

## How-to

1. Start with a value, technology, or context of use

“We suggest starting with the aspect that is most central to your work and interests.”

2. Identify direct and indirect stakeholders

“direct stakeholders are those individuals who interact directly with the technology or with the technology’s output. Indirect stakeholders are those individuals who are also impacted by the system, though they never interact directly with it. [...] Within each of these two overarching categories of stakeholders, there may be several subgroups. [...] A single individual may be a member of more than one stakeholder group or subgroup. [...] An organisational power structure is often orthogonal to the distinction between direct and indirect stakeholders.”

3. Identify benefits and harms for each stakeholder group

“one rule of thumb in the conceptual investigation is to give priority to indirect stakeholders who are strongly affected, or to large groups that are somewhat affected [...] Attend to issues of technical, cognitive, and physical competency. [...] personas have a tendency to lead to stereotypes because they require a list of “socially coherent” attributes to be associated with the “imagined individual.” [...] we have deviated from the typical use of personas that maps a single persona onto a single user group, to allow for a single persona to map onto to multiple stakeholder groups”

4. Map benefits and harms onto corresponding values

“In some cases, the corresponding values will be obvious, but not always.”

5. Conduct a conceptual investigation of key values

“the philosophical ontological literature can help provide criteria for what a value is, and thereby how to assess it empirically.”

6. Identify potential value conflicts

“value conflicts should usually not be conceived of as “either/or” situations, but as constraints on the design space.”

7. Integrate value considerations into one’s organisational structure

“In the real world, of course, human values (especially those with ethical import) may collide with economic objectives, power, and other factors. However, even in such situations, Value Sensitive Design should be able to make positive contributions, by showing alternate designs that better support enduring human values.”

**Conceptual Investigations**—defining the specific values at play in a project

- Who are the direct and indirect stakeholders affected by the design at hand?
- How are both classes of stakeholders affected?
- What values are implicated?
- How should we engage in trade-offs among competing values in the design, implementation, and use of information systems (e.g., autonomy vs. security, or anonymity vs. trust)?
- Should moral values (e.g., a right to privacy) have greater weight than, or even trump, non-moral values (e.g., aesthetic preferences)?

**Empirical Investigations**—observing, measuring, and documenting people's behaviour and the context of use

- How do stakeholders apprehend individual values in the interactive context?
- How do they prioritise competing values in design trade-offs?
- How do they prioritise individual values and usability considerations?
- Are there differences between espoused practice (what people say) compared with actual practice (what people do)?

And, specifically focusing on organisations:

- What are organisations' motivations, methods of training and dissemination, reward structures, and economic incentives?

**Technical Investigations**—analysing the ways in which a particular technology supports or hinders particular values

Not a list of questions here, but some notes:

Value Sensitive Design takes the position that technologies in general, and information and computer technologies in particular, have properties that make them more or less suitable for certain activities. A given technology more readily supports certain values while rendering other activities and values more difficult to realise.

Technical investigations involve the proactive design of systems to support values identified in the conceptual investigation.

Technical investigations focus on the technology itself. Empirical investigations focus on the individuals, groups, or larger social systems that configure, use, or are otherwise affected by the technology.

Human value	Definition
Human welfare	Refers to people's physical, material, and psychological well-being
Ownership and property	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 himself or herself can be communicated to others
Freedom from bias	Refers to systematic unfairness perpetrated on individuals or groups, including pre-existing social bias, technical bias, and emergent social bias
Universal usability	Refers to making all people successful users of information technology
Trust	Refers to expectations that exist between people who can experience good will, extend good will toward others, feel vulnerable, and experience betrayal
Autonomy	Refers to people's ability to decide, plan, and act in ways that they believe will help them to achieve their goals
Informed consent	Refers to garnering people's agreement, encompassing criteria of disclosure and comprehension (for "informed") and voluntariness, competence, and agreement (for "consent")
Accountability	Refers to the properties that ensures that the actions of a person, people, or institution may be traced uniquely to the person, people, or institution
Courtesy	Refers to treating people with politeness and consideration
Identity	Refers to people's understanding of who they are over time, embracing both continuity and discontinuity over time
Calmness	Refers to a peaceful and composed psychological state
Environmental sustainability	Refers to sustaining ecosystems such that they meet the needs of the present without compromising future generations

Source: Friedman, Batya, et al. "Value sensitive design and information systems." Early engagement and new technologies: Opening up the laboratory. Springer, Dordrecht, 2013. 55-95.