas in Define Challenge stage (A).

cover story

What is the change we want to bring about?

Headline

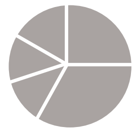
Lead Paragraph

Sidebar

Body Paragraph

Bar Graph

Pie Chart



Percentage

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Pull Quote

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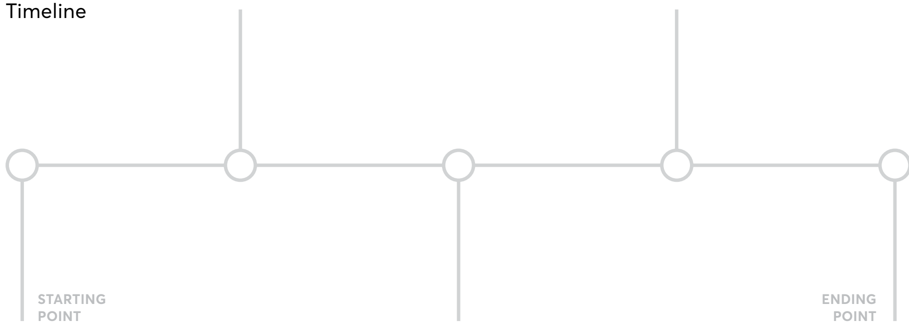
Timeline



B

STAGE:
GATHER DATA, INFORMATION AND IDEAS

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

This stage will help you to define what data, information or ideas are needed for your collective intelligence project. It is important because collective intelligence projects almost always involve some form of data collection. There are now many more potential sources of data: from sensors and satellites; commercial data like mobile phone records which track travel patterns or economic activity; and citizen-generated data on everything from floods to corruption. Any project needs to start with a good understanding of the information it already has, what it can access, and what it needs.

pointers for reflection and discussion:

- Sometimes data is proactively contributed by citizens, but it can also be collected passively via third parties or social media apps, with the consent of users.
- Consider what real-time ‘unstructured’ data such as posts on social media could reveal about the attitudes and values of a given subset of the population. Often the less obvious data are more valuable than official data. For example in many countries mobile phone data is a better indicator of economic activity and its shifting location than anything else.
- Very local, tacit data that reflects lived experience or community knowledge can be complementary to formal data from sensors such as air pollution monitors or aerial satellite images.
- You should consider whether you need historical or real time data to help you address the challenge. Historical datasets might be readily available but when an issue is rapidly changing, they might not offer much insight into the current context.
- Some datasets are easier to collect than others, you should think about the timeline of data collection and whether you need one-off or regular contributions.
- It is important to consider how you will ensure your data is ‘fit for purpose’. This includes knowing the accuracy, interoperability with existing standards and quality requirements. Some common data quality protocols include validation by experts, peer review or requiring participants to undergo training.
- This also brings important questions around data ethics, data protection and responsible use of personasl information. Clear rules around these need to be established before any data collection takes place.

data mapping

The Data Mapping Worksheet helps you consider what you need to know, what data sources are currently available and what new data you may need to create.

TIME FRAME
30 - 60 mins

GROUP SIZE
3 - 8 people

MATERIALS
Data Mapping Worksheet, post-its, 1 x pen per person, bluetack, Data Cards (B2)

INSTRUCTIONS:

1. Quickly review the Data Mapping Worksheet questions. One person could nominate themselves to read them out to the group.
2. Then, start by answering the question at the top of the worksheet, 'What specifically do you need to know?' Capture suggestions from the group on post-its or write on the worksheet directly. Spend 5-10 minutes.
3. Now move to the next question on the bottom left and spend 5-10 minutes discussing this as a group. Work your way across from left to right capturing answers on post-its in the appropriate sections.
4. Use in conjunction with the Data Cards (B2) for inspiration to stretch your thinking.
5. After you have explored many possible data sources, it is important to focus on 1-3 key data sources that are a) likely to be most relevant to your issue b) give the necessarily granularity or timeliness and c) are feasible to gather in the timeframe for the project. Highlight those on the worksheet.
6. When you've completed this worksheet, add your shortlisted data sources to the Collective Intelligence Project Design Canvas.

data mapping

What data might help us address our issue?

What specifically do you need to know?

What data are you already using?

For example: official or government data, data from NGOs or business.

What other data exists, which you are not using?

Are there other types of data or datasets that might contribute similar information, or act as a proxy measure?

What new data could you create?

Could you start collecting new types of data to help you now and in the future?

data cards

These Data Cards are to be used as prompts for discussion in conjunction with the collective intelligence project design canvas and associated activities. They highlight common data sets alongside illustrative case studies and are not intended to be exhaustive. The data cards are one of six 'decks', structured according to different stages of the playbook.

TIME FRAME
30 mins

GROUP SIZE
4 - 8 people

INSTRUCTIONS:

1. Explore these Data Cards and associated case studies with your group or workshop participants at any point to guide conversations.

2. There are also specific activities elsewhere in this playbook where you are encouraged to use these cards to help answer particular design questions.

3. Consider which sets of data are most relevant to you and your challenge.

citizen-generated data

Citizen-generated data is a broad category that includes any information that can be collected from people either by active involvement (experiences, ideas, upvotes) or passively (e.g. wearables or transactions data).

STAGE: **B2**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **I PAID A BRIBE**

I Paid A Bribe attempts to tackle corruption in India and other countries by tracking bribe payment activity and raising awareness about the nature and spread of bribe-related exchanges. The platform crowdsources anonymous reports by people who have either paid a bribe, refused to pay a bribe or who met an officer who did not ask or pay a bribe. The crowdsourced reports feed into city, state and country-level databases of corruption in public services. The Indian website of I Paid A Bribe receives around 25 to 50 reports per day, with many stories of official investigations leading to suspension of officials involved. The project has now partnered with 25 other countries who have replicated the site.

official data

Official data can include longitudinal survey data, such as census data, electoral registers or other population data. Official data provide a long-term picture of a country over time, and are usually collected by public institutions or national statistical agencies as a public good.

STAGE: **B2**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **AFRICAPOLIS**

Africapolis aims to be the most comprehensive and standardised geospatial database on cities and urbanisation dynamics in Africa. It blends data from across the continent in an effort to provide standardised, comparable insights into Africa's fast-changing urban populations.

The single most important element is official population records, including census data of official cartographic resources such as administrative boundaries. In some cases official data can date back 30 or more years, which is significant given the pace of demographic and urban trends. Africapolis brings these datasets together into a single, comparable resource, as well as additional sources such as satellite data to confirm the precise location of settlements. By integrating thousands of smaller agglomerations (covering inhabitants of a total of 180 million people) Africapolis also highlights the role of smaller towns and cities in urban networks, the emergence of new urban areas and the increasing fluidity between urban and rural environments.

sensor data

Sensor data includes information collected by physical sensors recording actions and physical changes (e.g. traffic cameras, weather sensors, ambient sensors, wearables or drones). Sensor data can provide cheap, real-time measurements of anything from pollution to crop-yield.

STAGE: **B2**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **ARRAY OF THINGS**

Data is starting to play a role in helping cities understand and manage air quality. To try and tackle this, Chicago has begun an ambitious effort called Array of Things, to install a network of approximately 100 air quality and weather sensors around the city, and make this data available for open use for researchers and educational purposes. The sensors collect real-time data about their surroundings, including air quality, climate and noise, with added privacy controls to ensure no individual data is collected. The aim is to provide real-time detection of urban flooding, high-resolution 'block-by-block' weather and climate information, and better understand population flows to improve urban planning.

satellite data

Satellite data is aerial imagery collected by satellites, usually available from companies for a fee. It can provide detailed insights into land-use over time, or act as a proxy for other measures.

STAGE: **B2**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **REGEN NETWORK**

Regen Network collects ecological and agricultural data via remote sensing (images collected by satellites, drones, and planes), and on-the-ground observation via Internet of Things (IoT) sensors. The collected data is verified by farmers and then run through a trained machine learning model which tries to determine ecosystem health. So far, Regen Network have developed an algorithm that is capable of detecting till events in Romania and Ukraine with a 99 per cent accuracy through public satellite data.

social media data

Social media data is information generated by activity on platforms such as Twitter, Facebook, Github, Meetup or other social networking sites. It can be accessed via APIs or scraped, providing real-time insights into human behaviour or social trends.

STAGE: **B2**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **PETABENCANA.ID**

PetaBencana.id, is a project that combines data from hydraulic sensors with citizen reports over social media including via Twitter, to produce a flood map for cities in Indonesia. The system is programmed to react when someone in Jakarta tweets the word "banjir" (flood) and tags @PetaJkt. PetaBencana.id automatically replies, and asks them to confirm the tweet with geotagged photos. The platform then combines all incoming reports with official data from the city government to build up-to-the-minute, online flood maps, which are then made publicly available. Through producing real-time maps of urban flooding, PetaBencana.id represents a major advance on previous static PDF maps.

open data

Open data is the raw data that is gathered by people or organisations, published in an electronic format that machines can read; it is then shared online and allowed to be re-used by others instead of keeping it private.

STAGE: **B2**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **OPENCORPORATES**

OpenCorporates increases transparency in the corporate world through making information about companies more accessible, so that citizens and journalists can better monitor and regulate them. OpenCorporates crowdsources data from citizens, who contribute to populating and updating the platform, identifying errors, or importing web scraped data. The contributions from people all over the world and their local knowledge have made OpenCorporates the largest open database of company data in the world, with over 100 million companies in a large number of jurisdictions. The fact that the data is open has also improved data quality, allowing anomalies, errors and issues to be discovered faster.

web-scraped data

Web-scraping is a method for extracting unstructured data from across the web, such as company websites, social media or job advertisements. Where official datasets are costly to gather and updated infrequently, web-scraping can provide more timely insights into social or economic trends.

STAGE: **GATHER DATA, INFORMATION, IDEAS** **B2**

CASE STUDY: **HEALTHMAP**

HealthMap is a platform that brings together a range of disparate and informal online sources to monitor the outbreak of diseases. By scraping data from across the web, the platform is able to provide near real-time intelligence on a broad range of emerging infectious diseases. The website and app bring together data from news aggregators such as Google and Baidu News, as well social media data and validated official reports. The system then organises, integrates and visualizes potential threats. The platform was successfully used for tracking cholera in Haiti after the 2010 earthquake.

ethnographic data

Ethnographic data encompasses qualitative information (stories, personal accounts or transcripts) collected by interviews, participant observation, note-taking, online text or recording. It provides rich and highly detailed accounts of people's lives.

STAGE: **GATHER DATA, INFORMATION, IDEAS** **B2**

CASE STUDY: **ON OUR RADAR**

On Our Radar trained citizen journalists to provide detailed accounts of the Ebola crisis from communities all around Sierra Leone (e.g. from urban slums, polio camps, and remote rural villages). The reporters shared their reports with On Our Radar via recorded telephone interviews, WhatsApp audio and photo functions, and SMS. People in the poorest regions of Sierra Leone are more likely to have a mobile phone than access to basic amenities and electricity, so even those in the most remote regions could report.

On Our Radar reports captured the atmosphere of day-to-day life in vulnerable communities in Sierra Leone, often delivering breaking news that international media did not otherwise have access to, and from communities that Western journalists failed to reach. Its reports were featured on the BBC World Service, Guardian and Sky News among others.

other data?

What other data sets might be particularly relevant or interesting?

STAGE: B2
GATHER DATA, INFORMATION, IDEAS

call detail records

Call detail records (CDRs) can be obtained as anonymous data from telecoms companies, providing fine-grained information into mobility or population trends.

STAGE: B2
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **NCELL NEPAL**

In April 2015, an earthquake struck Nepal impacting millions across the country. NCELL, Nepal's largest mobile phone operator, agreed to share anonymised mobile phone data with the non-profit Swedish organisation Flowminder. Population movement estimates were calculated by combining de-identified data on people's movements with available population data, and by comparing SIM card movements before and after the earthquake to normal pre-earthquake movements. By gaining real-time insights into population flows, UN agencies and government were able to better target aid to affected communities, saving hundreds of lives.

gather data method cards

These Gather Data Method Cards are to be used as prompts for discussion in conjunction with the collective intelligence project design canvas and associated activities. They highlight common methods to gather data, information and ideas, alongside illustrative case studies and are not intended to be exhaustive. The Gather Data Methods Cards are one of six 'decks', structured according to different stages of the playbook.

TIME FRAME
30 mins

GROUP SIZE
4 - 8 people

INSTRUCTIONS:

1. Explore these Gather Data Method Cards and associated case studies with your group or workshop participants at any point to guide conversations.

2. There are also specific activities elsewhere in this playbook where you are encouraged to use these cards to help answer particular design questions.

3. Consider which methods are most relevant to you and your challenge.

crowdsourcing

Crowdsourcing is an umbrella term for a variety of approaches that source data, information, opinions or ideas from large crowds of people, often by issuing open calls for contribution. It can help bring new ideas to light that hadn't previously been considered, or to gather expertise from people who have specialised knowledge or understanding of an issue.

STAGE: **B3**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **DECIDE MADRID**

The City Council of Madrid has has used CONSUL, an open software tool, to create a citizen platform - Decide Madrid - to crowdsource citizen proposals and harness more local knowledge in decisions about how to plan and allocate budgets. New ideas from residents have been gathered and implemented on topics ranging from sustainability and air pollution, to ticketing for local transport. Since its creation it has allocated over 100 million Euros in funding for projects suggested by local people. On the platform, people can make proposals, engage in debates, and vote for ideas. It is often used in conjunction with offline engagement.

open API

Application Programming Interfaces (APIs) provide the standards by which data is accessed and transferred between websites. Open APIs encourage collaboration and are built using open standards, allowing them to be freely accessed and used.

STAGE: **B3**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **OPENAHJO**

City Councils make hundreds of decisions every month, and it can be hard for both citizens and civil servants to follow the progress of legislation making its way through government. Open Decisions is Helsinki City Council's attempt to standardise and publish all of its decision making data electronically. Data about meetings, agendas and decisions from all across the council are tagged according to the Popolo open government standard, and then made available via an open API called OpenAhjo. By publishing the data via an open API, a range of developers have been able to create digital applications that notify local residents when decisions are made on topics of interest. It has also been used by city employees to more easily search and track progress made by local politicians.

challenge prize

Challenge prizes or competition platforms are a method of drastically widening the pool of possible solutions to solve a problem. They are useful for getting a variety of responses to questions and of spurring novel suggestions for how to address an issue or specific challenge.

STAGE: **GATHER DATA, INFORMATION, IDEAS** **B3**

CASE STUDY: **DARPA GRAND CHALLENGE**

In the US, the Defense Advanced Research Projects Agency (DARPA) ran a grand challenge with the goal of supporting innovation to accelerate the development of autonomous vehicle technologies with military applications. No vehicles completed the set route for the $1 million prize in 2004, but a year later another round was held in the desert near the California/Nevada state line. A total of five teams completed the course which was 132 miles over the desert terrain. The Stanford Racing team took home the $2 million prize, completing the course in 6 hours 53 minutes. DARPA credits this challenge with the creation of ‘a mindset and research community that a decade later would render fleets of autonomous cars and other ground vehicles a near certainty for the first quarter of the 21st century’.

microsurvey

Microsurveys are a short, abbreviated form of surveying which typically take the respondent only a few minutes to complete. Microsurveys are often delivered by mobile phone, text message or a digital platform. Benefits include a much faster turnaround, and higher frequency of results, compared to traditional surveys.

STAGE: **GATHER DATA, INFORMATION, IDEAS** **B3**

CASE STUDY: **SAUTI ZA WANANCHI**

Traditional, large-scale household surveys tend to be costly, and can take over a year to produce. Sauti za Wananchi (‘Voices of citizens’) provides an alternative whereby mobile phones are used to collect information from a broad cross-section of citizens in Tanzania and Kenya.

For each survey 2,000 ‘panel members’ are randomly selected from regions across the country, and sent mobile phones and solar-powered phone chargers to ensure that no-one is excluded. They are called and interviewed from a call centre in Nairobi once a month, with questions on a different topic each time. So far, Sauti za Wananchi has been used to gather insights into local people’s living standards, perceptions of poverty and to understand people’s access to safe drinking water. It claims to be Africa’s first nationally representative mobile phone survey.

gamification (serious games)

Gamification is a broad term that refers to using game-like elements to make engagement in collective intelligence projects more fun. It can be a useful way to motivate audiences in complex topics or research, as well as illustrating trade-offs associated with making certain choices. Games can also be useful for presenting data, ideas and trends.

STAGE: **B3**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **SEA HERO QUEST**

Sea Hero Quest is a mobile game where players' actions help scientists to understand and fight dementia. The game asks users to find their way through a digital maze, in turn providing researchers with valuable data to understand the user's spatial navigation. According to its website, playing Sea Hero Quest for only two minutes generates the same amount of data that it would take 5 hours to collect in similar lab based research. As a result the project has gathered approximately 17,600 years worth of dementia research from players on the app (from around 4.3 million players). Initial results from the data have provided novel insights into spatial navigation abilities across different social groups, ages and countries.

crowdmapping

Crowdmapping is a type of crowdsourcing which gathers data from different sources, including social media, text messages or geographic data, to provide real-time, interactive information about issues on the ground. Crowdmapping can create detailed almost real-time data in a way that a top-down, centrally curated, map may struggle to replicate.

STAGE: **B3**
GATHER DATA, INFORMATION, IDEAS

CASE STUDY: **SYRIA TRACKER CRISIS MAP**

Crowdmapping first came to international attention through its successful use in the global disaster relief movement. One example is the Syria Tracker Crisis Map, which has been used to crowdsource citizen reports on human rights violations since the beginning of the Syrian conflict in 2011. The map attempts to provide more detailed metrics on fatalities, while preserving the name, location and details of each victim. The service blends reports from local news with on-the-ground reports, using hashtags on social media or sent via email. Nearly 5,000 submissions, including over 11,000 fatalities, have been reported since the map's launch, with collected data being used by both USAID and the Washington Post to report on local events.

participatory sensing

Participatory sensing is where citizens use lightweight, cheap sensors to collectively monitor the environment around them. It also includes the task of collectively sharing and interpreting streams of citizen-sensed data with other community members, deepening their understanding of the issue, educating participants and empowering them to act.

STAGE: **GATHER DATA, INFORMATION, IDEAS** **B3**

CASE STUDY: **IDEAS FOR CHANGE**

Noise pollution is a problem which affects many people living in inner city Barcelona. A think tank called Ideas for Change worked with local communities to help them install sensors that measure the harmful effects of noise pollution in their neighbourhood. Participants were provided with cheap, open-hardware sensors, and then guided through the process of setting-up the technology and sharing data with one another.

The council organised public meetings in which locals could talk through their findings and propose potential solutions. Some of the solutions that have been implemented include new flower beds that remove areas where people used to sit and drink into the late hours of the evening, and improved community policing.

citizen science

Citizen science is any process where scientists and (usually unpaid) volunteers work together to collect or process scientific data or observations. Citizen science unlocks new resources for research, experimentation and analysis by opening the process to everyone.

STAGE: **GATHER DATA, INFORMATION, IDEAS** **B3**

CASE STUDY: **MOSQUITO ALERT**

The World Health Organisation reports over 500 million cases of mosquito borne illnesses a year, but the global spread of disease is difficult to manage or track in real-time. The Global Mosquito Alert Consortium (GMAC) was established in 2017 as a global network of citizen science projects that follow a common set of four protocols to track breeding sites, bites and sightings of mosquito species known to carry diseases. One such initiative includes Mosquito Alert, a project based in Spain that works with local communities and schools to build capacity for citizen science. It provides an app for volunteers to submit pictures of mosquitos or local breeding sites. These are then validated by a team of experts, and presented on an interactive map. Since 2014, the platform has been downloaded 57,000 times, reporting over 12,000 observations of tiger mosquitoes and 3,117 breeding sites.

petition platform

Petitions are collections of signatures, either online or offline, that aim to raise awareness by mobilising as many people around an issue as possible.

STAGE: **GATHER DATA, INFORMATION, IDEAS**

B3

CASE STUDY: **MEXICO CITY CROWDSOURCED CONSTITUTION**

To solicit ideas for a new city-wide constitution, Mexico City Government partnered with an online petition platform (Change.org) to gather suggestions from citizens. The owner of any petition gaining 10,000 signatures or more was given the chance to present to a 28-person drafting committee, made up of Mexico City residents. By the end of the process the city had collected 280,000 signatures on 357 petitions, on issues including LGBTI rights, river and lake revitalization and universal internet access; many of which went on to inform the final document.

data collaborative

Data collaboratives are a form of collaboration in which partners from different sectors - including private companies, research institutions, and government agencies - enter into an agreement to exchange data for a specific social cause. Data collaboratives aim to unlock new value in private data that would not be exploited otherwise.

STAGE: **GATHER DATA, INFORMATION, IDEAS**

B3

CASE STUDY: **UN GLOBAL PULSE**

In recent years the Mexican state of Tabasco has experienced record-breaking rainfall, yet timely data about how floods are affecting the population in real-time is currently missing. In response, UN Global Pulse brought together a range of novel datasets to generate real-time insights about human behaviour during flooding events. Data sharing and analysis was made possible via a public-private partnership between Telefonica Research and data scientists from the Technical University of Madrid, under guidance from experts at Global Pulse and the World Food Programme. By combining citizen mobile phone data, remote sensing data (satellite images), rainfall data, and census data from citizens, the project was able to use patterns of mobile phone activity to highlight the impacts of flooding on infrastructure and the local population, whilst also helping to target and improve public communications for disaster response.

wikisurveys

Wikisurveys are a type of survey where participants can add statements that others respond to. Participants' statements are added to a pool, and are then randomly presented back for individual participants to respond to or rank. Over time, participants generate new ideas and build a picture of where consensus or disagreement lies.

STAGE: **GATHER DATA, INFORMATION, IDEAS**

B3

CASE STUDY: **ALL OUR IDEAS IN NYC**

In 2011, New York City Mayor's Office of Long-Term Planning and Sustainability ran a Wikisurvey, where top-voted ideas were integrated into the city's PlaNYC 2030 Sustainability Plan. To do this they worked with a platform called All Our Ideas, which uses 'pairwise comparison' as a method of asking crowds to quickly sort and filter one another's proposals. Over four months around 1,400 respondents provided nearly 32,000 votes and 464 new ideas, many of which the council had previously not considered.

solution mapping

Solution mapping is a method that helps organisations and the communities they work with to identify needs, issues and opportunities by looking for solutions developed by people in response to concrete problems they face.

STAGE: **GATHER DATA, INFORMATION, IDEAS**

B3

CASE STUDY: **HONEY BEE NETWORK**

In many regions across the world there is tremendous potential for development through building upon what people already know and their capacity to learn from one another. The Honey Bee Network, based in India, aims to pool local solutions and facilitate communication among farmers, artisans, pastoralists and other grassroots innovators all over the world.

One of the network's methods for gathering solutions involves 'innovation scouting', where university students are asked to survey local villages for local innovations during their summer holidays. The network has built what is now one of the largest databases in the world on farmers' innovations. It is designed to be easy for local communities to use, and provides multiple translations in local languages. A key principle of the platform is that knowledge holders must benefit from the success of their innovations, in both fame and remuneration.

data ethics

This worksheet is for anyone who collects, shares or uses data. It helps identify and manage ethical issues – at the start of a project using data, and throughout. It gives a framework to develop ethical guidance that suits any context.

TIME FRAME
60 - 120 mins

GROUP SIZE
3 - 8 people

MATERIALS
Data Ethics Worksheet and examples, post-its, 1 x pen per person, bluetack

INSTRUCTIONS:

1. Individually, review the Data Ethics Worksheet questions.

2. Start in the top left of the worksheet and work across to the right, row by row. Answer the questions as a group, spending 5 - 10 minutes on each. Capture responses on post-it notes. Stick your answers in the appropriate sections.

3. When you've completed your first draft of the Data Ethics Worksheet review the post-its and write up your final answers to the questions directly. However, if you need some reflection time, review the post-its at a later date or share with others before writing up.

4. Finally transfer the main ethical or regulatory issues identified through using this worksheet to your Collective Intelligence Project Design Canvas in Gather Data, Information and Ideas (stage B).

data ethics

Are there any ethical or regulatory issues with using this data or involving these people?

DATA SOURCES

Describe your project's key data sources, whether you're collecting data yourself or accessing via third parties.Is any personal data involved, or data that is otherwise sensitive?

LIMITATIONS

Are there limitations that could influence your outcomes?

> bias in data collection, analysis, algorithms

> gaps or omissions

> provenance/quality

> other issues affecting decisions?

SHARING DATA

Are you going to be sharing data with other organisations? If so, who? Are you planning to publish any of the data? Under what conditions?

ETHICAL AND LEGISLATIVE CONTEXT

What existing ethical codes apply to your sector or project? What legislation, policies, or other regulation shape how you use data? What requirements do they introduce?

RIGHTS AROUND DATA SOURCES

Where did you get the data from? Is it produced by an organisation or collected directly from individuals? Was the data collected for this project or for another purpose? Do you have permission to use this data, or another basis on which you're allowed to use it? What ongoing rights will the data source have?

YOUR REASON FOR USING DATA

What is your primary purpose for collecting and using data in this project? What are your main use cases? What is your business model? Are you making things better for society? How and for whom? Are you replacing another product or service as a result of this project?

COMMUNICATING YOUR PURPOSE

Do people understand your purpose – especially people who the data is about or who are impacted by its use? How have you been communicating your purpose? Has this communication been clear? How are you ensuring more vulnerable individuals or groups understand?

POSITIVE EFFECTS ON PEOPLE

Which individuals, groups, demographics or organisations will be positively affected by this project? How? How are you measuring and communicating positive impact? How could you increase it?

NEGATIVE EFFECTS ON PEOPLE

Who could be negatively affected by this project? Could the way that data is collected, used or shared cause harm or expose individuals to risk of being re-identified? Could it be used to target, profile or prejudice people, or unfairly restrict access (eg exclusive arrangements)? How are limitations and risks communicated to people? Consider: people who the data is about, people impacted by its use and organisations using the data.

MINIMISING NEGATIVE IMPACT

What steps can you take to minimise harm? How could you reduce any limitations in your data sources? How are you keeping personal and other sensitive information secure? How are you measuring, reporting and acting on potential negative impacts of your project? What benefits will these actions bring to your project?

ENGAGING WITH PEOPLE

How can people engage with you about the project? How can people correct information, appeal or request changes to the product/service? To what extent? Are appeal mechanisms reasonable and well understood?

OPENNESS AND TRANSPARENCY

How open can you be about this project? Could you publish your methodology, metadata, datasets, code or impact measurements? Can you ask peers for feedback on the project? How will you communicate it internally? Will you publish your actions and answers to this canvas openly?

ONGOING IMPLEMENTATION

Are you routinely building in thoughts, ideas and considerations of people affected in your project? How? What information or training might be needed to help people understand data issues? Are systems, processes and resources available for responding to data issues that arise in the long-term?

REVIEWS AND ITERATIONS

How will ongoing data ethics issues be measured, monitored, discussed and actioned? How often will your responses to this canvas be reviewed or updated? When?

YOUR ACTIONS

What actions will you take before moving forward with this project? Which should take priority? Who will be responsible for these actions, and who must be involved? Will you openly publish your actions and answers to this canvas?

REFERENCE:
ODI DATA ETHICS CANVAS

data ethics

Are there any ethical or regulatory issues with using this data or involving these people?

DATA SOURCES	**LIMITATIONS**	**SHARING DATA**	**ETHICAL AND LEGISLATIVE CONTEXT**	**RIGHTS AROUND DATA SOURCES**
YOUR REASON FOR USING DATA	**COMMUNICATING YOUR PURPOSE**	**POSITIVE EFFECTS ON PEOPLE**	**NEGATIVE EFFECTS ON PEOPLE**	**MINIMISING NEGATIVE IMPACT**
ENGAGING WITH PEOPLE	**OPENNESS AND TRANSPARENCY**	**ONGOING IMPLEMENTATION**	**REVIEWS AND ITERATIONS**	**YOUR ACTIONS**

REFERENCE:
ODI DATA ETHICS CANVAS

STAGE:
GATHER DATA, INFORMATION, IDEAS

solutions brief

The Solutions Brief Worksheet helps you to clearly articulate the requirements of the solution(s) you are seeking including how developed they need to be.

TIME FRAME
30 - 90 mins

GROUP SIZE
2 - 10 people

MATERIALS
Blank Solutions Brief Worksheet, pens, bluetack

INSTRUCTIONS:

1. First review the questions. You may need to do some more research before you can answer all of them.

2. Think about the criteria for what a 'good' solution(s) needs to do without prescribing how the solutions should work. Consider things like the context and the user.

   For example: we need a diagnostic test for antibiotic infection. A good solution will be a) low-cost b) for use at the point-of-care c) will give a result in 30 mins or less d) can be used anywhere in the world.

3. Use in conjunction with the solution readiness tool if you need help to consider the maturity of solutions you are looking for.

4. Finally, transfer the main requirements identified through using this worksheet to your Collective Intelligence Project Design Canvas in Gather Data, Information and Ideas (stage B).

solutions brief

What solution(s) are we looking for?

What is the problem we want to solve?

What solutions already exist, and why aren't they working?

What would a 'good' solution look like?

This is where you identify the criteria that are important to you (e.g., it needs to be able to work in a setting with regular electricity outages).

What maturity of innovations do we need?

What are the key barriers to innovation and how can we overcome them?

solutions readiness

When seeking solutions, it can be helpful to consider the readiness level that is required. Do you want something that is already tried and tested, or are you searching for early ideas? The Solution Readiness Level (SRL) guide will help you discuss and clarify where you set your aspirations.

TIME FRAME
30 mins

GROUP SIZE
2 - 10 people

MATERIALS
Solutions Readiness Level (SRL) Guide, Solutions Readiness Worksheet

INSTRUCTIONS:

1. Review the SRLs. They range from early ideas to proven solutions at scale.
2. Review the main different types of solution maturity and consider which is appropriate for you.
3. Select the SRL that most closely matches the level of solution maturity you want to find or create through your collective intelligence project.
4. Transfer the maturity of the solutions required to your Collective Intelligence Project Design Canvas in the Gather Data, Information and Ideas (stage B).

REFERENCE:
NASA TECHNOLOGY READINESS LEVELS

solution readiness

What solution(s) are we looking for?

SRL1 – Research of basic principles for a solution
SRL2 – Early idea or concept formulated
SRL3 – Experimental proof-of concept
SRL4 – Proof of concept validated in a test environment
SRL5 – Prototype validated in a real live environment
SRL6 – Prototype tested in a real life environment
SRL7 – Pilot demonstrated in one or multiple contexts
SRL8 – Minimum viable product, service or process piloted
SRL9 – Proven implementation of product, service or process at scale

REFERENCE:
NASA TECHNOLOGY READINESS LEVELS

solution readiness

What solution(s) are we looking for?

PROOF OF CONCEPT

A proof of concept often involves a small exercise to test the real-world *potential* of an incomplete idea.

This isn't about delivering the idea, but demonstrating whether it is feasible. It should be used in the early stages when you first have an instinct about an idea. A proof of concept shows if a product, feature or system can be developed, whilst a prototype shows *how* it will be developed. For example, a proof of concept might be used to test a technical feature of an online service by quickly building a working model.

SRL: 2 - 4

TIMESCALE: MINUTES < DAYS

PROTOTYPE

A prototype is the visible, tangible or functional manifestation of an idea, which you test with others and learn from at an early stage of the development process.

Prototypes should be used when you have a hypothesis about a solution, but there is still uncertainty about how it looks, feels and works. Insights from testing can then be used to improve the idea. Prototypes are also a way to engage your stakeholders to develop a shared vision or common ground for a solution.

SRL:: 5 - 6

TIMESCALE: HOURS < WEEKS

PILOTS

Pilots are often used as the first stage of a new innovation. They are a 'live' activity, usually with a small group of real users or citizens.

Pilots should be used when you believe you have an effective solution and are looking to understand how it works in reality. By offering a partially implemented concept to a limited population, it is possible to see what actually happens. This is useful when preparing to scale a solution to a wider group. Pilots, are ultimately measured by success or failure, and so there is usually only room to make minor tweaks.

SRL: 7

TIMESCALE: WEEKS < MONTHS

MINIMUM VIABLE PRODUCT (MVP)

An MVP allows you to accelerate your learning about a possible solution whilst using minimal resources. It does this by testing only the essential core of your concept (rather than the full solution) with real users in practice.

This means that you can find out early on if there is an actual need or demand for the solution, what is working and what isn't, and make any adjustments accordingly. MVPs are about using fewer resources and minimal effort to gather insights and obtain feedback on potential changes.

SRL: 8 - 9

TIMESCALE: CONTINUOUS

REFERENCE:
NESTA

mapping solutions

This tool helps you to start thinking about where to find existing solutions that relate to your challenge.

TIME FRAME
5 - 30 mins

GROUP SIZE
2 - 10 people

MATERIALS
Mapping Solutions Worksheet, Gather Data, Information and Ideas Methods Cards (B3).

INSTRUCTIONS:

1. Review the the questions and consider where to find existing solutions that relate to your challenge.
2. Identify and write down websites or databases and associated keywords that you would use to conduct an online search.
3. Then consider other contexts or stakeholders that might be relevant and how you might best engage with them.
4. Finally transfer the main requirements identified through using this worksheet to your Collective Intelligence Project Design Canvas in Gather Data, Information and Ideas (stage B).

REFERENCE:
NESTA STATES OF CHANGE, SOLUTIONS MAPPING TOOL

mapping solutions

Where might solutions already exist?

ONLINE SEARCH

If you wanted to identify existing solutions, what websites would you go to and what keywords or phrases would you use in your search?

KEYWORD

KEYWORD

KEYWORD

KEYWORD

KEYWORD

WEBSITE

HTTP://

WEBSITE

HTTP://

WEBSITE

HTTP://

KEYWORD

KEYWORD

KEYWORD

KEYWORD

KEYWORD

OTHER AREAS/CONTEXTS

In what other industries, areas, contexts or regions might people have already developed solutions?

REFERENCE:
NESTA STATES OF CHANGE, SOLUTIONS MAPPING TOOL

STAGE:
GATHER DATA, INFORMATION, IDEAS

finding solutions

This is a matrix to help you explore different methods for seeking solutions, according to the type of solution needed and the audience you want to engage.

TIME FRAME
5 - 30 mins

GROUP SIZE
2 - 10 people

MATERIALS
Finding Solutions Worksheet, Gather Data, Information and Ideas Methods Cards (B3).

INSTRUCTIONS:

1. Explore different parts of the matrix, and mark a cross where your project could go.

2. Each of the methods here corresponds to one of the Gather Data, Information and Ideas Methods Cards (B3) or the Connect Methods Cards (D1) in the playbook. They are there to guide you towards case studies or approaches that might be helpful, but they are not definitive or exhaustive.

3. Explore other prompt cards with the Seek Solutions icon (e.g. Crowdsourcing, Collaborative Platform, etc.). These are broad enough to be placed anywhere on the diagram, depending on the topic or task at hand.

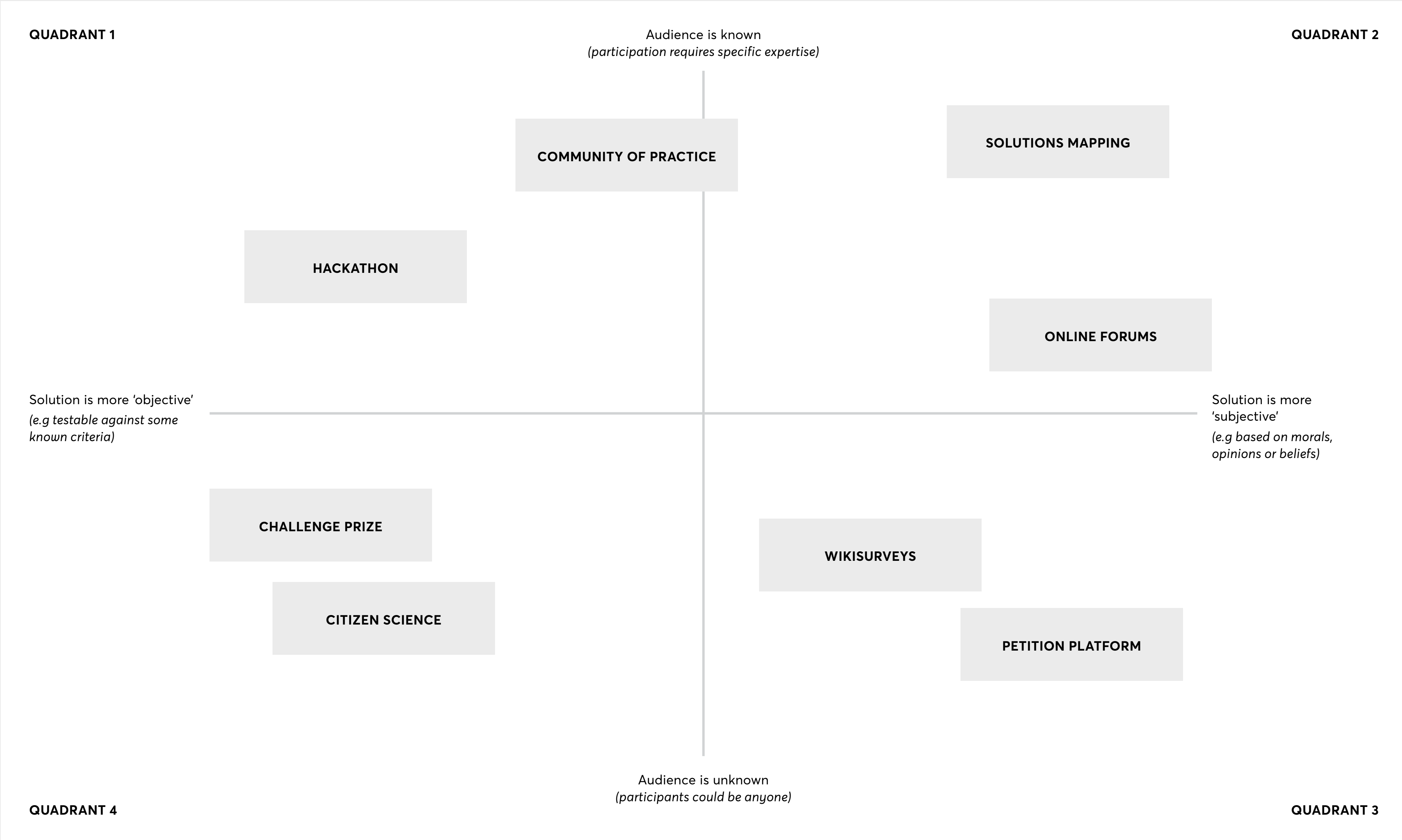
4. After discussing the different methods or approaches you might use, try to work through the questions from the corresponding quadrants of the diagram. Each of the questions raised here is revisited in more detail with specific activities and tools at later stages in the playbook.

5. Finally transfer the main methods identified through using this worksheet to your Collective Intelligence Project Design Canvas in Gather Data, Information and Ideas (stage B).

REFERENCE:
INSPIRED BY BRABHAM'S CROWDSOURCING DECISION TREE

finding solutions

What methods will we use to find those solutions?



REFERENCE:
INSPIRED BY BRABHAM'S CROWDSOURCING DECISION TREE

finding solutions

What methods will we use to find those solutions?

QUADRANT 1

Audience is known
(participation requires specific expertise)

QUADRANT 2

IF IN QUADRANT 1 OR 2:
Who are the specific stakeholders or experts you need?

What channels or tactics will you use to gain access to them?

How will you ensure a wide diversity of different perspectives and evidence?

(Also see the Personas Worksheet and Unique Perspectives Worksheet).

IF IN QUADRANT 1 OR 4:
What are the criteria for a 'good' solution?

How can you break these down into simple guidelines and communicate them to participants clearly?

(Also see the Solutions Brief Guide).

IF IN QUADRANT 2 OR 3:
Moving towards the right of the diagram could lead to potentially intense deliberation, higher chance of conflict, capture or gaming.

How will you deal with competing perspectives or moral values?

(Also see the Crowd Facilitation Guide and ORID Framework Guide).

Solution is more 'objective'
(e.g testable against some known criteria)

Solution is more 'subjective'
(e.g based on morals, opinions or beliefs)

IF IN QUADRANT 3 OR 4:
How will you motivate people to participate?

"What's the call to action?"

"How will you ensure you gather perspectives from the widest variety of people possible?"

(Also see the Engagement Plan Worksheet and the Challenge Call to Action Worksheet).

Audience is unknown
(participants could be anyone)

QUADRANT 4

QUADRANT 3

REFERENCE:
INSPIRED BY BRABHAM'S CROWDSOURCING DECISION TREE

C

STAGE:
MOBILISE PEOPLE

Who do we need to involve, and how can we engage them?

Collective intelligence design can help you tap into distributed experience and expertise to answer your questions. For this to happen, the goal needs to be clear, 'the crowd' needs to be carefully defined and targeted, and the motivations and incentives of those participating need to be considered.

pointers for reflection and discussion:

- Research shows crowd intelligence is enhanced by diversity. Whether you're interested in engaging specific groups or sectors in society, or 'the public' more broadly, it's important to consider how you will include people with diverse opinions and backgrounds, underrepresented groups and unusual suspects.

- Involving citizens or a wider group of stakeholders affected by the issue can help to legitimise the outcome of your collective intelligence project. It can also decrease the likelihood of disparate impact and seed behavioural change which might be fundamental to achieving the intended purpose.

- Some crowds are driven purely by curiosity or to make social connections. An individual's motivations might also change over the course of a project, which impacts participation. Getting this right requires clarity on who your crowd is, and deciding a range of tactics to incentivise them (e.g. monetary rewards or gamification). See the Incentives and Retention Worksheet for more on this.

- Sometimes crowds will be specific groups (e.g. particular experts, or affected populations), other times it will be open to anyone. Nonetheless it's important to have a clear understanding of who your audience is, as this will have an important impact on the methods and tools you choose to engage them.

- It can be difficult to motivate and coordinate distributed crowds. Therefore the goals needs to be clear. Can you condense what you want the crowd to do into a series of simple tasks or statements? Use the Engagement Plan Worksheet to decide how you'll communicate with participants.

- It's also important to consider the need to retain crowds over time. Some projects are designed with a lot of redundancy to ensure that high drop-out rates do not affect the success. Other types of collective intelligence rely on dedicated volunteers or participants over longer periods of time, meaning it's crucial to build and maintain trust. This can take place through active facilitation, feedback and Crowd Facilitation (we return to some of these in following stages).

- Individual level feedback helps participants to develop their skills, which can in turn benefit the project as participants build expertise.

- Regardless of who is involved, what you're asking people to do should be commensurate with their skills and experience. Try to acknowledge the value of different sources of expertise without prioritizing one over the other.

unique perspectives

It's easy to get stuck consulting the same narrow group of experts or the professional representatives of particular groups. This worksheet will help you look beyond the usual suspects and consider who could bring new insights, ideas or perspectives.

TIME FRAME
30 - 45 mins

GROUP SIZE
3 - 8 people

MATERIALS
Unique Perspectives Worksheet, post-its, 1 x pen per person, bluetack

INSTRUCTIONS:

1. Quickly review the tool questions.

2. Answer each question by capturing responses on post-it notes. Stick your answers in the appropriate sections. Make sure you think about people and communities who might be affected by the issue.

3. Use in conjunction with the People Cards (C2) for inspiration if you are struggling.

4. Once you have finished mapping all of the people you could potentially involve, it is important to focus on a smaller number of key groups that are a) likely to be most relevant to your issue b) feasible to involve in the timeframe for the project. Highlight those on the worksheet.

5. When you've completed your first draft of the Exploring Unique Perspectives Worksheet review the post-its and write up your final answers to the questions directly on the tool. However, if you need some reflection time, review the post-its at a later date or share with others before writing up.

6. Add the prioritised people/groups to the Collective Intelligence Project Design Canvas.

unique perspectives

Who do we need to involve? Who could help us?

Who are we already talking to?	Who else has relevant information or ideas?	Who else *could* have relevant information or ideas?

people cards

These People Cards are to be used as prompts for discussion in conjunction with the collective intelligence project design canvas and associated activities. They highlight common groups of people, and are not intended to be exhaustive. The People Cards are one of six 'decks', structured according to different stages of the playbook.

TIME FRAME
30 mins

GROUP SIZE
4 - 8 people

INSTRUCTIONS:

1. Explore these People Cards with your group or workshop participants at any point to guide conversations.

2. There are also specific activities elsewhere in this playbook where you are encouraged to use these cards to help answer particular design questions.

3. Consider which people are most relevant to you and your challenge.

nesta collective intelligence design playbook

DECK: **PEOPLE CARDS** POLICY MAKERS

policy makers

Government and regulators

STAGE:
MOBILISE PEOPLE **C2**

nesta collective intelligence design playbook

DECK: **PEOPLE CARDS** CITIZENS

citizens

Members of the public

STAGE:
MOBILISE PEOPLE **C2**

entrepreneurs

Individuals or small and medium sized enterprises

STAGE:
MOBILISE PEOPLE
C2

experts

Academics or experienced practitioners

STAGE:
MOBILISE PEOPLE
C2

central government officials

Civil servants and officials

STAGE:
MOBILISE PEOPLE
C2

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collective intelligence design playbook

corporate partners

For-profit organisations

STAGE:
MOBILISE PEOPLE
C2

non government organisations

Charities and not-for-profit organisations

STAGE:
MOBILISE PEOPLE

C2

local government officials

Councillors and administrators

STAGE:
MOBILISE PEOPLE

C2

local community

People within the neighbourhood

STAGE:
MOBILISE PEOPLE
C2

volunteers

Everyday people who want to help

STAGE:
MOBILISE PEOPLE
C2

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DECK: **PEOPLE CARDS** INVESTORS

investors

Funders or shareholders

STAGE:
MOBILISE PEOPLE

C2

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DECK: **PEOPLE CARDS** MEDIA AND PRESS

media and press

Journalists and influencers

STAGE:
MOBILISE PEOPLE

C2

employees

People who work directly with or for you

STAGE:
MOBILISE PEOPLE

C2

customers

People who might want a product or service

STAGE:
MOBILISE PEOPLE

C2

professionals

Doctors, nurses, lawyers, teachers, police, armed forces etc.

STAGE:
MOBILISE PEOPLE

C2

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suppliers

People who provide a product or a service

STAGE:
MOBILISE PEOPLE

C2

retired people

Older people who may have retired

STAGE:
MOBILISE PEOPLE

C2

young people

Children or teenagers

STAGE:
MOBILISE PEOPLE

C2

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DECK: **PEOPLE CARDS** OTHER

other?

Who else might be particularly relevant or interesting?

STAGE: **MOBILISE PEOPLE** C2

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DECK: **PEOPLE CARDS** BROKERS

brokers

Lawyers, bankers, consultants, intermediaries, agents, etc

STAGE: **MOBILISE PEOPLE** C2

engagement plan

The Engagement Plan outlines the key steps to consider when thinking about the people you want to engage and how you will reach and incentivise them.

TIME FRAME
60 mins

GROUP SIZE
3 - 8 people

MATERIALS
Engagement Plan Worksheet, 1-2 markers, post-its

INSTRUCTIONS:

1. Quickly review the Engagement Plan Worksheet questions.
2. You may want to complete the Personas Worksheet (C4) before embarking on this activity, so that you have a good understanding of your audience.
3. Answer each question in order, starting with objectives, capturing responses on post-it notes. Stick your answers in the appropriate sections.
4. Use this worksheet in conjunction with the Incentives and Retention Worksheet (C5), to develop ideas in this worksheet.
5. When you've completed your first draft, review the post-its and write up your final answers to the questions directly on the sheet. However, if you need some reflection time, review the post-its at a later date or share with others before writing up.
6. Add key decisions to the Collective Intelligence Project Design Canvas.

engagement plan

How will you reach people and incentivise them to get involved?

nesta
collective intelligence design playbook

1. OBJECTIVES
What are you trying to achieve and what do you want people to do?

2. AUDIENCES
Who do you want to engage?

4. INCENTIVES
What's in it for them?
Why should they engage?

3. KEY MESSAGES
What are the main points you want your audience to hear and remember? What is the call to action?

5. CHANNELS
How are you going to communicate with your audience?
e.g. face-to-face, SMS, email, focus groups.

6. WHEN
Where and when will the engagement happen? And over what period? Is it one-off or regular?

personas

A Persona is a informal summary of a person or key audience outlining key characteristics such as needs, frustrations and goals. These can be completed prior to meeting stakeholders or after, or both.

TIME FRAME
30 - 60 mins

GROUP SIZE
3 - 8 people

MATERIALS
Persona Worksheet, 1 pen per person

INSTRUCTIONS:

1. Quickly decide who is going to write up which Persona using the Stakeholder Map Worksheet (A3) as a starting point then quickly review all of the Persona questions.

2. Working individually or in pairs, answer each question, starting on the left hand side of the Persona. It may be you already have a clear picture of who this person is based on personal experience, so complete your answers based on them. It's also okay to complete the Persona based on an amalgamation of people you know (or best guess) to develop a persona type. Also draw a little sketch of the person, to help bring them to life.

3. On the right hand side of the Persona, the questions are more specific to them and your organisation. Complete each question adding as much detail as possible.
4. When you are unsure of the answer to a question, speak to another team member to see if they can help.

5. Personas are a work-in-progress so update them when you learn more about the person or the key audience.

6. Once the group has completed its Personas, each person takes 2-3 minutes to introduce each one to the wider group. Pay attention to duplication as there could be cross-over between Personas and you may decide to remove one.

personas

How will we reach our key audience and what will motivate them to be involved?

MEET...

Name:

Age:

Where they live:

THEM, YOUR ORGANISATION AND ITS SERVICES

What might they already think about your organisation?

What barriers or challenges might prevent them from engaging with you?

What moments in their life create the best opportunities for you to engage them?

What else is important to know about this person?

SOME OTHER USEFUL THINGS TO KNOW

People that know them might describe them as...

What they enjoy doing includes…

Things that frustrate them include…

Their preferred way of engaging (tick all that apply)

- [ ] PHONE
- [ ] WEBSITE
- [ ] EMAIL
- [ ] TEXT
- [ ] PRINT
- [ ] FACE-TO-FACE
- [ ] AT HOME
- [ ] PROVIDERS PREMISES

incentives and retention

This tool helps you to consider different ways to incentivise your contributors to engage and retain them more effectively.

TIME FRAME
30 - 60 mins

GROUP SIZE
3 - 8 people

MATERIALS
Incentives & Retention Guide, Incentives & Retention Worksheet, 2 - 4 markers, bluetack

INSTRUCTIONS:

1. As a group, reflect on who you want to contribute to your project (you may have used the Unique Perspectives Worksheet (C1) to identify who you most want to involve). Review the Incentives and Retention guide to help identify the different approaches you could use.

2. Capture thoughts on the most important incentives for engaging and retaining your desired contributors on post-its. If in smaller teams then share as a larger group.

3. After you have explored different options, it is important to focus on those that you think will be most significant for your contributors. Highlight the 1-3 you are prioritising on your worksheet.

4. When you've completed this worksheet, add the key incentives you'll use to the Collective Intelligence Project Design Canvas.

incentives and retention

What might motivate and incentivise people to be involved?

ENGAGE

RETAIN

FINANCIAL REWARD

Winner takes all prize
People are motivated to contribute by the opportunity to gain income for themselves or their team.
Eg. Challenge Prize

COMPENSATION

Task compensation
Individuals are motivated by the guarantee of cash or other rewards (such as vouchers) for completion of a task.
Eg. Amazon Mechanical Turk

REPUTATION

Gaining recognition
Individuals are motivated by the thought of having their knowledge and expertise recognized by their peers.
E.g. Crowdsourcing platforms

FEEDBACK

Good feedback is immediate, interpretable and identifies the usefulness of contributions made by participants. This can help them develop their skills.

COMMUNICATION

Good communication is up to date, accessible in the participants' own time, two way, and doesn't bombard people.

PURPOSE

Greater purpose
People are motivated by the prospect of helping to move an idea or area of research forward in ways they couldn't alone.

PASSION

Fulfilment of passion
People are motivated to work on areas of interest which align with their passion or values.

SATISFACTION

Satisfaction
Individuals are motivated by the prospect of being able to do something well, commensurate with their skills.

GUIDANCE

Good guidance ensures that contributors understand where and how they are best able to contribute. This can include FAQs or clear instructions.

BENEFITS TO CONTRIBUTOR

Make explicit and prioritise what the benefits are for contributors, not only the project and the stakeholders/beneficiaries.

LEARNING

Personal development
People are motivated by the idea of improving themselves; developing a new skill or gaining new knowledge.

SOCIAL CONNECTIONS

Growing a community
Individuals are motivated by the opportunity to build or expand their connections with likeminded people.
E.g. Peer to peer communities

OTHER

???
What else might incentivise and motivate people to participate?

ORGANISATION

Demonstrating high levels of organisation will give your contributors confidence in the process and in the commitment they are making.

INTEREST IN PARTICIPANTS

Demonstrating genuine interest in your contributors and the value they provide will reassure them they are not being used or wasting their time.

incentives and retention

What might motivate and incentivise people to be involved?

ENGAGE		RETAIN	
APPROACH Select an approach from the list provided.	**WHY AND HOW** Why is this the most suitable approach for your audience? How do you plan to carry it out, and what steps you will take?	**APPROACH** Select an approach from the list provided.	**WHY AND HOW** Expand on why this is the most suitable approach for your audience, and how you plan to carry it out.

challenge call to action

Once you've identified challenge areas that you are seeking solutions for, reframe it into a call to action. Use the structured format to communicate your challenge clearly and in a way that motivates people to participate.

TIME FRAME
30 - 60 mins

GROUP SIZE
2 - 10 people

MATERIALS
None

INSTRUCTIONS:

1. Refer back to your completed Solutions Brief Worksheet (B5). Try turning this into a compelling call to action for potential innovators.

2. Now take a look at your challenge question checklist and ask yourself if your questions address all of the criteria. If they don't, then refine and update the question.

3. Finally go and test your challenge questions with relevant people or partners to check they make sense.

challenge call to action

What do we want people to do?

VERSION 1: COULD YOU...

______________________________ ?

VERSION 2: COULD YOU...

______________________________ ?

VERSION 3: COULD YOU...

______________________________ ?

CHALLENGE QUESTION STRUCTURE:

COULD YOU...	CREATE / DEVELOP / FIND	(CHALLENGE)	FOR	(AUDIENCE)	WHO WANT TO	(GOAL) ?

e.g. Could you (develop) (an easy-to-use point-of-care diagnostic test) for (health professionals) who want to (administer the right antibiotics at the right time)?

e.g. Could you (create)(tools to source, analyse or translate data into actionable information) for (smallholder farmers) who want to (improve agricultural productivity)?

CHALLENGE QUESTION CRITERIA:

☐ OPEN ☐ INTERESTING ☐ ANSWERABLE ☐ UNDERSTANDABLE ☐ MEMORABLE ☐ SPECIFIC

REFERENCE:
INSPIRED BY HOW MIGHT WE QUESTIONS ON DESIGNKIT.ORG

D

STAGE:
CONNECT &
INTERPRET

How can we connect people and data, and make sense of the results?

This stage will help you to understand how you can combine different sets of data to arrive at new insights, what role the crowd should play within this, and how to facilitate collaboration between a diverse group of people. Some projects use the power of the crowd to do the work of connecting or cleaning data. For others, the value is in how members of the crowd interact with one another by sharing opinions or ideas, or by upvoting and filtering different options. Data and crowdsourced information can be messy, or swathes of unstructured text. In order to make data useful and actionable, collective intelligence projects must find ways to easily interpret data. This can be for the benefit of the community or for the project leader to make sense of the results.

pointers for reflection and discussion:

- There are a range of methods for connecting or bringing together different data or insights for collective intelligence projects. These can be categorised under three broad headings: 'connecting data with data' (e.g. matching datasets, or establishing data collaboratives or warehouses); 'connecting data with people' (e.g. crowds categorising, cleaning, sorting or tagging unstructured information, photos or PDFs) or connecting 'people with people' (e.g. deliberation, peer-ranking or upvoting).

- Data-heavy projects will rely more on quantitative tools for exploring and analysing data. There are both open source and proprietary software packages to help with processing and visualizing data. Other projects may need to involve much more active community participation, bringing people together in making sense of information.

- Interpreting data is sometimes non-contentious - it's about understanding facts, or joining the dots to spot obvious correlations or trends (e.g. rising infant mortality or the number of wildfires in a region). On other occasions the data will be much more subjective - it'll require interpretation and evaluation by many different stakeholders, or perhaps even assessment by an independent group (as is the case for some challenge prizes).

- When interpreting data it's always crucial to reflect on bias - especially when working with predictive models that are only ever as good as the dataset they are trained on. This also applies to offline groups, which can be susceptible to groupthink or confirmation bias. For some simple tactics see the Overcoming Biases Guide.

- For projects involving management of crowds, facilitation or moderation of both online and offline discussions can encourage more meaningful contributions. Providing feedback on what kinds of comments are most useful, and posing framing questions that redirect conversations or encourage elaboration help participants to focus on the topic at hand. The Crowd Facilitation Guide and ORID Framework Guide will help you to facilitate more productive online or offline conversations.

- A particular challenge when inviting ideas, suggestions or free-text contributions from large crowds is how to make sense of large volumes of unstructured text. One solution can be to use tools that constrain what people are able to do on the platform, so the results are easier to analyse and display (see the Visualizing Citizen-Generated Data Guide). Artificial intelligence methods can also help to sort unstructured information into clusters to reveal underlying patterns.

connect
method cards

These People Cards are to be used as prompts for discussion in conjunction with the collective intelligence project design canvas and associated activities. They highlight common groups of people, and are not intended to be exhaustive. The People Cards are one of six 'decks', structured according to different stages of the playbook.

TIME FRAME
30 mins

GROUP SIZE
4 - 8 people

INSTRUCTIONS:

1. Explore these People Cards with your group or workshop participants at any point to guide conversations.

2. There are also specific activities elsewhere in this playbook where you are encouraged to use these cards to help answer particular design questions.

3. Consider which people are most relevant to you and your challenge.

nesta collective intelligence design playbook

data collaborative

Data collaboratives are a form of collaboration in which partners from different sectors - including private companies, research institutions, and government agencies - enter into an agreement to exchange data for a specific social cause. The aim of data collaboratives is to unlock new value in private data that would otherwise not be exploited.

STAGE:
CONNECT & INTERPRET

D1

DECK: **CONNECT METHOD CARDS**

DATA COLLABORATIVE

CASE STUDY: **UN GLOBAL PULSE**

In recent years the Mexican state of Tabasco has experienced record-breaking rainfall, yet timely data about how floods are affecting the population in real-time is currently missing. In response, UN Global Pulse brought together a range of novel datasets to generate real-time insights about human behaviour during flooding events. Data sharing and analysis was made possible via a public-private partnership between Telefonica Research and data scientists from the Technical University of Madrid, under guidance from experts at Global Pulse and the World Food Programme. By combining citizen mobile phone data, remote sensing data (satellite images), rainfall data, and census data from citizens, the project was able to use patterns of mobile phone activity to highlight the impacts of flooding on infrastructure and the local population, whilst also helping to identify where to target and improve public communications for disaster response.

nesta collective intelligence design playbook

deliberation

Deliberation is a method of weighing up different options through dialogue. It can typically be used for engaging members of the public or participants in considering trade-offs, and in establishing greater understanding of one another's views to arrive at more consensus-driven and informed set of solutions or recommendations.

STAGE:
CONNECT & INTERPRET

D1

DECK: **CONNECT METHOD CARDS**

DELIBERATION

CASE STUDY: **ESTONIAN PEOPLE'S ASSEMBLY**

In 2012 the ruling Reform Party in Estonia was beset by a scandal related to anonymous donations, which sparked a national engagement exercise. The five-stage process began with crowdsourcing of over 2,000 proposals on an online platform, on topics from reducing barriers to creation of political parties, to improving party conduct. The process then culminated in a face-to-face deliberation between randomly selected citizens. Over several days, the group was tasked with sorting through the online proposals, and making practical recommendations to the Parliament. Fifteen proposals were submitted, leading to three new items of legislation and another four proposals being partially adopted.

project wikis

A project wiki is a collaborative web page which anyone can access, change or edit. Project wikis are structured to enable multiple people to collaborate, share knowledge and improve on one another's work all in one place.

CASE STUDY: **PUBLIC LAB**

Public lab is an open community for citizen scientists, whose aim is to empower communities facing environmental justice issues to own the data and advocate for the change they want to see. Public Lab use project wikis to collect information, documentation and instructions on citizen science projects. These range from guides on how to build your own spectrometer to introductions to near-infrared photography. Due to their open nature, the community is able to iterate and improve on project wikis over time or as new information becomes available. Some of the most active pages have been edited and updated by the community over 700 times.

collaborative platform

A collaborative platform enables a loosely defined group of participants to come together to create a product or service, which is typically then made available to contributors or non-contributors alike. It draws on principles of open collaboration and open source software development, whereby openness and transparency in product development improve participation, trust and collective memory.

CASE STUDY: **WIKIFACTORY**

Wikifactory is an open platform that allows product designers and creators to collaboratively solve problems using digital fabrication technologies. It responds to a problem among product designers where sharing PDFs and different file types over email, or via a shared drive, hinders effective collaboration. The platform provides something similar to Github for product designers, including version-control, an issue and documentation tracker to crowdsource ideas or solutions, a permission system and community tools to aid collaboration. By opening up the process of product design, Wikifactory also makes it possible to invite collaboration on designs from creators all over the world, who may copy, use or replicate the designs. Many projects currently on the site aim to provide cheap solutions for solving social problems using digital fabrication, from small wind turbines to water filtration systems for clean water. So far over 3,000 product developers from around the world have signed up to the platform.

community of practice

A community of practice is a group who share a concern and learn by interacting with one another regularly. In pursuing their practice area, participants help each other, and build up a repertoire of shared resources (experiences, tools and solutions) while working together.

CASE STUDY: **STATES OF CHANGE**

States of Change is a global community of practice whose aim is to build the culture and capability of governments to deal with the problems they face, and strengthen shared knowledge about public innovation. States of Change runs learning workshops and collaborative R&D projects with governments around the world to explore and test what works. Since its creation States of Change has worked directly with over 150 public servants, including from national and regional governments in the UK, Australia, Canada and Latin America. An evaluation of the programme highlighted how its focus on in-practice learning helped participants gain greater confidence in applying and spreading innovation.

open source repository

An open source repository is a digital repository where content (e.g. code, text or other learning resources) can be stored and freely downloaded with few restrictions on use. Many open source repositories help aid collaboration by providing a space for uploading documentation, monitoring and version control.

CASE STUDY: **GITHUB**

Software projects can be complex and often require contributions among a wide variety of developers and teams. Github is a platform for enabling collaborative, non-linear working with open source files. The platform is built on top of the 'Git' distributed version control system whereby every user contributing to a project holds a version of the project's content (a 'repository') which they can edit, add to and test. When they are satisfied with their edits they can 'commit' them, and the system exchanges sets of changes, synchronising everyone's latest work.

GitHub hosts these repositories and adds a user interface and tools that help with coordinating work. The platform makes detailed statistics of users' work open to inspection by default. Github reports having over 30 millions users and 100 million repositories, making it the largest host of source code in the world.

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collective intelligence design playbook

participatory monitoring

Participatory monitoring is the regular collection of measurements undertaken by local residents or members of a community. The aim is to provide high-quality information and raise awareness about local issues.

STAGE:
CONNECT & INTERPRET

D1

DECK: **CONNECT METHOD CARDS**

PARTICIPATORY MONITORING

CASE STUDY: **SEEDS FOR NEEDS**

As the climate changes and becomes more difficult to manage, farmers around the world need to be able to adapt, including access to a wide range of crop seeds. Through the Seeds for Needs initiative, farmers test and evaluate different varieties of seeds in their own farm's conditions, using an online platform. Scientists then link farmers' feedback with agro-climatic and soil data, and feed information back to farmers about which varieties are best adapted to local climates. As a result of participatory monitoring trials, in 2017 the Ethiopian government approved two new wheat varieties for distribution as officially approved seeds. The project now involves around 45,000 farmers around the world.

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collective intelligence design playbook

data warehouse

A data warehouse is a central database optimised to analyse information coming from a range of different sources. Data is cleaned, organised and structured in advance, acting as a single source for querying and enabling faster decisions.

STAGE:
CONNECT & INTERPRET

D1

DECK: **CONNECT METHOD CARDS**

DATA WAREHOUSE

CASE STUDY: **THE NEW YORK CITY FIRE DEPARTMENT**

The New York City Fire Department (FDNY) uses a Risk-Based Inspection System in order to better understand buildings that are most vulnerable to fire across the city. Collecting data from building inspections was previously done by paper, making it prone to delays and difficult to share information across the city's various fire companies, battalions and divisions. Therefore the department has built a data warehouse that all internal partners can access. This has helped to streamline the FDNY's entire inspection workflow, allowing statistics from the inspections to be gathered in one place, and improving measurement against internal goals.

what works centres

What Works Centres aim to ensure that public spending and practice is informed by the best available evidence. Centres operate in their own distinct way, but all aim to generate evidence and translate it into relevant and actionable guidance.

STAGE:
CONNECT & INTERPRET

D1

CASE STUDY: **THE EDUCATION ENDOWMENT FOUNDATION (EEF)**

The EEF is an independent charity dedicated to breaking the link between family income and educational achievement, by gathering research evidence and making it actionable to teachers and practitioners across the UK. EEF's Teaching Learning Toolkit is an accessible and interactive web tool that summarizes research evidence for teachers and schools on how to improve the attainment of disadvantaged people, according to cost, evidence and impact. More than half of secondary school leaders in the UK now say they use this resource.

online forums

Online forums are platforms that allow people to share ideas and resources, to deliberate on key issues or simply to talk to one another. They may be used by policymakers to generate discussion or suggestions on a bill or document, or they may be set up by projects or companies trying to build and sustain a community. Most successful forums involve active and ongoing moderation.

STAGE:
CONNECT & INTERPRET

D1

CASE STUDY: **SMARTPARTICIPATION**

SmartParticipation is an open source e-participation platform designed to offer an adaptable online forum environment for informed discussion and ideation. The design was informed by experiments run by researchers at the University of Cornell in partnership with several government agencies in the US. The platform itself provides easy content authoring, targeted commenting and options for moderating discussions.

One of the many experiments run on the platform was a 2011 consultation on Airline Passenger Rights in partnership with the Department of Transportation (DOT). More than 19,000 visitors posted over 900 comments on a proposal that would give airline passengers increased protections. After the comments were summarised and sent to the department, DOT announced that they played an important part in shaping the final rules.

peer-to-peer exchange

Peer-to-peer exchange refers to the process of sharing information horizontally to build and maintain a community, to collect data, connect people or send alerts about an event or emergency. Platforms for this vary, ranging from messaging platforms to online forums. Some rely on the internet but others do not (e.g. SMS or mesh networks).

STAGE: **CONNECT & INTERPRET**

D1

CASE STUDY: **WEFARM**

Wefarm is a free peer-to-peer service that enables small-scale farmers in Kenya, Uganda, and Tanzania to share information via SMS, without the internet and without having to leave their farm. Wefarm's network allows small-scale farmers to ask each other questions on anything related to agriculture and then receive crowdsourced bespoke content and ideas from other farmers around the world within minutes. The questions can be asked in any language and messaging is free of charge.

Knowledge shared on Wefarm can help farmers produce higher quality products, increase yields, gain insight into pricing, tackle the effects of climate change, diversify agricultural interests, and source the best seeds, fertilisers, and loans.

study circle

Study circles are groups that meet regularly with an aim to develop collective social expertise, and to brainstorm solutions or ideas. They try to incorporate diverse perspectives and encourage people to respectfully consider the views and values of other members within a community.

STAGE: **CONNECT & INTERPRET**

D1

CASE STUDY: **RESILIENCE DIALOGUES**

The Resilience Dialogues were a set of facilitated discussions in the US designed to help communities create climate action plans. The service uses an online platform, developed by the Massachussetts' Institute for Technlogy's Climate CoLab. Ideas from communities are matched with expert knowhow, and online discussions are used to clarify local risks and opportunities, share strategies that have worked in other communities, and build shared commitment to future plans and actions.

Local knowledge, combined with prompts from experts about the resources needed for various ideas and the likely outcome of particular proposals lead to much more robust proposals than either of these groups could have produced in isolation. Communities leave the dialogues with more confidence, as well as a range of new resources and a strategy for implementing resilience efforts in their local context.

hackathon

A hackathon is a challenge-based event where the organiser defines a problem or challenge, and participants compete to create a solution. Sometimes this involves a reward. Hackathons bring people together to help surface new ideas or solve a problem quicker.

CASE STUDY: **TAIWAN PRESIDENTIAL HACKATHON**

In 2018, the Taiwanese government launched the Taiwan Presidential Hackathon to demonstrate its commitment to open source and open data, and to accelerate solutions that address the needs of the country by inviting social innovators to propose project ideas using data and technology.

The government provided participating teams with open government datasets, as well as some 'protected' data that can be made accessible upon request. Submissions were judged based on criteria: innovation, social influence and feasibility. In 2019 ten finalists were selected from over 100 submissions, with solutions ranging from predictive monitoring of water leakages to a platform for improved knowledge sharing among caregivers. The government has now introduced an international track that invites submissions from all over the world.

overcoming biases

The saying 'two heads are better than one' alludes to the many potential benefits of group decision-making. But cognitive and social biases can also undermine the effectiveness of group decision-making. The short guide and world cafe exercise are intended to help your group become more aware of some of these potential pitfalls and to think about proactive tactics to mitigate against them.

TIME FRAME
40 - 90 mins

GROUP SIZE
10 - 40 people

MATERIALS
Flipcharts, pens, post-its

INSTRUCTIONS:

1. Before running your first session, read through the overcoming biases guide.
2. Split your group into smaller groups, each with its own flip chart.
3. Write on each flip chart one of the biases from the guide, or any others you want the group to cover.
4. Give the group 5-10 minutes at each one, ask them to make comments around what this bias looks or feels like from their own experiences. Then add any strategies to avoid it.
5. After 5-10 minutes ask them to move around clockwise to the next one and add to it. Repeat this until everyone has contributed to each bias.
6. Ask them to go back to their original flip chart and give them a few minutes to summarise their bias before taking turns to present back to the wider group.
7. Remember to introduce 'bias reflection moments' lasting 10-15 minutes at key decision-points in any group decision-making process.

overcoming biases

How will we enable everyone to contribute independently and freely?

POTENTIAL BIAS		TACTICS TO OVERCOME BIAS
Conformity Bias	When people suppress opinions or dissent to go along with group consensus. Also known as group think.	• Allocate someone in the group to play devil's advocate • Gain everyone's personal perspective first (e.g. through a silent brainstorm)
Confirmation Bias	Interpreting all new evidence as confirmation of existing belief/theories, or rejecting information that doesn't confirm existing views.	• Actively seek out evidence that contradicts the group's theory/world view • Ensure you have a diverse group • Use techniques like 'six hat' thinking
Authority Bias	The opinions of those with the highest social status, or greatest seniority get prioritised. This can also occur if there is a very dominant or confident individual in the group.	• Level the field by removing hierarchies among participants where possible • Introduce turn-taking and prevent interruptions or collect input anonymously • Ensure the leader doesn't state their opinion too early
Shared Information Bias	The tendency for group members to spend more time and energy discussing information that all members are already familiar with (i.e., shared information), and less time and energy discussing information that only some members are aware of (i.e. unshared information).	• Avoid time pressure or other constraints that might dissuade group members from sharing more information • Listen out for the minority view for hidden insights
Anchoring Bias	A tendency to jump to conclusions by basing decisions on information or an idea gained early on in the decision-making process. Also known as first-impression bias.	• Allow time for group deliberation, reasoning and checking of logic
In-Group Out-Group Bias	A pattern of favoring members of one's in-group over out-group members. This can be expressed in being more positive and helpful towards one's in-group, at the expense of others.	• Look for commonalities between opposing groups • Encourage empathy - asking people to put themselves in another person's shoes
Optimism Bias	Overestimating the probability of positive events or effects and underestimating the probability of negative events or effects.	• Undertake a 'pre-mortem', asking the group to imagine that their solution or project has gone very badly wrong and describe how this happened. • This will help people think ahead.

crowd facilitation

Good facilitation of online forums and communities is vital to keep a crowd productive. By giving regular feedback the facilitator adds value through suggesting real-time changes as well as making conclusions in the final analysis. Here are the four primary tasks of a crowd facilitator, and some daily and weekly tasks to consider.

TIME FRAME
30 mins

GROUP SIZE
50+ people

MATERIALS
None

INSTRUCTIONS:

1. Review the recommended daily and weekly tasks of the online crowd facilitator and the four main behaviours of the online crowd facilitator.

2. Build and moderate your online community and review, update and tailor your daily and weekly tasks as necessary.

DAILY TASKS

- Welcome new members in comments, messages or with an email
- Encourage new members to post pictures for their ideas and profiles
- Check and respond to new posts
- If posts are similar, link their authors
- Suggest workarounds if someone has a problem or question
- Moderate language if necessary
- Respond to any technical issues

WEEKLY TASKS

- Create or curate new blog posts and send newsletter
- Highlight and link to a variety of posts, from the most popular to random
- Discuss joining activity and the leaderboard positions if relevant
- Link to latest posts
- Compile weekly stats and activity into a report with a top line analysis and take note of significant trends
- Liaise with project team or partners and give updates on activity, flag any concerns and put forward any ideas for improvement

FACILITATION BEHAVIOURS

- Be nice. Welcome new members.
- Post encouraging comments on first time submissions.
- Praise good contributions.

BE HELPFUL

- Link similar posts to encourage members to pool their efforts in developing ideas.
- Provide technical help where needed.
- Share interesting content on the blog.

FOSTER INNOVATION & PEER LEARNING

- Encourage people to expand on their ideas to improve them.
- Encourage experienced participants to help newer members overcome challenges.
- Remind people to upvote ideas and posts they find useful.

ENFORCE THE RULES

- Write a process for dealing with any posts that are reported.
- Moderate transgressions appropriately.
- Escalate concerns to the appropriate colleague.

data flow

By mapping the data flows over the course of your project you will start to understand the interdependencies between different design stages. It will help you to iteratively refine your data methods, identify associated biases and suggest actions to mitigate. You may need specialist expertise to help you answer some of the questions.

TIME FRAME
60 - 90 mins

GROUP SIZE
3 - 8 people

MATERIALS
Data Flow Worksheet, Data Bias Guide, Data Methods Prompt Cards, post-its, 1 x pen per person, bluetack

INSTRUCTIONS:

Part 1: Mapping your project's data flow

1. Review the questions on the Data Flows Worksheet, some of them may be familiar to you from earlier parts of the design process.
2. Fill in the first box with the data sources and methods that you have decided to use in your project.
3. For each subsequent question spend 5-10 minutes discussing different approaches using the Data Flow Guide and/or prompt cards as a group.

Part 2: Thinking about bias

4. Nominate 1-2 people in your group to act as the anti-bias 'champions'. They should review the Data Bias Guide.
5. Other participants should spend 5 minutes writing down as many possible sources of bias in the dataflow as they can think of. Some might be down to the data collection while other biases might be the result of the methods used to process or analyse data.
6. With the help of the anti-bias champions cluster the biases by category. Discuss where along your data flow, these biases could occur.
7. Discuss potential mitigation strategies, using the Data Bias Guide as a starting point.

data flow

How will we bring together our data (store, clean, process, share)? What biases might there be in our data?

WHAT DATA WILL WE COLLECT?	HOW WILL WE VALIDATE THE QUALITY OF OUR DATA?	WHERE WILL WE STORE DATA? WHO HAS ACCESS?	WHAT PRE-PROCESSING IS NEEDED?	HOW AND WHO WILL ANALYSE OUR DATA?	WILL WE KEEP USING, STORING, SHARING THE DATA?
				WHO? Experts ☐ Crowd ☐ Machine ☐ **HOW?**	

We have checked and obtained the necessary data permissions for collecting, using, sharing and storing the data. ☐

We have considered mitigation strategies for different sources of bias along the pipeline. ☐

data flow

How will we bring together our data (store, clean, process, share)? What biases might there be in our data?

Pre-processing and cleaning can make you aware of gaps where more data is needed

STRUCTURED DATA
(MACHINE READABLE)

- Databases
- In situ sensors
- APIs
- Satellite data etc.

- Cloud or internal server
- Data collaboratives
- APIs
- Data warehouses

- Detecting outliers
- Identifying missing values
- Exploratory analysis

- Modelling
- Statistical analysis
- Visualisation & mapping

- Visualisation
- Predictions
- APIs
- Open source repository

IDENTIFY **WHAT DATA YOU NEED** AND CHECK **DATA PERMISSIONS** ▸ **DATA COLLECTION** ▸ **DATA STORAGE & ACCESS** ▸ **DATA CLEANING & PRE-PROCESSING** ▸ **DATA ANALYSIS** ▸ **USE & SHARE**

UNSTRUCTURED DATA

- Web scraping
- Active or passive human contributions
  - Images
  - Videos
  - Measurements
  - Free text

DATA QUALITY CHECK

You may have to go through many iterative rounds of cleaning and analysis as your understanding develops

data flow

How will we bring together our data (store, clean, process, share)? What biases might there be in our data?

BIASES AFFECTING DATA COLLECTION

SOURCE	DESCRIPTION	MITIGATION
Data collection protocol and parameters	The choice of data collection methods and which features of the data we choose to capture can sometimes reflect preconceptions we hold about the issue.	Think carefully about the issue you're exploring and your choice of variables before you finalise your data collection methods. Discuss these as a team to make sure you're capturing everything you need. For example, in the case of qualitative interview methods, questions should be neutral.
Measurement errors	Human recording errors or inaccuracies in the equipment used for measurements will affect data quality.	Make sure you check the quality of collected data. You can do this through peer or expert review or using multiple contributions for one datapoint.
Representation errors	Sometimes the data we collect is not representative of the underlying issue.	Discuss representation as a team and check your protocols with others who have experience with data collection or the issue you're exploring.

BIASES AFFECTING DATA ANALYSIS

SOURCE	DESCRIPTION	MITIGATION
Crowd worker bias	When you rely on a crowd for data analysis using microtasking, you risk increasing the potential for human error.	Providing training on the analysis task has been shown to improve microtasking accuracy.
AI model bias	AI models can be the source of inaccuracies if they are trained on biased (unrepresentative) datasets.	Interrogate your assumptions during data collection. Test your model on diverse datasets.
Data drift	During real-time data collection and processing, any structural changes to data at the source will affect the analysis.	Introduce period checks on the data to ensure that it hasn't changed.
Model drift	When a model is trained on data about an issue or context that is changing rapidly, the model's predictions can become outdated very quickly.	Seek advice from domain experts or peers. Introduce period checks of the stability of the model.

interpret method cards

These Interpret Method Cards are to be used as prompts for discussion in conjunction with the collective intelligence project design canvas and associated activities. They highlight common methods to make sense of your results, alongside illustrative case studies and are not intended to be exhaustive. The Interpret Methods Cards are one of six 'decks', structured according to different stages of the playbook.

TIME FRAME
30 mins

GROUP SIZE
4 - 8 people

INSTRUCTIONS:

1. Explore these Interpret Method Cards and associated case studies with your group or workshop participants at any point to guide conversations.

2. There are also specific activities elsewhere in this playbook where you are encouraged to use these cards to help answer particular design questions.

3. Consider which methods are most relevant to you and your challenge.

natural language processing (nlp)

Natural language processing (NLP) allows computers to understand, interpret and extract key information from human language. NLP techniques can be used to carry out automated analyses of different media to better understand which issues matter to people and what they are saying about key issues.

STAGE:
CONNECT & INTEPRET

D5

CASE STUDY: **UGANDA RADIO CONTENT ANALYSIS**

In Uganda, calling into a talk show on radio to share thoughts, opinions and reports is a common practice, especially in rural areas. Pulse Lab Kampala and the UNDOCO developed a technology prototype that allows analysis of public discourse on radio, understanding trends or issues that matter to communities in real-time. The Radio Content Analysis Tool transforms discussions taking place on radio into big data text, which is then mined for topics of interest.

For instance, filters to detect conversations regarding refugees were created and a translation team annotated all mentions of refugees, including issues of acceptance, health or increasing social tensions. The study demonstrated that speech-to-text processing, combined with NLP, can provide insights on early warning mechanisms, can help to monitor the implementation of projects and programmes, and can support programme evaluation.

proxy indicator analysis

In statistics, a proxy is a variable that is not directly relevant, but can serve in place of an unobservable or measurable variable. Proxy indicator analysis is useful for inferring a measurement for unavailable data based on known correlated information.

STAGE:
CONNECT & INTEPRET

D5

CASE STUDY: **UNDP SUDAN**

The UNDP office in Sudan tested the use of satellite data for estimating poverty levels via changing night-time energy consumption. The team used data pulled from night-time satellite imagery and analysed these illumination values over a two-year period, in conjunction with electric power consumption data provided by the national electricity authority. The proof-of-concept showed that night-time satellite imagery provided a reasonable proxy for poverty, though more detailed analysis with higher spatial and temporal resolution would have provided a better result. The experiment demonstrated the feasibility of using satellite imagery and machine learning to understand poverty, which a number of other organisations have continued to explore.

deliberation

Deliberation is a method of weighing up different options through dialogue. It can typically be used for engaging people in making trade-offs, and in establishing greater understanding of one another's views to establish consensus. Sometimes stratified sampling can be used to select a representative sample of participants (so-called 'mini-publics').

STAGE:
CONNECT & INTEPRET

D5

CASE STUDY: **ESTONIAN PEOPLE'S ASSEMBLY**

In 2012 the ruling Reform Party in Estonia was beset by a scandal related to anonymous donations, which sparked a national engagement exercise. The five-stage process began with crowdsourcing of over 2,000 proposals on an online platform, on topics from reducing barriers to creation of political parties, to improving party conduct. The process then culminated in a face-to-face deliberation between randomly selected citizens. Over several days, the group was tasked with sorting through the online proposals, and making practical recommendations to the Parliament. Fifteen proposals were submitted, leading to three new items of legislation and another four proposals being partially adopted.

predictive analytics

Predictive analytics encompasses a variety of statistical techniques that analyse current and historical facts to make predictions about future or otherwise unknown events. It can be used to identify early warning signs or to predict likely outcomes based on a range of variables.

STAGE:
CONNECT & INTEPRET

D5

CASE STUDY: **AIME**

Artificial Intelligence in Medical Epidemiology (AIME) is an initiative that uses data from a variety of different sources to predict disease outbreaks, providing warnings before the spread of disease occurs. The system relies on an algorithm that blends over 20 different variables from local government data and satellite data, with variables such as weather, wind speed and direction to rainfall. The result of this analysis is a map which illustrates the probability and location of the next outbreak. Following initial tests in Malaysia, Brazil and other South American countries, AIME's successes include an algorithm that can predict the location of the next Dengue, Zika or Chikungunya outbreak up to three months in advance with over 86 per cent accuracy.

data visualisation

Data visualisation encompasses a range of techniques for representing information, from complex graphs to mind-maps and tools for illustrating complex concepts or ideas. They can be static or dynamic, and they may also be connected to databases, or updated manually. Data visualisation can help to bring complex or messy data to life in new ways, aiding collective awareness and understanding of the issues that matter.

STAGE: **CONNECT & INTEPRET** D5

DECK: **INTERPRET METHOD CARDS**

DATA VISUALISATION

CASE STUDY: **POL.IS**

Pol.is is an example of an interactive survey tool that uses a statistical technique - known as principal component analysis - to visualise participants' opinions in real-time. Opinions are clustered, and users can click on different clusters to see how many people agreed or disagreed on certain statements. The tool was used as part of a consultation run by the Taiwanese government on how to regulate ridesharing companies. The visualisation helped people to understand the key dividing points among the 700 or so participants. Not only did this help lawmakers and participants gain greater understanding of the key areas of contention, it also helped participants arrive at a series of key consensus statements that were later used as the basis for new regulations.

crowd forecasting

Crowd forecasting is a method that asks small or large groups to make predictions about the future. It is inspired by research which showed that small crowds of non-experts can often forecast political events more successfully than individual experts.

STAGE: **CONNECT & INTEPRET** D5

DECK: **INTERPRET METHOD CARDS**

CROWD FORECASTING

CASE STUDY: **EARLY WARNING PROJECT**

Genocide and mass atrocities are almost always preceded by a range of early warning signs. The Early Warning Project aims to improve the early warning system for mass atrocities using a mixture of crowd forecasting and statistical modelling. An annual comparison survey invites experts in the field to participate, presenting them with pairs of countries and then asking them to choose which is more likely to experience a new mass killing. The cases from the annual survey then inform the selection of countries which the Early Warning Project tracks in real time using a crowd prediction polling tool called Good Judgment Open. Anyone can sign up to take part and the insights from the crowd consensus help address gaps in the statistical model. Early Warning Project produces a ranked list of more than 160 countries based on their likelihood of experiencing an onset of mass killing in order to better target preventative action.

visualizing citizen-generated data

This activity for anyone who is looking for the best way to make sense of citizen-generated data through visualisation.

TIME FRAME
5 - 10 mins

GROUP SIZE
1 - 5 people

MATERIALS
None

INSTRUCTIONS:

1. Review the guide and the nine different ways to visualise citizen-generated data.

2. Consider which visualisation technique might be best for you and your project.

3. Discuss with colleagues: can you think of any other ways to make the data you collect easy to visualize, and understand? What implications will the tools that you use have on how people provide information, or how they interact with one another?

REFERENCE:
ADAPTED FROM NESTA, SMARTER SELECT COMMITTEES

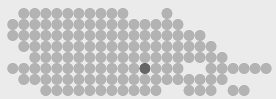
visualizing citizen-generated data

How will we make sense of the information we collect?

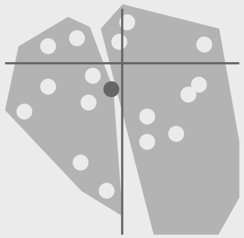
A common challenge for collective intelligence projects is how to visualise large volumes of citizen generated text, ideas or interactions. Good visualizations are not only important to derive clear insights, they can also be presented back to participants to boost satisfaction and improve collective learning.

A range of different approaches can help to make messy, unstructured data from citizens more understandable and actionable. Examples like Pol.is are a powerful way to visualise consensus across a wide array of ideas and opinions, whereas other activities may be useful to visualise consensus within an online forum-style setting (e.g. Your Priorities and Kialo for larger groups, or Loomio for smaller groups).

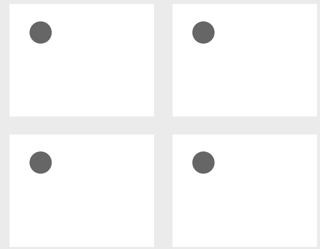
The diagram opposite provides some examples and corresponding methods. Examples vary in the types of input they require from people, ranging from active to more passive participation; and from quick and easy to deeper, more deliberative engagement.



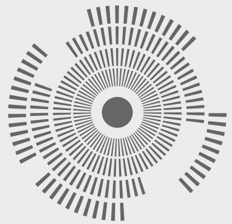
Statement clusters:
consensus vs divisive (Pol.is)



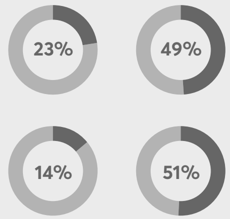
Statement clusters:
spatial consensus (Pol.is)



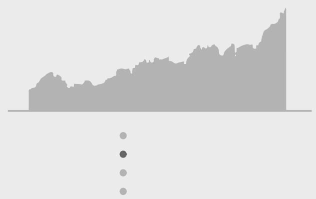
Discussion tiles
(Your priorities)



Discussion topography
(Kialo)



Statement lists: consensus
and divisive (Pol.is)



Sentiment dashboards
(Premise)

Network clusters
(Gephi / Kumu)

Pie Chart
(Loomio)

Deliberation map
(Deliberatorium)

collective decisions

There are many different types of collective decision making. This guide provides an overview of the six main types and provides an overview to consider which might work best depending on the decisions you want and need to make as a group.

TIME FRAME
30 - 45 mins

GROUP SIZE
2 - 10 people

INSTRUCTIONS:

1. Before running any collective decision making process, read through the Overcoming Biases Guide.

2. Consider your current project and organisation and consider the decision that you need to make.

3. Now use the table to consider to what extent that decision is a) urgent/non-urgent b) has wide impact/narrow impact c) has well defined options/undefined options d) is irreversible/reversible and e) is high risk/low risk. As a result select two or three decision making methods that could be appropriate.

4. Review the description of each type of collective decision and discuss the appropriateness for your particular situation.

5. Then select the decision making method(s) that you intend to use and in what context.

6. The first few times you try a particular method, factor in time afterwards to reflect on how it worked and whether it was effective, or whether any changes need to be made.

collective decisions

What type of decision do we need?

THE DECISION...	CONSENSUS	CONSENT	CONSULTATIVE	DELEGATION	DEMOCRATIC
Is urgent	☐	☑	☐	☑	☐
Is non-urgent	☑	☐	☐	☐	☐
Has wide-impact	☑	☐	☐	☐	☑
Has narrow impact	☐	☑	☐	☑	☐
Has well-defined options	☐	☑	☐	☐	☑
Has undefined options	☐	☐	☑	☐	☐
Has irreversible consequences	☑	☐	☐	☐	☐
Has reversible consequences	☐	☑	☐	☐	☐
Is high risk	☑	☐	☐	☐	☐
Is low risk	☐	☐	☐	☑	☐

REFERENCE:
DECIDER APP BY NOBL

collective decisions

What type of decision do we need?

CONSENSUS
- EVERYONE MUST AGREE

Gathering consensus takes time, but it works well when a decision will impact lots of people and those people have both valuable insight and the capacity for candid negotiation. Consensus decision making asks everyone in the group to shape the decision until a compromise is reached that reasonably satisfies everyone.

Unlike some other decision making models, consensus strives to incorporate everyone's perspectives, needs, and ultimately their permission. Consensus has a long history of use in tight-knit communities like faith groups, neighborhoods, and unions. Consensus also tends to be how recently formed organizations first approach decision making.

CONSENT
- NO ONE OBJECTS

Consent works well when speed is needed, when the proposal is clearly defined, and when the impact of the decision is limited and reversible. Consent means the absence of objections. Similar to consensus, consent invites group participation in the decision making process. But instead of granting each member the power to mould the proposal in pursuit of a compromise, consent urges the group to accept a 'good enough' solution. A decision is ratified when there are no meaningful objections.

Consent has become increasingly popular among engineering and technology firms over the last decade because it attempts to combine both speed and inclusiveness.

CONSULTATIVE
- I DECIDE, WITH INPUT

Consultative decision making works well when you need to gather expertise from a limited group or when you need the support of key members of the group. Consultative decision making means asking for input from a few select individuals, but ultimately reserving the decision for yourself. The consultative model is used when you need additional expertise or when you need to curry political favour.

The consultative process is often done one-on-one, but it can also happen in a small group setting. For instance the Delphi Technique is a group process using written responses to a series of questionnaires instead of physically bringing individuals together to make a decision.

DELEGATION
- YOU DECIDE, WITH LIMITATIONS

Delegation works well when time is critical, when a single member of the group has the best information (and it isn't you), and when the group is crystal-clear on what the execution would look like. Delegation means giving someone in the group explicit authority over making a decision, often with some guardrails.

One of the greatest leadership traits you can develop is removing yourself from the decision making process. Giving members of the group the authority to make a call independently will help your group act faster and give you more time to focus on the high-priority decisions that do require your attention.

DEMOCRATIC
- MAJORITY RULES

Democratic decision making works well when choices are clear cut, when your team is well informed, and when your culture embraces majority rule. Democratic decision making is when a leader gives up authority over a decision and presents a series of options to the full group to vote on. The option accepted by the majority of the group is then enacted.

The democratic system, is usually traced to ancient Greek city states, although it's probable that people have been voting throughout history. One form is the Nominal Group Technique which involves members of the group independently writing down ideas, then sharing and discussing, and finally voting by ranking or rating.

REFERENCE:
DECIDER APP BY NOBL

ORID framework

The ORID (Objective, Reflective, Interpretive, Decisional) method of strategic questioning is a structured conversation (face-to-face and/or online), led by a facilitator, to make intelligent decisions. ORID can be used in different scenarios from small meetings where everyone is in the same room, to large distributed teams with the help of different digital methods. For instance in Taiwan the ORID framework was used by the government to structure a mixed online and offline consultation process over several weeks, using a range of digital tools to collect and synthesize information at each stage. This worksheet will help you plan your structured conversation.

TIME FRAME
Can be delivered as a 1hr+ session or as a guiding framework for a longer consultation

GROUP SIZE
10 - 40+ people

MATERIALS
ORID Framework Worksheet, pens, post-its

INSTRUCTIONS:

1. Carefully set your goal for the conversation - this will help you articulate what you want to achieve.
2. Develop the ORID questions you want the group to respond to. It's advisable to test these with a colleague/critical friend in advance of starting the process. You might want to brainstorm questions first before refining and reordering.
3. Use the right hand column to consider what methods or tools might help to facilitate the dialogue at each stage and/or throughout.
4. When kicking off the session, explain the ORID approach to participants and ask for their buy-in to follow it respectfully. It's helpful to prepare your opening and closing remarks in advance.
5. Take the group through each set of ORID questions either capturing their key responses in the room as they're shared or using an online collaboration tool.

INSPIRED BY:
CONVERSATION, THE CANADIAN INSTITUTE OF CULTURAL AFFAIRS (ICA)

ORID framework

How will people contribute or interact?

O OBJECTIVE QUESTIONS	R REFLECTIVE QUESTIONS	I INTERPRETIVE QUESTIONS	D DECISIONAL QUESTIONS
The O questions identify objective facts relevant to the topic. The key questions is: **What do we know about this?** It's essential you capture objective facts, not perceptions and opinions.	The R questions ask about how people feel about the topic. The key question is: **How do we feel about this?** Feelings might be positive, negative, apprehensive and sometimes emotional. Ask participants to express their gut feelings even if they have no objective facts to support them. Capture likes, dislikes, fear and concerns. There are no wrong responses so encourage people to be honest and not hold back.	The I questions are to do with meaning. The key question of the interpretive stage is this: **What does it mean for me/you/us/our organisation, society, etc?** Interpretive questions allow the topic to be put into perspective and for the potential impacts of the topic on the individual, organisation or society to be explored. Useful interpretive questions might include "What if…?" questions as well as "What would it mean… ?", "What would that do… ?" and so on.	The D questions lead to a decision. The key question at the decisional stage is: **What are we going to do?** The focus of discussion should be future-focused and might include questions like: "What would be the best course of action?" "What would be achievable, positive outcomes?" "What is realistic given the limitation of our resources?"

INSPIRED BY:
CONVERSATION, THE CANADIAN INSTITUTE OF CULTURAL AFFAIRS (ICA)

ORID framework

How will people contribute or interact?

OUR CONVERSATION GOAL:			
	WHAT QUESTIONS WILL YOU USE TO GUIDE PARTICIPANTS?	**METHODS FOR EACH STAGE**	**METHODS TO USE THROUGHOUT**
OBJECTIVE What do we already know about this? *(Facts, definitions, raw data)*			
REFLECTIVE How do we feel about this? *(Reactions, likes or dislikes, emotions)*			
INTERPRETIVE What does it mean for me / you / us / our organisation, society? *(Meaning, values, significance, implications)*			
DECISIONAL What are we going to do? *(Resolution, actions, future direction)*			

INSPIRED BY:
CONVERSATION, THE CANADIAN INSTITUTE OF CULTURAL AFFAIRS (ICA)

ORID framework

How will people contribute or interact?

OUR CONVERSATION GOAL: *Regulating Uber in Taiwan*

	WHAT QUESTIONS WILL YOU USE TO GUIDE PARTICIPANTS?	METHODS FOR EACH STAGE	METHODS TO USE THROUGHOUT
OBJECTIVE What do we already know about this? *(Facts, definitions, raw data)*	*What is ridesharing?* *Who are the key stakeholders?* *What are the current regulations in place for ridesharing in Taiwan?* *How many people use ridesharing in Taiwan?*	*Relevant government ministries share data they have on the topic in reader friendly 'fact sheets', published on Slideshare. Definitions updated using Google Sheets.*	*Meeting agendas and consultation notes shared on live documents known as Hackpads.* *SayIt for publishing transcripts.*
REFLECTIVE How do we feel about this? *(Reactions, likes or dislikes, emotions)*	*How do we respond to this data?* *What experiences can people share to these facts or data?* *What are people's reflections on the current regulations?*	*Pol.is for large scale conversation.*	*Online forum Discourse can be used to ask questions to relevant ministries and share experiences.* *Real-time moderation.*
INTERPRETIVE What does it mean for me / you / us / our organisation, society? *(Meaning, values, significance, implications)*	*What have we learned about ridesharing from the previous stages?* *How can we best summarise information gathered in previous stages?* *What are the implications?*	*In-person conversation with key stakeholders, live streamed on YouTube and facilitated so people can submit questions.*	
DECISIONAL What are we going to do? *(Resolution, actions, future direction)*	*What are the key dividing points and what can key stakeholders agree on?* *What are the next steps?*	*'Rough consensus' determined via live-streaming method above.*	

generative decision making

Making decisions together does not have to be long and painful. Consent based decision making can help organisations make decisions collectively, efficiently and wisely. Generative decision making is a consent based decision making process. It requires a host, and the person taking on this role can and should vary.

TIME FRAME
30 - 120 mins

GROUP SIZE
8 - 40 people

INSTRUCTIONS:

1. Use the Collective Decisions Guide (D7) to identify the type of decision that is appropriate for your issue. If you selected a consent based collective decision, then generative decision making is one method for achieving this type of outcome.

2. Before running your first session, read through the seven stages of generative decision making to give you an overview of the process involved. You may want to practice this technique before using it as part of your collective intelligence project.

3. Have all your participants seated in a circle facing each other. Ask people to put away distractions such as laptops and phones. Explain the process (steps 1-7) to participants, and the rationale behind it.

4. Run the session and take time to reflect on what worked well and what you could do differently next time.

REFERENCE:
PERCOLAB

STAGE 1. CHECK: ARE WE READY TO MAKE A DECISION?	STAGE 2. INITIAL PROPOSAL (VERSION 1)	STAGE 3. GROUP SEEKS CLARIFICATIONS ON PROPOSAL	STAGE 4. GROUP REACTIONS TO PROPOSAL	STAGE 5. REVISED PROPOSAL (VERSION 2)	STAGE 6. GROUP OBJECTIONS TO PROPOSAL	STAGE 7. DECISION ON PROPOSAL BY VISUAL CONFIRMATION
Understand whether the group is ready to make a decision. Is the context clear? Is there information or data that needs to be gathered? Could an open conversation help develop the group's readiness to make a decision? *Hosting tips: You might need to offer the group one or two open conversation time slots to get to this point (e.g.. "I am going to put the timer on for 10 minutes while you explore the topic in question"). Offer supplementary time slots as necessary. You might need to conclude that the group is not ready to make a decision, and this is ok. Listen in deeply and when you sense that there is a possible proposal in the air, the group is ready. Invite the group to head into the next step.*	Invite the group — "would someone like to make an initial proposal?" This will help the group move forward into action and there will be lots of opportunities to fine tune the proposal together. *Hosting tips: Help the proposer name a proposal in ideally one single sentence. Avoid the proposal spreading into multiple proposals. Ensure that the proposal is written for all to see (separate from the proposer) and repeat it out loud.*	The group has the opportunity to voice questions to the proposer. The proposer has two options i) provides the answer or ii) says "not specified" if the answer is unknown. *Hosting tips: If someone is speaking without a question (i.e. reaction) remind them that is question period. Ensure that all questions are directed at the proposer and no one else intervenes. Avoid letting the proposer speak about anything further than the direct answer (keep it tight). Sense when the clarification period is about to finish (i.e. you feel that people are ready to react).*	It is mandatory that each person (minus the proposer) expresses to the group their reaction to the proposal; the different voices and perspectives of all need to be heard. The proposer listens deeply and takes notes. Afterwards the proposer will craft a new version of the proposal. *Hosting tips: Begin with the person who has the most reactive emotion and then go around, until everyone has shared their reaction. Make sure that the reaction is not about the proposer, but about the proposal itself — correct if necessary.*	The proposer formulates a new version of the proposal in light of all that has been spoken. The host ensures that it is written and visible to all and reads it out loud. *Hosting tips: If you feel that the proposer might want to stay with the same proposal, remind her that she can. If you sense that the proposer needs support in formulating the second version, remind her that it is possible to ask for help — however do not rush into saying this.*	An objection needs to express a risk or a backward movement for the organisation/ initiative. All objections are expressed to the host who then decides if the objection is valid or not. If it is valid, then the proposer needs to integrate it into a new version of the proposal. (Then the objection round is repeated). *Hosting tips:Sometimes people might express personal concerns that are not in fact organisational/ project risks. This needs to be differentiated. If it is fuzzy you may ask for help to the group. This is the hardest part of the process for the host.*	With a revised proposal, everyone visually confirms "I can live with this decision" by raising their thumb. This is a way of allowing all to see that everyone is fully on board with this decision. If there is something that has not been spoken that needs to be it will show up because a person will be unable to raise their thumb. This can happen when i) someone is struggling to find words to put on an idea that is important to them or ii) someone is disengaging in the process (holding on to the possibility to question the decision in the hallway thereafter). Either way it will need to be addressed and the group needs to return to the part of the process that was not fully addressed. Note: It is good to have visual confirmation as a cultural cue with which the process may be fast tracked. Someone makes a proposal and you can just do a quick check in to see right away if everyone could live with it. *Hosting tips: This is not a decision council and it is not an opportunity to lower thumbs and restart a process. It is simply a visual confirmation. If the process has run smoothly all thumbs should be raised. If someone is struggling to find voice for an objection, support the person and let them know that all information is important.*

REFERENCE:
PERCOLAB

open space

Open Space is an event format that can promote engagement; identifying key areas of interest; to allowing for informal learning.

TIME FRAME
60 - 120 mins

GROUP SIZE
20 - 100+ people

MATERIALS
Open Space Guide, paper, pens

INSTRUCTIONS:

1. Before running your first open space session, read through this guide to give you an overview of what's required to run session.
2. Start planning your session and test your thinking with a colleague.
3. Run your first session and take time to reflect on what worked well and what you could do differently next time.

REFERENCE:
TRANSITION CULTURE HOW TO RUN AN OPEN SPACE EVENT

OPEN SPACE PRINCIPLES

There are several underlying principles key to this process. They are:

1. Whoever comes are the right people.
2. Whatever happens is the only thing that could have.
3. Whenever it starts is the right time.
4. Whenever it's over, it's over.

OPEN SPACE OVERVIEW				
1. BEGINNING	**2. FRAMING**	**3. FORMING**	**4. FLOWING**	**5. CLOSING**
All participants start by sitting in a big circle, with the facilitator in the middle, who explains the process. People are encouraged to then announce themes/ topics for breakout sessions. There may be a blank agenda with timed slots and/ or table or room numbers on the wall.	The facilitator encourages those who are passionate about a topic and wish to take responsibility for convening a meeting to come to the centre. These participants write down their topic, announce it to the group, with a time and place to meet, and return to their seat.	When all topics have been announced, everyone moves to sign up to those they are interested in. If there are similar topics, people may be asked if they wish to combine sessions. Everyone then disperses and attends the sessions they have chosen.	People are actively encouraged to flow between sessions if they wish, if they feel they are not learning or participating. In each of the groups, the original convening participant should take notes of key points.	At the end, all of the different groups reconvene to form one big circle. In turn, each person is asked to reflect and share one key insight with the group as a whole.

group dialogue

A group dialogue can be rewarding and with some practice over time, it's possible to facilitate these effectively.

These tips are meant to help you run your first dialogue session. If you've run them before, they can act as a refresher.

Use the tips to plan your session, to kick it off, and then as a guide to facilitate and conclude your session.

TIME FRAME
30 - 120 mins

GROUP SIZE
10 - 40 people

MATERIALS
Group Dialogue Guide, paper, pens

INSTRUCTIONS:

1. Before running your first session, read through the group dialogue guide to give you an overview of what's required to run the session.

2. Start planning your session and test your thinking with a colleague.

3. Run your first session and take time to reflect on what worked well and what you could do differently next time.

WHAT IS A GROUP DIALOGUE?

A dialogue is a constructive and equal way of having a discussion in a group of people. At its core it is aimed at understanding others, but not at reaching consensus. A dialogue can generate new thinking and fresh insights.

A dialogue aims to create a trusting atmosphere to support participants to gain a deep understanding of almost any topic. A dialogue supports the bringing together of people from different backgrounds to an encounter in which they are on an equal footing.

For example, you can use a dialogue as part of the preparation or before decision-making.

PREPARING TO FACILITATE

1. Plan how you will start the dialogue and how people will introduce themselves.
2. Adapt the ground rules for discussion to make them better suit your style.
3. Plan how you lean into the topic and develop the initial question.
4. Familiarise yourself with the theme and capture questions related to the content of the discussion.
5. Consider how you will deepen the discussion and conclude it.
6. Decide if the discussion needs to be documented and how it will be done.

GROUND RULES

Listen to the others, do not interrupt or start side discussions.

Relate what you say to what the others have said and use plain English.

Talk about your own experience including issues, events and situations that have shaped your views.

Be present and respect the others and the atmosphere of trust.

Work together. Talk to the others directly and ask about their views as a way to deal with emerging conflicts early.

TUNING IN PARTICIPANTS

Tuning in helps to build trust in which the participants feel they are on an equal footing. It moves the attention from other matters to this moment – the space, the other people and the topic discussed. Ensure you use adequate time to build an atmosphere of trust. Here are a few example questions to help participants start tuning in:

- Who are you and what brings you here today?
- What are the experiences in your mind when you come to discuss this topic?
- What perceptions or feelings do you associate with the topic?
- What is it like to talk about this together? What do we want to aim at in this discussion?

ENCOURAGING PARTICIPANTS TO EXPRESS THEIR EXPERIENCES

Share events, situations and experiences to them or start side discussions.

Ask specifying questions about what they share including reasons and consequences.

Talk about your own experience including issues, events and situations that have shaped your views.

Ask participants to consider and express what kind of thoughts and experiences come to mind when they listen to others.

WAYS TO DEEPEN THE DISCUSSION

Ask the participants which kind of issues they would like to increase their understanding of.

Encourage the participants to offer viewpoints that have not yet been presented even if they are difficult or conflicting.

Share a personal experience related to the topic to shift the discussion from a general level to one where participants share their own personal experience.

Observe the atmosphere of the discussion and the level of engagement. Are participants finding the discussion interesting and important?

ACTIVATING THE QUIET PARTICIPANTS

Explain that you hope as many participants as possible will participate in the discussion. Over time, pay attention to those who have not said anything, yet.

Stop the conversation for a moment and say you would like to hear from those people who have not said anything.

Split the group into pairs for a short period of time if there's a large number of participants and the dialogue has stalled. After that, you can encourage those that have been quiet to speak.

WHAT IS A GROUP DIALOGUE?

As a minimum, ask the participants to answer:

- What was the most important insight you gained in this discussion?
- Where should this discussion be continued and who should continue it?

If you have time, also ask:

- Have we discussed the right issues?
- Have we discussed different points of view?
- Was our discussion constructive?
- Did our understanding of the topic increase?
- What other feedback do you have?

study circle

A study circle is a group of people who meet regularly over a period of weeks or months to address a critical issue in a democratic, collaborative way. In general, a study circle will progress from a session on personal experience ("How does the issue affect me?") to sessions providing a broader perspective ("What are others saying about this issue?") to a session on action ("What can we do about this issue right now?"). They emerge with recommendations for action that will benefit the community. A study circle is typically led by an impartial facilitator.

TIME FRAME
60 - 120 mins

GROUP SIZE
8 - 12 people

MATERIALS
None

INSTRUCTIONS:

1. Review the six stages of facilitating a study circle in this guide and consider an issue or topic to explore.

2. Give a personal invitation to a diverse group of people who might be interested in helping people address a specific challenge, and not just talk about them.

3. Be aware of the facilitators key role in the study circle process. Their role is to:

   a. Stay neutral. Not to promote an opinion, but to further the discussion.

   b. Encourage interaction. Let participants respond to one another.

   c. Don't let anybody dominate the discussion, and draw out quiet participants.

   d. Keep the discussions on track.

   e. Allow for pauses and silences. People need time to think and reflect.

   f. Don't worry about consensus. Just try to find some areas of agreement.

   g. When in doubt, ask the group what they would like to do.

4. Individual study circles can take place within communities or within organisations. However, they have the greatest impact when organisations across a community work together to hold multiple study circles as part of a large-scale program.

REFERENCE:
COMMUNITY TOOLBOX

1. INTRODUCTIONS

Introduce yourself and explain that you are a facilitator rather than a teacher and interested in the topic rather than an expert.

Ask the participants to introduce themselves and explain their interest in the topic.

In subsequent meetings at least 90 around the circle to give names.

Folded name cards in front of everybody may be helpful.

2. IDENTIFY THE GOALS

Make sure you all know why you are there.

Ask for a list of questions the participants want answered.

Lay out a range of views. Ask the participants to volunteer what they see as the main view on the issue based on the reading material and their knowledge of the issue.

Keep these lists and post them each meeting for reference.

Review the agenda or study plan and adjust it to suit the group.

3. PERSONAL CONNECTION OR INTEREST IN THE ISSUE

Ask participants to talk about why this issue is important to them.

Telling their story is a good ice-breaker at the first session.

Anyone may pass.

4. DISCUSSION AND DELIBERATION

This is where you practise those facilitation skills.

Have questions prepared to help you in any possible situation.

Remain neutral.

Guide the discussion without controlling it.

5. SUMMARY AND COMMON GROUND

Ask the participants to summarize the discussion from time to time.

Use their words and phrases, not your own.

Look for common concerns in different approaches.

Check your lists of goals and questions

6. CLOSING

Let the group know that the discussion is about to end. You might ask each participant for a closing comment. Establish direction for the next session.

Ask for comments on the group process. What did they like or not like about the discussion?

Thank everyone for their participation. Acknowledge the effort and contributions.

On your last session, ask for suggestions on further involvement or action on the issue. Ending with a pertinent quotation is an effective closing.

E

STAGE:
CREATE CHANGE

How can we use and test our collective intelligence to create change?

The results of collective intelligence need to be made actionable and usable. In this stage you will prototype your project and develop a plan to test it. You will also consider how you're going to feedback to participants, to build trust and show people that their input had meaning.

pointers for reflection and discussion:

- Know the Minimum Viable Product needed. Raw data is of little use to most decision-makers, people delivering a service or to the community who you're engaging. It's unlikely that whoever is carrying out the action (for example, a frontline worker or service manager) will want a spreadsheet or raw data. Instead they will want the data conveyed in a way that is actionable and usable.

- Be aware of local resource limitations and access needs of your intended audience. It's no use producing an online real-time map to visualise disaster-affected areas if most local residents don't have access to computers or smart-phones. SMS, radio and peer-to-peer neighbourhood alert systems can be much more effective to ensure timely action in low resource settings.

- Don't forget to provide feedback to the contributors. Progress updates regarding the overall goal of the project reminds individuals that they are part of a collective, building a sense of contributing to a greater purpose.

- The broader impacts of collective intelligence can be auxiliary to the intended use. For example some of the most transformative results of citizen science projects can come from sustained behavioural change by communities stemming from their deep engagement with their local environment.

create change method cards

These Create Change Method Cards are to be used as prompts for discussion in conjunction with the collective intelligence project design canvas and associated activities. They highlight common methods to create change, alongside illustrative case studies and are not intended to be exhaustive. The Create Change Methods Cards are one of six 'decks', structured according to different stages of the playbook.

TIME FRAME
30 mins

GROUP SIZE
4 - 8 people

INSTRUCTIONS:

1. Explore these Create Change Method Cards and associated case studies with your group or workshop participants at any point to guide conversations.

2. There are also specific activities elsewhere in this playbook where you are encouraged to use these cards to help answer particular design questions.

3. Consider which methods are most relevant to you and your challenge.

heatmap

A heatmap is a graphical representation of data where values are represented as shades or colours, overlaid on a matrix or map. It can help to quickly make sense of relationships between different variables, or trends presented geographically.

STAGE:
CREATE CHANGE
E1

CASE STUDY: **CEASEFIRE IRAQ**

Ceasefire has a civilian monitoring tool to monitor violations of human rights or international humanitarian law. People can submit reports of violations occurring anywhere in Iraq. Submitted reports are stripped of any personal identifying information and plotted onto a live map showing the distribution of violations by location and type. It is used to create a more accurate and up-to-date picture of the human rights violations on the ground, improving accountability and motivating a more effective national and international response.

dashboard

Dashboards make data more useful by providing quick and customizable visualisations of different data streams or variables, usually represented interactively on a screen.

STAGE:
CREATE CHANGE
E1

CASE STUDY: **PREMISE**

In Brazil, locals are paid to upload photos of supermarket items to a platform called Premise. The platform processes about 42,000 images per day, each of which is vetted for accuracy and authenticity, before being aggregated and analysed. The data then becomes accessible via a dashboard, which can be customized to display contributor activity with maps, graphs or photo walls. As a result, commercial clients are given access to data on their markets often weeks before official government figures are released. NGOs may also use the data to see where resources need to be reassigned, and to understand or pre-empt food shortages.

what works centres

What Works Centres aim to ensure that public spending and practice is informed by the best available evidence. Centres operate in their own distinct way, but all aim to generate evidence and translate it into relevant and actionable guidance.

STAGE:
CREATE CHANGE
E1

CASE STUDY: **THE EDUCATION ENDOWMENT FOUNDATION (EEF)**

The EEF is an independent charity dedicated to breaking the link between family income and educational achievement, by gathering research evidence and making it actionable to teachers and practitioners across the UK. EEF's Teaching Learning Toolkit is an accessible and interactive web tool that summarizes research evidence for teachers and schools on how to improve the attainment of disadvantaged people, according to cost, evidence and impact. More than half of secondary school leaders in the UK now say they use this resource.

storytelling

A story takes facts, figures or information and turns into something that can be relayed in a more accessible way, in turn helping to make data or research more understandable and usable.

STAGE:
CREATE CHANGE
E1

CASE STUDY: **THE QUIPU PROJECT**

In the 1990s, a family planning programme launched by the president of Peru led to the sterilization of over 270,000 women and 22,000 men. They were almost exclusively indigenous people living in rural areas, and thousands claimed it happened without their informed consent. Many of the people affected only spoke their native Quechua, and struggled to access institutions of the Spanish-speaking Peruvian State.

The Quipu project collected over 150 testimonies of sterilised people, presented as an interactive online documentary where users click on a visualisation of testimonies displayed as knotted strings (used by the Incas and Andean civilizations for record keeping). The project aims to create a collective memory archive of what happened, and to help build awareness in the victims' fight for recognition and reparation.

emergency alert

Emergency alerts improve awareness or speed up the response to an emergency or event. They often involve blending or integration of data, analysis and some form of prediction of the likelihood that an event will happen. This information is then presented on a map, sent via SMS, radio or email.

STAGE:
CREATE CHANGE E1

CASE STUDY: **VAMPIRE**

The combination of El Niño - a severe and lengthy climatic event exacerbated by climate change - and severe drought in districts across Indonesia gravely intensified threats to food security in Indonesia. The Vulnerability Analysis Monitoring Platform for the Impact of Regional Events (VAMPIRE) was designed by Pulse Lab Jakarta and the World Food Programme to provide integrated map-based visualisations of how drought will affect local populations, bringing together household survey data, vegetation health, rainfall data and other indicators. Based on the measure of economic vulnerability and exposure to drought, the tool can alert authorities to areas where people may require assistance. It has been embedded into the situation room of the Office of the President of the Republic of Indonesia. Further improvements may include the integration of text-messaging alerts to notify farmers or other affected populations.

manual

A manual is a comprehensive and step-by-step guide to a particular topic. It may include instructions, tutorials or guides to help facilitate learning, the aim of which is to lower barriers to entry for beginners or practitioners wishing to participate.

STAGE:
CREATE CHANGE E1

CASE STUDY: **INSTRUCTABLES**

Instructables.com is website specialising in user-created and do-it-yourself projects, from baking to 3D printing. By providing video aids, documentation and commenting functionality, the website aims to facilitate collaboration and shared learning among creatives, makers and artists. The website also holds contests each month to provide Instructables according to a unique theme. As of 2015, it was reported that the website has 30 million monthly users, resulting in more than 170,000 community authored projects across 6 categories.

register

Registers are lists or datasets that act as core reference data, providing lists of things like schools, companies or job centres. Registers can help to coordinate tasks across diverse crowds, in turn improving collective memory and making collaboration easier across time and space.

STAGE:
CREATE CHANGE
E1

CASE STUDY: **EPISTEMONIKOS**

Epistemonikos is allegedly the most comprehensive database of systematic reviews and other types of scientific evidence about health conditions and treatments. Initially, machine learning algorithms search through the major global health related databases to generate a longlist of potentially relevant articles, and assign scores to indicate certainty based on their relevance to the question. This longlist is then analysed for inclusion by at least 2 independent 'expert' humans in the loop, using a Tinder-like app. A validated dataset is then labelled and retained on the online platform for future use by the clinical community. The Chilean Ministry of Health issued 22 health guidelines within 6 months following an evidence review using the Epistemonikos platform.

open API

Application Programming Interfaces (APIs) provide the standards by which data is accessed and transferred between websites. Open APIs encourage collaboration and are built using open standards, allowing them to be freely accessed and used.

STAGE:
CREATE CHANGE
E1

CASE STUDY: **OPENAHJO**

City Councils make hundreds of decisions every month, and it can be hard for both citizens and civil servants to follow the progress of legislation making its way through government. Open Decisions is Helsinki City Council's attempt to standardise and publish all of its decision making data electronically. Data about meetings, agendas and decisions from all across the council are tagged according to the Popolo open government standard, and then made available via an open API called OpenAhjo. By publishing the data via an open API, a range of developers have been able to create digital applications that notify local residents when decisions are made on topics of interest. It's also been used by city employees to more easily search and track progress made by local politicians.

prototyping techniques

The Prototyping Techniques Guide provides a selection of ways to share and test your thinking, to gain valuable feedback and decide what to do next. Prototyping helps test how something looks, feels, works or behaves.

TIME FRAME
45 - 120 mins

GROUP SIZE
3 - 8 people

MATERIALS
Paper, coloured pens, cardboard, glue, pipecleaners, and anything else you have lying around. Use in conjunction with the Prototype Testing Worksheet (E3).

INSTRUCTIONS:

1. Agree with your group what idea(s) you would like to test.

2. Review the prototyping techniques and choose at least one.

3. Don't spend lots of time discussing the intricacies of your project, jump straight into making your prototype - it will be the quickest way to surface assumptions or gaps.

4. Once you have built your prototype you will want to test it on people - this could be with colleagues at first, but ideally you want to test this with the people who you hope will use it in the real world.

5. Use the Prototype Testing Worksheet (E3) to articulate what you think will happen, and how you will know when it does.

REFERENCE:
INSPIRED BY 100%OPEN PROTOTYPING TECHNIQUES

prototyping techniques

What do people need to see or feel in order to act?

PROTOTYPING PHYSICAL STUFF (EG. PRODUCTS, ROOMS, COMPONENTS)

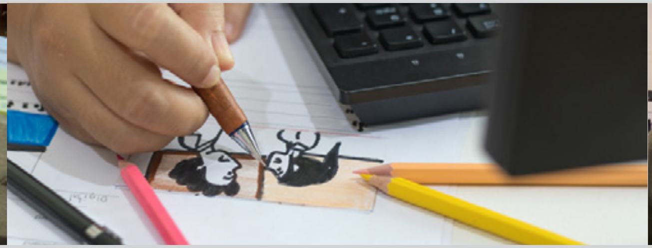
SCALE MODELLING

This is particularly useful for physical space when it isn't practical to build something at full-scale. Scale models can be built out of materials such as cardboard, foamboard and Lego.

SIMULATION

We use commonly available materials to make something physical to test with people. This isn't about perfection, it's all about speed - making a prototype that people can react to and give feedback.

PROTOTYPING INFORMATION (EG. APPS, SIGNAGE OR LEAFLETS)



STORYBOARDING

Storyboarding is a very early stage technique for prototyping. Describing the idea as a six-step story helps to consolidate thinking, test stakeholder reactions and capture feedback.

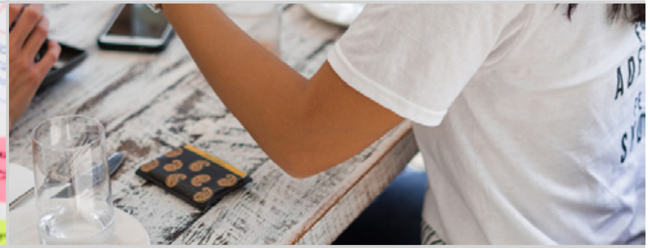
PAPER PROTOTYPING

Paper prototyping is a quick way to test using pens and paper. This can include mock-ups of how information is organised and shared through to mocking-up click-through screens for a digital interaction.

PROTOTYPING INTERACTIONS (EG. MEETINGS, CALLS, VIDEO)

BODYSTORMING

Bodystorming is technique of physically experiencing a situation to derive new ideas. It requires setting up an experience - complete with necessary artefacts and people - and physically 'testing' it. This is important when an idea relies on physical interaction with a product or between people.



ROLE PLAY

Role plays help you to test out thinking by following a script or by improvising (acting out a situation without prior preparation). Instruction cards providing cues such as specific tasks to be carried out, or character motivations, might be provided.

REFERENCE:
INSPIRED BY 100%OPEN PROTOTYPING TECHNIQUES

prototype testing

The Prototype Testing Worksheet will help you understand what you want to test and capture what you learn.

TIME FRAME
60 - 120 mins

GROUP SIZE
3 - 8 people

MATERIALS
Prototype Testing Worksheet, pens. Use in conjunction with the Prototyping Techniques Guide (E2).

INSTRUCTIONS:

1. Once you have built your prototype you will want to test it on people - this could be with colleagues at first, but ideally you want to test this with the people who you hope will use it in the real world.

2. Use the Prototype Testing - Plan Worksheet Sheet to articulate what you think will happen, and how you will test and measure what does.

3. Carry out your test activity, and use the Prototype Testing - Learn Worksheet to capture what actually happened, what you learnt and the changes you need to make.

4. You may have multiple hypotheses you are looking to test through different experiments.

5. Incorporate feedback into a revised design of your prototype and/or project.

prototype testing - plan worksheet

What do people need to see or feel in order to act?

NAME OF PROTOTYPE SOLUTION TO TEST:

NAME OF OWNER:

STEP 1: WE BELIEVE THAT...
(This is your hypothesis about what will happen)

STEP 2: TO VERIFY THAT WE WILL...
(This is the test you will carry out using the prototype)

STEP 3: AND MEASURE...
(This is the metric that will help prove or disprove your hypothesis)

STEP 4: WE ARE RIGHT IF....
(This is what will happen if your hypothesis is proven to be correct)

REFERENCE:

prototype testing - learn worksheet

What do people need to see or feel in order to act?

NAME OF PROTOTYPE SOLUTION TO TEST:

NAME OF OWNER:

STEP 1: WE BELIEVED THAT....
(Your original hypothesis)

STEP 2: WE OBSERVED THAT...
(What actually happened)

STEP 3: FROM THAT WE LEARNT THAT...
(What worked well, and what didn't)

STEP 4: THEREFORE WE WILL...
(The changes you are going to make)

REFERENCE:

theory of change

The Theory of Change Worksheet helps you to clearly articulate and connect your work to your bigger goal, and allows you to spot potential risks in your plan by sharing the underlying assumptions in each step.

TIME FRAME
60 - 90 mins

GROUP SIZE
3 - 8 people

MATERIALS
Theory of Change Worksheet, 1-2 pens, post-its, bluetack

INSTRUCTIONS:

1. Start by noting down the main problem you want to solve, and also your long term vision on the change you want to accomplish.

2. Next work outwards from your defining problem, and towards your long-term impact. Write down the people that have power or influence to address your issue – this could be a small community group or a government minister. Then think about where to start, you may need to find a place, a person or a thing that will be your first port of call. Try to think of some practical steps that you can take to get your key audience to act. Try to keep these as action-oriented as possible.

3. And finally, what would the immediate results or outcomes be? These could be tangible results that help you monitor whether your project is making a difference. List the key outcomes that your activity would lead to: these are the preconditions that you need to realise your vision.

4. As you fill each of the boxes in the worksheet, it is critical to also reflect on the key assumptions that underpin these steps in your project. This may help you to spot potential risks or interdependencies.

REFERENCE:
NESTA DIY TOOLKIT THEORY OF CHANGE

theory of change

Who do we need to act and what do we need them to do?

What is the problem you are trying to solve?	Who is your key audience?	What is your entry point to reaching your audience?	What steps are needed to bring about change?	What is the measurable effect of your project?	What are the wider benefits of your project?	What is the long term change you see as your goal?
				Measurable effect?	Wider benefits?	
				Measurable effect?	Wider benefits?	
Key Assumptions	Key Assumptions	Key Assumptions	Key Assumptions	Key Assumptions	Key Assumptions	Key Assumptions

REFERENCE:
NESTA DIY TOOLKIT THEORY OF CHANGE

collaboration agreement

A collaboration agreement helps initiate strong partnerships. It helps minimise the risks of working with new people. It helps to build trusting relationships and to develop and test the proposition itself. It is project-based and time-limited and sets out the rewards, risks and responsibilities as well as the development milestones for both parties.

TIME FRAME
60 - 120 mins

GROUP SIZE
2 - 10 people

MATERIALS
Collaboration Agreements Worksheet, pens, post-its

INSTRUCTIONS:

1. First, review the six sections of the collaboration agreement and the three main questions in each.

2. Next, with your partner work through all of the questions and agree a joint approach or put in place a process to agree how to address each point.

3. Finally, write up, share and formalise the agreement as required and start collaborating.

collaboration agreement

What will be our approach to partnership or intellectual property?

PROJECT OUTCOMES

- What are the specific objectives of the project for each partner?
- How will each partner measure progress during and afterwards?
- What are the expected next steps after our project is finished?

PROJECT PLANNING

- What are the key milestones and timelines?
- What is the procedure for changing the plan if necessary?
- Are payments linked to milestones?

ROLES AND EXPECTATIONS

- Who will be in the steering group and what are their primary responsibilities?
- Who will do what when? How will disputes be resolved?
- Who will be responsible for communicating between partners?

SHARED RESOURCES

- Who will lead and allocate resources to each part of the plan?
- What resources will be needed and who will supply these?
- What are the main benefits and costs for each partner?

OPERATING MODEL

- What is the primary nature of the relationship between parties (joint venture, licensing, partnership etc)?
- How can we test and develop the model throughout the project?
- What is the procedure for modifying it if necessary?

INTELLECTUAL PROPERTY

- What is our approach to managing intellectual property (creative commons, licensing, acquisition etc)?
- Do we need a legal agreement to formalise the collaboration?
- What will we tell the outside world about what we are doing?

REFERENCE:
100%OPEN TOOLKIT - COLLABORATION AGREEMENTS

dataset nutrition label

To make sure your dataset or analyses are taken up by others you should provide as much information as possible about your data pipeline. This activity will help you think about which features of your dataset are important to log. It is particularly useful if you are planning to collect new data as part of your project.

TIME FRAME
45 mins

GROUP SIZE
3-5 people, 1 person to act as facilitator

MATERIALS
Dataset Nutrition Label Guide, post-its, 1 x pen per person, bluetack

INSTRUCTIONS:

1. In your team, spend 5 minutes discussing and identifying all of the new datasets you will be creating as part of your collective intelligence project.

2. Working individually or in pairs, take 5 minutes to write down as many features of a dataset that you think would help to describe its contents to others who would want to use it. Use post-its.

3. Discuss the features you identified with the rest of your team. Did you end up with the same answers? What were the differences? Explain why you think they are important to know for future users of the data.

4. Guided by the facilitator try to cluster the features you've identified into 4 categories: Metadata, Provenance, Variables and Statistics. The facilitator should explain what each of these means.

5. Try to use these new categories to come up with any additional features that you have missed. Work as a group.

6. When you have exhausted your ideas, review the completed example in the Dataset Nutrition Label Guide.

7. Finish with a discussion about feasibility. Which information will it be easy for you to capture? How often will you need to update the nutrition label for your datasets?

INSPIRED BY:
THE DATA NUTRITION PROJECT, DRAFT PAPER & DATASETS FOR DATASHEETS

dataset nutrition label

How will we document our knowledge and make it available for others to use?

WHAT TO COVER	SUGGESTED CONTENTS
METADATA: Descriptive information about your dataset.	Filename, file format, keywords, dataset size, missing values, date of creation, license for use. Summary of what your dataset contains and the reason for collection.
PROVENANCE: Where does the data come from?	Source of the data and author contact information. Time period over which the data was collected.
VARIABLES: The features of your data that take on different values.	A list and description of the different variables in your dataset.
STATISTICS: Basic statistics that describe your dataset (for numeric datasets).	Min/max value, most frequent value (mode), mean, etc.

PROTOTYPE LABEL BY THE DATA NUTRITION PROJECT

Metadata

Cj CC-0 .CSV

Title COMPAS Recidivism Risk Score Data

Author Broward County Clerk's Office, Broward County Sherrif's Office, Florida

Email browardcounty@florida.usa

Description Laces ent, in culparum nimus dolor atetum que etur? Ipsapisque soluptiandi ut ped endelenis ipsus illabo. Ugit eum fuga. Iti ut licium is resequundit apiendis rem iligendant harit officitiis nimporu ntiumquosae. Ressimperum con comnimus quatium velendebis exceprovit, omnis comnit ilicientis

DOI 10.5281/zenodo.1164791

Time Feb 2013 - Dec 2014

Keywords risk assessment, parole, jail, law

Records 7214

Variables 25

Laces ent, in culparum nimus dolor atetum que etur? Ipsapisqu. **numerical**

Ugit eum fuga. Iti ut licium is resequundit apiendis rem iligendant harit officitiis nimporu. **numerical**

Missing Units 15452 (8%)

This dataset contains variables named 'age', 'race' and 'sex'.

03

exercises to communicate the idea of collective intelligence

THE BLIND MAN AND THE ELEPHANT

Long ago six old men lived in a village in India. Each was born blind. The other villagers loved the old men and kept them away from harm. Since the blind men could not see the world for themselves, they had to imagine many of its wonders. They listened carefully to the stories told by travelers to learn what they could about life outside the village.

The men were curious about many of the stories they heard, but they were most curious about elephants. They were told that elephants could trample forests, carry huge burdens, and frighten young and old with their loud trumpet calls. But they also knew that the Rajah's daughter rode an elephant when she traveled in her father's kingdom. Would the Rajah let his daughter get near such a dangerous creature?

The old men argued day and night about elephants. *"An elephant must be a powerful giant,"* claimed the first blind man. He had heard stories about elephants being used to clear forests and build roads.

"No, you must be wrong," argued the second blind man. *"An elephant must be graceful and gentle if a princess is to ride on its back."*

"You're wrong! I have heard that an elephant can pierce a man's heart with its terrible horn," said the third blind man.

"Please," said the fourth blind man. *"You are all mistaken. An elephant is nothing more than a large sort of cow. You know how people exaggerate."*

"I am sure that an elephant is something magical," said the fifth blind man. *"That would explain why the Rajah's daughter can travel safely throughout the kingdom."*

"I don't believe elephants exist at all," declared the sixth blind man. *"I think we are the victims of a cruel joke."*

Finally, the villagers grew tired of all the arguments, and they arranged for the curious men to visit the palace of the Rajah to learn the truth about elephants. A young boy from their village was selected to guide the blind men on their journey. The smallest man put his hand on the boy's shoulder. The second blind man put his hand on his friend's shoulder, and so on until all six men were ready to walk safely behind the boy who would lead them to the Rajah's magnificent palace.

When the blind men reached the palace, they were greeted by an old friend from their village who worked as a gardener on the palace grounds. Their friend led them to the courtyard. There stood an elephant. The blind men stepped forward to touch the creature that was the subject of so many arguments.

The first blind man reached out and touched the side of the huge animal. *"An elephant ais smooth and solid like a wall!"* he declared. *"It must be very powerful."*

The second blind man put his hand on the elephant's limber trunk. *"An elephant is like a giant snake,"* he announced.

The third blind man felt the elephant's pointed tusk. *"I was right,"* he decided. *"This creature is as sharp and deadly as a spear."*

The fourth blind man touched one of the elephant's four legs. *"What we have here," he said, "is an extremely large cow."*

The fifth blind man felt the elephant's giant ear. *"I believe an elephant is like a huge fan or maybe a magic carpet that can fly over mountains and treetops,"* he said.

The sixth blind man gave a tug on the elephant's coarse tail. *"Why, this is nothing more than a piece of old rope. Dangerous, indeed,"* he scoffed.

The gardener led his friends to the shade of a tree. *"Sit here and rest for the long journey home,"* he said. *"I will bring you some water to drink."*

While they waited, the six blind men talked about the elephant.

"An elephant is like a wall," said the first blind man. *"Surely we can finally agree on that."*

"A wall? An elephant is a giant snake!" answered the second blind man.

"It's a spear, I tell you," insisted the third blind man.

"I'm certain it's a giant cow," said the fourth blind man.

"Magic carpet. There's no doubt," said the fifth blind man.

"Don't you see?" pleaded the sixth blind man. *"Someone used a rope to trick us."*

Their argument continued and their shouts grew louder and louder.

"Wall!" "Snake!" "Spear!" "Cow!" "Carpet!" "Rope!"

"Stop shouting!" called a very angry voice.

It was the Rajah, awakened from his nap by the noisy argument.

"How can each of you be so certain you are right?" asked the ruler.

The six blind men considered the question. And then, knowing the Rajah to be a very wise man, they decided to say nothing at all.

"The elephant is a very large animal," said the Rajah kindly. *"Each man touched only one part. Perhaps if you put the parts together, you will see the truth. Now, let me finish my nap in peace."*

When their friend returned to the garden with the cool water, the six men rested quietly in the shade, thinking about the Rajah's advice.

"He is right," said the first blind man. *"To learn the truth, we must put all the parts together. Let's discuss this on the journey home."*

The first blind man put his hand on the shoulder of the young boy who would guide them home. The second blind man put a hand on his friend's shoulder, and so on until all six men were ready to travel together.

created by
Nesta's Centre for Collective Intelligence Design

with support from
UNDP's Accelerator Lab network

designed by
Liminal

ISBN 978-1-913095-15-4

Empowered lives.
Resilient nations.