NS GovLab Sourcebook

May 2019

NOVA SCOTIA

Acknowledgements

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NS GovLab Co-leads
Jocelyn Yerxa Aubrie McGibbon

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Illustrator: Mo Drescher
This Sourcebook is available online at
novascotia.ca/govlab

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GLOSSARY OF TERMS

Welcome

Module 1

Welcome

Your journey begins

Welcome to the NS GovLab Fellowship!

Twice a year, NS GovLab welcomes a new cohort (group) of fellows and partners to join a year-long journey of action research and professional development. The fellowship unfolds in two parts:

- **Part 1: Foundations** (6 months).
  Your cohort will gather on a regular basis to learn the foundational approaches of NS GovLab.

- **Part 2: Collaborative practice** (6 months).
  You will build a community of practice by applying skills you learned in Part 1 to a real-world challenge related to population aging. You set the schedule and choose the design challenge, in consultation with the NS GovLab leadership team and your colleagues.

This sourcebook sets you on the path and offers tips and tools for the journey we'll be taking together.

"It was inspiring for me to walk into that first Lab gathering and instantly feel welcomed. The feeling that something awesome was about to happen was palpable. Somehow the organizers had brought together an amazing "group of the willing." People with incredible intelligence, a depth of experience and alternative viewpoints, who want to make change to current systems in place."

Lynn Hennigar, Cohort 1 fellow

Read the full blog post at
medium.com/@NSGovLab/time-well-spent-with-ns-govlab-b150aa4ce9c2

About us

Why a social innovation lab?
NS GovLab is the provincial government's social innovation lab, focused on population aging.

In Nova Scotia today, 1 in 5 people are over the age of 65. By 2030, the ratio will be 1 in 4. Nova Scotians are living longer and in better health than at any other time in history. An aging population is one of the biggest public health wins of our time. But along with the good news comes new challenges. Our systems are lagging behind the reality.

A social innovation lab offers a forum to bring people together to tackle complex problems in new ways, and to develop skills and relationships for co-creating the future with all Nova Scotians.

Our four goals

- Deeply understand our aging population.
- Build skills and capacity for social innovation.
- Build and test prototypes to support our aging population.
- Create a network of engaged social innovators.

Our approach focuses on systems and design thinking, which means we are using our lab to design the future that Nova Scotians want as the population ages. The approach is experimental, so we can fail early, fail fast, and fail cheaply. We test our assumptions early and often to make sure we are on the right track,

addressing the cause as opposed to a symptom. This approach lowers the risk and can lower costs, too. At the same time, it allows us to win big on learning and understanding the issues, which will mean better, longer-lasting redesigns that positively impact the lives of Nova Scotians.

Our design challenge questions

How might we…

- Create a province where people can age at home and stay connected to their community?
- Foster connections across generations and cultures to create resilient communities in Nova Scotia that can adapt to their changing demographics?

Our principles

Be in relationship with people and the planet.
We strive to build networks and connections. Relationships with people and the planet are central to achieving this goal. Therefore, we see relationships as results. We strive as a collective and as individuals to trust and be trusted.

Everybody is needed.
We seek diversity. We invite people to be whole humans in NS GovLab. We accept that multiple contradictory truths are possible and we embrace that ambiguity.

Value learning over knowing.
Complex problems require constant curiosity and inquisitiveness. We approach NS GovLab with no predetermined outcomes, but with overarching questions and goals. We use an experimental process to test our hunches. We see inquiry as the answer.

Discomfort happens; it's temporary.
Group work and innovation follow a fairly predictable pattern of divergence and convergence. The groan zone is the place between divergence and convergence that is often most uncomfortable and feels like you might be going nowhere. This work is hard. Systems have a vested interest in the status quo, so making change can trigger a strong response.

Be scrappy, care deeply.
It is up to us. We want to change systems. We must recognize ourselves as actors in those systems. We must work across and from our own power to make change. Power matters. We are committed to paying attention to those who are most vulnerable.

Welcome whimsy, creativity and wonder.
We have fun! We stretch our ways of knowing. We fall in love with problems. We approach those problems with creativity and wonder.

Start somewhere, go everywhere.
There is no wrong place to start with a complex problem. We take a systems approach that looks at all levels all the time. We are committed to having the biggest impact possible, but we realize it will often start with small steps.

Co-create the future.
We are moving forward together in a good way. We recognize the need to acknowledge the legacies of colonialism, and we commit to reconciliation for a better future together.

What is a social innovation lab?

By social innovation, we mean any initiative, product, process, program, platform, or project that challenges and—over time—changes the defining routines, resources, and authority flows or beliefs of the broader social system in which it is introduced. Successful social innovations are durable, scalable, and transformative (Westley 2014).

Social innovation labs aim to transform systems by getting at the roots of complex problems and involving a diverse range of stakeholders in the process. An underlying assumption is that many of our biggest problems are embedded in our institutional logic—our patterns of power, authority, and marginalization. By working across sectors and bringing citizens and systems closer together, labs aim to generate new understandings of how things could be different (RADIUS SFU 2018).

This work is experimental. The answers don't yet exist, so lab fellows try things out and learn from doing. The lab is a safe container for this learning to happen. The process empowers participants—including our fellows, partners, and people at the point of impact—to develop creative agency over their future and the future of our province. By creative agency, we mean the will and capacity to change one's environment.

A social innovation lab is well suited for some challenges and not so well suited for others. Here are some examples.

What a social innovation lab is (and is not) suited for

A lab is suited for…	A lab isn't well suited for…
Problems posed as high-level questions with **no pre-determined outcomes**.	Problems with known scope, timeline, budget that include pre-defined solutions / pre-determined outcomes—for instance, program or process efficiencies where the goal is to reduce costs and decrease processing time.
Multidisciplinary teams with internal and external partners from varied disciplines and sectors—representing diversity in thought, experience, approach.	Teams made up of the predictable group of representatives that may or may not consult with other teams, partners, organizations, etc.
Problems that require an **experimental**, adaptive, and iterative approach—test, measure, adapt.	Problems that require a linear and/or fixed approach—plan, seek approval, implement.
Complex problems where solutions can only be found in a larger context or whole system approach—all of government and beyond.	Complicated problems where solutions are found with a single or small number of owners and do not require multiple perspectives and interconnection.
Root causes that are hard to identify, but where purposeful exploration of the problems can identify, address, and lead to better understanding of the causes.	Causes that are identifiable, understood, and easily addressed as the core of the issue—for instance, those that can be solved with effort, time, and money.

Our inspirations

The NS GovLab leadership team uses a variety of theories, models, and practices to help guide the work. We don't think of these as blueprints to be followed precisely. We draw inspiration from them and use them in combination, adapting as we go. In this way, we hope that our fellows will experience what can work in different contexts.

Our fellows delve into design thinking, systems thinking, transformational learning, and more.

Design thinking

Design thinking is a creative discipline with roots in the field of industrial design. In the broadest sense, design thinking is a process that helps people "unlock their creative potential and apply it to the world" (Stanford University nd).

Design thinking is a process for generating possible interventions for complex problems. It is often focused on creating new and useful products, services, experiences, or systems.

These are some key elements of design thinking:

- developing empathy for those you are designing for and with
- generating lots of ideas
- testing ideas early and often
- iterating ideas based on insights from testing

The design thinking process uses three main factors to assess ideas: desirability, feasibility, and viability.

- **Desirability** is concerned with how desirable the idea is for the people who might use or need it.
- **Feasibility** is focused on how easily the idea might be to implement.
- **Viability** is an assessment of how likely the idea is to solve the challenge it is intended to.

The design squiggle, conceived by Damien Newman, is a simple illustration of the design process. It is intended to convey the feeling of the journey—beginning on the left with mess and uncertainty and ending on the right with a clear, focused design (Newman nd).

The design squiggle

Systems thinking

A system is a set of interrelating and interdependent parts that create a complex whole. You cannot understand it as a function of any isolated component. The human body is a system. Canada is a system. Our economy is a system. Families are systems.

Systems have interrelated parts that connect with interrelated parts in other systems. For instance, our cardiovascular system is inside our human body system, which is in our family system, which is in our provincial and Canadian systems. Another example is that a car is a system that drives on the roadway or transportation system of a place. Each system can impact another in ways we might not expect. This adds to the complexity of the modern world.

All systems have boundaries (space, time, and thought), hierarchies (rank, power, and privilege of each element relative to others), and interconnectivity (how the elements connect to each other). It is important to keep these things in mind and it can be helpful to try to identify them when considering the system you will be trying to change through your work in NS GovLab.

Systems thinking is a set of methods and tools that help us understand complex systems. A systems mindset equips us to

- see patterns, not just problems
- inspire change, rather than imposing it
- plan to adapt, rather than stay the course
- seek health, rather than a fixed end point

You will use several systems thinking methods at NS GovLab. For example, you will zoom in on certain parts of the system related to your challenge, and zoom out to see connections and relationships—examining what enables and what blocks the effectiveness of the system for those it is intended to serve.

Systems mapping

Systems mapping is a method for making systems visible. An organization flow chart is a systems map for the structure of human resources within a particular organization. A process map of a production line, showing the movement of raw elements through to final product, is another kind of systems map. The kinds of systems maps you use at NS GovLab will generally focus on complex systems, and will have three main components:

- **actors** (people, organizations, and policies)
- **connections** (how the people, organizations, and policies relate to each other)
- **barriers or enablers** (things that help or hinder the system to work effectively and efficiently)

We use systems mapping throughout our process and in different ways, depending on our level of clarity about the challenge we are working on, and our understanding of the system in which the challenge is situated. As we get more clarity and details, we can add more layers. We don't ever consider a systems map to be finished. It is always a work in progress, used primarily for learning and thinking about what is possible in the future.

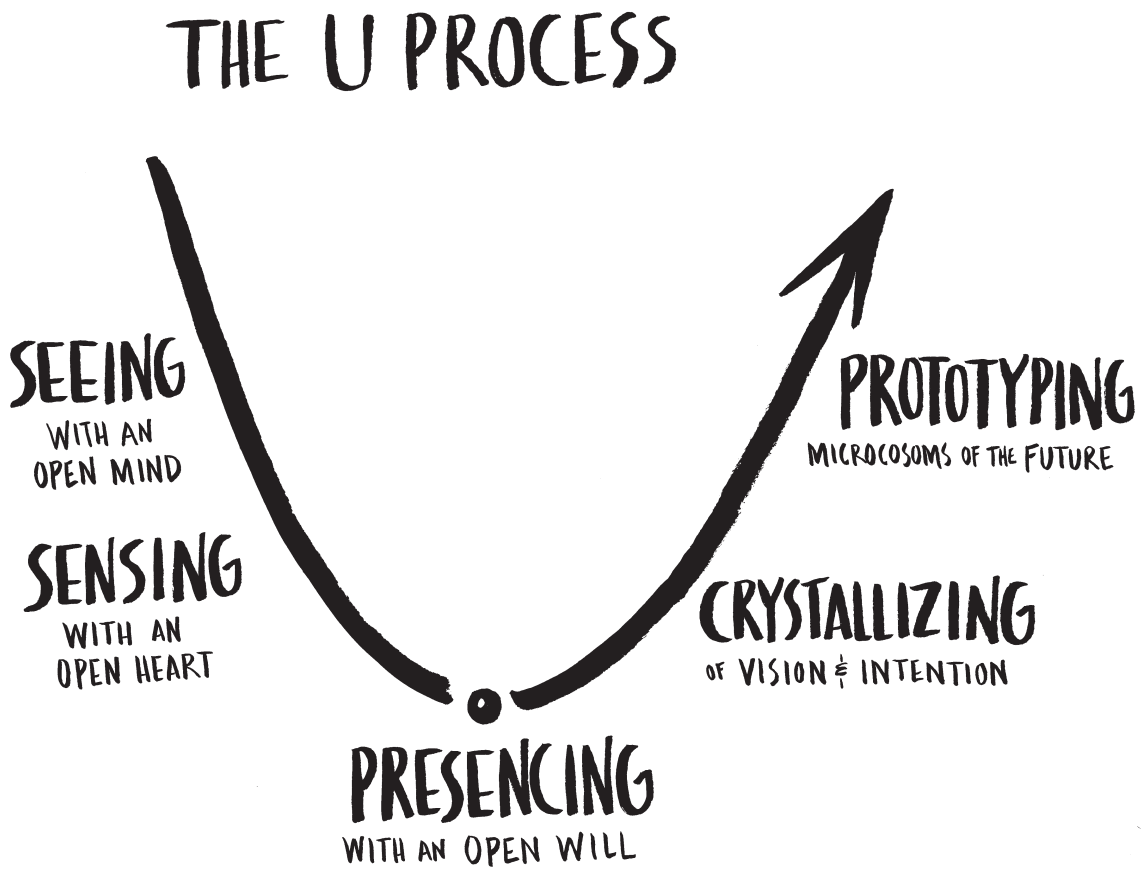
Transformational learning: Theory U

Theory U is a change management model for transformative learning. It is also known as the U Process. Primarily developed and shaped by Otto Scharmer through his work at Massachusetts Institute of Technology (MIT), in its simplest form Theory U is an invitation to take a detour from the typical problem-to-solution

pathway. The detour includes taking time to open your mind, your heart, and your will to allow something new—an unknown possibility—to emerge for the future. The process is grounded in a commitment to cultivate deep self-awareness, organizational understanding, and societal understanding (Scharmer nd).

This also connects to adrienne maree brown's work on emergent strategy, which "teaches us to map, assess, and learn from the swirling structures around us in order to better understand and influence them as they happen" (brown 2017).

We use the U process as a map to help us understand the personal trajectory through social innovation, and as a reminder for our lab fellows to shift their focus away from solutions and toward the learning and journey to a new possible future.



Adapted from The Presencing Institute (www.presencing.org/aboutus/theory-u)

Our process

The NS GovLab process is nonlinear and emergent by nature. Emergence is

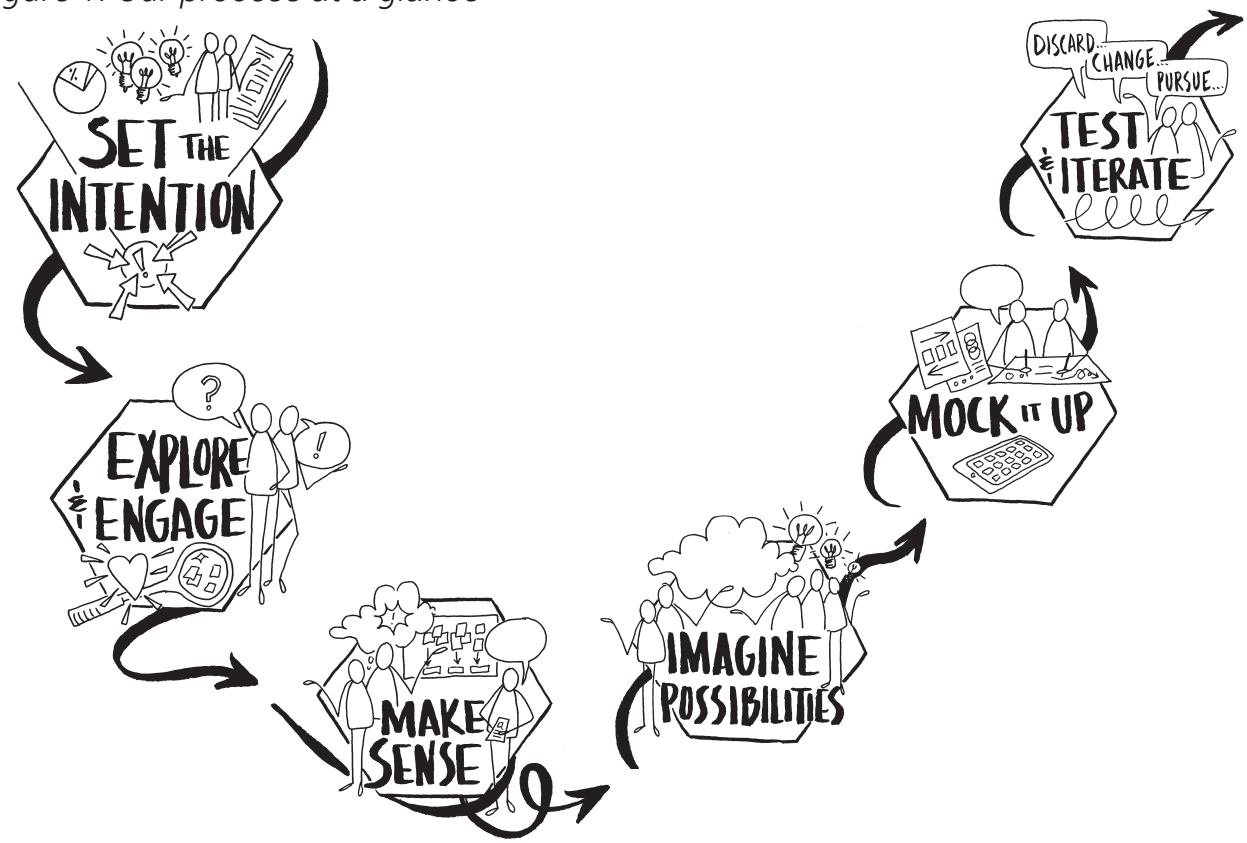
- the process of becoming visible after being concealed
- the process of coming into existence or prominence

Figure 1 shows the whole process at a glance. For the first phase of the fellowship, you will develop skills and capacities in each of the six cells shown in the diagram. You will learn by doing. You will then be able to make decisions about what parts of the process are appropriate in what contexts. This allows you to use the process flexibly to respond to complex challenges.

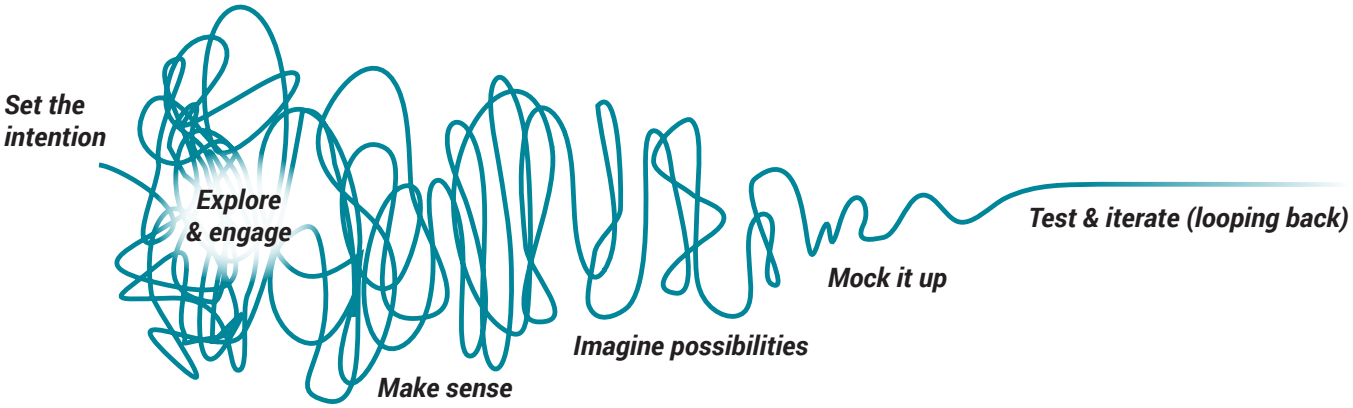
The following six modules in this binder correspond to the six cells in the NS GovLab design process. Each module zooms in on one cell or phase in the process.

Although the process is nonlinear, it does roughly follow the path of the design squiggle described earlier.

Figure 1. Our process at a glance



Our process may feel something like this...



How we use creativity and embodiment

Traditional problem solving in a western context depends heavily on thinking and talking. In NS GovLab, we use creativity, embodiment, and learning from the land to tap into different ways of knowing, seeing, and expressing our learning about the world around us.

We offer opportunities to use different forms of creativity throughout our process. For example, drawing allows us to be visual in expressing our ideas and thoughts. Improv helps us tap into our spontaneity, confidence, and courage to try things out and use what is available.

Embodiment and embodied practice span many disciplines and mean many things. In NS GovLab, we look at ways to reconnect with our bodies and the deeply held wisdom within. We also consider how we interact and respond to each other and the world around us. Everyone is encouraged to participate as much or as little as is comfortable for them. We have experimented with different ways of moving our bodies; moving and noticing things around us; games of energy movement; and finally experiencing movement in pairs and as a whole group. It was fun and reminded us that we are not just thinking brains, but whole-bodied beings that can sense so much more of the world when we connect with our bodies.

We encourage you to embrace this opportunity and to bring you whole selves to the experience of NS GovLab.

How we use developmental evaluation

Developmental evaluation aligns well with social innovation (Patton 2011). It emphasizes making sense, recognizing patterns, and adapting as you explore, develop, and test ideas. Developmental evaluation differs from traditional

evaluation approaches—such as formative and summative evaluation—in a few key ways. Formative and summative evaluation focus on improving, proving, or validating for accountability purposes. They require outcomes that are fairly stable and predictable, with few unknowns. Because the work you will do as a lab fellow emphasizes learning over knowing, with multiple pathways and few knowns, a different approach to evaluation is needed.

The skills and tools we use for evaluation are simple and accessible. Your work will be informed by testing and experimenting. You will pay attention to what happens; you will get feedback on everything you do; you will make sense of what happened; and you will learn from what you did. This cycle builds on what has already been done and repeats itself throughout the fellowship.

Reflection is a key practice to your work and evaluation. You will have the opportunity to reflect individually, in a small group, and with the larger group. This practice helps you to make sense of what is happening, to see patterns and themes emerging, and to generate new questions and next steps.

Your learning goals

Take a few minutes to consider these questions. Write or draw your thoughts here, then share them with your small group. Let's see what you're thinking at this point.

- What is your intent in coming to NS GovLab?

- What do you hope to leave with that will be different from what you have now?

Learn more at these links

1. ***What is Social Innovation?*** Watch this short video produced with the Social innovation Generation Knowledge Hub (3:03 minutes): https://vimeo.com/60114688

2. ***"Would You Play a One String Guitar?"*** Read about holistic learning in this article by Virginia Griffin: http://www.icdr.com/WouldYouPlayAOneStringGuitar.pdf

3. ***Developmental evaluation.*** We are using developmental evaluation in our work. You will be part of this, so having a basic understanding would be helpful.

    - Read "A Developmental Evaluation Primer," by Jamie Gamble, at https://www.mcconnellfoundation.ca/assets/Media%20Library/Publications/A%20Developmental%20Evaluation%20Primer%20-%20EN.pdf

    - Watch "Developmental Evaluation," posted by Claudia Wong (13:19 minutes), at https://www.youtube.com/watch?v=oL8Nz83KUZ8

4. ***Complexity and Complex Problems.*** Watch "Complex Problems: Complexity or Clockware," by Frances Westley, Waterloo Institute for Social Innovation and Resiliency (6:51 minutes), at https://vimeo.com/117051066

5. ***Mindsets.*** We will be using a Human-centred Design process to loosely guide our work together. These Design Kit videos by IDEO will give you a sense of the core mindsets we are asking you to embrace (each one is very short, from 1-2 minutes long): http://www.designkit.org/mindsets

6. ***Indigenous Ways of Knowing.*** We only touch on this, but we will be delving more deeply during our time together. Weaving together Indigenous and Western ways of knowing wil continue to develop as a key part of NS GovLab.

    - Learn about Two eyed Seeing, as taught by Mi'kmaq Elder Albert Marshall.

        - Read about the principles at http://www.integrativescience.ca/Principles/TwoEyedSeeing/

        - Watch this video featuring Elder Albert Marshall, Elder Murdena Marshall, and their colleague Dr. Cheryl Bartlett at Cape Breton University (8:44 minutes): https://www.youtube.com/watch?v=_CY-iGduw5c

    - Watch "Indigenous Knowledge and Western Science: Contrast and Similarities," by Dr. Leroy Little Bear, at https://www.youtube.com/watch?v=gJSJ28eEUjI

    - Watch "Etuaptmumk: Two-Eyed Seeing," by Rebecca Thomas, TEDxNSCCWaterfront, at https://www.youtube.com/watch?v=bA9EwcFbVfg

References for Module 1

brown, adrienne maree. 2017. *Emergent Strategy: Shaping Change, Changing Worlds.* AK Press. https://www.akpress.org/emergentstrategy.html (Retrieved April 26, 2019).

Henningar, L. 2018. "Time well spent with NS GovLab" (blog post). https://medium.com/@NSGovLab/time-well-spent-with-ns-govlab-b150aa4ce9c2 (Retrieved April 30, 2019).

Newman, D. nd. *The Design Squiggle* website. San Francisco CA. https://thedesignsquiggle.com (Retrieved April 26, 2019).

Patton, M. Q. 2011. *Developmental evaluation: Applying complexity concepts to enhance innovation and use*. New York, NY, US: Guilford Press.

Presencing Institute. nd. *The Presencing Institute* website. https://www.presencing.org/aboutus/theory-u (Retrieved April 26, 2019).

RADIUS SFU. 2018. Canadian Labs Landscape presentation. Converge 2018.

Scharmer, O. nd. *Otto Scharmer* website. Massachusetts Institute of Technology, Cambridge MA. www.ottoscharmer.com (Retrieved April 26, 2019).

Stanford University. nd. *d.school.* https://dschool.stanford.edu/about (Retrieved April 26, 2019).

Westley, F. 2014. *Waterloo Institute for Social Innovation and Resilience* website. University of Waterloo, Waterloo ON. https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/about/what-social-innovation (Retrieved April 26, 2019).

Set the intention

Module 2

Set the intention

"Intentional adaptation is the heart of emergent strategy. How we live and grow and stay purposeful in the face of constant change actually does determine both the quality of our lives and the impact we can have when we move into action together."

adrienne maree brown

Value learning over knowing

NS GovLab is about learning as you go and being open to possibilities. You will spend less time thinking about solutions and more time investigating and learning about what's happening for other people.

Get ready to explore with curiosity and openness and to challenge yourself to think about problems in new ways. Embrace the beginner's mindset. You will be surprised where this process can take you.

As you start this journey, it is helpful to reflect on what you are bringing into it. Start by taking some time to reflect on these questions. You can write or draw your thoughts below.

- What do you know already about population aging and aging in Nova Scotia? (What's happening now? How do you know?)

- What are you are less certain about? What don't you know?

Embrace complexity

NS GovLab aims to focus on **complex** challenges. This means there are no right answers, but there will be emergent patterns that can help us determine what might be happening. Complex challenges dare us to focus on the unknown unknowns and to try out competing ideas, looking for patterns and signals for what to try next.

Examples of simple, complicated, and complex challenges

A simple challenge is something that is easily knowable.	**A complicated challenge** is not simple but is still knowable.	**A complex challenge** is not fully knowable but can become reasonably predictable with enough information and perspectives.
Following a Recipe	**Sending a Rocket to the Moon**	**Raising a Child**
The recipe is essential	Formulae are critical and necessary	Formulae have limited application
Recipes are tested to assure easy replication	Sending one rocket increases assurance that the next will be OK	Raising one child provides experience but no assurance of success with the next
No particular expertise is required. But cooking expertise increases success rate	High levels of expertise in a variety of fields are necessary for success	Expertise can contribute but is neither necessary nor sufficient to assure success
Recipes produce standardized products	Rockets are similar in critical ways	Every child is unique and must be understood as an individual
The best recipes give good results every time	There is a high degree of certainty	Uncertainty of outcome remains

(Recipe, rocket, and child examples from Glouberman & Zimmerman 2002)

Note: The examples of simple, complicated, and complex challenges are not meant to imply that all challenges fit neatly into any one category. There can be simple elements in both complicated and complex challenges. The nature of a challenge over time and through action may also change how it might be categorized.

Divergent and diverse points of view help us to make sense of complex challenges, and will be important in the work. We will

- Look for ways to increase interaction and communication in order to come to a shared understanding.
- Stop the temptation to fall back into habitual and traditional ways of problem solving, like looking for facts instead of allowing patterns to emerge.
- Avoid the temptation to move to solutions or resolutions, and instead take time for learning and reflection to allow new possibilities to come forward.

Frame the challenge

Framing is about choosing where to pay attention. What you pay attention to and the connections you make among ideas can open up new possibilities or keep you fixated on the status quo. Consider the following example.

A framing example: Rethinking the dependency ratio

Economists often frame the challenge of population aging in terms of the dependency ratio. This is the ratio of people who are of working age (20–64) compared to those who are not of working age (0–19 and 65+).

Youth (ages 0–19) + older adults (ages 65 or older)
per 100 workers (ages 20–64)

The result is supposed to measure the pressure on the "productive" population. In other words, it aims to measure how many working folks are available to pay full taxes for public services. Because the dependency ratio is framed this way, solutions tend to focus on increasing birth rates (Quebec for example) or increasing immigration (New Brunswick for example).

What happens if we challenge the basic elements of the dependency ratio? The framing of the dependency ratio reveals a belief that labour force attachment equates to productivity. It ignores the fact that people 65+ are not necessarily dependent, nor are all working-age people in the workforce. What if we started to include elements of value creation that are calculated by things other than labour force productivity? So, for example, what if we consider the value of all the free labour typically provided by women who care for children or home life? What about the value contributed by grandparents who in higher and higher ratios are providing free childcare for their grandkids (Margolis

2017) (Milan, Laflamme, and Wong 2015)? Or the value contributed by older people who are volunteering more and for longer periods of time than any other age group (NS Department of Seniors 2017, 8-9) (Imagine Canada 2014, 37)?

Each of these elements and their connections begin to shift how we think about the dependency ratio, and possibly reframe the factors that are important to be looking at for potential innovations while our population is aging.

Worldviews

Much of how we see the world and what has been taught to us in schools is from a colonial, free-market mindset. This mindset includes presumptions about the way the world is and should be—emphasizing individual responsibility and the importance of free-market capitalism in human progress. Historically and in the present, we can see this in the positioning and framing of "Indigenous issues," "Black issues," "Newcomer issues," and many other social and economic issues. At NS GovLab, we are trying to unsettle this way of thinking and are weaving Indigenous ways of knowing together with social innovation.

An Indigenous worldview offers a more holistic perspective on people, the planet, and all living beings. We will be working to balance and weave together Indigenous and non-Indigenous ways of knowing through the entire process to go forward together in a good way. You can see this reflected in our principle, "Co-create the future."

We will be asking you to reflect on how you are framing your challenges and will encourage you to be explicit about the connections you are making among ideas and the way you see the world. We will also be asking you to focus on complex challenges and may challenge your definition of the challenge you have chosen as complex. This will help you distinguish between incremental change and the transformative change we are looking to focus on.

How Might We…?

A How Might We (HMW) question is a design thinking technique to unblock thinking and open the way to new possibilities. It frames the design challenge as an opportunity, and encourages collaboration. An effective How Might We question is broad enough to support a wide range of solutions, and narrow enough to provide helpful constraints. At each phase in the design process, and with each iteration, the How Might We question can change in response to fresh insights.

In the broadest sense, your design challenge begins with the two questions we all share at NS GovLab:

- **How might we create** a province where people can age at home and stay connected to their community?
- **How might we foster** connections across generations and cultures to create resilient communities in Nova Scotia that can adapt to their changing demographics?

To arrive at these two guiding questions, the NS GovLab team examined existing research and conducted our own field research. Figures 2 and 3 offer a glimpse of some of the ideas and facts that helped to shape each How Might We question.

Figure 2.
Data on aging in place and staying connected—for NS GovLab Design Challenge 1

How might we create a province where people can age at home and stay connected to their community?

The ability to age in place and stay connected to community depends on several factors, such as one's health, current living arrangement, adaptability of the living arrangement over time, finances, sense of safety, sense of connectedness, available supports and services, ability to participate, and access to transportation.

NS GovLab was curious about how Nova Scotians want to age in place and stay connected to their community. We were equally curious about the conditions that facilitate aging in place and staying connected to community, as well as the barriers to doing so.

Here is some of the data that informed this design challenge question:

Housing: 65+
- 76% of Nova Scotians over the age of 65 live in a single detached house.
- Of that 76%, 1 in 4 still maintain a mortgage.
- 10% of those 65+ who still carry a mortgage need a major home repair.

(Statistics Canada 2016)

Housing: 85+
- 50% of Nova Scotians over the age of 85 live in a single detached house.
- 25% live in a private apartment, condo, or mobile home.
- 25% live in an institutional or communal setting.

(Statistics Canada 2016)

Community connections
- Almost 75% of Nova Scotians have a strong sense of belonging to their communities.
- Until 2008, the percentage of Nova Scotians who reported having 5 or more close friends on whom they could rely had dropped steadily—from 68% in 1994 to 52.5% in 2014.
- 84% of Nova Scotians provided unpaid help to others in 2013.

(Engage Nova Scotia 2018)

Figure 3.
Data on migration and resident status—for NS GovLab Design Challenge 2

How might we foster connections across generations and cultures to create resilient communities in Nova Scotia that can adapt to their changing demographics?

An aging baby boomer generation is contributing to an aging population, but other factors also influence our population, including fertility rates, immigration rates, and interprovincial movement (those that move to the province and those that move out of the province), to name a few.

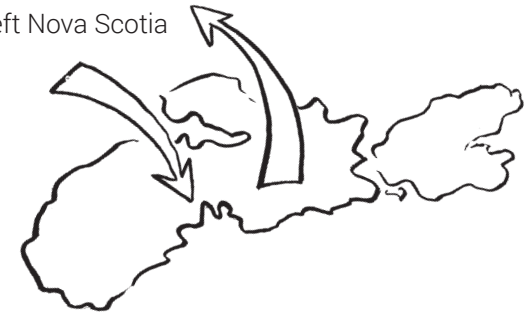
NS GovLab was curious about the role identity and integration play within and across communities. We wanted to understand the conditions under which community resilience is developed, fostered, or hindered.

Here is some of the data* that helped inform the second design challenge question:

Immigration
- 2016–17 saw the second-largest number of immigrants to the province on record, at 4,356. This was second to the record number of 5,442 in 2015–16, which included a large influx of Syrian refugees in early 2016. (Note: These statistics are based on fiscal years.)
- An analysis by county found that immigration concentrated around Halifax, with over 3,700. The next highest numbers of immigrants added to Pictou County, Kings County, and Cape Breton.

Non-permanent residents
- 2016 also saw the second-largest increase in net non-permanent residents coming to the province, at 2,140. This was also second to the 2015 record of 2,634.
- An analysis by county found net changes in the number of non-permanent residents were concentrated in Halifax. Apart from Cape Breton, most other net changes in non-permanent residents were reported in the counties centred around Halifax.

Moving from or to Nova Scotia (interprovincial movement)
- Interprovincial movement data shows that 14,971 people left Nova Scotia for other provinces in 2016.
- 15,616 people moved to Nova Scotia from other provinces in 2016.



**(Nova Scotia Finance and Treasury Board 2017)*

Consider people and places at the point of impact

Whatever you choose to work on, the intent is always to meet peoples' needs. By "people" we mean the people at the point of impact. These are the people who will be most affected by the solutions you design. For example, this could include not only the people who receive a service, but also their close family members, as well as the staff that deliver the service.

The human-centred co-design model developed by the Auckland Co-Design Lab (2018) starts its framing phase with questions like these:

- What is important to those impacted?
- Who needs to be involved and how (and who decides this)?
- What is the readiness of those involved—for the process and for the change?
- What are the cultural contexts we are working in?

Indigenous wisdom teaches that people and the land are inextricably connected. The wellbeing we seek for people must be good for the land, as well.

Putting people and the land at the centre is about cultivating empathy and acting with compassion and accountability. It is the heart and soul of transformative change.

Begin to map the system

Complex challenges are embedded in systems. This contributes to the complexity. Mapping your group's current understanding of population aging in Nova Scotia can help you come to a shared understanding of the challenge and some of the important elements. It can help you understand how each of you is framing the challenge, as well. For instance, some people tend to look at the policy level while others focus on individual experiences.

At this stage, we recommend that you work as a group to draw a "brain dump" systems map. Your group will identify

- what you think is happening, or what is known so far
- questions or areas where you don't know enough
- your shared understanding as you work on specific areas
- your next steps

Use words and symbols to help explain the system you are curious about.
For example:

- What actors and organizations are involved?
- What are their relationships with one another? (Solid lines between actors and organizations can show direct relationships, while dashed or dotted lines might show less direct relationships.)
- Are there blockages or enablers? (Minus and plus signs can reflect blockages and enablers.)

The key with this is not to produce a neat or perfect map, but rather to get current thinking on a page. Make sure that all members can participate fully. Each person should have their own pen or marker. Lots of discussion is good to help increase understanding in your group and to clarify how each of you frames the challenges you currently see.

Worksheet 2-1. Begin to map the system

What do you want to change?

NS GovLab has a transformative change goal. We ask you to think about what you want to change. What is the current state as you see it now and what is the future state you would like to see? From these statements, you can then frame your challenge as a How Might We question to help guide your work. Consider the following example, then use Worksheet 2-2 to begin to document your thinking.

Example for Worksheet 2-2: What do you want to change?

In the future...
Nova Scotia will be a province of vibrant intergenerational thriving communities

	Key ideas and their connections	How might we...?
From Communities with a scarcity mindset and competition for resources **To** Communities with an abundance mindset and intergenerational sharing of resources	Mindsets are currently based on a scarcity model, we don't have enough resources and must compete with each other to access them. We can shift our mindsets to abundance and see how we can meet the needs of many with the resources we have.	How might we create sharing and a sense of abundant resources through intergenerational connections in communities across NS?

	Key ideas and their connections	How might we...?
From Communities of isolated individuals **To** Communities that value and embrace connections between community members across generations	Nuclear family and global movement for work has reduced intergenerational familial connections and living together. We can re-introduce of the importance of intergenerational connection as more than just intergenerational familial connections.	How might we holistically plan and develop intergenerational communities?

Worksheet 2-2. What do you want to change?

In the future…

	Key ideas and their connections	**How might we…?**
From **To**		

	Key ideas and their connections	**How might we…?**
From **To**		

Starting with a framing question that is broad enough and narrow enough takes practice. Consider the examples in Figure 4.

WARNING: Do not get too attached to your How Might We question. It will change as you know more and understand the challenge more deeply. This is a starting point.

Figure 4. How to scope How Might We questions

Too Narrow 	**How might we create a cone to eat ice cream without dripping?** This question implies that redesigning the cone is the solution. It doesn't invite you to explore other possible opportunities.
Too Broad 	**How might we redesign dessert?** This question doesn't give enough direction. It offers no starting point and no spark to help you generate ideas around one category of desserts. If the challenge is about ice cream, then it's important to include that in the question.
Just Right 	**How might we redesign ice cream to be more portable?** This question is scoped properly because it frames the challenge but does not imply a solution. Rather, it allows you to brainstorm many solutions.

Your reflection on setting the intention

- What are your biggest learnings and curiosities so far? Write or draw any “Ah-ha” moments here.

- What are your challenges and worries? Write or draw any “Uh-oh” moments here.

- What do you need to move forward? (“Nothing” is a perfectly valid answer.)

Take stock and decide

Decision making here refers to reflection on action—taking stock of what you've done and what it means going forward. Reflect on what has led you to the decisions you've made, and why.

- What actions have you taken to set the intention of your work with NS GovLab?

- What beliefs have surfaced (opinions you have, assumptions you hold, etc.)?

- What knowledge have you accessed (sources of information that are not opinion-based)?

- What challenge are you deciding to focus on? If you have decided on a specific How Might We question, you can record it here.

Learn more at these links

1. Why is learning over knowing so important now and for the future?
Read "Education Is Not The Answer (Part 1)," by Heather E. McGowan.
https://www.linkedin.com/pulse/education-answer-part-1-heather-mcgowan?trk=hp-feed-article-title-share

2. Why is problem framing key to innovation?
This short video shares experiences from Design Sprint participants about why problem framing was key for what comes next. Watch "Why Problem framing is important?," by Design Sprint Academy (2:20 minutes).
https://www.youtube.com/watch?v=Wl6u2FKotIU

3. The power of language in problem framing.
Why do we use How Might We and how can it be a powerful tool for unlocking possibilities and curiosities, as well as uncovering your underlying assumptions? Watch "How Might We," by FourSightOnline (2:08 minutes).
https://www.youtube.com/watch?v=6BfIK3suMBo

4. Innovation does not need to be costly.
When extreme limits exist, we need to look inside for ways to create value for little or no cost. Watch "Creative problem-solving in the face of extreme limits," by Navi Radjou (16:29 minutes).
https://www.youtube.com/watch?v=cHRZ6OrSvvI

5. Population aging in Nova Scotia.
SHIFT: Nova Scotia's Action Plan for an Aging Population is changing the narrative about older adults. Check it out at https://novascotia.ca/shift/

References for Module 2

Auckland Co-Design Lab. 2018. *An introduction to Co-Design principles and practice, Co-Design process: cheat sheet*. Auckland NZ. https://www.aucklandco-lab.nz/resources (Retrieved April 27, 2019).

Glouberman, S. & Zimmerman, B. 2002. *Complicated and Complex Systems: What Would Successful Reform of Medicare Look Like?* Commission on the Future of Health Care in Canada: Discussion Paper No. 8. 8. https://www.researchgate.net/publication/265240426_Complicated_and_Complex_Systems_What_Would_Successful_Reform_of_Medicare_Look_Like (Retrieved April 26, 2019).

Engage Nova Scotia. 2018. *Nova Scotia Quality of Life Index, 1994–2014.* http://www.nsqualityoflife.ca/full-report (Retrieved April 26, 2019).

Imagine Canada. 2014. *The Non-profit Sector in Nova Scotia: A Statistical Portrait. Department of Labour and Advanced Education, Province of Nova Scotia*. https://novascotia.ca/NonProfitSector/documents/The-Nonprofit-Sector-in-Nova-Scotia-A-Statistical-Portrait.pdf (Retrieved April 26, 2019).

Margolis, R. 2017. "Grandparent Health and Family Well-Being." *The Vanier Institute of the Family* https://vanierinstitute.ca/grandparent-health-family-well-being/ (Retrieved April 26, 2019).

Milan, A., Laflamme, N., Wong, I. 2015. "Diversity of grandparents living with their grandchildren." *Insights on Canadian Society, Statistics Canada.* https://www150.statcan.gc.ca/n1/pub/75-006-x/2015001/article/14154-eng.htm (Retrieved April 26, 2019).

Nova Scotia Finance and Treasury Board. 2017. *Nova Scotia Population Estimates as of July 1, 2017.*

- Immigrants to Nova Scotia (graph) https://novascotia.ca/finance/statistics/archive_news.asp?id=13193&dg=&df=&dto=,6f&dti=24
- Estimates by County - July 1, 2017 (graph) https://novascotia.ca/finance/statistics/archive_news.asp?id=13575&dg=&df=&dto=,6f&dti=24
- International Migration Components (graph) https://novascotia.ca/finance/statistics/archive_news.asp?id=13193&dg=&df=&dto=,6f&dti=24
- Estimates by County: Population Change (graph) https://novascotia.ca/finance/statistics/archive_news.asp?id=13575&dg=&df=&dto=,6f&dti=24
- Interprovincial Migration Components (graph) https://novascotia.ca/finance/statistics/archive_news.asp?id=13193&dg=&df=&dto=,6f&dti=24

Nova Scotia Department of Seniors. 2017. *Shift: Nova Scotia's Action Plan for an Aging Population.* Halifax: Province of Nova Scotia. https://novascotia.ca/shift/shift-action-plan.pdf (Retrieved April 26, 2019).

Statistics Canada. 2016.

- Catalogue Number 98-400-X2016015 - Structural Type of Dwelling, Age and Sex for the Population in Occupied Private Dwellings of Canada, Provinces and Territories, Census Divisions and Census Subdivisions, 2016 Census – 100% Sample Data.
- Catalogue Number 98-400-X2016230 - Housing Indicators (5), Tenure Including Presence of Mortgage Payments and Subsidized Housing (7), Age of Primary Household Maintainer (9), Household Type Including Census Family Structure (16), Household Siz (8) and Period of Construction (12) for Owner and Tenant Households With Household Total Income Greater Than Zero in Non-farm, Non-reserve Private Dwellings of Canada, Provinces and Territories, Census Metropolitan Areas and Census Agglomerations, 2016 Census - 25% Sample Data.

Explore and engage

Module 3

Explore and engage

"Creativity requires input, and that's what research is. You're gathering material with which to build."
Gene Luen Yang

"You have to do the research. If you don't know about something, then you ask the right people who do."
Spike Lee

Record what you know and are curious about

Once you have set the intention for your research and before you head out into the field, take some time with your group to consider the following.

- What is it about your question or area of focus that sparks your curiosity?

- What do you already know about your question or area of focus? What is happening now? What data sets exist (Statistics Canada census data, labour force survey, CMHC housing reports, etc.)?

- What assumptions or hypotheses are you making about your design challenge question?

A hypothesis is an informed hunch or guess to be tested.

An assumption is a belief lacking evidence to substantiate it.

- What do you want to learn more about? What don't you know?

Proceed ethically

Part of your work as a fellow with NS GovLab will include research and prototype testing with humans. You will be asking them for their experiences, thoughts, and opinions, as well as their time. This is a Big Ask. Some of you may have had experience with academic research where getting ethics approval is a formal process. Others may not have this experience.

Working ethically is a critically important element of any research, but it doesn't have to be complicated. Our approach is framed by respect, responsibility, and honesty (IDEO 2015).

Respect

- Am I treating the research or testing as a collaboration with participants?
- Am I aware and considerate of the cultural expectations and sensitivities of the situation?

Responsibility

- Am I confident that our work is not harmful?
- Did I get consent (use Worksheet 3-6 if collecting personal information)?
- Did I explain the purpose of the research, the use of the information, and the process for safeguarding the information?

Honesty

- Am I doing my best to not mislead participants?
- Have I introduced myself, the team, and the purpose of our work?

Types of bias to watch out for in research
(Choong Ching 2016) (Practical Psychology 2016)

Confirmation bias
The tendency to search for or interpret information in a way that confirms one's preconceptions.

Groupthink and the bandwagon effect
The tendency to do (or believe) things because many other people do (or believe) the same.

Observer expectancy bias
The tendency of a researcher's beliefs or expectations to unconsciously affect the behavior of the observed subject(s).

Anchoring bias
The tendency to assign too much weight to the first piece of information we receive.

Selection bias
When the way data is collected distorts our analyses and conclusions.

Clustering illusion
When we mistake random coincidence in small samples for a trend in the population at large.

Reporting bias
When the direction or statistical significance of results influences whether and how research is reported.

Hindsight bias
Filtering memory of past events through present knowledge, so that those events look more predictable than they actually were.

Plan your research

Work with your group to list people you might want to speak with and places to visit as part of your research. Consider the following four categories:

- **People at the point of impact** are those who will be most affected by the solutions you design. They might be citizens, customers, clients, family, friends, neighbours, frontline service providers, or even policy makers. Consider people who represent opposing or contrary points of view, and not only mainstream points of view.

- **Immersion locations** are places you can visit to find insights and new perspectives on the challenge you are researching. With your group, decide where to put each group member's observation skills into action. There is value in visiting immersion locations as a whole group because you get different perspectives on the same location and situation. You can learn how each person sees the world around them, and learn from their perspective.

- **"Experts"** might include inspiring people, researchers, or organizations already working on your challenge area. An expert does not need to have a degree in the subject, but is someone with a depth of knowledge and experience. If they are not local, consider reaching them by telephone, video calls, or other means, such as Google Hangouts.

- **Analagous inspiration locations** have some quality or characteristic that is similar (analogous) to your challenge area, but with a twist. Think of different contexts that you can learn from and be inspired by to help give you a fresh perspective on your area of focus. For instance, perhaps there is another sector that is more advanced in addressing a challenge similar to yours, and you can learn from their experience. A great example of this is a group that was exploring ways to reduce food waste in grocery stores. They visited a local thrift store to understand how the store approached reusing and repurposing household goods.


!!!
AHA!
ANALOGOUS INSPIRATION LOCATIONS
I'VE LEARNED...
EXPERTS
LOOK...
OOOhh.
IMMERSIVE LOCATIONS
TELL ME MORE...
PEOPLE AT THE POINT OF IMPACT

Worksheet 3-1. Four targets for your research

People at the point of impact	Immersion locations
"Experts"	Analogous inspiration locations

Now refine your list and make plans. Remember that relationships with people and the planet are central to the work of social innovation. The people and places you choose to explore will shape your design thinking.

Worksheet 3-2. People at the point of impact (3–8 individuals)

		Book your interviews and assign interviewers	
Name and basic info	Why this person?	Where/When	Interviewers (at least two for each if possible)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Worksheet 3-3. Immersion locations (2+ locations)

Location	Why this location?	When	Observers (at least two for each, if possible—or ideally the whole group)
1.			
2.			
3.			

Worksheet 3-4. Experts (2–4 individuals or organizations)

		Book your interviews and assign interviewers	
Expert	Why this expert?	Where/When	Interviewers (at least two for each, if possible)
1.			
2.			
3.			

Worksheet 3-5. Analogous inspiration locations (1+ location)

Location	Why this location?	When	Observers (at least two for each, if possible)
1.			
2.			

Tips on talking with people

Talking with people doesn't require special expertise, but it does take some practice. Good conversations can happen in all sorts of ways—for example, in formal interviews, by approaching strangers in a specific location to ask them about it, or through a chance encounter while investigating something else.

It is important to consider how conducting your research will impact those you speak with and observe. Keep in mind the NS GovLab principles while researching. Approach people with honesty and ensure that you instill trust and confidence about how you intend to use what they share. We encourage you to collect as little person information as possible. It is not necessary to collect personally identifiable information while doing this research. It is the feedback and experiences that will give you the insights.

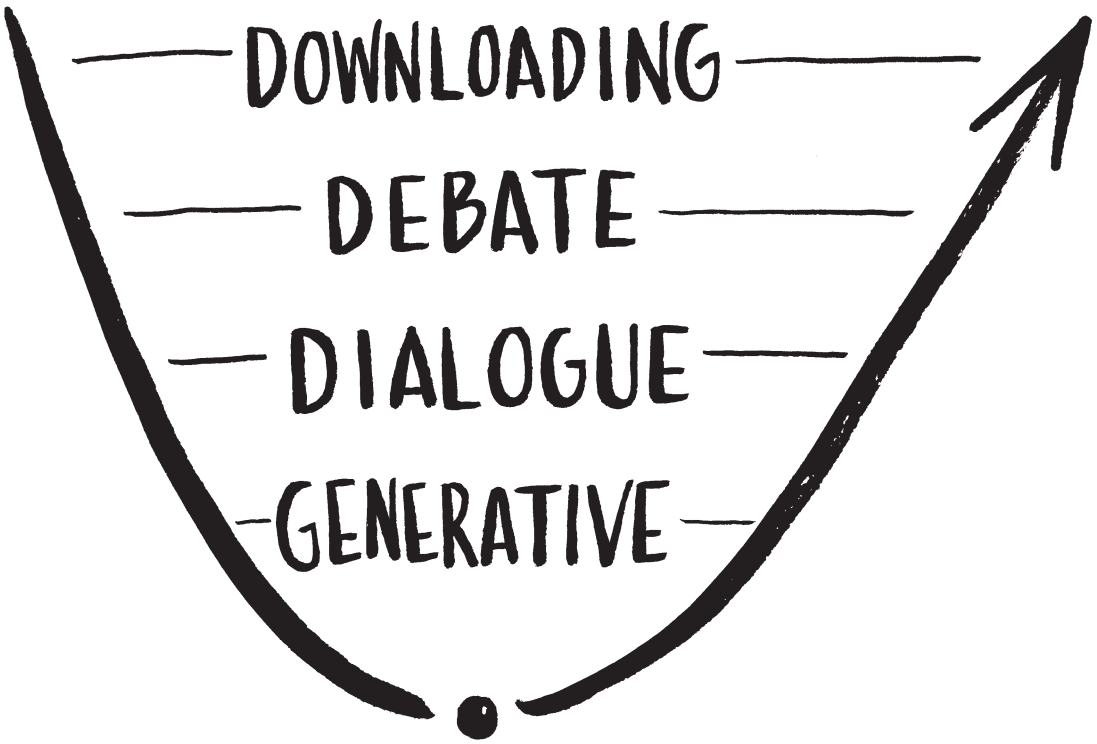
> *IDEO has a great resource, **The Little Book of Design Research Ethics**, that we will provide. You can also check it out at openideo-resources.s3-us-west-2.amazonaws.com/production/assets/807.pdf.*

When talking to people or observing, remember that you are also part of the situation. Your own biases can affect your observations. Also remember to listen to your inner wisdom. Pay attention when you feel uncomfortable, or completely

comfortable, or if you start feeling tension in your body—and try to relax. Each of these sensations may be pointing to things that are important but that you can't yet express with words. Paying attention to your body's wisdom in the moment will help you to recall it later and reflect on it.

Whenever you observe or talk with people, there are some important things to keep in mind:

- **Decide how much** personal information you will need to collect.
- If you are collecting any personal information, **use the consent form** (Worksheet 3-6) to ensure you have consent.
- Always **ask permission** before you record audio or take pictures.
- **Go to where people are.** Introduce yourself and confirm that now is a good time for the person to talk and they're comfortable beginning.
- **Use their language**, not yours—especially not your jargon or industry words. (Their jargon is fine if you understand it.)
- Start with **broad questions first**. (For example, "Can you tell me a little bit about what you do here?") **Build trust** and make sure the person is comfortable.
- Ask deeper **more probing questions later** when you've established trust and rapport. (for example, "You mentioned that such-and-such really makes you irritated. Can you tell me more about why that bothers you?")
- **Let awkward silences last…** The pause is giving the other person a chance to say more. The space you leave for people to fill in the silence is sometimes where the most interesting things get revealed.
- If in doubt, ask, "Can you tell me more about….?" Use this if someone says something vague, to help them **clarify**. And use this if you're not sure the person has really shared everything they think or feel about a topic.
- Include questions you think you know the answers to. Maintain a beginner's mindset.
- **Listen deeply.** The Levels of Listening from the U Process (Theory U) are a good tool to use to ensure you are approaching listening with an open mind, open heart, and open will.



LEVELS OF LISTENING

Adapted from Otto Scharmer

Four levels of listening in Theory U

1. Downloading	Listening from habit for what you already know	Reconfirms opinions & judgements
2. Debate	Noticing differences (disconfirming data) from the outside with an OPEN MIND	Challenges confirmation bias; source of innovation; basis of all science, but not enough for complex social challenges
3. Dialogue	Seeing through another person's eyes with an OPEN HEART	Emotional connection; learn from the experience of another person
4. Generative listening	Letting go with an OPEN WILL	Listening for the highest future possibility

Worksheet 3-6. Freedom of Information and Protection of Privacy (FOIPOP) Consent

NS GovLab is a social innovation lab focused on the aging population in Nova Scotia. As an NS GovLab fellow, I am working with a team to conduct human-centered research to build and test a prototype with potential end users.

We are seeking to better understand [INSERT AREA OF RESEARCH HERE—for example, AGING IN PLACE]. We feel that your experience can help inform our work in this area. You are not required to provide any personal information. If you do share any personal information with us, we will not disclose your personal information to other organizations or individuals, except as required to fulfill the purpose(s) of the program or service, and only to the extent required or authorized by law.

The NS GovLab Fellowship is bound by the principles and requirements of the Nova Scotia Freedom of Information and Protection of Privacy (FOIPOP) Act. The personal information we collect will only be used for research and evaluation purposes, in keeping with the access and privacy provisions of the Nova Scotia FOIPOP Act and the Nova Scotia Personal Information International Disclosure Protection (PIIDPA) Act.

If you are interested in the work of NS GovLab, we encourage you to visit our website at www.novascotia.ca/govlab, or contact us by email at nsgovlab@novascotia.ca, or phone us at (902) 424-0770 in the Halifax Regional Municipality, or toll-free at 1-844-277-0770.

Under the privacy provisions of the FOIPOP Act you have the right to correction of, and access to, your personal information. To obtain access or request a correction, please contact the Health Privacy and Access Office by email at PAOSupport@novascotia.ca or phone (902) 424-5419 or 1-855-640-4765.

I acknowledge that I have read and understand the above information regarding the collection, use, and disclosure of my personal information.

Name _____ *Signature* _____ *Date* _____

Name of Fellow _____ *Signature* _____ *Date* _____

Take shorthand notes

You can use visual cues in your notes to save time and highlight types of information you're capturing. For example, consider putting symbols like these in the margins to help you quickly find what you're looking for. You can also create your own. (You will learn more about using a visual vocabulary in Module 4, "Imagine possibilities.")

Some symbols to highlight your notes

Quotes

When you write down the person's actual words, you can mark them as quotes in the margins. Later when you're looking for the perfect words to sum up a perspective, it will be helpful to find these quotes.

Exclamation

If something you hear or observe strikes you as important or noteworthy, you can put an exclamation in the margin.

Question mark

If there is something you want to learn more about or revisit in your research, you can mark it to make it easy to come back to later or when you're debriefing.

Sketches

If someone shows you something in their environment, draw a small sketch of it. This, combined with photos, can help jog your memory later when you and your team are reviewing what you learned.

My shorthand

Sketch your own symbols and shorthand here so you can refer back to them later.

Make your own version here

Before you go, write your starter questions on Worksheet 3-7, or in a similar format. Immediately following the interview or observation, add your thoughts to the research notes while the details are fresh in your mind. What really stuck with you and the group? Do you have new questions for additional research? Did you uncover something you hadn't considered?

Worksheet 3-7. Outline for research notes

Date

Location

Who we will talk to

Starter questions

Your reflection on exploring and engaging

- What are your biggest learnings and curiosities? Document any “Ah-ha” moments here.

- What are your challenges and worries? Document any “Uh-oh” moments here.

- What do you need to move forward? (“Nothing” is a perfectly valid answer.)

Take stock and decide

Decision making here refers to reflection on action—taking stock of what you've done and what it means going forward. Reflect on what has led you to the decisions you've made, and why.

- What actions did you take?

- What beliefs have surfaced (opinions you have, assumptions you hold, etc.)?

- What knowledge have you accessed (sources of information that are not opinion-based)?

- What challenge are you deciding to focus on?

Learn more at these links

1. **Human-centered design**
   This introductory video from IDEO outlines the concept of human-centered design and its value in problem solving. (1:55 minutes) http://www.designkit.org/human-centered-design

2. **Cognitive biases**
   Cognitive biases create blind spots that can lead to assumptions and false conclusions. Being aware of these biases is the first step in minimizing their impact on your work. This video introduces you to 12 biases that you may encounter. (10:08 minutes) https://www.youtube.com/watch?v=wEwGBIr_RIw

3. **The value of different perspectives**
   In this TED Talk, Amy Edmonson explores how a group of strangers can become a team. She also highlights what is possible when individuals from different industries, places, and experiences collaborate to develop something. (13:07 minutes) https://www.ted.com/talks/amy_edmondson_how_to_turn_a_group_of_strangers_into_a_team#t-775090

4. **Right relationships**
   The 4Rs Youth Movement (Respect, Reciprocity, Reconciliation, Relevance) brings together Indigenous and non-Indigenous youth to explore their histories, their identities, and what it means to be in relationship with one another. (7:29 minutes) https://youtu.be/B9XlFUAasrc

References for Module 3

Choong Ching, T. 2016. *Types of cognitive biases you need to be aware of as a researcher.* UX Collective. https://uxdesign.cc/cognitive-biases-you-need-to-be-familiar-with-as-a-researcher-c482c9ee1d49 (Retrieved April 27, 2019).

IDEO. 2015. *The Little Book of Design Research Ethics*. https://openideo-resources.s3-us-west-2.amazonaws.com/production/assets/807.pdf (Retrieved April 27, 2019).

Practical Psychology. 2016. 12 *Cognitive Biases Explained* - How to Think Better and More Logically Removing Bias (10-minute video). Attributed to Ismonoff TV. https://www.youtube.com/watch?v=wEwGBIr_RIw (Retrieved April 27, 2019).

Sharmer, O. 2014. *Levels of Listening* (8-minute video). The Presencing Institute. https://www.presencing.org/resource/tools/listen-desc (Retrieved April 30, 2019).

Scharmer, O. nd. O*tto Scharmer* website. Massachusetts Institute of Technology, Cambridge MA. www.ottoscharmer.com (Retrieved April 26, 2019).

Make sense

Module 4

Make sense

"Only when our clever brain and our human heart work together in harmony can we achieve our true potential." ..... *Jane Goodall*

It is natural to come out of the active research phase with ideas and solutions, and an urge to act and make changes. But it's important to resist that urge and to take the time now to document and review all the observations your group has gathered. This allows you to see patterns, test assumptions, and refine hypotheses you didn't notice at first.

You should plan to spend at least as much time making sense of the research as you did gathering it. Just as it was important to do the research together with your group, it is important to make sense of it together. It will help to determine your overall direction and your next steps.

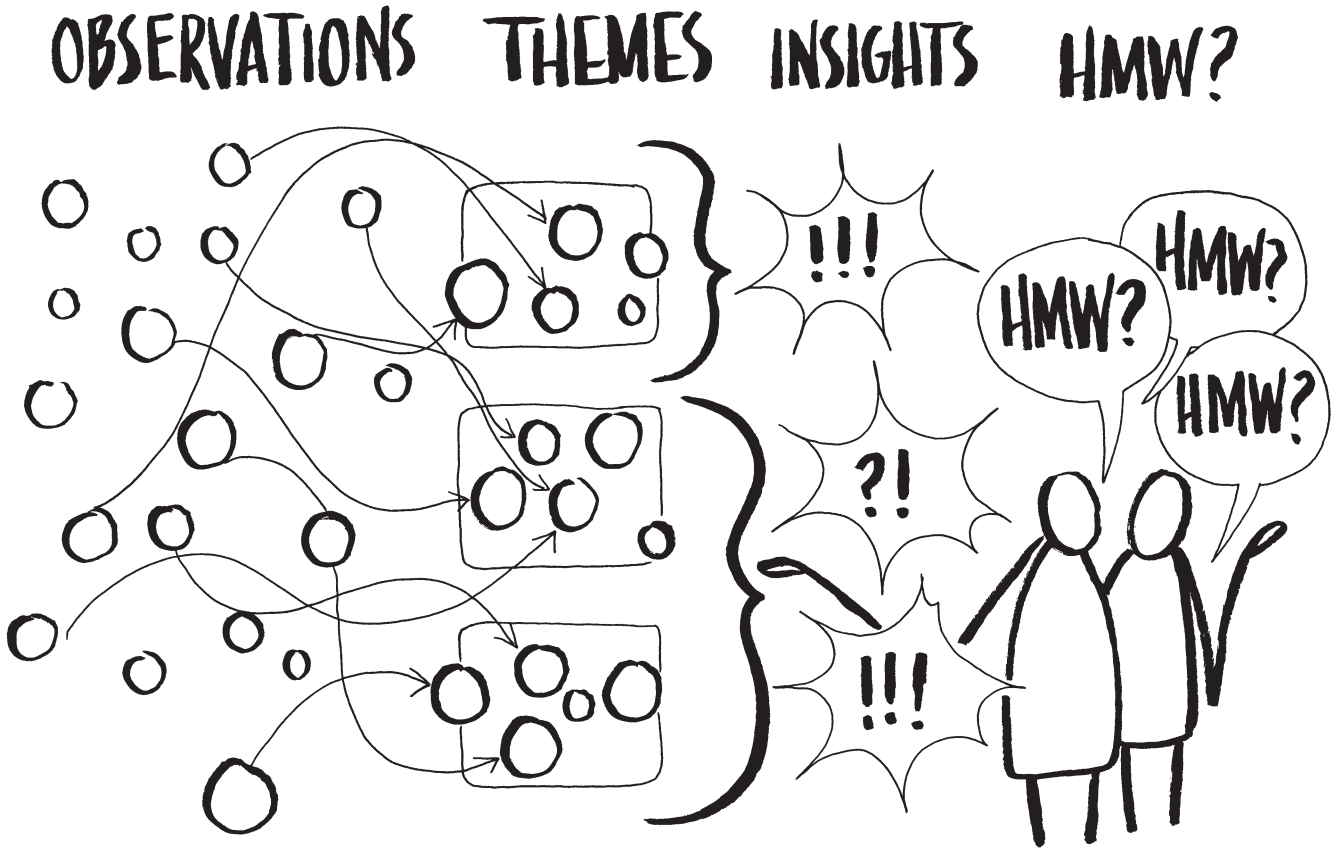
Four steps to synthesize your research

The purpose of the interviews and observations was to test your assumptions and your How Might We (HMW) question. Making sense of this research as a group will help you look at your design challenge with new perspectives. It is important to ensure you have the correct framing of a particular challenge, based on what you observed in the real world with real people. This will be the basis of inspiration for your prototypes.

There are four main steps to making sense of your research data:

1. Share observations.
2. Cluster themes.
3. Identify insights.
4. Confirm or reframe the design question (How might we…?).

Figure 5. Four steps to synthesize your research: Sense making at a glance



Step 1: Share observations

The first step in research synthesis is to systematically document the learnings from each person and place that your group members have visited. Doing this for each person you spoke with, interviewed, and observed—and for each location you visited—gives equal opportunity for all the perspectives that your group has heard to be put on display out in the open. Because group members have likely had different conversations and visits, this step allows each group member to share the conversations that they had with the rest of the small group.

It is important to go over all the interviews and the visits as a group before diving into what was heard, seen, or observed, to look for themes and insights. Follow these next steps to help your group organize the information you've collectively gathered.

(a) Recap all the people your group spoke with and the places your group visited.

Worksheet 4-1. People you engaged and places you explored

Categories	Who	Where/When	Interviewers
Individual			
Expert			
Immersion Location			
Analogous Location			

An observation can be

- something you saw
- something someone said
- something that people showed to be working well
- relevant errors

An observation is not

- what you think something means
- your opinion of why
- what you think might fix it

(b) Identify gaps in your research.
What types of research were you able to do and what were you not able to do?

Worksheet 4-2. Gaps in your research

Identified gap	**How do you plan to fill the gap?**
Example: Project on intergenerational connections. Failed to speak to multiple generations.	Example: Schedule additional interviews.

(c) Share stories and observations from your research, and capture what is shared.

Working as a whole group, have each group member who conducted interviews share stories of the people they were able to talk with. Start at the top of the list and work your way down. Plan to spend about five minutes on each person or place you visited. This is not a word-for-word recap of the conversation; rather it is a synopsis to share the interaction with your group for future synthesis.

Here are some helpful things you can share about each interview or location visit:

- **Basic information:** Who did you meet with? Where did you visit?
- **Interesting stories:** What was most memorable and surprising about the interview or visit?
- **Motivations:** What did the person(s) care about? What were their motivations?
- **Barriers:** What frustrated them?
- **Interactions:** What was most interesting about the way they interacted with their environment?
- **Remaining questions:** What questions would you like to explore if you had another conversation with this person?

Tips on capturing what is shared:

- If you took pictures, print the best couple of photos from each interview or location and hang them on the wall. Photos make the stories you share real for those who didn't participate. They also help with organization, and they can help jog your memory for details of your time with that person or at that location.
- Write the basic identifying information on a large sheet of paper and put that on the wall together with the corresponding pictures.
- Assign someone to record notes, observations, and quotes on coloured sticky notes while your group mates are sharing their stories and observations.
    - Use ONE observation or quote per sticky note so that you can easily shuffle them later.
    - Use colours for meaning—for example: blue for quotes; yellow for observations

- Put a code on each sticky note to indicate the source (for example, which interviewee; or which location). This will come in handy later when you move the sticky notes around.
- Print clearly.
- Use short and complete sentences so everyone in your group can understand them.
- Capture quotes. They are a powerful way to represent the voices of the participants.
- Be as visual as possible.

(d) Hang your notes on the wall.
When you are done talking about a particular person or place, hang the sticky notes on the wall underneath that large sheet of paper and pictures (if you had any and printed them).

Each distinct person, organization, and location, should have a separate section on the wall for this step.

Keep quotes and pictures together to help paint a picture of the person's experiences.

Step 2: Cluster themes

Now that you have captured the main points from each interview and visit, your group can begin to look for patterns and themes across the interviews and visits. It's helpful to have one person lead the group through this activity.

(a) Find the gems.
From the sticky notes your group posted on the wall, each group member should choose the five they find most interesting or insightful and mark a dot on those notes. These are the observations the group feels are worth exploring more. Gather all the sticky notes marked with one or more dots and put them in a new blank area of the wall, with empty space around each one. Let's call these notes your group's "gems."

(b) Working together, cluster the gems into themes.
Review the gems that your group selected and try to organize them into similar groups or categories.

For instance, did many people mention the same thing? Are there behaviors you saw repeatedly? Are there obvious issues? Or perhaps you heard conflicting statements. Maybe there was an explanation for this conflict? Put the related sticky notes together in clusters.

(c) Find supporting evidence.
Quickly review the rest of the sticky notes that you left on the wall from Step 2(a). Find additional notes to support the clusters you've created. If you can, include some photos or visuals to further support the categories you've created.

(d) Refine your clusters.
Create a minimum or three and maximum of five clusters.
Is there a new cluster that you might like to create? Or are their some which are similar in focus that could be combined?

(e) Create headlines.
For each cluster, create a short headline or label describing the overarching theme for that cluster.

Step 3: Identify insights

Now that your group has created clusters and themes that emerged from your research, it is time to identify the challenges that your group has uncovered related to each theme. This activity will help you understand why certain themes have emerged, and what makes those themes potentially important for design.

Refer to the example for Worksheet 4-3 to help you through the process.

Follow these steps:
(a) Write your original How Might We at the top of the page in the space provided. Being able to quickly reference your challenge will make this exercise easier, because it will help you connect your insights back to the question you are ultimately trying to answer.

(b) Write your cluster headlines in the Theme lines on the worksheet.

(c) Try to draft three concise insights for each theme, to explain why the theme you have identified describes a challenge for the people in the community that you spoke to. Feel free to work individually at first and then as a group.

Once you have a few insights for each theme:
(d) Work with your group to revise your insight statements until the group has captured the most unique and compelling points related to each theme. Use Worksheet 4-3, or extra sheets of paper if you run out of room.

Using 5 Whys to determine root cause

The purpose of 5 Whys* is to allow individuals and groups to go deeper and examine why something is happening, rather than jumping to a solution. It is a quick exercise that is intended to promote deeper insight into the challenges that face us in complex systems. The technique draws on the inherent experiences, wisdom, and deep knowledge/understanding of a group of individuals, without the need for complex statistical analysis and data.

Steps

1. Identify a problem. Once you have themes, you can identify a problem associated with that theme.
2. Ask why this problem occurred. There will likely be many answers. Pick one.
3. Now continue asking why until you feel like you have the originating cause. Five times often works; sometimes it is 25.
4. If you get lost, go back up your chain of whys to see if there was a flaw in your logic.
5. Document the root cause or causes so you can check back throughout the process.

Things to remember

- Don't spend too much time trying to get the problem statement just right.
- Don't spend too much time coming up with all the possible answers.
- Use the answer to each Why question to create the next Why.
- Follow the logic both ways to make sure it is sound.
- It may take more or fewer than 5 steps. You will know you are done when no other reasons come to mind.

TIP : People tend to stop asking Why too early. Really push yourselves to identify the underlying cause.

Example
1. Why did your car stop?
Because it ran out of gas.

2. Why did it run out of gas?
Because I didn't buy any gas on my way to work.

3. Why didn't you buy any gas this morning?
Because I didn't have any money.

4. Why didn't you have any money?
Because I lost it all last night in a poker game.

5. Why did you lose your money in last night's poker game?
Because I'm not very good at "bluffing" when I don't have a good hand.

Learn more about 5 Whys at
www.mindtools.com/pages/article/newTMC_5W.htm.

Example of Worksheet 4-3: Write your design challenge

Write your design challenge

How might we....
improve the success of social enterprise through intergenerational connections?

Theme:
Connections

Insights:
1. Use of space and layout can be key in facilitating connection.
2. Feeling responsible for someone else can help foster social connections.
3. Middle generations are buffers/connectors between older and younger generations.

Theme:
Intergenerational challenges

Insights:
1. Negative points of view can easily spread within intergenerational groups.
2. Even when there are clear intergenerational connections, they may not be recognized or talked about.
3. Sometimes the needs of one generation are not easily met or matched by the other generation.

Theme:
Profits + impact

Insights:
1. Not all "successful" businesses would be viable if they were required to pay a living wage and/or ensure they have no negative impact on the environment.
2. People young or old are motivated by profits, so profits can also be used for positive social impact.
3. When successful, social enterprises may not feel the same push and pull for social impact that they did when they were start-ups—due to different motivators.

Worksheet 4-3. Write your design challenge

Write your design challenge:

How might we...

Theme:

Insights:

Theme:

Insights:

Theme:

Insights:

Step 4: Create How Might We insight questions

Human-centred design is more powerful when it turns existing challenges into opportunities. Your insight statements are identified challenges that the people you interviewed are experiencing. Turning those insight statements into How Might We questions will be a starting point for your brainstorming during our first prototyping session (Module 6, "Mock it up").

(a) As a group, select the top three insight statements that you created collaboratively in the last step. Try to use three insight statements that are related to different theme areas or clusters. This will give you more variety in the How Might We insight questions that you create. Also make an effort to select statements that share a sense of possibility or a new perspective. Write your three insight statements on Worksheet 4-4 in the space provided.

(b) Work individually for a few minutes to try turning the selected insights into How Might We questions. Reread the scoping tips below, and pay attention to the examples. You can also refer back to Module 2, "Set the intention."

(c) Share your How Might We questions with the group. Then work as a group to refine the questions until your group feels like you have strong questions that you are excited to answer as part of your brainstorming during the next phase. Remember the questions should be neither too narrow nor too broad. Use the following tips to assess the scope of your questions.

How to scope How Might We questions

Too Narrow 	**How might we create a cone to eat ice cream without dripping?** This question implies that redesigning the cone is the solution. It doesn't invite you to explore other possible opportunities.
Too Broad 	**How might we redesign dessert?** This question doesn't give enough direction. It offers no starting point and no spark to help you generate ideas around one category of desserts. If the challenge is about ice cream, then it's important to include that in the question.
Just Right 	**How might we redesign ice cream to be more portable?** This question is scoped properly because it frames the challenge but does not imply a solution. Rather, it allows you to brainstorm many solutions.

Example of Worksheet 4-4

Record your How Might We insight questions

Insight:
Even when there are clear intergenerational connections, they may not be recognized or talked about.

How might we...
ensure that intergenerational connections are recognized and talked about in the social enterprise sector?

Insight:
Use of space and layout can be key in facilitating connection.

How might we...
encourage social enterprise to use space and layout to enhance connections between people of all generations?

Insight:
Middle generation could play a buffer/connector role in matching needs and abilities between generations.

How might we...
create opportunities for the middle generation to act as connectors between older and younger social entrepreneurs?

Worksheet 4-4. Record your How Might We insight questions

Insight:

How might we...

Insight:

How might we...

Insight:

How might we...

Update your systems map

Mapping is a powerful way to…

- Organize and deepen what you've learned so far.
- Move beyond individual perceptions to a group understanding.
- Stay mindful of the people at the point of impact.
- Identify assets and gaps for maximum impact.
- Better understand what you are trying to change about the system.

Take some time to look back at the systems map you drew (Worksheet 2-1) and update it now with insights you've gained by making sense of your research. Use Worksheet 4-5 if you want to start fresh. You might want to try a different format this time, such as the bullseye system map in Figure 6.

Worksheet 4-5. Update your systems map

Figure 6 shows another kind of system map—a bullseye centred around the people at the point of impact. After synthesizing your research, you are probably getting a clearer picture of who is closest to the point of impact related to your challenge. Zooming in now to see what the system is like for them can be very useful later when you are imagining ways to improve the system for them.

The bullseye method is fairly simple:

1. Identify who the people are at the point of impact. Put them at the centre.

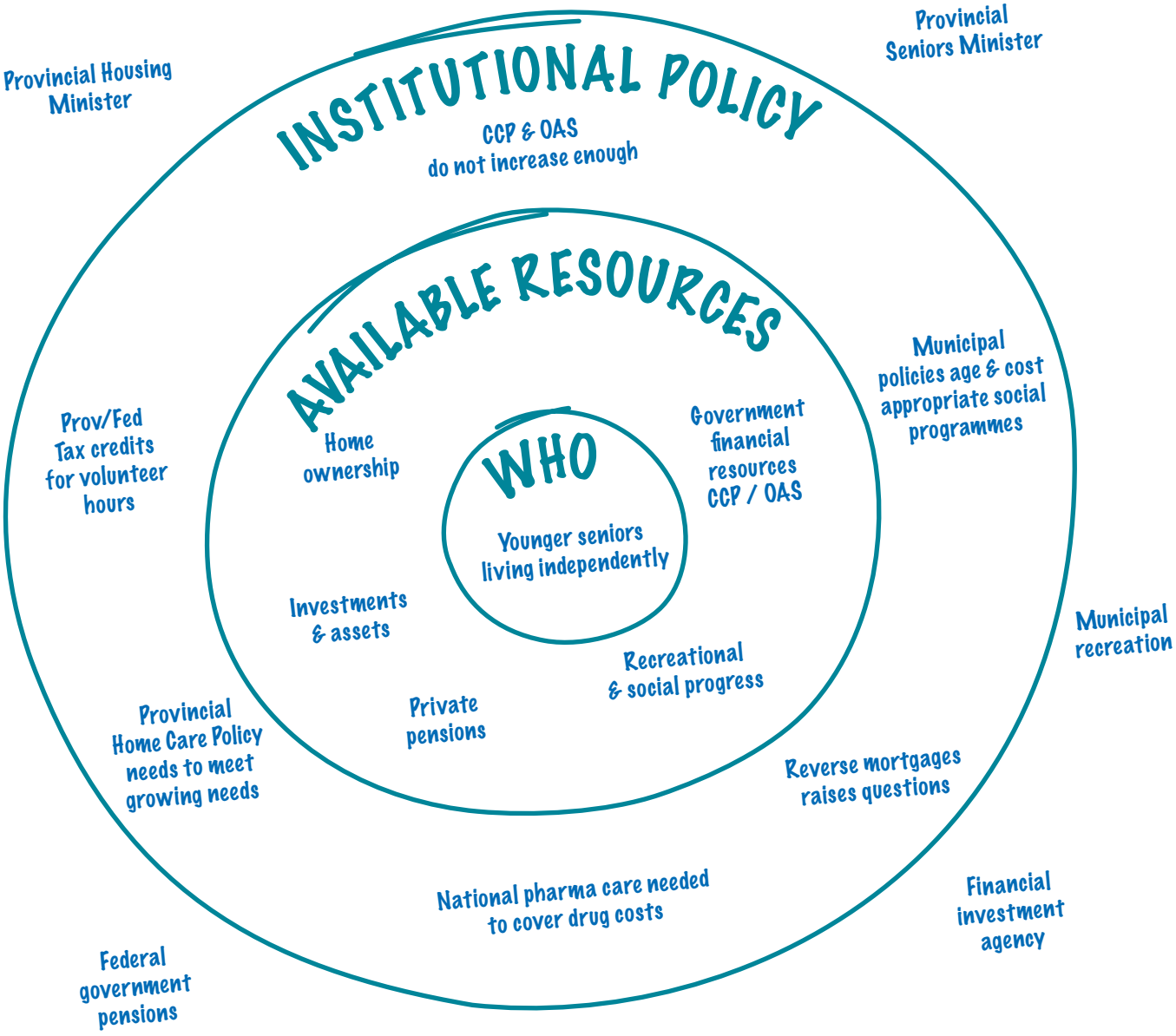
2. Add a circle around these people to identify what is available to them. This might be family members, friends, or services or programs they use regularly.

3. Move out another layer to record the policies associated with the resources they have available. For instance, if they have home care, then note the home care provider's policies, as well as the Department of Health or Health Authority policies.

4. In the next outer layer, identify the institutional level that the policies fall within. This might be culture, laws, government policies, or economy, for example. These are the influences that impact the person but are farthest away from them.

Once you identify these layers, your group can then talk about the gaps and opportunities you are seeing.

Figure 6. Bullseye system map (example)



Your reflection on sense making

- What are your biggest learnings and curiosities? Write or draw any “Ah-ha” moments here.

- What are your challenges and worries? Write or draw any “Uh-oh” moments here.

- What do you need to move forward? (“Nothing” is a perfectly valid answer.)

Take stock and decide

Decision making here refers to reflection on action—taking stock of what you've done and what it means going forward. Reflect on what has led you to the decisions you've made, and why.

- What actions did you take?

- What beliefs have surfaced (opinions you have, assumptions you hold, etc.)?

- What knowledge have you accessed (sources of information that are not opinion-based)?

- What is the refined challenge you are deciding to focus on?

Learn more

Synthesizing research
In this video, Dr. Jochen Schweitzer of U.Lab highlights how team members can turn their observations and insights into an actionable problem statement. (4:45 minutes)
https://www.youtube.com/watch?v=wEdk1bn0nsM

References for Module 4

Mind Tools Content Team. nd. *5 Whys: Getting to the root of a problem quickly.* https://www.mindtools.com/pages/article/newTMC_5W.htm (Retrieved May 5, 2019).

Imagine possibilities

Module 5

Imagine possibilities

"It's very hard to have ideas. It's very hard to put yourself out there, it's very hard to be vulnerable, but those people who do that are the dreamers, the tinkers, and the creators. They are the magic people of the world."

Amy Poehler, Yes Please

"Once you get over the hump of getting to know your group and team members, you attempt to learn the art of thinking in a socially innovative way. It isn't easy to think of creative ideas in a few hours. You often must dig deeper. Without the time, people often produce superficial ideas and rehash old initiatives."

John Smith, Cohort 1 fellow

Read the full blog post at
medium.com/@NSGovLab/learning-to-embrace-social-innovation-with-ns-govlab-593bfb85109

About ideation

Ideation is the creative process of generating ideas. It can help you…

- **Ask** the right questions.
- **Push beyond** the obvious and increase the potential for new and better ideas.
- **Bring together** perspectives and strengths of group members.
- **Uncover** unexpected areas of innovation.
- **Create** a wider and more original range of options.
- **Get** obvious solutions out of your heads, and propel your group beyond them.

Your first ideas aren't necessarily the best ideas. A conscious ideation phase broadens your thinking and creates space to explore things that might seem unconnected.

The key to this phase and the next is to generate ideas quickly so you can test your assumptions and learn what might work and what won't. You will go through many ideas. Brace yourself to be proven wrong again and again. Ultimately this will help you devise more innovative and effective solutions.

Remember the design squiggle. The design process is not linear. You can jump between steps, and even between phases, in response to what you are learning.

At this point, your design challenge is expressed most concisely in two key products or outputs: a systems map and your How Might We questions. Now it's time to imagine solutions to the challenge.

Warm up

The NS GovLab principles remind us to bring our whole selves to the work of co-creating the future. As you move into imagining possibilities, be inspired to welcome whimsy, creativity, and wonder; to seek diversity; and to start somewhere so you can go everywhere. Imagine with your heart and hands, as well as your head. Listen to your inner wisdom and hold space for others to do the same, in the spirit of the U Process (Theory U).

Let's warm up with some embodiment and drawing exercises.

Embodiment: An improv exercise

Improvisation is about making or doing something without a plan, using whatever you have on hand. "Yes, and" is both a game and a core principle in improvisation. It aims to teach improvisers how to accept offers and contribute to the scene. It can be useful to help a group build on each other's ideas. Here's how to play "Yes, and."

"Yes, and" improv exercise

Adapted from Canadian Improv Games (improv.ca/yes-and/)

Rules

Put the players in pairs. One person starts by making a statement such as, "We are going on a vacation." The other follows up by first saying, "Yes, and…"—agreeing with the first statement and adding new information. "Yes, and we are spending a week in Paris." The players go back and forth making "Yes, and" declarations until they reach a natural conclusion.

Objectives

The objectives of this warm up are to

- show how simple and effective the concept of "Yes, and" is in extending each other's ideas
- make a habit of always accepting new information

Comments

Encourage the players to respond to what was just said and expand on that idea, as opposed to listing a series of disconnected ideas. In the example above, the players might get into the trap of just listing activities they did in Paris. "Yes, and we arrive at the Eiffel Tower." "Yes, and we eat fine cheese." "Yes, and we see Versailles."

It is more effective to explore the first idea: "Yes, and we arrive at the Eiffel Tower." "Yes, and we take the stairs all the way up." "Yes, and we can see the whole city." It allows a story to reveal itself.

Also encourage the students to embody the emerging story—acting it out and making statements in the present tense.

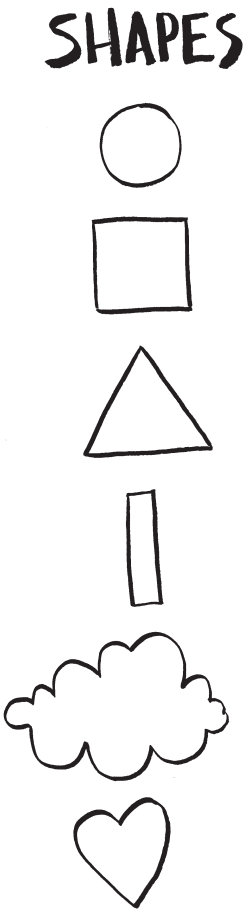
Adaptations

This game can also be played in a circle or in small groups.

Visual vocabulary: A drawing exercise

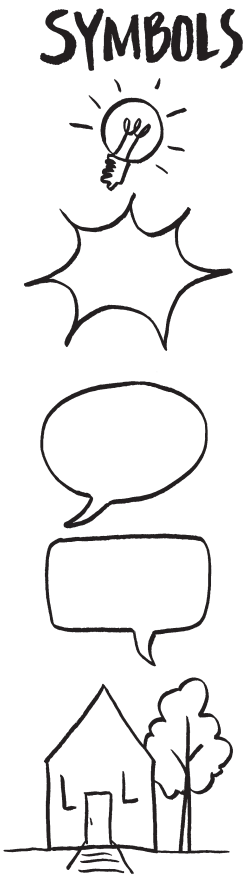
There are many ways to communication ideas. Words are not always the easiest way to fully express your idea or help others fully understand your idea. A picture is worth a thousand words! Sketching your ideas can be liberating and does not require artistic talent. Bravery and well-placed labels will suffice. Worksheet 5-1 (4 pages) offers you a starting point, with a visual vocabulary and space to practise. Try to replicate the shapes and add your own.

Worksheet 5-1. Visual vocabulary: Draw your ideas (4 pages)

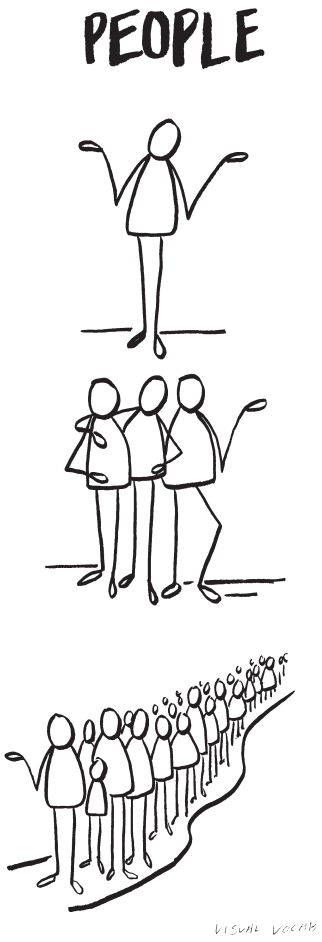


Worksheet 5-1. Visual vocabulary

Worksheet 5-1. Visual vocabulary



Worksheet 5-1. Visual vocabulary



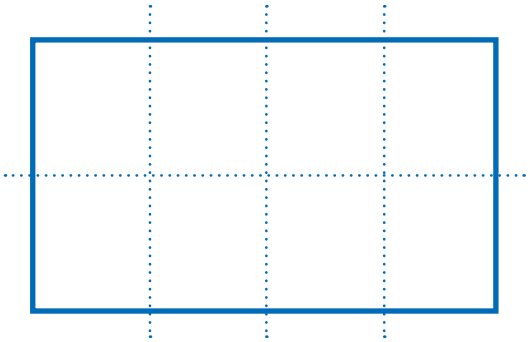
Generate ideas

There are many quick and fun ways to generate ideas. We offer you two different methods here. Different people will gravitate to different methods. You do not need to use both methods, but if you get stuck, trying the other method might help.

Method 1: Crazy 8s (quick sketching)
In this method, you use quick sketches to express ideas. In a very short time everyone on your team will have eight ideas sketched. Each stage of the exercise is time limited. This forces you to move quickly and not overthink things. Often it is easy come up with the first one or two ideas. Ideas four and five may be a little more difficult. The magic occurs when you move beyond your first level of capacity to think of and communicate ideas, and when you let go of your hesitation to draw.

Follow these steps:

- Each person folds an 11 x 17 sheet of paper into eight sections.



- Round 1 – Working individually, draw one idea per box, taking 1 minute per box. (8 boxes = 8 minutes)
- Round 2 – Working individually, select one idea and draw it out in detail on 1 sheet. (8 minutes)
- Round 3 – In your small group, share feedback on the best ideas (I like… I wish… I wonder). (10 minutes)
- Round 4 – In pairs or individually, sketch your "best" idea. Incorporate feedback and elements from other people's ideas to come up with the idea you think is best. (15 minutes)

TIPS:

- Make it self-explanatory. Others should be able to explain your idea by only seeing this sketch. You should not have explain it. (And in the next step you will not have the opportunity to explain it, so make sure your drawing stands on its own.)
- Aim for "ugly OK." This is not an art competition.
- Only use words that explain or clarify. Use as few words as possible, but use them if you need to explain or clarify a drawing. Maybe you aren't great at drawing dogs, so label your dog.
- Give it a catchy title. The catchy title will help others understand what you're trying to convey in your idea.
- DO NOT put your name or group identification anywhere on the sheet.

Method 2: Brainstorming

Brainstorming is a strategy for generating a lot of ideas quickly. It is both freewheeling and focused.

Remember these rules for brainstorming:

- Defer judgement.
- Encourage wild ideas.
- Build on each other's ideas.
- Stay focused on the topic.
- Keep to one conversation at a time.
- Be visual.
- Go for quantity.

Step 1: Get ready...

- Select a facilitator. This person will keep your team on track and focused. They will keep time and remind you of the rules.
- Gather materials and organize the space. You will need enough wall space to post your ideas. Everyone should have sticky notes and a marker.

- Print three How Might We questions from your insights, clearly on large sheets, one question per sheet. If you have more than three, quickly decide which three your team has the most energy to work on, and use those for brainstorming. Take no more than two or three minutes to decide.
- Review the rules. Take turns reading the rules out loud. Clarify any questions from your group.

Step 2: Get set…

- The facilitator will lead the brainstorming. Keep the energy high and the ideas flowing!
- Focus on the first How Might We question from your insights. Everyone should be able to see it. Your facilitator can read it out loud.

Step 3: Go!

- Start the Clock!! Take a maximum of 10 minutes for the first How Might We.
- Print one idea per sticky note. Be visual.
- Post each idea underneath the How Might We question you are working on.
- Take turns. Have each team member take a turn saying their idea as they write it and post it to help get the energy and creative juices flowing.
- Stop after 10 minutes.
- Move on to the next How Might We and repeat.
- For the final How Might We question, provide extra encouragement. You might need an energizer for this round. Have everyone stand up, jump around, or do push-ups. Anything that feels right for your team.

Select your best ideas

Brainstorming and Crazy 8s can be exciting and high energy. Now it's time to select which ideas your team has the most excitement and energy for. Like every other stage of the design process so far, your team will use what they know to narrow down the ideas. Each team member will get to vote on which ideas they think are most innovative and which ideas they think are most likely to succeed.

Then the team will narrow even further by assessing these ideas.

Vote on your ideas

1. Individually, look at all the ideas you generated. Do this in silence so you don't sway your teammates' votes.

2. Each member has two votes—one for most innovative and one for most likely to succeed.
   - Draw an O in the upper right corner of the idea you think is most innovative.
   - Draw an X in the upper left corner of the idea you think is most likely to succeed.

   Everyone can vote for the same idea or different ideas.

3. Select your team's top ideas. As a team, count the votes. Put the most promising ideas in a separate space on the wall or in the middle of the table.
   - Is there agreement on two or three ideas?
   - If you have more than three ideas, can any be combined to a single concept?
   - Work together combining or voting on ideas until you have no more than three ideas.

NOTE: If you used the brainstorming method, draw your group's top three ideas now, using Worksheet 5-2. (If you used the Crazy 8s method, you already have a sketch of your ideas.)

Worksheet 5-2. Sketch the best ideas from brainstorming

Design Challenge	**How Might We insight question**
Write your original How Might We here.	Write the How Might We insight question that this idea was generated under on Worksheet 4-4.
Sketch your idea	Describe the idea
	What is the expected impact?

Plot the best ideas on a graph

Once you have your best ideas drawn in a self-explanatory way with a catchy title, plot your ideas on a graph to get a clear sense of which have the most merit. Use Worksheet 5-3 and refer to the example. Consider where each idea lands on the continuum of *new and useful* versus *status quo*, and the continuum of *symptom* versus *root cause*.

- An idea is **new and useful** if it is fresh and meets the needs of people. It is **status quo** if it offers more of what is already happening.
- A **symptom** is a sign of a bigger issue. A **root cause** is the ultimate reason for an issue.

The transformative innovations will be in the top right quadrant and the incremental innovations will be closer to the bottom left.

Comparing your ideas in this way may help you to more deeply understand how you are framing the challenge and how far you have pushed yourselves to come up with ideas that are transformative in nature. A robust idea is shaped by your best current guesses about what the future could be with a new and useful idea, and how you might address the root causes you have identified.

As a group, discuss each idea. Use these prompts to guide your discussion:

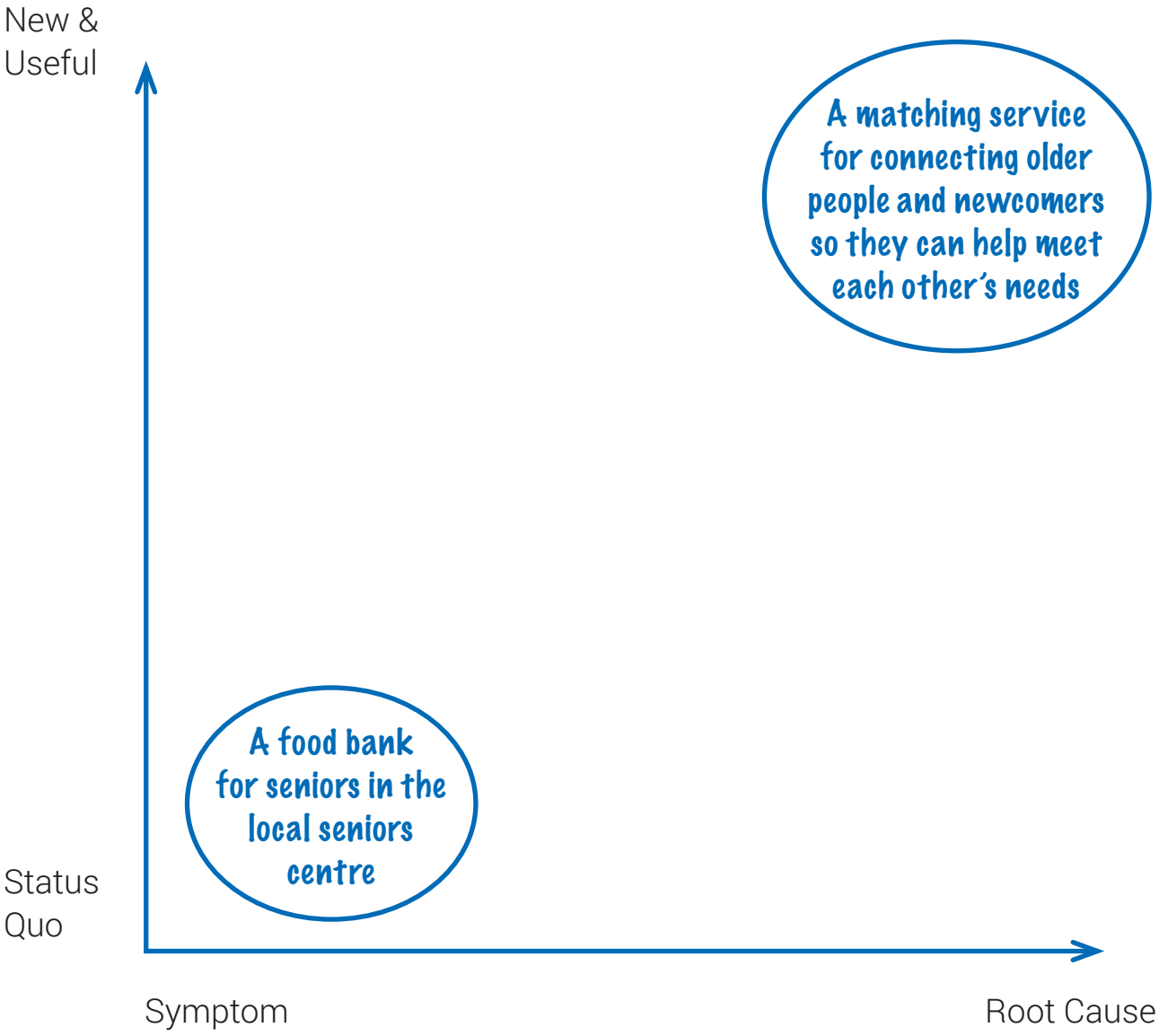
- I like…
- I wish…
- I wonder…

Consider elements of ideas, not just the whole. There may be some elements that are really desirable, while others are not.

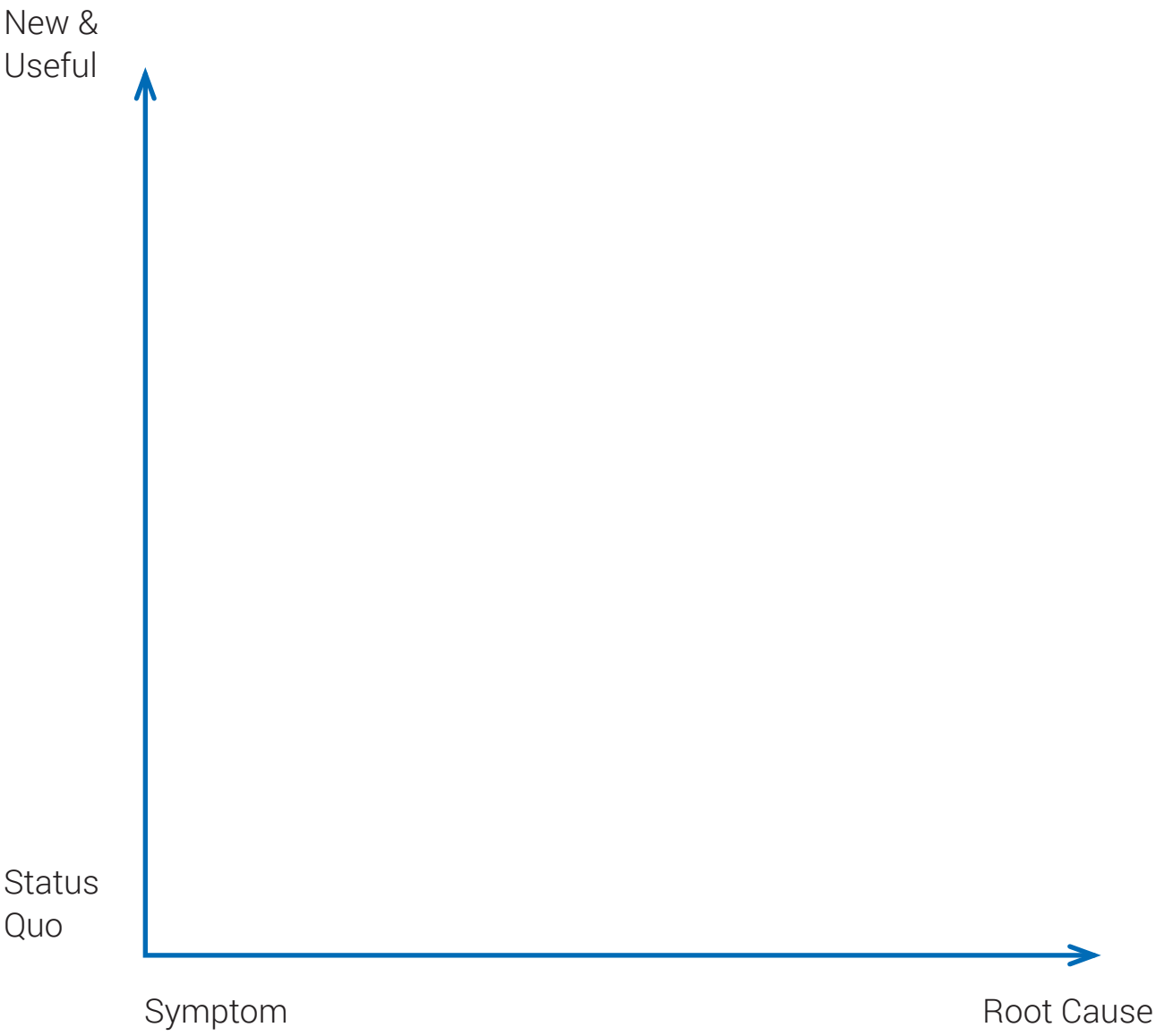
Is there agreement about where the idea belongs on the graph? As a group, could you look at different elements of your idea or different ways of thinking about the idea that might push the idea further away from a *symptom* or *status quo* and toward the *root cause* and/or *new and useful*? What are the underlying assumptions of the idea(s)?

Answering these questions and continuing to refine the ideas (and elements of ideas) will help your group determine which ideas are worth pursuing and testing.

Example of Worksheet 5-3: Plot your ideas on a graph



Worksheet 5-3. Plot your ideas on a graph



Evaluate your ideas

Whether you used brainstorming or Crazy 8s, your team has generated a large number of ideas and has narrowed them to your top two or three ideas. This next activity will help you evaluate your ideas and decide which one(s) to move forward to prototyping.

1. First working individually, rate each idea using the scoresheets in Worksheet 5-4.
   - Instinctively, how excited is your team about this idea?
   - How innovative and different does this idea feel from what is already happening in Nova Scotia?
   - How practical do you think this idea is? Does implementing it seem realistic?
   - How confident are you that this idea addresses a root cause? Can you name the root cause?

2. As a group, compare your scores and ideas.
   - Which idea has the highest scores?
   - Where did you agree and where did you disagree?
   - Is there a clear agreement on which idea you should prototype?

3. Confirm which idea your group will prototype first. If there is not a clear favourite, go back and discuss the ideas again. Focus on what your team needs to reach a decision.

NOTE: If your team has 5-7 members, you can select 2-3 ideas to prototype, but it will mean making and testing all of them.

Worksheet 5-4. Idea scoresheets

Evaluate your ideas

IDEA (# or name)	Least				Most
Instinctively, how excited are you about this idea?	1	2	3	4	5
How innovative and different does this idea feel from what is already happening in Nova Scotia?	1	2	3	4	5
How practical do you think this idea is? Does implementing it seem realistic?	1	2	3	4	5
How confident are you that this idea is addressing a root cause?	1	2	3	4	5

IDEA (# or name)	Least				Most
Instinctively, how excited are you about this idea?	1	2	3	4	5
How innovative and different does this idea feel from what is already happening in Nova Scotia?	1	2	3	4	5
How practical do you think this idea is? Does implementing it seem realistic?	1	2	3	4	5
How confident are you that this idea is addressing a root cause?	1	2	3	4	5

IDEA (# or name)	Least				Most
Instinctively, how excited are you about this idea?	1	2	3	4	5
How innovative and different does this idea feel from what is already happening in Nova Scotia?	1	2	3	4	5
How practical do you think this idea is? Does implementing it seem realistic?	1	2	3	4	5
How confident are you that this idea is addressing a root cause?	1	2	3	4	5

Your reflection on generating ideas

- What are your biggest learnings and curiosities? Write or draw any “Ah-ha” moments here.

- What are your challenges and worries? Write or draw any “Uh-oh” moments here.

- What do you need to move forward? (“Nothing” is a perfectly valid answer.)

Take stock and decide

Decision making here refers to reflection on action—taking stock of what you've done and what it means going forward. Reflect on what has led you to the decisions you've made, and why.

- What actions did you take? What was your process for generating ideas?

- What beliefs have surfaced (opinions you have, assumptions you hold, etc.)?

- What knowledge have you accessed (sources of information that are not opinion-based)?

- What set of ideas are you deciding to focus on?

Learn more at these links

1. **Where do good ideas come from?**
   In this Ted Talk, Steven Johnson provides insight into the conditions needed for creative and innovative ideas to flourish. He challenges the notion of the singular "Eureka!" moment. (17:45 minutes)
   https://www.ted.com/talks/steven_johnson_where_good_ideas_come_from?language=en

2. **Ideation**
   Learn how quantity versus quality and novelty versus relevance work together in the ideation process. (4:03 minutes) https://www.youtube.com/watch?v=zbLxs6te5to

3. **Embracing ambiguity**
   To stay open to possibilities, it's important to not fall in love with any particular idea. One must embrace ambiguity and uncertainty. This short video makes a case for allowing multiple ideas to co-exist as you explore opportunities. (1:09 minutes) http://www.designkit.org/mindsets/5

References for Module 5

Canadian Improv Games. nd. "Yes, And." *Canadian Improve Games* (website). Ottawa. improv.ca/yes-and/ (Retrieved April 27, 2019).

Smith, J. 2018. "Learning to embrace social innovation with NS GovLab" (blog post). https://medium.com/@NSGovLab/learning-to-embrace-social-innovation-with-ns-govlab-593bfb85109 (Retrieved May 1, 2019).

Mock it up

Module 6

Mock it up

"Have no fear of perfection – you'll never reach it."
Salvador Dali

"It's through mistakes that you actually can grow.
You have to get bad in order to get good."
Paula Scher

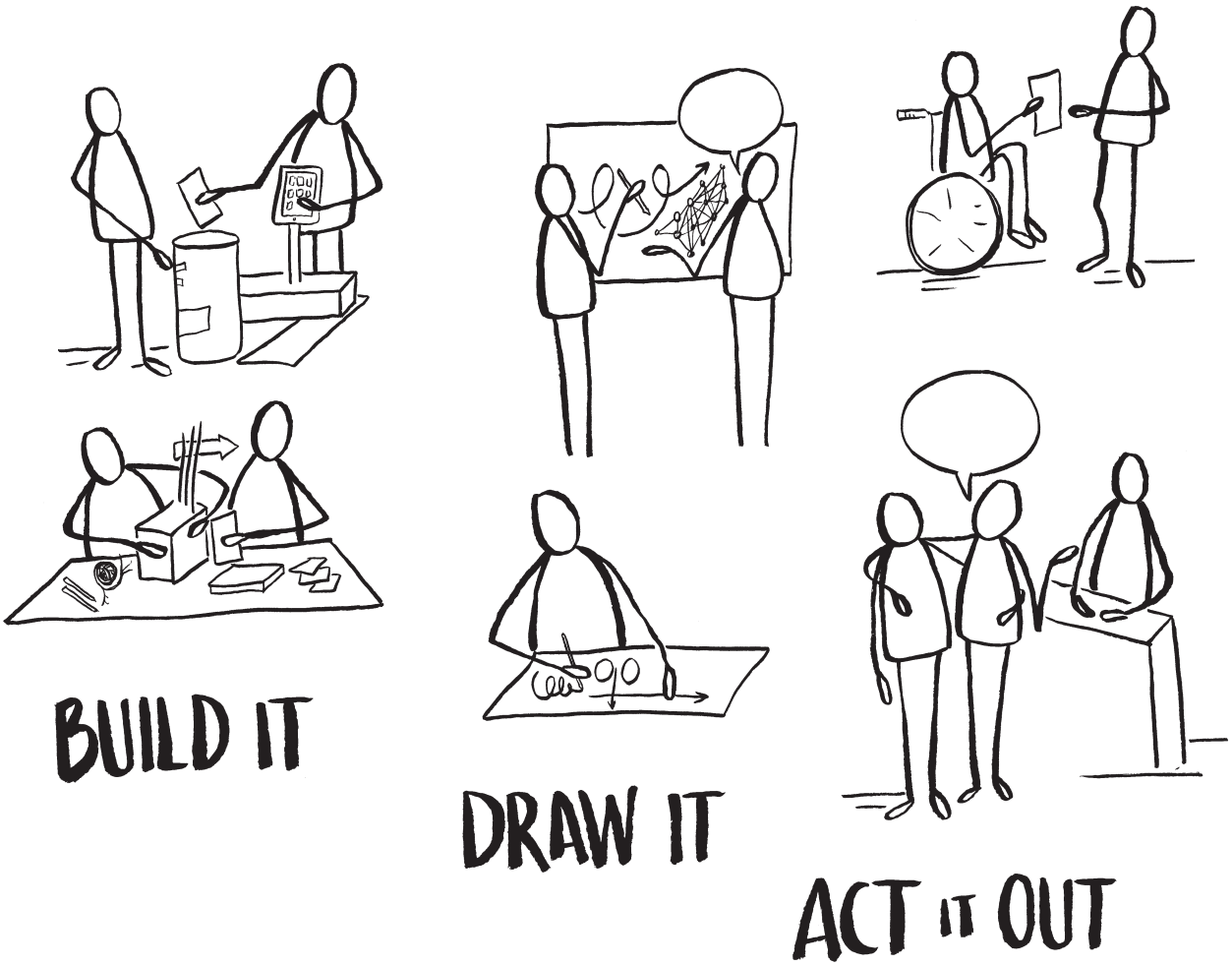
Make it real with prototypes

Prototypes allow you to share your ideas with other people, get feedback, and refine your ideas further. You can prototype just about anything. We will focus on the following ways to prototype, but there are many more.

- **Build it.**
  Create a three-dimensional representation of your idea. You can use paper, cardboard, Lego, modelling clay, pipe cleaners, Styrofoam, etc. For example, if your idea is a digital tool or website, you can build a simple sketch of the screens on paper. Tape the mock-up to an actual computer screen or mobile device when testing it. After getting some feedback, you can then move on to creating a digital version.

- **Act it out.**
  You can create a role play of your idea. Write up the roles and the situation. You can then try on different roles to understand the experience from multiple angles. Consider assembling simple props to help people experience the idea more fully. You can also record and play it for others to get their sense of your idea.

- **Draw it out.**
  Tell a story of your idea and use illustrations to help describe it. This could be in the form of a storyboard, journey map, or diagram. Use words along with drawings to help fully describe your idea.



Tips for making it real

Remember, prototyping is primarily about learning and getting feedback to refine your ideas. In the previous phase, you provided details on your idea. Now you can break it down further to determine the most important elements to validate. In other words, you don't need to make the whole idea real at this point. Make the elements real that will help you learn the most.

Break down the user experience

Any idea you have will have a beginning, middle, and end for the user.

- How will the person find out about your idea?
- What will their first experience with the product service, policy, etc. be like?
- How will the experience end for them?

Create a list of questions and assumptions

For each step of your users' experience, you can create questions and ask yourselves what assumptions you are making. Documenting these will help you focus on elements of your idea that you will prototype and what you hope to learn from testing your prototype.

Your group can now identify which questions are most important to answer and what form of prototype will help you answer those questions. Determine which ones need to be answered first and focus on making those elements real. You may want to test a number of things and combinations of things.

Try hard as a team to be as critical as you can of your own idea.

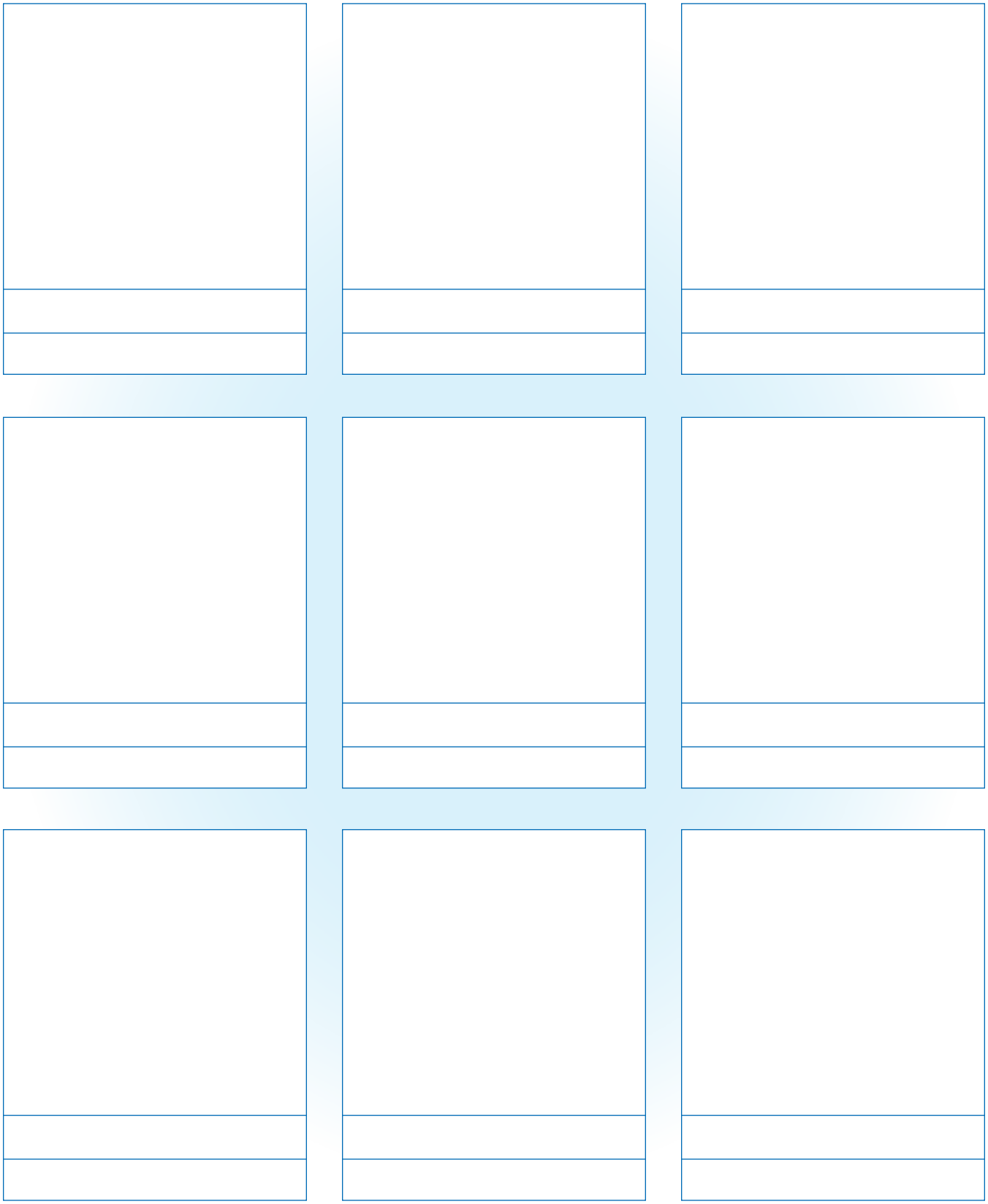
Make a storyboard or experience map

The purpose of a storyboard or experience map is to capture what your users will experience with your idea. You can use images, sketches, or text boxes to show the user experience over time. Stick figures work well for this—no artistic skills required.

Worksheet 6-1 is a template you can use to create your own simple storyboard. Worksheet 6-2 is a template for a detailed storyboard. For a storyboard example, look ahead in this module to Figure 7, the story of Larry the Tomato.

In your storyboard or experience map, aim to provide details for at least three steps (beginning, middle, and end). You will need to bring enough of your idea to life to learn from people and get meaningful feedback. Build on each other's ideas here to create a story of how you imagine the user's experience. Don't spend too much time, just enough for a good sense of your user's experience. Then focus on the questions and assumptions you are making about how it will work or how your users will experience it.

Worksheet 6-1. Simple storyboard template



Worksheet 6-2. Detailed storyboard template

TITLE (name the step)	TITLE (name the step)	TITLE (name the step)
Draw a picture of what your user's experience looks like here	Draw a picture of what your user's experience looks like here	Draw a picture of what your user's experience looks like here
Concisely describe what happens in this step	Concisely describe what happens in this step	Concisely describe what happens in this step
Questions/Assumptions	Questions/Assumptions	Questions/Assumptions
How might we test it?	How might we test it?	How might we test it?
Priority ranking #	Priority ranking #	Priority ranking #

Worksheet 6-3. Prototyping workplan (page 1 of 2)

Prototype

Group:

What is the How Might We question?

What is our Theory of Change?

We believe that..._ _ _ _ ...

will lead to ..._ _ _ _.

What are we prototyping? What is the objective of the prototype? What aspects or concept will be tested?

What do we want to learn about through this prototyping? What questions do we want answered?

Who is the user? Which people are most impacted or expected to use the prototype if we made it real?

Testing

What assumptions are embedded that need testing?

How are we going to test it? Where? What methods? Over what time?

What issues or constraints might we expect?

What are the ethical constraints or risks involved with testing this prototype?

How will iterations and feedback be managed?

How will we know what is working and what is not working?

Worksheet 6-3. Prototyping Workplan (page 2 of 2)

CONSIDER:

What is the reason for the prototype?

- ☐ To explore and make ideas tangible?
- ☐ To test and evaluate how well something works?
- ☐ To communicate, share, and make the idea accessible to others?

What do we want to learn about?

- ☐ Value (do others see value)?
- ☐ Feasibility (what would it take to make this)?
- ☐ Integration (how does this work as a whole)?
- ☐ Experience (what will this look and feel like for people)?

How might we build capacity for change through the prototyping process?

How might human-centred and co-design principles be applied in the planning and evaluation?

Adapted from Auckland Co-Design Lab static1.squarespace.com/static/55ac5ee5e4b08d4c25220f4b/t/5b8f7e2e758d4614cb6bf5bd/1536130606942/prototyping_planning.pdf

Create your prototype

Determine which questions and assumptions are most important for you to test first. Once you have determined that then you can think about the simplest and best type of prototype, and start making it real!

Get creative and use whatever methods you like to make your prototype.

Remember Tom Chi's three rules for rapid prototyping:

1. Find the quickest path to experience.
2. Doing is the best kind of thinking.
3. Use materials that move at the speed of thought to maximize your rate of learning.

Watch the video at **www.youtube.com/watch?v=d5_h1VuwD6g**.

Prototyping example: Tomato Tinder

In the following example, the design challenge was "How might we reduce the likelihood of food waste at the grocery store?"

Figure 7 shows a simple storyboard, identifying the challenge and a possible solution. The design team focused on step 4 in their storyboard—a mobile app for grocery store staff. Figure 8 shows the built prototype.

Figure 7. Larry the Tomato (sample storyboard)

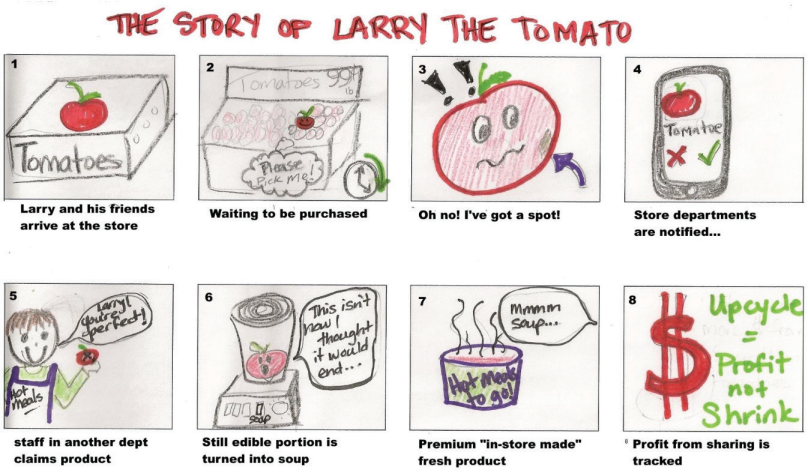
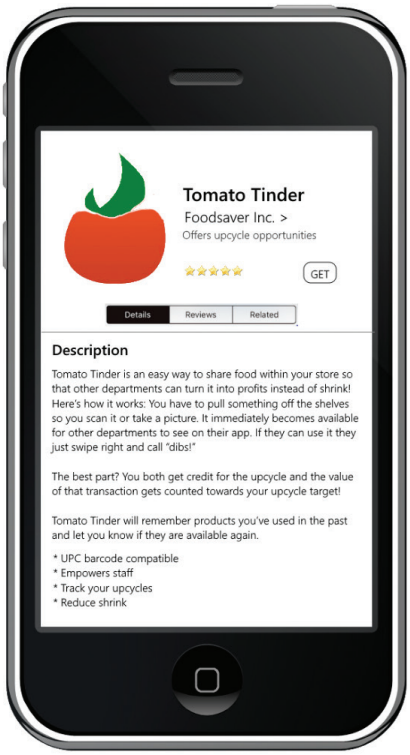


Figure 8. Tomato Tinder screen mockup



A note about embodiment

Remember what you learned from the embodiment/improv warmup in Module 5, "Imagine possibilities." Trust your gut as well as your intellect. What is your intuition telling you about the options?

Your reflection on prototyping

- What are your biggest learnings and curiosities? Write or draw any “Ah-ha” moments here.

- What are your challenges and worries? Write or draw any “Uh-ho” moments here.

- What do you need to move forward? (“Nothing” is a perfectly valid answer.)

Take stock and decide

Decision making here refers to reflection on action—taking stock of what you've done and what it means going forward. Reflect on what has led you to the decisions you've made and why.

- What actions did you take?

- What beliefs have surfaced (opinions you have, assumptions you hold, etc.)? For example, where do you now think the prototype fits on the "Plot your idea" graph?

- What knowledge have you accessed (sources of information that are not opinion-based)?

- What is the prototype you will build, and why (what do you hope to learn from it)?

Learn more at these links

1. **Rapid prototyping**
   Rapid prototyping is a process to make your ideas real in a short amount of time in order to accelerate the learning process. In this 8-minute video, Tom Chi describes how an early version of the Google Glass was prototyped in minutes. https://www.youtube.com/watch?v=d5_h1VuwD6g

2. **Why everyone should prototype**
   Chris Nyffeler and Leta Stafford of IDEO explain why everyone should prototype, not just designers. (article and 45-minute podcast) https://www.ideou.com/blogs/inspiration/why-everyone-should-prototype-not-just-designers?utm_medium=email&utm_source=mailchimp&utm_campaign=5.3-chris-nyffeler-webcast-recap-2019-may&goal=0_f703b39d99-b9ed24685e-218036001&mc_cid=b9ed24685e&mc_eid=44a3ec536e

References for Module 6

Auckland Co-Design Lab. nd. "Prototyping work plan." *The Aukland Co-Design Lab* (website). Auckland NZ. https://static1.squarespace.com/static/55ac5ee5e4b08d4c25220f4b/t/5b8f7e2e758d4614cb6bf5bd/1536130606942/prototyping_planning.pdf (Retrieved May 1, 2019).

Chi, T. 2013. "Rapid Prototyping Google Glass" (8-minute video). TED-ED. www.youtube.com/watch?v=d5_h1VuwD6g (Retrieved May 1, 2019).

Test and iterate

Module 7

Test and iterate

"The art of life lies in a constant readjustment to our surrounding."
Kakuzo Okakura, The Book Of Tea

Types of bias to watch out for in research
(Choong Ching 2016) (Practical Psychology 2016)

Confirmation bias
The tendency to search for or interpret information in a way that confirms one's preconceptions.

Groupthink and the bandwagon effect
The tendency to do (or believe) things because many other people do (or believe) the same.

Observer expectancy bias
The tendency of a researcher's beliefs or expectations to unconsciously affect the behavior of the observed subject(s).

Anchoring bias
The tendency to assign too much weight to the first piece of information we receive.

Selection bias
When the way data is collected distorts our analyses and conclusions.

Clustering illusion
When we mistake random coincidence in small samples for a trend in the population at large.

Reporting bias
When the direction or statistical significance of results influences whether and how research is reported.

Hindsight bias
Filtering memory of past events through present knowledge, so that those events look more predictable than they actually were.

Get set to welcome all feedback

Feedback is valuable in developing and designing an idea. Feedback from test participants is a gift because it allows you to improve your idea. That does not mean you need to accept all feedback equally or that you need to make changes based on every bit of feedback you receive. Your group's job will be to objectively, and mostly silently, receive all the feedback you get during testing.

It's important to remember that feedback is not just what people say; it is also their reactions and what they do when interacting with your prototype. So watch carefully and make note of people's reactions, questions, difficulties, and ease in interacting with your prototype.

Before testing

Consider the setting

Decide the setting you want to test your idea in. Your prototypes will be simple and rough. This is on purpose and really gives people permission to give feedback because they can tell the idea is not fully developed. An informal and neutral setting can be good for testing at this stage. However, your group may decide that you can learn the most by testing your prototype where it will ultimately be used.

Consider the goals

Your group will need to decide what kind of feedback you are looking for. Based on the questions and assumptions you have identified, you can further focus your feedback goals. For instance, you might be most interested in first impressions of your idea. Perhaps your idea is a new activity or service and you are trying to learn whether or not people would be interested in participating. Or maybe your group is wondering if the idea will change people's behaviors over time. Capture your thoughts and create a list of goals, so you can focus your testing script.

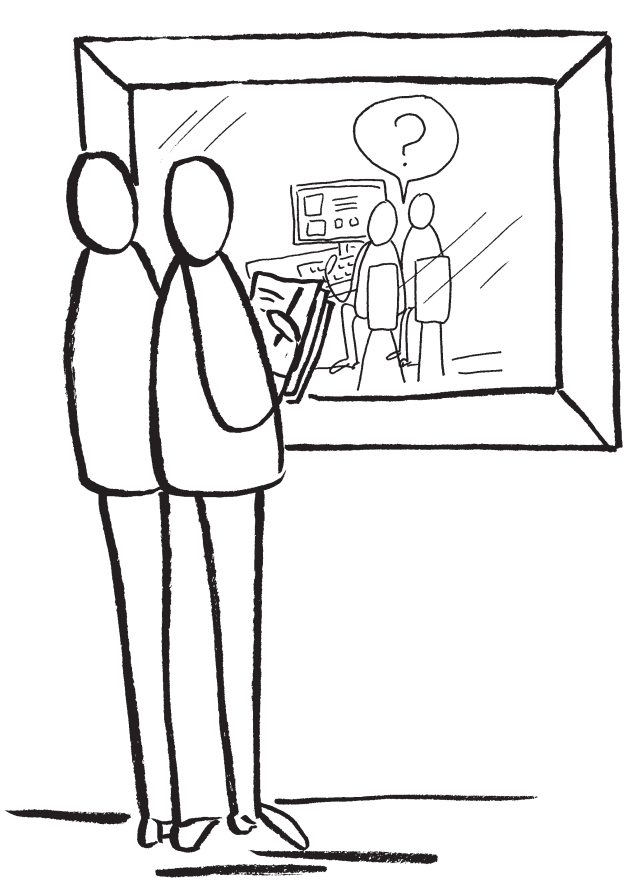
Define feedback activities

Based on what you are trying to learn, carefully plan your feedback activities. Arrange for a conversation if you are interested in first impressions. Set up an activity that demonstrates the real experience of your prototype, so you can gauge people's interest. Consider allowing people to use your prototype over a period of time, if you are interested in how it may change behavior over time.

Create a script and be prepared to abandon it

Decide as a group how you will introduce your prototype and the basics of what you hope to gain in testing it. Early prototype testing is more about exploration and inquisitive observation than evaluation. Even with the best script and testing plan, often people will express opinions and solutions (for example, "this thing should be bigger") rather than specific feedback. Take the opportunity to probe deeper (for example, "if it was bigger, how would that help you?").

One way to encourage users to focus on their experience is to ask them to think out loud as they use the prototype. Worksheet 7-1 offers a short script to introduce users to the Think Aloud method. Worksheet 7-2 is a longer script. Worksheet 7-3 is a template to help you create your own script.



Worksheet 7-1. Short Think Aloud script

As we try the tasks today, we will be using a method called "Think Aloud."

While you are working, we would like you to talk out loud about what you are thinking. Also, if you are reading text on a page, please read it aloud.

Since it is sometimes hard to remember to talk aloud, I may remind you from time to time. This talking will help us understand your actions better.

Worksheet 7-2. Longer script for a test session using Think Aloud

Hi, .

My name is_____, and I'm going to be walking you through this session.

You probably already know, but let me explain why we've asked you to come here today: We're testing a [WHATEVER YOUR PROTOTYPE IS] that we're working on to see what it's like for real people to use it. Our prototype is to [how is your prototype significant to this participant].

I just want to make it clear that we are testing our prototype, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes because that will help us know what is working well and what isn't.

This prototype is in the early development phase, so please don't worry that you're going to hurt my feelings. We want to improve it, so we need to know honestly what you think. I will ask you questions along the way to ensure that I am understanding your experience.

Think Aloud
As we go along, I'm going to ask you to think out loud, to tell me what's going through your mind. This will help us to understand how you interpret what you see.

If you have questions, just ask. I may not be able to answer them if that would change the outcome of the test. If I can't help you I'll just say "I can't answer that," but I will try to answer any questions you still have when we're done.

I realize this isn't a natural situation. Sometimes when people know they're being watched, they feel like they should keep going, even when they would have stopped at home. So if you're at a point where you'd normally stop, I want you to feel comfortable telling me. Please don't feel like you need to keep trying.

Do you have any questions before we begin?

Worksheet 7-3. Template for your own testing script

"Hi. My name is _____ and this is _____ and _____. We are taking part in NS GovLab, the province's social innovation lab focused on population aging. We wonder if you have a few minutes today to talk with us about something we're working on."

If the person says no, then say: **"No problem. Have a nice day."** *And move on.*

If they say yes, then follow the questions below.

"We have an idea about *[insert your idea here].* **What do you think?"**

- Listen for expectations.
- Do they make specific suggestions or share their decision making?

"Have you ever had difficulties related to *[insert the challenge you team is focused on and this idea is meant to address]?"*

"I have a demo. Would you be willing to look at it?"

- Pay attention to body language and any reaction.
- Ask them what they notice? What do they think certain aspects of your prototype mean?

"Thank you for speaking with us. It helps us make this idea better for everyone."

During testing

Pair up

Working in pairs can be really useful. One person can be the note taker while the other focuses on interacting with the user. If you are able to do this, then make sure your roles are clear. Plan to debrief together soon after the testing to share your observations.

Invite honesty and openness

Be sure to introduce your prototype as a work in progress. Make it clear to the users that the development of the idea is still in progress and that their feedback will be key in making improvements and helping to further develop the prototype. Ask them to be open and honest. Assure them that they will not hurt your feelings and that you will be most grateful for both positive and negative feedback. Be receptive to suggestions and ideas from users and get them to show you what they'd change.

Stay neutral but engaged

Present all concepts related to your prototype in a neutral tone. Don't be defensive or sell your idea. Listen carefully to all feedback and take notes on both positive and negative comments. Ask open, clarifying questions and record the responses. If they have a particularly obvious reaction, you can probe further to understand what they were thinking and feeling (for example, "I noticed you raised your eyebrows and said, 'oh!'... What were you thinking there? Was that positive or negative? Why?").

Adapt on the fly

Encourage participants to build on the idea, and revise the prototype as you go. Be ready to eliminate or change parts, but be sure to make a note of it. It will be important to understand the evolution of the idea so you can share the rationale for the changes with your group partners when you debrief.

Test multiple prototypes

Perhaps your group has decided to test multiple prototypes. Multiple prototypes allow you to compare and contrast prototypes in testing. If you have time and the interest to do so, it can be useful.

After testing

Share impressions while the memories are fresh

Ensure that you plan for time immediately following your testing to review the experience with your teammates and capture the key learnings. You can review again later, but capturing while it's fresh is important. Make note of any ideas and potential design changes you have in mind. This will be useful to have on hand when you begin adapting your prototype.

Complete a prototype test report

Take some time after each prototype test to document and reflect on the assessment.

Using the report outline on the following page as a guide, capture some key insights and learnings with each test.

Note: You do not need to fill out a report for each test. Just jot notes for your summary report.

As a group, complete a summary report of all prototyping your group completed. Use the following outline for your report.

Prototype test report outline

Basic information

- What did you test (hypothesis or assumptions)?
- Who did you test the prototype with?
- How did you test?
- Where did you test?
- When (date and time) did you test?

Learnings

What have you learned about

- Your understanding of the question or area of interest?
- Your assumptions?
- Your group?
- The system?

Assessment

- To what extent is this prototype likely to be desirable for the user(s) you identified for testing?
- To what extent is this prototype likely to be feasible in the real world?
- To what extent is this prototype likely to be viable in the current context (economic, political, social, etc.)?

Decisions and Next Steps

Based on your initial prototype testing, what are you

- Changing with your prototype?
- Discarding from your prototype?
- Pursuing with your prototype?

Update your systems map

Once you have made sense of your testing, it is important to update your systems map based on what you have learned. Take some time to determine what sort of organization and mapping is most useful for your group at this point in the process. We've given you several tools and you may have others that will be useful.

At this point, updating your systems map can give you indications of how your prototype might change the system. Are their indications of how your prototype contributes to the future state you are working toward? The map can also reveal new insights about the connections and relationships, as well as enablers and barriers.

Try to be as thorough as possible, while remembering that the map will continue to be a work in progress.

Worksheet 7-4. Update your systems map

Iterate, iterate, and repeat

It is highly unlikely that you will get your prototype right the first time around. If your design challenge is complex—as it should be—you will be faced with many unknowns and many possible paths to follow. By incorporating systems thinking into your work, you introduce changes that will impact actors, organizations, and all of the relationships among and between them in unpredictable ways.

As things change, you adapt. As things emerge, you adapt. To do so, you need to iterate—your thinking, your relationships, your approaches, your research, and your prototypes. You experienced this during the Crazy 8s game in the ideation phase. Building on existing work and pushing past a sticking point or perceived barrier can yield unanticipated results.

This is not to say that the work is endless. There are times to make a decision that can include abandoning, changing, or persevering. There are also opportunities to revisit work you have already done that was not pursued for potential opportunities. As long as change and complexity are embedded into systems, the work must respond and adapt to meet it. Iteration is the means to that end.

> *"As every other earthly thing, even dreams must die. We long for a time when this may no longer be needed; we will always have questions, but these sores that itch – these problems that beleaguer our neighbourhoods and families and communities – will hopefully disappear one day, reiterated in the emergence of things. And new shadows will emerge with new inquiries. And we will not know our former pains or vocations in the same ways anymore."*
>
> *Bayo Akomolafe,* The Emergence Network (www.emergencenetwork.org/a-politics-of-possibilities/)

Your reflection on testing and iterating

- What are your biggest learnings and curiosities? Write or draw any “Ah-ha” moments here.

- What are your challenges and worries? Write or draw any “Uh-oh” moments here.

- What do you need to move forward? (“Nothing” is a perfectly valid answer.)

Take stock and decide

Decision making here refers to reflection on action—taking stock of what you've done and what it means going forward. Reflect on what has led you to the decisions you've made, and why.

- What actions did you take?

- What beliefs have surfaced (opinions you have, assumptions you hold, etc.)?

- What knowledge have you accessed (sources of information that are not opinion-based)?

- What will you abandon, pivot towards, and/or pursue based on the results from testing?

Share your learning and insights

One of the four key goals of NS GovLab is to create a network of engaged social innovators. It's vital that we share our learning and that we continue to learn from each other. This can lead to new opportunities, fresh insights, and exponentially greater returns on our collective efforts.

There are many ways to share your learning and insights, including presentations, blog posts, graphic illustrations, infographics, and short videos. We encourage you to be creative and extend your reach.

NS GovLab will offer opportunities to do this within your cohort, but we also encourage you to do this in your own organization and networks. There will also be opportunities to make connections and learn from other NS GovLab cohorts. We hope you will take advantage of this and extend your working relationships far and wide.

Learn more at these links

1. **The Mom Test**
   The Mom Test is a cautionary tale for testing out an idea or prototype. (3:31 minutes) https://www.youtube.com/watch?v=Hla1jzhan78

2. **Beyond the Mom Test**
   In this video, Rob Fitzpatrick shares valuable tips and tricks for getting relevant information from potential users—beyond opinions and compliments. (16:48 minutes) https://www.youtube.com/watch?v=O_xjb7LB7VY

3. **The value of iteration**
   Change can be hard, but it is necessary with rapid prototyping and testing. In this video, you will learn the value of iteration and where it can take you. (1:15 minutes) http://www.designkit.org/mindsets/7

References for Module 7

Choong Ching, T. 2016. Types of cognitive biases you need to be aware of as a researcher. UX Collective. https://uxdesign.cc/cognitive-biases-you-need-to-be-familiar-with-as-a-researcher-c482c9ee1d49 (Retrieved April 27, 2019).

Practical Psychology. 2016. 12 Cognitive Biases Explained - How to Think Better and More Logically Removing Bias (10-minute video). Attributed to Ismonoff TV. https://www.youtube.com/watch?v=wEwGBIr_RIw (Retrieved April 27, 2019).

Glossary of terms

Glossary of terms

analogous location
A place that has some quality or characteristic that is similar (analogous) to the challenge you are researching, but with an inspiring twist. Visiting an analogous location can give you a fresh perspective on your area of focus.

assumption
A belief lacking evidence to substantiate it. An assumption is less robust than a hypothesis.

cognitive bias
"A type of error in thinking that occurs when people are processing and interpreting information in the world around them… cognitive biases are often a result of your brain's attempt to simplify information processing. They are rules of thumb that help you make sense of the world and reach decisions with relative speed." (www.verywellmind.com/what-is-a-cognitive-bias-2794963)

cohort
A group of people. Your NS GovLab cohort is the group of people who started their fellowship when you did.

complexity theory
"The study of complex and chaotic systems, and how order, pattern, and structure can arise from them." (www.dictionary.com/browse/complexity-theory)

convergence
In design thinking, the synthesizing and focusing points (What did we learn? What does it mean?) "Convergence is a bringing together, a unifying of diverse aspects through a common resonance or purpose." (ffla.co/future-fit-business-embracing-living-systems-logic-divergence-convergence-emergence)

design squiggle
A simple illustration of the design process. It was conceived by illustrator/designer Damien Newman to convey the feeling of the design journey, "beginning on the left with mess and uncertainty and ending on the right in a single point of focus: the design." (thedesignsquiggle.com)

design thinking
A creative discipline with roots in the field of industrial design. In the broadest sense, design thinking is a process that helps people "unlock their creative potential and apply it to the world." (dschool.stanford.edu/about)

divergence
In design thinking, the process of opening up, inviting curiosity, expanding the inquiry and realm of possibilities. Divergent thinking is vital, but is balanced with convergence. (ffla.co/future-fit-business-embracing-living-systems-logic-divergence-convergence-emergence)

embodiment
The practice of paying attention to what our bodies can teach us—for example, using improvisation exercises to spark creativity and generate thinking. Refer to the Yes/And exercise in module 5, "Imagine possibilities."

emergence
"What parts of a system do together that they would not do alone." It also refers to "how behavior at a larger scale arises from [details] at a finer scale." (https://necsi.edu/emergence)

fellow
At NS GovLab, a person who has committed to a year-long program of learning and action research. All of the fellows who start the program at the same time form a cohort.

hypothesis
An informed hunch or guess to be tested. A hypothesis is more robust than an assumption.

immersion location
A place you can visit to learn more about the challenge you are researching. An immersion location brings you into contact with the people and places at the point of impact.

iteration
A new version of something; another round of development.

mapping
Making what's known visible so you can recall, retrace, see parts in relation to the whole, and draw possible routes.

people at the point of impact
The people who will be most affected by the solutions you design. They might be citizens, customers, clients, family, friends, neighbours, frontline service providers, or even policy makers. For example, this could include not only the people who receive a service, but also their close family members, as well as the staff that deliver the service.

presencing
In the U Process (Theory U), holding the quiet space open; to make space to go deeper. As an interview technique, the awkward silence you let hang after the response.

prototype
A model or mock-up of an idea.

storyboard
A sequence of drawings that tell a story. A storyboard helps people see the beginning, middle, and end as parts of the whole.

synthesis
Sense making; distilling; focusing.

systems thinking
A set of methods and tools that help us understand complex systems. A systems mindset equips us to: see patterns, not just problems; inspire change, rather than imposing it; plan to adapt, rather than stay the course; seek health, rather than a fixed end point.

Acronyms

We have avoided acronyms in this Sourcebook. But here are a few you may encounter in related readings. Are there others you need to know or be able to explain? Record them below.

HCD
Human-centred design

HMW
How might we…?

MVP
Minimum viable product

MVS
Minimum viable service