INTRODUCTION

The aim of this workshop is to assist startup entrepreneurs, product teams, and students in defining their core values and examining how their technologies can align or diverge with those values when viewed from various stakeholder perspectives.

During this session, you will participate in an activity rooted in value sensitive design, an approach that incorporates human values into the process of designing and developing technology. Value sensitive design is particularly beneficial for applied technology teams because:

1. It does not impose a specific set of values to be upheld, recognizing that different technology organizations and stakeholders prioritize different values
2. It acknowledges that conflict often arises between core values and practical constraints
3. It emphasizes making progress rather than striving for perfection

The activity will draw upon two components of value sensitive design: stakeholder analysis and value source analysis. Stakeholder analysis will help you consider both the direct and indirect impacts of your technology on different groups of people. Value source analysis will help you to think through which human values are important, how these values are defined, and which stakeholders hold them.

STAKEHOLDER ANALYSIS

DIRECT

Stakeholders who directly interact with a tool or technology. Can include end users, designers, engineers, hackers, and administrators.

INDIRECT

Stakeholders that do not use the technology, but are still impacted by it. Can include advocacy groups, families of end users, regulators, and society at large.

EXCLUDED

Stakeholders who cannot or do not use the technology because of physical, cognitive, social, or situational constraints.

STAKEHOLDER ANALYSIS

Consider an electronic health records system that health care providers use to access patient records and insurance companies use for billing...

Direct Stakeholders	Indirect Stakeholders	Excluded Stakeholders
Doctors	Patients	Practitioners with limited internet access
Nurses	Family members	Users with low-vision
Insurance companies		
Academic researchers		
Regulators		

VALUE SOURCE ANALYSIS

Consider an electronic health records system that health care providers use to access patient records and insurance companies use for billing...

Stakeholder	Type	Value
Doctors	Direct	Paternalism: Actions intended to enhance the well-being of a patient, with limited patient involvement
Patients	Indirect	Autonomy: The patient is free of control; the patient can do as she pleases
Engineers	Direct	Security: Only authorized direct stakeholders can gain access to medical records

VALUE SOURCE ANALYSIS

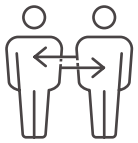
ACCOUNTABILITY

Refers to the properties that ensure that the actions of a person, people, or institution may be traced uniquely to the person, people, or institution

AUTONOMY

Refers to people's ability to decide, plan, and act in ways that they believe will help them to achieve their goals

COURTESY



Refers to treating people with politeness and consideration

FAIRNESS

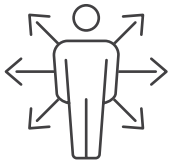
Refers to equal treatment of all stakeholders and freedom from harmful biases and stereotypes

VALUE SOURCE ANALYSIS

HUMAN WELFARE

Refers to people's physical, material, and psychological well-being

IDENTITY



Refers to people's understanding of who they are, embracing both continuity and discontinuity over time

INCLUSION

Refers to making all people successful users of information technology

INFORMED CONSENT

Refers to garnering people's voluntary agreement, with full comprehension of all relevant details

VALUE SOURCE ANALYSIS

OWNERSHIP

Refers to a right to possess an object (or information), use it, manage it, derive income from it, and bequeath it

PRIVACY

Refers to a claim, an entitlement, or a right of an individual to determine what information about themselves can be communicated to others

RELIABILITY

Refers to systems performing safely across conditions, including worst-case scenarios

SUSTAINABILITY

Refers to sustaining ecosystems such that they meet the needs of the present without compromising future generations

VALUE SOURCE ANALYSIS

TRANSPARENCY

Refers to people's ability to understand systems and their outputs

TRUST

Refers to expectations that exist between people who can experience goodwill, extend goodwill toward others, feel vulnerable, and experience betrayal

WRITE YOUR OWN

Write out any additional values your team finds important

Value:

Definition:

Value:

Definition:

FRESH PERSPECTIVE GAME

In this game, you will be dealt three cards a stakeholder card, which will contain the name of a direct, indirect, or excluded stakeholder...

a value card, which will contain the name and definition of a core value...

and a rating card, which will contain 1, 3, or 5 stars.

FRESH PERSPECTIVE GAME

1. Brainstorm stakeholders, with a mix of direct, indirect, and excluded stakeholders. Write the names of these stakeholders on the cards.

2. Choose a dealer. Dealers, shuffle the three different card types separately then deal one of each to every member of your group. Put the wild cards in the center of the group.

3. On the notecards, write a review from the stakeholder's perspective, focusing on the value you drew. If the rating is low, focus on how the technology does not support that value (and vice versa if it is high). Be creative. For real-world technologies, feel free to write the reviews about features or details of the technology that might not exist at present, but that could plausibly exist in the future. For hypothetical case studies, feel free to include details of specific product features even if they are not explicitly mentioned in the case study.

4. If your combo is nonsensical (e.g., 5-star rating for an excluded stakeholder), you may choose play a wild card. This allows you to write a 0-star review or draw either a new stakeholder or value card.

FRESH PERSPECTIVE GAME

Consider an iPhone application that uses both clinician-generated content and natural language processing techniques to deliver therapy to parents suffering from post-partum depression...

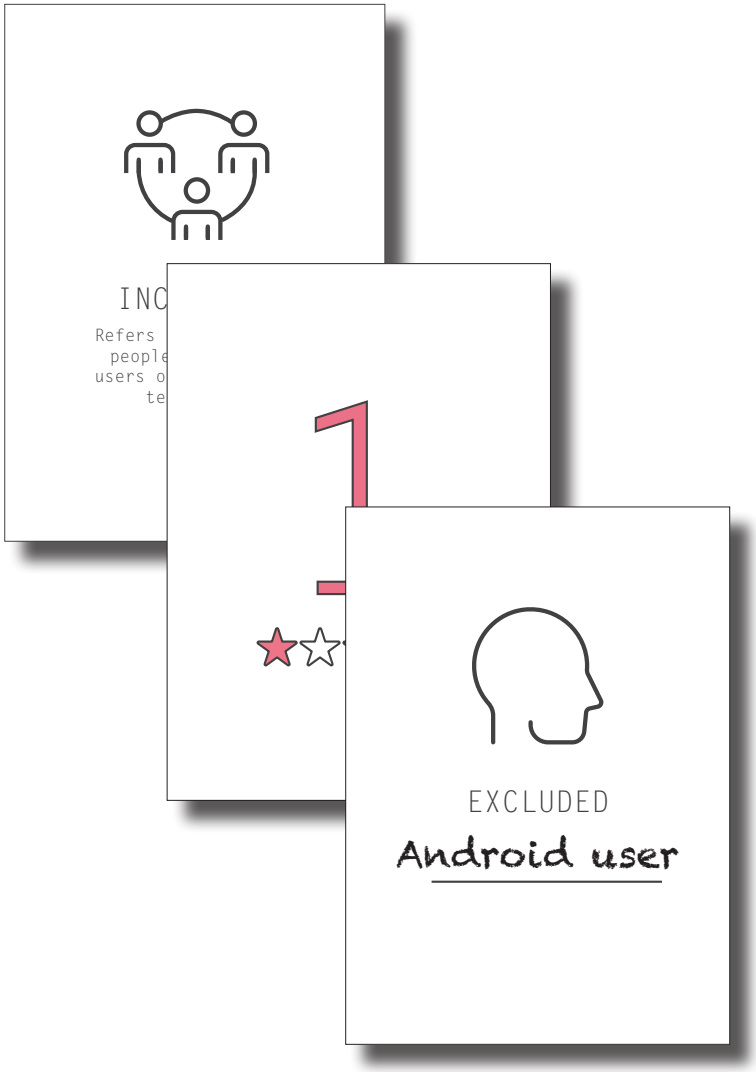
Inclusion — 5 stars

This app makes postpartum therapy accessible to patients in various circumstances and life stages. It allows for parents in varying economic backgrounds get support and the care they need. The app takes into consideration the varying family dynamics and initiates support that allows parents to have access to resources and help that is tailored to their specific needs.

-Therapist

FRESH PERSPECTIVE GAME

Consider an iPhone application that uses both clinician-generated content and natural language processing techniques to deliver therapy to parents suffering from post-partum depression...



Inclusion **1 star**

This app is not inclusive at all! I've been suffering from postpartum depression and need help. I wish this tool was developed to not directly exclude me.

-Android user

NOTES

This activity is adapted from Ballard, S., Chappell, K. M., & Kennedy, K. (2019, June). Judgment call the game: Using value sensitive design and design fiction to surface ethical concerns related to technology. In Proceedings of the 2019 on Designing Interactive Systems Conference (pp. 421-433). It has been expanded to be applicable to technology other than AI.

Definitions are adapted from Friedman, B., Kahn, P. H., Borning, A., & Huldtgren, A. (2013). Value sensitive design and information systems. In N. Doorn, D. Schuurbiers, I. van de Poel, M. E. Gorman Early engagement and new technologies: Opening up the laboratory (pp. 55-95) and Ballard et al., (2019).

For more information about value sensitive design, see Friedman, B., & Hendry, D. G. (2019). Value sensitive design: Shaping technology with moral imagination. MIT Press.

The examples about electronic health records systems are adapted from Hendry, D. G. (2020). Designing Tech Policy: Instructional Case Studies for Technologists and Policymakers.

Example reviews were written by students who participated in a version of this workshop.

This activity can be used to explore the implications of existing real-world technologies, new features for existing technologies, or hypothetical technologies. The following is an example case study of a hypothetical case study that can be used in educational settings:

The AI startup Stork is developing a chatbot for providing therapy to parents experiencing postpartum depression. The application is informed by forms of therapy that are known to be effective treatments for postpartum depression such as cognitive behavioral therapy (CBT). The therapeutic content delivered to users will be predetermined and will be developed by Stork in collaboration with clinical experts (e.g., on confronting cognitive distortions). However, the application will also employ machine learning natural language processing techniques to respond to free text inputs from the users in ways that emulate human therapists.

While hypothetical, this case study is heavily informed by: Darcy, A., Beaudette, A., Chiauzzi, E., Daniels, J., Goodwin, K., Mariano, T. Y., ... & Robinson, A. (2022). Anatomy of a Woebot®(WB001): Agent guided CBT for women with postpartum depression. Expert Review of Medical Devices, 19(4), 287-301.

Please send any feedback on this workshop to Amy Winecoff at aawinecoff@gmail.com. If you would like me to conduct a workshop for your team or organization, please reach out!