Turn and Face the *Strange*

Shifting Organizational Paradigms with Participatory Design

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ABSTRACT

I explore design thinking in organizational management and transformation. Through the lens of metaphor, I describe the differences between the current paradigm of "organizations as machines" and a future one of "organizations as networks." These paradigms are visualized through the Causal Layered Analysis method. I argue that design thinking can facilitate paradigmatic transformation because systemic perspectives are inherent in the mindset. I developed co-design workshops to solve a functional challenge for teams. I provide insights into design thinking, the design and facilitation of the method, and systemic change. Participants were able to reframe their challenges and come to higher-order solutions that focused on multiple leverage points to create change. Creating team heterogeneity and a collaborative space provided conditions for stakeholder-centred solutions. A design-thinking mindset produced double-loop learning, human-centricity, and the opportunity for emergent transformation, all key principles for a decentralized and humanistic paradigm.

ACKNOWLEDGEMENTS

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1.0 INTRODUCTION

I began this project by observing a trend happening in my professional sphere. I noticed the first signal in conversations with friends around their struggles with centralized processes and structures within large corporations; they felt like they were not valued for their dedication, time, or expertise. The second was an article from McKinsey discussing how design leaders were frustrated by the confines of their organization, having been given the mandate to improve customer experience without the authority to do so (Dalrymple & Sheppard, 2020).

My anecdotal observations are not new or unique. In a 2017 survey of over 7000 Harvard Business Review readers, management consultants Gary Hamel and Michele Zanini found that two-thirds of respondents felt their organizations were increasing in bureaucratic bloat (2017). This was particularly true for those generating the most value for customers. Feelings of increased bureaucracy correlated with reports of increased time spent on bureaucratic chores such as creating reports and attending meetings. They also found that respondents believed that only 10% of employees could spend $1000 without manager approval, and 96% of survey respondents working in large organizations said it was either "not easy" or "very difficult" for employees to start initiatives, which bred feelings of disempowerment. These statistics can be viewed in light of other trends in the last two decades, such as the sharp decrease in small firms disrupting large incumbent organizations, the increase in global mergers and acquisitions deals, and the increase in voluntary employee turnover in the USA from lack of career development and work-life balance (Bessen et al., 2020, Rudden, 2021, Mahan et al., 2019). In companies of more than 300 employees, bureaucratic patterns tended to outpace organizations' growth (Hamel & Zanini, 2020).

With the COVID-19 pandemic, many organizations have had to quickly re-evaluate their entire strategy and approach to organizational design (Foss, 2021). The sudden disruption for organizations across the globe is an opportunity to envision a different kind of organizational life, in how we experience organized behaviours and systems. It is an opportunity to become more flexible, resilient, and humanist.

One of design thinking's core principles is human-centricity, making it a valuable resource in organizational transformation towards a human-centric paradigm (Brown, 2009). From this perspective, my project explores the use of design thinking in organizational management, with the intent that the outcomes generated would create paradigmatic transformation. Organizational management is defined in this project as the art of organizing people to produce a common vision (Boettinger, 1975). This idea of using a different tool to shift paradigms is reminiscent of Marshall McLuhan's theory that "we shape our tools and thereafter they shape us" (Culkin, 1967, p. 70).

To accomplish my project, I developed co-design workshops for teams to solve an organizational challenge. Based on that research, I will share insights into the use of design thinking on participants, as well as system analyses on the limitations and opportunities they faced to create change. In addition, I will provide reflections into the workshop process itself. While my findings did not measure change within organizations, participants were able to develop a shared sense of purpose and alignment on their challenge and a deep understanding of their boundaries of influence to affect the systems in their organization.

This paper is structured in three main sections. Section 2.0 is theoretical and explores the current, dominant paradigm of organizational life and the vision for a future paradigm. From there, I discuss the theory and practice of organizational transformation, and provide an argument for design thinking to create emergent change from a systemic perspective. In section 3.0, I discuss my research method and provide an overview of my workshops. Lastly, I share the insights I gained through the workshops related to design thinking and organizational transformation.

2.0 BACKGROUND

2.1 Organizational Paradigms as Metaphors

In 1986, Gareth Morgan published the original edition of *Images of Organization*. In the book, Morgan uses metaphors to describe organizational life, noting that "the use of metaphor implies *a way of thinking* or *a way of seeing* that pervade how we understand the world

generally" (1997, p. 4, emphasis in original). There is a holistic quality to the metaphor because it enables one to imagine many characteristics at once to grant understanding. Metaphor helps us understand an organization's structure (e.g., management and governance), processes (e.g., operations and implementation), and people (e.g., culture and experience) (Keller et al., 2017). Below I will examine two metaphors from Morgan's book: the current metaphor, "organizations as machines," and a future metaphor, "organizations as networks" (1997).

ORGANIZATIONS AS MACHINES

The current dominant paradigm can be seen as a metaphor of "organizations as machines," which is tied to Taylorism and bureaucracy (Morgan, 1997). The basic elements we draw from the metaphor are centralized planning, command, coordination, and control. Just as machines are made up of parts that have single core functions, organizations are divided into functional departments such as technology, marketing, and finance. Roles and responsibilities are both unique and complementary to one another and tightly defined, like an interlock of cogs. The separation of management and employees can be observed in the variety of strategy formation schools that focus on conceiving and formalizing strategy as centralized processes and roles to operate the organization (Mintzberg et al., 1998). Managers do the thinking, and staff do the working.

However, organizations-as-machines are limited in their ability to adapt to complex environments. Organizational theorist Jay R. Galbraith explains:

> The greater uncertainty, the more difficult it is to program and routinize activity by preplanning a response. Thus, as uncertainty increases, organizations typically find ways of controlling outputs (e.g., by setting goals and targets) rather than controlling behaviors (e.g., through rules and programs) and by relying on continuous feedback as a means of control. Hierarchy provides an effective means for controlling situations that are fairly certain but in uncertain situations can encounter information and decision overload. (Morgan, 1997, p. 80, Galbraith, 1974)

In contrast, decentralized organizations, like networks, are more resilient to increased uncertainty because they decentralize authority and allow low-level employees to make decisions.

ORGANIZATIONS AS NETWORKS

Signals for the emergence of a new paradigm of organization have been occurring for a long time. For example, Mary Parker Follett was a management theorist writing about humanism in organizational life in the 1920s and 1930s (Parker, 1984). Additionally, Peter Senge wrote about learning organizations in the 1990s (Senge, 1994), and recently, Gary Hamel and Michele Zanini wrote *Humanocracy* to detail how organizations can evolve into decentralized networks (2020). These authors all share ideas on increasing interpersonal relationships within organizations, decentralizing authority, and creating reflexive environments, which conjure the metaphor of organizations-as-networks.

There are several principles that embody this paradigm:

- Each part of the organization contains the values and culture of the whole: the organization contains both specialization and generalization at each level and in every part (Morgan, 1993),
- *Redundancy* is built into the roles of employees and into the systems of the organization, and helps develop "tacit understanding" (Emery, 1969, Nonaka & Takeuchi, 1995),
- Organizations must have *requisite variety*, which states that in order to deal with complexity, organizations must have the capacity to generate a variety of responses that are as diverse as the problems they must solve (Ashby, 1956),
- Structures, processes, and people operate on minimum specifications instead of rigorously prescribed specifications: managers act as facilitators and boundary-setters instead of as "grand designers" (Morgan, 1997, p. 114, Herbst, 1974), and
- *Double-loop learning*, defined as challenging the assumptions that made current processes, is embedded into the organization to anticipate change by learning to do the right things. In contrast, single-loop learning is learning to do things right (Senge, 1994).

Although these principles are theoretical, *Humanocracy* contains many practical examples of shifting organizations from machine to network, which I will use as the basis for my foresight exercise.

SHIFTING PARADIGMS USING METAPHOR

We can re-imagine the future using metaphors by using a futures method pioneered by Sohail Inayatullah (1998). Causal Layered Analysis (CLA) is structured as four layers to contextualize a problem, from superficial to ideological: *litany, systemic causes, worldviews,* and *metaphors.* Inayatullah explains that CLA illuminates different layers of analysis and synthesis, and equates to different ways of knowing. It is not so important to debate which ideas fit in which layer; the layers are intended to create holistic thinking across the layers and metaphors. This method is usually participatory; for the purposes of this project, it is used to contrast the two metaphors.

In Figure 2.1 on the following page, the machine metaphor highlights rigidity, centralization, and performance measurements based on efficiency. Decisions and information have one-way flows to the top. In the network metaphor, decisions and information is distributed and small-scale. This allows for flexibility, decentralization, and performance measurements based on effectiveness.

Ultimately the purpose of shifting to a new paradigm is to be more adaptable and resilient, but also more equitable, fair, and sustainable from a human perspective. So how do we go from this metaphor to the next?

2.2 Guiding Systemic Evolution

The prevailing mindsets and assumptions in organizations make it difficult to identify the relevance of emerging change (Hodgson & Sharpe, 2012). From a dynamic systems perspective, this makes sense because organizations revolve around a main attractor point: the status quo, the business-as-usual thinking (Svyantek & DeShon, 1993, Morgan, 1997). However, organizations never repeat quite the same pattern or behaviour, thus providing opportunities for minor attractors to influence those systems. So how do we invite instability that might catalyze a new mindset? Morgan makes the argument that managers must

2.1 CAUSAL LAYERED ANALYSIS

Table 2.1: A Causal Layered Analysis to compare Organizations-as-Machines and Organizations-as-Networks. Following a U-shape, we first notice the trends of the current paradigm. We then identify the systems and worldviews that perpetuate the litany, with an understanding that they stem from the same metaphor. From there, we examine a new metaphor, and imagine worldviews and systems that arise. Finally, we reflect those systems into the litany, illustrating the differences in trends that occur in the new paradigm versus the old.

	Organizations as Machines	Organizations as Networks
Litany Trends, problems, and news reports that are often disconnected with each other and politicized without clear solutions.	'M&A activities are increasing' 'Increase in KPIs' 'Employees feel disempowered' 'Increase in bureaucratic bloat' 'Most change programs fail' '50% of workers are rethinking what kind of work they want to do' 'Employers seek unicorns'	'Change is continuous and built-in' 'Management roles are rare' 'KPIs are outcome-based' 'Employers ask for minimum specifications in resumes' 'Automation removes administrative roles' 'Organizations are resilient to takeovers'
Systemic Causes Social, technological, political, or historical factors. Different stakeholder interests are explored in this layer.	Information must flow to the top Decisions based on quantitative analysis: sales, profit & losses, shareholder return Decisions made by managers Departments are silos based on function People are seen as resources to be exploited Competencies are commodities that can be bought & sold	Information is distributed and open source Decisions based on qualitative analysis: customer experience, stakeholder return Decisions are made by teams Departments are guilds based on function People are seen as contributors to be supported Competencies are seen as cultures that must be developed and adapted
Worldviews Discourses and worldviews that support and legitimize the above layers from deep social structures.	Centralized decision-making People are specialized Environments are stable and predictable Plans are linear steps for organizations to follow Each part is measured for maximum efficiency: time vs cost	Pods make up the whole People are multi-functional and localized Environments are complex and unpredictable Strategic direction emerges from signals on the edges Each part is measured for maximum effectiveness: outcome vs cost
Metaphor Myths and metaphors to understand the deep unconscious dimensions of the problem.	**Organizations as Machines**	**Organizations as Networks**

shape and create "new contexts" through *new ways of understanding* or *action* (1997). A good manager uses small but high-leverage initiatives to trigger a transition from one attractor to another. Their skill set includes navigating their sphere of influence, balancing paradoxes, and managing boundaries. A good manager becomes a guide for emerging change. If I compare this to the "Three Horizons" method in futures studies, a good manager sits in the second horizon, administering change from the current horizon to the preferred one (Curry & Hodgson, 2008).

FINDING LEVERAGE POINTS

In order to create systemic transformation, we look for places or interactions that will affect systemic goals or functions, called *leverage points*. One of the more powerful leverage points is self-organization, which allows a system to determine its own structure and consequently change the points of leverage within, like rules of behaviour and information flows (Meadows, 2008). Self-organization requires a variable flow of information from which new patterns can emerge, and a means to experiment and test new patterns. Any organization that does not allow for self-organization has a higher risk of failure to adapt to existential crises.

Statistically, change management initiatives fail over 70% of the time and fail to change mindsets (Hamel & Zanini, 2014, Schein, 2004). Most successful change happens organically and at the periphery without central authorization (Mintzberg, 2017, Eisenstat et al., 1990). Design thinking is also an effective means of organizational transformation because of its abilities to de-risk strategies and increase alignment (Wuertz et al., 2020). I will thus compare different change models with design thinking models to show their similarities.

A COMPARISON OF CHANGE METHODS

So, what works? There is already a lot of information on change management and the many models explaining how to do it (Morgan, 1997, Mintzberg et al., 1998, Cameron & Green, 2009). In Figure 2.2, I compare four different methods of change.

The steps in the models all take a similar form: identify a problem, prototype small initiatives, evaluate and reflect on emergent behaviours, and use the momentum of success to propagate systemic transformation.

2.2 COMPARISON CHART OF CHANGE MODELS

Kotter's 8-Step Change Process	Senge's Guide to Systemic Change	IBM's Enterprise Design Thinking	Design Thinking as a Learning Process
1. Create a sense of urgency	Limit commitment to a handful of people	A loop of continuous change to understand the present and envision the future	A process of learning as a design thinking framework
2. Build a guiding coalition	Start small	Observe: immerse yourself in the real	
3. Form a strategic vision & initiatives	Intended results are more important than detailed plans	Reflect: come together and look	
4. Enlist a volunteer army	Identify the limits of the system and lessen them	Make: give concrete form to abstract ideas	
5. Enable action by removing barriers	**Challenges to Overcome**	**Principles**	
6. Generate short-term wins	1. Not enough time	Focus on user outcomes	
7. Sustain acceleration	2. No help, coaching, or support	Restless reinvention	
8. Institute change	3. Not relevant; no clear business case for change	Diverse empowered teams	
Principles	4. Walking the talk; aligning values and action	**Key concepts**	
Leadership + Management	5. Fear and anxiety; the desire for psychological safety	Hills: align teams on meaningful user outcomes	**Principles for success**
Head + Heart	6. Established measurements and assessments	Playbacks: stay aligned by regularly exchanging feedback	A cross-functional, cross-disciplinary team that represents the four learning styles in appropriate balance
Select Few + Diverse Many	7. True believers vs. non-believers	Sponsor user: invite users into the work to stay true to real world needs	A good team leader who can move the team into different realms of learning
"Have To" + "Want To"	8. Governance		
	9. Diffusion into the rest of the organization		
	10. Strategy and purpose		

In the fourth column, a 2x2 matrix diagram appears with axes:
- **Abstract Conceptualization** (top) / **Concrete Experience** (bottom)
- **Reflective observation** (left) / **Active experimentation** (right)
- Quadrants: frame + reframe (top-left), imagine + design (top-right), observe + notice (bottom-left), make + experiment (bottom-right)

Figure 2.2: *A comparison of established change methods: Kotter's 8-Step Change Process, Senge's Guide to Systemic Change, IBM's Enterprise Design Thinking, and Beckman's Design Thinking as a Learning Process, based on Kolb's Experiential Learning Cycle and Charles Owen's Design Thinking Model (Kotter, 2018, Senge, 2011, IBM, n.d., Beckman, 2020).*

These models stress the need to keep change initiatives small and to grow their impact over time. They also highlight the need for diversity within the teams that will be driving the change, which touches on Ashby's concept of *requisite variety* (1956). These models share the need for members of the organization to reflect and shift their ways of thinking, made explicit in the design thinking models. Three of the models acknowledge organizational systems by identifying limits, removing barriers, and prototyping to surface emergent

behaviours. These similarities reveal that successful organizational transformation has certain principles one must follow, which design thinking inherently embodies.

2.3 Design Thinking for Systemic Change

WHAT IS DESIGN THINKING?

Design thinking has been evolving for several decades (Papanek, 1972, Cross, 1982, Buchanan, 1992, Owen, 2007, Brown, 2009). Design thinking can be a mindset that employs abductive, integrative, and iterative thinking, and a set of tools that emphasize observation, collaboration, fast learning, visualization, and rapid prototyping (Martin, 2009, Lockwood, 2010, Liedtka & Ogilvie, 2011). Thinking like a designer produces some of these characteristics (Owen, 2007, Forsythe, 2020):

- Being hypothesis-driven but solution-focused by asking what *could be*,
- Being not just iterative, but recursive by jumping continuously between the problem, the context, and the solution (Dubberly Design Office, 2009),
- Sensemaking and experiential learning (Klein, Moon, & Hoffman, 2006),
- Being human-centric (Brown, 2009), and
- Being strategic to understand a solution's feasibility (Brown, 2009).

Design thinking has been broadly applied to problems of increasing complexity, from branding to organizational design. In this project, I will focus on service design to create change through new processes within organizations, which fits into Buchanan's "activities and organized services" as a third-order problem space, above product design and below complex systems (1992). Recently, Lou Downe describes a service as "something that helps someone [do] something" (2020, p. 20).

Designers have refined the language, methods and principles for improving services (Kimbell, 2014, Stickdorn et al., 2018, Downe, 2020). The principles of service design have evolved from what Pourdehnad, Wexler, and Wilson refer to as the "Second Generation of Design" to the "Third Generation of Design" (2011a). The second generation studies the end user and the organization while they piece together a solution from the data they collect; the main criticism has been that designers can create unintended consequences by not fully understanding

how their solutions affect parts of the system outside their scope of knowledge. The third generation involves stakeholders not only in gathering information, but in designing and implementing their own solutions within the system. This is evidenced in a case study from *The Service Innovation Handbook*, where an expert-led initiative within a healthcare network was only implemented successfully with 60% of their teams (Kimbell, 2014). It was re-visited five years later, this time empowering teams to become co-creators to understand the purpose of the change and to tailor the solution to their ways of working, which resulted in 100% adoption.

With systems thinking, design thinkers help organizations adopt ideas that emerge through the design process from the stakeholders who created them (Pourdehnad et al., 2011b, Rehm, 1999). I posit that design thinking and service design practices can be used to create systemic change, like teaching stakeholders to learn through doing, and to develop a recursive mindset. As Kimbell states, "the implication for managers designing innovative services is to recognise that in a post-normal organizational environment, facts are uncertain, knowledge is uncomfortable and solutions need to be what environmental researcher Steve Rayner calls 'clumsy'" (2014, p. 37, Rayner, 2006). Clumsy solutions are solutions that cannot be fully formulated in advance because they have unintended consequences and need to be re-evaluated continuously as systems respond to change.

Service design has become entrenched as a business concept, meaning that people are seeing its value to improve experiences for customers. Organizational processes are also experiences, but for the employees and stakeholders involved. Service design consultancies like MAD*POW and Bridgeable are translating their competencies into process and organizational design. The Service Design Network is advocating for service designers to tackle change management (Bartlett & Block, 2020). Overall, design thinking is an action-focused mindset, which can produce new contexts for change to emerge. It also emphasizes action through collaboration, something that organizational consultant Margaret Wheatley supports: "Emergence happens through connections. Therefore, any process that can catalyze connections becomes the means to achieve change at a global level" (2002, The power of this approach section, para. 4). Going beyond similarities, design thinking operates in a different

paradigm than traditional management methods because it focuses on human-centricity and self-organization.

THE IMPACTS OF DESIGN THINKING

Successful use of design thinking suggests that there are repeatable implications for organizations. In a study conducted by Jeanne Lietdka using 22 companies, she observed five common practices in their design thinking projects (paraphrased from Lietdka, 2018):

1. Teams sought to develop a deep understanding of user context

Design thinking provided user-based criteria for future ideation, reframing the problem to solve the actual needs of the stakeholders, aligning perspectives across the team, and building emotional and experiential engagement for the team and the various stakeholders in the problem space.

2. Team heterogeneity

By gathering stakeholders from different sides of a problem, the diversity within teams brought new perspectives and reformulations of the problem definition. Design thinking helped build alignment across differences, create higher-order solutions addressing multiple stakeholders, broaden the team's resources and mindsets, and increase their willingness to co-create.

3. Dialogue-based conversations

Teams that were able to align their purpose with dialogue surfaced tacit assumptions, collaborated on solutions, and used "social technology," which created shared meanings and built trust within the team (Pezeshki, 2014).

4. Generation of prototypes

Teams that generated diverse prototypes and treated them as hypotheses reduced investment into and the magnitude of failures, lessened the effects of decision biases, allowed the emergence of champions for implementation, and encouraged a learning-through-making mindset. Prototyping also unearthed dependencies on other parts of the system and emergent behaviours from those tests.

5. Teams used a structured and facilitated process

Having a facilitator promoted psychological safety from the discomfort of uncertainty and helped manage cognitive complexity. Expert facilitation also allowed key stakeholders to provide critical input and improved both the team's confidence in and the quality of their solution. Not all design thinkers were good design thinking facilitators, which was a necessary component for successful workshops; good facilitators did the work *with* the team as opposed to doing the work *for* the team.

The mindset and methods of design thinking are often borrowed from other disciplines, but when combined they create potent effects on solution development. As Lietdka notes at the end of her paper, "the power of [design thinking] lies less with individual elements and their corresponding tools and stages considered in isolation, and more in the gestalt of them taken together, and coordinated in an end-to-end process" (2018, p.35). The principles of design thinking have the potential to be correlated to the characteristics of organizations-as-networks. Figure 2.3 illustrates how design thinking supports this paradigm through its outcomes.

2.3 MAPPING DESIGN THINKING TO ORGANIZATIONS-AS-NETWORKS

Principles of Design Thinking   INSPIRES   **Characteristics of Organizations-as-Networks**

Deep understanding of user context — Each part contains the whole

Team heterogeneity — Redundancy of knowledge & tacit understanding

Dialogue-based conversations — Ability to generate a variety of responses to match diverse problems

Cyclical prototyping — Wide operating parameters based on minimum specifications; managers are facilitators & boundary-setters

Structured and facilitated processes — Double-loop learning; the ability to challenge operational assumptions

Table 2.3: The principles of design thinking hold promise to foster characteristics of organizations-as-networks (Lietdka, 2018, Morgan, 1997). Deep understanding and dialogue-based conversations create whole-in-parts behaviour and redundancy, team heterogeneity creates requisite variety, generating prototypes and design thinking facilitation create an emphasis on minimum specifications and boundary-setting, and learning by doing builds the capacity for double-loop learning.

I now answer the practical part of the project: What is the first step in organizational transformation? How might we employ design thinking in organizational management, knowing that it will inherently promote change?

3.0 RESEARCH METHOD

I designed two workshops for participants to co-design a functional challenge within their organization. Each group of participants consisted of a manager, who provided the challenge, and three to four relevant stakeholders. Their objective was to produce a new process.

I employed a participatory design methodology so that stakeholders could engage with the organizational transformation implicit in the challenge. Following Scandinavian approaches to participatory design, which focuses on democratization, values- and conflicts-based discussions as resources in the process, participants would have the opportunity to contextualize and design imagined solutions for themselves (Gregory, 2003). As design researcher Judith Gregory notes, "Scandinavian participatory design approaches emphasise change and development, not only technological change and systems development, but change and development of people, organisations, and practices, occurring in changing socio-historical contexts" (2003, p. 63).

Two elements were critical in the workshop design: planning a structured and facilitated process to increase the potential impact of the workshops and recruiting teams that would be heterogeneous in nature by way of their roles within the organization.

Each two-hour workshop was conducted online due to COVID-19 restrictions. Workshops were required to occur within one week of each other so that participants would remember what they had done in the previous session. Prior to the workshops, I provided an optional tutorial to explain the workshop and give the participants an opportunity to familiarize themselves with Miro.com, a web-based application used for collaboration. Both myself and participants had mics and cameras turned on for the workshops, with audio-only recording. The design of the workshops was an iterative process. These iterations will be discussed as individual studies because of their unique challenges, organizations, and facilitation.

Prior to recruiting, I received approval from OCADU's Research Ethics Board. From October to December of 2020, I recruited using social media and networking sites, as well as messaging people within my own network to initiate a snowball recruitment process. Email and direct message were the primary modes of communication with participants who expressed interest. The call for participants targeted managers first. Once I confirmed their interest and proposed challenge, they were responsible for recruiting their own stakeholders. In total nine participants were recruited, four of whom belonged to a large financial institution referred to as **Team #1**, with the other five belonging to a small technology consultancy referred to as **Team #2**. All participants were based in Toronto, Canada, and were not compensated for their time. Workshops were completed between November and December.

After the workshops were completed, I analysed audio transcripts of the sessions made using Temi.com to discover themes related to the participants' views of their challenge, the team's capacity for design thinking, and their organizational boundaries and opportunities for change. In addition, I examined the strengths and weaknesses of the workshops and myself as facilitator.

3.1 Workshop Design

I designed the workshops from two different frameworks (see Figure 3.1). The first framework follows the double-diamond method presented by the British Design Council in 2005 (Design Council, 2021). It provides four stages of problem finding and solving: *Discover, Define, Develop,* and *Deliver.* Its goal is to emphasize convergent and divergent thinking in the process. Tim Brown describes this as a "rhythmic exchange . . . with each subsequent iteration less broad and more detailed than the previous ones" (Brown, 2009, p. 68). I used the framework as a guide for participants to diverge and explore possibilities as well as to converge and make decisions.

The second framework follows the AT-ONE method popularized by service design expert, Simon Clatworthy. Service design has generally employed tools and techniques from participatory and generative design research to deliver its outcomes (Sanders & Stappers, 2012). This method was developed in Norway in response to the over-use of product development

3.1 DESIGN FRAMEWORKS

Double Diamond Framework
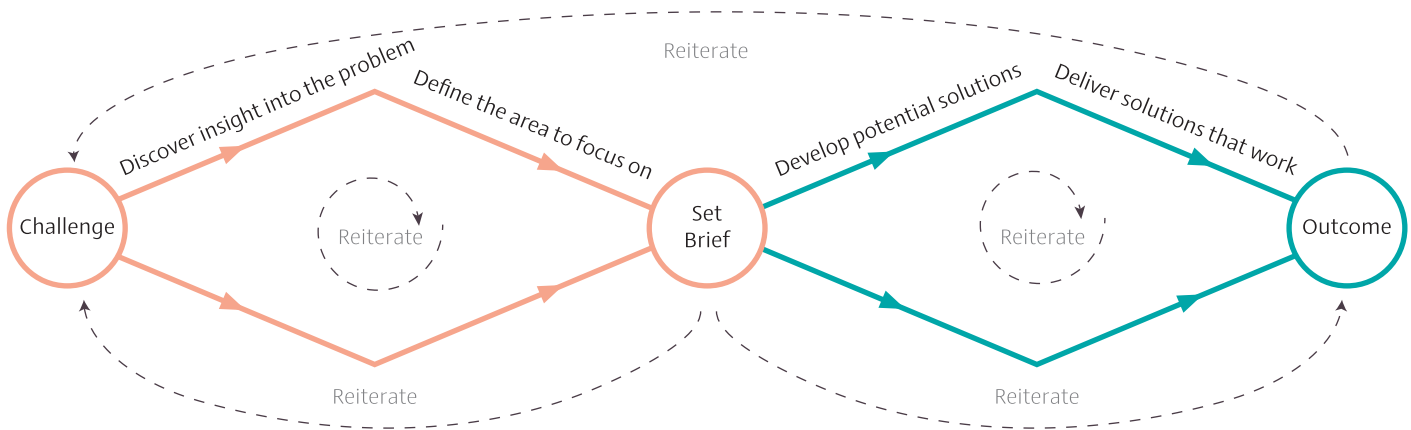
AT-ONE Framework

Figure 3.1: *The workshops are based on the double diamond and AT-ONE frameworks.*

methods to innovate services and uses five different lenses to design services: *Actors, Touchpoints, Offerings, Needs,* and *Experiences* (Clatworthy, n.d.). *Experiences*, which seemed extraneous in this instance, were converted to *Resources* to anticipate the materials or technologies needed for the process. I used the AT-ONE framework because of its general applicability and because it could be mapped onto the 5 w's of problem solving.

The first workshop *discovered* and *defined* the challenge by exploring the team's, the organization's, and the customer's *needs* and the organization's *strategic values* (see Figure 3.2). *Strategic values* were defined as the set of beliefs that influenced how people made decisions and prioritized objectives, which was important to include because "culture determines and limits strategy" (Schein, 2004, p. 411). These beliefs would be the basis for evaluating the needs-to-be-met as easy or difficult to fulfill. After, a round of voting would occur with participants casting six anonymous votes to the needs they thought were most important to the challenge.

3.2 WORKSHOP 1 ACTIVITIES

CHALLENGE · DISCOVER · DEFINE · SET BRIEF

Define Challenge · Unbox Needs · Organize Needs · Break · Define Values · Evaluate Needs · Set Priorities · Debrief · 2:00 h

0:20 · 0:30 · 0:15 · 0:05 · 0:20 · 0:10 · 0:10 · 0:10

(in minutes)
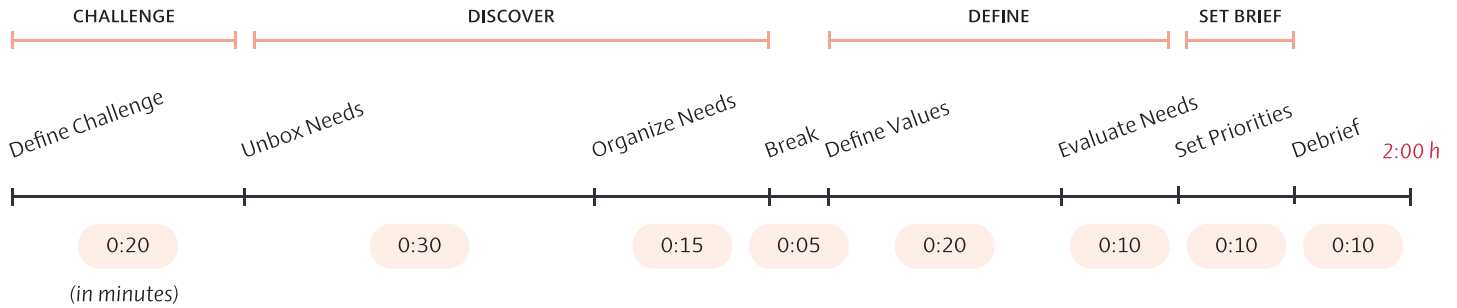
Figure 3.2: *Workshop 1 activities: define challenge, unbox needs, organize needs, define values, evaluate needs, set priorities, and debrief.*

3.3 WORKSHOP 2 ACTIVITIES

DEVELOP · DELIVER

Refresh · Brainstorm Solutions · Map Solutions to Needs · Pick Solution · Break · Service Map · Next Steps · Reflect · 2:00 h

0:10 · 0:30 · 0:10 · 0:15 · 0:05 · 0:35 · 0:05 · 0:10

(in minutes)
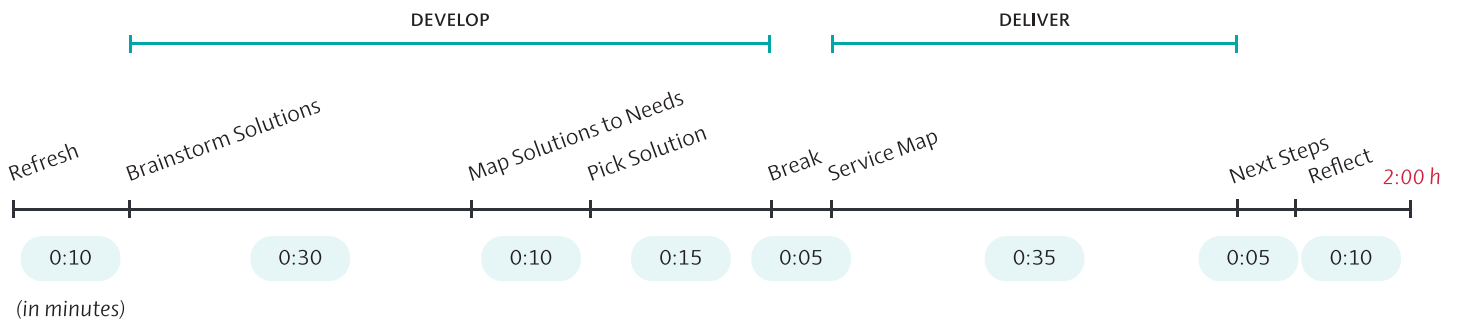
Figure 3.3: *Workshop 2 activities: refresh, brainstorm solutions, map solutions to needs, pick solution, design service map, next steps, and reflect.*

The second workshop *developed* and *delivered* ideas in relation to the challenge (see Figure 3.3.). The participants would first brainstorm potential solutions. After a roundtable discussion, they would evaluate their ideas based on the approved needs and pick one. I did not design specifically how they would pick one idea, hoping for consensus but understanding they might have to vote. The final solution, as a new process, would then be designed by its *Actors, Touchpoints, Offerings,* and *Resources* using a service map. The last two activities, *Next Steps* and *Reflect*, would allow participants to plan for implementation and to discuss the overall process.

3.2 Process Overview: Team #1

Team #1 consisted of participants from a large financial institution. The first recruited participant was the Service Design Director, who then recruited the Design Research Director, and two User Experience (UX) Managers, referred to as Managers A and B. Their challenge was, **"How might we create a process of learning and evolution for the team?"** They had their workshops one week apart. Each participant picked a unique colour for their own sticky notes and kept to that colour throughout the entirety of the workshops. See Figures 3.4 and 3.6 for workshop times.

WORKSHOP 1

Define Challenge

We started late due to technical issues. I prompted the Service Design Director to explain the challenge, which centred around the growth of their department and the desire to improve employee retention. As they spoke, others created sticky notes contextualizing the issue. Their ease with Miro indicated their familiarity with visual collaboration. The conversation introduced related questions about stakeholder expectations and strategies that other organizations have used in solving similar challenges. The tone felt conversational: there was a lot of laughter, referencing each other's previous points, and speaking openly about their families, personal routines, and professional challenges they faced at work.

Delay (0:15)

Intro (0:05)
Define Challenge (0:10)

Unbox Needs (0:25)

Break (0:00)
Organize Needs (0:15)

Define Values (0:15)

Evaluate Needs (0:10)

Set Priorities (0:10)

Debrief (0:00)

Figure 3.4: Team #1: Workshop 1 activity durations in minutes.

Unbox Needs

This activity was framed as the "why" of the challenge, similar to a "Voice of the Customer" process (Griffin & Hauser, 1993): what needs of the team, the organization, and potentially the customer would be fulfilled by solving the challenge? The team had come prepared with knowledge from personal anecdotes, data from exit interviews, and previous discussions with colleagues who had transferred out of the department. They discussed concepts such as the desires to be happy, motivated, growing, empowered, and both collectively and individually successful. While some of these concepts were identified, some of them were inferred by me for this summary because the participants lacked the time to push their insights one or two steps further during the workshop.
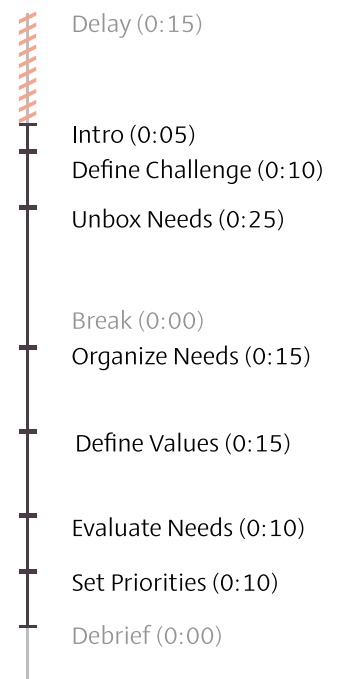
A 5-minute break was scheduled around the hour mark, but because of the late start to the workshop, participants wanted to push ahead.

Organize Needs

I copied their sticky notes from *Unbox Needs* to the next board and prompted them to map them onto a triangle, with the corners labelled "Team," "Organization," and "Customers." The participants found that their notes were clustered along the line between Organization and Team, with only a few in the centre addressing all of them. A few were not needs at all and were put to the side. Their discussion of needs picked up from where they left off, and at this point they began to uncover some of the organizational limitations they would encounter if they pursued certain strategies for a solution. Their discussion led directly into the next activity.

Define Values

For this activity, I wanted the team to think about the deeply held beliefs and assumptions of the organization; I likened it to "trying to talk about the elephant in the room." Manager B proposed that they limit the discussion to their department. From there, the team started with positive values, like their focus on customers and creating "best-in-class" design, but the Service Design Director argued that they "have to also look at the reality of it." The team shared frustrations about how their values as a department were at odds with the broader values of the organization. Manager A summed it up:

> One thing I want to write is iterative design. I feel like as a value, we do want to iterate our designs. But again, from that "who controls the purse strings" perspective, once something's launched, I think we have an expectation that it's going to be like that for a couple of years, because they're probably not going to invest in that again, which kind of stands at odds with what, as a design team, we do value.

Potential leverage points to disrupt the culture and structure of the organization in their favour arose during this conversation. After 15 minutes, even though the conversation still had a lot of momentum, we moved on.

Evaluate Needs

We returned to the triangle of needs in order to colour code each need either red for "hard to fulfill," green for "easy to fulfill." I changed their needs' colours to be white so that participants would not recognize the notes based on their ownership. The participants could pick random needs to evaluate, and I prompted them to use their prior discussion on strategic values as an informal rubric. There was consensus for most of them, but one disagreement required a judgement call from me. Manager A argued, "[this need is] something that we talk about and that we explore, where there's other organizations where I've been where they don't even talk about it," while the Research Director argued, "I would agree that's a very strong value, but it's also a challenge to get that funding at the same time." My recommendation at the time was to code the sticky note red if the need was routinely difficult to achieve in practice.

Set Priorities

Once the needs were all colour-coded, the participants voted anonymously on which needs were most important to fulfill from their perspective. Each participant had six votes and could stack votes if they chose to; I wanted to determine if participants had found alignment by this point. Unfortunately, the Service Design Director experienced technical issues, and did not vote. By this point, the energy to participate fell sharply; they had been online for almost two hours with no breaks. While we were waiting to see if the Director's issues resolved, other participants went on a break. I did not provide an effective way to bring their focus back to the workshop, so participant interest stayed low upon their return. The votes tallied to 5 needs with two to four votes, and 5 needs with one vote, out of 30 needs that were identified (see Figure 3.5). I prompted participants for further comments but received none, I ended the workshop ten minutes early.
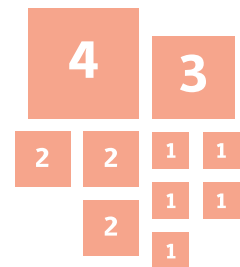

Figure 3.5: *Number of votes for different needs for Team #1.*

WORKSHOP 2

Refresher

Prior to the second workshop, I took some of the sticky notes from the first workshop and put them on a new board. I included their voted-on needs and sized the notes proportional to the number of votes they received. When we began, the Service Design Director

wanted to refine the needs to make them more "well-rounded." This sparked a debate to ensure that the spirit of the need was maintained while accepting compromises on the size of the need and the wording. We then moved onto the next activity once everyone was satisfied with the refinements.

Brainstorm Solutions

The participants jumped right into the activity, being veterans of the design process. They began by working individually, writing their own ideas in separate corners of the board. As the board filled up, they added ideas to their colleagues' existing ones. After ten minutes, I asked each participant to share their ideas. At a high level, they discussed:

- Formalizing the structure of the organization by adding or refining processes,
- Transforming the organization's structure by re-distributing resources and decision-making power to different stakeholders,
- Supporting employees in a variety of ways by adding human resource capabilities,
- Changing or removing measurements that negatively impacted the department's ability to act, and
- Creating opportunities for employees to create and lead initiatives.

These solutions show a breadth of approaches in both solving their challenge and removing the systemic barriers that would compromise those solutions.

Map Solutions to Needs

I encouraged them to pick two or three strong ideas and move them to the next board where I had transferred their refined needs. The goal for this activity was to hypothesize which of their ideas were going to meet their needs. The participants clustered similar ideas together in boxes and then drew lines from the ideas to the needs. They used small talk to share what they were doing. Afterwards, the Service Design Director felt that although the groups were good, they were "not high-level enough." The Director drew a diagram on paper and held it up to the camera, outlining a strategic plan that contained three

Intro (0:05)
Refresher (0:15)

Brainstorm Solutions (0:30)

Map to Needs (0:20)

Pick Solution (0:00)
Break (0:05)
Service Map (0:30)

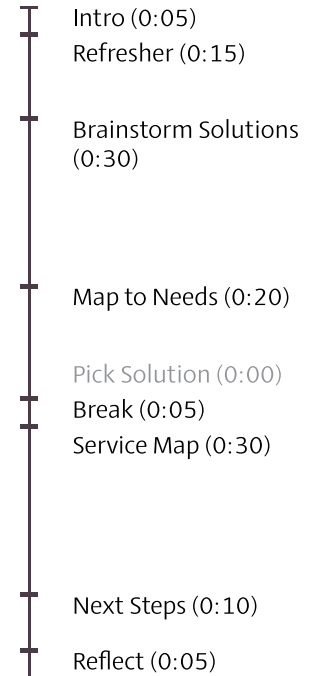Next Steps (0:10)

Reflect (0:05)

Figure 3.6: Team #1: Workshop 2 activity durations in minutes.

overarching concepts that the clusters suggested. The plan was met with enthusiasm by the rest of the team, and they refined the "nodes" of the plan into four distinct approaches that would solve different aspects of the challenge.

At this point, the participants felt strongly that they should go "offline" to gather more research, since the strategic plan involved multiple leverage points and that making a service map for one single process without more information felt inappropriate. I asked if they could continue the workshop by using the service map to map out the creation and implementation of the strategic plan, as opposed to the elements within it, since it was still a process and could be a useful thought exercise. They agreed, and we took a small break before heading to the next activity.

Service Map

The participants were uncertain on how to approach this activity, since the strategic plan would require more complexity than a simple process. I encouraged them to think of *Offerings* as the elements in the system they were creating, *Touchpoints* as event points, and *Actors* as the people needed to plan the elements (we later split them into "process owners" of a touchpoint and "stakeholders" involved). The Research Design Director put down some ideas under *Offerings* and *Actors*, and then walked me through their thought process to confirm that they were on the right track. Once that discussion occurred, participants felt much more comfortable with the activity. The other Director verbally envisioned the strategic plan, and during that time, I added notes based on their comments to show them how to use the boards.

The discussion from then on was split into two paths: how and what information to acquire to build the strategic plan, and how to implement the strategic plan. Both paths generated *Touchpoints* for a long-term solution. The participants ruminated on the difficulty in creating sustainable change, with the Service Design Director summing up,

> It's the implementation piece of the part that's hard. And I think that that's always the case in any strategy. This is why so many organizations do a strategy, stick it on a shelf, and it's like, "Done, we did our strategy," and then they go off and do whatever, right? So it's taking all that upfront work and then saying, "Okay, we are

doing this in the next two years and we have to…" And maybe that's something we have to talk with [the vice president] about, is if we really want to do some of these things, there's ownership, there's accountability, there's resources that really need to be put in place.

This quote highlights the difficulty in creating high-leverage initiatives, because they are generally long-term, require many stakeholders, and need to be prioritized in order to be sustained.

Next Steps

This last step was an opportunity for the participants to write down their final thoughts on the next steps involved in taking their solution out into the real world. Participants made their own notes on what would need to be done after the workshop ended, from gathering information through participatory research with the rest of the team, to creating roadmaps and implementable actions.

Reflect

We spent the last five minutes reflecting on the process. The participants spoke about how helpful the workshops were, despite some of its flaws. The participants felt productive because they had the space to unpack a lot of latent problems and ideas they had, and they gained new perspectives listening to others. The Service Design Director relayed after the workshop that "it was a really great exercise for us, because we are going down the path of doing this work." The Design Research Director likened the workshops to the story of the lost men in the Alps having found their way to a town using a map only to discover it was the wrong map, and how the team still got to where they needed to go: they were able to identify the core elements of a solution to guide them in the future.

3.3 Process Overview: Team #2

Team #2 consisted of participants from a small technology consultancy in the education sector. The first recruited participant was an Organizational Development Consultant, who then recruited their Executive Director to determine the challenge they wanted to solve. Three more Organizational Development Consultants were then recruited for a total of five

participants. I will refer to the consultants as Consultants A, B, C, and D. The team's challenge was, **"How might we share experiences and knowledge gained from our different roles in order to better inform our work with one another and with [provincial education] programs?"** Their two workshops were separated by four days. Each participant picked a unique colour for their own sticky notes and kept to that colour throughout the entirety of the workshops. See Figures 3.7 and 3.9 for workshop times.

WORKSHOP 1

Define Challenge

We began with the Executive Director explaining the challenge and its context. The Executive Director stated that "everyone has the same job description now, but they all have slightly different roles." Consultant A had been working at the organization for less than a year; the challenge was initially proposed to share the knowledge that each Consultant possessed not only with Consultant A, but with each other as well. The conversation centred around validating the challenge (i.e., "Is this problem actually a problem?") and contextualizing the challenge (i.e., "How do we currently share knowledge?"). At first, there was more collaboration between three participants; two participants seemed hesitant to speak and contribute to the whiteboards. But by the end of *Unbox Needs*, all participants were fully engaged.

Intro (0:05)
Define Challenge (0:20)

Unbox Needs (0:20)

Organize Needs (0:20)

Break (0:10)

Define Values (0:25)

Evaluate Needs (0:05)
Set Priorities (0:10)
Debrief (0:00)

Figure 3.7: Team #2: Workshop 1 activity durations in minutes.

Throughout the first workshop, there was a technical issue that impeded my oral facilitation. I substituted verbal instruction by using sticky notes whenever my mic lost clarity.

Unbox Needs

In this activity, the team identified their needs and of the organization's needs. Since the consultancy was small, they could speak directly about their needs as a team. They began by filling in sticky notes with their initial thoughts, and then started to think out loud, which led to a roundtable discussion.
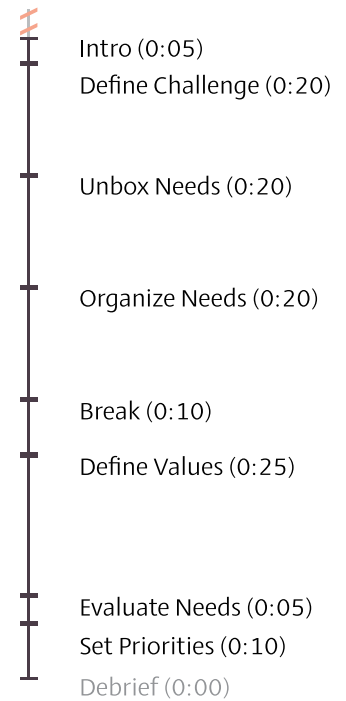
Consultant B initially did not feel that the challenge was valid, but in speaking up began to define the challenge in a way that made sense to them:

> Are we trying to all have the same knowledge or are we specializing in just under-standing what each other's specialization is? . . . My thought when we first started doing that was, "yeah, it's not around us all having the same knowledge." So [there] wouldn't be much point in that if we're going to do different work, right? But it's around us knowing what each other knows.

The needs they identified required more refinement than what they could do in the allotted time, but they identified that effective communication internally would lead to better com-munication with their clients. As multiple perspectives were brought up in terms of their struggles in sharing knowledge, what emerged was an understanding of first- and second-order implications of the problem they were currently facing, such as feeling like they were receiving information through a large hose, and feeling frustrated and overwhelmed trying to discern what was useful.

Organize Needs

I transferred their sticky notes onto the next board and asked them to triangulate them based on "Team," "Organization," and "Customers." The Executive Director noticed that the work they generated followed the line between Customer and Team and asked if they could add more needs, which I encouraged. This was a good lesson in iterative thinking: as their understanding of the challenge evolved, they added and revisited past work to reflect that evolution. By the end of this activity, there was a broad spread of needs.

Unlike with Team #1, I asked the participants to then reword their needs by writing "We get…" at the beginning of each need. I added this exercise so that participants needed to clarify the meaning of each note, thereby avoiding the long discussion that Team #1 had in their second workshop.

Afterward we took a ten-minute break.

Define Values

To start the activity, the Executive Director found a table of cultural attributes in organizations that they remembered from a literature review. This table had attributes such as "knowledge sharing," "empowerment," and "risk tolerance." It provided the team a basis for the activity. After some time spent in silence making notes, I prompted them to share what they had put on the board. The participants discussed the strategic tensions between organizational values, personal values, and the values that emerged due to their customers' needs. Some values were clearly defined, like "continuous learning" and "being adaptive," but a lot of notes only inferred values of the organization. However, these notes were similar in meaning and created a patchwork of the overall culture. This indicated that although the participants had difficulty articulating their values, they shared cultural alignment. As we were nearing the end of the workshop, I ushered them to the next activity despite good conversation.

Evaluate Needs

I instructed them to colour code each need as either red or green. Since I had changed all the notes to white, the Executive Director was uncertain about which ones had been done and which ones had not. I made a new rule for the colour yellow to denote a need that was neither difficulty nor easy to fulfill. The team joked about what would happen if they disagreed on how the need was labelled, but no debates arose during the activity.

Set Priorities

Once they were all labelled, I kept the same instructions as I did with Team #1. During the process, the Executive Director remarked that it was "scary" not seeing how others were voting, with Consultant A commenting that in previous workshops they performed dot voting: "We would assign dots to things, but the thing is that we could always see what other people were assigning. And I've always thought that that introduced a little bit of bias."

When the voting ended, there were 2 needs with five and four votes respectively, 5 needs with two votes, and 11 needs with one vote, for a total of 18 out of 25 needs (see Figure 3.8). I asked the group to cluster similar needs to reduce the number of needs that they would be
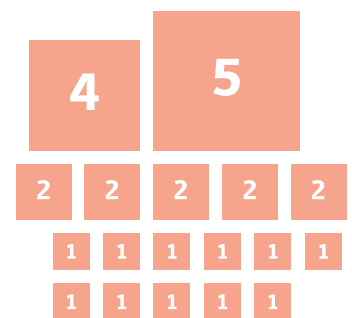

Figure 3.8: Number of votes for different needs for Team #2.

considering. They worked silently but collaboratively to arrange the 18 needs into seven clusters.

That took us to the end of the two-hour mark with no time to debrief.

WORKSHOP 2

Refresher

We began the activity five minutes late because we experienced some technical issues. We started by reviewing notes from the first workshop. There was not much discussion, so we moved on to the next activity, which indicated to me that all the extra work we did to refine their needs was successful in creating alignment compared to my first prototype with Team #1.

Brainstorm Solutions

I prompted the group to reference the Refresher board while they were brainstorming solutions on a new board. They worked silently for ten minutes, jotting down ideas. I noticed that if one participant's idea were similar to an existing one, they would cluster their notes. Their ideas for change involved:

- Using external communication channels for internal communication,
- Clarifying their organizational purpose, goals, and processes for external audiences to provide more structure internally,
- Developing specific knowledge management technologies, and
- Creating processes that would allow for self-reflection and learning opportunities from colleagues.

The conversation, while it started with sharing ideas, was a way to talk about other issues that were beyond the scope of the challenge. The participants, without meaning to, used this time to reflect on the challenge, what other challenges there were, and how they were all related. Consultant D reflected on the team's strength in adapting to their clients' needs was part of the challenge:
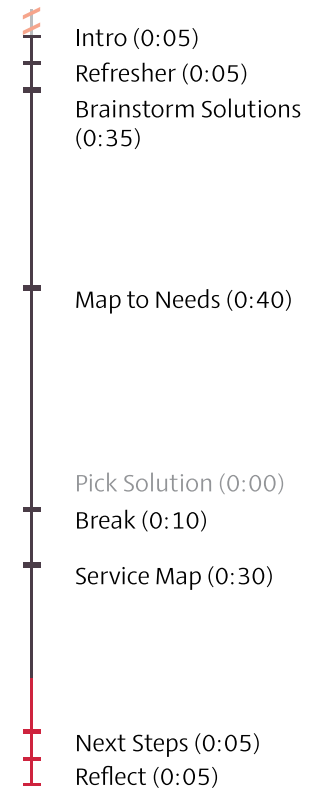
Intro (0:05)
Refresher (0:05)
Brainstorm Solutions (0:35)

Map to Needs (0:40)

Pick Solution (0:00)
Break (0:10)

Service Map (0:30)

Next Steps (0:05)
Reflect (0:05)

Figure 3.9: Team #2: Workshop 2 activity durations in minutes.

Some of the things we have rolled out are direct responses to what we feel [our clients] need or ask for. And some [are] things we potentially haven't planned for or thought about in the business plan, but we feel that those are important, and it'll make a change in the community. So we still roll it out, even though we didn't plan for it. But then the communication of it is also harder because it's almost on the spot sometimes.

I wanted to make sure we were moving forward in the workshop, so I asked participants to hold on to their thoughts and continue with the next activity.

Map Solutions to Needs

I asked participants to take one or two sticky notes that they resonated with over to the next board which displayed the seven clusters of needs. The team brought six notes over, and I asked the author of each note to clarify their idea to the rest of the team. This conversation ended up being the entirety of the activity, but by the end they came to a consensus on a solution that seemed to fit their needs.

Participants had difficulty discussing solutions, with Consultant C lightheartedly saying, "It's easier to talk about [ideas] rather than now come up with a process for it." The Executive Director clustered three of the ideas into a general communication- and knowledge-sharing strategy, and the other three into transforming the business-planning process, commenting that "[the two clusters] seem to be very different scales." Consultant D asked if they could pick one cluster for the rest of the workshop, so the team agreed to focus on redesigning their business-planning process.

They refined their initial idea to add an activity at the start of the business-planning process. They would use the activity to reflect on the past year and share that knowledge and wisdom. As the team discussed how to create the process by appropriating concepts from empathy mapping, the Executive Director struggled with the potential ramifications of the solution:

I have trouble getting out of my mindset, which is to look at impact. I try, but it's very hard for me to give up on: what we intend. What's the change we intend

to have happen? We can develop empathy and become better, but what are we becoming better at? And how do we know that we're better?

From a systemic perspective, it seemed like the consultants were creating emergent change to the process, while the Director was trying to predetermine that change.

In another part of the conversation, the team changed their perspective on their organizational purpose, and changed how they might measure impact:

CONSULTANT B: You can think about impact because you choose the pain points or the things that people are finding difficult, and you design for those. So then you could measure your impact. You could say, there was this pain point, is it still there? Or is it gone?

EXECUTIVE DIRECTOR: In terms of [current] impact, we just look, "Are they using one more technology thing with any of their learners? Just one more thing." That was the measure. And we could switch that, change it to just saying [if] you need programs that we work with, we'll eliminate, address, resolve one barrier.

CONSULTANT B: It might work . . . Because [of] our bailiwick, the solution has to have some kind of technology involved in it. But I think it does help you with the technology-second idea that we have around. That [the client is] using technology to address something that needs to happen in [their] program.

Before they got any deeper into planning, I stopped them for a ten-minute break.

Service Map

From the first prototype, I tweaked the wording, such as changing *Actors* in charge of a *Touchpoint* into the "Primary Owner." The participants were uncomfortable using the tool because it was their first time, similar to Team #1, so I coached them by providing examples. Consultant A felt the most comfortable and became the de facto note-maker while the other participants talked through the design. They filled out *Touchpoints, Actors,* and *Resources,* but not *Offerings* because it was on a separate board and out of sight for them.

The participants were able to envision a cyclical timeline for themselves, including measuring impact, changes from year to year, and how external stakeholders would be affected by this process.

Because we were running overtime, I had asked them if we could extend the workshop by 15 minutes. They agreed, so we were able to complete the last two activities.

Next Steps

Three of the participants wrote down ideas, but there was no discussion.

Reflect

I asked for any reflections they had on the workshops. Consultant A acknowledged that the double-diamond process felt very condensed, but that patterns and clarity emerged about their work. The participants appreciated the space to collaborate and to reflect on the changes and growth they experienced in the last year. Consultant D mentioned that "it's really nice to be able to come back and talk about [our evolution], then figure out if we are all on the same page, or if we need a bit more clarification in some things." The Executive Director, admitting that although they did not get far in designing something, said the proposed transformation of the business-planning process felt like it would be the "linchpin of communications" for the organization.

4.0 INSIGHTS

Overall, the workshops began the process for teams to reframe their original challenge to accommodate systemic transformation into a new paradigm while keeping the benefits of the current one. Their proposed solutions were hypotheses to be tested by providing over-arching goals and principles to guide the team beyond the confines of the workshop.

My insights from the research method are split into three categories. The first, design thinking insights, explores the effect the design thinking process had on the participants. The second, facilitation insights, is reflexive as I examine my role as research designer and facilitator. The third, change insights, explores the opportunities and boundaries of the

systems of their organization from the participants' perspectives. Although I have separated them, they flow into and inform one another. The structure of the workshops and my facilitation promoted design thinking and a sense of wandering within participants, which in turn uncovered latent challenges within the systems of their organizations.

4.1 Design Thinking Insights

Participants defended their own perspectives while finding alignment.
Team heterogeneity was achieved before the workshops were conducted to get multiple perspectives from managers and employees. It seemed that the participants got along well outside of the workshops, so they were able to be lighthearted while advocating for their own interests. Despite their differences, they valued and respected each other. They found alignment by accepting the validity of other participants' perspectives, and their unified vision for the solution reflected that.

Teams came to a deeper understanding of the challenge by deferring decisions around scope and priorities.
The collaborative atmosphere allowed participants to share their perspectives, which brought the team into alignment on vision and purpose. In both cases, the teams reached a consensus on one solution without resorting to argument or vote. At the same time, participants expressed a desire to narrow down the scope of the challenge, but because I encouraged them to defer their decisions until after brainstorming solutions, they were able to relate aspects of the challenge to other parts of the organization. This broadened their perspective and produced higher-order—or systemic—solutions.

Iterative thinking was continuous.
Iterative thinking was useful in moving participants from their initial perspectives into uncharted, and often uncomfortable, perspectives. In addition, participants reframed their understanding with each new activity because each activity provided a different lens to see the challenge. The activities provided space for thought experiments and allowed new contexts to emerge from new understandings. This reframing supports Hugh Dubberly's concept of "recursive" thinking (Dubberly Design Office, 2009).

Design thinking worked in a small time frame, but its full realization would be years-long.

There was a distinct feeling that each activity could have been its own workshop, yet in the allotted time, the participants achieved a high degree of alignment on a solution with some core principles to guide them in the future. As illustrated in Figure 4.1, the timeframes for most activities in the first workshop were closely aligned to the flow of conversation, signalling that participants could meaningfully reframe their understanding in a short period of time provided they had the space. In the second workshop, the timeframes I estimated were completely off, and in the case of the first team, I was off by weeks! As soon as a decision had been made on a solution, the following activity (the service map) required much more research, stakeholder input, and expertise to prototype the solution. In addition, my workshops did not iteratively prototype any solution: this step is a continuous process that would need years to create sustained systemic change.

4.1 COMPARISON OF WORKSHOP TIMES

WORKSHOP 1: ACTIVITIES	INTENDED TIME	TEAM #1 TIME	TEAM #2 TIME	WORKSHOP 2: ACTIVITIES	INTENDED TIME	TEAM #1 TIME	TEAM #2 TIME
Prep Time	0:00	0:15	0:05	*Prep Time*	0:00	0:00	0:05
Introduction	0:05	0:05	0:05	Introduction	0:05	0:05	0:05
Define Challenge	0:15	0:10	0:20	Refresher	0:05	0:15	0:05
Unbox Needs	0:30	0:25	0:20	Brainstorm Solutions	0:30	0:30	0:35
Organize Needs	0:15	0:15	0:20	Map to Needs	0:10	0:20	0:40
Break	0:05	0:00	0:10	Pick Solution	0:15	0:00	0:00
Define Values	0:20	0:15	0:25	Break	0:05	0:05	0:10
Evaluate Needs	0:10	0:10	0:05	Service Map	0:35	0:30	0:30
Set Priorities	0:10	0:10	0:10	Next Steps	0:05	0:10	0:05
Debrief	0:10	0:00	0:00	Reflect	0:10	0:05	0:05
WORKSHOP TIME (H:MIN)	**2:00**	**1:30**	**1:55**	**WORKSHOP TIME** (H:MIN)	**2:00**	**2:00**	**2:15**

Table 4.1: Comparison of workshop times. Each activity is broken down into intended time and each team's time spent, in hours and minutes.

4.2 Facilitation Insights

There is a fine line in participant engagement between structured and unstructured facilitation.

Most activities in the workshops were unstructured: I provided a few prompts at the beginning and then let participants discuss for the rest of the time. This strategy worked well when participants needed to think divergently because it allowed the participants to talk freely and make "lateral" connections (De Bono, 1970). When participants needed to think convergently, or were unfamiliar with the concepts within an activity, more structure was needed. By providing concrete visual examples, I could have lowered uncertainty and confusion, and therefore lack of participation. Understanding this line required a nuanced and practiced hand, because different participants felt uncomfortable with different activities. For example, asking people to draw an elephant with step-by-step instructions would make a group of artists bristle, but would be useful for people who did not know how to draw.

Visual tools were integral in supporting the dialogue.

Dialogue was the foundation for participant alignment. The visual elements of the workshops anchored the dialogue. Quieter members were able to pose their questions through sticky notes, which could be addressed by the whole group. Both groups had good participation, although if a participant felt discomfort during an activity, then that discomfort was reflected in the lack of generation of notes, less so with dialogue participation. Overall, when there was visual collaboration without dialogue, participants were not aligning on vision, while dialogue without visuals wandered into tangents and vague statements.

Facilitation requires continual translation.

As a facilitator, I needed to arbitrate, translate, and refine their dialogue for clarity and purpose. I let participants drive the conversation, but in certain instances I stepped in when the conversation was no longer productive, or when participants had different perspectives. For example, with Team #1, participants disagreed on whether a need was easy or difficult to meet based on what the organization said versus did, and turned to me for the final say. This circumstance made me realize I needed the knowledge, theory, and expertise on not just facilitation and design thinking, but on organizational and management theory in order to guide participants properly through their challenge.

Language is one of the most important elements to get right.

Dialogue was only effective by finessing language. It was relatively easy for participants to toss ideas around, but refining their language challenged participants to be precise about their ideas. With Team #2, the exercise of reframing needs into "We get…" statements was a powerful shift in perspective for participants. For myself, my instructions needed refinement. For example, with both teams, I never used the word "processes" when I asked participants to brainstorm solutions. A lot of generated ideas were not processes and did not fit into the final activity of the workshop. In another example, the concept of "strategic values" was not only a difficult topic to discuss, but it was not a meaningful term for participants. The workshops' effectiveness relied on my ability to convey concise meaning.

There were built-in success factors during the recruitment process.

I made several calculated moves that probably increased the likelihood of successful collaboration. When I set up my recruitment process, I specifically recruited managers in order to get manager buy-in from the onset. The managers had existing challenges they had already identified and knew that they would be working with their choice of stakeholders. This setup presupposed that the managers wanted to improve conditions for their teams, that they valued their employees' perspectives, and that they had the power to drive change based on their employees' feedback. I had the sense that the teams worked well outside of the workshops because of the familiarity and joviality that the participants had with each other, managers included. This is not the case for every team or for all managers and executives.

4.3 Change Insights

Lastly, I found that my participants were discussing systemic elements without any prompting. They implicitly understood how their organizations behaved and what their positions were within them. The discussions that emerged during the workshops painted a complex picture of organizational life. Participants identified leverage points that they could influence, and often discussed the relationships between different aspects of the organization, as well as the first- and second-order impacts of those relationships.

While higher-order solutions were proposed, the participants found it difficult to design their solutions in terms of actions or processes they could use, which reflected the challenge both

teams had with the service map. To change even one area of the system, participants had to consider the financial, political, cultural, technological, and logistical challenges involved.

I thus illustrated system maps, Figures 4.2 and 4.3, to show the complexity of organizational systems as experienced by participants. The size of the circled elements corresponds to their frequency as discussion points. Lines of relationship were drawn based on quotes from the participants. Could these maps be used to help inform actions and implications for stake-holders of systemic and service design? In my view, these maps visualize leverage points for any organizational change that can be used in tandem with prototyping, in order to observe and track the evolutions of the systems.

SPHERES OF INFLUENCE: SYSTEM MAP FOR TEAM #1

1. *The relationship between conflicting departments making decisions and driving strategy.*

   "The decision is being made by the group that has the money. That's the way it is…
   The decision is coming from marketing because they're investing in those outlets."
   – UX Manager B

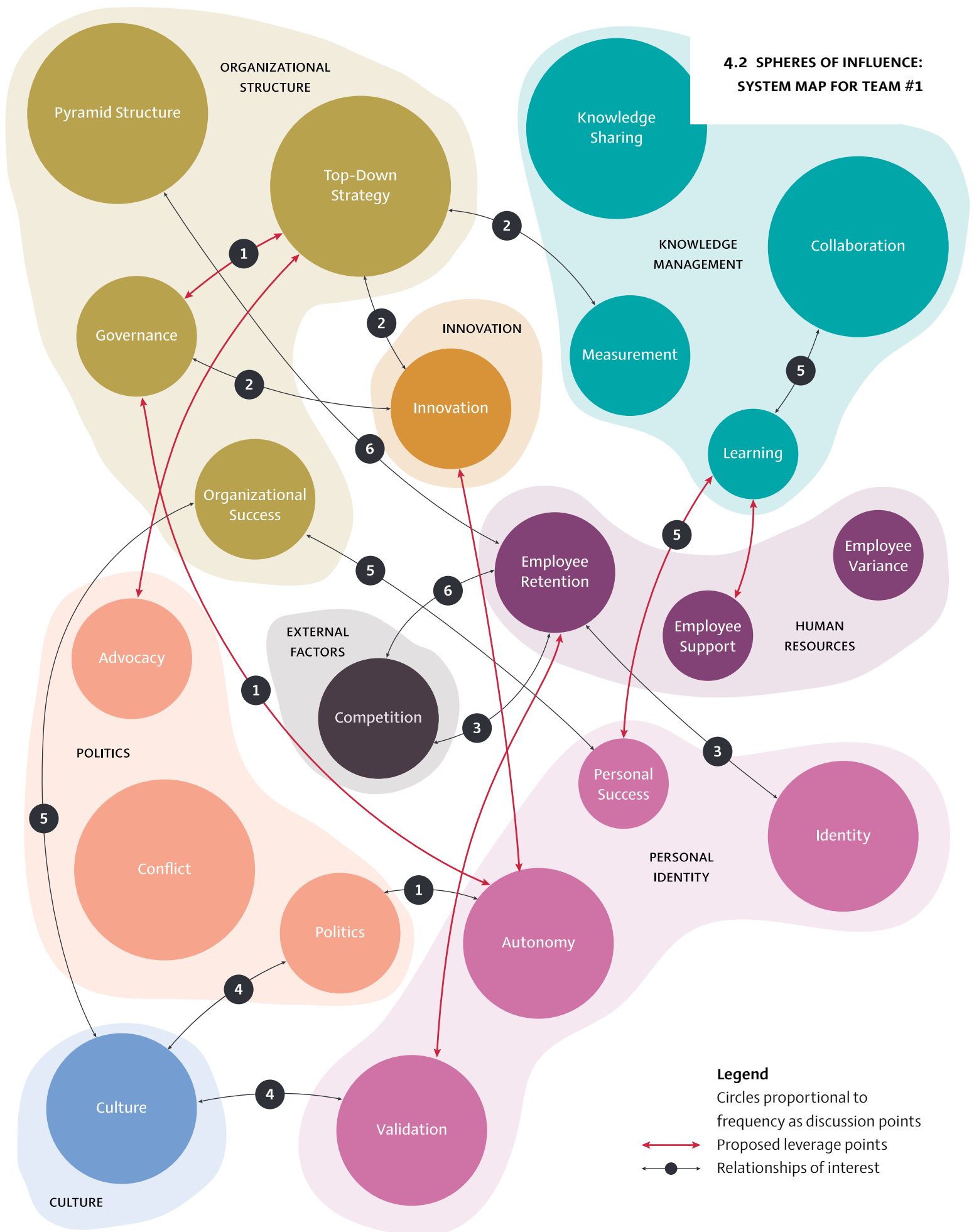2. *The relationship between measurements driving decisions that affect innovation and strategy.*

   "I've come across situations where product owners didn't want [measurements] to dip.
   So they didn't want the design team to do something innovative because we know that
   when something innovative happens, there's a bit of change, and our customers rate us
   low for a month or two." – Design Research Director

3. *The relationship between identity, employee retention, and searching elsewhere for opportunities.*

   "…The researchers have an identity as researchers. So even though there might be oppor-
   tunities elsewhere in [the organization], they're really not interested in doing those other
   things because it actually conflicts with their identity, how they see themselves, who

[Next Page] Figure 4.2: A system map illustrating both hard and soft elements of Team #1's organization, from the perspectives of the participants. This map outlines spheres and relationships of influence, as well as the leverage points involved in the participants' proposed solution.

4.2 SPHERES OF INFLUENCE: SYSTEM MAP FOR TEAM #1

ORGANIZATIONAL STRUCTURE

Pyramid Structure

Top-Down Strategy

Governance

Organizational Success

KNOWLEDGE MANAGEMENT

Knowledge Sharing

Collaboration

Measurement

Learning

INNOVATION

Innovation

Advocacy

POLITICS

Conflict

Politics

EXTERNAL FACTORS

Competition

Employee Retention

Employee Variance

Employee Support

HUMAN RESOURCES

Personal Success

Identity

PERSONAL IDENTITY

Autonomy

Culture

CULTURE

Validation

Legend

Circles proportional to frequency as discussion points

Proposed leverage points

Relationships of interest

they are. So ideally, as a result of that, if they do want some progression, they have to move out of our team, out of [the organization] and they get that at other places."
– Design Research Director

4. *The relationship between creating a positive environment for employee success and the need for political navigation.*
"The previous mental model was that other team members are going to be like, 'Oh my God, why didn't I get the promotion?' But then the positive way of thinking about that is that person[sic], while the manager should be able to handle that situation. And the other thing is that instead of thinking negatively of, 'why didn't I get it,' they can think positive that, 'well, if I try, I can get it,' and they're going to be motivated as well."
– UX Manager B

5. *The relationship between creating a supportive environment for employee growth and company success.*
"When I think about my employees and growth, a happy, challenged, engaged person is going to do great work, bring a lot to the team, and they're great to work with. When somebody is disillusioned and negative and cynical, it's very hard to work with them. So you care about people, right? You care about your team. You want to see the growth."
– Service Design Director

6. *The relationship between a pyramid-like organizational structure and employee retention.*
"Currently our structure goes into one person. And so as you get closer to that level, there's less and less roles and people have to leave to actually be able to get to that role."
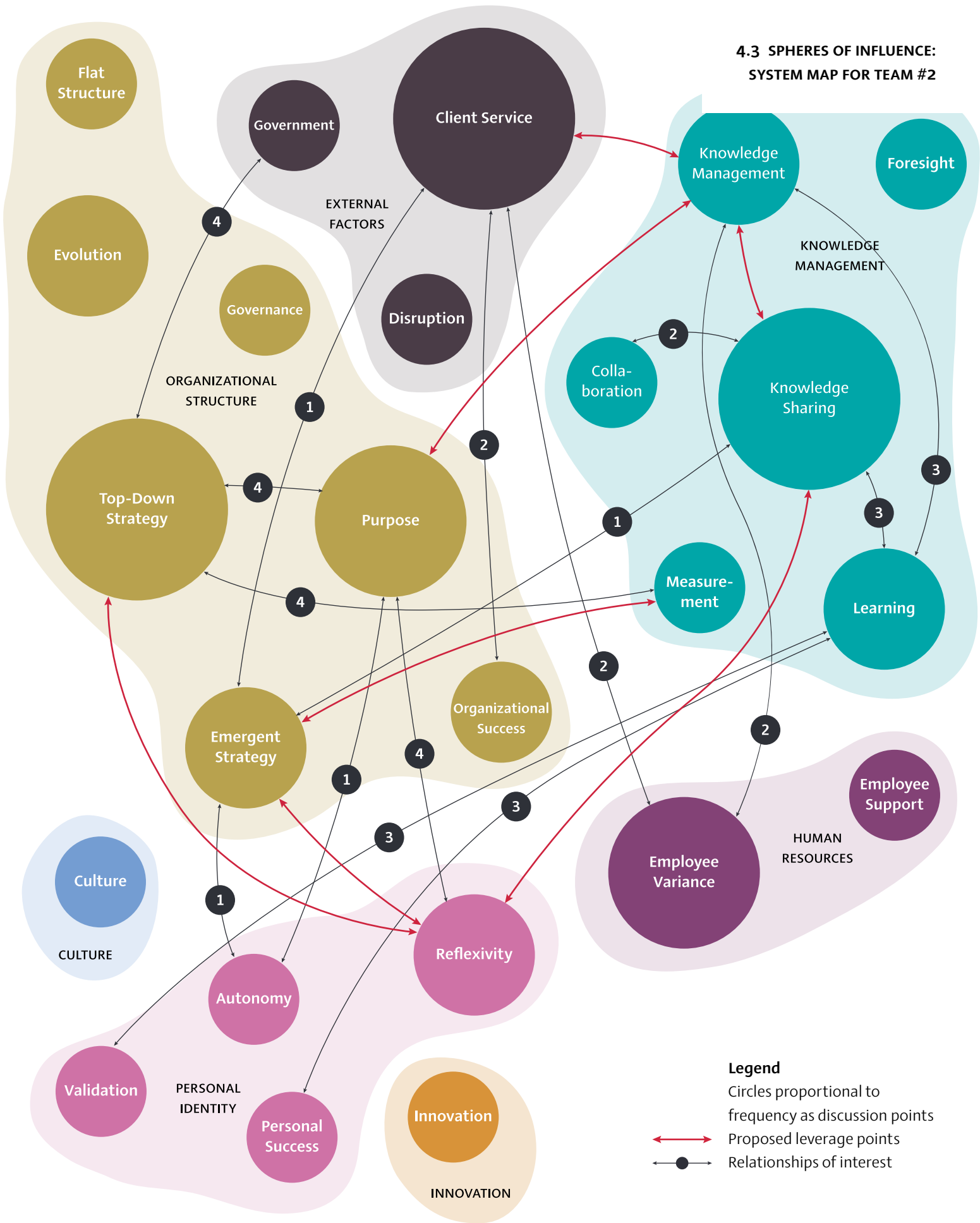– Service Design Director

SPHERES OF INFLUENCE: SYSTEM MAP FOR TEAM #2

1. *The relationship between being adaptable and its difficulties interacting with strategy and knowledge management.*
"With COVID, I think the adjustments that we can make, not that we want to make adjustments to the business plan, but some of the things we have rolled out are direct responses to what we feel [our clients] need or ask for. And some things we potentially

4.3 SPHERES OF INFLUENCE:
SYSTEM MAP FOR TEAM #2

Flat
Structure

Government

Client Service

Knowledge
Management

Foresight

EXTERNAL
FACTORS

Evolution

Governance

Disruption

4

ORGANIZATIONAL
STRUCTURE

1

KNOWLEDGE
MANAGEMENT

Collaboration

2

Knowledge
Sharing

Top-Down
Strategy

4

Purpose

2

3

1

Measurement

3

3

Learning

4

4

2

Emergent
Strategy

1

Organizational
Success

4

2

Employee
Support

3

Culture

1

HUMAN
RESOURCES

CULTURE

Reflexivity

Employee
Variance

Autonomy

Validation

PERSONAL
IDENTITY

Personal
Success

Innovation

INNOVATION

Legend
Circles proportional to
frequency as discussion points
Proposed leverage points
Relationships of interest

[Previous Page] Figure 4.3: A system map illustrating both hard and soft elements of Team #2's organization, from the perspectives of the participants. This map outlines spheres and relationships of influence, as well as the leverage points involved in the participants' proposed solution.

haven't planned for or thought about in the business plan, but we feel that those are important and it'll make a change in the community. So we still roll it out, even though we didn't plan for it. But then the communication of it is also harder because it's almost on the spot sometimes." – Consultant D

2. *The relationship between having a lot of individual autonomy and creating a unified message for clients.*

"... And so [Consultant D] sent an answer. I sent an answer. [Consultant B] sent an answer. We sent three answers. They weren't contradictory or anything, but none of us had a place to go to find, not that it would be official, but to find the resolved information... It had came from three different people with three different sets of information and suggestions. I don't know whether it needs to be a unified thing, but I think if each of us had known where to look, it might've been a little less stressful. But I wouldn't want it to strip out the richness of doing it three times." – Executive Director

3. *The relationship between knowledge sharing, learning, and personal success.*

"As we are sharing and communicating with each other, there's a lot of information going through all of our desks. 'Do I need to know all of this? Should I have read all those reports?' It becomes this wave that comes over and then you start to feel like you don't know anything because you didn't know about this, you miss this one, you forgot to read this one. So it becomes this craziness that you're going through, and you're trying to understand, 'How do I fit in that?' ... Also making sure that you don't fail the team, you don't fail as the role you have, and then it becomes a bit confusing overall. So I think for me, a lot of this process is trying to find what's expected of me. How can I be the best I can be in this role, but also not to ignore all the roles, and respect and value what information I need to know and have?" – Consultant D

4. *The relationship between external directives and internal learning to inform strategy and purpose.*

"The hard part then always comes into the shaping of [the business plan], because it has

to fit that very prescriptive — superficial in a way — business planning direction from the ministry. So maybe it's some sort of follow-up that helps us really think about a way to back-end some of that stuff, not front-end it. So it's not up in front when we're thinking about the parts that were really interesting and exciting that worked this year, the stuff that fits into the [company]'s three domains of activity, and where [the company] is going as an organization. And then the end part, the hard part of saying, well, how do we make this fit into this very prescriptive framework?" – Consultant C

Both teams were concerned with people learning and growing. In Team #1, coming from a large institution, there was a lot of discussion on providing more knowledge, resources, and autonomy for their employees so they could be more supported and more self-sufficient. This concept of giving employees more autonomy within a traditional organizational structure touches on the management of paradox required for organizations in transformation. In Team #2, as a small organization, they were concerned with maintaining their adaptability and individual autonomy, while leveraging some of the benefits of bureaucratic structure. This concern signals to me that as we move into a new paradigm, we don't completely destroy the old; both paradigms offer benefits, and we'd be wise to leverage the best parts of both as we move towards networked organizations.

5.0 CONCLUSION

5.1 Areas for Future Research

My research method still needs refinement along multiple axes: duration, types of activities, and general applicability. With more prototyping, I would try different service-design activities to see if there was a flaw with the service map itself, or whether it is appropriate to frame the solution in a service design context at all. The more systemic the solution, the more difficulty participants had in designing discrete components for it, which reflects the struggle participants had with the activity and the limitations of expert-led design-thinking tools in the context of participatory design. However, having the participants use a design-thinking mindset to solve their problem created opportunities for systemic awareness and

the ability to understand how changes in one area of the organization could affect other areas, despite the tactical difficulties involved.

This struggle created a strange paradox not explored in this project: the cognitive difficulty in switching contexts between strategic and tactical, between high-level thinking and low-level doing, while requiring both. What are the interdisciplinary contexts that are naming this phenomenon and how can we develop it as an individual capacity? How can we get participants to flux their everyday mindset?

To further the cause of design thinking in organizational transformation, creating longitudinal data would be a necessary future step. Data could be captured to observe how organizations and individuals transform using design thinking, capturing pivotal moments along the way. A future prototype of my method could incorporate prototyping as part of participants' solution-finding process. How participants iterated processes would likely support the argument for design thinking in systemic design. These explorations would be aiding research into transition design, systemic design, and designing for emergence, areas of the study in designing for sustainable futures (Irwin, 2015, Jones, 2014, Van Alstyne et al., 2018).

5.2 Conclusion

Ch-ch-ch-ch-changes
Turn and face the strange
Ch-ch-changes
There's gonna have to be a different man
Time may change me
But I can't trace time

– David Bowie, "Changes"

This project used design thinking to promote change in organizations. By starting from a worldview of organizational paradigms and zooming all the way down to a single challenge by a single team, I found it valuable to switch between the two views because it created

meaningful wayfinding toward and through change initiatives. We observed that with four short hours of design thinking, participants were able to reframe their challenge, identify important needs to be met, and brainstorm comprehensive solutions that took different stakeholder needs and interests into account. The participants appreciated the ability to reflect on the way they were operating, creating "double-loop learning," an essential component in Senge's *learning organization* (1990). The workshops support the argument that design thinking brings systemic awareness to problems and provide the opportunity for paradigm-shifting organizational behaviour.

As design thinking evolves from second to third generation, from expert-led to stakeholder-led, it becomes a vessel for a larger paradigmatic shift from expert-led change to emergent change. With the right facilitator and guided by the appropriate activities, stakeholders can align their purpose and prototype improvements into a cyclical change process. The ability to envision and reflect is design at its core: a constant dissatisfaction of the present, solved by wondering *what could be*. By integrating design thinking, organizations can turn and face the strange; they can imagine and embody new patterns from human-centred paradigms.

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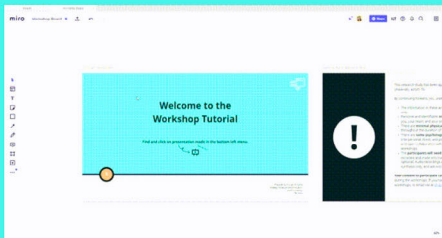
APPENDICES

Appendix A: Workshop Boards: Tutorial

Purpose of Research Study

3

The purpose of this research study is twofold:

- to investigate how a team understands and changes their function
- to use a service design framework for an internal challenge

The workshops will explore and solve a challenge your team is facing that changes its function in your organization.

miro

Workshop Framework

4

The **double diamond model** is used in design to illustrate the types of thinking you will need to apply during each "phase" of the workshop journey: **divergent thinking** (exploring possibilities) and **convergent thinking** (narrowing down possibilities). We'll be following a simplified version over the course of the two workshops. Workshop 1 will focus on discovering and defining the challenge, and Workshop 2 will focus on developing and delivering the solution.

| Unpack | Prioritize | Brainstorm | Design |
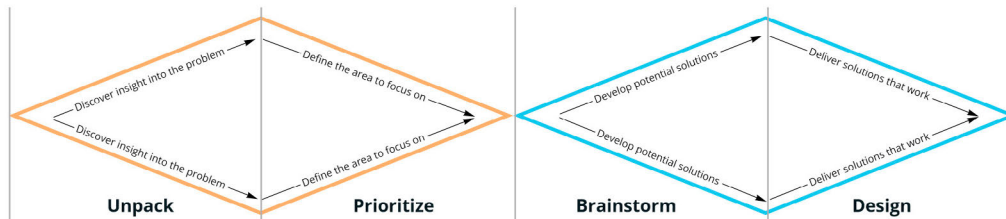
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Workshop Goals

5

Workshop 1 To-Do List
- **Explain the challenge** and provide context
- **Unpack the challenge** by exploring the needs of the stakeholders
- **Prioritize needs** based on the organization's values and orthodoxies
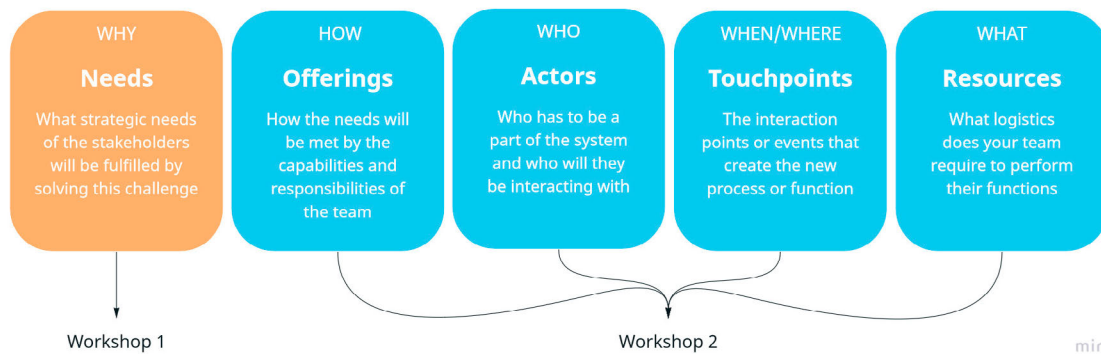
Workshop 2 To-Do List
- **Brainstorm potential solutions**
- **Pick a solution** based on the needs identified in Workshop 1
- **Design a service map** around one solution

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Using Service Design Thinking

6

Your function as a team unit has 5 considerations when framing the challenge and solving it.
Think of this as answering the 5 Ws of your team's function.

WHY	HOW	WHO	WHEN/WHERE	WHAT
Needs	**Offerings**	**Actors**	**Touchpoints**	**Resources**
What strategic needs of the stakeholders will be fulfilled by solving this challenge	How the needs will be met by the capabilities and responsibilities of the team	Who has to be a part of the system and who will they be interacting with	The interaction points or events that create the new process or function	What logistics does your team require to perform their functions

Workshop 1   Workshop 2

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Getting Started in Miro

7

During the workshops, you will be contributing with your own sticky notes. You'll get an opportunity to practice on the next slide.

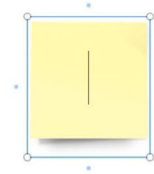Look for this icon on the menu to the left.

Everyone picks their own colour for the rest of the workshop.

Click on the board where you want your sticky note.

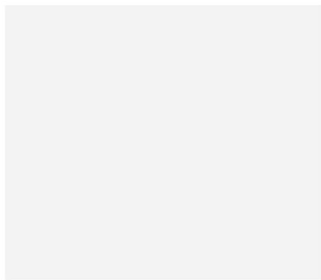You'll automatically have the chance to type in the sticky note. The white circles resize the sticky note.

This will be the facilitator's colour.
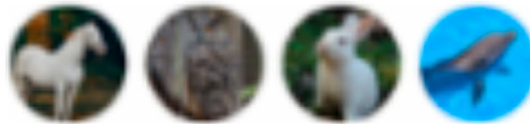
miro

Time to Play!

8

Exit presentation mode by pressing "Esc" or by clicking the presentation icon in the bottom left menu.
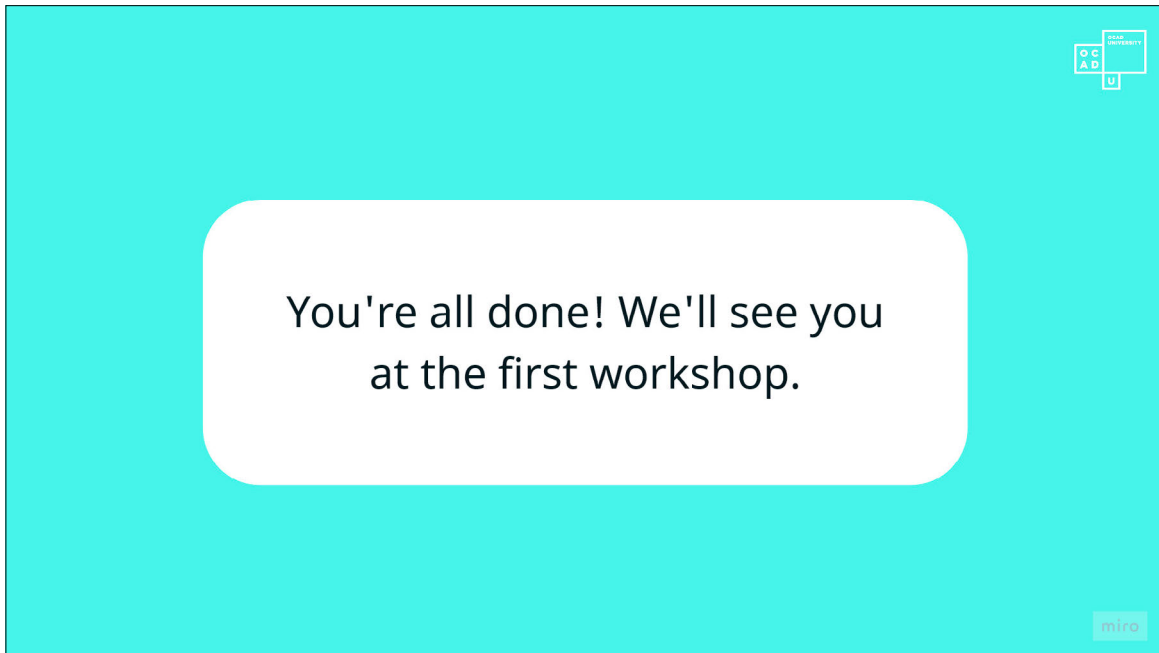
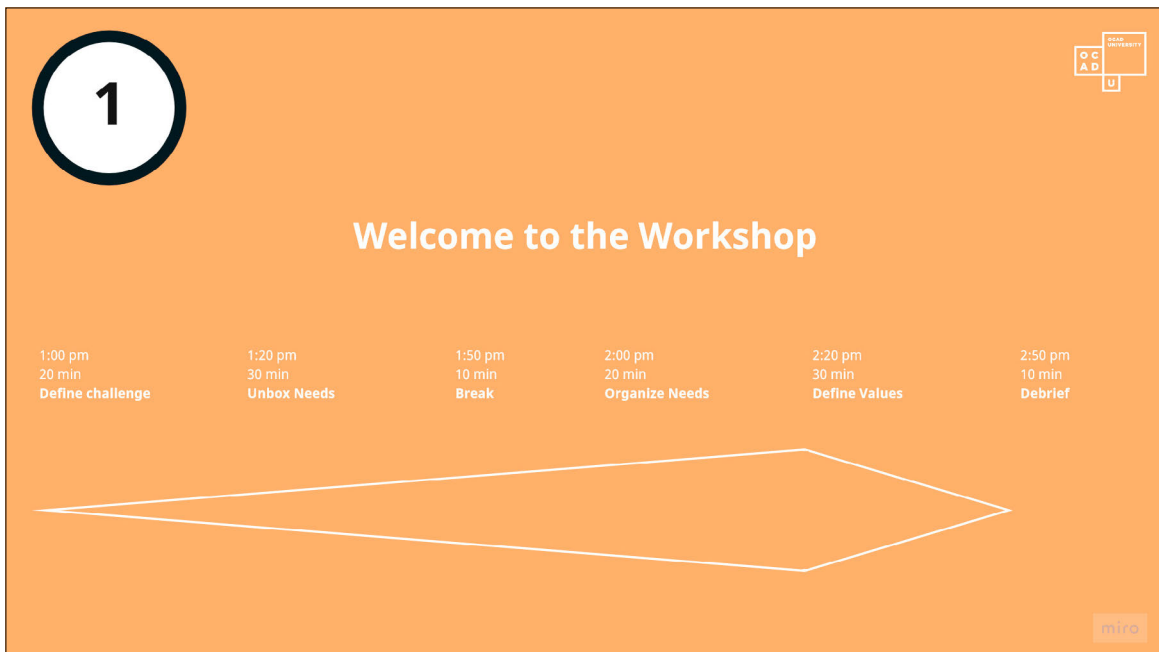Create a sticky note with your name in the box.

Place a small sticky note under one of the animals. You choose!

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Appendix B: Workshop Boards: Workshop 1

The Challenge

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Needs

[WHY] What needs of the organization, the customer, and the team will be fulfilled by solving this challenge

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Customers

Team

Organization

miro

Define Values

miro
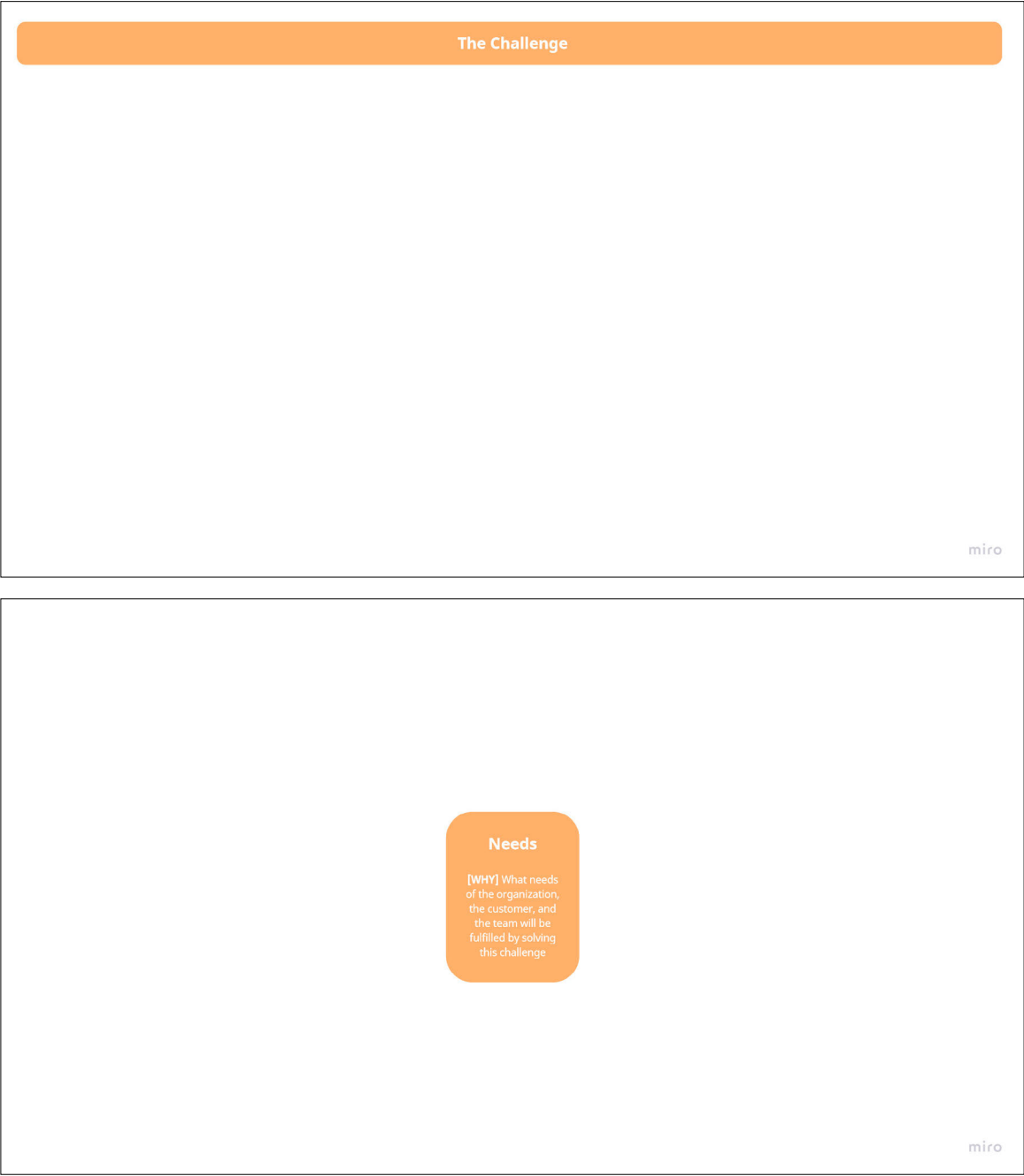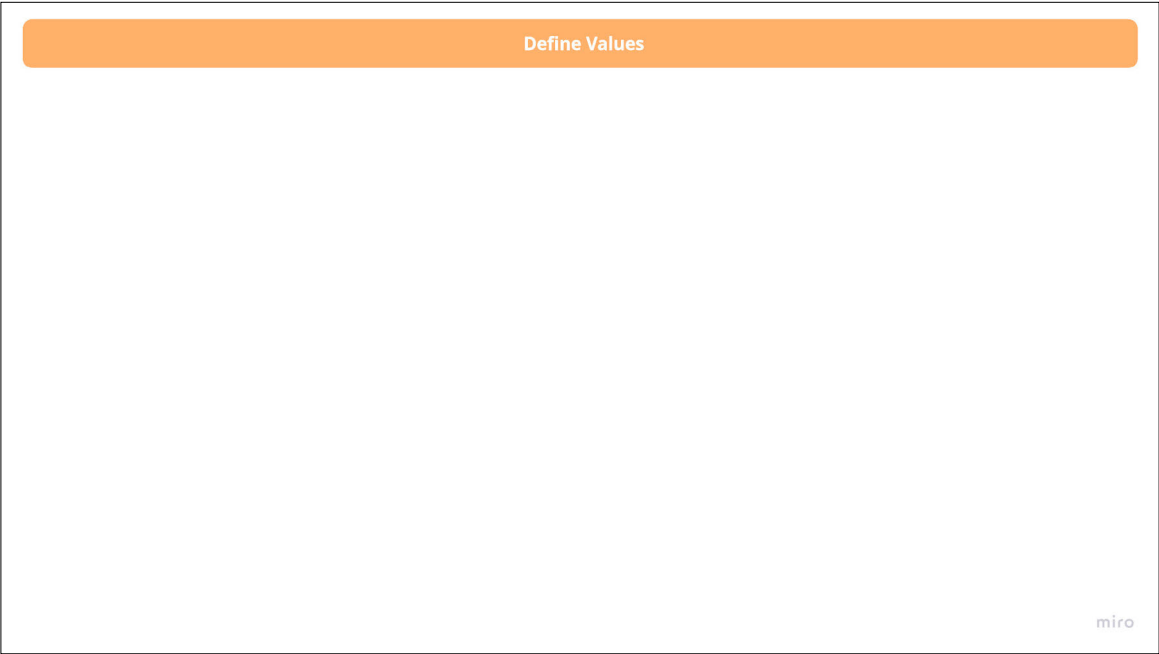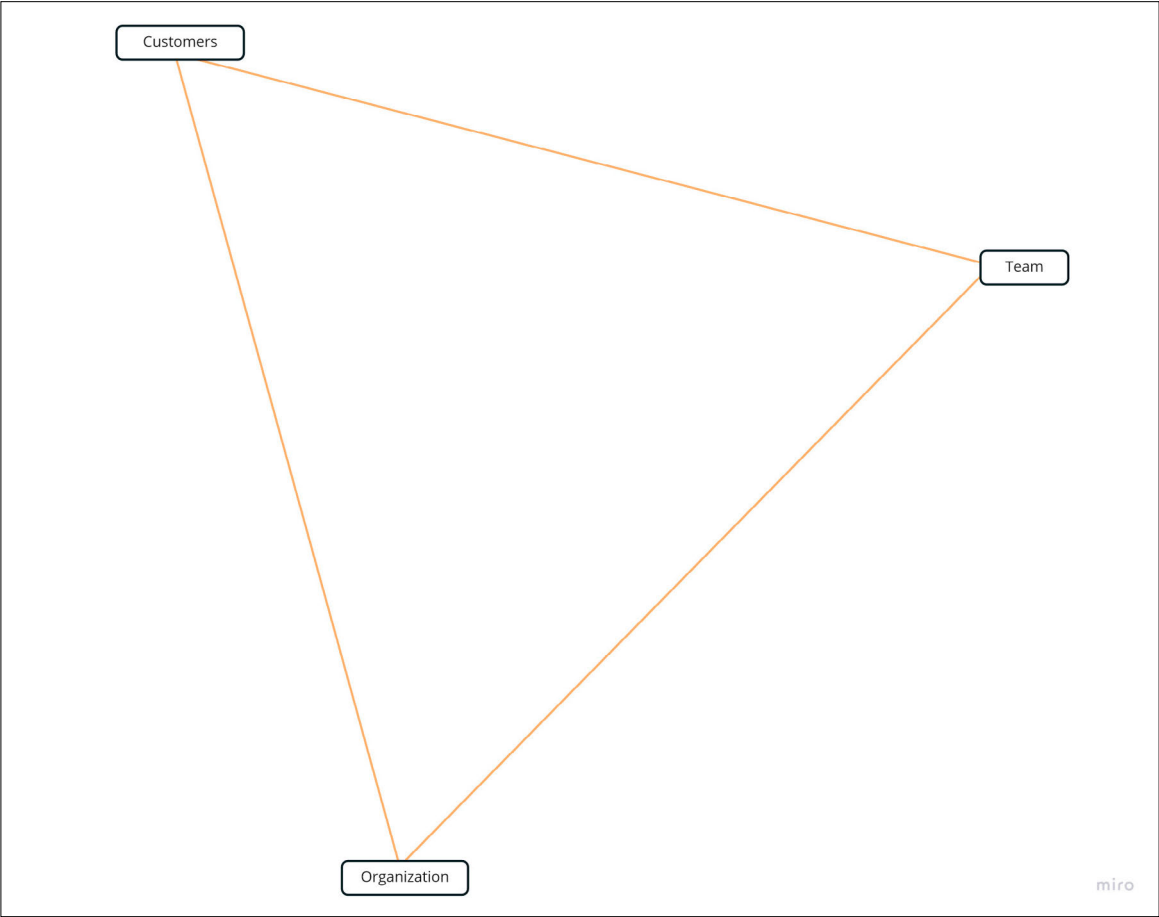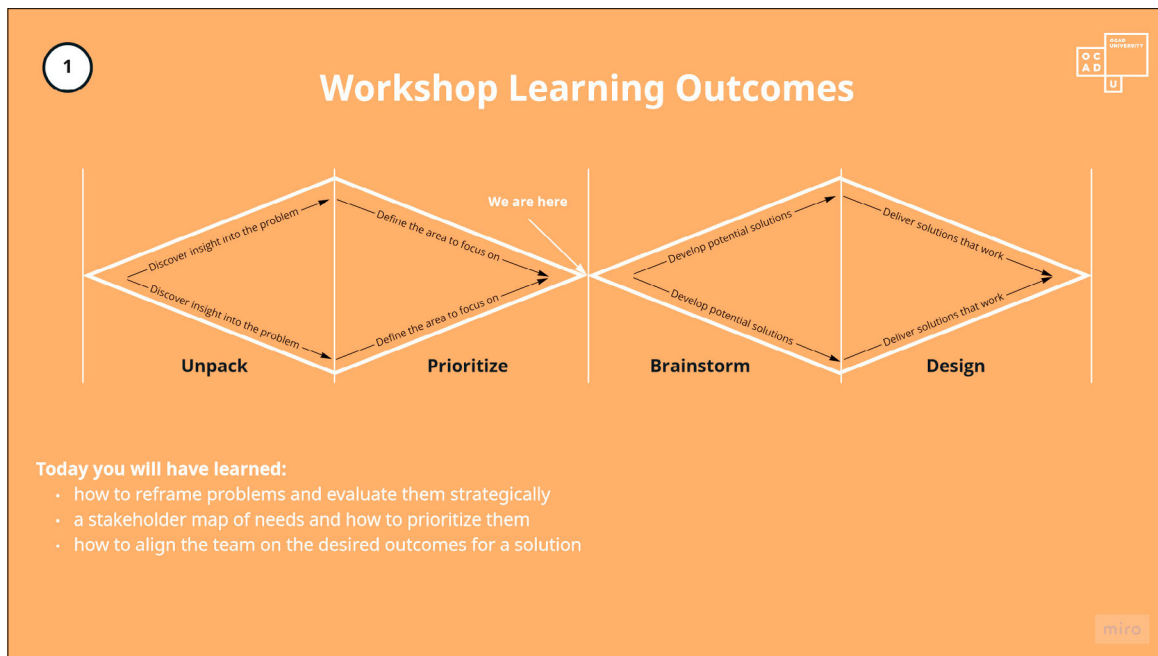
Appendix C: Workshop Boards: Workshop 2

Refresher

| Challenge | Needs - Prioritized | Values |

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Brainstorm Ideas

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Customers

Team

Organization

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Needs

Offerings
[HOW] What capabilities and responsibilities are required to meet these needs

Actors/Owners
[WHO] Who is involved in the solution, either as people who are responsible, or people who need to be interacted with

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Resources

[WHAT] What technology or logistics does the organization / other actors need to provide

Actors

[WHO] Who will be on the other side of the interaction

Touchpoints

[WHEN/WHERE] The interaction points or events that create the new process or function

Owners

[WHO] Who is the primary owner responsible for this making the interaction happen

Resources

[WHAT] What does your team need in terms of knowledge, technology, and support systems

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Next Steps

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