HUMAN-CENTERED

DESIGN
IN CI

September, 2018

Table of Contents

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

Training Objectives:

- Develop an understanding of the Human-centered Design (HCD) process
- Learn how developing empathy for your customer will lead to solving their problem in a way that best meets their needs
- Create customer focused solutions
- Build your skills with continuous improvement (CI) tools

Course Overview

- Housekeeping and Ground Rules
- Introductions
- Overview of Human-centered Design (HCD)
- Practice HCD tools by working on a case study

Introduction Activity

Why are you attending today's training?

What are some methods you could use to collect information about your customers?

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

Human-Centered Design (HCD) is…

Looking at a process *from the customer's perspective* from the start to the end. It uses a convergent/divergent approach of Empathize-Define-Ideate-Prototype-Test, to design a solution, or solve a problem, that creates a preferred customer experience.

Though the specific method and tools are different than other problem solving approaches, HCD still works in a cyclical pattern of "What is the problem?" "Why is it happening?" "How can we fix it?" and "Did we achieve our goal? What adjustments still need to be made?"

	Scientific Method	Lean	Six Sigma	Human-centered Design
What is the problem?	Form Question	Plan	Define	Empathize
Why is it happening?	Make Hypothesis	↓	Measure	Define
			Analyze	
How can we fix it?	Predict Outcome	Do	Improve	Ideate
	Conduct Test	Study		Prototype
Did we achieve our goal? **What adjustments still need to be made?**	Analyze Results	Act	Control	Test

DEPARTMENT OF ADMINISTRATION
CONTINUOUS IMPROVEMENT

The "Modes" of HCD:
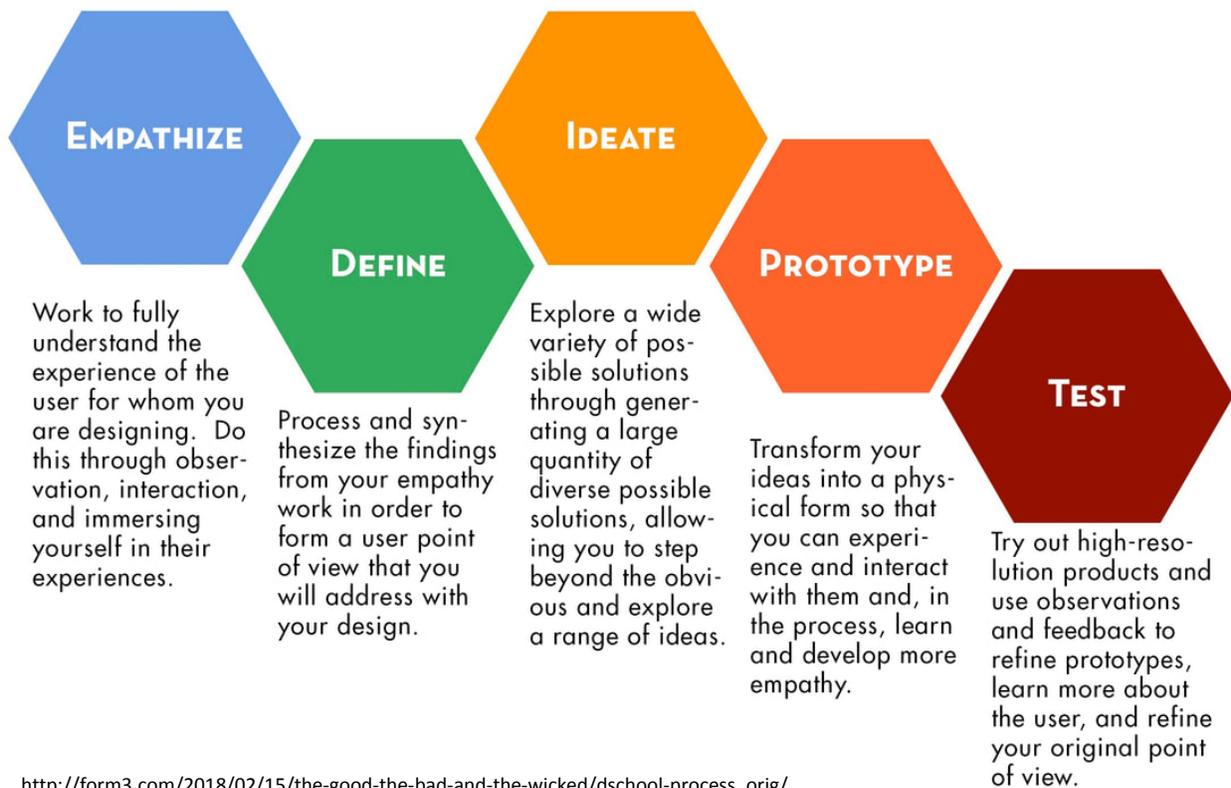
Applying HCD Tools and Concepts Today:

During today's training, you and your team will be working through a scenario using different HCD tools and strategies. During this case study, you will:

- *Practice* different strategies for conducting customer research
- *Learn and practice* interviewing for empathy and how to synthesize this information
- *Identify* key insights to develop solutions that enhance your customer's experience

Case Study: Minnesota Construction Safety Enforcement

Here is the situation…

- MCSE was established as a state department in 2005, to be responsible for and to enforce inspecting construction sites to ensure worker safety.

DEPARTMENT OF ADMINISTRATION
CONTINUOUS IMPROVEMENT

- The number of worker injuries and site infractions is making statewide news (see the data packet for numbers/trends).
- There is a projected increase in construction projects due to economic growth which could increase in possible worksite injuries, making this issue a priority for the leadership of MCSE.
- Commissioner directs you to mitigate the current situation by reducing the frequency of worker injuries and worksite infractions.

Your goal is to decrease the frequency of worker injuries and worksite infractions that occur after an inspection on a Minnesota construction site occurs.

Customer Research (Empathy Mode)

What is empathy?

- [What is empathy video from IDEO](#)
  - Does this happen with your customers? How?
  - Is it easy? Difficult?
- [It's not about the nail video](#)
  - What is the message behind this video?

Interview for Empathy

The best way to innovate for someone is to understand them. By understanding a person's thoughts, motivations, emotions, barriers, etc., you can identify their needs, and design to meet them.

Interview key customers

During today's training, you will have the opportunity to interview three different customers of the inspection process. Two groups with be assigned to each person. You will then have the opportunity to prep what questions you would like to ask them.

The customers we will be hearing from today are:

- An Inspector
- A Contractor
- A Construction Worker

Prepare for and conduct interviews

With your team, prepare what questions you would like to ask the customer you will be interviewing. You will have four minutes to interview your customer. Remember, you are trying to understand *their* perspective, feelings, actions, and emotions. Here are some helpful tips to remember when you are writing and asking questions:

- Don't suggest answers in your questions.

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

- Ask questions neutrally (no leading questions).
- Never say "usually" when asking a question. Instead, ask about a specific instance, occurrence, or story. (e.g. "tell me about the last time you…..")
- Don't ask questions that can be answered in one word (e.g. yes or no questions).
- Ask why! Be sure you leave time for follow-up questions to dig deeper into their responses.

Brainstorm your potential questions here:

Interview Notes – Inspector

Interview Notes – Contractor

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

Interview Notes – Construction Worker

Empathy Mapping

Empathy mapping is a tool to help you discover insights from customer research and fosters a greater awareness of, and empathy for, your targeted customers. Empathy maps are most effective before your solutions have been identified, but after you have completed some customer research.

Empathy maps shed light on what problem to solve, and how to solve it!

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT
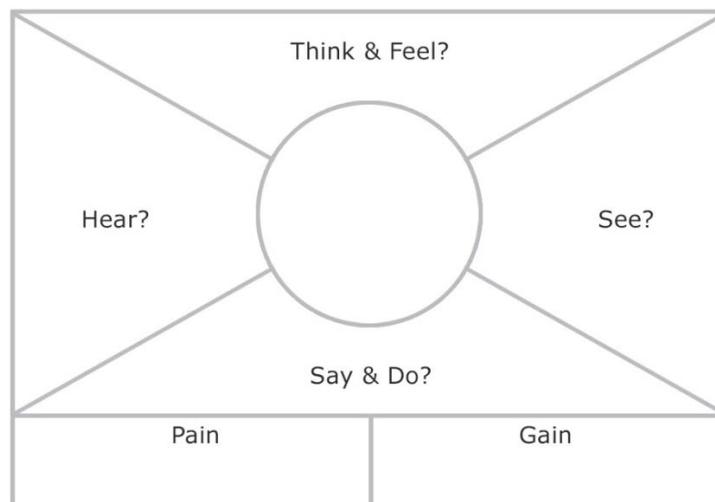
Think and Feel

- What does this person think and feel?
- What really counts to them?
- What are their worries and aspirations?

Hear

- What does this person hear?
- What does their boss say?
- What does their team say?
- What do they hear other people say?

See

- What do they see and observe?
- How do they interact with their work environment?
- What does their work environment look like?
- What are they exposed to on a daily basis?

Customer Name Here

Say and Do

- What do they say?
- What do they do?
- What is their attitude like?
- How is their performance?

Fears

- What are their fears?
- What are their frustrations?
- What are their obstacles?

Gain

- What are their wants/needs?
- What long term goals do they have?
- What short term goals do they have?

Insights (Define Mode)

Creating insight statements helps you understand why certain themes have emerged and what makes them potentially important areas for design.

Review the empathy map that you collectively created for the customers you interviewed. From the post-it's that were brainstormed, each person should choose three-five that you find the most interesting of most insightful about any of the people interviewed.

With your group, create similar groups/themes (affinitize) from your combined Post-it™ notes. The goal is to identify key themes and then translate them into opportunities for design.

To do this, with your group follow the steps below:

- Have one person share one of the Post-it™ notes they selected and place it on the wall. Ask the question: does anyone else have one that is similar? If so, place it next to first post-it.
- Repeat this above step until everyone's Post-it™ notes have been shared and are in groups.
- Look for patterns and relationships between your clusters and move the individual Post-it™ notes around as your group begins to continue grouping.
- Arrange and rearrange the Post-it™ notes, discuss, debate, and talk through what is starting to emerge. Don't stop until everyone is satisfied with the clusters that you have created.
- After the clusters have been made, work together to give each cluster an overall theme, and label it accordingly.

Next, with your team develop your insight statements based off the themes you created.

Use the following template to write your insight statements. You want to take one of the themes and rephrase it as a short sentence. For example, if your theme is "**Unclear Standards**" some key insights could be:

- ***Contractors want clear expectations from MCSE***
- ***Not all contractors are aware of the policy change that occurred in 2013 and what it means for their work sites***
- ***Inspectors are not all following the same process for conducting inspections***

The point of this activity isn't to come up with solutions, it is meant to serve as a key finding or core insight from your research.

DEPARTMENT OF ADMINISTRATION
CONTINUOUS IMPROVEMENT

Remember, your goal is to decrease the frequency of worker injuries and worksite infractions that occur after an inspection on a Minnesota construction site occurs.

When generating insights, you could use everything theme that you created during the afinitizing process. For today, look over the themes you came up with and start with two that you feel relate the most to your design challenge.

Theme: _____

Insights:

    1. _____

    2. _____

    3. _____

Theme: _____

Insights:

    1. _____

    2. _____

    3. _____

Theme: _____

Insights:

    1. _____

    2. _____

    3. _____

DEPARTMENT OF ADMINISTRATION
CONTINUOUS IMPROVEMENT

"How Might We" Questions (Ideate Mode)

Every problem is an opportunity for design! By defining themes and insights, you have identified problem areas that have pose challenges for the problem you are trying to solve/people you are designing for. To create "How Might We" (HMW) questions, you will be reframing your insight statements into questions. The "How Might We" format suggests a solution is possible and gives you the opportunity to answer the questions in a variety of ways.

Use the following steps to create your "How Might We" questions with your team:

- Refamiliarize yourself with the project goal. Review and ask each other again, "what are we trying to accomplish?"
- Next, look over the insight statements you created and select three that come from different themes, that you agree have stong correlation with your design challenge.
- Write the two insights below, reframe the statements as questions.

Example:

Insight: Contractors want clear expectations from MCSE

How might we ensure that exepectations are communicated and followed by contractors?

Insight:

_____

How might we_____

Insight:

_____

How might we_____

Insight:

_____

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ADMINISTRATION
CONTINUOUS IMPROVEMENT

Examples Applying HCD at the State of Minnesota:

Minnesota Department of Human Services (DHS)

DHS employees from the Economic Assistance and Employment Support Division worked with the Humphry School of Public Affairs to enhance the experience for Minnesota Family Investment Program (MFIP) participants.

- "The Minnesota Family Investment Program (MFIP) helps families with children meet their basic needs, while helping parents move to financial stability through work. Parents are expected to work, and are supported in working with both cash and food assistance. Most families have a lifetime limit of 60 months on MFIP" (MFIP, 2016).
- This project started by creating training modules for counselors of the MFIP. This was accomplished by building personas of program participants and assessing how best to meet the needs they have, and support needed for them to be successful in the MFIP program (Jin, 2016).
- The project has grown into designing an app for participants to access information and community resources, and direct communication with program workers.
- For more information on the MFIP program, visit their website: https://mn.gov/dhs/people-we-serve/children-and-families/economic-assistance/income/programs-and-services/mfip.jsp

Minnesota Department of Health (MDH)

The program team for the Women, Infants & Children (WIC) program created a mobile phone app for WIC program participants based off of feedback and challenges they were facing.

- The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides Federal grants to States for supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age five who are found to be at nutritional risk (WIC Program, 2016).
- If in the program, participants can have access to discounted food at grocery stores that are established as WIC foods by the federal government. Before the WIC app was developed, participants (and employees at grocery stores) had difficulty identifying WIC foods (Clarke, 2017).
- After feedback from program participant's challenges at the store, the WIC program staff along with their participating advisory committee members,

invested in offering a free app for program participants to use when grocery shopping (Clarke, 2017).

- Based on continuous feedback from participants, the app has been enhanced to offer information about different program components (e.g. program appointment reminders) to be up to date with customers' needs (Clarke, 2017).
- For more information about the WIC program, visit their website: http://www.health.state.mn.us/divs/fh/wic/index.html

Minnesota Department of Administration

The Minnesota Office of Continuous Improvement (MNCI) uses Human-centered Design methods as part of their process improvement work.

- To understand the customer experience of a process, MNCI interviews and observes people who are part of a process and customers who interact with a process. This develops empathy for the customer. The approach focuses the improvement to be about a process and for customers who are part of the process to have an optimal experience.
- MNCI also draws from HCD when it comes to testing. Before even beginning to implement a solution, MNCI brings the idea back to their initial customers to gather feedback, then testing, and for enhancements. Giving a customer something to react to allows for greater understanding of their preferences.
- For more information about MNCI, visit their website: https://mn.gov/admin/continuous-improvement/

Brainstorm and Determining Solutions (Ideate and Prototype Mode)

With your team, review the "How Might We" questions you created and determine which one you collectively are the most excited about. Once you have decided, you and your team will have four minutes to brainstorm together possible solutions you can think of that answer your HMW questions. Write one idea per Post-it note.

Next as a group, consider the following questions about each idea:

- Instinctively, how excited are you about this idea?
- How innovative and different from what is out there does this idea feel?
- How practical do you think this idea is? Does implementing it seem realistic?

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

Use the following scoring system to determine to help select your best ideas. Once you have completed your scoring, compare with your team. Did you end up with similar results?

Potential solution:

Instinctively, how excited are you about this idea?

Least 1 2 3 4 5 Most

How innovative and different from what's out there does this idea feel?

Least 1 2 3 4 5 Most

How practical do you think this idea is? Does implementing it seem realistic?

Least 1 2 3 4 5 Most

Total =

Potential solution:

Instinctively, how excited are you about this idea?

Least 1 2 3 4 5 Most

How innovative and different from what's out there does this idea feel?

Least 1 2 3 4 5 Most

How practical do you think this idea is? Does implementing it seem realistic?

Least 1 2 3 4 5 Most

Total =

Potential solution:

Instinctively, how excited are you about this idea?

Least 1 2 3 4 5 Most

How innovative and different from what's out there does this idea feel?

Least 1 2 3 4 5 Most

How practical do you think this idea is? Does implementing it seem realistic?

Least 1 2 3 4 5 Most

Total =

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

What solutions ranked highest? To feel confident moving into prototyping with your top ideas you will want to conduct a "gut check" first. Answer the following questions about your solution to reaffirm that it links back to the insights you discovered and addresses or "solves" your original design challenge.

Design challenge:

HMW question that your top solution came from:

Your top idea:

Describe the idea:

How will this idea have an impact on the challenge you are addressing? How will it meet your customer's needs?

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

Additional Resources

- Stanford's Design School: http://dschool.stanford.edu/

- IDEO: https://www.ideo.com/

- Human-centered Design Toolkit: https://www.ideo.com/us/post/design-kit

- Why Human-centered Design Matters:
  https://www.wired.com/insights/2013/12/human-centered-design-matters/

- HCD: Why Empathy Isn't Everything:
  https://designmind.frogdesign.com/2015/05/human-centered-design-why-empathy-isnt-everything/

- Methods and Ideas for Innovation: http://www.circulardesignguide.com/

- 6 Tips for How to Prototype a Service: https://www.ideou.com/blogs/inspiration/6-tips-for-how-to-prototype-a-service

For More Continuous Improvement Training, Resources, and our Newsletter:

- CI Homepage:
  http://mn.gov/admin/government/continuous-improvement/

- Additional Resources:
  http://mn.gov/admin/continuous-improvement/resources/

- Additional Training Available:
  http://mn.gov/admin/continuous-improvement/skills-development/

- Sign-up for our CI Newsletter:
  http://mn.gov/admin/continuous-improvement/resources/newsletter/

We offer four standard courses: Introduction to CI, Problem Solving, Process Improvement Measurement, and Human-centered Design in CI. Our training programs equip Minnesota's state government workforce with the tools of continuous improvement. Courses are offered for public sector employees only and are *free* of charge. Register through the Employee Self-Service website.

For state agencies, we also offer direct CI training to your project teams and work units. Contact us at ci@state.mn.us for details!

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT

Sources

Clarke, B. (2017, January 19). WIC Program Informational Interview.

Minnesota Family Investment Program (MFIP). (2016, March). Retrieved January 27, 2017, from https://mn.gov/dhs/people-we-serve/children-and-families/economic-assistance/income/programs-and-services/mfip.jsp

Ong, S. J. (2016, December 13). State of MN and HHH School Future Services

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Women, Infants and Children (WIC) Program - Minnesota Dept. of Health. (2016). Retrieved January 27, 2017, from http://www.health.state.mn.us/wic/

DEPARTMENT OF
ADMINISTRATION
CONTINUOUS IMPROVEMENT