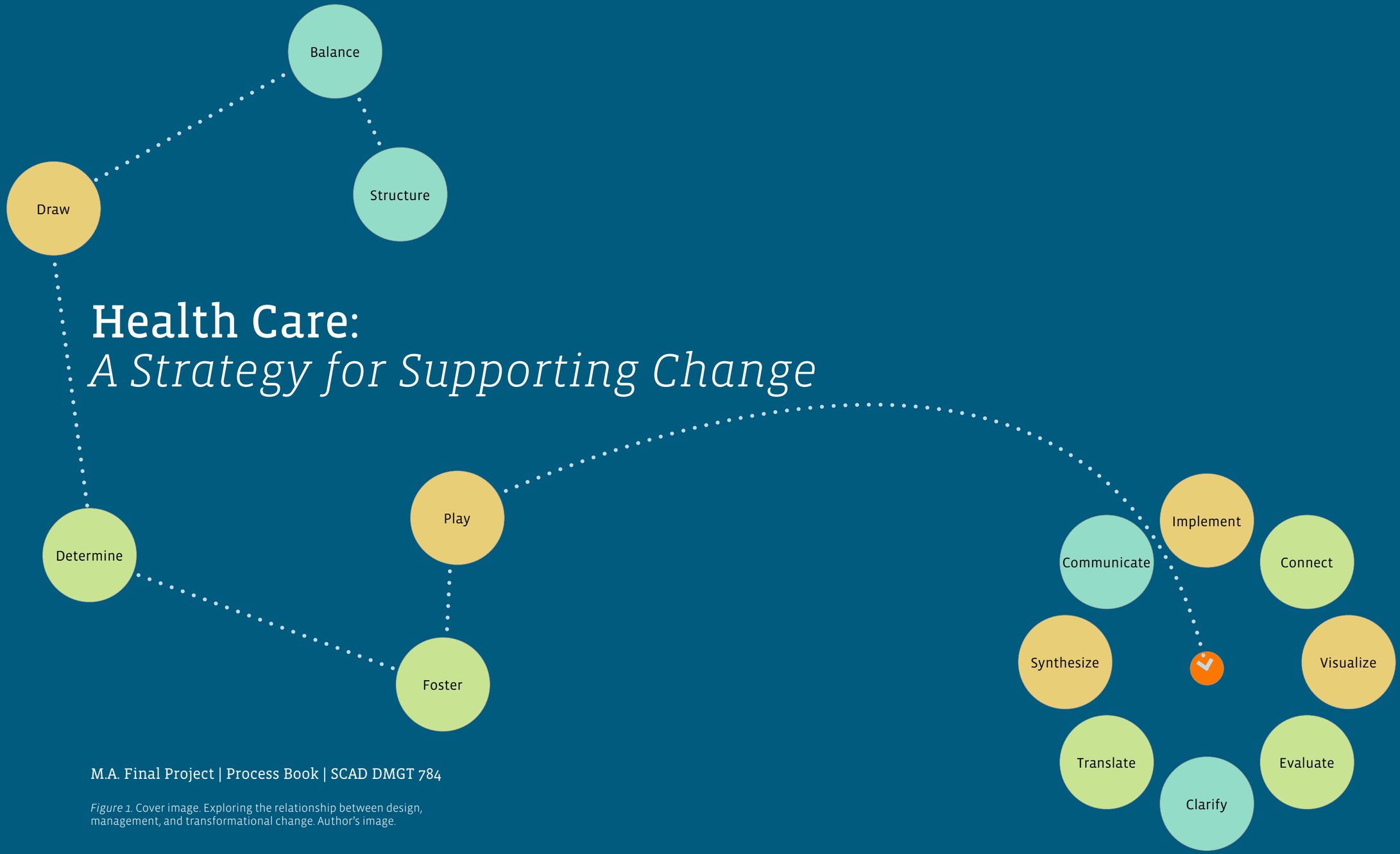

Health Care:
A Strategy for Supporting Change

M.A. Final Project | Process Book | SCAD DMGT 784

Figure 1. Cover image. Exploring the relationship between design, management, and transformational change. Author's image.

Enrique L. Von Rohr

Health Care:
A Strategy for Supporting Change

Design management is the effective use of design strategy, operational constraints, and business objectives to generate innovations that enable a better quality of life. Design managers lead teams to consider viability, feasibility, and desirability of products, services, processes, and systems in order to implement business and organizational strategy.

Final Project submitted to the faculty of the Design Management Program at the Savannah College of Art and Design on March 11, 2015, in partial fulfillment of the requirements for the degree of Master of Arts in Design Management.

Introduction

This project employed principles and methods of design management, the effective use of design strategy, operational constraints, and business objectives to generate a strategic approach that supports institutional health care managers and designers.

Health Care: A Strategy for Supporting Change showcases the development of MergeCare, an approach for facilitating the adoption of design-led methods into existing process improvement systems with the goal of supporting change activity during new initiatives. Research, prototype development, and testing were conducted over a ten-week period. The proposal demonstrates each step of this process as well as the final prototype. Interview subjects included managers and designers within two health care companies that provided rich insights into the culture of their organizations, how they currently manage change, and what they believe might support future initiatives. Common strengths were identified in both target audiences, such as the ability to translate, communicate, iterate, and synthesize. These organizations also have a strong culture of inquiry and subjects demonstrated the desire to adopt new methods that would improve their work and support clients. The heterogeneous systems and human factors within health care contribute to a need for integrating new approaches and methods into existing processes.

The MergeCare proposal is a manifestation of input from and collaboration with target stakeholders, analysis of the market and emerging trends, and validation of design criteria through prototype testing. The process resulted in a meaningful product and business opportunity that will support change activity for designers and managers in the institutional health care sector.

Although MergeCare is a case study specific to the St. Louis region, its application as a product and consulting opportunity has potential in other markets. Continued refinement, testing, and validation will prepare MergeCare for a market launch.

Dedication

I dedicate this work to my friend, companion, advisor, and amazing life partner, Melissa Von Rohr. Thank you for your constant love, support, encouragement, and for giving me the space to take this long journey. Thank you also for the many reviews you have done to make this project complete. And to my children, thank you for your patience and gift of time that I hope to return tenfold.

Acknowledgment

It is with great pleasure that I acknowledge and thank those who have helped me complete this project.

To my professors, particularly Regina Rowland, PhD: Thank you for your dedication, perseverance, and leadership in guiding my growth and instilling confidence in me to build a new future. You have changed my mind for the better and opened the door to an expansive chapter in my life.

To my classmates: Thank you for your constant support and encouragement, for stretching the boundary of my comfort zone, and pushing me to explore the richness of this emerging field. A special thanks to my last quarter cohorts, Johan Verstraete and Kangjun Seo for your constructive reviews of my final project. And to my other classmates Jashua Plotkin, Erika S. Rose, Shannon D. Simon, and Yirun Xu: it has been a learning experience watching your projects develop and discuss our collective challenges together. To past collaborators Jason Spinks and Amber Benson: thank you for your thoughtful teamwork! And thank you to Jason Mills for being my St. Louis classmate on the ground. Thank you all for making the experience well worth the journey.

To my colleagues: Thank you to Douglas Dowd and Traci Moore for your ongoing support as I pivot into a new space, and to Jen Meyer for your constant encouragement.

To health care professionals: Thank you to the managers and designers I have met along the way who support the systems, processes, and changes to make institutional health care function for the long-term betterment of our collective health.

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Project Framing

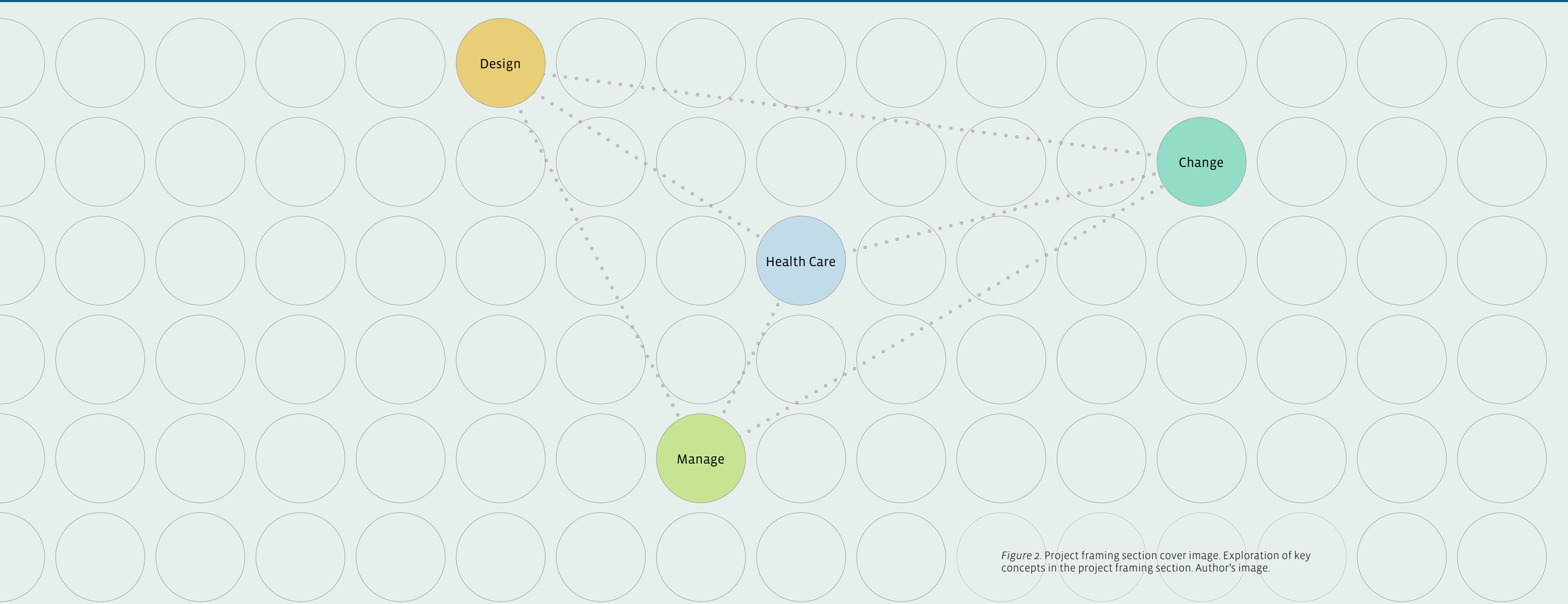


Figure 2. Project framing section cover image. Exploration of key concepts in the project framing section. Author's image.

Subject of Study

The research investigated how individuals in two institutional health care systems use design and management methods to support transformational change.

Problem Statement

John Halamka, MD, Chief Information Office of Beth Israel Deaconess Medical Center in Boston states that health care in the United States is of poor value, significant cost and less than optimal outcomes (Jones, 2013). Halamka suggests that innovation and reconsideration of models of service and institutional practice are needed in order to create continuous care and support.

The *Patient Protection and Affordable Care Act* (PPACA) signed into law by President Barack Obama on March 23, 2010, is an effort to improve how health care is managed at multiple levels. The PPACA reflects the challenges that have existed in the United States health care system for some time. Reforming the system through transformational changes in terms of patient coverage, cost structure, and patient care will continue to be a long-term challenge. Strategies to support the institutional health care systems that care for and manage patients are needed by the design industry (Jones, 2013).

Target Audience Description

Two subject groups were identified for this study. Group one was composed of institutional health care managers who focus on process improvement methods to support transformational change. The second subject group was comprised of designers who seek opportunities for greater engagement in the institutional health care sector and wish to develop tools they can use to support change.

Purpose of Project

The purpose of this project was to uncover organizational barriers to operational culture in order to develop methods that support managers and designers who intend to lead transformational change in health care institutions.

Scope of Project

Context
The context for this project was the challenges faced by the institutional health care sector. These challenges include the process improvement methods and strategies that managers and designers use to support care in hospital settings.

Content
The content of the project included design process, design management, business management, process improvement methods, and transformational change strategies.

Subjects
The subjects were designers that work for institutional health care systems and institutional health care professionals, such as decision makers and managers of operations.

Location
The location of the project was in the St. Louis, Missouri region, no more then 20 miles from the city center. Subjects were interviewed at their offices at various health care systems facilities.

Timeline
The project began on July 1, 2014 with secondary research and lasted through January 4, 2015. The primary research and project development began of January 5, 2015 and lasted through March 11, 2015.

Delimitations
The study did not include clinicians in health care practices, consumer health care products or their agents, nor other disciplines that make up the institutional health care sector. It also did not include small health care practices such as doctors' offices or larger insurance payers and pharmaceutical companies that focus on health care.

Significance of the Study

Health care is a large sector with complex challenges in which many disciplines play significant roles. To affect change, design management has the opportunity to develop and integrate strategic approaches that support health care innovation (Jones, 2013). In my professional career, I seek to pivot into the health care sector while retaining my roots as a graphic designer and maker of visual forms. I have observed a growing need for designers, and more broadly design managers, to deeply understand the human, emotional, and complex cultural conditions of health care in order to effectively support the sector through design. I also see an opportunity for design managers to be integrated more seamlessly into health care systems at various leadership levels. The institutional health care sector, which is the strategic and management area of health care, needs human-centered and design thinking approaches for understanding patients and developing services that meet their needs while maintaining a strong process improvement system and business strategy. The field of design management has many of the needed approaches to support solving complex and system-level challenges in health care. I intend to use these approaches in my current and future work.

Project Positioning

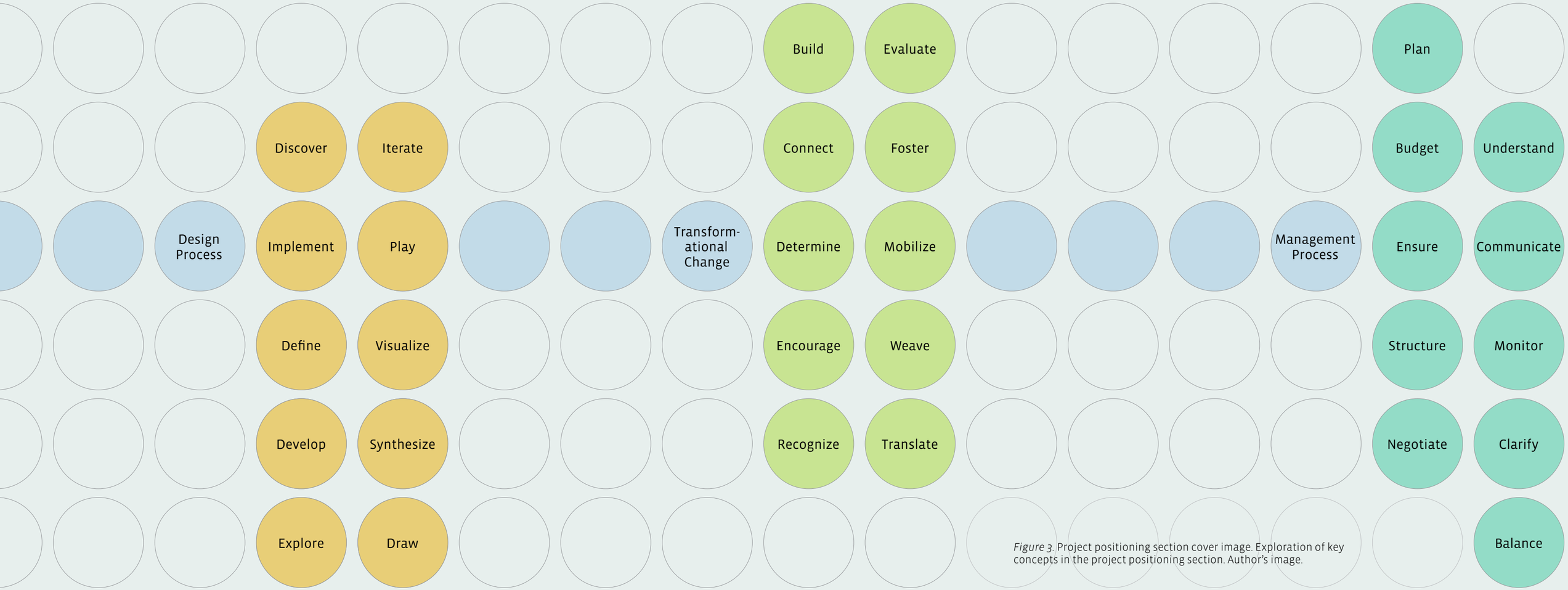


Figure 3. Project positioning section cover image. Exploration of key concepts in the project positioning section. Author's image.

Opportunity Statement

An opportunity existed to conduct research in the institutional health care sector of St. Louis. The study investigated what strategies were being used by design and management to support transformational change.

The research contributed to the field of design management by:

1. Demonstrating how a design-led method can be used to foster effective collaboration and sustain change.
2. Helping health care managers and designers integrate design-led strategic approaches into day-to-day activities.
3. Clarifying how health care professionals can support change by embedding design-led expertise into their processes.

The health care sector has many specialized components. Designers often bring a variety of backgrounds and approaches to support specific products or services. In order to effect systemic change, design managers need to develop models and tools that support health care innovation from within the system itself.

There is a growing need for designers and, more broadly, design management to understand the complex emotional and cultural conditions of the health care field in order to support the sector effectively (Jones, 2013). Equally, health care practitioners are looking to design management for new strategies to develop and sustain many activities (Jones, 2013). The institutional health care sector, which is the strategic management side of health care, needs new models and approaches for implementing change initiatives.

Positioning: *Overview*

Competitor/Collaborator Analysis

The market analysis reviewed a range of institutional health care structures at the national level. These structures, of varying size, incorporated either transformation change or innovation into their current systems. Additional not-for-profit organizations were evaluated that focused on health care, including one company that focused on transformational change strategies. A review of the institutions' websites, including the terminology used and the types of projects initiated, was used to evaluate the degree to which innovation or process improvement methodologies were incorporated into toolkits and methods presented for transformational change.

Regional Health Care Systems

Eight health care systems of varying scales were analyzed in the St. Louis region. Websites were reviewed for the words "transformation" and "innovation" to evaluate if they had people, centers, or initiatives that address these areas and what tools they might be using to effect change.

Positioning: *Competitor/Collaborator Analysis*

Changefirst

Changefirst is a consulting company that supports all types of businesses with change initiatives. They have six steps that are guided by what they call a *learn*, *apply*, and *embed* process. They also provide training workshops, e-learning modules, and coaching (http://www.changefirst.com).

Table 1. Changefirst competitor/collaborator analysis.

Objectives: What is their network's value?	Members: What categories do they fall into?	Lessons: What can they teach us for our network?
› Integrated consulting business › Clear methodology and steps › Tools to support change	› Business Consultancy › Engineering › Financial Services › Government › Pharmaceuticals	› A model with added consulting services and software can create holistic toolsets › A clear method that is shared with all provides confidence › Various channels can be used for the model
Approach: How do they create value?	**Channel:** What is the entry point to their network?	**Collaboration Opportunities:** Where do we overlap?
› Clear process in place › Global offices offer international perspectives and knowledge base › Tools exist for visualizing processes	› Online portal › On-ground site visits › Coaching › E-learning	› Their method serves other sectors as well as health care

Adapted from " Workshops," "Our change management methodology," "Key features of e-change," "Our clients," and "Really embedding PCI® in your organization," 2015, *Changefirst*.

Cornell University: Healthcare Transformation Project

The Healthcare Transformation Project at Cornell University provides consulting services to health care leaders in the areas of needs assessment, delivery of best practices, strategic partnerships, and organizational change approaches. Most of their practices appear to be in areas of process improvement methods (https://www.ilr.cornell.edu/healthcare).

Table 2. Cornell University: Healthcare Transformation Project competitor/collaborator analysis.

Objectives:
What is their network's value?

- University-level organization that provides research and knowledge on best practices

Members:
What categories do they fall into?

- Consulting support to health care industry

Lessons:
What can they teach us for our network?

- Being outside a health care system may not add the best value
- High-level strategies may not always translate into best practice on the ground

Approach:
How do they create value?

- Knowledge to leaders
- Patient-centered approach

Channel:
What is the entry point to their network?

- Online website
- Publications
- Research papers

Collaboration Opportunities:
Where do we overlap?

- May adopt their ideas or methods of transformational change
- Possible channel for dissemination

Adapted from "Who we are," "What we do for you," "Work we've done," "News and events," 2015, *Cornell University: Healthcare Transformation Project.*

Healthcare Transformation Institute

The Healthcare Transformation Institute is a not-for-profit affiliated with the University of Arizona and Arizona State University. The institute provides knowledge about best practices at the intersection of scientific discovery, health care delivery, and reimbursement services. They have a structure, method, and criteria for working with health care systems in order to effect change on a high-level path (http://healthcaretransformationinstitute.org).

Table 3. Healthcare Transformation Institute competitor/collaborator analysis.

Objectives:
What is their network's value?

- Affiliated with a university
- Leaders have track record of success
- Act as a catalyst

Members:
What categories do they fall into?

- Health care systems
- Health care teams
- Strategists
- Translation of science to practice

Lessons:
What can they teach us for our network?

- Best practices
- Example model
- How we might provide consulting

Approach:
How do they create value?

- Resources to their stakeholders
- Broker relationships with innovation implementation strategies

Channel:
What is the entry point to their network?

- Online portal
- Location within partner schools

Collaboration Opportunities:
Where do we overlap?

- Production of toolkits
- May want to test our approach for their health care clients

Adapted from "Healthcare transformation institute," "Strategy and Focus," "Engineering to create a health care system," "Vision and Mission," 2015, *Healthcare Transformation Institute.*

Independence Blue Cross: Center for Health Care Innovation

The Center primarily facilitates innovation-based activities for employees of Independence Blue Cross. They are looking for outside opportunities to import into their structures to support change and innovation activities (http://www.ibx.com/company_info/innovation).

Table 4. Independence Blue Cross: Center for Health Care Innovation competitor/collaborator analysis.

Objectives:
What is their network's value?

- Internally support changes that help to adopt external innovation best practices

Members:
What categories do they fall into?

- In-house health care teams
- Health care professionals in their system

Lessons:
What can they teach us for our network?

- Internal groups can be supportive if the knowledge comes from within the organization
- May not always have the best buy-in if all knowledge is external

Approach:
How do they create value?

- Knowledge to their leaders
- Training functional groups

Channel:
What is the entry point to their network?

- Online website
- Workshops facilitated throughout their system

Collaboration Opportunities:
Where do we overlap?

- May support our method and use as a testing ground
- May use as a prototype

Adapted from "The Center for Health Care Innovation at Independence Blue Cross," "Addressing the challenges of health care with innovation," "Innovation at work," 2015, *Independence Blue Cross: Center for Health Care Innovation.*

Institute for Healthcare Improvement

The Institute for Healthcare Improvement (IHI) is an independent not-for-profit organization providing resources to the health care community. IHI serves as a clearinghouse of innovation science in various areas. Along with linking to many articles, they also produced "A Guide to Idealized Design," which combines transformational and design approaches in a step-by-step guide. In addition, IHI has developed the "Triple Aim" model, which addresses the health of a population, experience of care, and per capita cost. The Institute also provides coursework at various levels for transformational change leadership (http://www.ihi.org).

Table 5. Institute for Healthcare Improvement competitor/collaborator analysis.

Objectives:
What is their network's value?

- Large database of research
- Expert advice
- Long history of expert work
- Global reach

Members:
What categories do they fall into?

- Strategist
- Think tank
- Educators
- Facilitators

Lessons:
What can they teach us for our network?

- We may need more depth
- Value of information
- Total business model

Approach:
How do they create value?

- Resources to their stakeholders
- Broker relationships
- Think tank approach
- Host conferences
- Conveners

Channel:
What is the entry point to their network?

- Online portal
- Offices in Cambridge, MA
- Online teaching tools
- Print materials

Collaboration Opportunities:
Where do we overlap?

- Might adopt their method/toolkit
- Could be a partner
- May validate our work

Adapted from "Vision, Mission, and Values," "Innovations," "Education," "Science of Improvement: How to Improve," and "Open School," 2015, *Institute for Healthcare Improvement*.

Joint Commission Center for Transforming Healthcare

This not-for-profit organization is supported by leading national health care systems with the mission of transforming health care through a set of process improvement tools such as Robust Process Improvement, which includes Lean Six Sigma and Targeted Solutions Tool (http://www.centerfortransforminghealthcare.org).

Table 6. Joint Commission Center for Transforming Healthcare competitor/collaborator analysis.

Objectives:
What is their network's value?

- Part of a large network of health care providers
- Ability to gather knowledge from all participants
- Impacts the whole industry due to being a network resource

Members:
What categories do they fall into?

- Strategists
- Educators
- Connectors

Lessons:
What can they teach us for our network?

- Having many partners can influence best practice for many
- Agreement by many players builds concesus

Approach:
How do they create value?

- Provide a registered process
- Offer clear tools all can use at the same time
- Help understand existing tools

Channel:
What is the entry point to their network?

- Online portal

Collaboration Opportunities:
Where do we overlap?

- Use their process improvement tactics

Adapted from "About the Center," "Projects," "FAQs," "Targeted Solutions Tool®," 2015, *Joint Commission Center for Transforming Healthcare.*

Kaiser Permanente: Garfield Innovation Center

Kaiser Permanente is one of the largest health systems in the country. The Garfield Innovation Center leads the way in testing new ideas and implementing them through large-scale prototyping in modeled hospital environments. Anyone within the national system can visit the site in order to prototype within the physical conditions and see how operations might be impacted. The physical environment allows for a human-centered design approach to exploring problem-solving methods. In addition it provides the opportunity for stakeholder buy-in from all team members (https://xnet.kp.org/innovationcenter/index.html).

Table 7. Kaiser Permanente: Garfield Innovation Center competitor/collaborator analysis.

Objectives:
What is their network's value?

- A large-scale facility allowing for rapid prototypes
- Value to the Kaiser Permanente system and national model
- Only one of its kind in the USA
- A living laboratory

Members:
What categories do they fall into?

- In-house innovation team
- Prototype development

Lessons:
What can they teach us for our network?

- How a physical demonstration site can garner enterprise adoption
- Can test multiple models at once
- Role play allows for a human-centered opportunity to test ideas

Approach:
How do they create value?

- Shows how an environment can be designed to support operations and lower the long-term cost of investment
- Tests potential ROI before investment is made

Channel:
What is the entry point to their network?

- Primarily their physical site
- Online website with video examples of spaces and projects

Collaboration Opportunities:
Where do we overlap?

- Potential partner for testing the product
- Potential adopter of the product

Adapted from "Who we are," "What we do," and "How to start," 2015, *Kaiser Permanente: Garfield Innovation Center.*

Mayo Clinic: Center for Innovation

The Center for Innovation at Mayo Clinic began in 2008 and bridges medical practice with human-centered design. They have been the leader in using design thinking to facilitate the transformation of health care delivery at all levels of the organization. They use a "Connect, Design, Enable" approach to initiate and deliver their projects (http://www.mayo.edu/center-for-innovation).

Table 8. Mayo Clinic: Center for Innovation competitor/collaborator analysis.

Objectives:
What is their network's value?

- Innovation team integrated into a health care system
- Clinician-initiated formation encourages institutional leadership trust

Members:
What categories do they fall into?

- In-house innovation team

Lessons:
What can they teach us for our network?

- An internal structure can have significant impact on buy-in
- Overall culture of collaboration supports change and adoption

Approach:
How do they create value?

- Available to their immediate stakeholders on a daily basis
- Build transdisciplinary teams from project onset
- Demonstrate by participating at each step of process

Channel:
What is the entry point to their network?

- Facility at the hospital site
- Online website

Collaboration Opportunities:
Where do we overlap?

- Use mixed methods to develop models for transformation
- Follow their human-centered design strategy

Adapted from "What We Do," "Projects," and "Transform," 2015, *Mayo Clinic: Center for Innovation.*

UCLA Health: Institute for Innovation in Health

The Institute is charged with identifying new opportunities and delivering transformational change in health care. They have a seven-step process for evaluating an innovation. The Institute also uses aspects of design thinking and process improvement to evaluate and initiate projects. In addition, they provide a 60-page toolkit that walks readers through a step-by-step process of innovation (http://uclainnovates.org).

Table 9. UCLA Health: Institute for Innovation in Health competitor/collaborator analysis.

Objectives:
What is their network's value?

- A clearinghouse for ideas
- Sourcing and evaluating best practices

Members:
What categories do they fall into?

- In-house innovation team for a major health care system

Lessons:
What can they teach us for our network?

- Criteria for evaluating an innovation
- How to identify and match lead problems with an innovation
- Robust "Deep Dive" process for projects

Approach:
How do they create value?

- Knowledge to their system
- Knowledge to broader health care industry on best practices

Channel:
What is the entry point to their network?

- Online website
- Their toolkit/process

Collaboration Opportunities:
Where do we overlap?

- Toolkit may have many similar steps that support transformation
- May support new methods and post on their site

Adapted from "Key Activities," "Innovation at UCLA," "Resources," and "Econsult Deep Dive" 2015, *UCLA Health: Institute for Innovation in Health.*

Sutter Health: The David Druker Center for Health Systems Innovation

The Center began in 2010 to advance exploring, creating, and deploying new health care in the region. It uses a human-centered design approach to facilitate developing new ideas. The Center focuses on new innovations, as opposed to improving existing structures within the Sutter Health system (http://innovation.pamf.org).

Table 10. Sutter Health: The David Druker Center for Health Systems Innovation competitor/collaborator analysis.

Objectives: What is their network's value?	Members: What categories do they fall into?	Lessons: What can they teach us for our network?
› Support Sutter Health system › Facilitate innovation activities	› In-house innovation team for a major health care system	› Facilitation methods can add value to large systems

Approach: How do they create value?	Channel: What is the entry point to their network?	Collaboration Opportunities: Where do we overlap?
› Disseminate knowledge to their system › Facilitate workshops for system leaders and staff	› Online website › Events and workshops	› Our method may support their mission › Given their smaller size and recent formation, new methods may be of interest

Adapted from "Home," "linkAges," and "Personalized Health Care Programs," 2015, *Sutter Health: The David Druker Center for Health Systems Innovation.*

Positioning: *2x2 Axis of Organizations*

Location vs. Size

The 2x2 axis shown in Figure 4 plots the relative size of the health care organizations and if transformational change was supported within the entity. Larger organizations had more robust transformational and innovation-oriented team leaders. They also had clear methodologies to support change. Organizations outside health care systems ranged in the complexity of methods and strategies used to support transformational change.

An opportunity area was identified, indicating the need for a strategic approach that could support smaller health care organizations in achieving transformational change.

Organizations included in Figure 4 are:

1. Changefirst
2. Cornell University: Healthcare Transformation Project
3. Healthcare Transformation Institute
4. Independence Blue Cross: Center for Health Care Innovation
5. Institute for Healthcare Improvement
6. Joint Commission Center for Transforming Healthcare
7. Kaiser Permanente: Garfield Innovation Center
8. Mayo Clinic: Center for Innovation
9. UCLA Health: Institute for Innovation in Health
10. Sutter Health: The David Druker Center for Health Systems Innovation

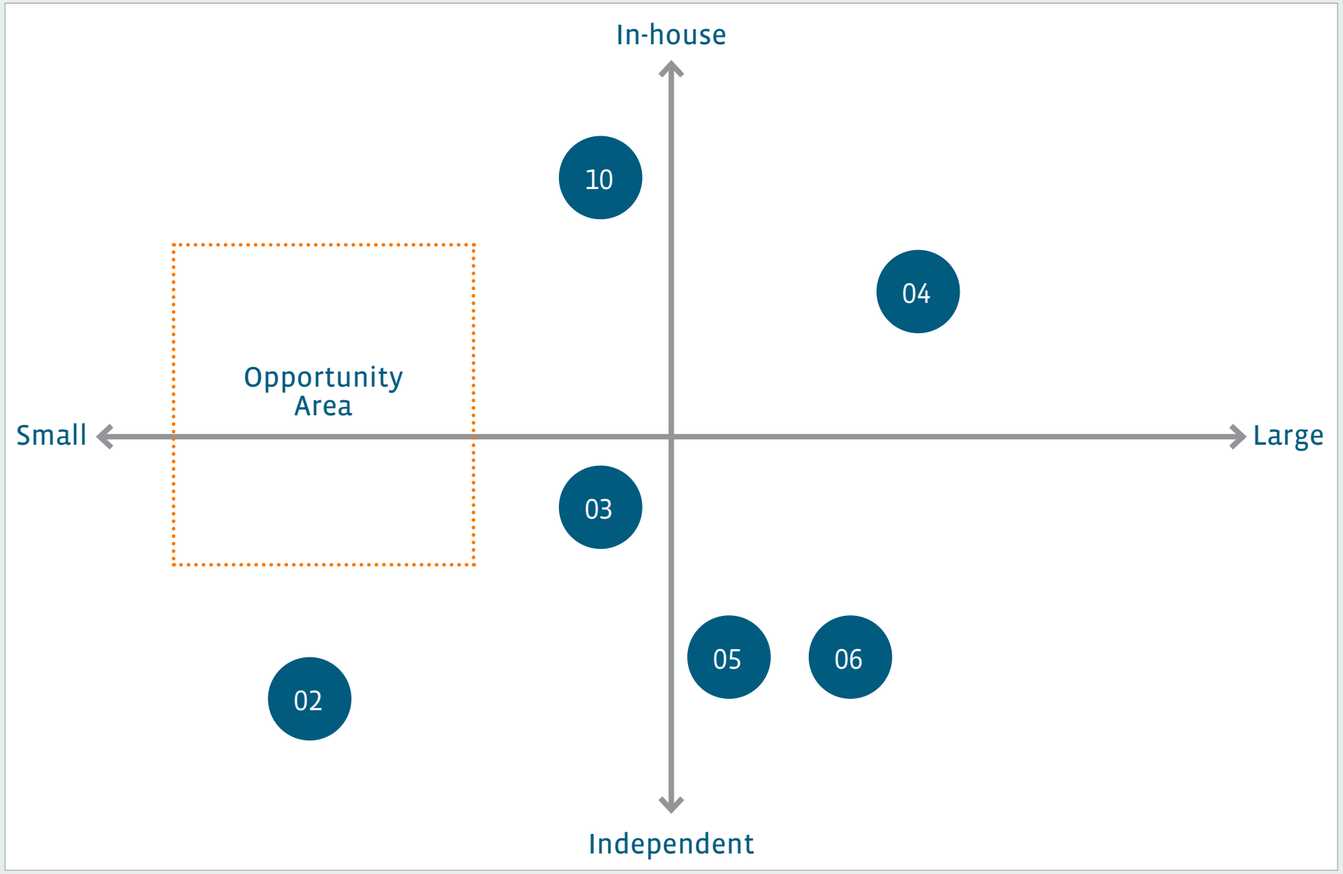


Figure 4. 2x2 axis of organizations supporting transformation. Identifies structures supporting transformational change across the United States. Author's image.

Positioning: *2x2 Axis of Approaches to Transformation*

Design-led vs. Process Improvement

Many of the organizations reviewed used a variety of methods for creating transformational change. Some took a design-led approach with a focus on human-centered innovation for transforming part of or a whole system. Others leaned toward process improvement under a Six Sigma approach to make incremental change within units. A few offered strategies that reflected both methods, suggesting there might be an opportunity for developing a meta-method that combines design-led and process improvement strategies.

Organizations included in Figure 5 are:

1. Changefirst
2. Cornell University: Healthcare Transformation Project
3. Healthcare Transformation Institute
4. Independence Blue Cross: Center for Health Care Innovation
5. Institute for Healthcare Improvement
6. Joint Commission Center for Transforming Healthcare
7. Kaiser Permanente: Garfield Innovation Center
8. Mayo Clinic: Center for Innovation
9. UCLA Health: Institute for Innovation in Health
10. Sutter Health: The David Druker Center for Health Systems Innovation

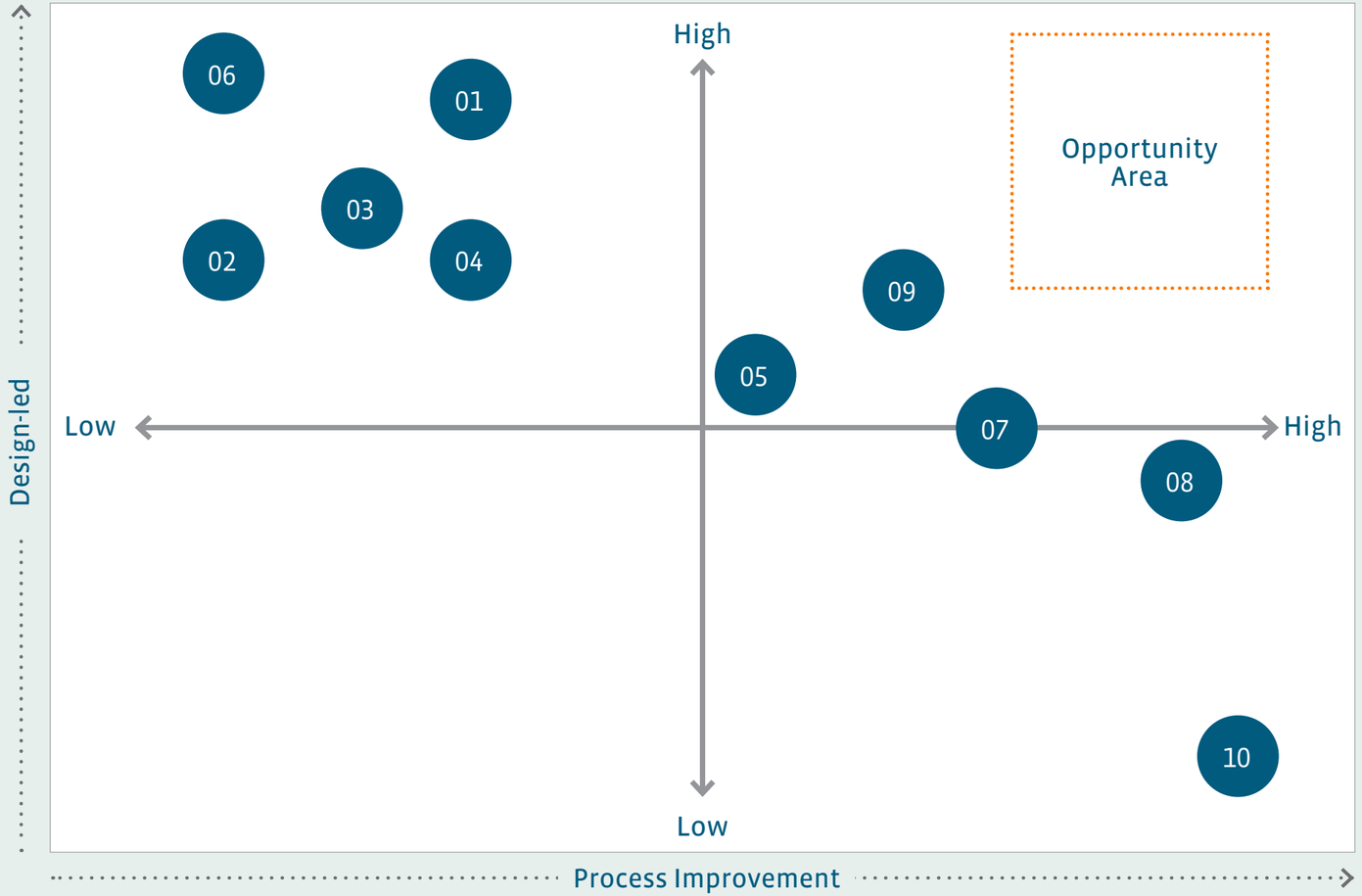


Figure 5. 2x2 axis of approaches to transformation. Identifies institutions that use design-led versus process improvement practices. Author's image.

Positioning: *Regional Health Care Systems*

Figure 6 plots the relative size of the health care company compared to the number of transformation support staff and strategies evident in the business.

1. Ascension Health
Ascension Health is the largest Catholic, not-for-profit health system in the St. Louis region. Based in St. Louis, Ascension has facilities throughout the country. A transformational development team is charged with initiating clinical innovations (https://www.ascensionhealth.org).

2. BJC HealthCare
BJC HealthCare is a regional health system in the St. Louis area with 14 hospitals. They have a Center for Clinical Excellence that is charged with supporting transformation at all levels of the organization. Their mission is to improve clinical care through innovation sciences (http://www.bjc.org).

3. Blessing Health System
Blessing Health System is a for-profit system with six facilities in the Quincy, Illinois region. They do not have transformational or innovation support agents or teams as part of their corporate structure (http://www.blessinghealthsystem.org).

4. CoxHealth
CoxHealth is a health care system based in Springfield, Missouri with five hospitals under its management. CoxHealth does not have an internal structure for supporting company-wide transformation or innovation (http://www.coxhealth.com).

5. Memorial Health System
Memorial Health System is a Midwest not-for-profit health system based in Springfield, Illinois with seven hospitals. The system lacks a transformation support structure; however, a team of individuals are charged with transformational change within the leadership structure (https://www.choosememorial.org).

6. Saint Luke's Health System
Saint Luke's Health System is a not-for-profit organization that includes 10 hospitals across the Kansas City region. It does not have a structure for transformation beyond a few employees who support the practice internally and often hire external experts (http://www.saintlukeshealthsystem.org).

7. Southern Illinois Healthcare
Southern Illinois Healthcare is a nonprofit, three-hospital system in Southern Illinois. The organization does not have a transformational change support team, nor do any individuals within the organization have a title suggesting this type of activity (http://www.sih.net).

8. SSM Health
SSM Health is a Catholic, not-for-profit health care system based in St. Louis with 18 hospitals and affiliations with 40 rural hospitals. The organization supports transformation through senior leadership and other employees who are charged with clinical transformation and innovation (http://www.ssmhealth.com).

An opportunity area exists for supporting transformational change for smaller health care systems. A toolkit may provide a solution to support teams that do not have staff dedicated to the transformation process.

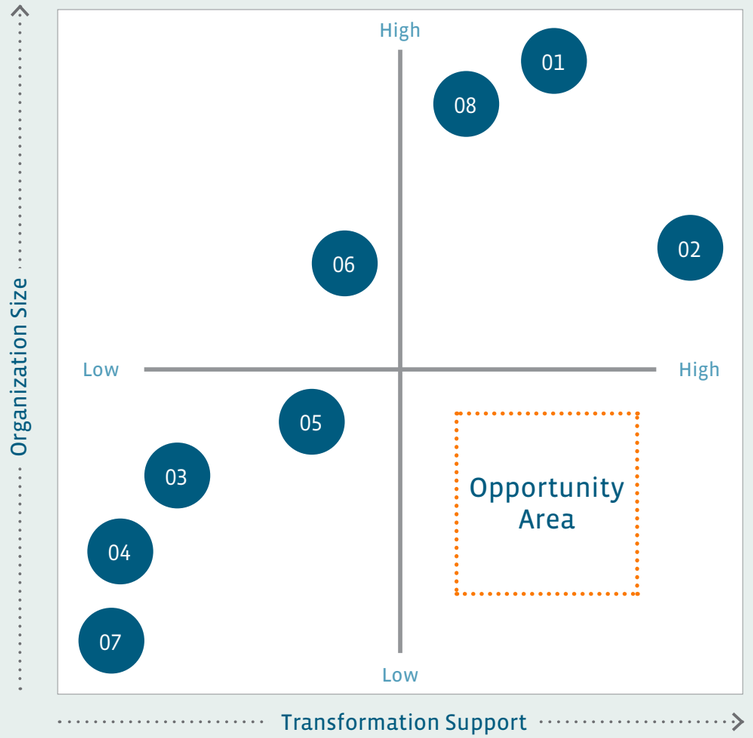


Figure 6. 2x2 axis of regional healthcare systems. Identifies health care systems with transformational support staff as part of their organization. Author's image.

Zag Steps

Table 11. Zag steps.

1: Who am I?	MergeCare is a strategic method for supporting institutional health care managers during change initiatives.
2: What do I do?	The purpose of MergeCare is to support health care managers and designers through a combination of design-led and process improvement phases and steps to plan, initiate, and sustain change.
3: What is my vision?	The vision of MergeCare is to empower health care professionals when facilitating operational changes today and in the future through a mixed-method approach.
4: What wave am I riding?	Health care looking to design for innovation. Process improvement strategies lack innovation. Process improvement strategies lack a human-centered approach. Need to reduce health care costs and errors. Pressures to improve health outcomes.
5. Who shares the brandscape?	Large health care systems that incorporate design-thinking strategies into their management structures, change management consulting firms with established practices, and think tanks with methods that incorporate human-centered design to support change.
6. What makes me the only me?	MergeCare is the only design-led and process improvement strategy that was created to support change for US-based institutional health care managers and designers who seek to collaboratively improve overall operational and patient outcomes in an era when both large and small systems need new ways to lower costs and manage resources.
7. What should I add or subtract?	MergeCare will continue to add the best methods that strengthen its offerings to institutional health care professionals.
8. Who loves me?	Health care managers who need new strategies to align team members and stakeholders, and designers who are seeking to facilitate better relationships within complex institutional health care environments.
9. Who's the enemy?	Existing, well-established change methodologies in the health care culture, as well as individuals who are not aware of innovative approaches on the market.
10. What do they call me?	MergeCare
11. How do I explain myself?	We inspire health care teams to take a path of change by enhancing the methods they already have with design-led approaches.
12. How do I spread the word?	We market within the health care industry at conferences and trade shows, but most importantly we demonstrate the approach through engagement with partners that will advocate within health care systems.
13. How do people engage with me?	Health care professionals can purchase MergeCare through online retailers and industry partners that are aligned with our change strategy. They can also retain our consulting services to walk through the strategic approach with their teams.
14. What do they experience?	Health care professionals experience a visually engaging method for aligning strategy and tactics with qualitative and quantitative methods.
15. How do I earn their loyalty?	By demonstrating our strategic method, clients will see firsthand how team members align around challenges and change initiatives.
16. How do I extend my success?	Our approach has the capacity to integrate with many other change improvement strategies because, at our core, we value and believe in a mixed-method approach to solving challenges.
17. How do I protect my portfolio?	Because our approach is able to integrate with evolving new methods, we can adapt to future challenges.

Value Proposition

Merge*Care* is for institutional health care managers and designers who need to support change in complex functional and operational environments. Our strategic approach integrates an intuitive and logical process for evaluating, understanding, and implementing change initiatives. We do this by facilitating a set of design-led visual sessions that clarify opportunities, imagine futures, and codify processes for participants to implement. Unlike other change strategies that are primarily data-driven, our approach is based on research that revealed an opportunity to combine a human-centered design and process improvement methods to deliver greater outcome and adoption success. As a result, health care professionals are better equipped to facilitate innovative change programs because people are at the core of our strategy.

Onliness Statement

Merge*Care* is the only design-led and process improvement strategy that was created to support change for US-based institutional health care managers and designers who seek to collaboratively improve overall operational and patient outcomes in an era when both large and small systems need new ways to lower costs and manage resources.

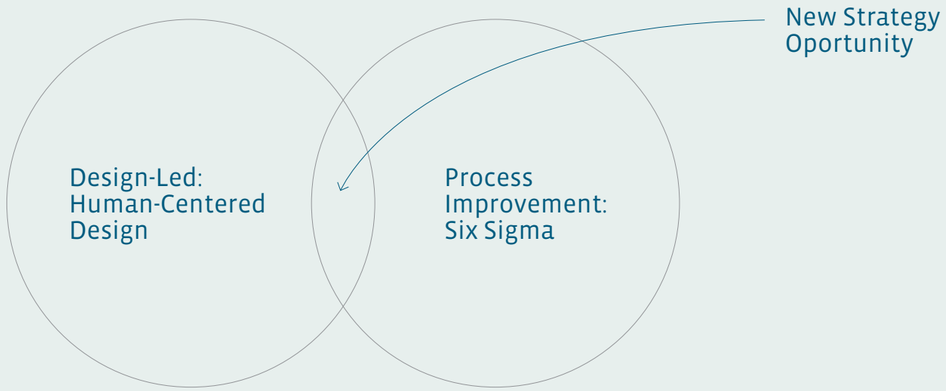


Figure 7. Venn diagram of new process intersection. Combines a design management and Lean Six Sigma process improvement idea to suggest a new model. Author's image.

Research Activities and Synthesis

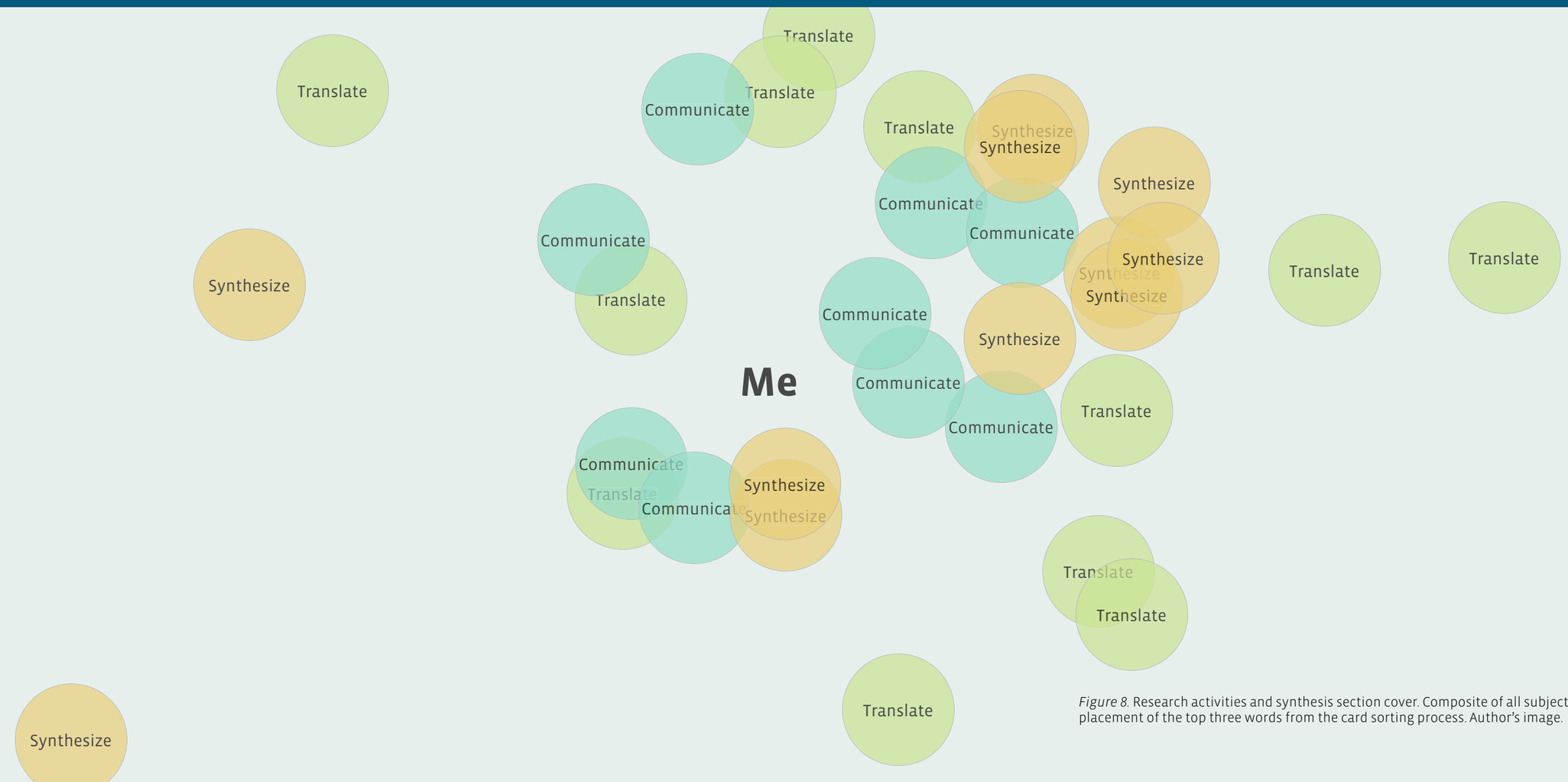


Figure 8. Research activities and synthesis section cover. Composite of all subjects' placement of the top three words from the card sorting process. Author's image.

Research Space

The research space was defined as the intersection of health care designers, health care managers, transformational change, and institutional health care. Figure 9 identifies relevant literature and associated concepts.

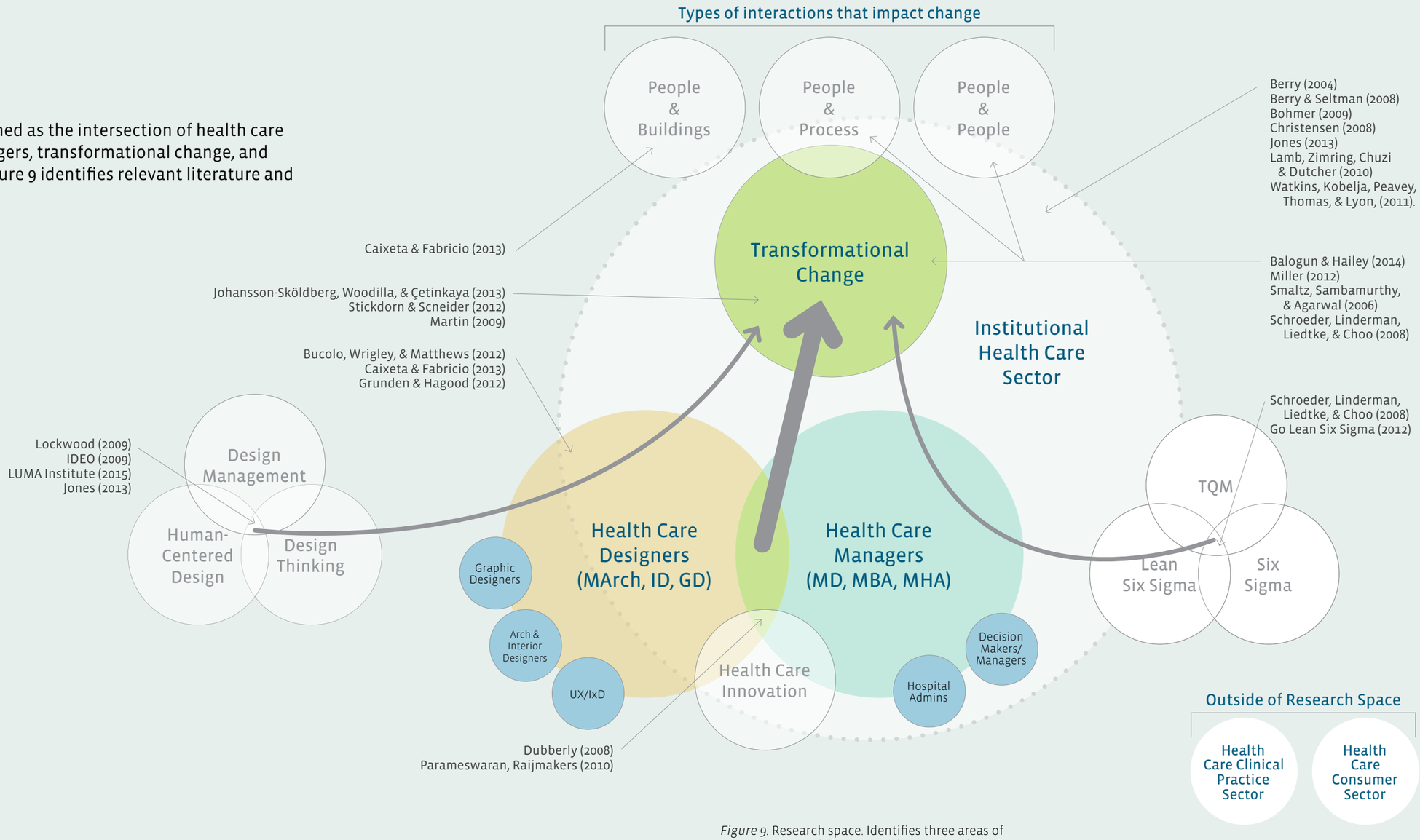


Figure 9. Research space. Identifies three areas of investigation and literature relevance. Author's image.

Research Methodology

The methodology for this research was a qualitative case study.

This approach was appropriate for a number of reasons. The case study focused on two subject groups: health care designers and health care managers at various job levels. The case was bounded by two large institutional health care systems in which the two subject groups work. The method facilitated exploring phenomenon within the bounded areas in order to understand the subjects' opinions about operational logistics, successes, challenges, opportunities, and current processes used to achieve transformational change.

Research Questions

Primary

How might the application of design management methodologies support transformational change within the institutional health care sector?

Secondary

1. What are the successes in institutional health care?
2. What are the challenges in institutional health care?
3. What is the definition of transformational change in the context of institutional health care?
4. What are the techniques used to foster transformational change?
5. How is transformational change sustained in institutional health care?
6. What are management methods used in institutional health care?
7. What is the definition of design management in the context of institutional health care?
8. Who are leaders of design management activity in institutional health care?

See research question matrix on page 38 for additional exploration of sub-research questions.

Research Questions Matrix

Primary Research Question:
How might the application of design management methodologies support transformational change within the institutional health care sector?

Table 12. Sub-question matrix.

Sub-Questions	What do we need to know?	Why do we need to know this?	What kind of data will answer the question?	Where can I find this data?	What type of data collection methods will be used?	Who do we contact?	When do we need to know?	What are we learning?	What might we be missing?
1. What are the successes in the institutional health care sector?	What is working? What does it look like? How does it work? Actual programs that have worked.	To learn from good examples to apply to others. Can it be replicated? If so, how and how might DMGT support it? Set context for success.	List of case studies or projects that are working well.	› Institutional health care professionals › Secondary research	› Interview › Unique method › Secondary research	› Subject 1 › Subject 2 › Subject 5 › Subject 7 › Subject 10	› End of unit 3	What does real success look like for institutional health care so that we might incorporate it into the product to market.	Not having a large enough sample size. What is really big versus just a specific department.
2. What are the challenges in the institutional health care sector?	What is not working well? Are there clear, big problems that are system-wide? Are they observable or understandable?	To know if there is consensus on the types of challenges that people see in this space.	List of large-scale challenges. Stories of daily problems that keep recurring that are part of the larger challenge.	› Institutional health care professionals › Secondary research	› Interview › Unique method › Secondary research	› Subject 1 › Subject 2 › Subject 5 › Subject 7 › Subject 10	› End of unit 3	Fundamental challenges in this space.	Other challenges that might not seem large at first, but do contribute to systemic challenges.
3. What is the definition of transformational change in the context of institutional health care?	How is the term understood and what are some examples? Is this something that hinders broader health care progress?	To understand if the subjects view transformational change as an actual function of the institution.	Descriptions of significant changes that have occurred in the organization.	› Institutional health care professionals › Designers in health care practices	› Interview › Unique method › Secondary research	› Subject 1 › Subject 2 › Subject 5 › Subject 8 › Subject 10	› End of unit 3	Understanding of “transformational change” by designers and health care managers.	Examples in the health care space that are of a sufficiently large scale to be deemed transformational.
4. What techniques are used to foster transformational change?	What tactics are used to start and sustain change? Are there specific types of tools?	To gain a deeper understanding of the tools and steps that lead to transformational change. Who leads this?	The exact type of techniques or systems used, such as Lean or Six Sigma.	› Institutional health care professionals › Secondary research	› Interview › Unique method › Secondary research	› Subject 1 › Subject 2 › Subject 5 › Subject 8 › Subject 4	› End of unit 3	Techniques for transformational change.	Transformational change may be a common method across all organizations.
5. How is transformational change sustained in institutional health care?	Effective activities or actions to sustain change. What are the barriers to change?	To know how sustainable long-term change is. What needs to be overcome?	Tactics that supported the long-term change.	› Institutional health care professionals › Secondary research	› Interview › Unique method › Secondary research	› Subject 1 › Subject 2 › Subject 5 › Subject 6 › Subject 4	› End of unit 3	If there are any barriers to enacting transformational change programs.	Insight from those at the very top of the organization.
6. What management methods are used in health care?	Is anything unique about health care and the application of design management?	To compare against what might be deemed as “traditional” management processes.	Specific examples or projects that might have used a design management process.	› Institutional health care professionals › Designers in health care practices	› Interview › Unique method › Secondary research	› Subject 1 › Subject 2 › Subject 5 › Subject 7 › Subject 10	› End of unit 3	A possible deeper connection between design management and health care.	There may be no unique method for health care.
7. What is the definition of design management in the context of institutional health care?	What does a design process really look like for affecting change in institutional health care?	To know if people are already doing similar things. To know what the different subjects consider to be a design process.	Specific definitions and examples of design processes.	› Institutional health care professionals › Designers in health care practices	› Interview › Unique method › Secondary research	› Subject 3 › Subject 4 › Subject 11 › Subject 12	› End of unit 3	The perception of the role or need for design in institutional health care.	Subjects may not know DMGT, as it is a young field.
8. Who are leaders of design management activity in health care?	Who are the leading institutions or groups using design to drive big change in health care?	Are there unique leadership skills that could be supported by a DMGT process? Who out there is doing a great job?	Published information and articles citing the success of the groups.	› Designers in health care practices › Online data mining › Contact from literature reviews	› Interview › Unique method › Secondary research	› Subject 3 › Subject 4 › Subject 6 › Subject 11 › Subject12	› End of unit 3	Who are considered leaders? What tools are they using to affect change?	Smaller groups that are not well published due to proprietary information, which is a common challenge in health care.

Consent Forms

Pre–Interview Discussion

Figures 10 and 11 concern the *Research Project Explanation* and *Informed Consent Form*.

The pre–interview discussion structure is outlined in Table 13.

Table 13. Pre–interview discussion steps.

Step	Time	Interviewer	Subject	Supplies
1	3 min	› Give subject the *Research Project Explanation* and read each part with subject. › Explain that they can keep this copy.	Listen/Review	Envelope with forms
2	2 min	› Give subject the *Informed Consent Form* and read each part with the subject. › Request that they sign the form at the end. › Retrieve the form and place in envelope.	Listen/Review	Envelope with forms

Research Project Explanation

The following information provides an introduction to the "Health Designer: A strategy to support change" research project to be conducted in St. Louis, Missouri from January 2015 to April 2015.

Researcher Bio

Enrique Von Rohr is a Design Management graduate student at the Savannah College of Art and Design. This research constitutes the final project toward a master's degree. Von Rohr currently teaches communication design and is part of the administration at the Sam Fox School of Design and Visual Arts at Washington University in St. Louis. The project is being conducted outside of his roles at Washington University.

Purpose of the Study

The purpose of this study is to understand how might the application of design management methodologies support transformational change within the institutional healthcare sector?

Sub-Questions

The research will be guided by the following sub-questions:
What are successes of the institutional healthcare sector? (1IH)
What are challenges for the institutional healthcare sector? (2IH)
What is the definition of transformational change in the context of institutional healthcare? (1TC)
What are the techniques used to foster transformational change? (2TC)
How is transformational change sustained in institutional healthcare? (3TC)
What are management methods used in healthcare? (1DM)
What is the definition of design management in the context of institutional healthcare? (2DM)
Who are leaders of design management activity in healthcare? (3DM)

Data Collection Methodology

Data will be collected primarily through interviews and secondary sources. These will include design professionals at traditional firms, designers within healthcare settings, as well as institutional healthcare professionals. Additional secondary research in literature reviews will be conducted to evaluate best practices and trends of how design and design management is being used in non-traditional ways.

Data Management

All data will be anonymized during final production of the research results. Individual interview data will be stored on two external hard drives, all of which will be erased after one year of the interview date.

Contact Information

This project is being conducted through the Design Management Program at the Savannah College of Art and Design. For additional information please contact Professor Regina Rowland, Ph.D. at rrowland@scad.edu.

Figure 10. Research project explanation. Sample of the form used to discuss the nature of the project with subjects prior to the interview. Author's image.

Informed Consent Form

MA: Final Project

School: Savannah College of Art & Design
Course: DMGT 748
Term: Winter 2014-15

I voluntarily agree to participate in an interview performed by student Enrique Von Rohr from the Design Management program at the Savannah School of Art and Design.

I understand that this interview is being conducted by Enrique Von Rohr as research for his final degree project titled "Health Designer: A strategy to support change." The class deliverable includes written and filmed presentations documenting the findings of the research.

In order to document and learn from the interview I understand that it will involve:

1. Participation in a 60 min interview
2. Recorded (audio, pictures and video) of the 60 min interview
3. Photographs of the types of activity or environment that are part my job
4. Transcription of the interview for use in the research documentation and analysis

I grant permission for this process to be photographed, recorded, transcribed, and be used only for Enrique Von Rohr's class work and portfolio.

I understand that any identifiable information in regard to my name and/or company name will be removed from any material that is made available to those not directly involved in this class and research activity.

_____
Participant Signature / Printed Name

_____
Date

Figure 11. Informed consent form. Sample of the form subjects signed prior to the interview. Author's image.

Research Protocols: *Interview Questions Field Notes Form*

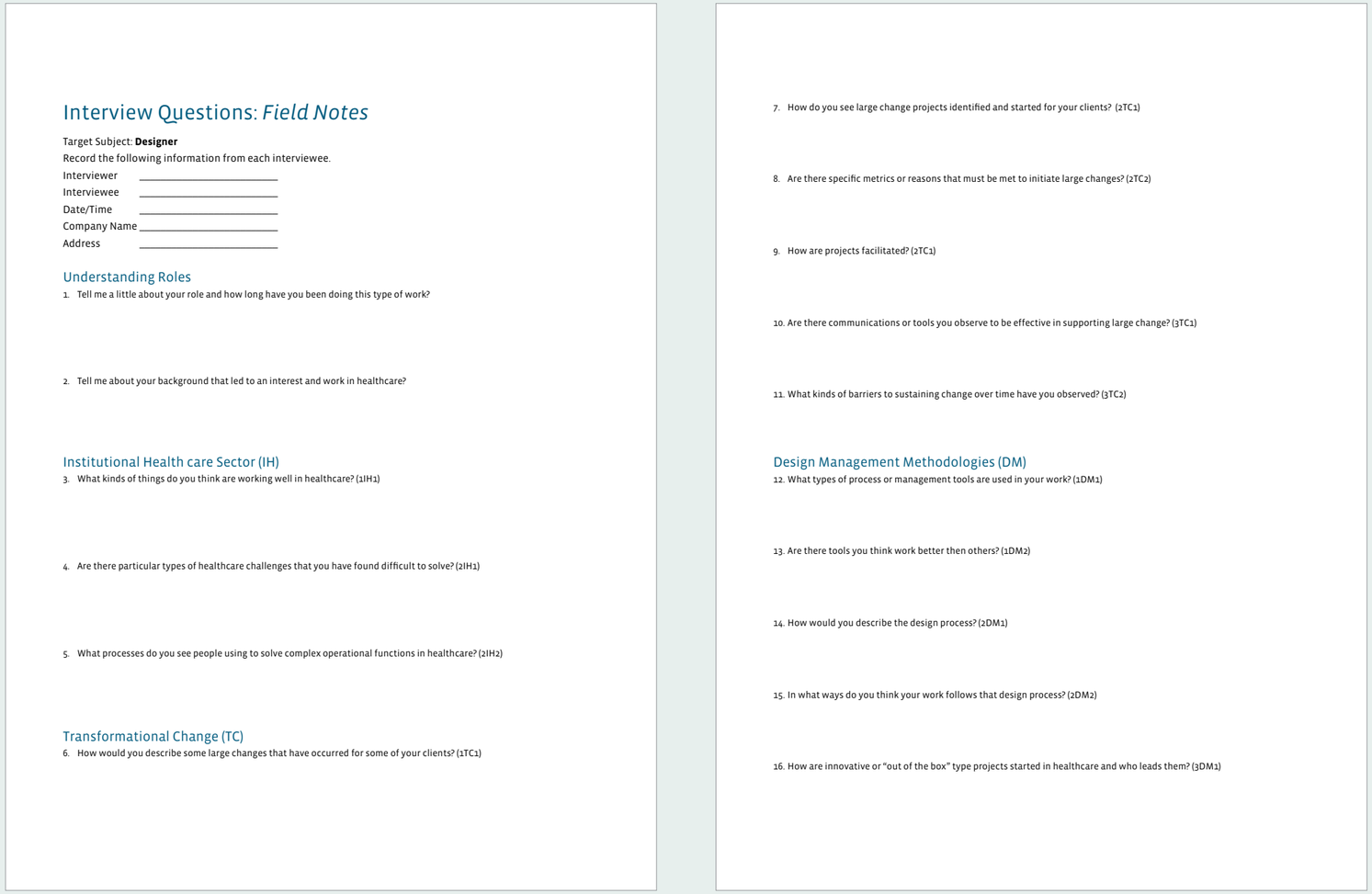
Interview

Figures 12–13 represent the *Interview Questions* Guides. The guides included space for subject name, date, time, and location where the interview occurred.

The interview discussion structure is outlined in Table 14.

Table 14. Interview discussion steps.

Step	Time	Interviewer	Subject	Supplies
1	35 min	› Turn on recorder › Set timer › Begin to ask questions	Respond	Envelope with *Interview Questions* guide
2	1	› Instruct subject that the interview part is done and we will now do a quick exercise. › Place *Interview Questions* notes into envelope.	NA	Envelope



Interview Questions: *Field Notes*

Target Subject: **Designer**
Record the following information from each interviewee.
Interviewer _____
Interviewee _____
Date/Time _____
Company Name _____
Address _____

Understanding Roles

1. Tell me a little about your role and how long have you been doing this type of work?

2. Tell me about your background that led to an interest and work in healthcare?

Institutional Health care Sector (IH)

3. What kinds of things do you think are working well in healthcare? (1IH1)

4. Are there particular types of healthcare challenges that you have found difficult to solve? (2IH1)

5. What processes do you see people using to solve complex operational functions in healthcare? (2IH2)

Transformational Change (TC)

6. How would you describe some large changes that have occurred for some of your clients? (1TC1)

7. How do you see large change projects identified and started for your clients? (2TC1)

8. Are there specific metrics or reasons that must be met to initiate large changes? (2TC2)

9. How are projects facilitated? (2TC1)

10. Are there communications or tools you observe to be effective in supporting large change? (3TC1)

11. What kinds of barriers to sustaining change over time have you observed? (3TC2)

Design Management Methodologies (DM)

12. What types of process or management tools are used in your work? (1DM1)

13. Are there tools you think work better then others? (1DM2)

14. How would you describe the design process? (2DM1)

15. In what ways do you think your work follows that design process? (2DM2)

16. How are innovative or "out of the box" type projects started in healthcare and who leads them? (3DM1)

Figures 12–13. Interview questions field guide. Pages with questions used during subject interviews. Author's image.

Research Protocol: *Interview Card Sorting Exercise*

Card Sorting Unique Method

This unique method was adapted from a 2013 study by Miller and Moultrie. They called it a “card sorting” method and their study focused on understanding the skills of UK fashion industry leaders that had “design” in their job titles. This card sorting adaptation evaluated subjects’ understanding of design, management, and transformational change by providing a collection of words (Figure 14) identified from literature reviews related to these three areas. The intent was to capture subjects’ personal associations with activities in the contexts of their jobs and how they rated their strengths in each (Figure 15).

The card sorting structure is outlined in Table 15.

Table 15. Card sort steps.

Step	Time	Interviewer	Subject	Supplies
1	2 min	› Place materials in front of subject. › Place page in front of subject with words randomly arranged to the left. › Ask subject to arrange words next to the word “Me” based on how often they do that type of activity. › State that they have 5 minutes to complete this work. › Additional “blank” cards are provided in case there are other words they would like to add.	› Watch and listen	Envelope with 11x17 paper and words
2	5 min	› Watch and document any type of comment subjects have in the process	› Arrange words	NA
3	2 min	› Once done, tape all words in place. › Then ask subjects to rate on a scale of 0–10 how well they think they perform each one of the activities. › State that they have 5 minutes to complete this task.	› Watch and listen	Tape and pen
5	5 min	› Watch	› Label words on a scale of 0–10	

Figure 14. Card sort words. Ten words are identified in each category. Only ten minutes are alloted for this activity. Two blank cards are provided in the event a subject would like to add to the collection. Author’s image.

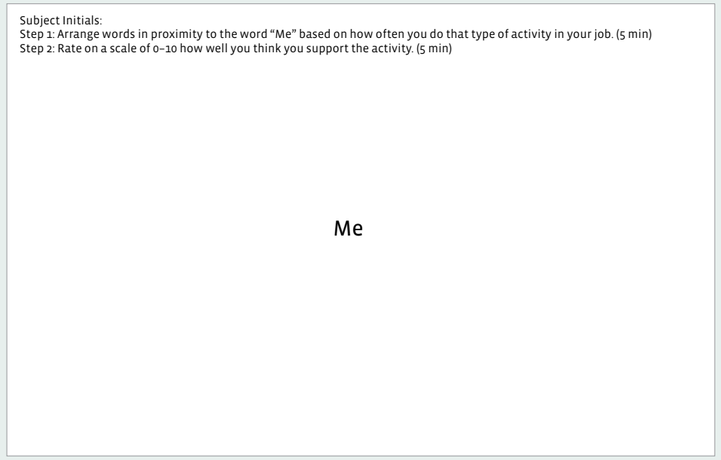


Figure 15. Page for card placement. 11 x 17-inch sheet of paper with the word “Me” printed in the middle for subjects to place cards. Author’s image.

Research Activity

Overview

The research was conducted over a two-week period from January 19 to 30, 2015. A total of 6 designers and 6 managers were interviewed at two St. Louis health care companies. The designers and managers ranged in role type and level, but all had either a creative or managerial role supporting transformational change, innovation and large scale projects. All subjects were responsible for supporting change initiatives in their organizations at various levels. The interviews were conducted within a one-hour time frame. All interviews were recorded and transcribed upon completion. Photographs were taken of the subjects during the signing of the consent forms and during the card sorting activity.

Data: *Card Sort by Subject Type*

Overview

Table 16 represents all data from the “health care designer” subjects. Data is sorted according to design process (DP), management process (MP), or transformational change (TC). Table 17 represents data from the “health care manager” subjects and all data was sorted in the same way as Table 16.

Insights

Sorting the data revealed that health care designers and managers had the concept of *synthesize* in common when looking at the top 2 words. This word was associated with the “design process.” For the “management process,” the common words between the two subject types were *communicate* and *clarify*. For “transformational change,” the common word was *translate*.

The words that scored highest were *synthesize*, *communicate*, *clarify*, and *translate*. The words that scored the lowest were the same within each group: *play*, *draw*, *balance*, *structure*, *determine*, and *foster*.

Table 16. Card sorting research data for health care designers.

	Subject Type	**HD**	**HD**	**HD**	**HD**	**HD**	**HD**		
	Subject #	**3**	**4**	**6**	**9**	**11**	**12**		
Code	**Word**							**Total**	**Average**
DP	Play	4	5	4	2	8	6	29	4.83
DP	Draw	4	1	8	10	6	6	35	5.83
DP	Discover	2	5	3	9	8	8	35	5.83
DP	Define	2	5	10	8	6	6	37	6.17
DP	Iterate	2	8	7	8	7	8	40	6.67
DP	Explore	9	5	3	6	9	10	42	7.00
DP	Develop	9	10	6	9	4	6	44	7.33
DP	Implement	7	10	6	9	5	8	45	7.50
DP	Visualize	7	8	7	7	9	8	46	7.67
DP	Synthesize	9	5	8	9	10	8	49	8.17
	Sub-Total	**55**	**62**	**62**	**77**	**72**	**74**	**402**	
MP	Structure	2	5	2	6	4	8	27	4.50
MP	Balance	9	1	2	8	4	4	28	4.67
MP	Budget	4	10	1	5	4	4	28	4.67
MP	Ensure	7	5	6	8	3	4	33	5.50
MP	Monitor	7	5	5	9	4	6	36	6.00
MP	Negotiate	4	10	5	5	6	8	38	6.33
MP	Plan	4	10	2	9	7	6	38	6.33
MP	Understand	2	8	9	9	8	6	42	7.00
MP	Communicate	7	10	9	10	10	6	52	8.67
MP	Clarify	9	10	9	8	10	8	54	9.00
	Sub-Total	**55**	**74**	**50**	**77**	**60**	**60**	**376**	
TC	Determine	2	5	8	5	1	2	23	3.83
TC	Foster	2	5	1	7	3	8	26	4.33
TC	Mobilize	4	10	2	9	3	6	34	5.67
TC	Build	4	10	6	4	7	6	37	6.17
TC	Encourage	2	8	2	7	8	10	37	6.17
TC	Weave	7	8	7	7	4	6	39	6.50
TC	Connect	2	5	8	9	10	6	40	6.67
TC	Recognize	9	5	8	7	8	6	43	7.17
TC	Evaluate	9	8	4	8	7	8	44	7.33
TC	Translate	9	5	9	8	6	8	45	7.50
	Sub-Total	**50**	**69**	**55**	**71**	**57**	**66**	**368**	

Table 17. Card sorting research data for health care managers.

	Subject Type	**HM**	**HM**	**HM**	**HM**	**HM**	**HM**		
	Subject #	**1**	**2**	**5**	**7**	**8**	**10**		
Code	**Word**							**Total**	**Average**
DP	Play	1	8	6	8	4	2	29	4.83
DP	Draw	2	4	9	2	8	2	27	4.50
DP	Define	5	5	7	2	7	2	28	4.67
DP	Discover	4	8	8	9	5	8	42	7.00
DP	Develop	6	9	0	9	5	5	34	5.67
DP	Explore	3	8	9	7	8	7	42	7.00
DP	Visualize	3	8	10	8	5	4	38	6.33
DP	Iterate	7	9	10	10	5	10	51	8.50
DP	Synthesize	5	8	7	9	7	10	46	7.67
DP	Implement	9	7	10	10	10	10	56	9.33
	Sub-Total	**45**	**74**	**76**	**74**	**64**	**60**	**393**	
MP	Balance	5	2	6	2	8	2	25	4.17
MP	Structure	6	2	0	5	8	5	26	4.33
MP	Budget	6	2	3	5	5	5	26	4.33
MP	Ensure	7	1	9	7	5	5	34	5.67
MP	Monitor	4	3	7	9	6	3	32	5.33
MP	Negotiate	7	2	8	10	10	5	42	7.00
MP	Understand	5	6	7	7	8	8	41	6.83
MP	Plan	7	7	10	8	9	7	48	8.00
MP	Clarify	2	5	10	10	9	6	42	7.00
MP	Communicate	5	6	10	10	10	6	47	7.83
	Sub-Total	**54**	**36**	**70**	**73**	**78**	**52**	**363**	
TC	Determine	3	3	10	9	7	6	38	6.33
TC	Foster	7	5	8	7	5	7	39	6.50
TC	Build	8	7	8	4	6	6	39	6.50
TC	Weave	6	8	8	3	5	8	38	6.33
TC	Mobilize	8	5	9	8	8	7	45	7.50
TC	Recognize	4	8	5	7	6	7	37	6.17
TC	Evaluate	5	6	8	8	8	3	38	6.33
TC	Encourage	6	8	10	10	6	10	50	8.33
TC	Translate	3	7	7	8	10	7	42	7.00
TC	Connect	8	9	10	10	8	9	54	9.00
	Sub-Total	**58**	**66**	**83**	**74**	**69**	**70**	**420**	

Analysis: *Synthesis by Subject Type*

Overview

Figure 16 visualized 6 words in common between health care designers and managers that ranked low on how well the subjects believed they do these things in support of transformational change. Four words representing what subjects believed they do well in support of change rose to the top of the scale. However, 2 unique words ranked high for designers compared to managers.

Insights

Figure 16 clarifies common challenges for both health care designers and managers. It was revealing that the same words existed for both subject types. This insight may inform strategies to help designers and managers achieve these activities when leading change type activities.

The visualization also helped identify the top common strengths for designers and managers when supporting change. In addition, there were unique words for each subject type – *visualize* and *evaluate* for designers and *implement* and *connect* for managers.

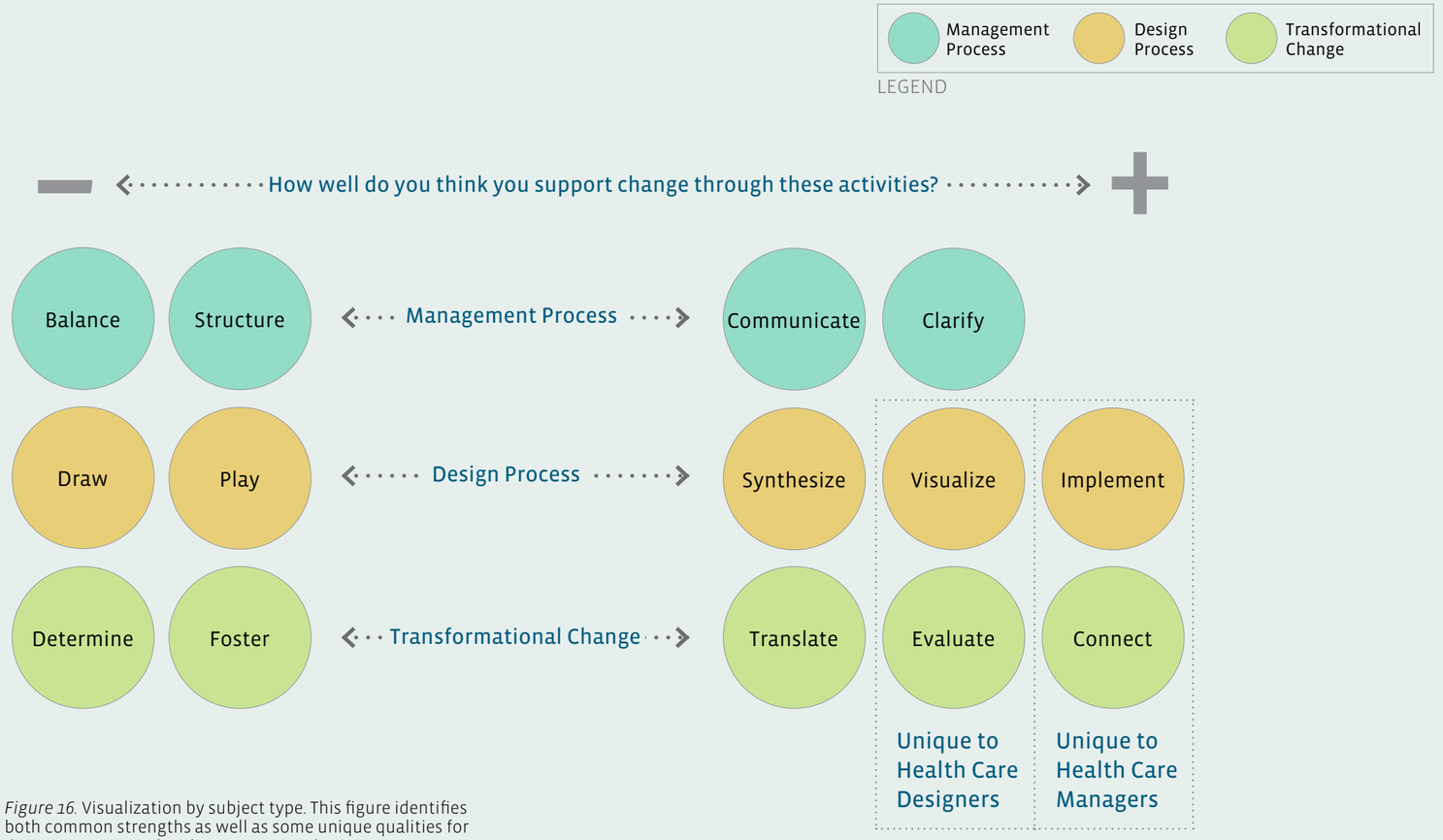


Figure 16. Visualization by subject type. This figure identifies both common strengths as well as some unique qualities for designers compared with managers. Author's image.

Data: *Card Sort all Data*

Overview

Table 18 shows all data entered, based on how the subjects numbered each word during interviews. Subjects were first asked to place the words in proximity to the word “Me” based on how often they did that work in their jobs. Subjects were then asked to rate on a scale of 0–10 how they thought they supported change through the words listed on each circle. The data is sorted based on the average totals from low to high.

“HM” indicates health care managers and “HD” notes health care designers, all working within two large health care systems in St. Louis, Missouri. A total of 6 designers and 6 managers were interviewed. The codes were “MP” for management process, “DP” for design process, and “TC” for transformational change.

Insights

A review of the data revealed that the most common activities for all subjects were *visualize*, *plan*, *encourage*, *translate*, *iterate*, *connect*, *synthesize*, *clarify*, *communicate*, and *implement*. This suggests that, on average, these words support change in the subjects’ activities.

Health care professionals scored a total of 30 points higher overall than designers. This suggests that health care managers were more engaged in change within their jobs than designers.

Table 18. Card sorting research data.

	Subject Type	**HM**	**HM**	**HD**	**HD**	**HM**	**HD**	**HM**	**HM**	**HD**	**HM**	**HD**	**HD**		
	Subject #	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**		
Code	**Word**													**Total**	**Average**
MP	Balance	5	2	9	1	6	2	2	8	8	2	4	4	53	4.42
MP	Structure	6	2	2	5	0	2	5	8	6	5	4	8	53	4.42
MP	Budget	6	2	4	10	3	1	5	5	5	5	4	4	54	4.50
DP	Play	1	8	4	5	6	4	8	4	2	2	8	6	58	4.83
TC	Determine	3	3	2	5	10	8	9	7	5	6	1	2	61	5.08
DP	Draw	2	4	4	1	9	8	2	8	10	2	6	6	62	5.17
DP	Define	5	5	2	5	7	10	2	7	8	2	6	6	65	5.42
TC	Foster	7	5	2	5	8	1	7	5	7	7	3	8	65	5.42
MP	Ensure	7	1	7	5	9	6	7	5	8	5	3	4	67	5.58
MP	Monitor	4	3	7	5	7	5	9	6	9	3	4	6	68	5.67
TC	Build	8	7	4	10	8	6	4	6	4	6	7	6	76	6.33
DP	Discover	4	8	2	5	8	3	9	5	9	8	8	8	77	6.42
TC	Weave	6	8	7	8	8	7	3	5	7	8	4	6	77	6.42
DP	Develop	6	9	9	10	0	6	9	5	9	5	4	6	78	6.50
TC	Mobilize	8	5	4	10	9	2	8	8	9	7	3	6	79	6.58
MP	Negotiate	7	2	4	10	8	5	10	10	5	5	6	8	80	6.67
TC	Recognize	4	8	9	5	5	8	7	6	7	7	8	6	80	6.67
TC	Evaluate	5	6	9	8	8	4	8	8	8	3	7	8	82	6.83
MP	Understand	5	6	2	8	7	9	7	8	9	8	8	6	83	6.92
DP	Explore	3	8	9	5	9	3	7	8	6	7	9	10	84	7.00
DP	Visualize	3	8	7	8	10	7	8	5	7	4	9	8	84	7.00
MP	Plan	7	7	4	10	10	2	8	9	9	7	7	6	86	7.17
TC	Encourage	6	8	2	8	10	2	10	6	7	10	8	10	87	7.25
TC	Translate	3	7	9	5	7	9	8	10	8	7	6	8	87	7.25
DP	Iterate	7	9	2	8	10	7	10	5	8	10	7	8	91	7.58
TC	Connect	8	9	2	5	10	8	10	8	9	9	10	6	94	7.83
DP	Synthesize	5	8	9	5	7	8	9	7	9	10	10	8	95	7.92
MP	Clarify	2	5	9	10	10	9	10	9	8	6	10	8	96	8.00
MP	Communicate	5	6	7	10	10	9	10	10	10	6	10	6	99	8.25
DP	Implement	9	7	7	10	10	6	10	10	9	10	5	8	101	8.42
	HD Totals			**160**	**205**		**167**			**225**		**189**	**200**	**1146**	
	HM Totals	**157**	**176**			**229**		**221**	**211**		**182**			**1176**	

Figure 17. Size relationships. Words illustrated in relation to the averages on Table 18. Author’s image.

Analysis: *All Data Synthesis*

Overview

Figure 18 represents the top 15 words chosen by health care managers and designers and an average of the two. All data can be seen in Table 18. Lines linking the main words explore patterns between the two subject types. In addition, words without any common connections were circled in red.

Insights

The visualization strategy corroborates data in Table 18 that health care managers generally believe they support change well in their jobs as compared to the average. A couple of words in each group emerged as unique to each subject type that were not revealed in the averaged data (Figure 19): *negotiate* and *encourage* for managers compared to *recognize* and *evaluate* for designers.

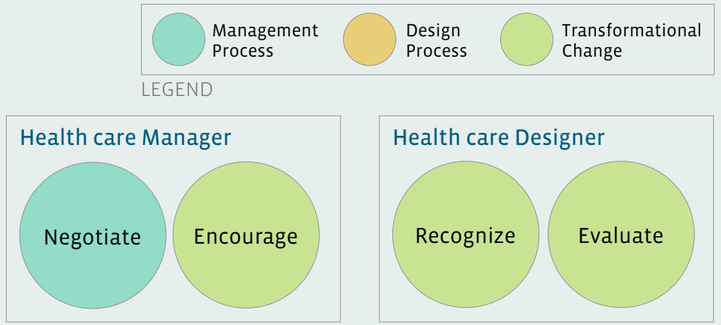


Figure 19. Unique words from Figure 17. Words that emerged as unique for each of the subject types in relationship to the average in Figure 17. Author's image.

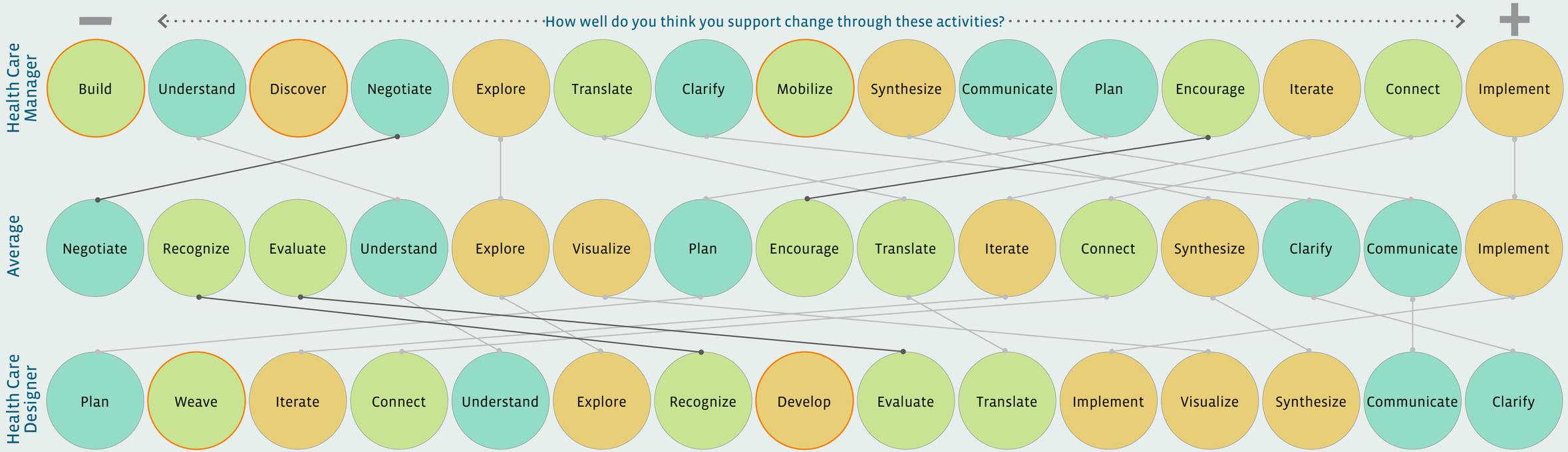


Figure 18. Top 15 words for all data. This represents the top 15 words chosen by designers and health care professionals during the card sorting exercise. Author's image.

Card Sort Data: *Designers*

Overview

Figure 20 layers all 6 subjects' card sort exercises on top of each other. A filter was applied to each in order to see as many of the words as possible, as well as to identify density and proximity to "Me." In addition, the top 3 words identified in Figure 16 were layered in to help explore any related trends. To build this map, subjects were asked to place each word in proximity to "Me" based on how often they did that type of work in their jobs. In doing so, a baseline of common job activities were identified for each of the subject types.

Instructions provided to subjects:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0–10 how well do you think you support change through these activities. (5 min) There are two blank cards if there are additional things you do that you feel are important to include.

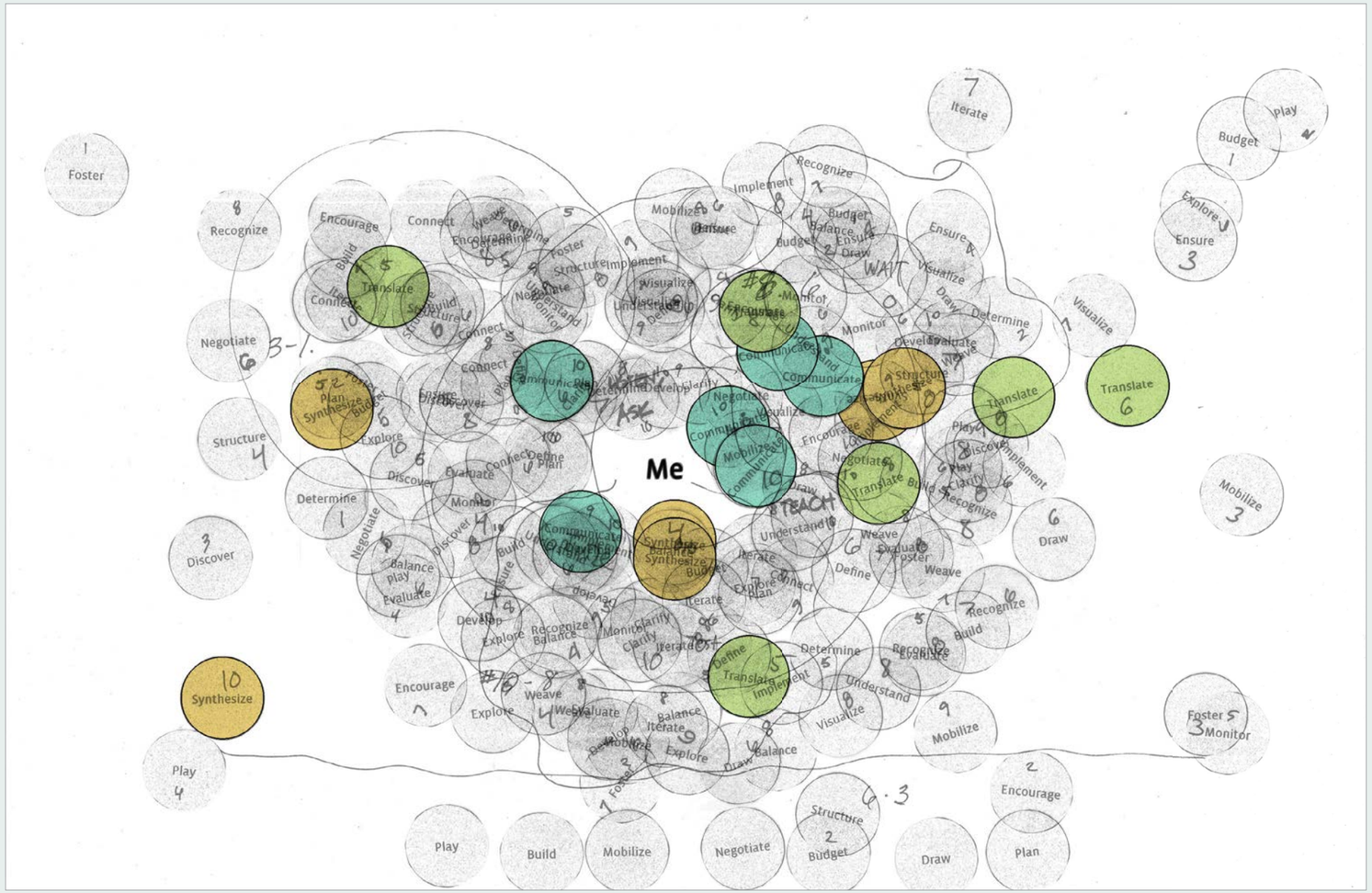


Figure 20. Composite of 6 designers' card sort results. The visualization layered 6 health care designers' card sort exercises onto one image and identified the top words from Figure 16 with the corresponding color. Author's image.

Card Sort Data: *Managers*

Overview

Figure 21 layers the 6 manager subjects' card sort exercises onto each other. A filter was applied to each in order to see as many of the words as possible, as well as to identify density and proximity to "Me." In addition, the top 3 words identified in Figure 16 were layered in to help explore any related trends. To build this map, subjects were asked to place each word in proximity to "Me" based on how often they did that type of work in their jobs. In doing so, a baseline of common job activities were identified for each of the subject types.

Instructions provided to subjects:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0–10 how well do you think you support change through these activities. (5 min) There are two blank cards if there are additional things you do that you feel are important to include.

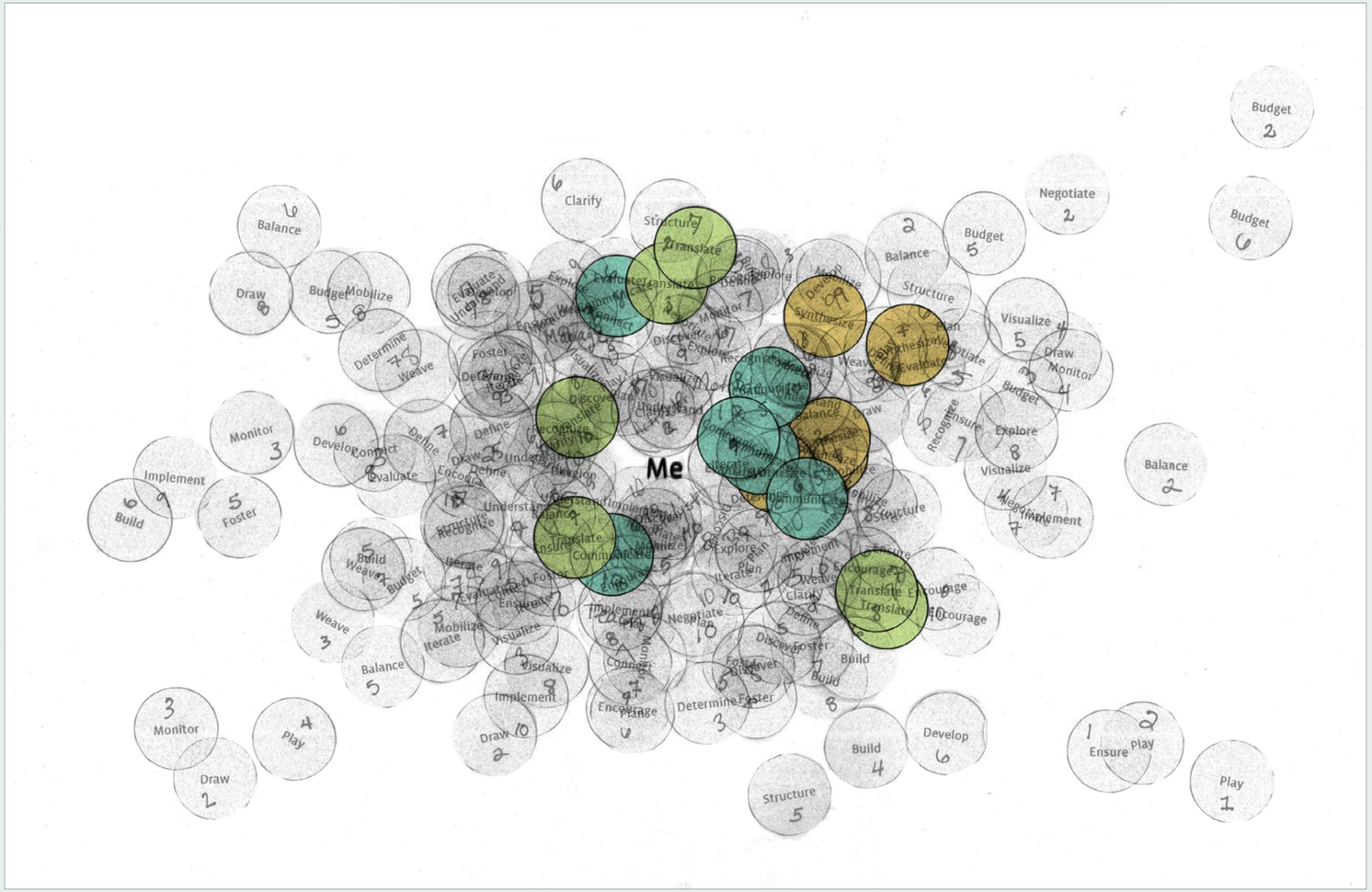


Figure 21. Composite of 6 managers' card sort results. The visualization layers 6 health care managers' card sort exercises onto one image and identified the top words from Figure 16 with the corresponding color. Author's image.

Card Sort Data: *Designers & Managers*

Insights

Figure 22 is a composite of all subjects' card sorting activities. Looking at the placement of the words in Figure 20 and Figure 21 revealed some differences between health care designers and managers in institutional health care environments.

Designers appear to do less activity in their jobs compared to what they believe contributes to change in their work. This reflects a disconnect between their ability to support change and the amount of time they spend doing that activity in their jobs.

Managers appear to do more activity in their jobs that is equally reflective of supporting change. The similarity in amount of time and ability suggests they may be more invested in change activities for their company.

Instructions provided to subjects:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0–10 how well do you think you support change through these activities. (5 min) There are two blank cards if there are additional things you do that you feel are important to include.

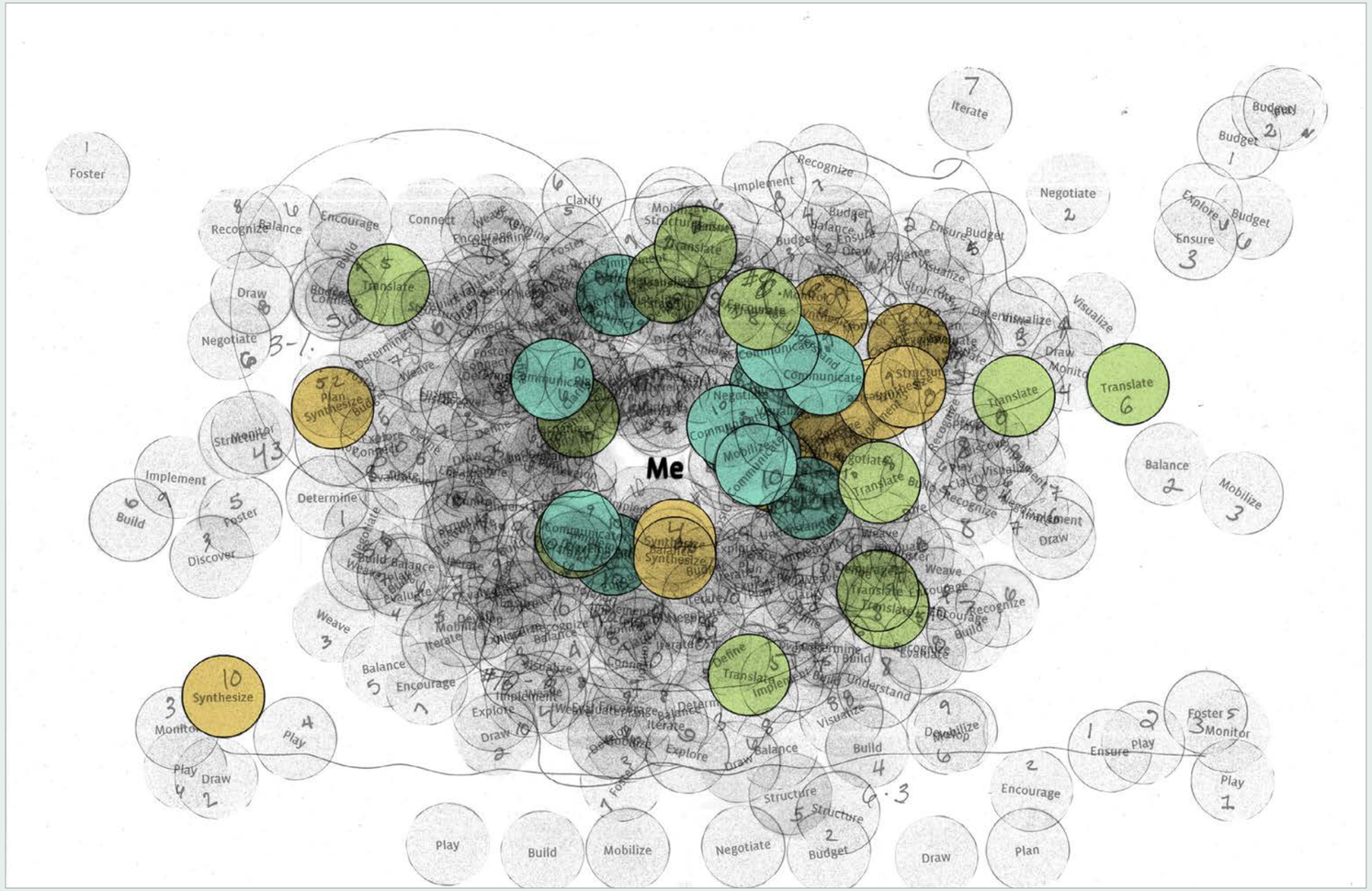


Figure 22. Composite of all subjects' card sort results. The visualization layers all 12 subjects' card sort exercises onto one image and identified the top words from Figure 16 with the corresponding color. Author's image.

Card Sort Data: *Synthesis*

Insights

Figure 23 illustrates subjects' average placement of words in the card sorting exercise. The placement represented how often subjects did an activity in their jobs. Words placed closer to "Me" reflected that subjects did that activity more; conversely, words placed farther away represented less.

More subjects placed the words *communicate*, *understand*, and *plan* closer to the center. These 3 words were in the top 15 words that represented subjects' ability to support change. It suggests a strong connection between ability and amount of time spent doing that activity, potentially identifying a good set of attributes to support. When looking at the second set of top 3 closest words, we see 2 unique words, *translate* and *iterate*, which are associated with design and transformation. All other words are associated with management.

More subjects placed the words *budget*, *draw*, and *play* farther from the center. These were also in the bottom 15 words, thus suggesting a correlation between lower ability and less amount of time spent doing these activities. However, it does present an opportunity to evaluate if these represent activities that might support change in other ways.

Instructions provided to subjects:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0–10 how well do you think you support change through these activities. (5 min) There are two blank cards if there are additional things you do that you feel are important to include.

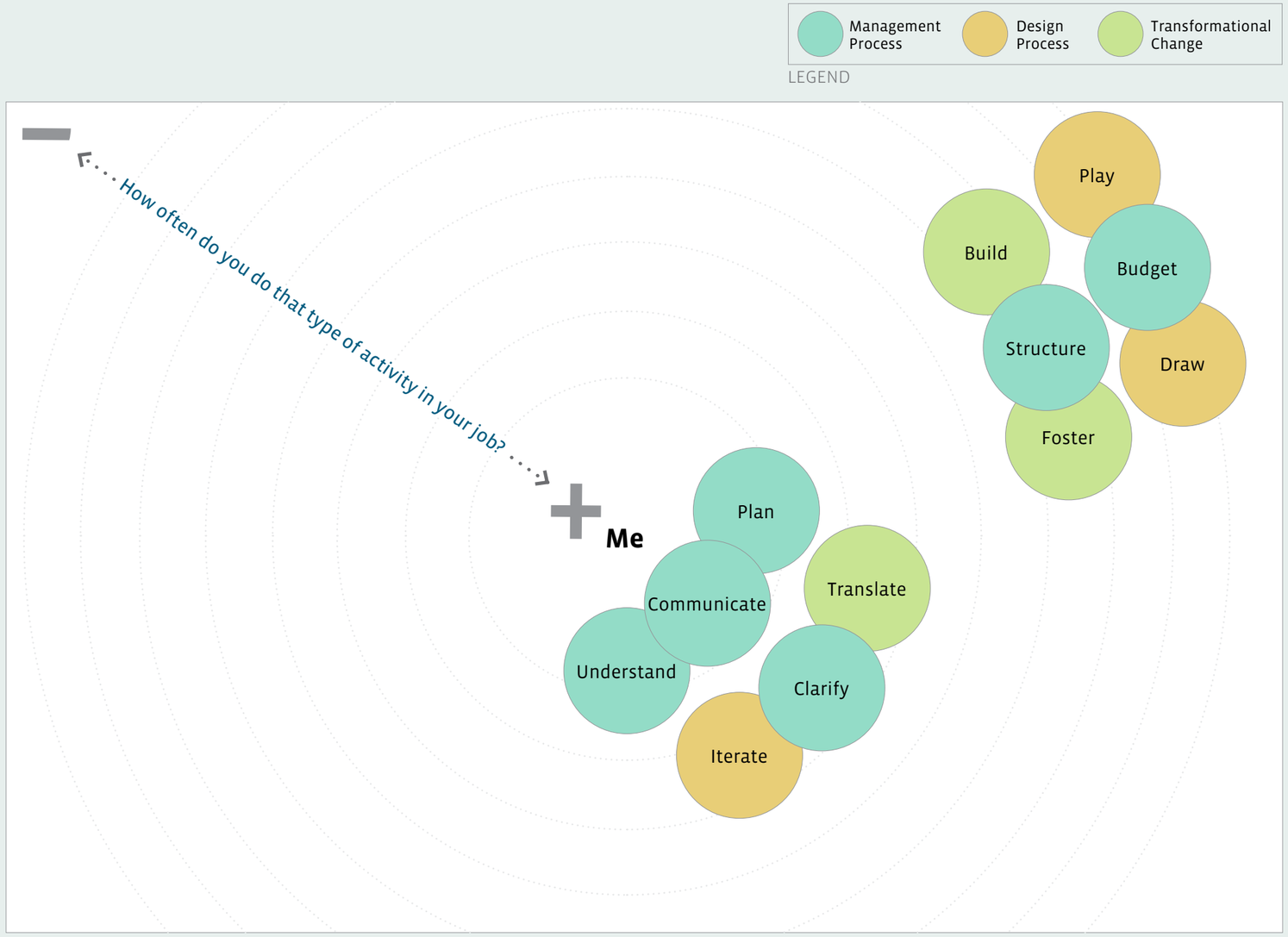
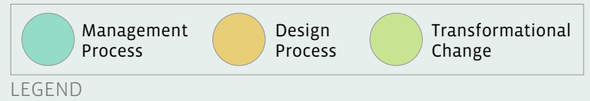


Figure 23. Synthesis of card sort map. Displays the 6 words most frequently placed close to "Me" and the 6 words most frequently placed farther from "Me" by subjects. Author's image.

Card Sort Synthesis: *Amount vs. Ability*



Insights

Figure 24 illustrates a couple of interesting relationships between amount of activity and ability. *Communicate* and *translate* are activities that both designers and managers do more often in their jobs. These words also get high marks for supporting change.

At the opposite end, *play* and *draw* are done the least and do not support change well. *Iterate* was the only word designers and managers both do more often; however, it was not an activity they believed supported change.

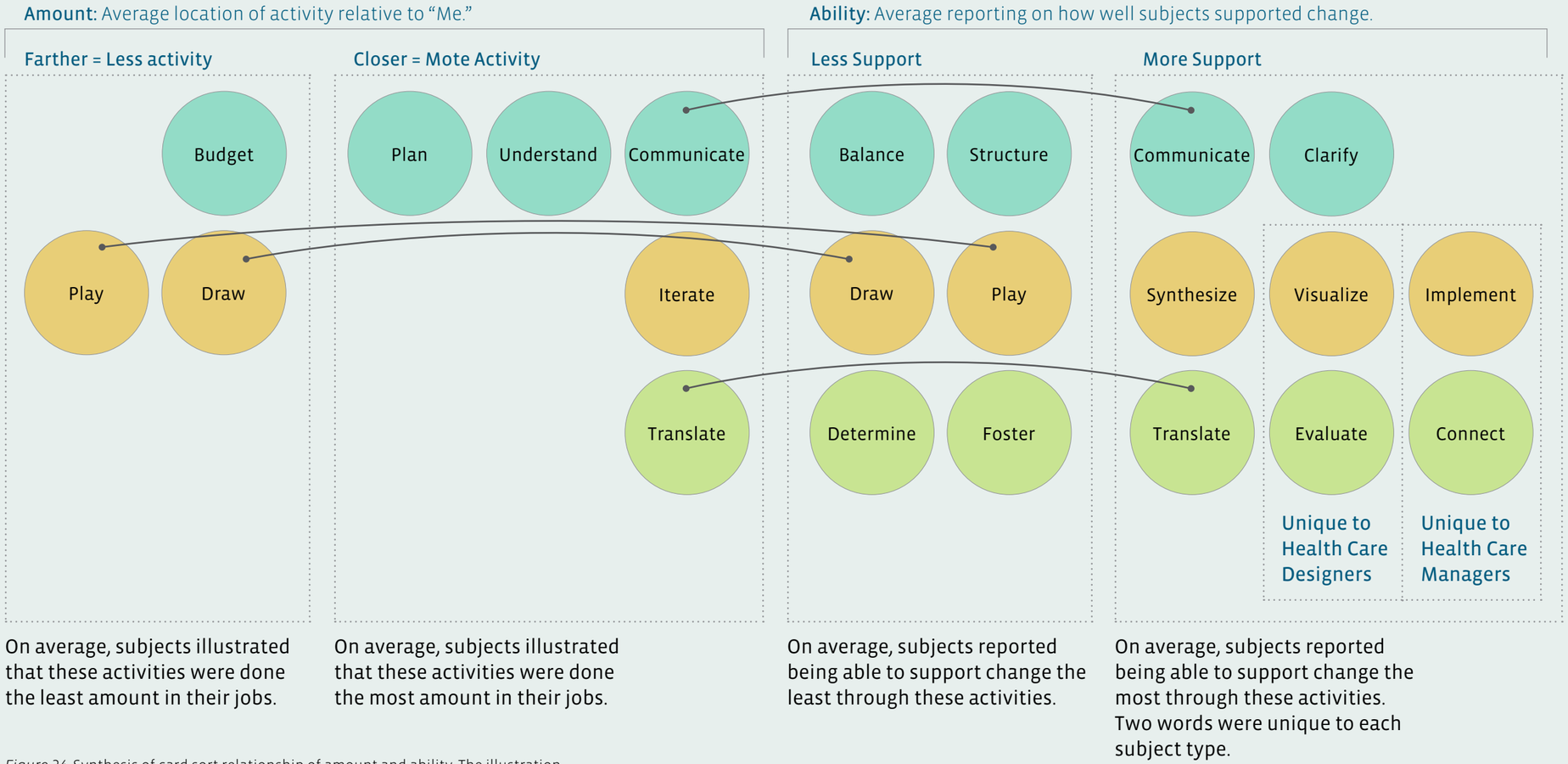


Figure 24. Synthesis of card sort relationship of amount and ability. The illustration represents the amount of time subjects spend on an activity in their jobs and their ability to make a connection between activities. Author's image.

Interview Synthesis: *Working*

Insights

Insights from interviews reflected that subjects believed the people who are in health care are committed to their jobs and want to do well. Patient-centered outcomes topped the minds for many in part because of federal regulations. In addition, there was a focus on preventive care as opposed to reactive medicine. The scrutiny has also led to more transparency in many of the organizations' operations.

Subjects also expressed a greater willingness on the part of their organization to adopt new ideas in order to solve some of the challenging issues facing institutional health care systems. There was a culture of constant process improvement.

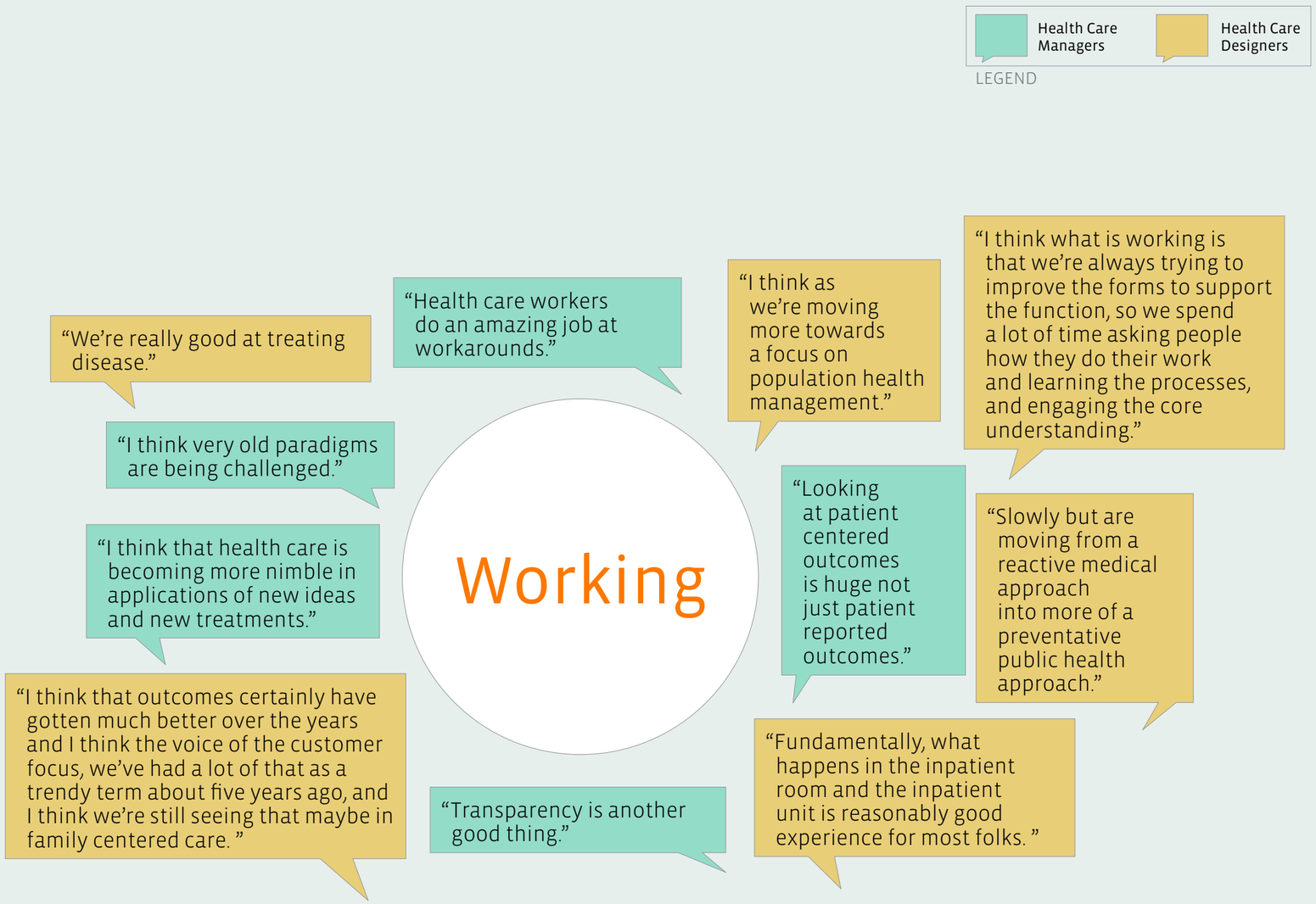


Figure 25. Quotations from subject interviews. A selection of quotes about working activity in institutional health care. Author's image.

Interview Synthesis: *Challenges*

Insights

Insights about challenges reflected a very large spread in the issues. Comparing comments to the card sorting exercise showed that communication is an underlying challenge across all areas. There seemed to be a constant need to better understand what all the different areas are doing and how to better coordinate their activities. The complexity of problems being solved seemed to constantly point to the need for better communication and coordination. Examples of this included electronic medical record systems and simply making decisions about patients. There was a sense that much of the knowledge is there, but getting it all in one place is a challenge.

In addition, the health care sector seemed to be looking outward for solutions. Subjects are not only willing to use new ideas, but they are actively going out and looking at other disciplines for knowledge. This insight was also reflected in the earlier market analysis and the breadth of organizations in health care that are using innovation tools to re-engineer how they are operating.

Figure 26. Quotations from subject interviews. A selection of quotes about challenges that are difficult to solve in institutional health care. Author's image.

Interview Synthesis: *Barriers*

Insights

Barriers to change for the organization were many. Turnover was a constant challenge and was a significant disruptor. In one case, a subject noted that over 40% of the participant that initiated a project would no longer be there when the project was implemented. Many times for multi-year projects the same people that designed a space would no longer be there to move in.

A second large barrier to change was adopting the idea. While many identified team meetings as a good process to gain alignment, there was still an acknowledgment that adoption was difficult. Other challenges included available time to do work or people being set in their ways of doing things.

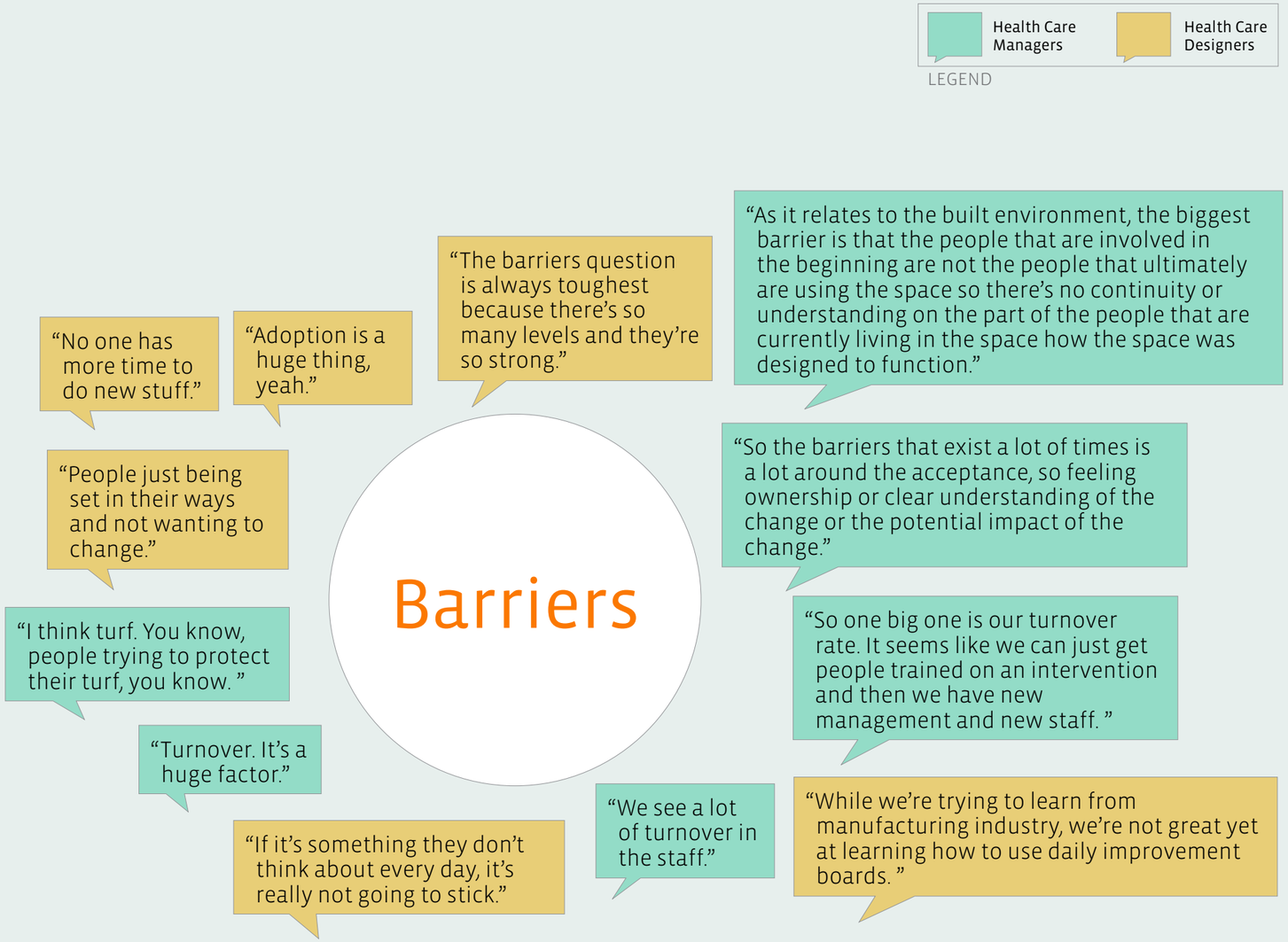


Figure 27. Quotations from subject interviews. A selection of quotes about barrier to sustaining change in institutional health care. Author's image.

Interview Synthesis: *Design Process*

Insights

Most subjects identified the design process as a problem-solving process. Each had a unique way of describing it or a different application to it, but overall, they all defined it as a problem-solving tool. Some equated it with a process improvement tool and some used it for more open-ended exploration of possibilities.

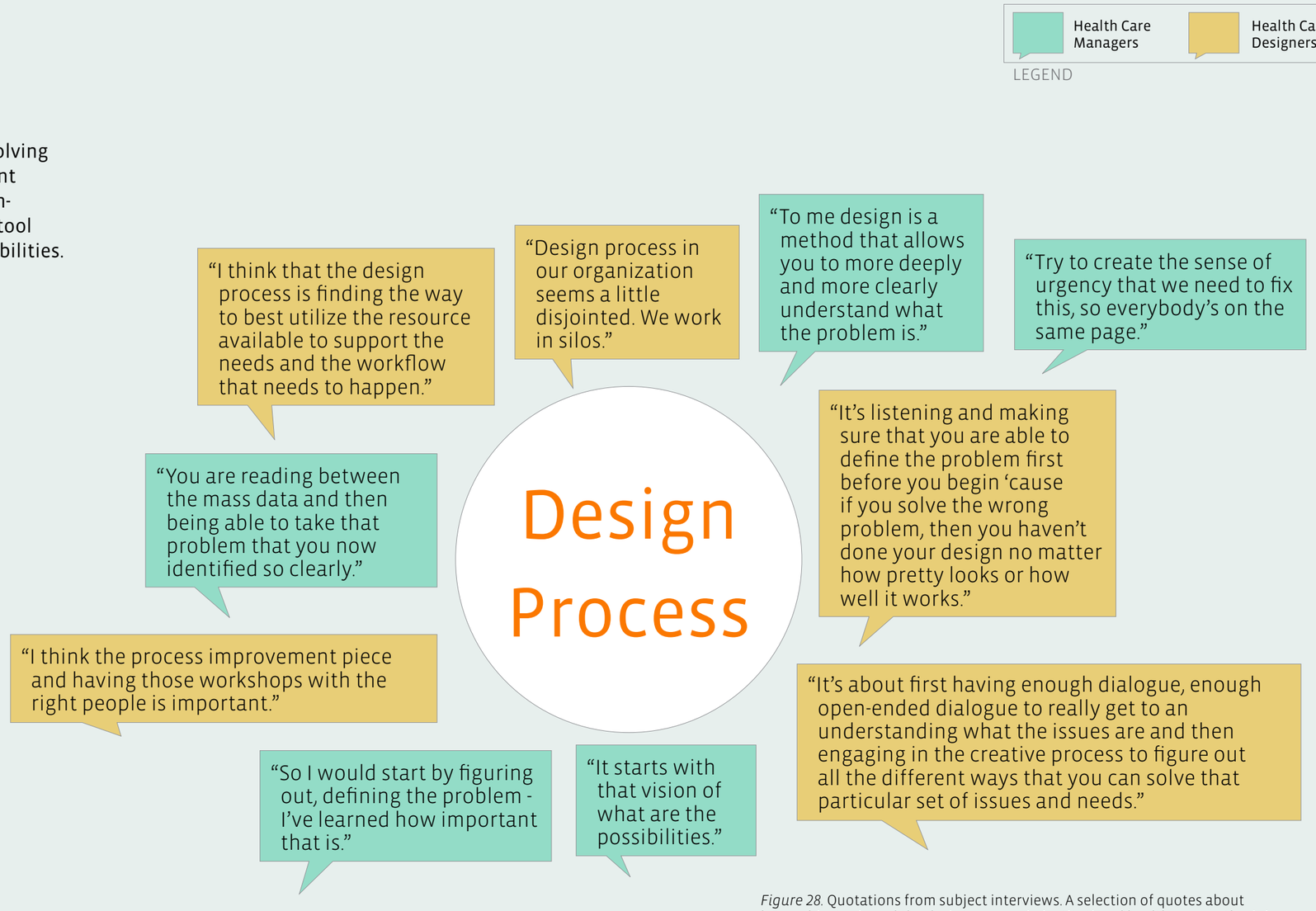


Figure 28. Quotations from subject interviews. A selection of quotes about how subjects viewed the design process in institutional health care. Author's image.

Interview Synthesis: *Management Process*

Insights

Process improvement methods were discussed frequently. These included Lean Six Sigma, Plan-Do-Study-Act, and Define Measure Analyze Improve Control (DMAIC). Various project management tools were used, but none stood out as overarching best options. A few noted Human-Centered Design as an emerging tool to solve some of their complex challenges. Overall, many procedures are rigid with set protocols; thus, there is little room for deviation or innovation around process or large changes.

One overarching theme was the need for team meetings – repeatedly, often weekly – in order to have continuous buy-in for process improvement or for new initiatives.

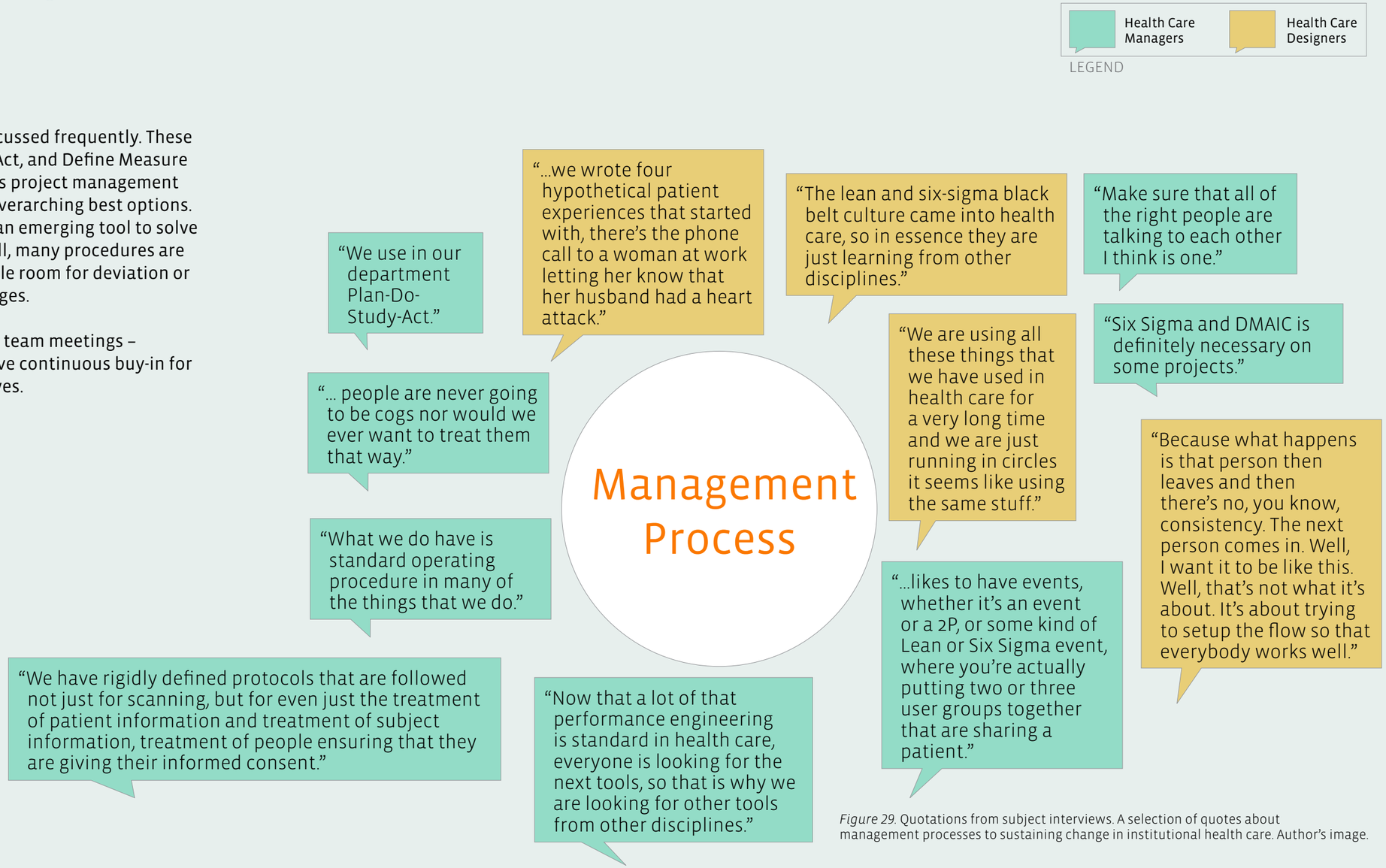


Figure 29. Quotations from subject interviews. A selection of quotes about management processes to sustaining change in institutional health care. Author's image.

Persona: *Sally*

Figure 30. Sally persona. "Young nurse or female doctor" [Photograph], by P. Marcinski, n.d., Fotolia. Retrieved July 7, 2014, from: http://us.fotolia.com/id/21540802

Sally F.

Director of Activation Management

Age: 31
Hight: 5' – 6"
Race: Caucasian
Education: MBA, MPH

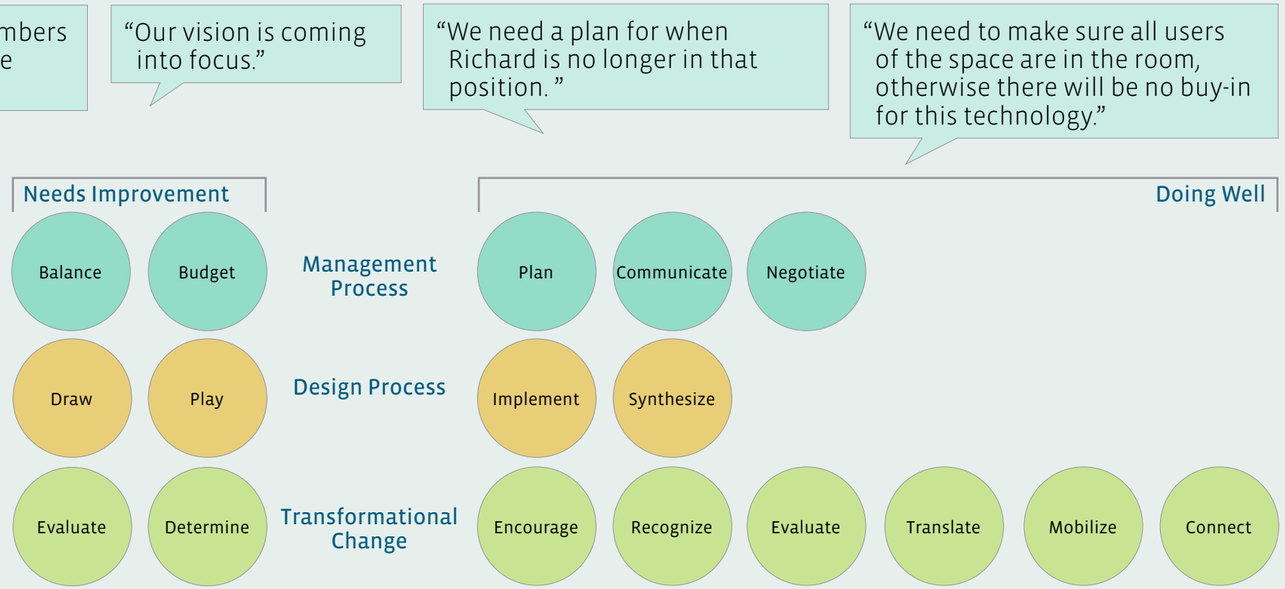


Figure 31. Sally persona activities. An overview of the kinds of activities Sally has to do in her day-to-day job as part of her large-scale change support functions. Author's image.

Overview

Sally is a recent addition to a large health care system in the St. Louis region. She has just arrived from California where she was in the health care business managing operations for a three-hospital system. With an MBA and MPH and five years at her prior job, where she managed a team of five people, she will now manage a twenty-person team facilitating the opening of a 200-million dollar facility for pediatrics. This will require all her acumen in understanding how hospitals of the future will need to run and manage a team charged with documenting the process and ensuring all move into the new spaces.

Environment

Sally is working out of a temporary facility that is outfitted to change once the project is complete, so it has a large loft-like quality to it. While she oversees a team of twenty, there are over one hundred people in this space, all very busy on various parts of the project, so it is hard to focus at times.

Skills

Sally is a go-getter. She is direct and professional in her interactions. She always has to translate information from leadership meetings to her team members. She connects the dots and is able to implement a road map addressing a particular need. Her team appreciates her encouragement and ability to help them iterate at each step of the way.

Frustrations

Given the large scale of the new organization, it has been difficult for Sally to know how to prioritize. Her ability to balance competing opinions of the various stakeholders is hard, especially when there are strong-willed doctors that do not want to take no for an answer and are stuck in their ways. She feels she could really use some help with structuring how best to convince people her ideas will work. If she could only draw the ideas!

Attitude

Sally has a positive attitude. She believes this is a necessity in the business of caring for people. When people leave that she has invested in, she knows she just has to keep moving forward.

Typical Tasks

Sally is an implementer at heart. She has to negotiate with top leadership, encourage her team, recognize industry trends, and evaluate options. All this revolves around transforming how they will operate in a new building that is yet to be built. With the volume of paperwork on her desk after only six months on the job, she wonders how they will keep track of all the stuff once they move into the building.

Needs and Wants

Sally needs to make sure all is on track at all times. She wants to succeed in making sure transitions go well and all participants buy into the process and final solution.

Persona: *Tomas*

Figure 32. Tomas persona. "*Man on the wall*" [Photograph], by Y. Poirier, n.d., *Fotolia*. Retrieved July 7, 2014, from: http://us.fotolia.com/id/60940857

Tomas C.

Director of Design Management

Age: 45
Hight: 6' – 1"
Race: Latino
Education: BFA, MA

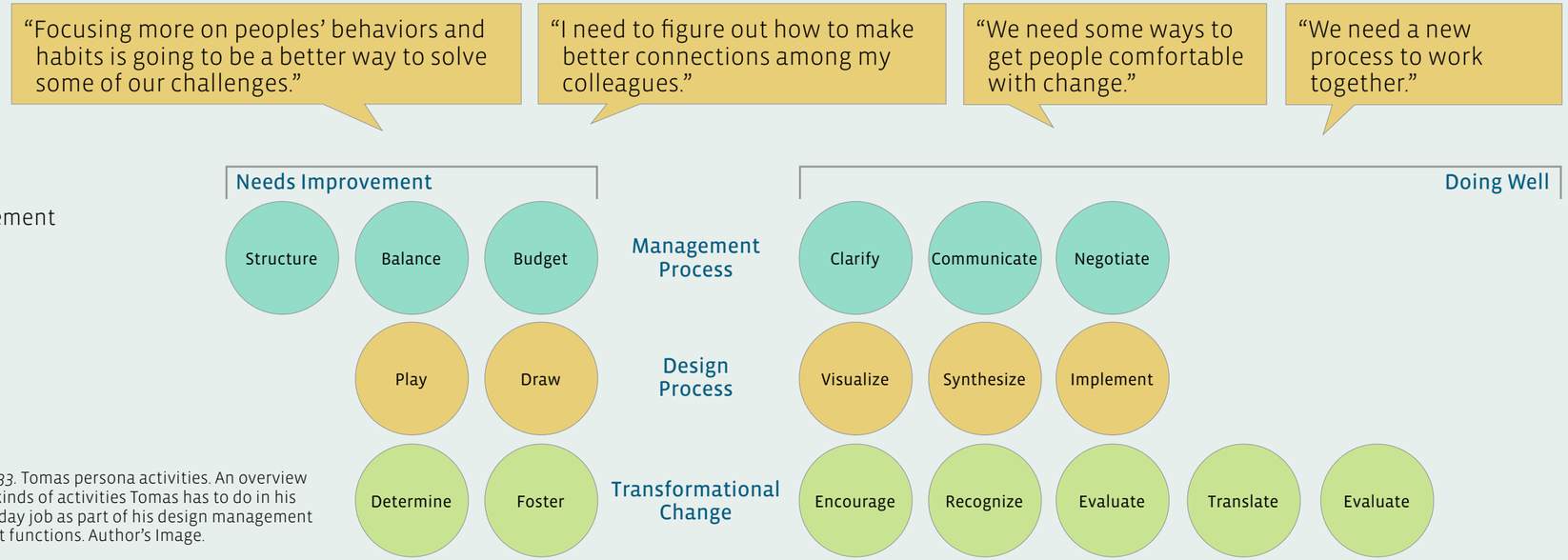


Figure 33. Tomas persona activities. An overview of the kinds of activities Tomas has to do in his day-to-day job as part of his design management support functions. Author's Image.

Overview

Tomas is a native of St. Louis, Missouri. He received his undergraduate education at Pratt Institute in New York City. Upon graduation, he worked for a small firm with large retail health care clients, mostly consumer products for Walgreens. After fifteen years at New York-area firms, he returned home to work for a local firm, continuing with a health care focus. He then moved to the client side, joining an innovation team at a mid-size local health care system. He was hired for his graphic design skills and because he is a good visualizer of information. Much of his work had been clarifying complex systems through information graphics.

Environment

Tomas works in a corporate environment characterized by typical rows of desks in a large open area. However, the company created a new space called the "Design Tank" to begin exploring new process improvement strategies for their operations.

Skills

Tomas is a great communicator and uses his design skills to visualize and clarify complex concepts or processes that are part of the firm's operations.

Frustrations

He is frustrated with his role – he does not get to draw or play as much as in prior roles. This is mostly due to the corporate environment, but he hopes innovation will be fostered by the senior leadership once they see his work. He is feeling a little stuck in a system with people that do not want to change or explore new ideas.

Attitude

Tomas has a casual, low-key attitude, and nothing seems to upset him. When people start getting emotional, he tells a joke to create some levity. He is good at recognizing details about people and then evaluating if it is best to drop a joke.

Typical Tasks

At the moment, Tomas is dealing with what most designers consider superficial activities, i.e. just the visuals. He was brought in to be part of larger team, meeting around strategy and improving communications and operations of the company, but it has been slow going. His boss is a champion of his work and skills, but adoption from others will be slow.

Need and Wants

Tomas feels he needs to weave his way into a more robust role within the company, to validate his skill for larger roles that lead to innovative ways of supporting patients. He wants to make a difference in the lives of the people that come to the hospital. He knows there are inefficiencies and people do not like being there, so he really wants to support change.

Research Insights

Insight 1

Health care turnover is a significant problem, often leading to stalling a project or shelving it altogether.

Insight 2

Adoption and buy-in is difficult to mitigate in health care because there are so many expert stakeholders involved in one clinical setting.

Insight 3

Communication is a core strength for both health care designers and managers; however, interview insights suggested the complexity of systems breaks down understanding.

Insight 4

Health care is open to adopting new human-centered design strategies in order understand and improve operations and patient outcomes.

Insight 5

Health care managers and designers have different skill sets and methods for solving problems, yet they are often tasked with implementing large projects in collaboration.

Insight 6

There is a culture of teaching and learning in the organization in support of continuous improvement.

Research Findings

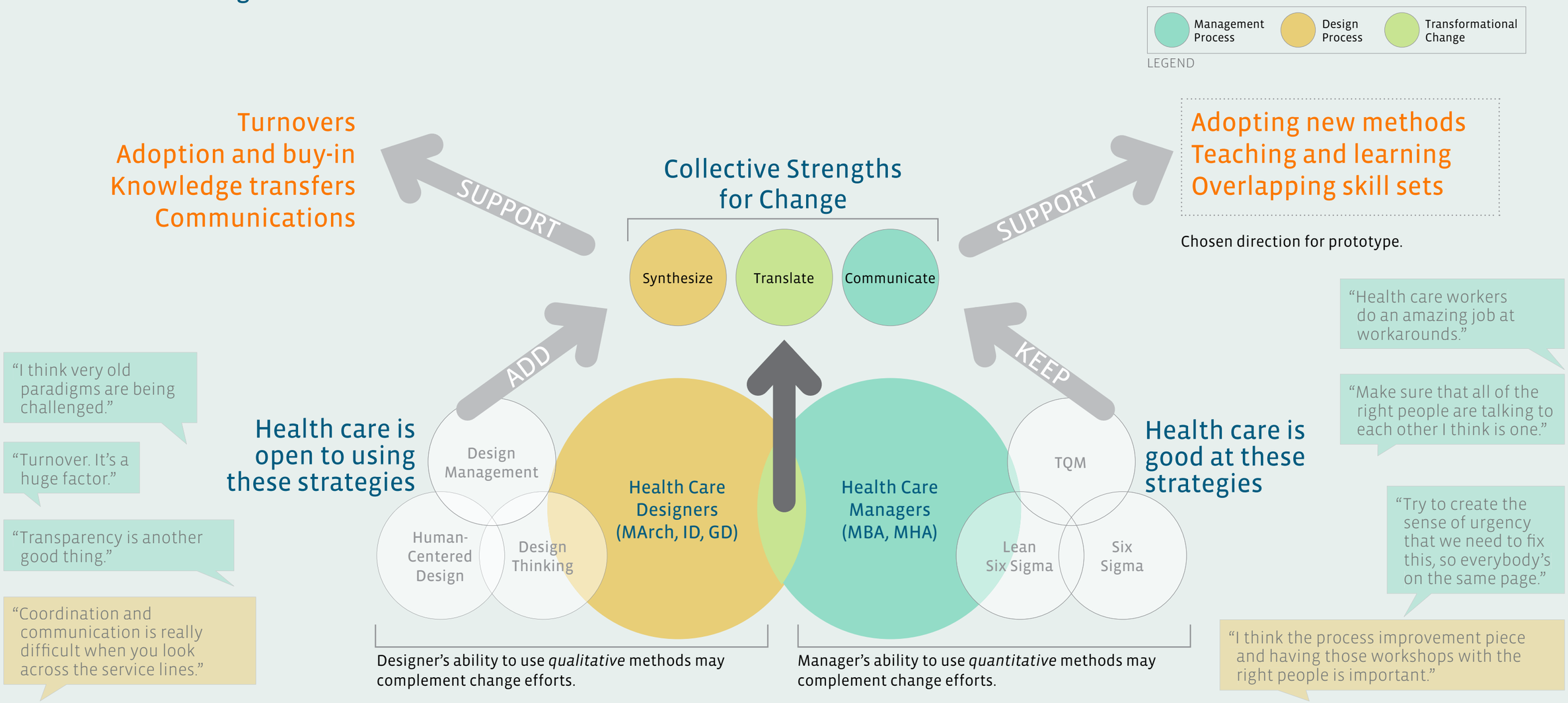


Figure 34. Research findings at a glance. An overview of the relationship between the abilities of subjects and how to support change. Author's Image.

Design Opportunities and Criteria, Reframing

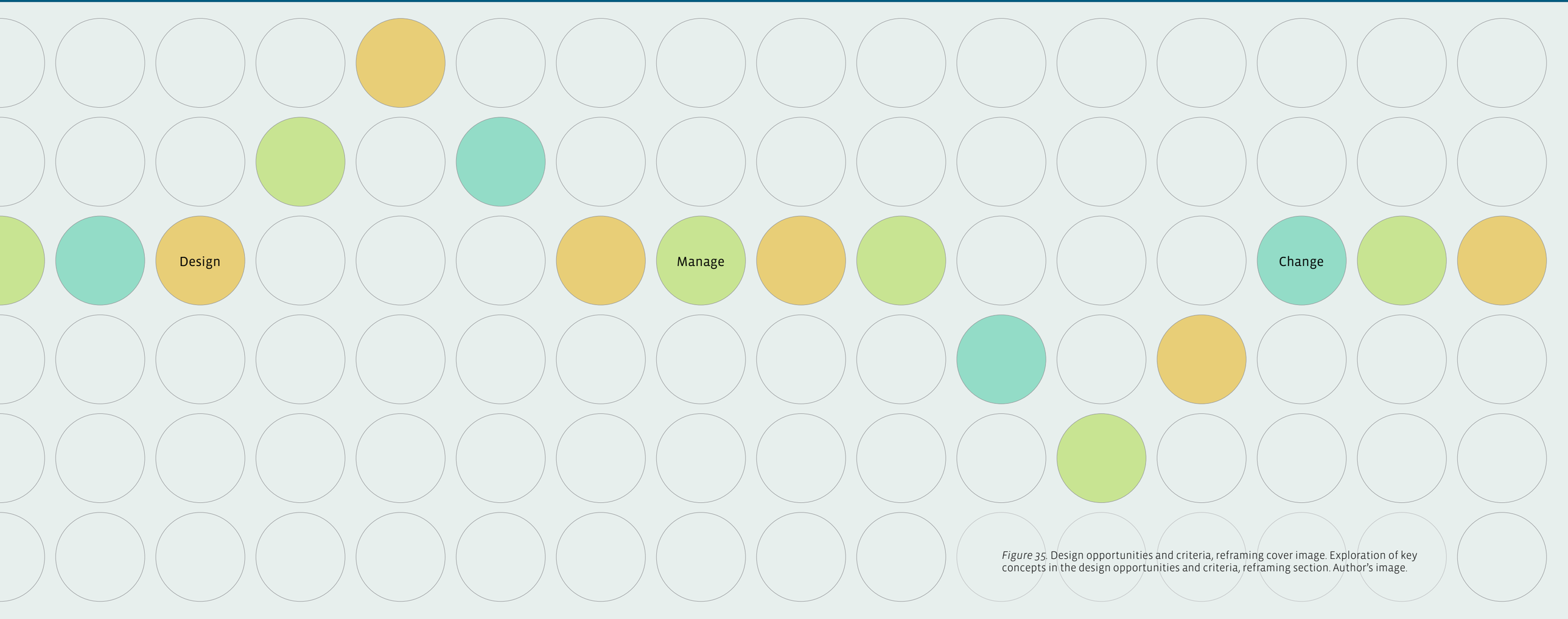


Figure 35. Design opportunities and criteria, reframing cover image. Exploration of key concepts in the design opportunities and criteria, reframing section. Author's image.

Opportunities for Design Matrix

Insight 1

Health care turnover is a significant problem, often leading to stalling a project or shelving it altogether.

Opportunity 1

How might we mitigate continuous turnover by supporting knowledge transfer in order to sustain transformational change activity over long periods of time?

Table 19. Insight 1 SWOT.

Strengths	Weaknesses
› Staff in health care spaces are dedicated and want to do good for their patients	› Staff members across the system are overworked, so there would need to be an added layer to this service
Opportunities	**Threats**
› Allow people to move freely throughout the organization › Have a continual contingency plan that is part of every new project	› Ongoing teaching and training is a big financial investment for the organization

Insight 2

Adoption and buy-in is difficult to mitigate in health care when there are so many expert stakeholders involved in one clinical setting.

Opportunity 2

How might we create project plans that garner buy-in by demonstrating value to participants in order to support adoption at each step in the process?

Table 20. Insight 2 SWOT.

Strengths	Weaknesses
› Leadership is very talented, with deep expertise in many areas	› People are stuck in their ways of doing things when the process is very complicated and every person counts in the system
Opportunities	**Threats**
› Allow for adoption of ideas by demonstrating future scenarios in the process	› Cost of doing business the same old way will cause stress for the entire organization in the long run

Insight 3

Communication is a core strength for both health care designers and managers; however, interview insights suggested the complexity of systems inhibits understanding.

Opportunity 3

How might we improve a health care team's ability to consistently communicate and understand across many stakeholders?

Table 21. Insight 3 SWOT.

Strengths	Weaknesses
› Leadership is very talented, with deep expertise in many areas › Proximity of working groups may facilitate low-tech methods of internal communication	› IT infrastructures take a long time to support communication › Confidential information is an ongoing concern
Opportunities	**Threats**
› Support greater team cohesion at each step in the process › Support greater understanding of processes	› Implementation cost may be too high › Legacy systems and data may take too long › New technology outpaces implementation speed

Insight 4

Health care is open to adopting new human-centered design strategies in order understand and improve operations and patient outcomes.

Opportunity 4

How might we use existing process improvement methodologies in combination with design-centric methods to formulate a new process to support transformational change initiatives?

Table 22. Insight 4 SWOT.

Strengths	Weaknesses
› Leadership is open to adopting new methods to improve their services › Many in health care often retraining for new tool sets	› There is little time in current schedules to continually train
Opportunities	**Threats**
› To create a new method that may be a welcome tool to existing teams and processes	› Cost of doing business the same way is not sustainable › Perpetual innovation is costly

Insight 5

Health care managers and designers have different skill sets and methods for solving problems, yet they are often tasked with implementing large projects in collaboration.

Opportunity 5

How might we create a journey process map that supports each practice area's expertise while visualizing the overall process in order to succeed in a transformational change process?

Table 23. Insight 5 SWOT.

Strengths	Weaknesses
› Both managers and designers have a similar views of the "design process"	› None identified
Opportunities	**Threats**
› Create a combined problem-solving process that is transparent and visual	› Who takes ownership or leadership of the toolkit may cause friction

Insight 6

There is a culture of teaching and learning in the organization in support of continuous improvement.

Opportunity 6

How might the teaching and learning process be embedded in a constant sharing of information across silos in order to provide transparency and understanding?

Table 23. Insight 6 SWOT.

Strengths	Weaknesses
› Willingness to learn will create an openness to test participation in change activity	› Physical and technical challenges dominate and gets in the way of people actually doing a good job
Opportunities	**Threats**
› Teaching an learning culture may be door to introducing other tactics for better communication and collaborations	› Long lead time with projects still represents a challenge for continuity of teams

Opportunities for Design Map

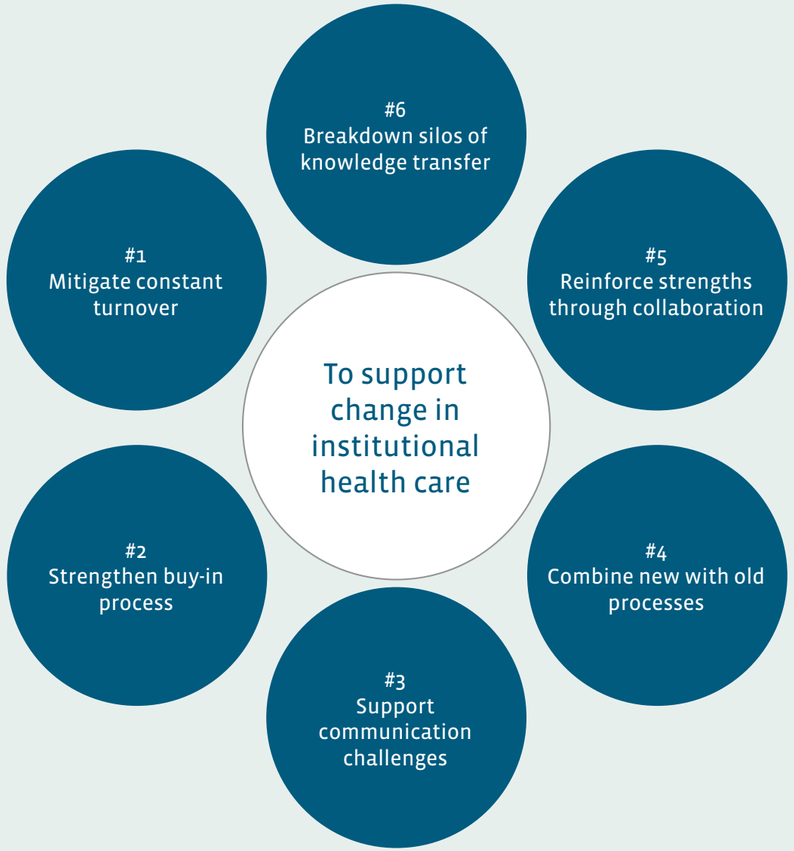


Figure 36. Opportunity for design map. An overview of the possible opportunity for design to support transformational change in the institutional health care sector. Author's Image.

Design Criteria for Prototype

This project would be considered successful if:

Institutional health care managers and designers are able to collaborate and communicate effectively when leading change.

It reinforces the tool sets that are currently being used by the system, such as Six Sigma process improvement strategies.

It facilitates problem solving in a way that documents the steps and allows stakeholders to see the process unfold, aiding in adoption each step of the way.

It allows for turnover, while still retaining the long-term change initiatives needed to be successful year over year.

Expert voices are supported while still continuing to move initiatives forward.

It merges existing methodologies of process improvement with external and emerging design-led approaches.

Reframing

To reframe this project, I:

Reinforced the existing abilities of institutional health care managers and designers. Research revealed key attributes that included being good *communicators* and *implementers* when it comes to supporting change. Other attributes, such as *connectors* or *translators*, also emerged that were considered in the prototype.

Health care professionals, both designers and managers, care deeply about their practice, yet must also contend with constant staff turnover. Workflow interruption and knowledge of processes and procedures were identified as persistent challenges that often derail entire initiatives. A parallel insight was that turnover interruptions cause a loss in knowledge transfer from one team to the next, which also creates further challenges to sustaining long-term changes.

The institutional health care industry recognizes it needs new methods that are more centered on deeply understanding the patient and customize solutions to each individual. When the system has been built around efficiency for mass care, executing change to be human-centered may be difficult. However, it was evident that health care leadership was open to the opportunity of change through the adoption of a new approach.

If design management methodologies are to support change in the institutional health care sector, then strategic approaches are needed that address existing strengths while integrating new and emerging design-led tools.

Prototype Development and Testing

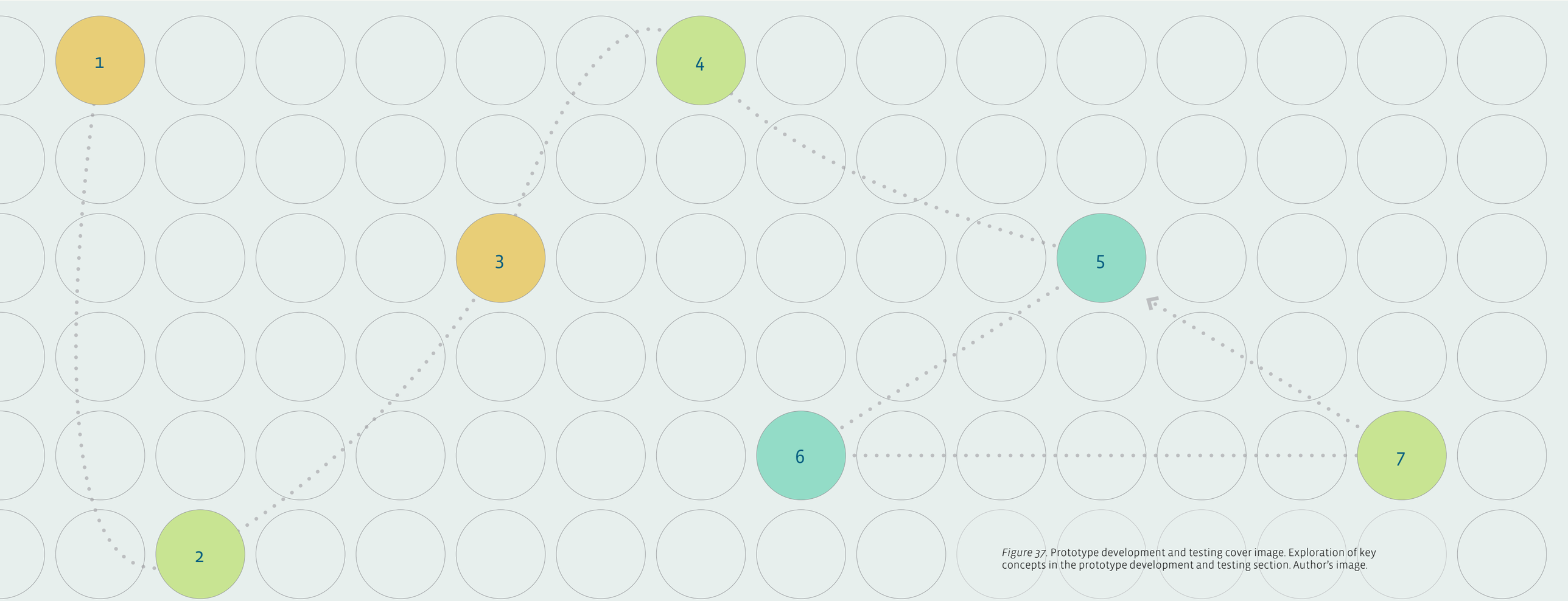


Figure 37. Prototype development and testing cover image. Exploration of key concepts in the prototype development and testing section. Author's image.

Prototype Ideas

Concept 1: *Project Facilitator Toolkit*

Concept 1 was a project facilitator toolkit to help managers lead change activities and bring diverse stakeholders together at various points in a process. It would support an increased ability for open communication in order to secure buy-in at various points in a change process.

Table 25. PMI of project facilitator toolkit idea.

PMI		Totals
Plus	› Complements managers'/designers' roles to document and visualize a process (+4) › Reinforces Lean Six Sigma by capturing the "Plan" step in the "Plan-Do-Study-Act" process (+2) › Supports new stakeholders entering a project at various points if the tools are used consistently (+4)	+10
Minus	› Does not address other Lean Six Sigma steps (-2) › Does not mitigate turnover (-1) › Visual nature of toolkit may have its detractors (-3)	-6
Interesting	› More voices can be seen at once (+5) › Decisions are out in the open for all to see (+3) › Journey maps are human-centered approaches of interest to both groups (+5)	+13
		+17

Concept 2: *Teaching Meta–Method*

Concept 2 was a teaching method that supported the adoption of design-led methods, in particular, Human-Centered Design (HCD). The teaching strategy would map existing HCD methods with methods used in Six Sigma and change activities within health care organizations.

Table 26. PMI of teaching meta-method idea.

PMI		Totals
Plus	› Reflects the emerging leadership role of the designer through human-centered design (+4) › Supports the manager's emerging interest in human-centered design (+4) › Can be integrated into an organization's existing culture of teaching and learning (+4)	+12
Minus	› Does not address the turnover challenges observed on projects (-3) › Would be a slow process in helping with the adoption of ideas (-3) › Requires a champion teaching structure to implement (-2)	-8
Interesting	› High potential to be a long-term mechanism for supporting change in the organization (+3) › Mapping new tools to existing tools would make it a smoother process (+4) › The visualization process mitigates challenges of turnover (+2) › The method supports adoption of new tools for change (+1)	+10
		+14

Concept 3: *Communication Feedback Tool*

Concept 3 was a communication feedback tool designed to identify problems within a system in order to effectively plan for needed changes. It was one part of a toolkit designed to help management identify challenges by monitoring qualitative data, which would then be combined with quantitative methods in order to implement change strategies.

Table 27. PMI of communication feedback tool idea.

PMI		Totals
Plus	› Tool is design-centric in that it captures qualitative data (+3) › Supports managers in diagnosing systemic issues (+5) › Supports employee communication and empowers them to providing feedback (+3)	+11
Minus	› May be costly to implement (-5) › Requires many stakeholders to implement (-3) › Might cause resistance due to perceived time infringement (-2)	-10
Interesting	› If adopted, this could be an interesting tool for measuring other types of activities within the organization (+4) › Functions as a red flag for emerging challenges in a particular process and could be adapted to other industries (+5) › Supports a culture of constant feedback in the organization (+3)	+12
		+13

Selected Concept: *Teaching Meta–Method*

Interview feedback during the research phase identified Six Sigma as the dominant process improvement strategy that was already part of the organization's culture. Literature reviews during the positioning phase of the project also revealed that using Six Sigma was useful in other health care systems. In addition, larger health care systems have a professional development cycle to support existing employees, train new employees, and provide a continuous educational system that mitigates staff turnover in order to deliver consistent project management.

The insights support that design-led approaches that complement existing strategies have a better chance of being adopted because they can be integrated into current structures. A teaching method would provide such a vehicle because a culture of process improvement already exists for supporting continuous change.

Furthermore, change is often a process that requires a long view. While turnover may be constant, the culture can be sustained through perpetual educational systems that are embedded in day-to-day processes.

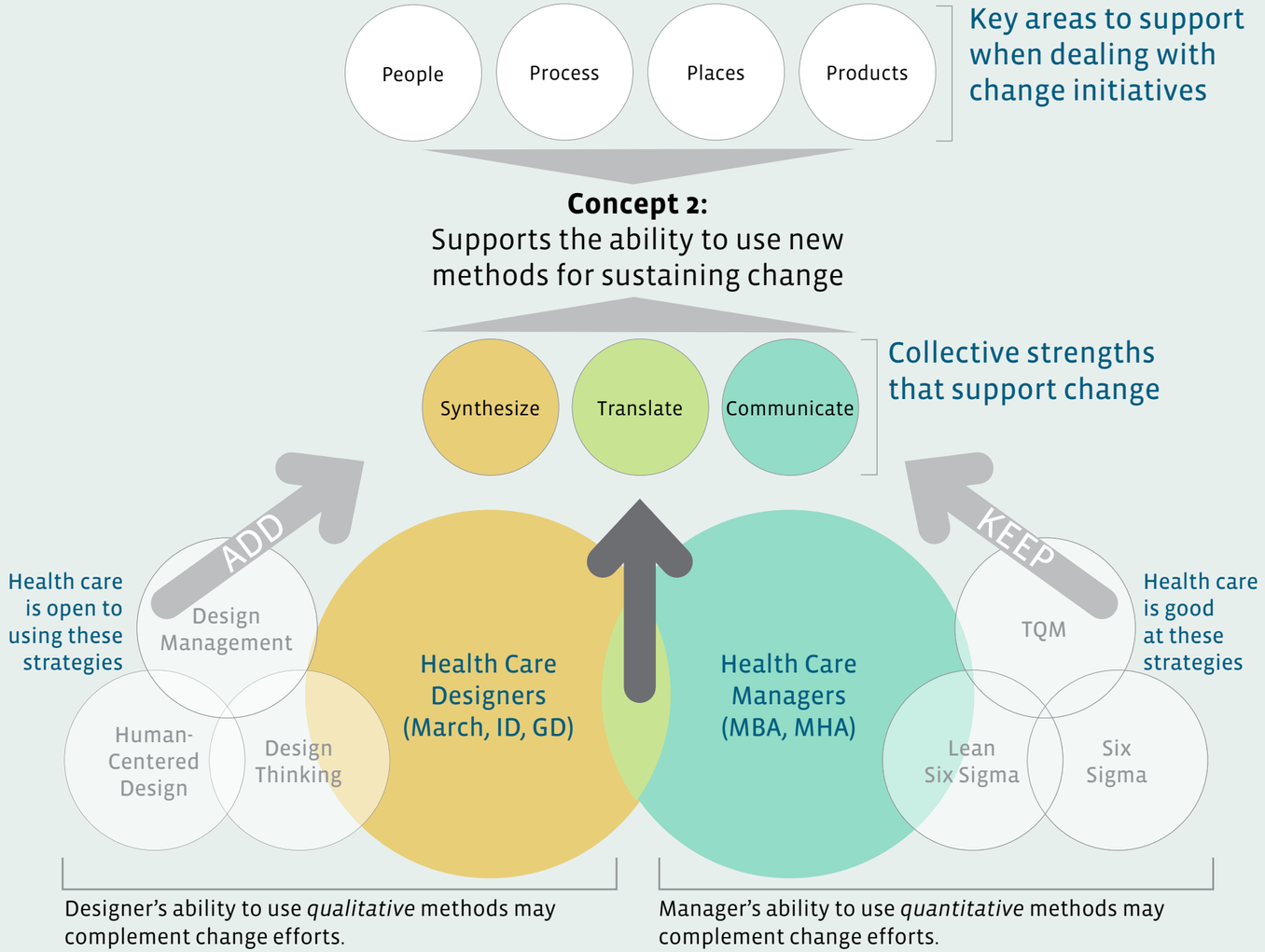


Figure 38. Map of prototype development. Mapping the relationship in the prototype development. Author's image.

Concept Development Process

Overview: *Methods Explored*

To test the prototype, an initial evaluation of various methods and associated steps was explored in Table 28 and 29. These include methods that frequently appear in scholarly publications as well as more commonly used practices. Subjects identified Six Sigma as the most frequently employed process improvement strategy. Subjects identified Human–Centered Design (HCD) as being of interest by various groups within the target organizations. In addition, many of the organizations that were exploring innovation identified the HCD approach as an emerging method to support change activity.

Table 28. Methods/steps of design and process improvement.

Selected methods for prototype	Method	Steps						
	Human-Centered Design (HCD)	Empathize	Define	Ideate	Prototype	Test		Sequence from the d.School's bootleg toolkit (d.School, 2001).
	Six Sigma	Define	Measure	Analyze	Improve	Control		Sequence from the MoreSteam Toolbox (MoreSteam, 2015).
	Lean Six Sigma	Plan	Do	Study/Check	Act			Sequence from the MoreSteam Toolbox (MoreSteam, 2015).
	Design Project Management Cycle	Understand	Define	Communicate	Plan	Monitor	Ensure	Sequence from Managing the Design Process (Stone, 2010).
	Design Process	Discover	Define	Design	Develop	Deploy		Sequence from Dubberly Design (Dubberly, 2009).
	Steps	1	2	3	4	5	6	

Table 29. Steps provided to subjects for prototype testing.

Test	Empathize	Control	Ideate	
Analyze	Prototype	Measure	Define	Improve

Overview: *Tools*

A selection of 30 tool cards were created from the two methods. The human-centered design method cards were adopted from various published cards, most notably from IDEO (IDEO, 2003). The Six Sigma cards were developed from one published sources; however, there are many more on the market (MoreSteam, 2015).

The intent was to identify a sufficiently large selection of tools used in the two methods to explore how they might work together as one meta–method.

A review of the tools in each method suggested that HCD focused on emotional factors (or the human side of situations), while Six Sigma focused on measuring a data component of a particular situation.

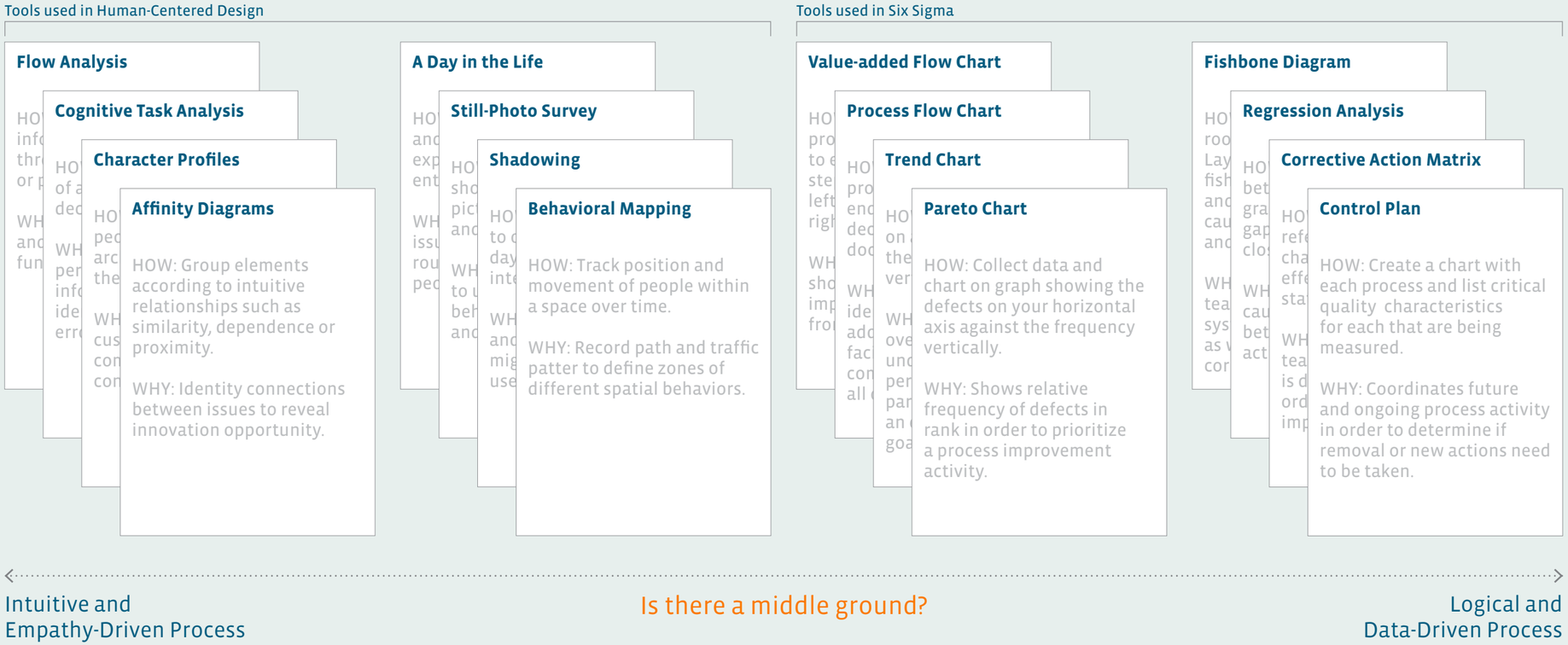


Figure 39. Methods cards. Examples of method cards from Human-Centered Design and Six Sigma. Author's Image.

Concept Development Process: *Steps*

Step 1: *Clarifying the Challenge Together*

During step 1, groups of subjects were asked to identity a challenge in their work environment. The goal was to focus on a specific patient or caregiver and what that person might be feeling and thinking. In addition, participants were asked to describe the place, product, and process in which the person was situated and the associated challenges accompanying those three scenarios.

Subjects were provided with a collection of images, but were also encouraged to use Post-it Notes and/or to draw on the visuals to clarify relationships.

Goal

The goal of step 1 was for the group of subjects to paint a collective understanding of a situation that they were trying to describe. Subjects placed a picture of a patient or caregiver at the center of the board and then worked their way around the board. For each segment of the board, subjects used the provided images and icons to build a visual map of the person. In doing so, subjects could develop greater insights about potential challenges that might be a part of the person and, in turn, develop strategies to solve those challenges in step 2.

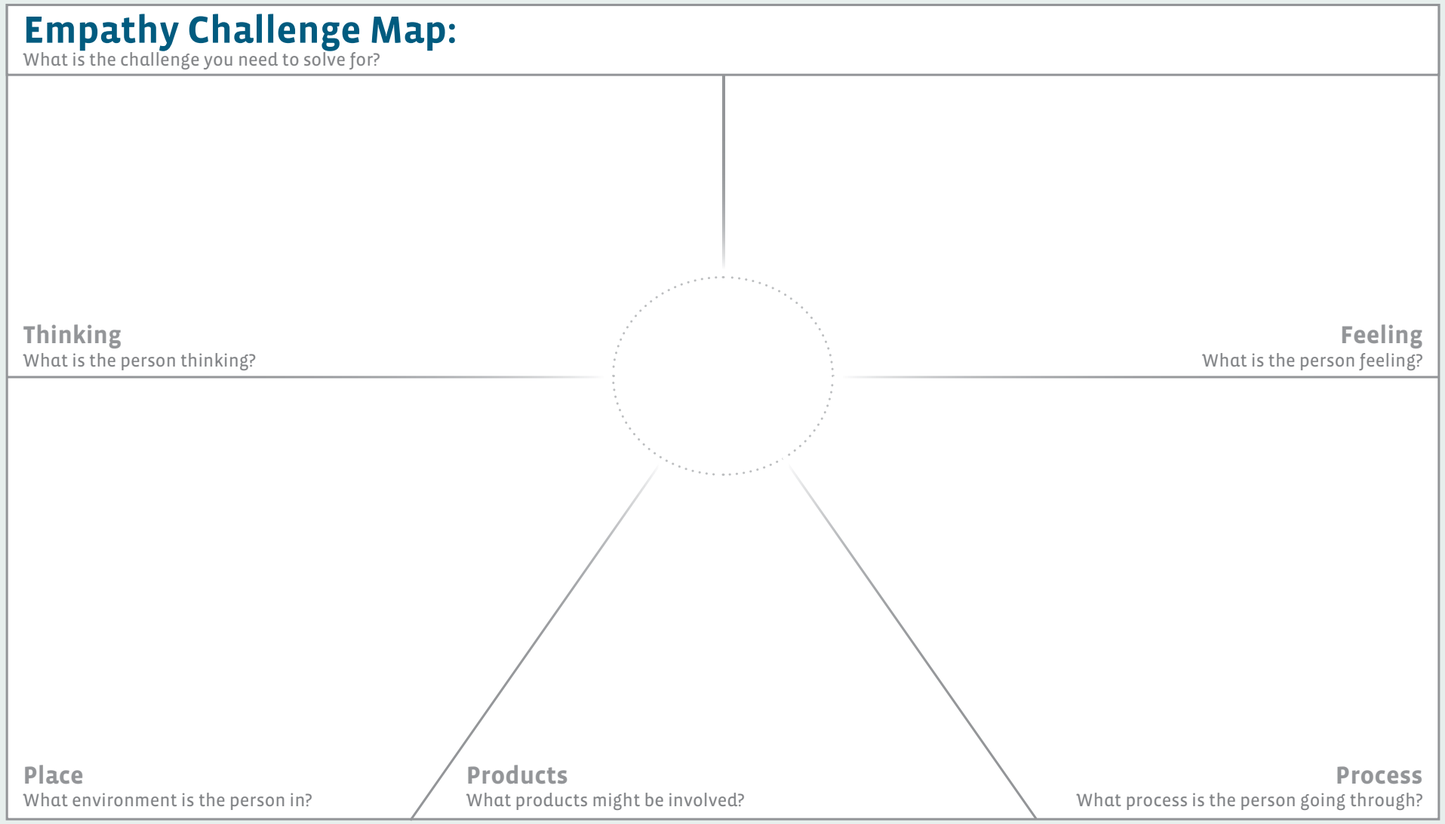


Figure 40. Empathy challenge map. A structure for defining a challenge the team needs to work on. Author's image.

Step 2: *Agreeing on Steps and Tools*

In part “A” of step 2, subjects were asked to use the combined Six Sigma and HCD steps identified in Table 29 to map out what they believed to be the best “steps” to solve the challenge from step 1. The goal was to see how they might combine the steps from these two methods to solve the challenge.

In part “B” of step 2, subjects were asked to identify which tool they would use with each step. A selection of Six Sigma and HCD tools, examples of which are identified in Table 28, were provided. Subjects were allowed to use as many tools as they felt were necessary for each step. If others were needed, they could write them in with Post-it Notes.

The step and tool cards for both Six Sigma and HCD were produced to look alike so that they were indistinguishable from each other.

Goal

The goals of step 2 was to test how subjects might mix the Six Sigma and HCD steps and group the tools for those steps. Along with producing the cards in the same way, on all-white backgrounds, an equal selection of both Six Sigma and HCD tools were provided to further enhance a lack of distinction between the two methods. In doing so, subjects were compelled to read each tool. Otherwise, a subject who was familiar with a particular method might work more quickly to complete the sequence of steps.

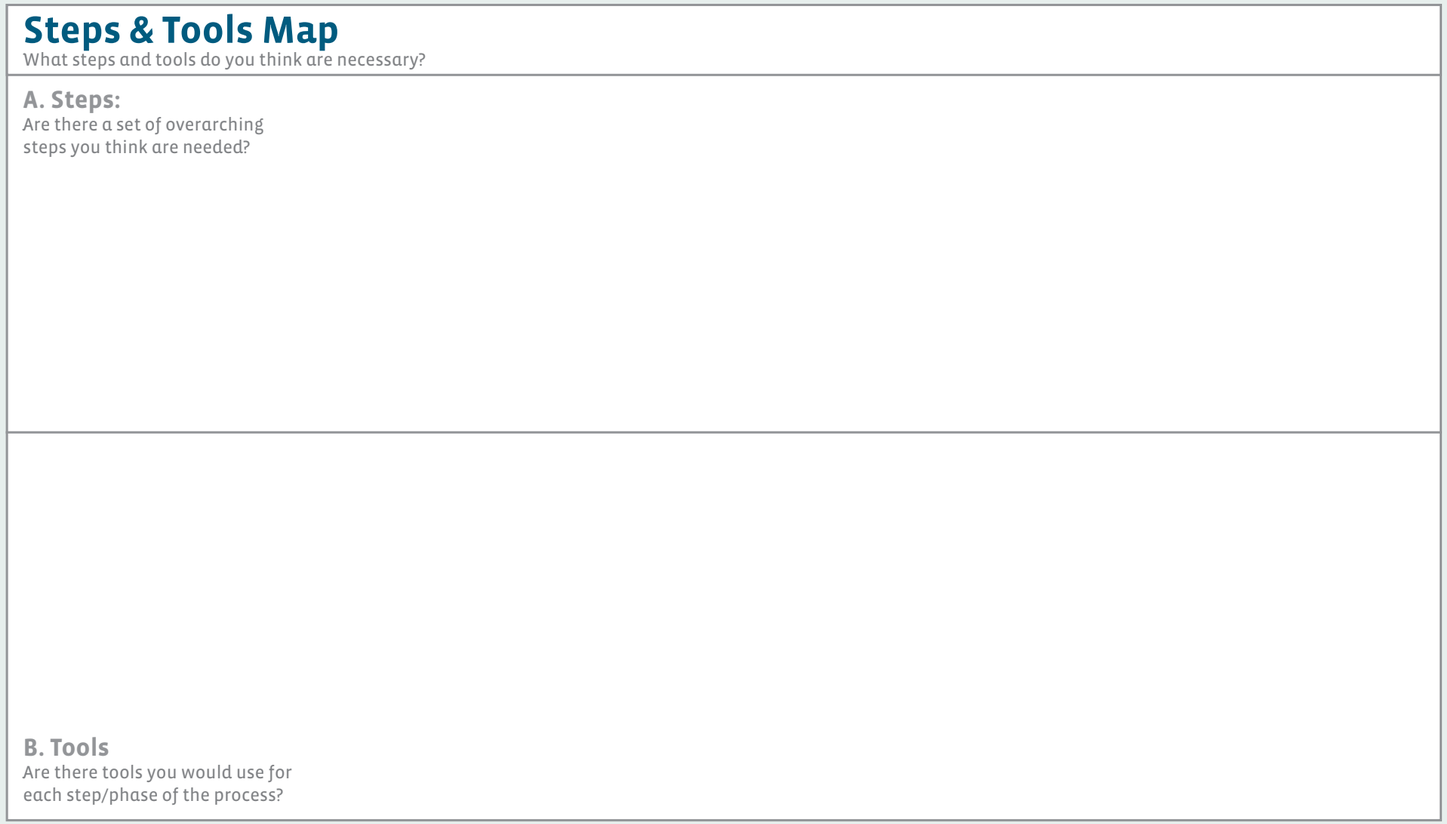


Figure 41. Mapping steps and tools. A structure for mapping the steps and tools associated with the meta–method. Author’s image.

Concept Testing With Target Audience

Group 1: *Overview*

The first test was conducted with two process improvement managers at one of the health care facilities in the target group.

Time: Friday, Feb. 13, 1:00 - 2:00pm
Location: Meeting room at work location of target audience
Testing Subjects: Two health care managers, one of which was part of the initial research phase of the project.

This group of subjects selected a nurse as the target person to explore the prototype with.

Steps

Step 1: Preparations
› Graphic boards with “Empathize With the Challenge” and “Steps & Tools” were prepared in advance
› Images were cut out for inspiration
› Pens and Post-it Notes were purchased
› *Informed Consent Forms* were prepared

Step 2: Introduction
› All subjects signed *Informed Consent Forms* prior to commencing
› A brief introduction was provided about the project to date and the goals of the prototype test
› Key insights were shared from the first round of research activity

Step 3: Challenge
› Subjects were asked to identify a real-life care provider or patient challenge they wanted to solve
› Subjects were asked to visualize what the care provider/patient would be thinking and feeling
› Subjects were asked to identify the types of places, products, and processes impacting the care provider/patient
› Subjects were asked to used Post-it Notes to explain key challenges at various steps in the process of building the map

Step 4: Steps & Tools
› Subjects were first asked to map out how they might solve the challenge using the steps alone
› Subjects were then asked to imagine how they might use the tools provided to solve the challenge and at which step they would use them

Step 5: Take-Aways/Feedback
› Subjects were asked to share key insights from the prototype test and how they might use the method in their own work

Figure 42. Meeting room. The space in which the prototype test was conducted. Author’s image.

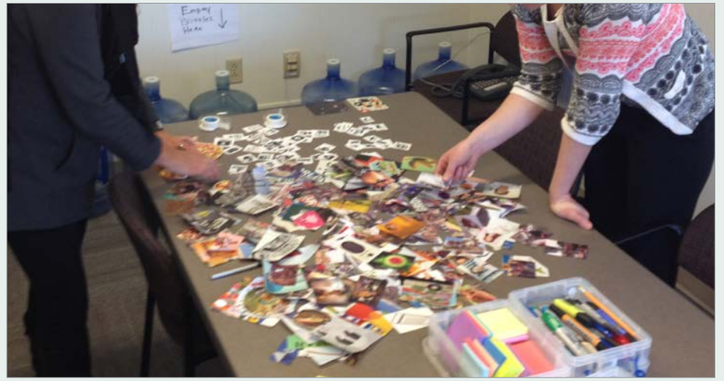


Figure 43. Subjects working. Subjects are selecting images to explore their challenge. Author’s image.

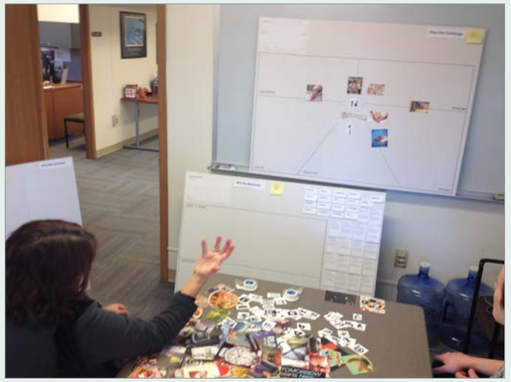


Figure 44. Subjects discussing challenge. Subjects discussing the challenge as they build the visual map. Author's image.

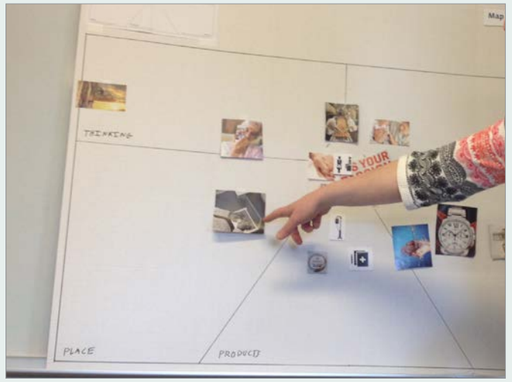


Figure 45. Subject explaining situations. One subject explaining specific issues to the other. Author's image.

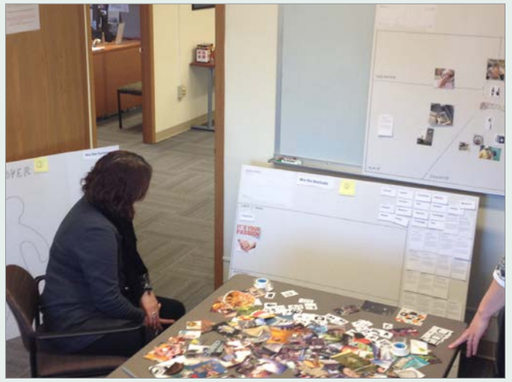


Figure 46. Subjects considering steps and tools. Subjects begin to explore step 2 of prototype. Author's image.

Figure 47. Subjects building step 2. Subjects begin to identify the steps and tools that would help solve the challenge in step 1. Author's image.

Figure 48. Subjects building step 2 detail. Subjects discuss and build step 2. Author's image.

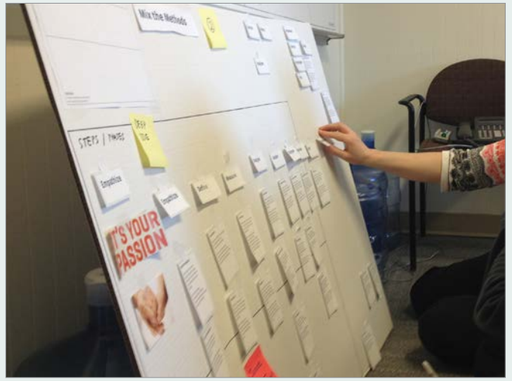


Figure 49. Subjects building step 2 detail. Subjects debating various steps and tools as they discuss and build step 2. Author's image.

Figure 50. Subjects building step 2 detail. Subjects debate various tools to accomplish the steps. Author's image.

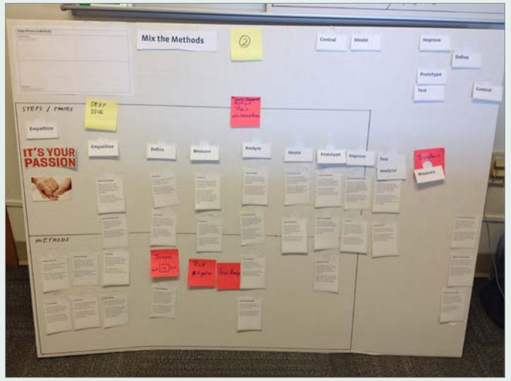


Figure 51. Final map of steps and tools. Subjects complete the steps and match tools they associate with each step. Author's image.

Group 2: *Overview*

A second test was conducted with four health care professionals, two of whom were focused on innovation, while the other two were focused on transformation support. All subjects had been trained in Human–Centered Design and Six Sigma methods.

Time: Monday, Feb. 16, 3:00 - 4:00pm
Location: Meeting room at work location of target audience
Testing Subjects: Four health care professionals

This group of subjects selected what was called a "complicated patient." They defined this as someone who was suffering from a number of medical conditions, is often homebound, and a challenge to move to the hospital due to being overweight.

Steps

Step 1: Preparations
- Graphic boards with "Empathize With the Challenge" and "Steps & Tools" were prepared in advance
- Images were cut out for inspiration
- Pens and Post-it Notes were purchased
- *Informed Consent Forms* were prepared

Step 2: Introduction
- All subjects signed *Informed Consent Forms* prior to commencing
- A brief introduction was provided about the project to date and the goals of the prototype test
- Key insights were shared from the first round of research activity

Step 3: Challenge
- Subjects were asked to identify a real-life care provider or patient challenge they wanted to solve
- Subjects were asked to visualize what the care provider/patient would be thinking and feeling
- Subjects were asked to identify the types of places, products, and processes impacting the care provider/patient
- Subjects were asked to used Post-it Notes to explain key challenges at various steps in the process of building the map

Step 4: Steps & Tools
- Subjects were first asked to map out how they might solve the challenge using the steps alone
- Subjects were then asked to imagine how they might use the tools provided to solve the challenge and at which step they would use them

Step 5: Take-Aways/Feedback
- Subjects were asked to share key insights from the prototype test and how they might use the method in their own work

Figure 52. Meeting room. The space in which the prototype test was conducted. Author's image.

Figure 53. Subjects working. Subjects selecting images to begin exploring the challenge. Author's image.

Figure 54. Subjects discussing challenge. Subjects discussing the challenge as they build the visual map. Author's image.

Figure 55. Subjects exploring situation. One subject exploring the relationship of images prior to posting on the board. Author's image.

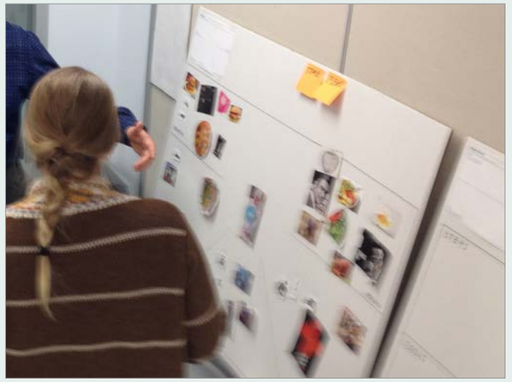


Figure 56. Subjects considering steps and tools. Subjects begin to explore step 2 of the prototype. Author's image.

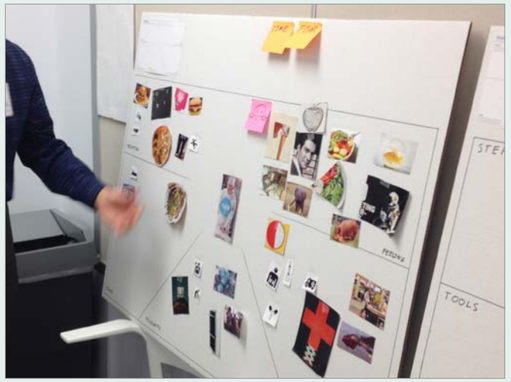


Figure 57. Subject explaining step 1. Subject is explaining to colleagues various factors that he believes are an issue for the patient. Author's image.

Figure 58. Subjects considering steps and tools. Subjects begin to explore step 2 of the prototype. Author's image.

Figure 59. Subjects building step 2. Subjects continue to identify the steps and tools that would help solve the challenge identified in step 1. Author's image.

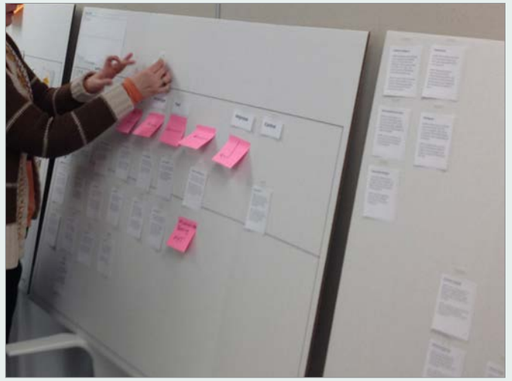


Figure 60. Subjects building step 2 detail. Subject debates various tools for accomplishing the steps as she moves items around the board. Author's image.

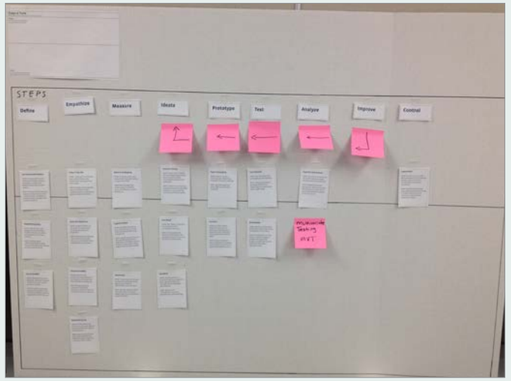


Figure 61. Final map of steps and tools. Subjects complete the steps and match tools they associate with each step. Author's image.

Concept Testing Findings

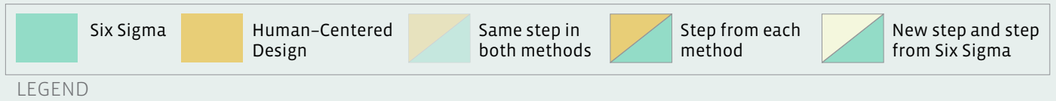


Table 30 illustrates the two methods being explored in the prototype. Two directions emerged during testing, illustrated in Figures 42–61. The two subjects for group 1 noted the need for what they referred to as a "deep dive" empathize step, which would follow directly after the first empathize step in order to arrive at a clearly-defined problem. While there were a few instances when Six Sigma or Human-Centered Design steps were sequential, overall the steps did seem to represent an equitable mix of the two methods for both groups. One unique word emerged, "sustain," which was placed at the very end of the process.

Test group 2 included four subjects, most of whom had received HCD training. The sequence of steps for this group seemed to separate the Six Sigma and the HCD steps into two large sets. Subjects also noted that they would cycle back from the *improve* step to the *ideate* step in the process in order to refine the solution.

Table 30. Steps in the two methods selected for prototype testing.

Human-Centered Design	Empathize	Define	Ideate	Prototype	Test
Six Sigma	Define	Measure	Analyze	Improve	Control

Table 31. Prototype test group 1 and 2 results.

Prototype Test Group 1 Results	Empathize	Empathize (Deep Dive)	Define	Measure	Analyze	Ideate	Prototype	Improve	Test/ Analyze	Sustain/ Measure
Prototype Test Group 2 Results	Define	Empathize	Measure	Ideate	Prototype	Test	Analyze	Improve	Control	

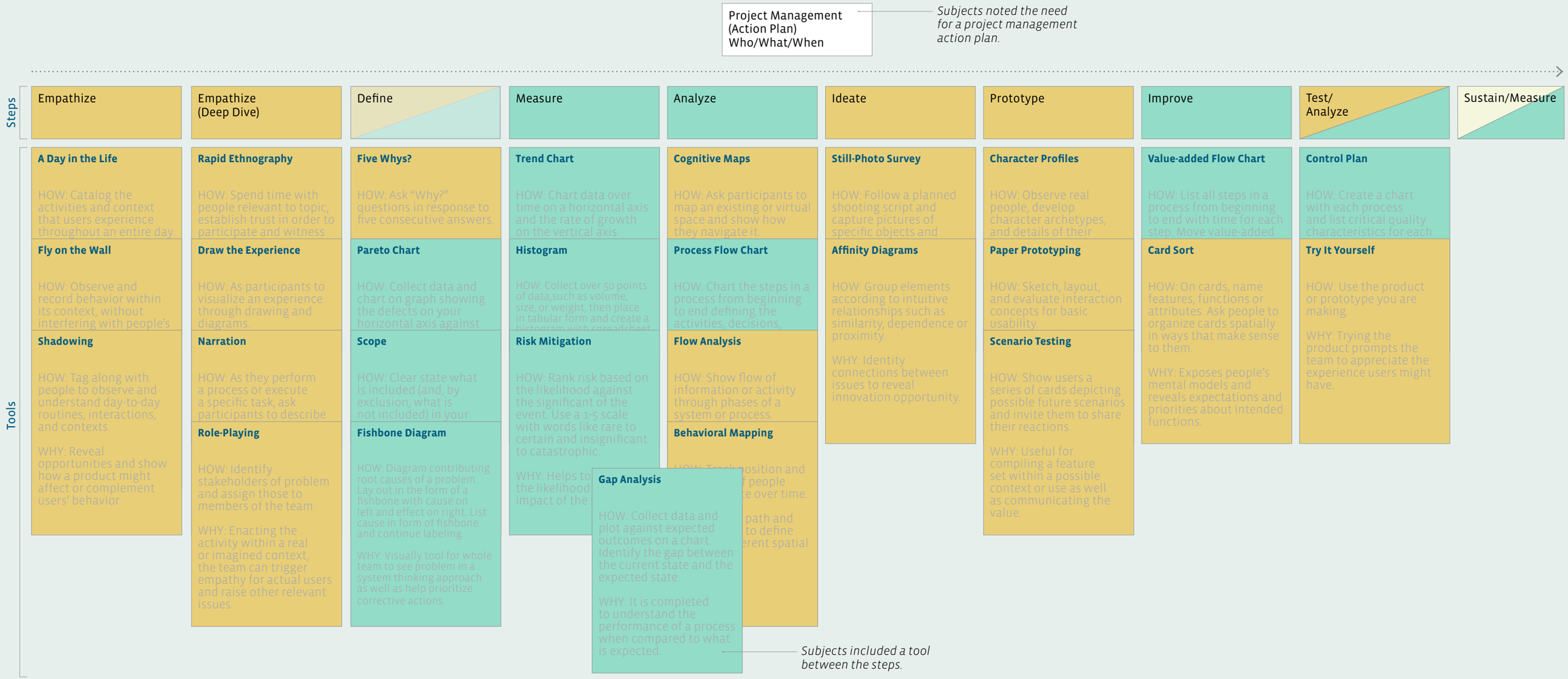


Figure 62. Prototype group 1 results. Arrangement of steps and tools from group 1 prototype test. Author's Image.

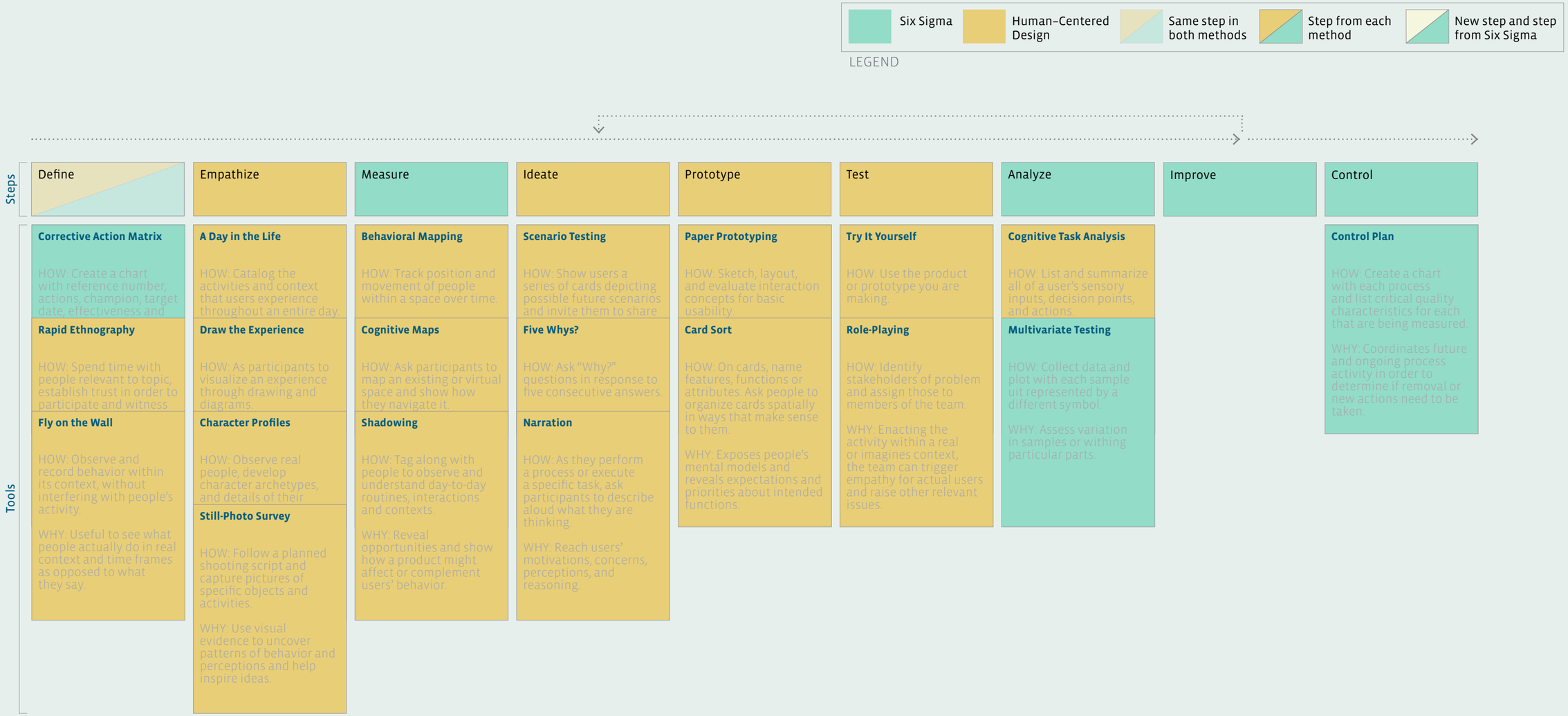


Figure 63. Prototype group 2 results. Arrangement of steps and tools from group 2 prototype test. Author's Image.

Group 1: *Overview*

Observed Insights

› Subjects were engaged when placing images on the boards.
› Subjects were quickly able to tell a story about a nurse.
› Subjects built the challenge map relatively quickly using images compared to the process map using text.
› Subjects were slower in processing and agreeing on steps and tools for solving the challenge.
› Subjects spent more time debating the use of tools than building the sequence of steps.
› Subjects needed clarification for some of the terms at each step in the process.

Stated Insights

› Subjects stated that they enjoyed the challenge map more than the process map because it was more visual.
› Subjects thought that the overall prototype would be beneficial to the team when agreeing on steps, but would have liked to have the target care provider involved as well.
› Subjects noted that they would be curious about how their colleagues would map each step, suggesting that some would have more analytical versus empathetic approaches.
› Subjects were unsure how the prototype would directly support mitigating turnover.
› Subjects did believe the prototype would help build buy-in at various points in their processes.
› Subjects felt the prototype would be beneficial to their activities.

Group 2: *Overview*

Observed Insights

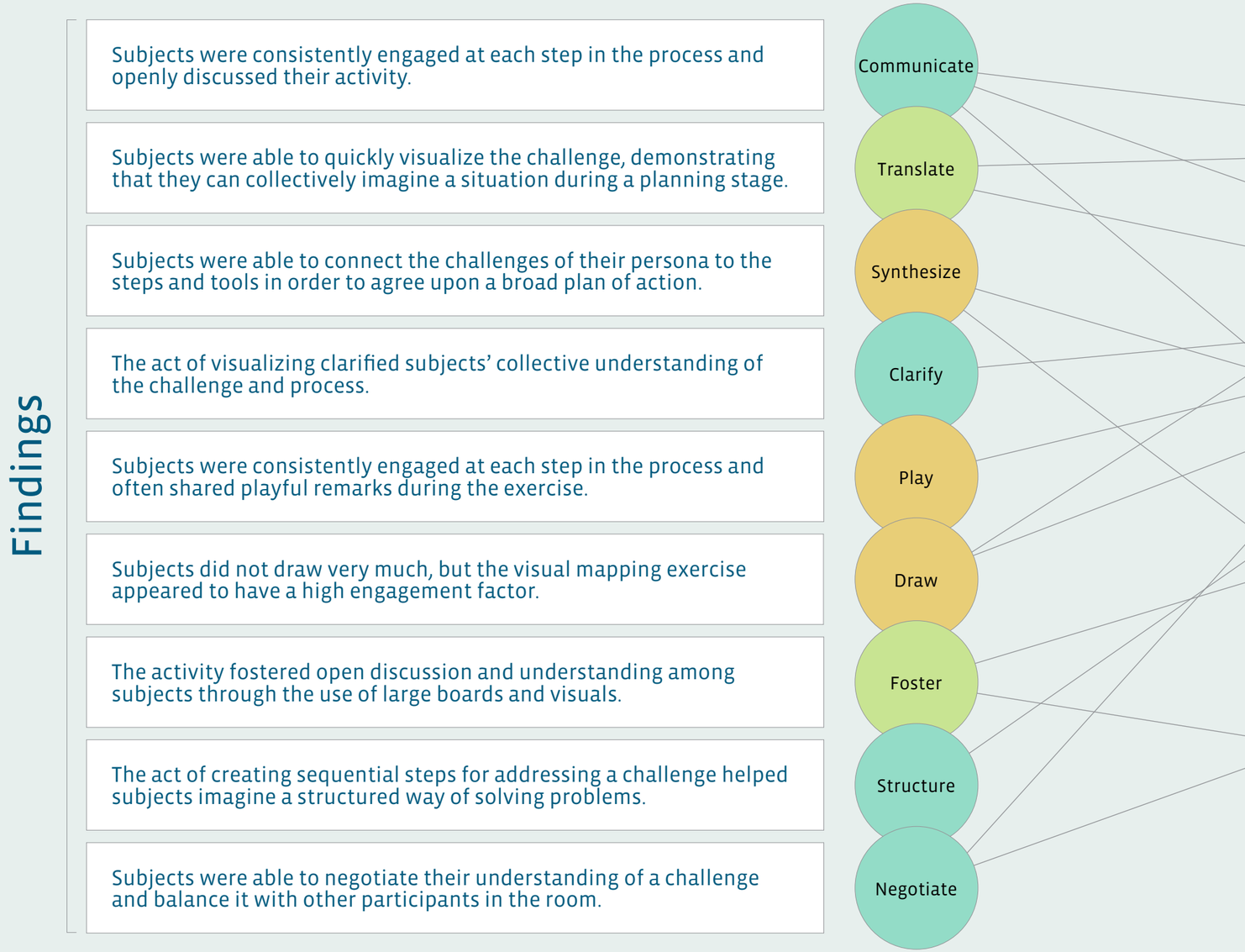
› Subjects were engaged when placing images on the boards.
› Subjects joked with each other while building the visual map.
› All subjects were lively and equally engaged at all times.
› Subjects built the challenge map very quickly.
› Subjects took more time during step 2.
› Subjects spent more time debating the use of tools than building the sequence of steps.

Stated Insights

› One subject felt that the protptoype was still a Six Sigma process, but with different tools.
› Subjects already had training in HCD and were attempting to rapidly implement the process into their work.
› One subject had created an HCD/Six Sigma slide deck based on prior trainings to share with colleagues in order to demonstrate that the tools of HCD are a “complement and not divisive”
› One subject suggested switching some of the words in order to provide clarity to colleagues, e.g. use “analyze” instead of “ideate”
› One subject noted that it is hard to map cognitive decisions with engineering tools
› One subject suggested neutralizing the language to combine both methods in order to more broadly disseminate HCD processes in the culture of a Six Sigma organization
› One subject felt that this combination of methods was needed, but that the prototype should always include all the partners in the group, such as the patient
› One challenge for group 2 was how to operationalize tools into daily work
› One subject suggested making the prototype less rigorous, but not to water it down

Validation

The prototype concept was validated by returning to the initial research findings and linking key word insights to established design criteria. While not all research findings were applicable to the prototype, those listed in Figure 64 represent a combination of key attributes from the target personas.



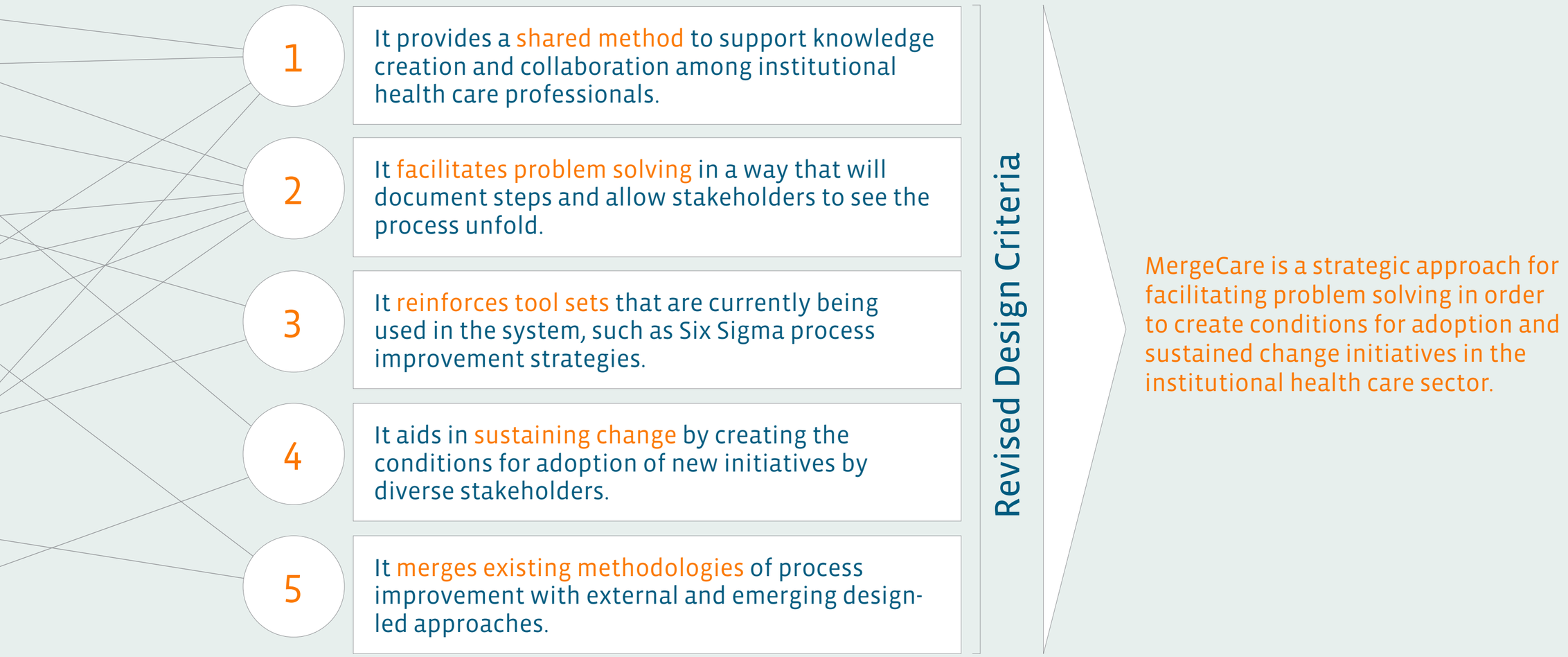
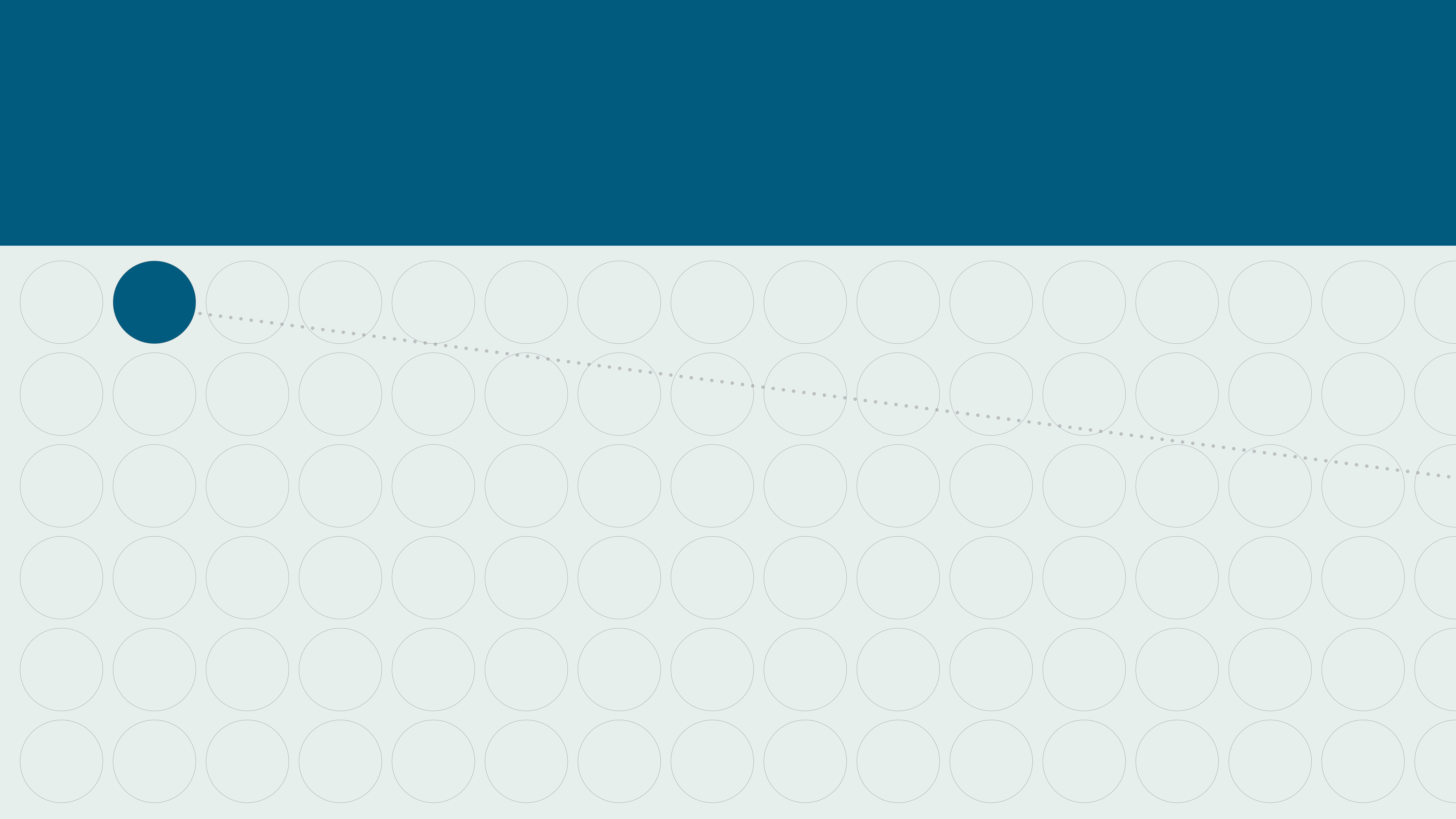


Figure 64. Findings and revised design criteria. Illustration of relationship between findings to final revised design criteria. Author's image.



Final Design to Market

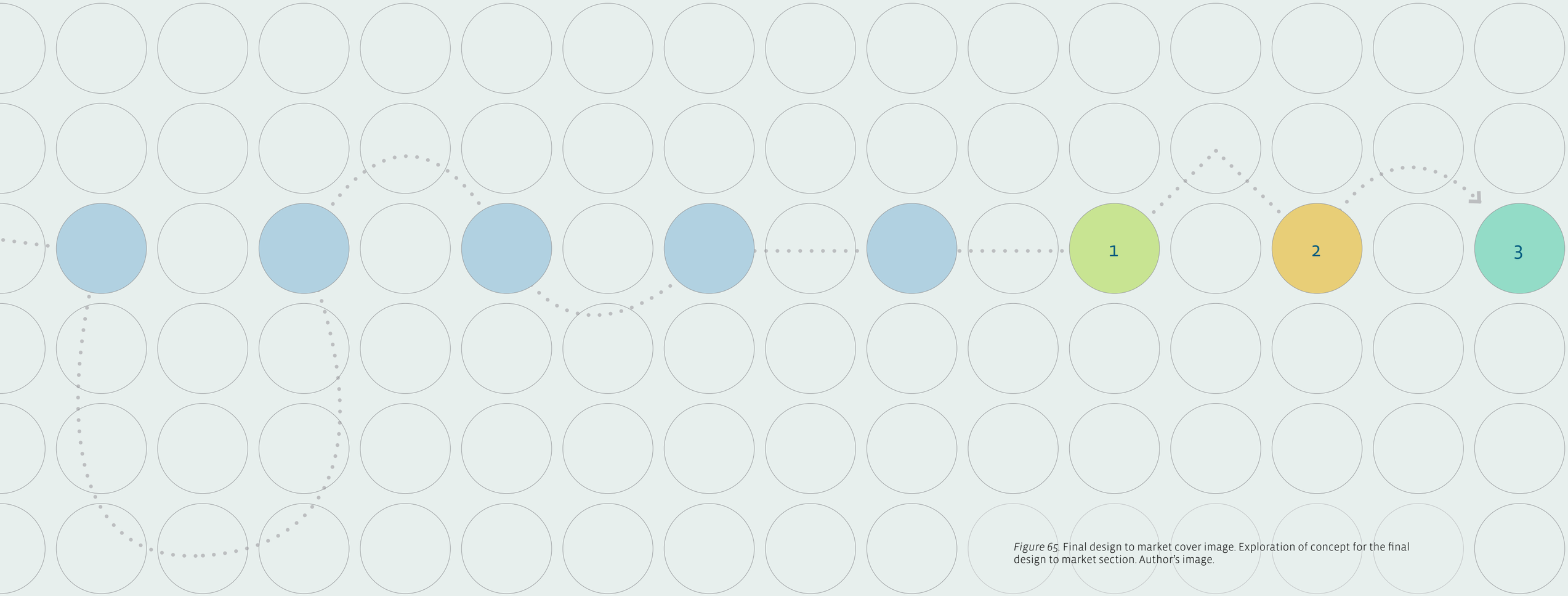


Figure 65. Final design to market cover image. Exploration of concept for the final design to market section. Author's image.

Final Prototype

Overview

The final direction is based on primary and secondary research, user testing, and validation of design criteria.

MergeCare is a strategic approach for use by institutional health care managers and designers when supporting change activity. The product combines Human-Centered Design and Six Sigma methods. MergeCare combines the two methods into a set of workshops that builds conditions for adopting of new solutions and, in turn, successful initiatives. The goal is to affect how projects are evaluated, understood, and executed. Ultimately MergeCare helps institutional health care professionals integrate these new strategies into their existing cultures and processes.

Fulfilling the Design Criteria

The final strategic method was evaluated against previously-determined design criteria.

Table 32. Fulfilling the design criteria.

YES	NO	It provides a shared method to support knowledge creation and collaboration among institutional health care professionals.
YES	NO	It facilitates problem solving in a way that will document steps and allow stakeholders to see the process unfold.
YES	NO	It reinforces tool sets that are currently being used in the system, such as Six Sigma process improvement strategies.
YES	NO	It aids in sustaining change by creating the conditions for adopting new initiatives by diverse stakeholders.
YES	NO	It merges existing methodologies of process improvement with external and emerging design-led approaches.

MergeCare Phases

Figure 66 illustrates the phases of the strategic approach.

Phase 1: Evaluate

Phase 1 includes clarifying the organization's *context*, *culture,* and *opportunities*. Research has shown that institutional health care systems operate at different scales with many different change support structures. Evaluating the appropriate scale and opportune places for implementing new methods is critical to planning openings where change can occur.

Phase 2: Understand

Phase 2 encourages team members to envision solutions to the chosen problem in the context of a workshop that is comprised of *empathize, steps/tools,* and *journey*. These steps build the key learning portion of the Human-Centered Design and Six Sigma processes and support participants in imagining a future resolution.

Phase 3: Implement

Phase 3 is comprised of managing the overall adoption of new tools to support change through the *test*, *encourage,* and *reflect* steps. This phase involves the implementation and monitoring of the project change. This is where understanding is demonstrated through actions in the field.

Knowledge Center (website)

The phases are supported by a Knowledge Center website designed specifically for each health care organization. Websites are built as part of consulting engagements and include resources and tools for the organization to continue building their culture of change and innovation as projects develop.

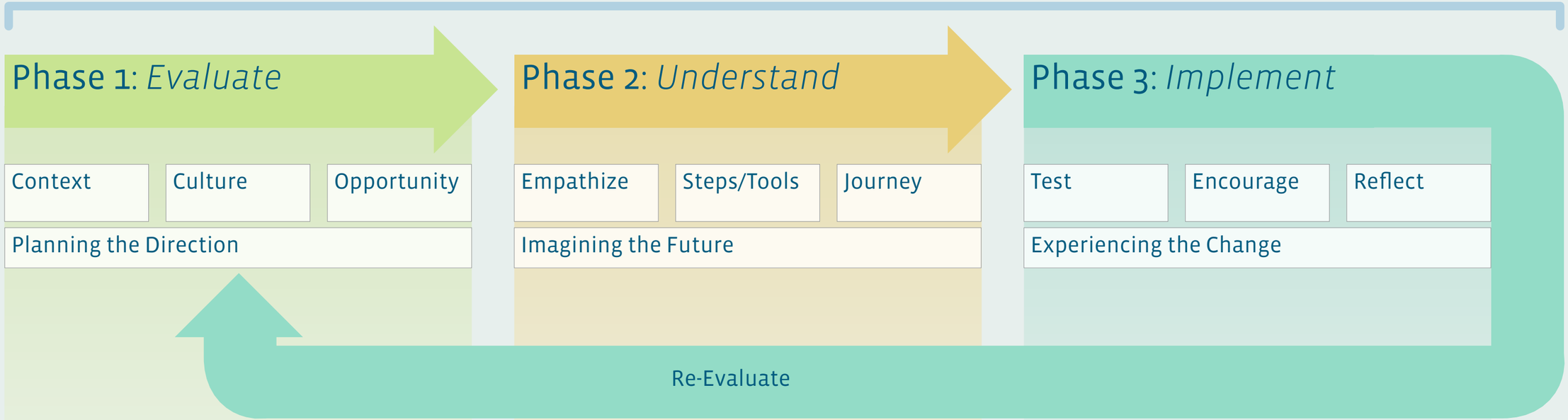


Figure 66. MergeCare strategic approach phases. Graphic representation of the three phases and associated steps. Author's image.

Product to Market

MergeCare has two levels at which clients can obtain the strategic approach. Level one is purchased as a workbook and knowledge center website to implement by internal managers and designers. Product level two engages MergeCare consultants who facilitate the workshops and overall strategic approach.

Figure 67. Prototype workbook with process. Illustration of prototype book that contains phases of the method. Author's image.

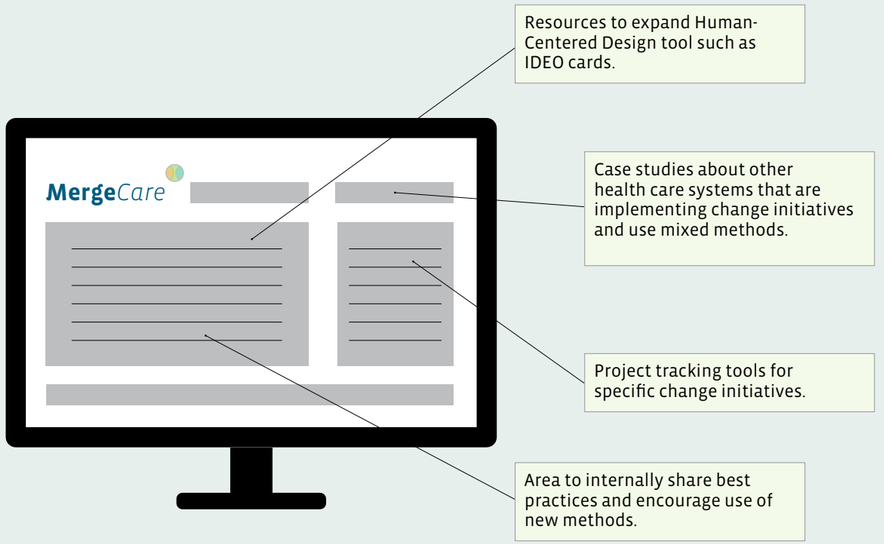


Figure 68. Prototype knowledge center. A dashboard website that is part of the product to market. Author's image.

Figure 69. Prototype cover. Cover with word mark, logo, and tag line to support the prototype. Author's image.

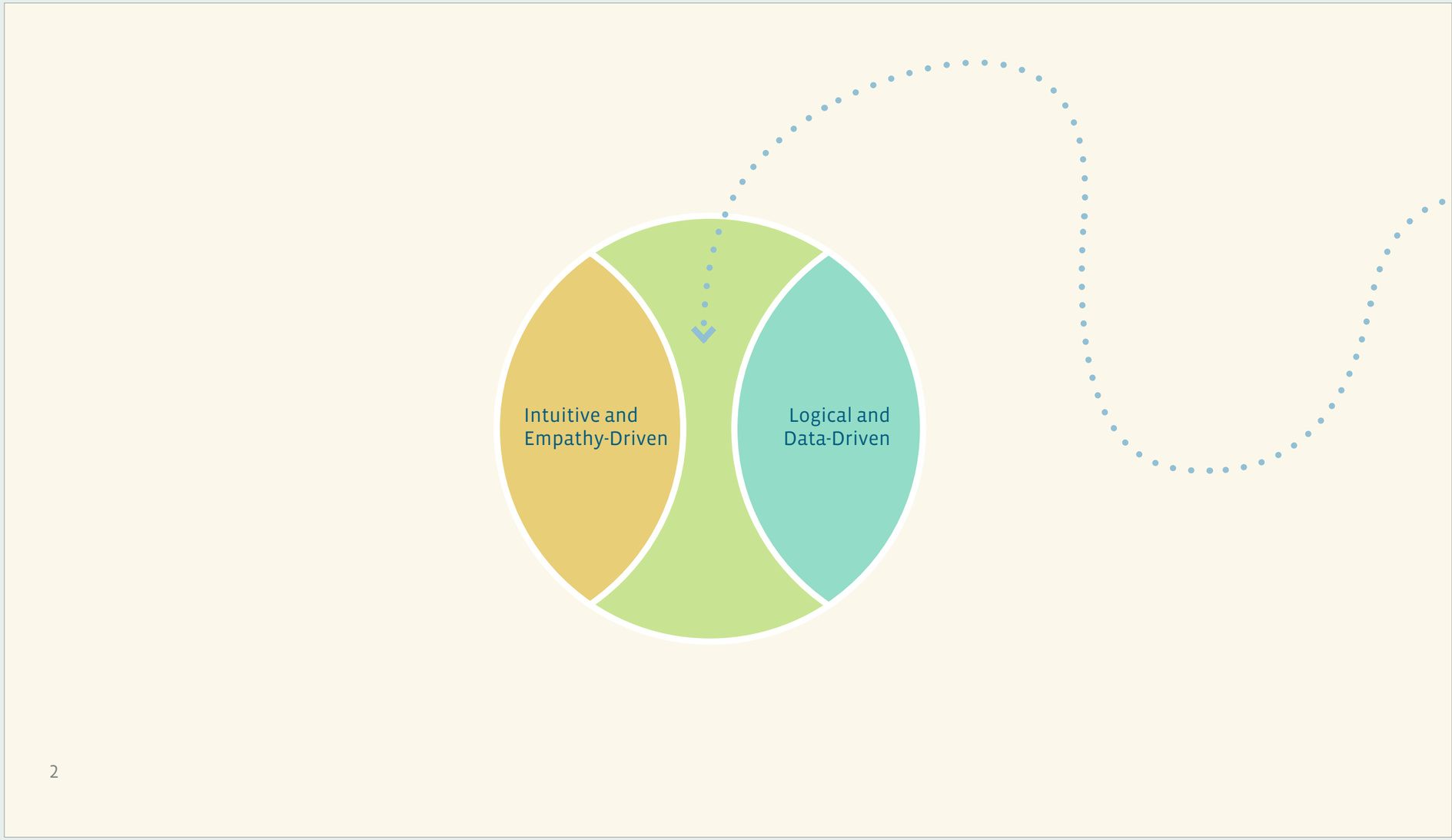
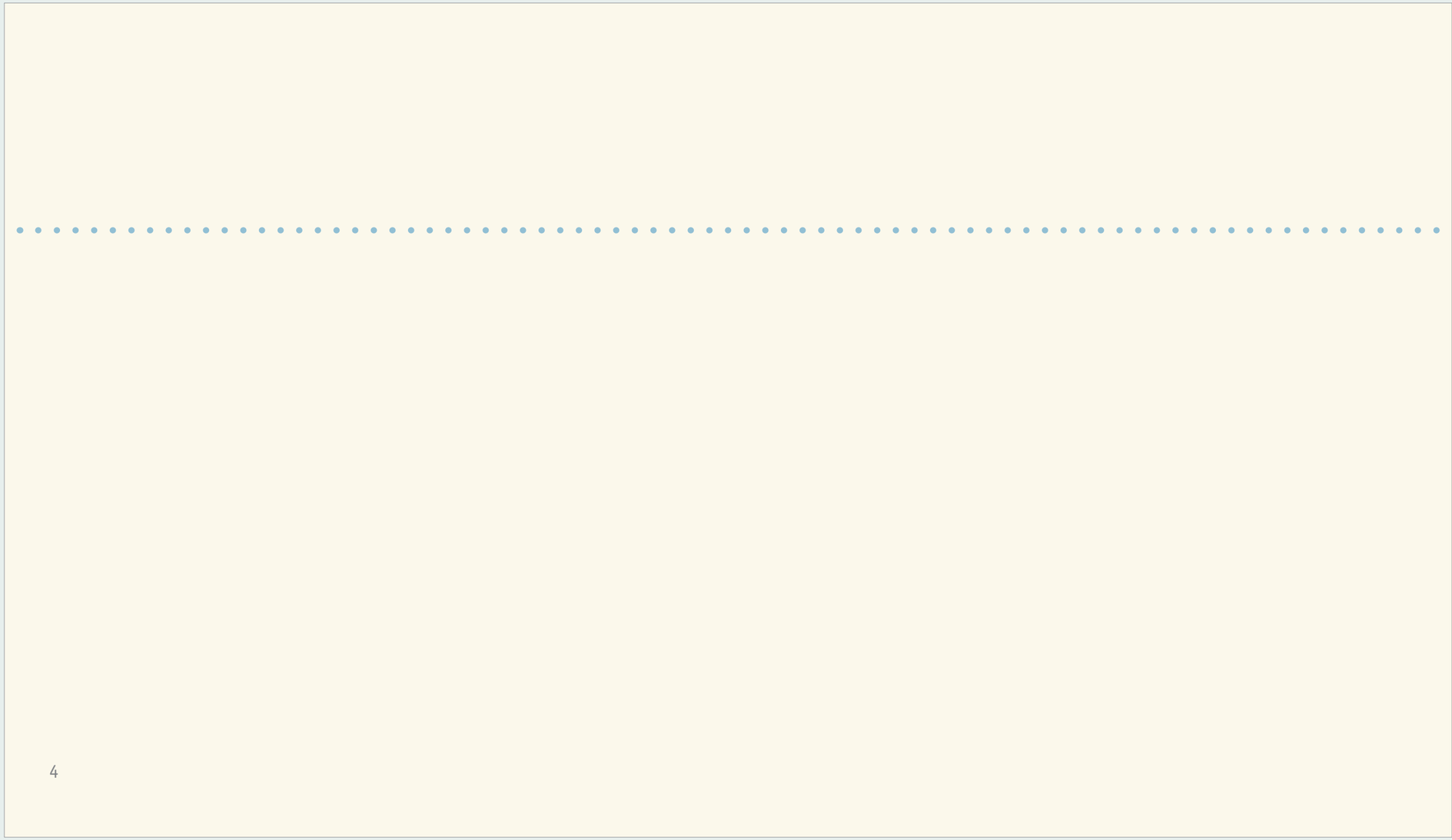


Figure 70. Approach relationship concept. Visual depicting the concept of the two methods coming together. Author's image.

MergeCare is a strategic approach created specifically for institutional health care managers and designers who need to support change in complex functional and operational environments. Our strategic approach integrates an intuitive and logical process to evaluate, understand, implement, and then sustain change initiatives. MergeCare uses a set of visual exercises that clarify opportunities and codify processes in order for team participants to collaborate and implement projects. Unlike other existing approaches, ours combines Human-Centered Design and Six Sigma process improvement methods. As a result, health care professionals are better equipped to facilitate and support innovative programs that improve overall operations.

3

Figure 71. MegerCare description. Overarching explanation of the strategic approach value to target audience. Author's image.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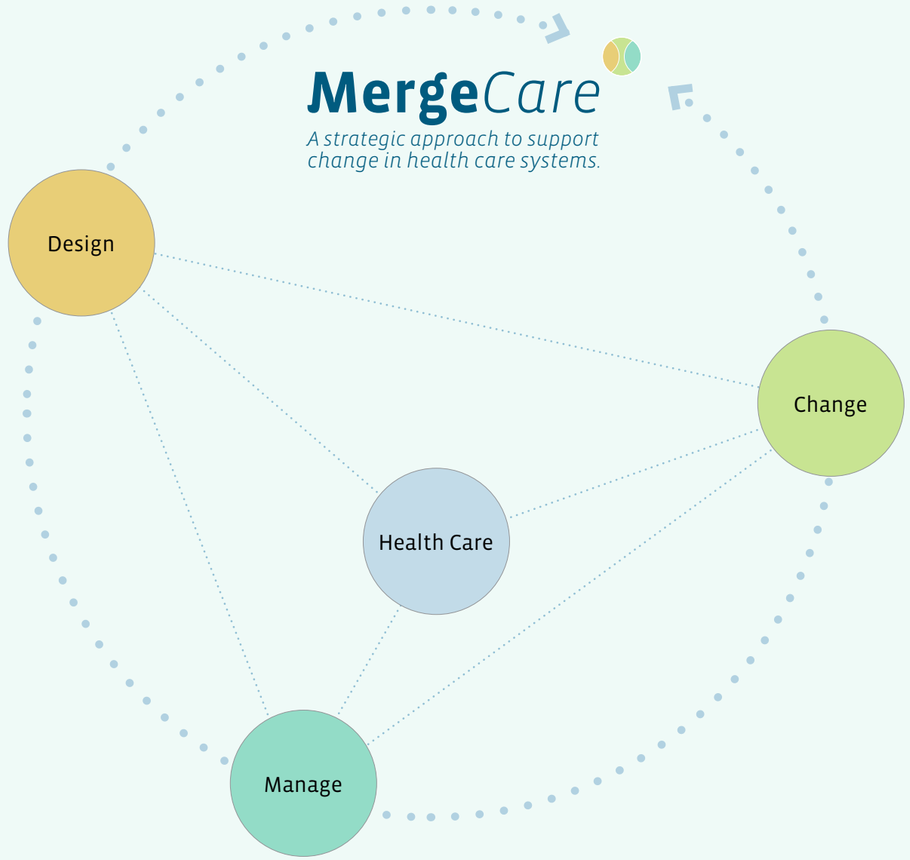
Contents

Figure 72. Contents. Table of contents for the various parts of the strategic method. Author's image.



About

MergeCare is the result of a 2015 investigation by Enrique Von Rohr that was supported by design management methods and tools. The outcome is a strategic approach for managers and designers within institutional health care systems that are leading teams of people through a process of change. Often the change is in the context of solving a particular challenge and may require stakeholders to alter how they plan and implement the initiative. The methods used here are applicable to many health care challenges in which an organization seeks a new approach to problem solving. The strategy is intended to be a starting point for an expanded set of tools that health care professionals can build upon. Each phase of the method is described further on page 10.

Figure 73. Relationships map. Illustration and text about the prototype concept relationships. Author's image.

Research

Results of the research uncovered that a number of strong attributes were present among designers and managers when successful change activity was taking place in the institutional health care sector.

The words shown do not represent an exhaustive list, but they guide the strategy used by the MergeCare approach. In addition, research demonstrated a strong culture of Six Sigma process improvement along with an emerging adoption of Human-Centered Design methods to support change activity. The two methods are combined into MergeCare. The phases described on the following pages are a high-level approach to using the two methods and are a starting point for managers and designers to expand their tool sets as they become familiar with the process.

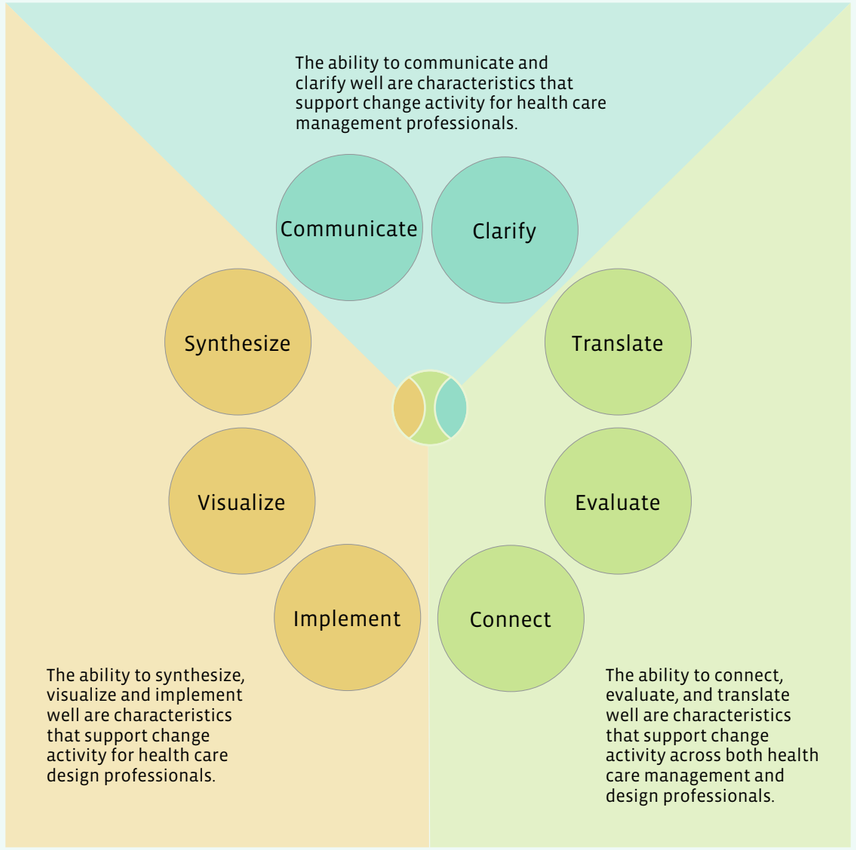


Figure 74. Research insights. Research that supported the logic behind the prototype development. Author's image.

Methods Used

Human-Centered Design is a methodology for solving problems in which people are the starting point of the process. It is a design process in which empathy is gained by focusing on the human experience, thus building a stronger solution that meets the needs of the people one is designing for. While there are many variations to the steps, they all embrace inspiration, ideation, and implementation in some form. A commonly used version developed by design firm IDEO uses a five-step process: empathize, define, ideate, prototype, and test.

Six Sigma is a structured, data-driven methodology for reducing business variation problems or improving processes by implementing performance metrics to minimize waste and increase customer satisfaction. Leading businesses across the globe use this methodology to improve such areas as manufacturing and services. The steps involved are known as the DMAIC process, which stands for Define, Measure, Analyze, Improve, and Control.

8

Figure 75. Methods used. Explanation of the methods used in the prototype. Author's image.

Team Formation

Assembling team members from the very beginning as part of the solution is critical to the process. The methodology supports group activity to create alignment, understanding, open dialogue, and communication. When managers and designers include team members in visioning and setting the steps and tools, they are more likely to support adoption of the methods.

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Figure 76. Team formation. Explanation of the importance of team formation in the use of the method. Author's image.

Phases Overview

Phase 1: Evaluate

Phase 1 includes clarifying the organization's *context*, *culture,* and *opportunities.* Research has shown that institutional health care systems operate at different scales with many different change support structures. Evaluating the appropriate scale and opportune places for implementing new methods is critical to planning openings where change can occur.

Phase 2: Understand

Phase 2 encourages team members to envision solutions to the chosen problem in the context of a workshop that is comprised of *empathize, steps/tools,* and *journey*. These steps build the key learning portion of the Human-Centered Design and Six Sigma processes and support participants in imagining a future resolution.

Phase 3: Implement

Phase 3 is comprised of managing the overall adoption of new tools to support change through the *test, encourage,* and *reflect* steps. This phase involves the implementation and monitoring of the project change. This is where understanding is demonstrated through actions in the field.

Figure 77. Phases overview. Description of each phase of the process. Author's image.

Knowledge Center (Website)

The phases are supported by a Knowledge Center website designed specifically for each health care organization. Websites are built as part of consulting engagements and include resources and tools for the organization to continue building their culture of change and innovation as projects develop.

Phase 2: *Understand*

Empathize | Steps/Tools | Journey

Imagining the Future

MHA RA DM RN CIO ENG PM

Who: Middle management, front-line staff along and senior leadership.
Why: In this phase, teams work to understand a challenge and envision the path to a solution. Stakeholders at the table lend knowledge as well as overall buy-in and support.

Phase 3: *Implement*

Test | Encourage | Reflect

Experiencing the Change

PM DM HEAD-RN RN RN RN

Who: Primarily front-line staff and lead project managers.
Why: At this phase the project is being implemented and various methods are being tested. Adoption of new methods and processes will be critical at this stage in the process.

Re-Evaluate

11

Figure 78. Illustration of phases. Illustration of approach phases with each step. Author's image.

Phase 1: *Evaluate*

What needs to happen?

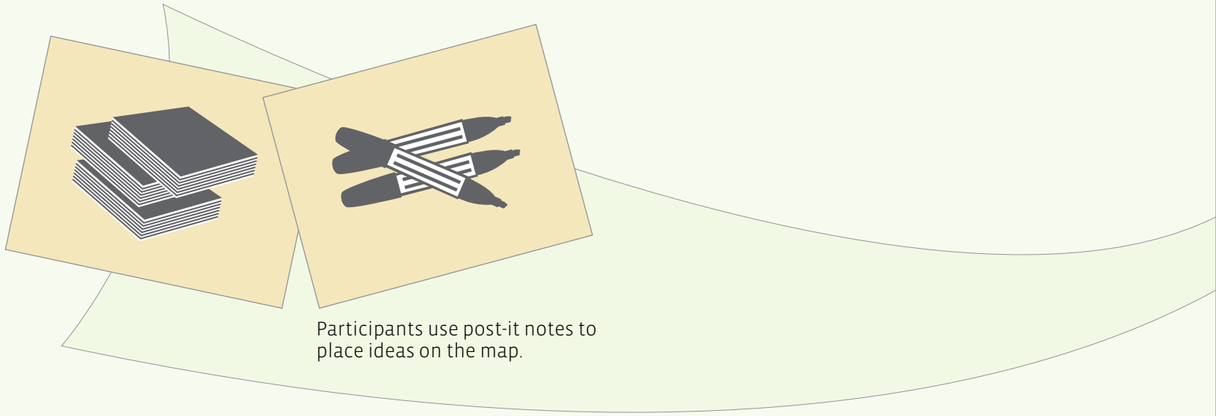
Phase 1 is comprised of clarifying the organizations *context*, *culture,* and *opportunities* in order to target a change initiative. **Context** looks at how the organization supports change and if there are existing formal or informal structures – or even individuals – that champion change methods and initiatives. **Culture** looks at how receptive team members are to change, how they currently implement changes, and how often they adopt new tools or even use work-arounds to solve challenges. Understanding the culture is critical to identifying an **opportunity** for implementing a change initiative. Looking for activity within which to test ideas and gain adoption are critical to impacting the overall culture of the organization, especially when there are roadblocks to change.

How it can happen?

Designers and managers start with an evaluation map. Senior leadership and middle management build this diagram through a collaborative process. In order to retain continuity, team members from this phase will need to carry over to Phase 2.

What are the measures of success?

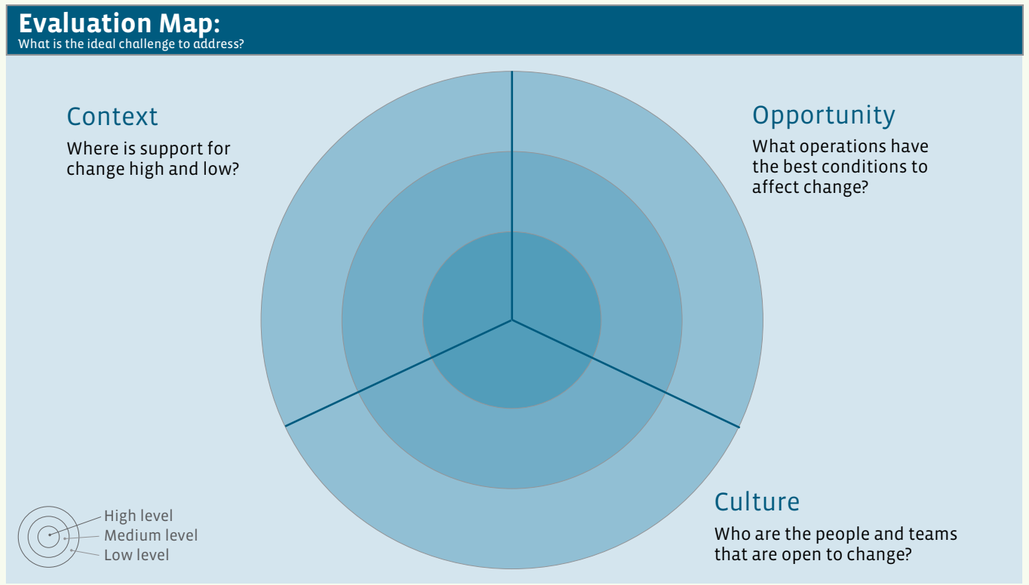
The goal is to identify a high or low presence of support for change activity in the *context* and *culture* of the organization. The *opportunity* goal is to identify the best areas for implementing change activity. By ranking projects from high to low, leaders, mangers, and designers can visually see connections in order to prioritize where to invest in change activity.



Participants use post-it notes to place ideas on the map.

12

Figure 79. Phase 1 evaluate. Overview of phase 1 of the strategic approach. Author's image.



Map size: 48” x 24”

Meeting Steps

Step	Time	Facilitator (Manager/Designers)
1. Plan	5 min	› Manager/Designer sets out materials and describes goal
2. Do	30 min	› Manager/Designer facilitates answering the questions posed on the illustration. Additional questions can be asked in each section.
3. Evaluate	30 min	› Manager/Designer facilitates discussion that may include moving ideas from the inner to the outer rings.
4. Decide	15 min	› Manager/Designer facilitates prioritizing the challenge to be addressed. If only a few opportunities are placed in the inner circle, then the group process has arrived at consensus.
5. Close	10 min	› Manager/Designer facilitates closing the meeting by getting agreement on the next steps for Phase 2 of the process.

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Figure 80. Evaluation map. Illustration of the evaluation map and meeting steps. Author’s image.

Phase 2: *Understand*

What needs to happen?

Phase 2 takes a staged approach to build a set of visuals that support team understanding of the challenge chosen in Phase 1. The steps are to *empathize*, to define the *steps* and *tools* used and to then refine the insights into a *journey* map that visualizes what the team needs to do.

How it can happen?

Designer and manager facilitate this process in partnership with key leaders and the front-line staff. It is important that as many of the participants involved in Phase 1 be included. In addition those people actually doing the work must be part of the process.

What are the measures of success?

Success will be achieved when there is clarity of alignment for each of the steps. In aggregate, the process of visualization, discussion, and debate is part of the process that supports consensus among participants. By making the process physical, participants can see the vision unfolding – and a path to success!

Parts of the Phase

The following table represents the various steps in Phase 2 of the MergeCare strategic method. Guiding team members through this process will support their understanding of the design-led process, but more importantly, it will introduce them to mixing a Human-Centered Design approach with a Six Sigma process.

A. Space Preparation	Secure a space sufficiently large for all team members to freely move around the room. Moving around the space is part of the collaboration.
B. Empathy Map	In this step, participants build a visual that sets the foundation for defining the total process used to solve the challenge.
C. Steps/Tools Map	Participants explore the overarching steps and tools that are to be used to solve the challenge. At this point, participants codify a high level project plan.
D. Journey Map	In this session, participants use the steps/tools as well as the empathy content to build out parts of the Journey Map that can inform details of an implementation project plan.

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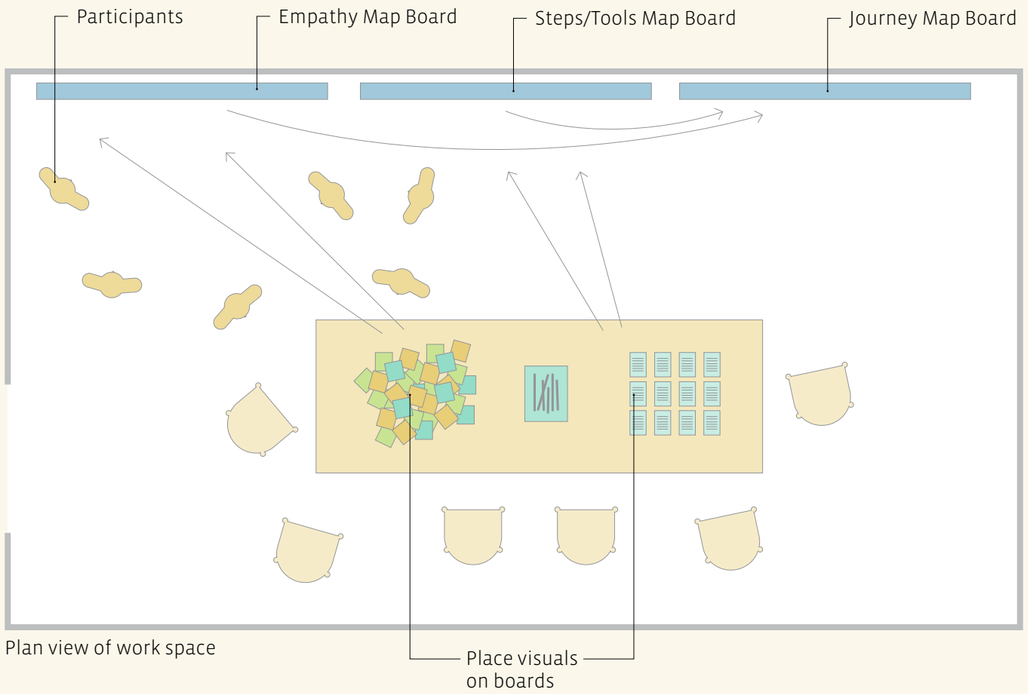
Figure 81. Phase 2 understand. Overview of phase 2 of the strategic approach. Author's image.

A. Space Preparation

It is important to plan a space where all team participants are welcomed and can engage in critical thinking about the project. Secure a sufficiently large room so all participants can move freely around the space. Place all material on a table in the center of the room. Participants will physically place images and text on boards, so they must move back and forth to the map. This activity is critical to building rapport and understanding about the challenge being discussed and leads to solving it collaboratively.



15

Figure 82. Space preparation. Illustration of the space preparation and location of items. Author's image.

Phase 2: *Understand*

B. Empathy Map

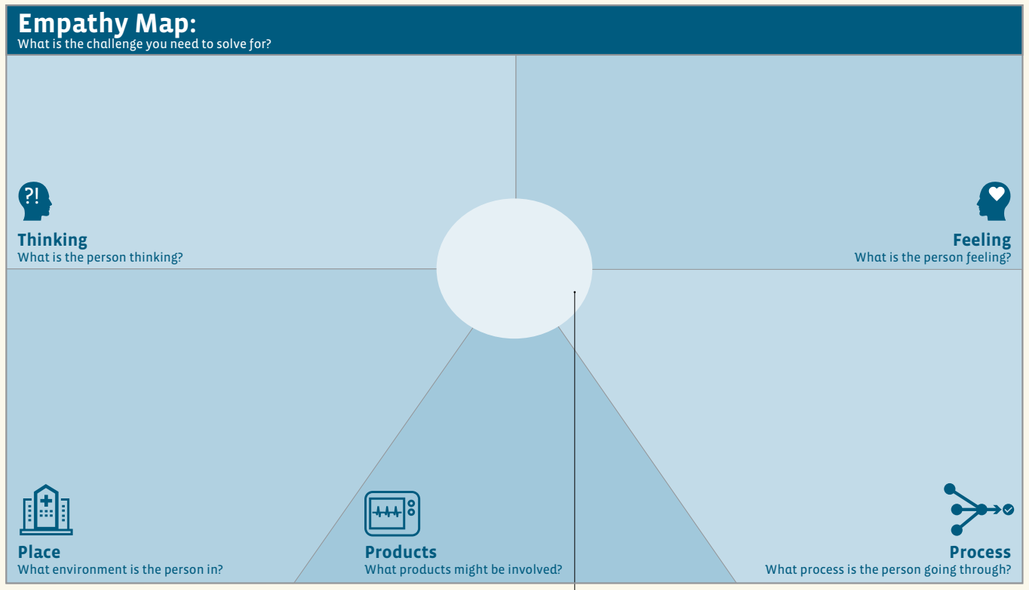
As part of the planning process the manager or designer should select a large number of photographs and icons and cut them out in advance. These can be very general in nature, but might also contain images relevant to the area of challenge. These visual stimulate team members to think more broadly about the challenges that might be affecting the individual or group of individuals they are tasked with addressing.

The Empathy Map allows participants to fully visualize a challenge. It starts with placing an image of the person for whom the team is solving the challenge in the middle. Often in health care systems the challenge involves a person and their role within the place they work, the products they use, and the processes they are involved with. For example, the target individual may be a nurse that is experiencing a particular situation in his or her area. It is important for team members to describe what the person is *thinking* and *feeling* in order to gain greater understanding of potential challenges not always immediately evident. These two areas are critical to a Human-Centered Design approach. Visualizing the person in proximity to the *place, product, and process* will help clarify the problem and allow teams to empathize with the person through the relationship of ideas.

Figure 83. Phase 2 understand. Illustration of the parts included in for the empathy map of phase 2. Author's image.

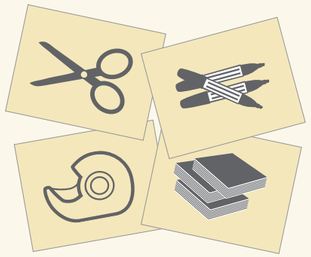
Examples of images that may be offered to participants for visualizing the Empathy Map.

Figure 84. Photographic images. Royalty-free stock photography purchased at https://us.fotolia.com.



Map size: 48” x 24”

First, place an image of the target audience or person here.



Always come prepared with tape for posting images on the board, Post-it Notes, markers, and scissors for building the map.

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Figure 85. Phase 2 empathy map. Illustration of the empathy map and it components. Author’s image.

Phase 2: *Understand*

C. Steps/Tools Map

The *steps/tools* portion of the understanding phase is designed to familiarize the team with the Human-Centered Design method and how it integrates into the Six Sigma method. The “steps” at right are taken from both methods. The “tools” are also taken from each method and can be matched with different steps. There are dozens of tools to accomplish each of the steps. It is the task of the group to define one or two tools that might be appropriate for each specific step. Each tool has actions associated with it that will be explored in the journey map stage.

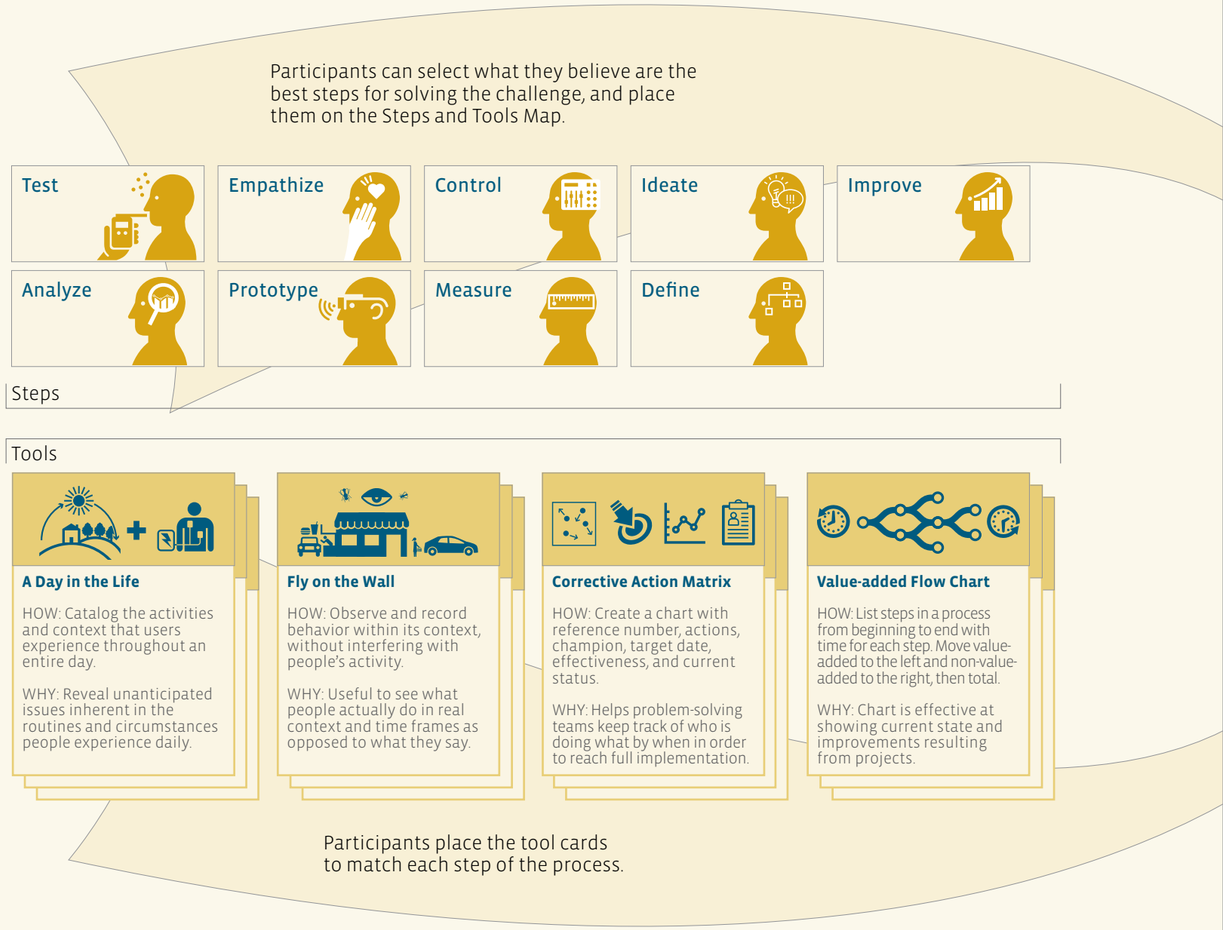
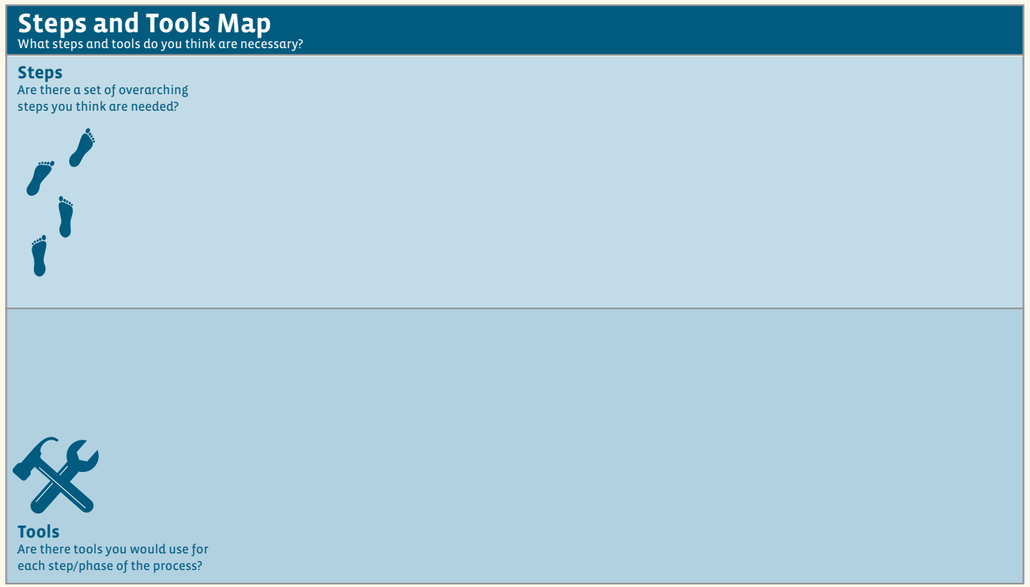


Figure 86. Phase 2 understand. Illustration of the parts included in for the steps/tools map of phase 2. Author’s image.



Map size: 48” x 24”

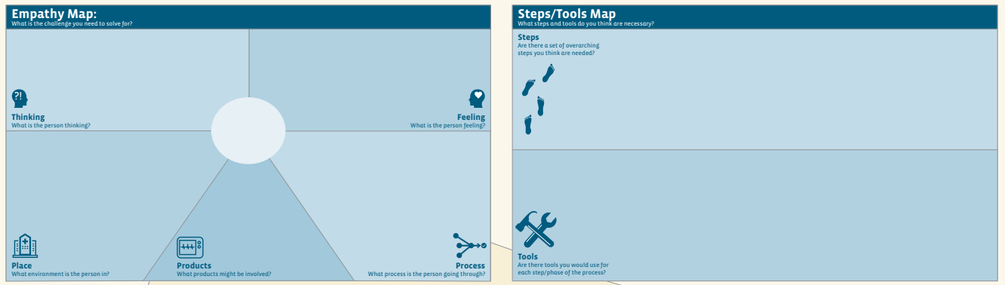
The Steps/Tools Map is designed to allow participants to fully visualize each of the steps and tools that might be used throughout a change initiative. As participants build the map there may be discussion and debate about which steps or tools are appropriate. The goal of this process is to foster communication and transparency of process. Participants may have developed a greater understanding during the Empathy Map, and thus will be able to explore new steps and tools to address issues. The process is also intended to be a learning step in the gradual adoption of the Human-Centered Design method.

Figure 87. Phase 2 steps and tools map. Illustration of the steps and tools map and it components. Author’s image.

Phase 2: *Understand*

D. Journey Map

The Journey Map outlines a vision for how the chosen change might unfold over time. It combines the thinking, feeling, place, process, and products from the Empathy Map with the Steps and Tools Map. The Journey Map is a manifestation of the qualitative approach found in Human-Centered design and the quantitative or data driven aspects of Six Sigma. While the goal of the Journey Map is to imagine an ideal future state, many of the parts will be refined in Phase 3, when a schedule of work is determined.



Elements from the Empathy Map and the steps/tools populate the Journey Map.

20

Figure 88. Phase 2 understand. Illustration of the parts included in for the journey map of phase 2. Author's image.

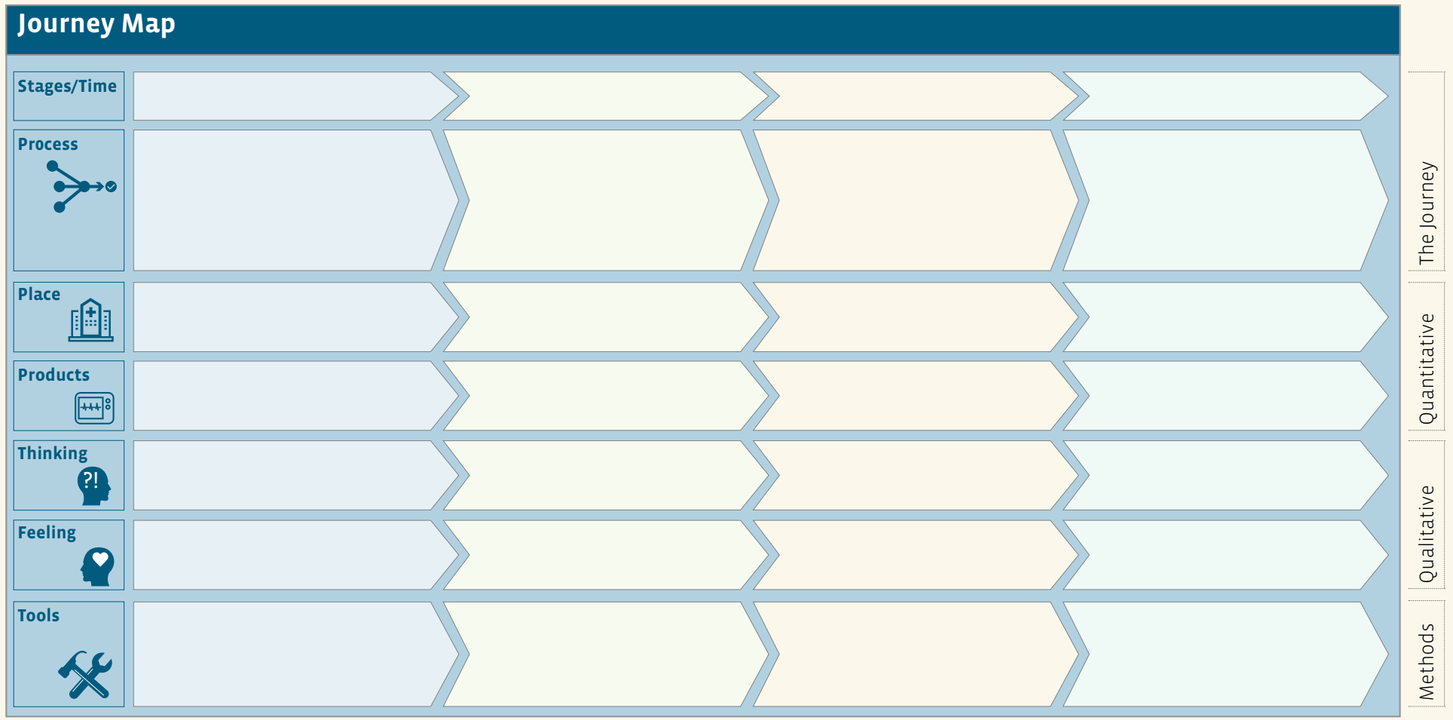


Figure 89. Phase 2 journey map. Illustration of the journey map and it components. Author's image.

Sample Schedule

The following is a sample schedule to follow for a Phase 2 workshop: Understanding.

Pre-Workshop Steps	Schedule	Facilitator (Manager/Designers)	Team Participants	Supplies
1: Reserve Space	1 week prior	› Manager/Designer makes sure the space is appropriate		
2: Collect Materials	1 week prior	› Print out Empathy Challenge, Steps/Tools and Journey Maps › Collect images › Collect tools from various sources as needed (HCD and Six Sigma)		
3: Invite Team	1 week prior	› Manager/Designer invites team members to join the meeting	› RSVP to meeting	
Workshop Steps 1: Prepare Room	**Schedule** 20 min	› Manager/Designer sets out materials as described on page 9		› Empathy Map, Steps/Tools Map, Journey Map › Images, steps, tools from various sources › Water and snacks
2: Meeting Intro	10 min	› Manager/Designer explains the intent of the meeting	› Listen	
3: Empathy Map	30 min	› Manager/Designer facilitates and participates in posting images	› Post images with all team members	› Empathy Map and materials
4: Steps/Tools Map	1 hour	› Manager/Designer facilitates and participates in posting images	› Post steps and tools with all team members	› Steps/Tools Map and materials
5: Lunch	1 hour	› Select a place to go in advance or order in	› Lunch together	
6. Journey Map	1 hour	› Manager/Designer facilitates and participates in merging the empathy and steps/tools ideas on the Journey Map	› Combine two prior maps onto new one	› Journey Map and materials
7. Closing	30 min	› Manager/Designer facilitates closing the meeting by getting participants to agree on moving into the implementation phase. If additional stakeholders need to be engaged, the process may be shared and refined; however, these participants are ideally part of this session.	› All agree on direction	

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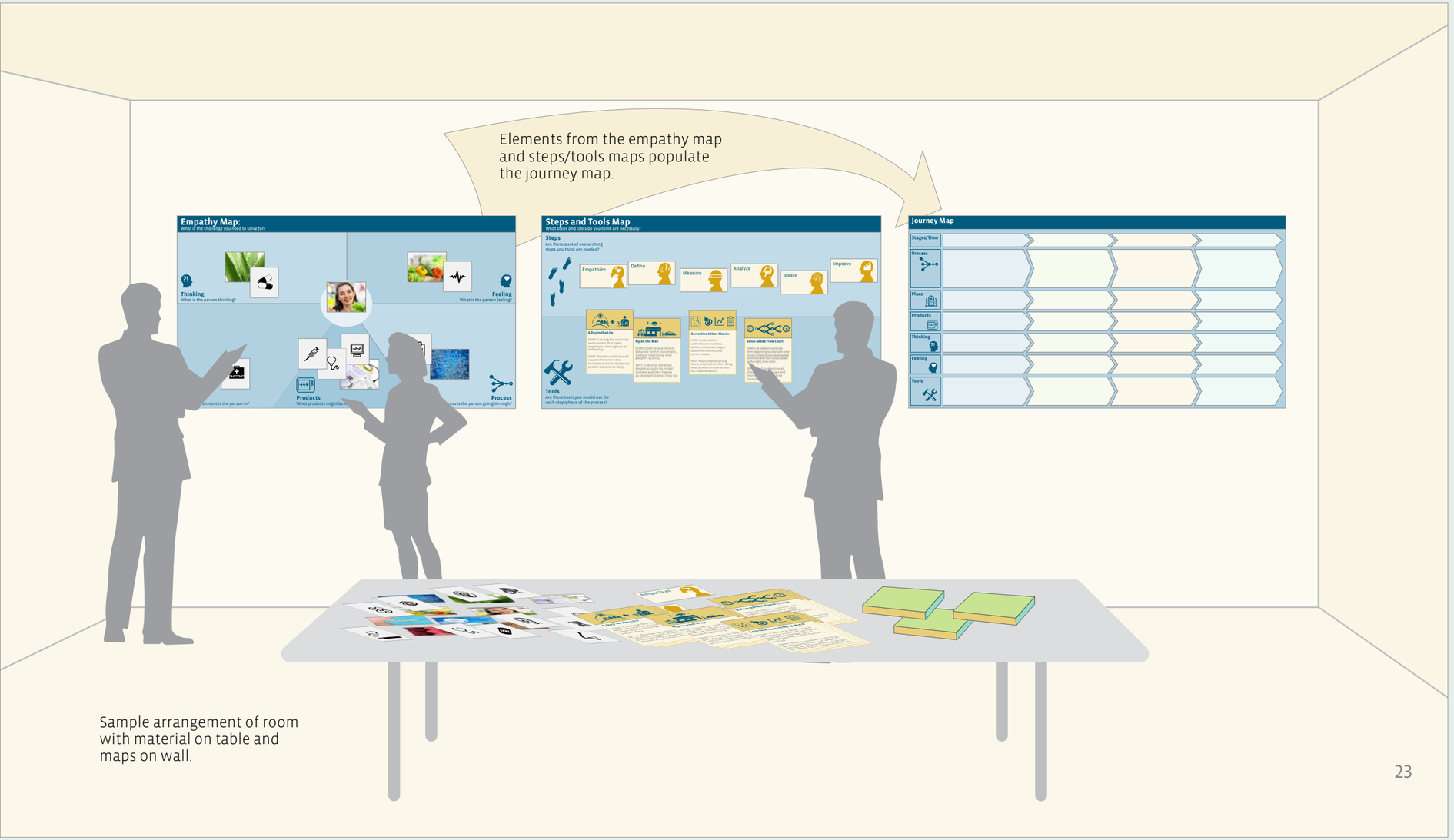
Figure 90. Phase 2 sample schedule. Illustration of a schedule used in the workshop of phase 2. Author's image.



Sample arrangement of room with material on table and maps on wall.

23

Figure 91. Phase 2 workshop room. Illustration of the workshop room and how to set up the maps. Author's image.

Phase 3: *Implement*

What needs to happen?

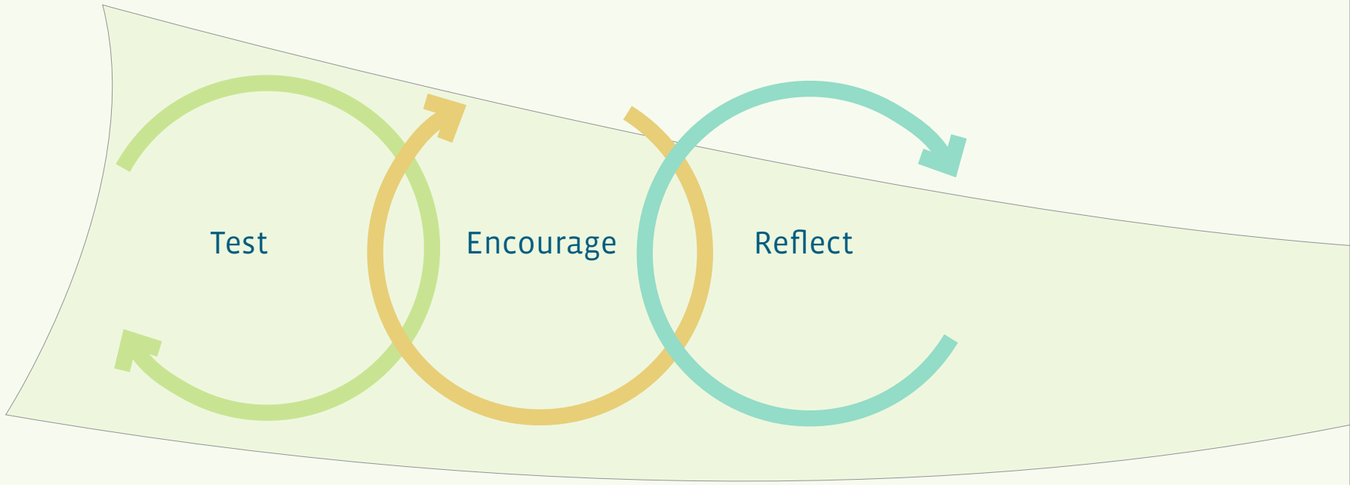
Team members agreed on a path in Phase 2 and now work to enact change by implementing the stages outlined in the Journey Map.

How it can happen?

Managers and designers now use project management tools such as a gantt chart to schedule a project plan that supports the stages of the Journey Map. However, keeping the Journey Map as a visible artifact will be key to re-evaluating the process as it unfolds.

What are the measures of success?

The measure of success will be the overall adoption of the methods used. Managers and designers as well as team members at large should become more adept at using MergeCare and the design-led tools included in this strategic approach.

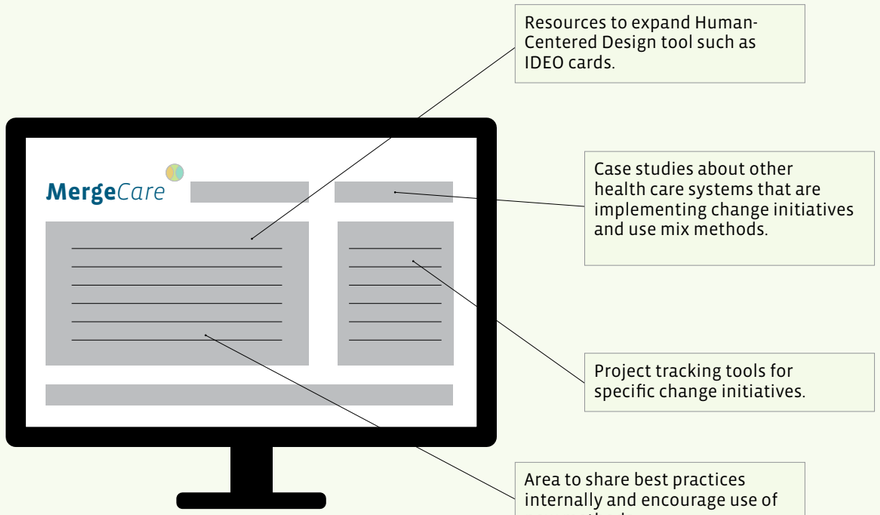


24

Figure 92. Phase 3 implement. Illustration and description of phase 3 steps. Author's image.

Knowledge Center

The Knowledge Center is a website dashboard that supports collaboration and knowledge sharing. The website is part of the MergeCare consulting services and is built to support the implementation phase of the project. Change initiatives are tracked through the site in order to support all team members when testing the project. In addition, case studies and resources are provided to support team members and encourage them to keep up the good work. Lastly the site contains tools for members of the team to reflect on the project as it progresses.



25

Figure 93. Knowledge center. Illustration and description of the knowledge center portion of the approach. Author's image.

Figure 94. Back cover. Illustration of strategic approach back cover and contact information. Author's image.

The Wordmark, Symbol, and Color

The MergeCare name is intended to reflect the value of bringing diverse methods together in support of health care. Because our focus is health care, we accent the word “care” in the wordmark. Combining “merge” and “care” reflects the aspirations of our vision and mission to positively affect the institutional health care sector with new approaches to problem solving. The wordmark typeface is Vista Sans, which combines serif and sanserif to further express the blending of methods we use in our strategic approach.

The symbol that follows the wordmark is also a graphic representation of combining two ideas into one. The symbol is reinforced through a color system intended to reflect a warm and inviting approach. The pastel color palette is balanced by a saturated, single blue color that imparts a strong yet friendly quality to the overall identity.

Figure 95. Logotype identity. Illustration of application of the logotype identity on various backgrounds and color combinations. Author’s image.

Business Model Canvas

Table 33. Business model canvas.

Key Partners

Change Managers

Individuals that want to improve their skill sets and need a strategy to test and adopt.

Change Agents

Thought leaders that will adopt the method as well as advocate within health care systems.

Innovation Teams

Teams within health care systems that lead change initiatives and are looking for new strategies to energize their colleagues.

Think Tanks

Organizations that look to support innovation in the health care space.

Key Activities

Consulting

Workshops at national events and contracts with organizations to teach the strategic approach.

Education

Educational institutions that seek to explore new approaches at the intersection of process improvement and innovation.

Key Resources

Intellectual/Human

Knowledgeable leadership who can continue to evolve the approach.

Printing

Printed materials used for facilitating workshops.

Value Proposition

Use Existing Knowledge

Inclusive Approach

Educate Health Care Professionals

MergeCare supports institutional health care managers and designers seeking change in complex functional and operational environments. Our strategic approach integrates an intuitive and logical process for evaluating, understanding, and implementing change initiatives. We do this by facilitating a set of design-led visual sessions that clarify opportunities, imagine futures, and codify processes for participants to implement. Unlike other change strategies that are primarily data-driven, our approach is based on research that revealed an opportunity to combine human-centered design and process improvement methods to deliver greater outcomes and adoption success. Because we put people at the core of our strategy, health care professionals are better equipped to facilitate innovative change programs.

Customer Relationships

Dedicated Consultants

Customer segments may retain our expert facilitators.

Self Service

Customer segments may retain our product as a workbook and knowledge website.

Channels

Online Website

Conferences

Partner Organizations

Customer Segments

Health Care Managers

Health Care Designers

Health Care Professionals

Professional in the health care space that are not managers and designers may also value MergeCare.

Cost Structure

Fixed Cost Salaries

Employee salaries

Rent

Space to house company

Technology

Cost of marketing communications

Media

Cost of promoting the strategic approach materials and consulting

Revenue Streams

Consulting

Income from consulting services

Sales of stand-alone product

Income from sales of strategic approach workbook

Grants/Foundations

Partners that want to see the strategy developed

Publications (Print/Digital)

Refinement of literature and website modules

MergeCare business model canvas. This table shows the proposed business model for MergeCare, and provides details in each key information field. Adapted from "The business model canvas," by Strategyzer.com, 2010. Retrieved from http://www.businessmodelgeneration.com/canvas. Creative Commons Attribution-ShareAlike 3.0.

SWOT Analysis

Key Partners

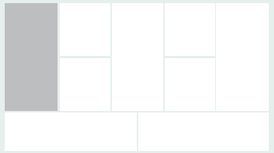


Table 34. Key partners SWOT.

Strengths	Weaknesses
› We have an inclusive view of methods to support our approach › Typically are open to new approaches that seek to improve their systems	› Still a young strategy with little testing completed, so partners may not be quick to adopt
Opportunities	**Threats**
› Think tanks often seek out innovative approaches like ours › Partners are looking to test new methods that propose opportunities for change	› Saturated market of approaches that state they solve change challenges › Individuals who may adopt it have existing legacy systems in place

Key Activities

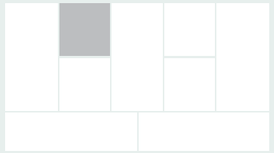


Table 35. Key activities SWOT.

Strengths	Weaknesses
› Education approach often allows for entry to potential adopters › Consulting that starts small with network team approach may build slowly to mitigate challenges	› It is difficult to gain recognition early in any new process without case studies › Founder is new to space, yet has strong partners
Opportunities	**Threats**
› Professionals in health care are interested in improving their system so may try new methods	› Professionals in health care are overworked and may not take time to test the strategy presented in the approach

Key Resources

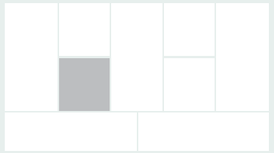


Table 36. Key resources SWOT.

Strengths	Weaknesses
› Founder is passionate about collaboration and entering the health care space › Health care sector is familiar with both methods combined in our strategy	› Consulting agreements with services that have a long lead time for success are a challenge to fund
Opportunities	**Threats**
› There are many thought leaders in this space that lend support and feedback to improve strategy	› Perceptions about each method are that they are the best for certain problems, thus adopting a combined approach may be a challenge

Value Proposition

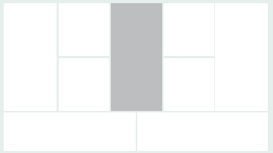


Table 37. Value proposition SWOT.

Strengths	Weaknesses
› A new combination of existing tools may be non-threatening because people are familiar with them › Low cost to test	› Customer segments may not be open to innovation for fear of perceived cost
Opportunities	**Threats**
› Low cost to test may create large opportunity for adoption	› High cost to implement long term › Needs senior level buy-in to pay for change

Customer Relationships

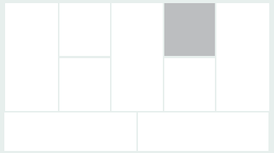


Table 38. Customer relationships SWOT.

Strengths	Weaknesses
› Consultant network may diversify potential entry points beyond a local market	› Brand is unknown › Challenge to have large groups of people adopt
Opportunities	**Threats**
› There are many health care conferences dealing with innovation in the sector where we could promote the strategy	› The methods we are adopting may be available to the target audience through other channels

Channels

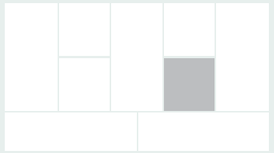


Table 39. Channels SWOT.

Strengths	Weaknesses
› Multiple touchpoints offer opportunities for dissemination › Potential for large, existing partner organizations to support the product	› Economy of scale may be difficult to realize
Opportunities	**Threats**
› There are many health care conferences dealing with innovation in the sector where we could promote the strategy	› Others might co-opt concept

Customer Segments

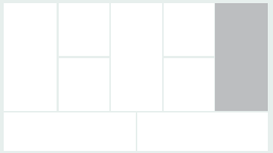


Table 40. Customer Segments SWOT.

Strengths	Weaknesses
› There is a large target audience › The approach is applicable to many levels of health care	› Customers often have limited time to engage
Opportunities	**Threats**
› Adoption by one large system may sustain the startup growth of the consulting service	› Health care professionals often find work arounds on their own › Consulting cost to support teams may be too high for smaller systems that need the service

Cost Structure

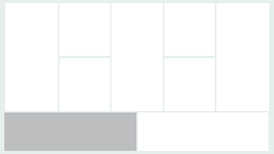


Table 41. Cost structure SWOT.

Strengths	Weaknesses
› Low overhead will be needed to start the service	› Real-world testing will need to be done to validate the cost structure
Opportunities	**Threats**
› There is a low start up cost to prepare materials and put in place technology needed to disseminate the product to market	› Pressure may surface due to high venue cost during educational engagements

Revenue Streams

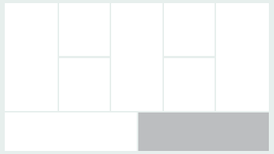


Table 42. Revenue streams SWOT.

Strengths	Weaknesses
› Simple to make the product and deliver service › Foundations are willing to fund innovation directed at health care change	› Consulting can have long lead times without consistent revenue › Grants and foundations may only provide startup costs
Opportunities	**Threats**
› Organizations are receptive to funding improvements to health care systems	› There are many competing change strategies on the market

Business/Implementation Plan

Executive Summary

MergeCare is a strategic approach for institutional health care managers and designers who need to support change in complex functional and operational environments. We deliver our approach through a consulting-services model or a stand-alone set of instructions in the form of a workbook and knowledge website. Our approach integrates an intuitive and logical process to evaluate, understand, implement, and, finally, sustain initiatives. MergeCare's approach uses a set of visualization strategies to clarify opportunities and codify a desired process in order for team participants to implement projects. Unlike other existing approaches, ours combines Human-Centered Design and Six Sigma process improvement methods. As a result, health care professionals are better equipped to facilitate and support innovative programs that improve overall operations.

MergeCare is the result of a research investigation supported by a design management process. The outcome is our strategic approach to help managers and designers within institutional health care systems lead teams of people through a change process. Change often occurs in the context of solving a particular challenge and may require stakeholders to alter how they imagine and implement the change. MergeCare's strategy is intended as a starting point for an expanded set of methods for health care professionals to build upon.

The Team

Management Profile

Chief Design Officer

The Chief Design Officer of MergeCare has over twenty years of experience in the design industry. He was a founding member of a New York-based start-up design practice with a focus on the built environment, brand, and print for clients in financial services, law, and health care. In addition, he has taught design for over ten years – an ongoing act of facilitating educational experiences.

Lead Design Activator

The Lead Design Activator has been in the health care sector for over ten years. With a background in health management and psychology as well as human-centered design methods, she is well positioned to lead large teams of health care professionals.

Facilitation Activators

The MergeCare model has a distributed workforce strategy, partnering with experts across the country who provide consulting services in their own region using the MergeCare strategic approach.

Why We Are a Winning Team

We have a passion for improving the quality of people's lives. The health care sector comprises some of the largest organizations in the country, serving patients with thousands of conditions. Our design-led approach in partnership with management strategies will play a pivotal role in supporting changes because we will bring the voice of real people into the process improvement method.

Our team has over 30 years of combined experience partnering with clients that appreciate collaboration and design-led approaches. The techniques we use are trans-disciplinary: we know that complex systems require many voices to lead a change initiative.

The Business Model

Vision

Our vision is to support health care managers and designers leading successful projects that bring healthy change to their organizations.

Mission

Our mission is to facilitate collaboration between managers, designers, and multi-faceted teams to help them evaluate, understand, and implement meaningful change resulting in improved processes and service to patients.

Values

- We believe in the power of combining human-centered design and process improvement methods.
- We value transdisciplinary collaboration, intuitive, empathy driven, and logical, data-driven processes.
- We provide a strategic approach that enables design and management leaders to effect change activity in their health care organizations.

How our Business Model Works

What makes the MergeCare business unique is that we offer new ways of approaching change that synchronize with models well utilized by health care managers. We are a multi-sided platform that bridges not only methods and tools, but customer segments within an organization. We offer our customer segments the opportunity to build a better process and thus service to their customers. In the process they change the culture of their operations in order to effect greater long term impact.

Figure 96. Star model. Use of Jay Galbraith's Star Model to illustrate key organizational components of the business (Osterwalder & Pigneur, 2010). Author's image.

Value Proposition

MergeCare is a new approach for institutional health care managers and designers who need to support change in complex functional and operational environments. Our strategic approach integrates an intuitive and logical process for evaluating, understanding, and implementing change initiatives. We do this by facilitating a set of design-led visual sessions that clarify opportunities, imagine futures, and codify processes for participants to implement. Unlike other change strategies that are primarily data-driven, our approach is based on research that revealed an opportunity to combine human-centered design with process improvement methods to deliver greater outcomes and adoption success. As a result, health care professionals are better equipped to facilitate innovative change programs because people are at the core of the strategy.

External Environment

The Economy

The local St. Louis economy has a number of large and small health care systems. While some have teams that already support change activity through methods such as Six Sigma, Lean Six Sigma, and other process improvement strategies, few integrate a mix of human-centered approaches. The Affordable Care Act of 2010 is putting increased pressure on the institutional health care sector to focus more on patient outcomes. By integrating approaches that focus on human behavior from the start, health care professionals can develop holistic approaches that meet outcome goals.

Market Trends

Process improvement strategies such as Six Sigma have been the standard for health care managers seeking to improve efficiency and support innovation and change in complex systems. However, these strategies often data driven and lack a human-centered approach. Health care is now looking to design for innovation through new methods, among them being human-centered design and design thinking.

Competitor Analysis

Competitor analysis revealed that there is a growing interest and use of human-centered design within the health care sector. While much attention is directed at pure innovation, there is less activity that integrates design approaches with existing methods being used within institutional health care. MergeCare leverages the existing culture of Six Sigma and integrates a new, human-centered approach to problem solving and change strategy.

Competitive Advantages

By positioning MergeCare as a business intended to support managers and designers ability to affect change through a human-centered design and process improvement approach, we position ourselves in an opportunity space that few are addressing. In doing so, we become trusted advisors and partners of their business.

Implementation Roadmap

Projects

Financial Analysis

In order to gain support for our organization, MergeCare will complete a detailed financial analysis that includes a break-even analysis, financial projection, capital spending, operating costs, and funding requirements.

Product Refinement

Refinement of the product and consulting scope will be needed prior to implementing consumer-facing touchpoints. Additional testing with trusted advisors will be needed to further refine the approach.

Milestones

Within 6-9 Month

- Create strategic alliances with local health care organizations that are willing to pilot the approach prior to a full launch.
- Identify a network of designers that will use the approach as part of their engagements to pilot the product in large and small organizations in other markets.
- Refine approach workbook materials.
- Publication in mainstream publication to garner exposure and response from industry and peers.

Within 1 Year

- Present the MergeCare approach at national health care conferences that showcase new approaches to innovation and process management.
- Pitch MergeCare to national non-profits that advocate for new approaches to change in the health care sector.

Risk Analysis

Limiting Factors

›Limiting factors for MergeCare include the possibility that existing organizations in the human-centered design space are already penetrating the health care space and can pivot to include Six Sigma in their services.
›Another limiting factor could be that, once the organization adopts the approach, there will be limited growth of consulting services.
›Institutional health care can often limit outsourcing of change initiatives, especially when the organization is large.
›Change activity has a long lead-time to demonstrate results, thus challenging adoption from target audiences in order to sustain the product.

Critical Success Factors

›Critical to the success of MergeCare will be the adoption of the strategy by managers and designers.
›Critical to the success will also include communicating the value to many stakeholders within the target organization.

Specific Risk and Countermeasures

There is a real chance that others will co-opt parts of the approach. Audiences may seek out the methods on their own as opposed to using the integrated MergeCare strategy. Further testing is needed to refine the approach and develop case studies that demonstrate its unique value.

Business SWOT Analysis

Table 43. Business SWOT analysis.

Strengths	Weaknesses
›We have an inclusive view of methods to support our approach ›Education approach allows for entry to potential adopters ›Consulting that starts small with network team approach may build slowly to mitigate challenges ›Founder is passionate about collaboration and entering the health care space ›Health care sector is familiar with both methods combined in our strategy ›A new combination of existing tools may be non-threatening because people are familiar with one of them ›Low cost to test ›Consultant network may diversify potential entry points beyond a local market ›Multiple touchpoints offer opportunities for dissemination ›Potential for large, existing partner organizations to support the product ›There is a large target audience ›The approach is applicable to many functional groups	›Still a young strategy with little testing completed, so partners may not be quick to adopt ›It is difficult to gain recognition early in any new business without case studies ›Founder is new to sector, yet has strong partners ›Consulting agreements with services that have a long lead time for success are a challenge to fund ›Customer segments may not be open to innovation for fear of perceived cost ›Economy of scale may be difficult to realize ›Customers often have limited time to engage ›Real-world testing will need to be done to validate the cost structure ›Consulting can have long lead times without consistent revenue ›Grants and foundations may only provide cost for unique cases
Opportunities	**Threats**
›Think tanks often seek out innovative approaches like ours and may promote ›Partners are looking to test new methods that propose opportunities for change ›Professionals in health care are interested in improving their system so may try new methods ›There are many thought leaders in this space that lend support and feedback to improve strategy ›Low cost for initial testing may create opportunity for adoption ›There are many health care conferences dealing with innovation in the sector where we could promote the strategy ›Adoption by one large system may sustain the startup growth of the consulting service ›There is a low start up cost to prepare materials and put in place technology needed to disseminate the product in the market ›Organizations are receptive to funding improvements to health care systems	›Saturated market of approaches that state they solve change challenges ›Individuals who may adopt it have existing legacy systems in place ›Professionals in health care are overworked and may not take time to test ›Perceptions about each method are that they are the best for certain problems, thus adopting a combined approach may be a challenge ›Needs senior level buy-in to pay for change activity may be a challenge ›The methods we are adopting may be available to the target audience through other channels ›Others might co-opt concept ›Health care professionals often find their own work arounds to problems ›Consulting cost to support teams may be too high for smaller systems that need the service

Conclusions and Recommendations

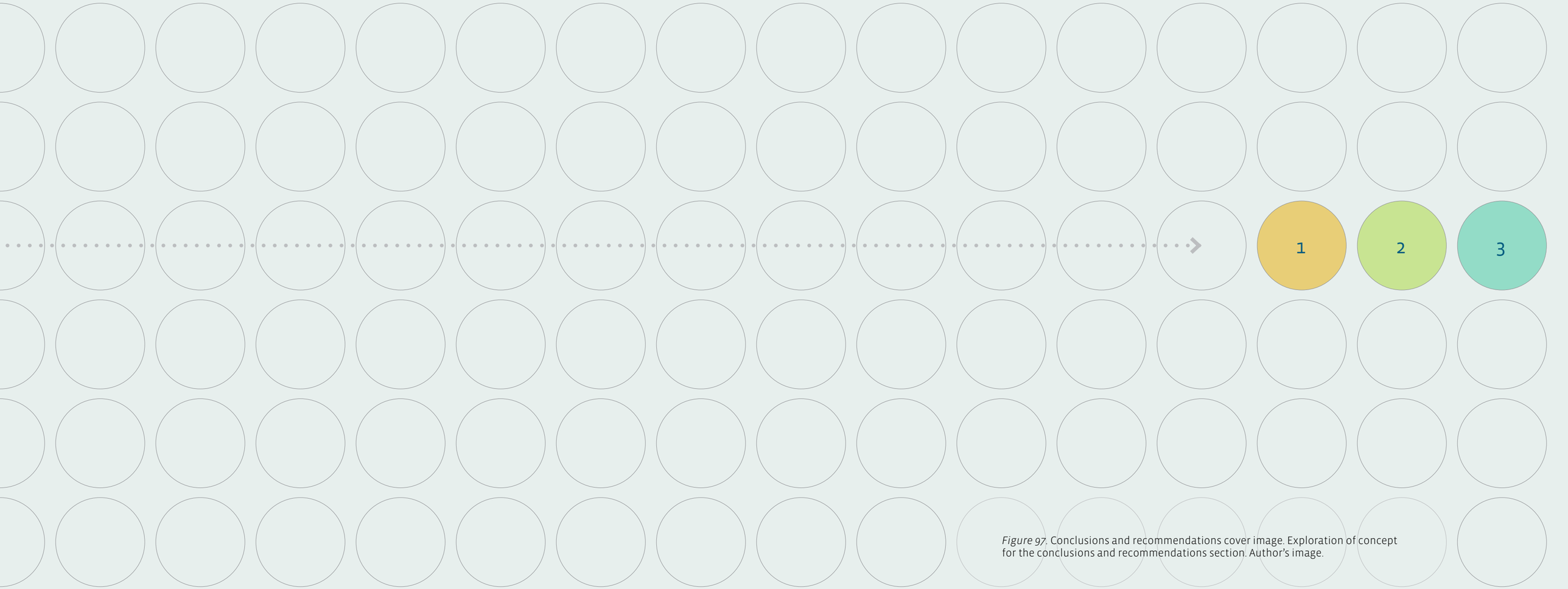


Figure 97. Conclusions and recommendations cover image. Exploration of concept for the conclusions and recommendations section. Author's image.

Conclusions

MergeCare is a proposal for health care managers and designers in the St. Louis region, however, it is intended to be applicable across US-based systems. Institutional health care systems seeking to affect greater change by integrating design-led approaches within their existing process improvement methods will find value in what MergeCare has to offer.

The Process

This concept grew out of a research question: “How might the application of design management methodologies support transformational change within the institutional health care sector?” The process began with defining the problem, target audience, purpose, scope, and significance of the study. These initial steps clarified the boundaries of what could be accomplished within the timeframe and the question’s relevance to the practice of design management.

Secondary research about institutional health care defined a strategic intent through market analysis. The insights generated provided a broader understanding of the problem statement in order to identify opportunities for design to be integrated into the institutional health care sector.

The research and synthesis included a deeper investigation of St. Louis designers and managers within the institutional health care sector. This primary research provided further insights about regional organizations’ cultural attitudes, operational challenges, and receptivity to and management of change processes.

During the reframing and prototype development phase, the project scope was shifted in response to the research findings. There was evidence that “transformational change” was not always part of the target audience’s scope of daily activity. Subjects clearly felt their actions contributed to change; however, it was not at the scale of organizational transformation.

While “transformational change” was the initial intent of the project, it became clear that the appropriate focus for the target audience was an incremental affect on change at the project level. A smaller scale change would still impact the overall culture and have an opportunity for success. Further testing of the refined prototype may prove there is potential to have a larger impact.

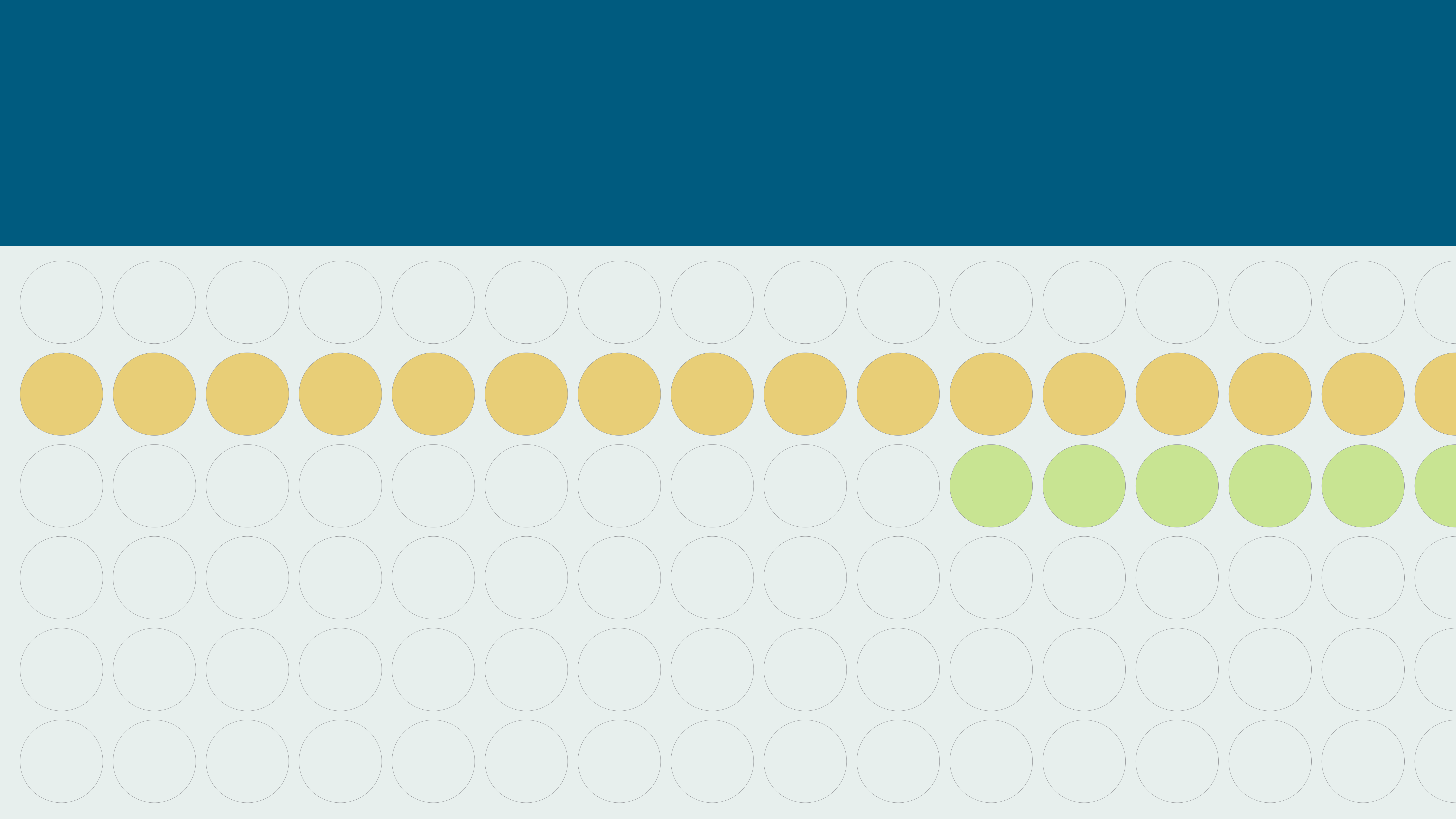
A prototype test was used to refine design criteria that in turn informed the final product, a strategic approach called MergeCare. MergeCare facilitates use of emerging problem solving methods and creates the conditions for adopting sustained change initiatives. The strategy incorporated Six Sigma, a widely used health care process improvement method, with that of Human-Centered Design, an emerging approach that focuses on people at the start of a problem solving process.

MergeCare is marketed as a program that managers and designers can implement on their own, or in the context of a consulting service in which facilitators walk teams through the process.

Recommendations

Institutional health care managers and designers have challenging jobs that intersect with operational logistics and human factors. Subject interviews revealed that affecting change in order to better serve clients was a slow and difficult proposition, partly due to the intensity and complexity of practice areas across institutional health care. The heterogeneous environments, data points, and health conditions that must be attended to make it challenging to develop a strategy that works across all areas. Hence, MergeCare's strategic approach is inclusive, giving it the potential to integrate additional methods over time.

If change is to occur in institutional health care, it is recommended that managers and designers embrace approaches that incorporate design-led and process improvement strategies in a holistic way. It is also recommended that the initial problem-solving team be limited to a few key stakeholders until the organization is well versed in the approach. This will help secure long-term change agents within the organization.



References

Figure 98. References section cover image. Pattern from card sorting method showing the three areas of inquiry. Author's image.

Annotated Bibliography

Berry, L. L. (2004). The collaborative organization: Leadership lessons from mayo clinic. *Organizational Dynamics,* 33(3), 228–242. doi:10.1016/j.orgdyn.2004.06.001

Summary: This article, published prior to Berry's book of a similar title, summarizes the unique beliefs and culture of Mayo Clinic that make it a leader in the industry. At its core is an unwavering belief in collaboration. As a place for patients to seek a last option, the "team" approach used by all Mayo employees is what allows it to provide high quality service. This team belief not only makes the organization function well, it is also self-selecting for those that choose to work there. Even the hiring process is collaborative in that Mayo is rigorous in identifying team players at all levels of the organization. So while some organizations will list similar attributes, Mayo delivers by actually functioning collaboratively in all activities in order to hire for life. Collaboration is further supported by investment in infrastructures that facilitate communication between doctors across the organization and the electronic medical record (EMR) system, capturing all patient data when coming and going. While the organization is physician-led at each level, every physician is paired with an administrator. In this way, the administrators function as coaches and vice versa, providing a collaboration model unique to Mayo that helps support the organization when dealing with patient-centered issues or management, business, and finance concerns.

Research Relevance: Articulates the success of a large organization and how – through collaboration and clear team building processes – they achieve operational success. As a case study in success and investment it informs what might be best practices.

Bucolo, S., Wrigley, C., & Matthews, J. (2012). Gaps in organizational leadership: Linking strategic and operational activities through design-led propositions. *Design Management Journal,* 7(1), 18–28. doi:10.1111/j.1948–7177.2012.00030.x

Summary: The authors state that, while "design thinking" has generally been accepted as a valuable tool in business, the leadership is still not there to support the activity. They use the term "design-led" to encapsulate enabling design thinking to be "embedded as a cultural transformation process within business." Their research presents a conceptual framework for enabling a design-led process to be adopted. By telling the story of an XYZ company's employees new product development process, they demonstrate how multiple units and stakeholders were slowly able to adopt a design-led approach to innovation. The authors argue that, while the leader was not a "designer," he did follow a design-led process to bring consensus to a new product launch. They identify this new person as a "design interpreter," someone who can understand the operations requirements, business needs, and strategy while leading the design process. They argue that this is a "new type of practitioner" needed to bridge the gap between business and design.

Research Relevance: The process of telling a story might prove to be one effecting process in design management. This example provides fodder for thinking further about strategies for transformational change.

Caixeta, M. C. B. F., & Fabricio, M. M. (2012). A conceptual model for the design process of interventions in healthcare buildings: A method to improve design. *Architectural Engineering and Design Management,* 9(2), 95–109. doi:10.1080/17452007.2012.738040

Summary: This article looks at architecture design practices and models for how to improve the design process when addressing health care environments. The research consists of literature reviews and case studies of health care architecture practices.

Research Relevance: A large challenge for the institutional health care sector is how spaces are arranged. How architects might think about space and how they manage and interact with the health care space informs how it might be further improved in the change process.

Donofrio, M. (2013). Building knowledge: A framework for a translational research culture in architecture. *ARCC Conference Repository.* Retrieved from http://arcc-journal.org/index.php/repository/article/view/106

Summary: This paper proposes a model for translational research in architecture schools in order to partner with basic research scientists and professional practice to help encourage change within the design industry. The model is based on translational research in medicine that seeks to bring basic research to practice faster by creating a feedback loop between research and practice in order to affect change within the built environment.

Research Relevance: The article identifies obstacles in how designers can acquire best skills to do good work in the health care space due to the complex challenges within the health care sector.

Hunter D. J., Erskine J., Hicks C., McGovern, T., Small, A., Lugsden, E., … & Eccles, M. (2014). A mixed-methods evaluation of transformational change in NHS North East. *Health Services and Delivery Research,* 2(47), 19–142. doi:10.3310/hsdr02470

Summary: The authors researched a large-scale transformational change in the NHS region of England over a period of three years. They looked at barriers and successes in change. The result was that change is complex and takes time.

Research Relevance: The authors looked at a number of methods for change, including workshops and the lean method. They conclude that, due to the continual reorganization of the entity studied, it was hard to provide a conclusive result beyond the idea that more

methods are needed in complex health care spaces. They identify some of the continued barriers, such as policy changes and staff turnover.

Ionescu, E-I., Meruță, A., & Dragomiroiu, R. (2012). Role of managers in management of change. *Procedia Economics and Finance*, 16, 293–298. doi:10.1016/S2212–5671(14)00804–1

Summary: This paper presents key roles that managers must play during a change management process. They include: being a communicator, supporter, trainer, and manager of resistance and the environment that they are working in. Overall, the teams that are built must be able to generate concrete change, manage the technical side of change, work with change management teams, and integrate project plans.

Research Relevance: The paper helps with understanding key leadership skills needed by a manager. Managers are often part of the overall transformational change or change initiatives, so it is important to address key attributes that might be supported.

Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design thinking: Past, present and possible futures. *Creativity and Innovation Management*, 22(2), 121–146. doi:10.1111/caim.12023

Summary: This paper looks at design thinking and the various contexts within which it is used and understood. It looks at five designers' perspectives and at three management perspectives, all of which stand in competition to each other, but which could be explored in parallel. The five designerly ways of thinking are for the "creation of artifacts, reflexive practice, as a problem-solving activity, as a way of reasoning/making sense of things, and as creation of meaning." The paper proposes ways to link discourse as well as further research to support this activity.

Research Relevance: Having examples of the intersection of these two practice areas informs how they might have other strategies or unique methods for transformational change.

Miller, K., & Moultrie, J. (2013). Understanding the skills of design leaders. *Design Management Journal*, 8(1), 35–51. doi:10.1111/dmj.12002

Summary: The authors begin with a literature review and comparison of concepts around the skills of a design leader. They find that there is little research or consensus on the topic and thus more research is needed. The main research question is "What are the key skills of design leaders in large fashion retailers, and specifically, do design leaders need design skills?" Given the lack of research in design leadership, they looked at general leadership and the skills needed. Some skills identified include creative problem solving and the ability to function within "constantly shifting scenarios." They identify the four categories by Katz (1955, 1974) who created the "skill-based approach" to management; they are cognitive, interpersonal, business, and strategic. The research was comprised of interview-based case studies of large UK retailers that are market leaders with a total 30 percent of the UK market. A total of 20 subjects were interviewed, all with "design" in their title or related roles. A qualitative and quantitative card-sorting method was used. They conclude that design leaders must posses a foundation in design and business skills. While the authors focus on the fashion industry, they acknowledge that their research findings could be applied to other fast-moving organizations that require constant innovation.

Research Relevance: This article informs how design managers understand leadership and how these interpretations might also be related to supporting transformational change in a corporate organization.

Razzouk, R., & Shute, V. (2012). What is design thinking and why is it important? *Review of Educational Research*, 82(3), 330–348. doi:10.3102/0034654312457429

Summary: This paper summarizes recent research on design thinking, helping one to understand characteristics of the process, differences in novice versus expert design thinkers, and a teaching process. The authors' goal is to provide the basics of design thinking in order to promote student problem-solving skills.

Research Relevance: To understand design thinking from an educational perspective and how this might be used to inform a tool or model used by health care professionals.

Reddy, M. C., Gorman, P., & Bardram, J. (2011). Special issue on supporting collaboration in healthcare settings: The role of informatics. *International Journal of Medical Informatics*, 80, 541–543. doi:10.1016/j.ijmedinf.2011.05.001

Summary: The main takeaway is that "collaboration" is critical in the health care space. The authors cite many others in explaining why collaboration is important and will lead to transformational change.

Research Relevance: Further evidence that collaboration is an important component of understanding and designing for complex health care challenges.

Sanders, L. (2008). An evolving map of design practice and design research. *Interactions*, 15(6), 13–17. doi:10.1145/1409040.1409043

Summary: The paper discusses various research methods being used by a variety of design disciplines. The study proposes a model that contrasts "design–led" with "research–led" and "expert mindset" with "participatory mindset" activities. The author's intent is to help practitioners who are conducting design research to better understand where they fit within the model and what methods they might use to advance activity that supports innovation.

Research Relevance: To explore how the research process might be incorporated into the teaching process and to consider if that is relevant in the context of transformational change.

Schroeder, R. G., Linderman, K., Liedtke, C., & Choo, A. S. (2008). Six Sigma: Definition and underlying theory. *Journal of Operations Management*, 26(4), 536–554. doi:10.1016/j.jom.2007.06.007

Summary: In this paper, the authors argue that research into, and understanding of, Six Sigma's performance is limited. Through a grounded-theory approach, their questions ask what the definitions and variants are, the underlying theoretical basis, and what is new about Six Sigma. Their subjects include 22 individuals at two multi-billion dollar corporations that had implemented Six Sigma and were at different stages of adoption. The field data was then compared to literature and other data to come up with definitions of Six Sigma. The research resulted in their definition of Six Sigma as "an organized, parallel-meso structure to reduce variation in organizational processes by using improvement specialists, a structured method, and performance metrics with the aim of achieving strategic objectives."

Research Relevance: Understanding Six-Sigma as a process improvement tool might inform a design method strategy that can support transformational change.

Smaltz, D. H., Sambamurthy, V., Agarwal, R. (2006). The antecedents of CIO role effectiveness in organizations: An empirical study in the healthcare sector. *IEEE Transaction on Engineering Management*, 53(2), 207–222. doi:10.1109/TEM.2006.872248

Summary: The authors' research looks at Mintzberg's managerial role as the foundation for examining a CIO's effectiveness in the health care sector. Their conceptual model looked at the relationship between the CIO's role effectiveness and their capabilities and engagements. They used a field survey research method with 136 subjects in senior leadership roles. They focused on the health care service delivery industry due to it being "highly dynamic, information intensive and complex." The results found that effective CIOs must be strategists, information stewards, relationship architects, integrators, IT educators, and utility providers. Furthermore, they must also be engagement as part of the top management team membership in order to be successful.

Research Relevance: Looking at senior leadership health care roles and what it takes to be effective provides potential opportunities and/or roadblocks for identifying who can lead transformational change in the institutional health care sector.

Swanson, C., Cattaneo, A., Bradley, E., Chunharas, S., Atun R., Abbas, K. M., & Best, A. (2012). Rethinking health systems strengthening: Key systems thinking tools and strategies for transformational change. *Health Policy and Planning*, 27(suppl 4), iv54–iv61. doi:10.1093/heapol/czs090

Summary: This paper presents three overarching tools and strategies for change in the health care industry. They are: collaboration across disciplines, sectors and organizations; ongoing, iterative learning; and transformational leadership. The authors provide an argument for a systems-thinking perspective to address multiple areas within health care.

Research Relevance: In order to have transformational change, a systems thinking perspective is often needed to understand the large picture and how to gradually support individuals to change over time.

Watkins, N., Kobelja, M., Peavey, E., Thomas, S., & Lyon, J. (2011). An evaluation of operating room safety and efficiency: Pilot utilization of a structured focus group format and three-dimensional video mock-up to inform design decision making. *Health Environments Research & Design Journal*, 5(1), 6–22.

Summary: The intent of this study was to "identify safety and efficiency-related design features for inclusion in operating room (OR) construction documents." The team used three-dimensional video mock-ups to solicit feedback from 19 surgical team members in a mixed-methods approach that led to design solutions for construction documents of operating rooms.

Research Relevance: This article assists with understanding how the built environment is designed and how it is facilitated. Based on the facilitation techniques used, one can consider if they are successful or if there might be opportunities for improvement.

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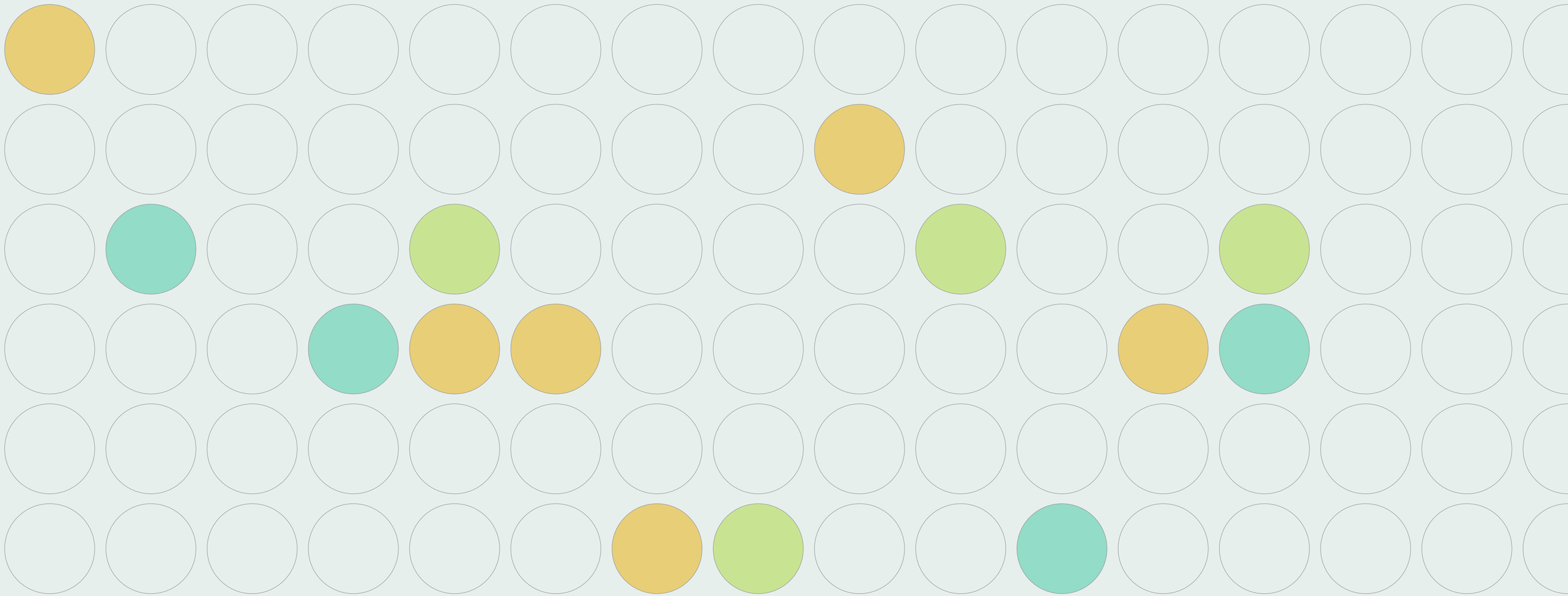
List of Figures

List of Tables



Appendices

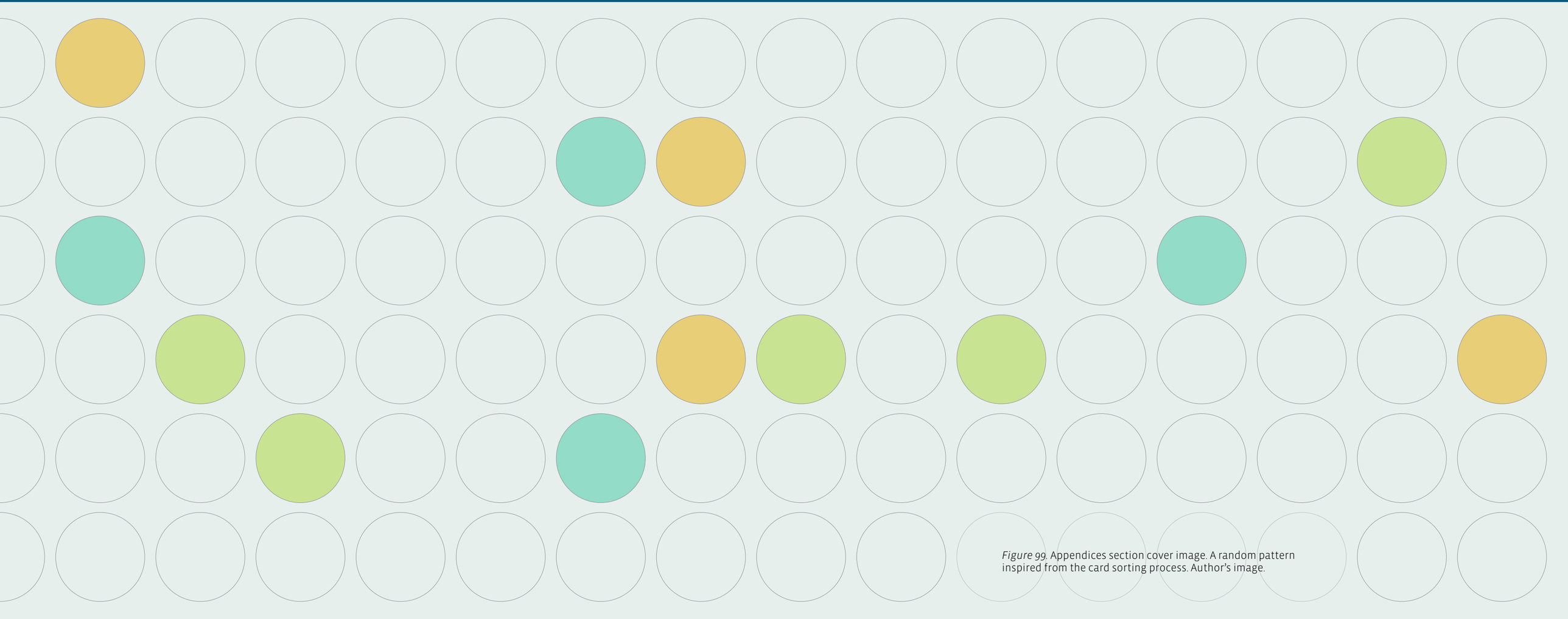
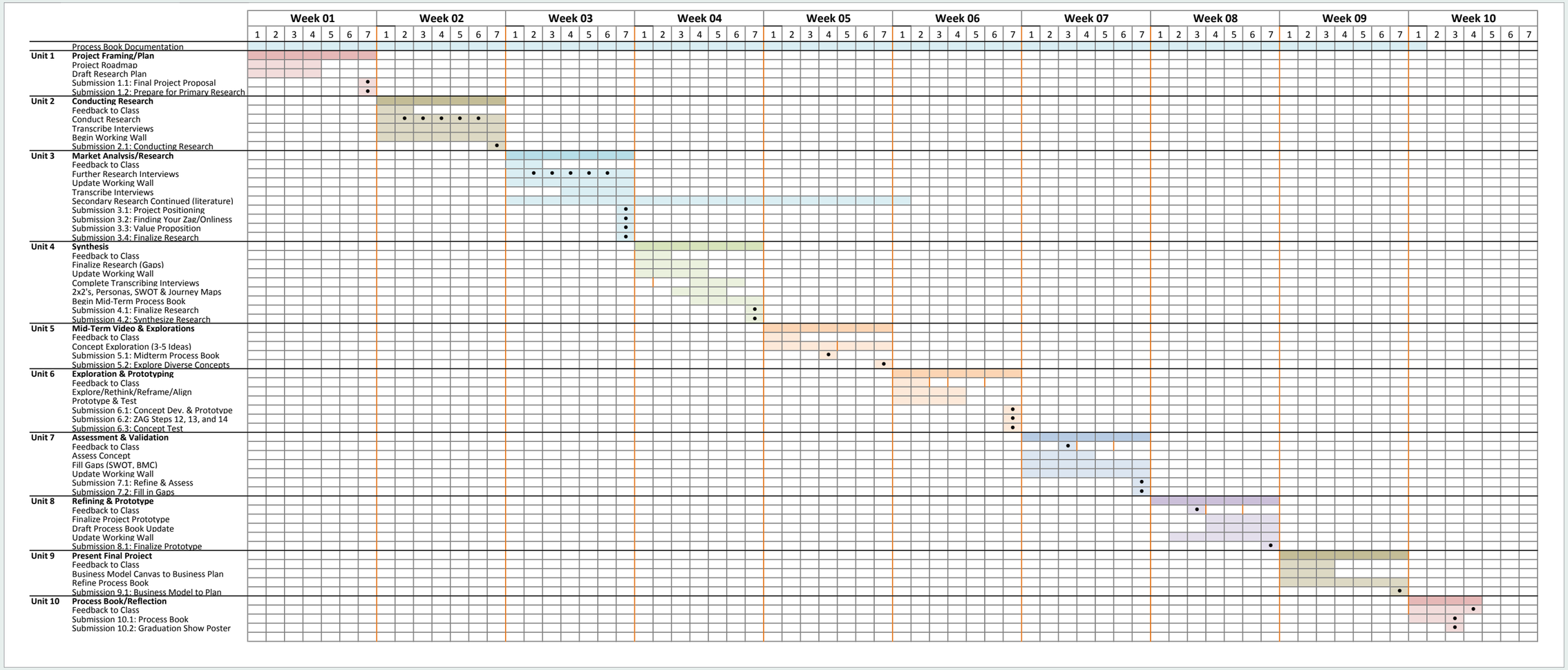


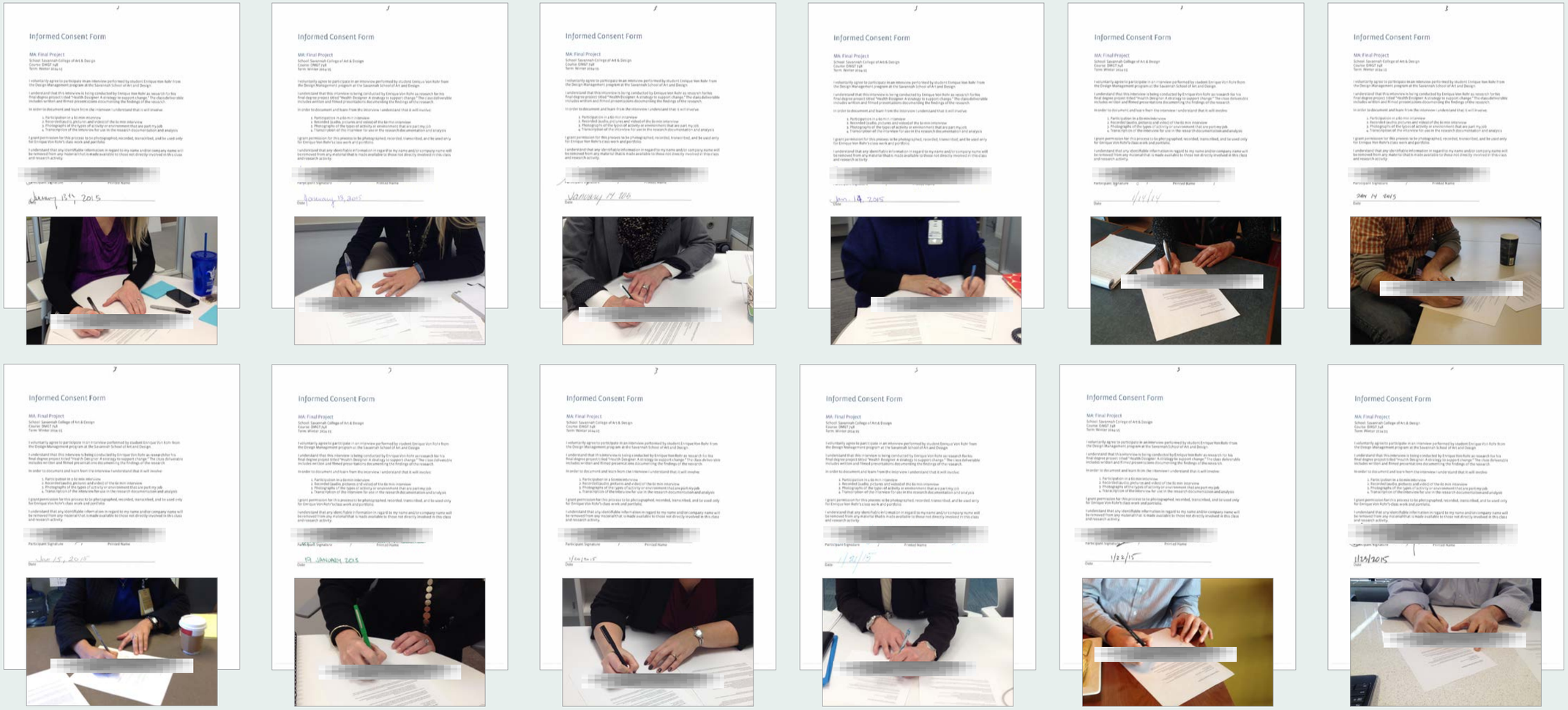
Figure 99. Appendices section cover image. A random pattern inspired from the card sorting process. Author's image.

Appendix A: *Timeline*

Table 44. Project Gantt Chart.

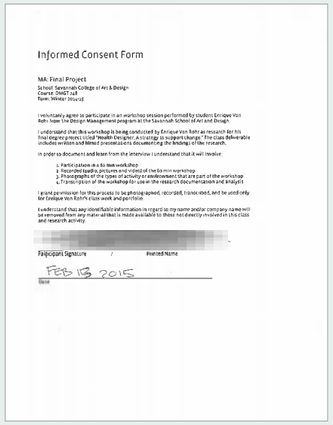


Appendix B: *Signed Consent Forms (Interviews)*



Figures 100–111. Subjects signed informed consent form. Subject 1-12 signed informed consent form and image of them signing. Author's images.

Appendix B: *Signed Consent Forms (Prototype Testing)*


Informed Consent Form

MA: Final Project
School: Savannah College of Art & Design
Course: DMGT 748
Term: Winter 2014-15

I voluntarily agree to participate in an workshop session performed by student Enrique Von Rohr from the Design Management program at the Savannah School of Art and Design.

I understand that this workshop is being conducted by Enrique Von Rohr as research for his final degree project titled "Health Designer: A strategy to support change." The class deliverable includes written and filmed presentations documenting the findings of the research.

In order to document and learn from the interview I understand that it will involve:

1. Participation in a 60 min workshop
2. Recorded audio, pictures and video of the 60 min workshop
3. Photographs of the types of activity or environment that are part of the workshop
4. Transcription of the workshop for use in the research documentation and analysis

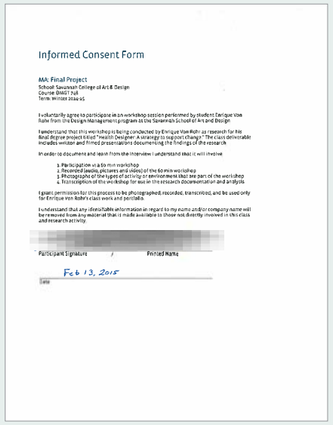
I grant permission for this process to be photographed, recorded, transcribed, and be used only for Enrique Von Rohr's class work and portfolio.

I understand that any identifiable information in regard to my name and/or company name will be removed from any material that is made available to those not directly involved in this class and research activity.

Participant Signature / Printed Name

Feb 13 2015

Date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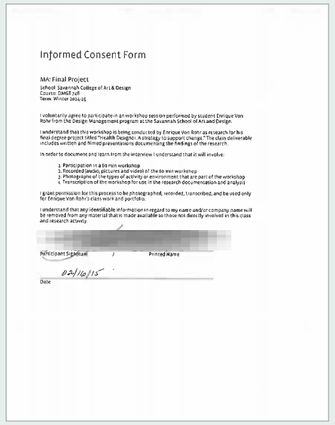
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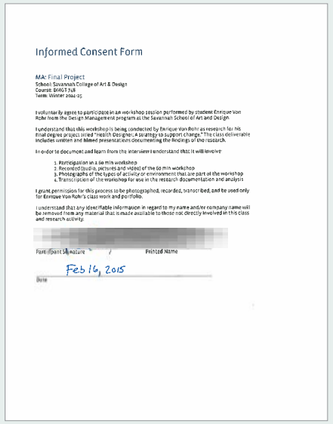
Participant Signature / Printed Name

02/16/15

Date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Participant Signature / Printed Name

Feb 16, 2015

Date


Informed Consent Form

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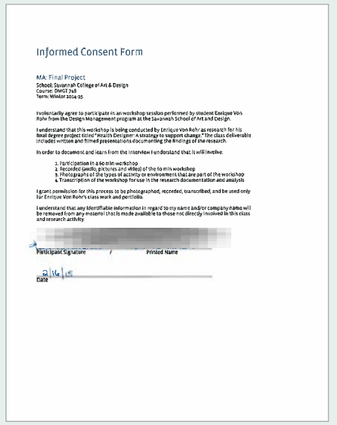
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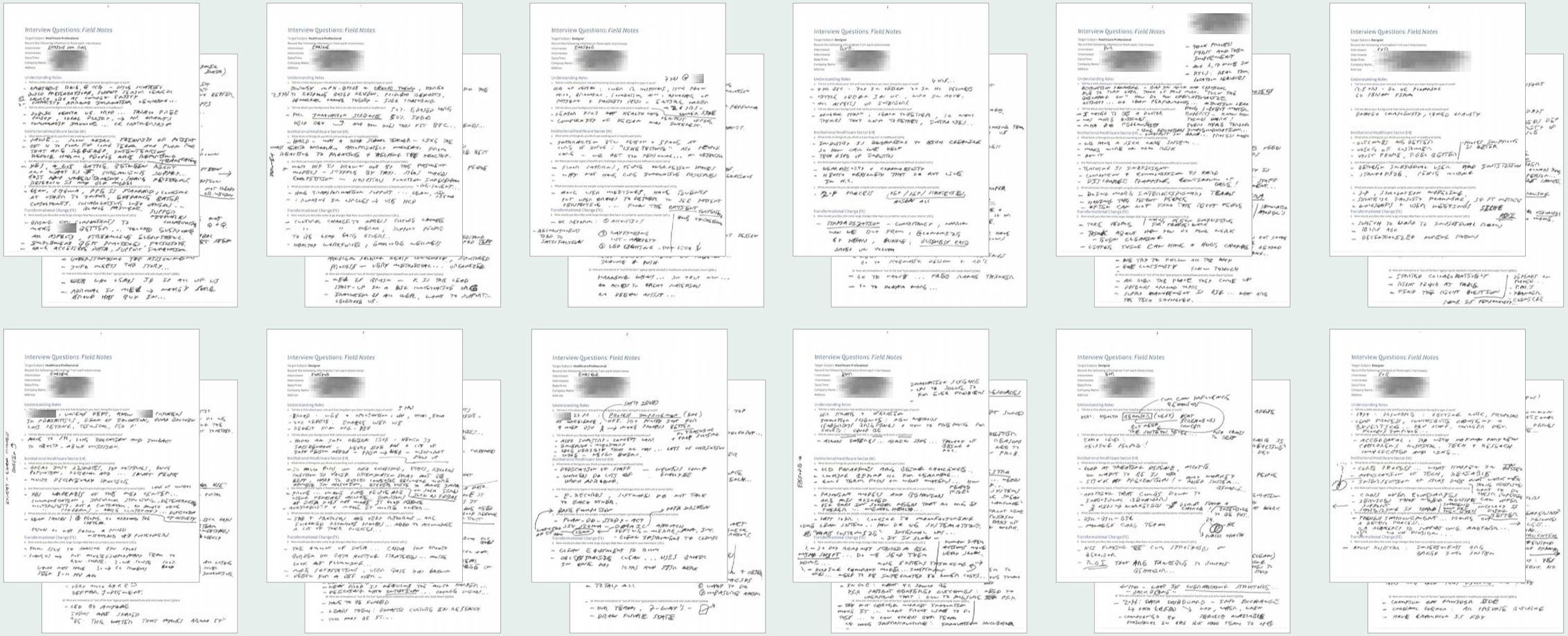
Participant Signature / Printed Name

2/16/15

Date

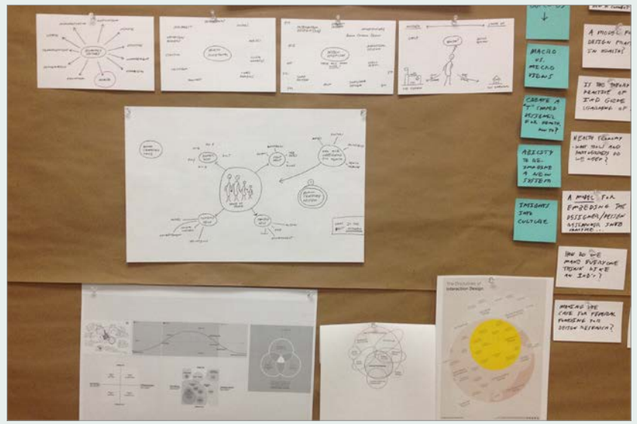
Figures 112–117. Subjects signed informed consent form. Subject 13-19 signed informed consent form and image of them signing. Author's images.

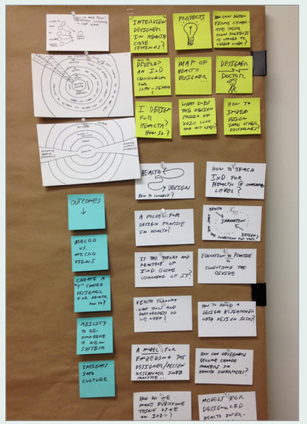
Appendix C: *Interview Questions*

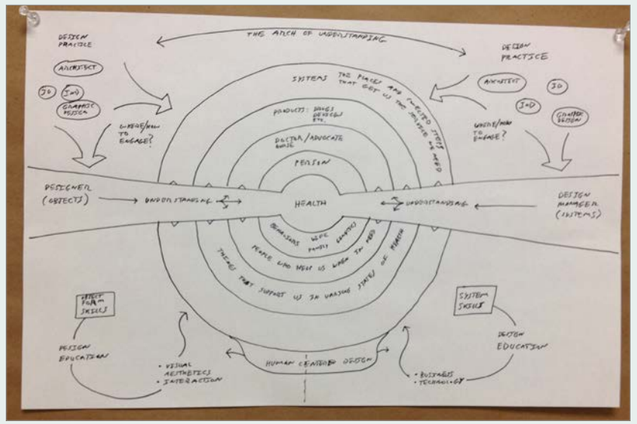


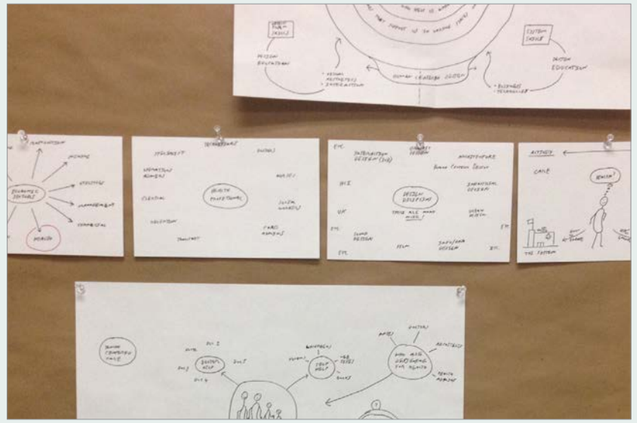
Figures 118–129. Subject interview notes. Documentation notes from the interviews 1-12. Author's images.

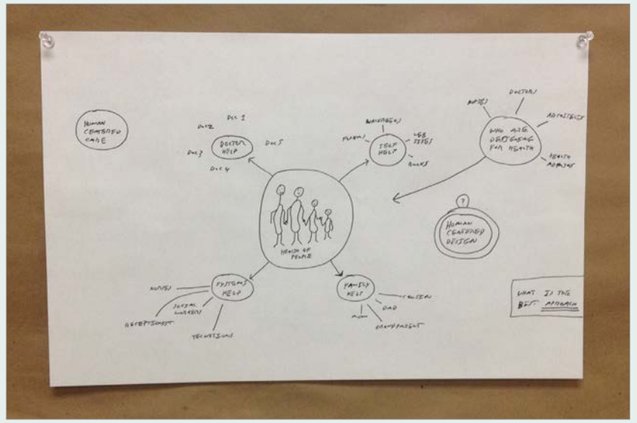
Appendix D: *Working Wall (Ecosystem Map Development)*

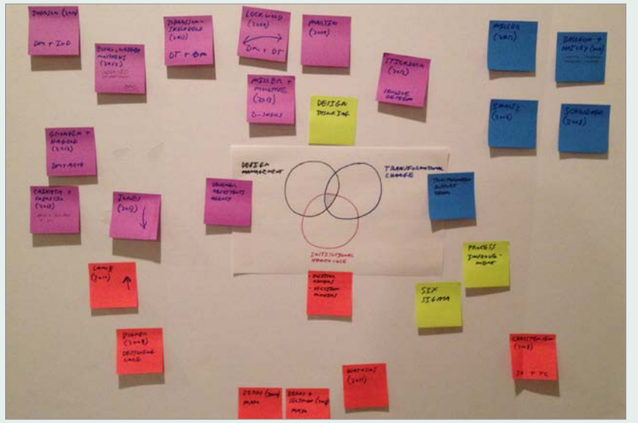






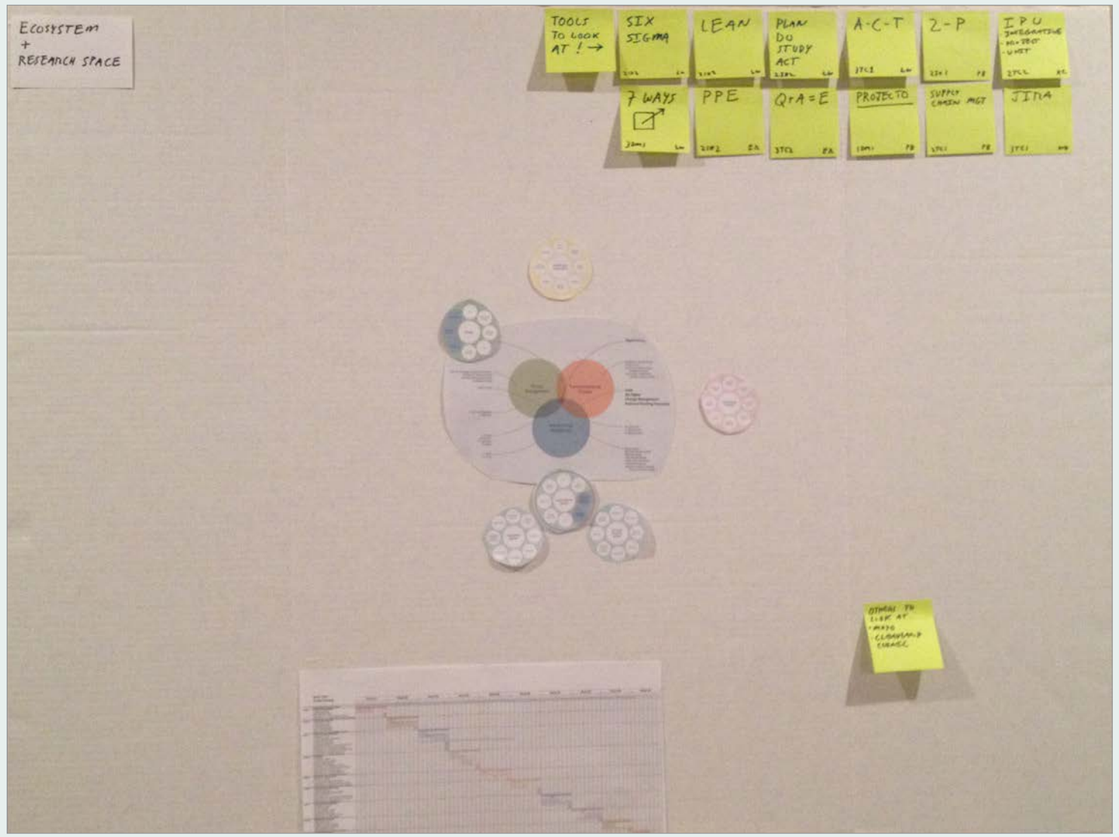


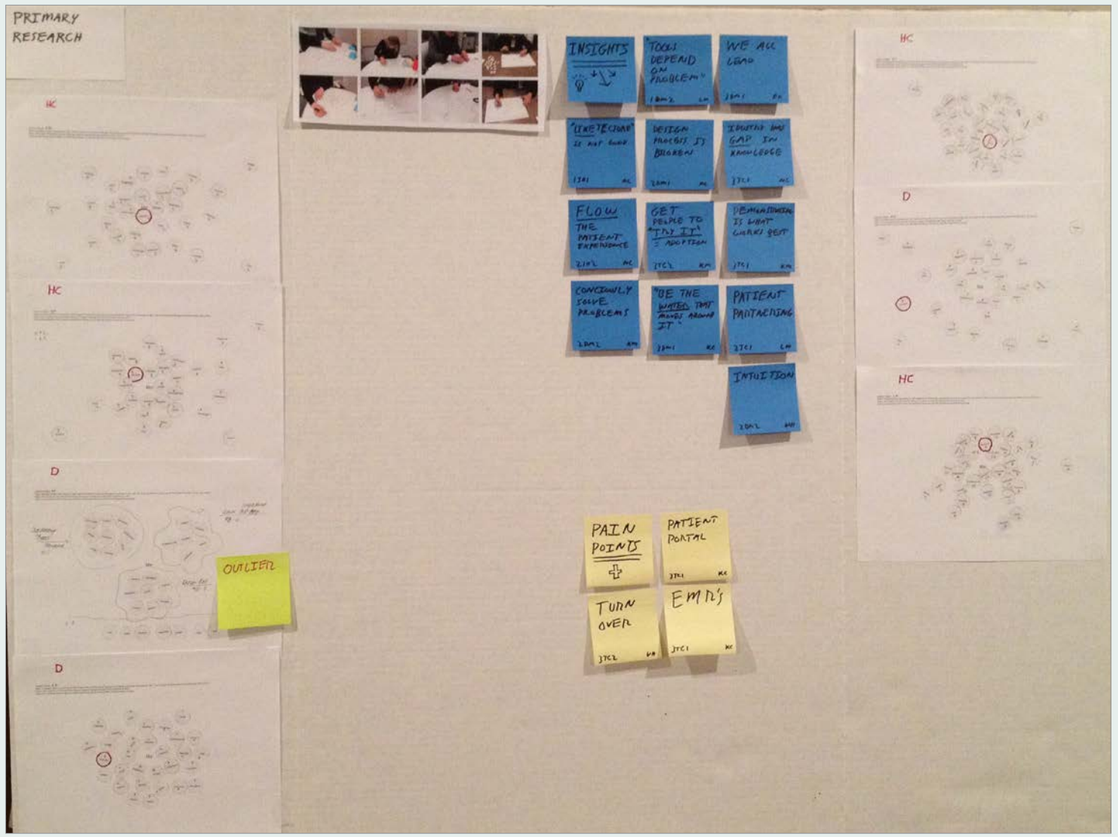




Figures 130–136. Working wall of ecosystem. Exploration of ecosystem and project concept prior to start of project. Author's images.

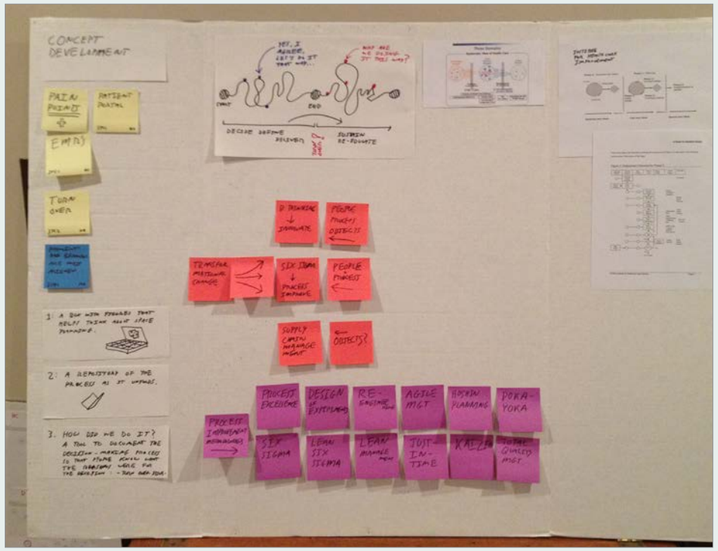
Appendix D: *Working Wall (Week 2)*

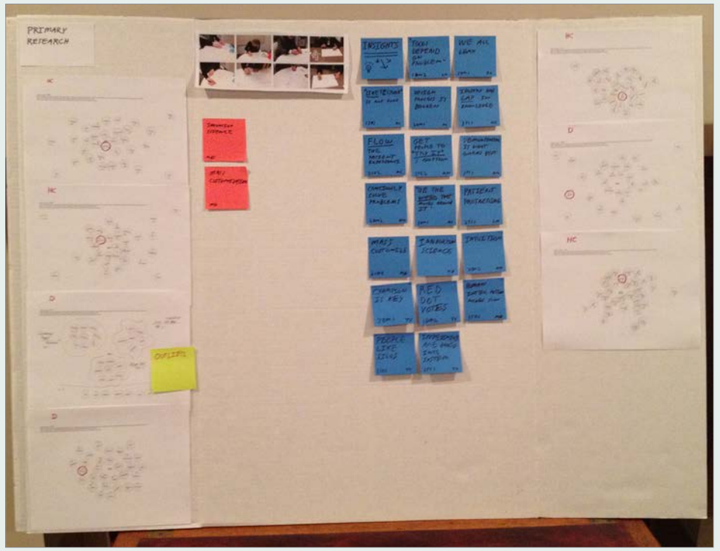


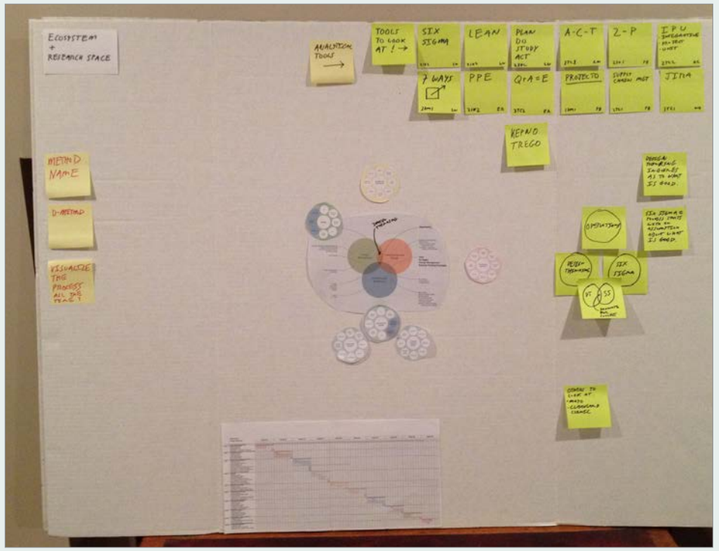


Figures 137–138. Working wall week 2. Progress from week 2 reflecting research insights. Author's image.

Appendix D: *Working Wall (Week 3)*

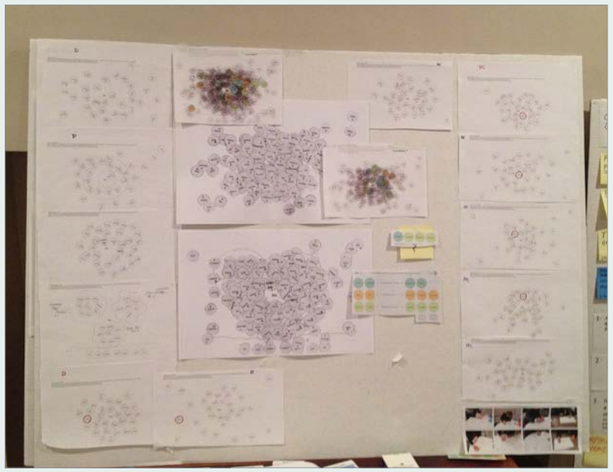


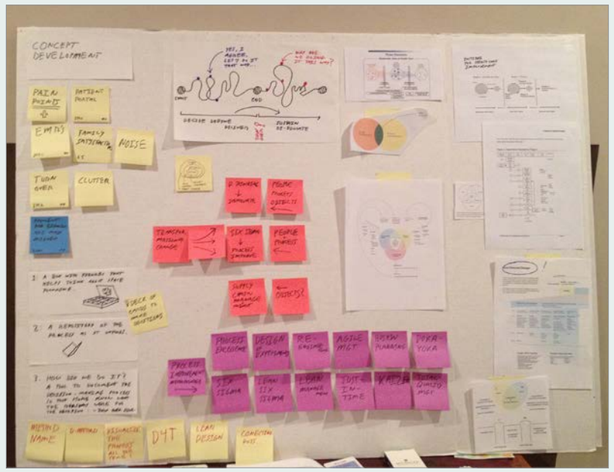




Figures 139–141. Working wall week 3. Progress from week 3 reflecting research. Author's image.

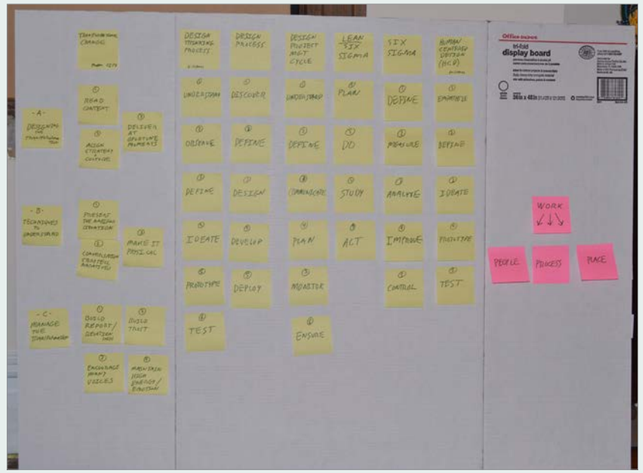
Appendix D: *Working Wall (Week 4)*

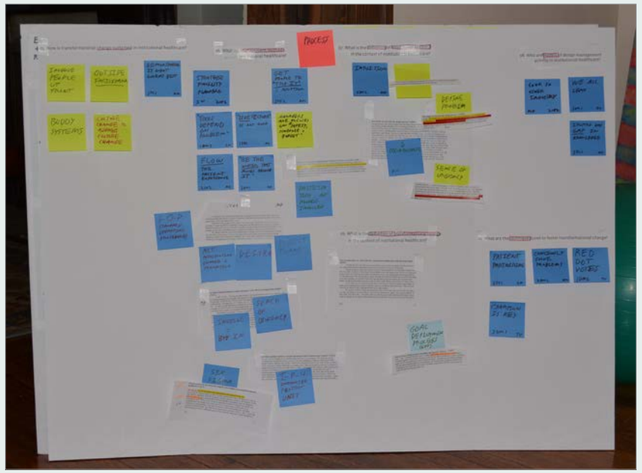


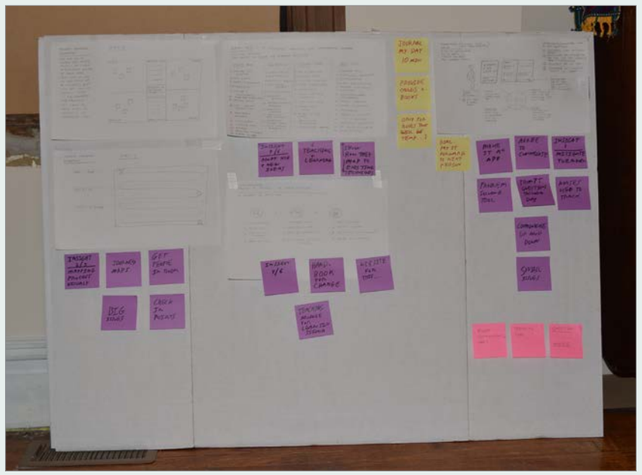


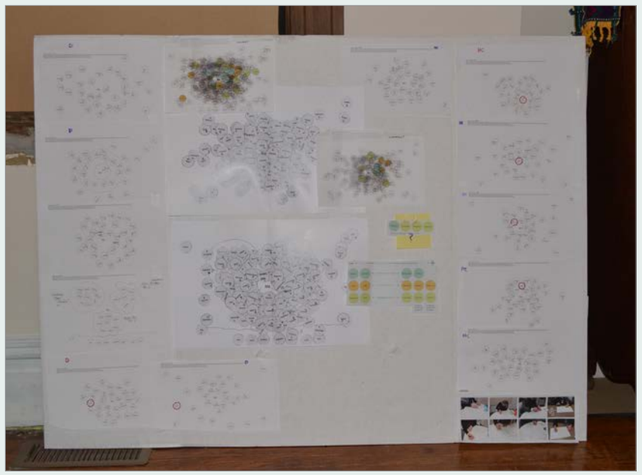
Figures 142–145. Working wall week 4. Progress from week 4 reflecting research synthesis. Author's image.

Appendix D: *Working Wall (Week 6)*



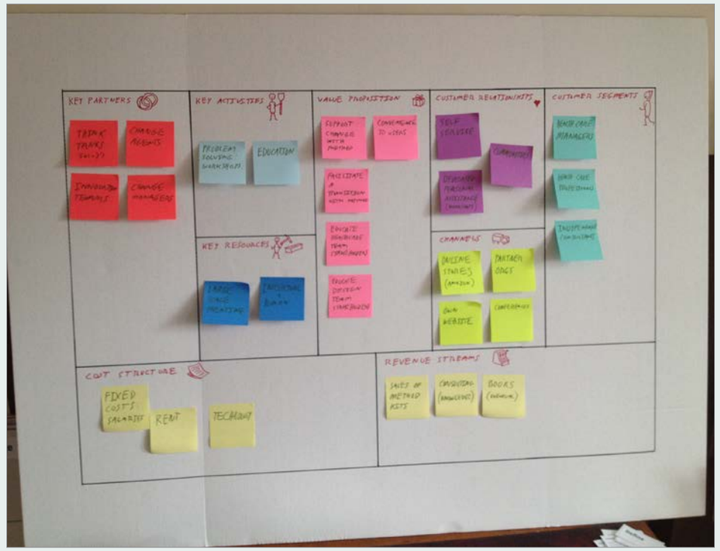


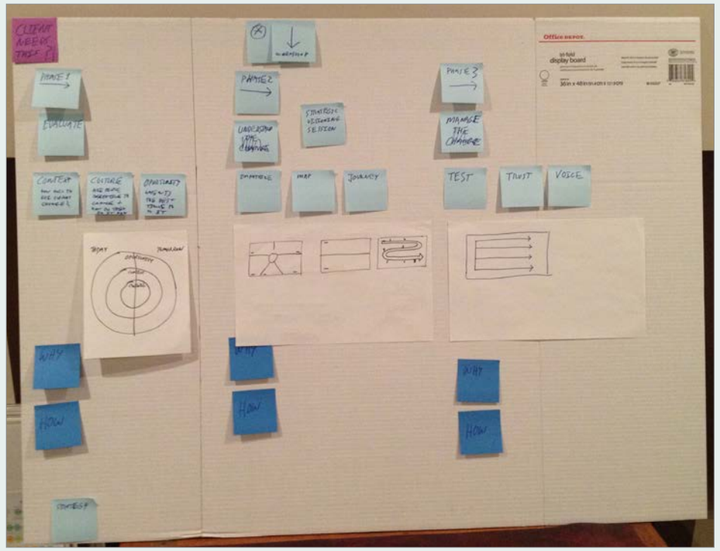




Figures 146–151. Working wall week 6. Progress from week 6 reflecting research insights. Author's image.

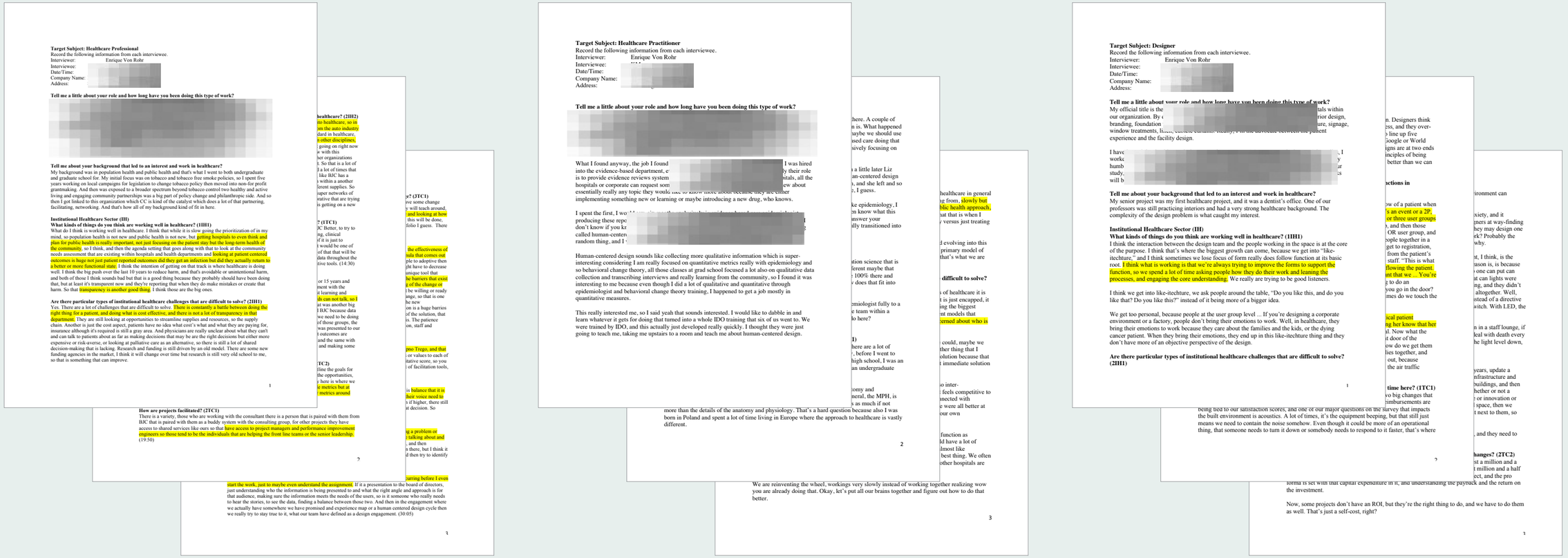
Appendix D: *Working Wall (Week 7-8)*





Figures 152–154. Working wall week 7–8. Progress from week 7–8 reflecting research insights, prototype refinements and business model canvas thinking. Author's image.

Appendix E: *Transcriptions*



Target Subject: Healthcare Professional
Record the following information from each interviewee.
Interviewer: Enrique Von Rohr
Interviewee:
Date/Time:
Company Name:
Address:

Tell me a little about your role and how long have you been doing this type of work?

Tell me about your background that led to an interest and work in healthcare?
My background was in population health and public health and that's what I went to both undergraduate and graduate school for. My initial focus was on tobacco and tobacco free smoke policies, so I spent five years working on local campaigns for legislation to change tobacco policy then moved into non-for profit grantmaking. And then was exposed to a broader spectrum beyond tobacco control two healthy and active living and engaging community partnerships was a big part of policy change and philanthropic side. And so then I got linked to this organization which CC is kind of the catalyst which does a lot of that partnering, facilitating, networking. And that's how all of my background kind of fit in here.

Institutional Healthcare Sector (IH)
What kinds of things do you think are working well in healthcare? (1IH1)
What do I think is working well in healthcare. I think that while it is slow going the prioritization of in my mind, so population health is not new and public health is not new, but getting hospitals to even think and plan for public health is really important, not just focusing on the patient stay but the long-term health of the community, so I think, and then the agenda setting that goes along with that to look at the community needs assessment that are existing within hospitals and health departments and looking at patient centered outcomes is huge not just patient reported outcomes did they get an infection but did they actually return to a better or more functional state. I think the intention of getting on that track is where healthcare is doing well. I think the big push over the last 10 years to reduce harm, and that's avoidable or unintentional harm, and both of those I think sounds bad but that is a good thing because they probably should have been doing that, but at least it's transparent now and they're reporting that when they do make mistakes or create that harm. So that transparency is another good thing. I think those are the big ones.

Are there particular types of institutional healthcare challenges that are difficult to solve? (2IH1)
Yes. There are a lot of challenges that are difficult to solve. There is constantly a battle between doing the right thing for a patient, and doing what is cost effective, and there is not a lot of transparency in that department. They are still looking at opportunities to streamline supplies and resources, so the supply chain. Another is just the cost aspect, patients have no idea what cost's what and what they are paying for, insurance although it's required is still a gray area. And physicians are really unclear about what they can't and can talk to patients about as far as making decisions that may be are the right decisions but either more expensive or risk-averse, or looking at palliative care as an alternative, so there is still a lot of shared decision-making that is lacking. Research and funding is still driven by an old model. There are some new funding agencies in the market, I think it will change over time but research is still very old school to me, so that is something that can improve.

1

How are projects facilitated? (2TC1)
There is a variety, those who are working with the consultant there is a person that is paired with them from BJC that is paired with them as a buddy system with the consulting group, for other projects they have access to shared services like ours so that have access to project managers and performance improvement engineers so those tend to be the individuals that are helping the front line teams or the senior leadership. (19:50)

start the work, just to maybe even understand the assignment. If it a presentation to the board of directors, just understanding who the information is being presented to and what the right angle and approach is for that audience, making sure the information meets the needs of the users, so is it someone who really needs to hear the stories, to see the data, finding a balance between those two. And then in the engagement where we actually have somewhere we have promised and experience map or a human centered design cycle then we really try to stay true to it, what our team have defined as a design engagement. (30:05)

3

Target Subject: Healthcare Practitioner
Record the following information from each interviewee.
Interviewer: Enrique Von Rohr
Interviewee:
Date/Time:
Company Name:
Address:

Tell me a little about your role and how long have you been doing this type of work?

Human-centered design sounds like collecting more qualitative information which is super-interesting considering I am really focused on quantitative metrics really with epidemiology and so behavioral change theory, all those classes at grad school focused a lot also on qualitative data collection and transcribing interviews and really learning from the community, so I found it was interesting to me because even though I did a lot of qualitative and quantitative through epidemiologist and behavioral change theory training, I happened to get a job mostly in quantitative measures.

This really interested me, so I said yeah that sounds interested. I would like to dabble in and learn whatever it gets for doing that turned into a whole IDO training that six of us went to. We were trained by IDO, and this actually just developed really quickly. I thought they were just going to teach me, taking me upstairs to a room and teach me about human-centered design.

2

more than the details of the anatomy and physiology. That's a hard question because also I was born in Poland and spent a lot of time living in Europe where the approach to healthcare is vastly different.

We are reinventing the wheel, workings very slowly instead of working together realizing wow you are already doing that. Okay, let's put all our brains together and figure out how to do that better.

3

Target Subject: Designer
Record the following information from each interviewee.
Interviewer: Enrique Von Rohr
Interviewee:
Date/Time:
Company Name:
Address:

Tell me a little about your role and how long have you been doing this type of work?
My official title is the
our organization. By
branding, foundation
window treatments,
experience and the facility design.

Tell me about your background that led to an interest and work in healthcare?
My senior project was my first healthcare project, and it was a dentist's office. One of our professors was still practicing interiors and had a very strong healthcare background. The complexity of the design problem is what caught my interest.

Institutional Healthcare Sector (IH)
What kinds of things do you think are working well in healthcare? (1IH1)
I think the interaction between the design team and the people working in the space is at the core of the purpose. I think that's where the biggest growth can come, because we get into "like-itecture," and I think sometimes we lose focus of form really does follow function at its basic root. I think what is working is that we're always trying to improve the forms to support the function, so we spend a lot of time asking people how they do their work and leaning the processes, and engaging the core understanding. We really are trying to be good listeners.

I think we get into like-itecture, we ask people around the table, "Do you like this, and do you like that? Do you like this?" instead of it being more of a bigger idea.

We get too personal, because people at the user group level ... If you're designing a corporate environment or a factory, people don't bring their emotions to work. Well, in healthcare, they bring their emotions to work because they care about the families and the kids, or the dying cancer patient. When they bring their emotions, they end up in this like-itechture thing and they don't have more of an objective perspective of the design.

Are there particular types of institutional healthcare challenges that are difficult to solve? (2IH1)

1

being tied to our satisfaction scores, and one of our major questions on the survey that impacts the built environment is acoustics. A lot of times, it's the equipment beeping, but that still just means we need to contain the noise somehow. Even though it could be more of an operational thing, that someone needs to turn it down or somebody needs to respond to it faster, that's where

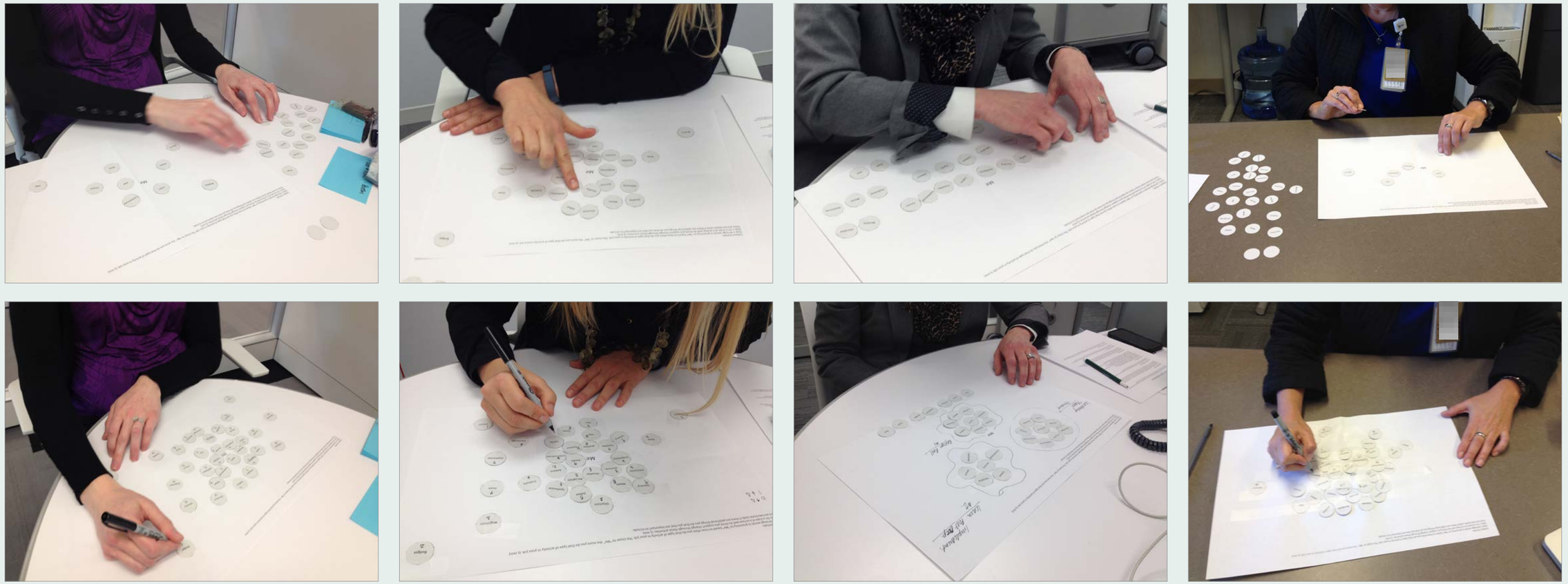
the investment.

Now, some projects don't have an ROI, but they're the right thing to do, and we have to do them as well. That's just a self-cost, right?

3

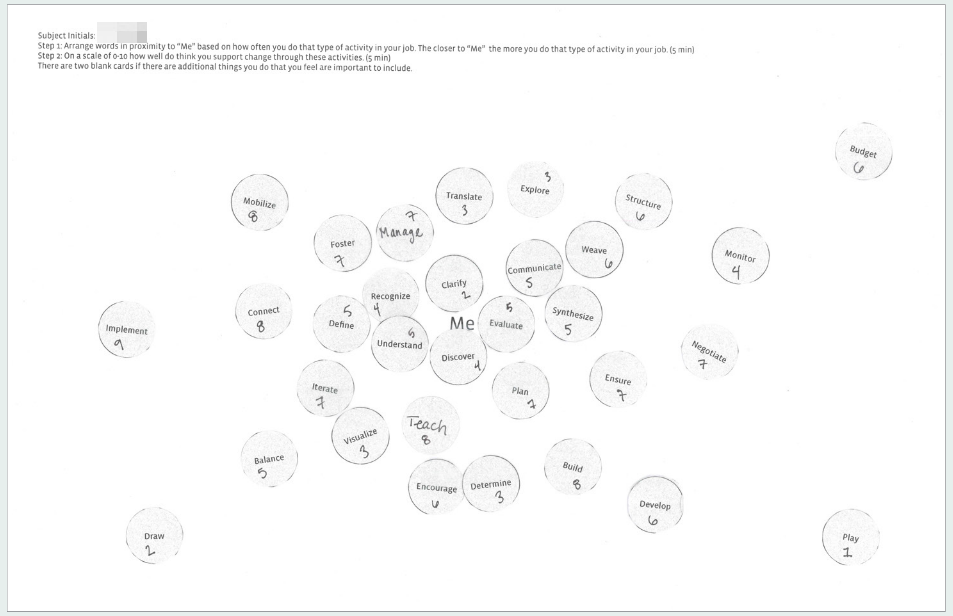
Figures 155–157. Interview transcription samples 1–3. Interview transcription samples pages 1 to 3 of a total of twelve. Author's image.

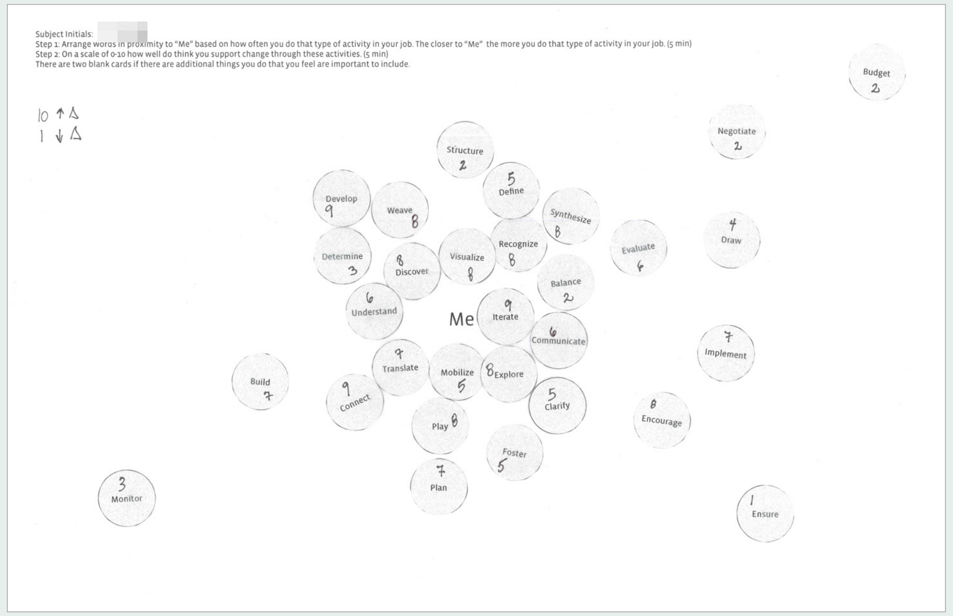
Appendix F: *Unique Method Activity Subjects 1–4*

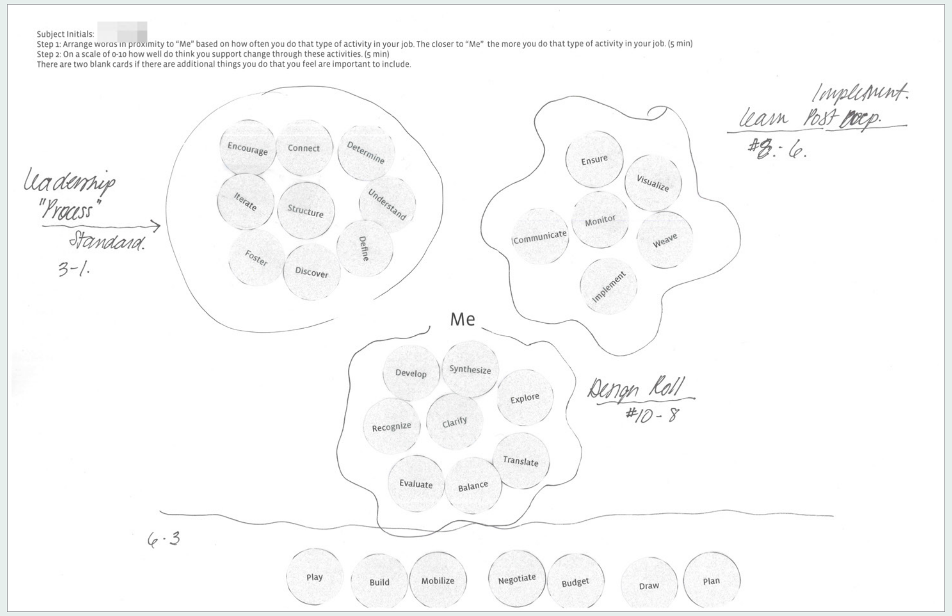


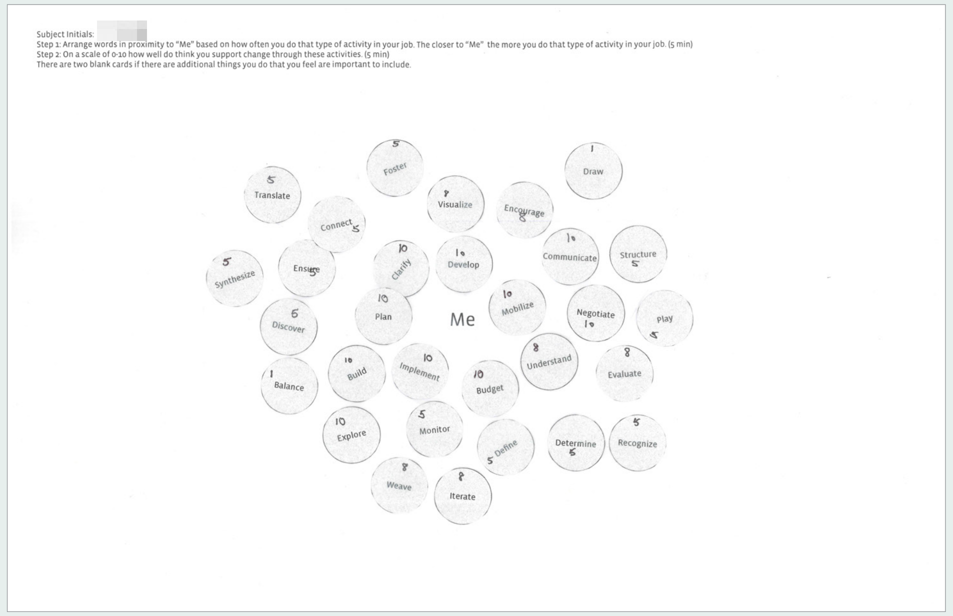
Figures 158–165. Card sort activity examples. Subject 1–4 performing the card sorting unique method activity. Author's image.

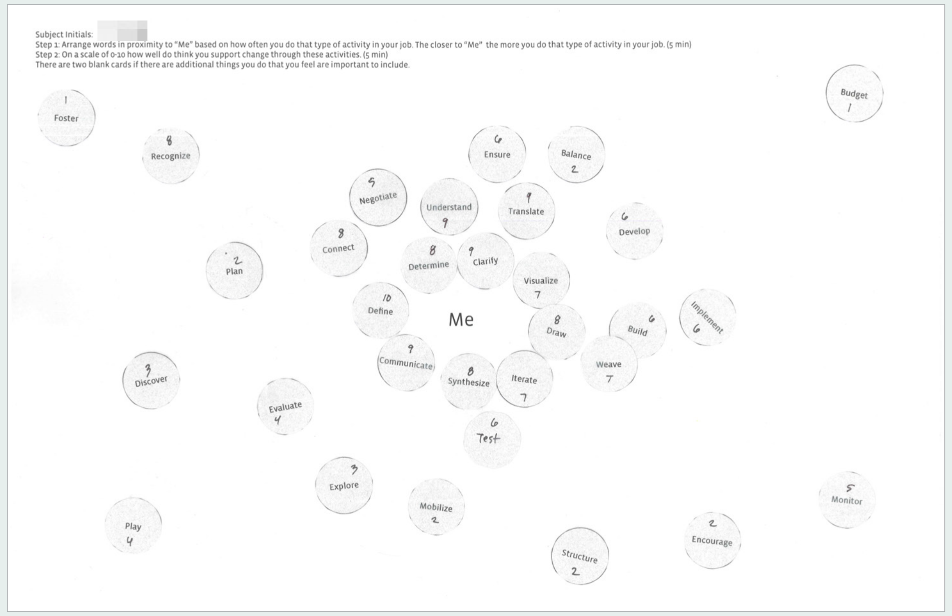
Appendix F: *Unique Method Activity Results Subjects*



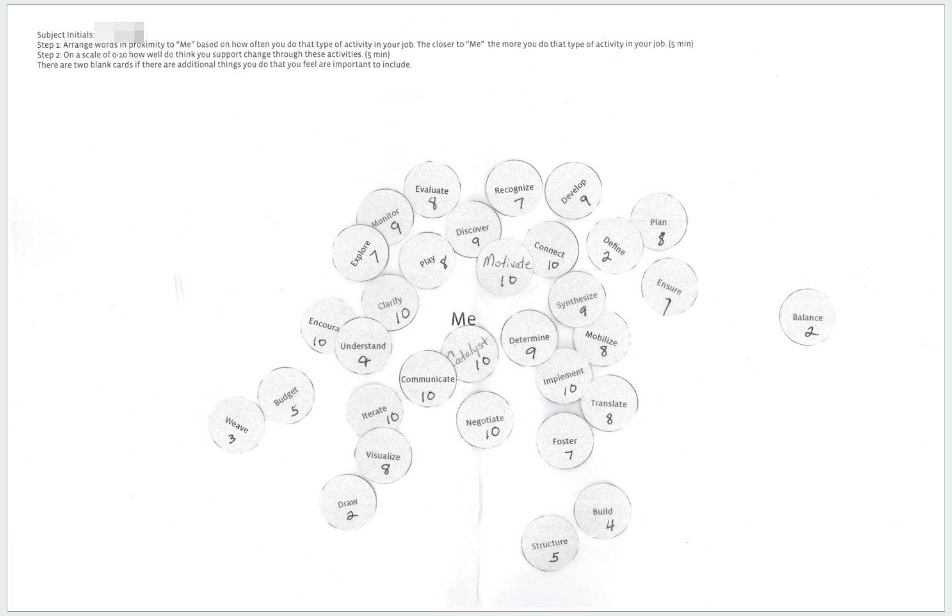


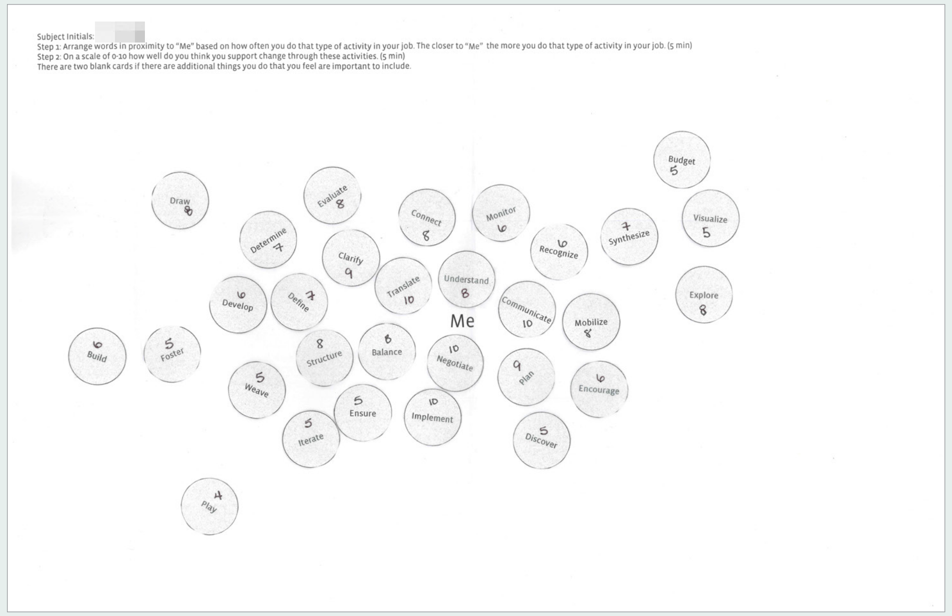




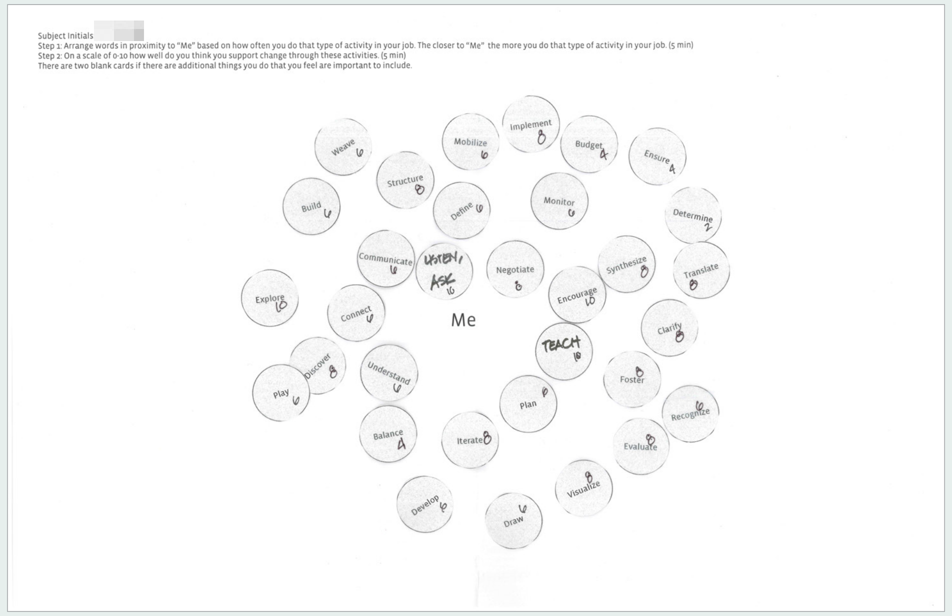


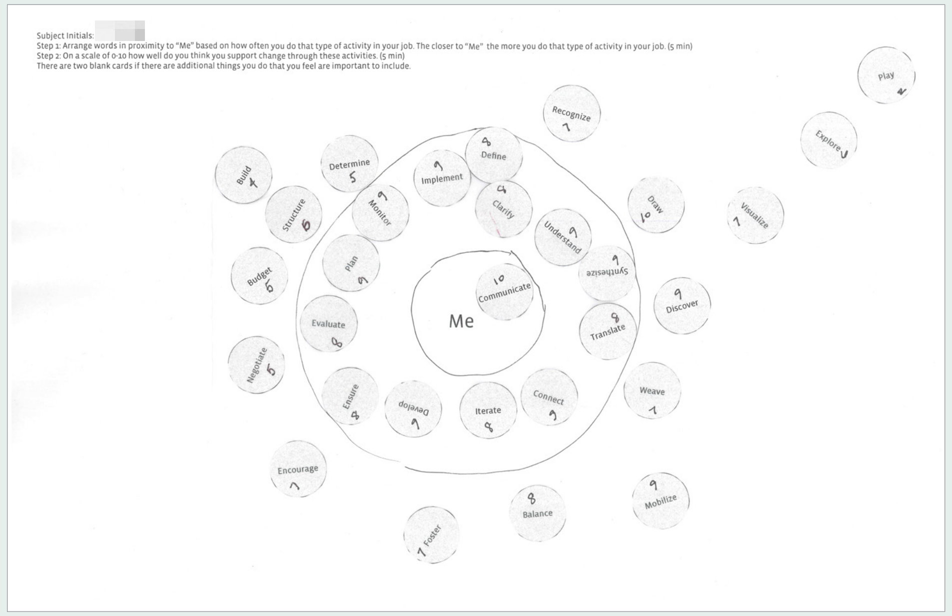
Figures 166–177. Card sort results 1–12. Shows how subjects arranged words in proximity to "Me" and how they rated their support of change with each word. Author's image.

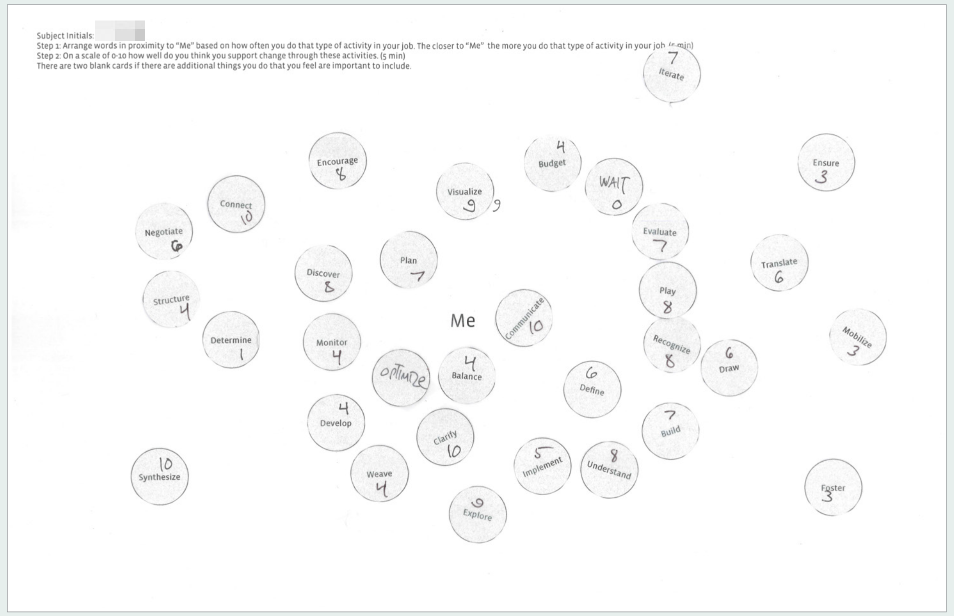

Subject Initials:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0-10 how well do think you support change through these activities. (5 min)
There are two blank cards if there are additional things you do that you feel are important to include.
Me


Subject Initials:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0-10 how well do think you support change through these activities. (5 min)
There are two blank cards if there are additional things you do that you feel are important to include.
Me


Subject Initials:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0-10 how well do think you support change through these activities. (5 min)
There are two blank cards if there are additional things you do that you feel are important to include.
Me


Subject Initials:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0-10 how well do think you support change through these activities. (5 min)
There are two blank cards if there are additional things you do that you feel are important to include.
Me


Subject Initials:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0-10 how well do think you support change through these activities. (5 min)
There are two blank cards if there are additional things you do that you feel are important to include.
Me


Subject Initials:
Step 1: Arrange words in proximity to "Me" based on how often you do that type of activity in your job. The closer to "Me" the more you do that type of activity in your job. (5 min)
Step 2: On a scale of 0-10 how well do think you support change through these activities. (5 min)
There are two blank cards if there are additional things you do that you feel are important to include.
Me

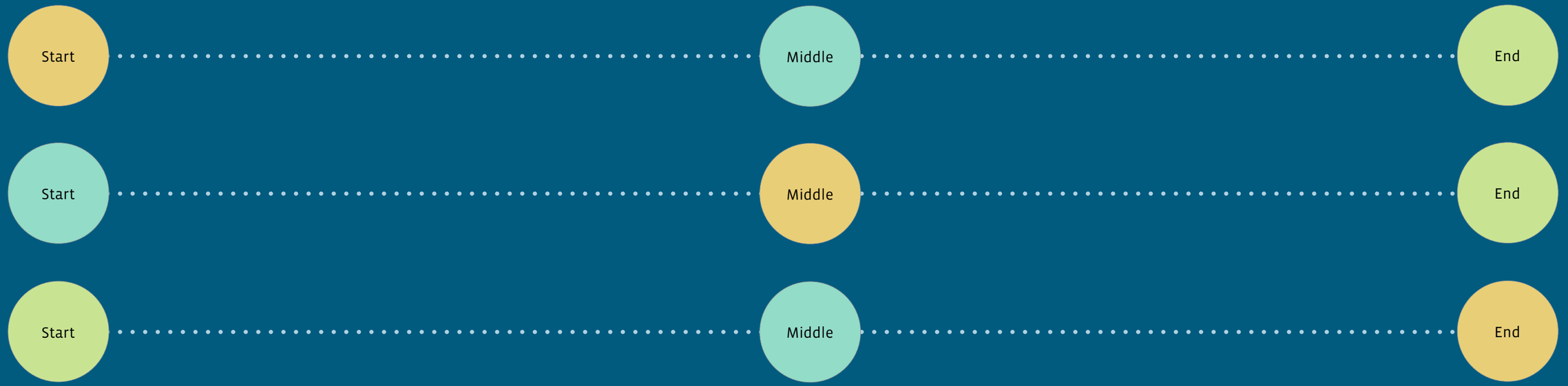


Figure 178. Process book back cover. Illustration of a simplified set of phases for doing an activity. Author's image.