

## Accounting for Culture

Breakdowns can develop when people from one culture make assumptions about the conventions, norms, or practices of other cultures. How might your system be misunderstood by users who are unfamiliar with your culture?

Record 2-3 positive effects of your technology when used within your own cultural context. How might those effects be different in another culture? Develop and discuss potential breakdowns.

# Record



# Accounting for Culture

Stakeholders

Time

Values

Pervasiveness

## Adaptation

People are inherently adaptive, changing themselves or their behaviors in order to fit current conditions. Technologies can facilitate adaptation (e.g., a device that displays home energy use may encourage a homeowner to turn out the lights) or hinder adaptation (e.g., a person may be prevented from adopting a useful new technology if it is incompatible with other currently used technology).

Visualize one lifestyle change that could be supported by your technology. Consider whether your technology would inhibit any positive lifestyle changes.



Adaptation

Stakeholders

Time

Values

Pervasiveness

## Appropriation by Cultural Groups

Different cultural groups will likely interact with your system in varied ways. How might a cultural group appropriate the use of technology to support their cultural practices (e.g., Muslim calls to prayer, Christian evangelizing)? How will use of the technology in turn affect these practices?

Contemplate ten years into the future. Consider 1-3 ways in which use of the system might **influence specific cultural groups** who interact with the **system, or might influence interactions among cultural groups.**

# Contemplate



## Appropriation by Cultural Groups

## Changing Hands

A single product can change hands once, twice, or more times during its lifecycle. It may be passed among family members (e.g., coming of age gift) or across town (e.g., consignment). How might use of the system change as the technology changes hands?

Design a scenario of your product changing hands.  
**Imagine a specific challenge** an individual might face when wanting to shift ownership. What features might make this process smoother?

# Design

бутик, 13

для

для отдыха  
охоты и РЫБАЛКИ

ПОДГОНКА  
ОДЕЖДЫ →

супер цена  
1700 от 1400

# Changing Hands

Stakeholders

Time

Values

Pervasiveness

## Choose Desired Values

Often systems are intentionally designed to support specific values (e.g., to facilitate community, to protect privacy, or to enhance trust).

Deliberate on and then designate three primary values the system ideally would support.

# Deliberate



Choose Desired Values

## Choosing Not to Use

Some people may decide not to use your system, or may attempt to remove themselves from an indirect stakeholder role (e.g., choosing not to publish a telephone number). How might deliberate non-use of the system affect a person's daily life (e.g., employability, relationships, civic participation)?

Picture your system in use many years from now. Identify three ways in which an individual's intentional non-use of the system might affect that person's daily life or the system as a whole.

# Picture



Choosing Not to Use



Consider Children

## Consider Key Values at Stake

A technology can support certain values and hinder others (e.g., a shared online calendar system can support community, but impinge on privacy). Possible values include (but are not limited to): autonomy, calmness, community, democracy, environmental sustainability, fairness, human dignity, inclusivity, informed consent, justice, privacy, self-efficacy, and trust.

Generate a list of as many potentially implicated values as **possible in five minutes** (your list may contain some or none of the values suggested here). **Then, briefly discuss each of the values on your list.**



Consider Key Values at Stake

## Crossing National Boundaries

Nations have different rules, customs, and infrastructure that affect use of a technology. What challenges will be encountered by your system if it is used in other countries?

Choose three countries across the globe and envision challenges for your system if it was deployed in each of those countries. Label any common **concerns across the identified challenges.**

# Choose



Crossing National Boundaries

## Direct Stakeholders

Those who directly interact with the system are known as direct stakeholders. These direct stakeholders may have unique perspectives, skills, and concerns. In what key roles will individuals interact directly with the system (e.g., for a medical application: intake receptionist, physician, insurance agent)?

Create a list of the system's direct stakeholders. For each stakeholder role, note at least **one concern specific to that** role. You may refer back to these roles throughout the project.

# Create



Direct Stakeholders

## Diverse Geographies

A system designed for one geographic setting may perform quite differently in other geographies (e.g., a laptop computer designed for an urban setting may not function well in a desert setting).

Enumerate 2-3 diverse geographies. For each geographic setting, consider ways in which the system could be **adapted to better fit that environment.**

# Enumerate



Diverse Geographies

## Elicit Stakeholder Views and Values

Both direct and indirect stakeholders may hold values that are different than those of the designers. What views and values do stakeholders bring to a system? What tensions among values do stakeholders experience?

Inquire. When interacting with direct stakeholders (i.e., during usability or user experience studies), include **at least five questions or activities** about values and value tensions. If possible, also present these questions or activities to at least some indirect stakeholders.

# Inquire



Elicit Stakeholder Views and Values

# Environmental Sustainability

Many systems can be applied or extended to support a desirable environmental outcome (e.g., a system designed to support efficient printing from web browsers may lead to less use of paper and ink). At the same time, systems may have unintended negative effects on the environment (e.g., pollution and waste created in the production of electronics).

Specify the required resources needed to create and support your system, and the byproducts of its production and use. Can your design be applied or extended to support a more positive environmental outcome?

# Specify

Book 2-sided Copying Mode

Align spine of book here



Save a tree,  
use regular  
2-sided mode

A4 LTR 8½x11 STMTR

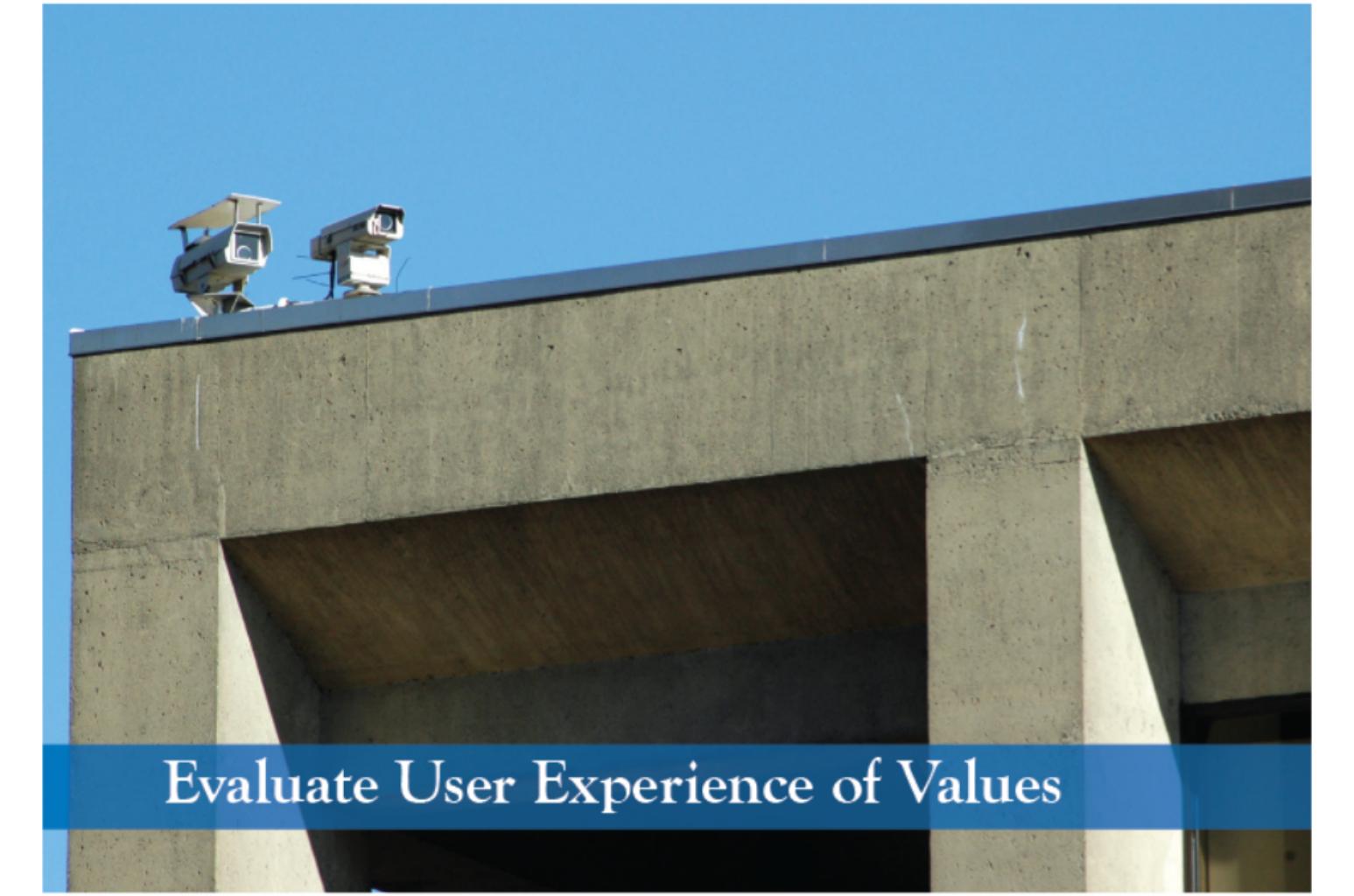
Environmental Sustainability

## Evaluate User Experience of Values

A user may feel that a technology affects values differently than the designers intended. How do users experience the influence of a system on their values?

Ask potential users whether use of the system has any positive or negative effects on a value that they feel is important. You might ask whether a **specific feature of the system** is OK and why (e.g., A camera is pointed at a fountain in a public plaza. The live images of people in the plaza are being displayed in someone's office. Is it OK or not OK that the image is displayed in the office if the people in the plaza are unaware of it? Why or why not?).

Ask



Evaluate User Experience of Values

## Indirect Stakeholders

Some people may be affected by a system without directly using it. These people are known as indirect stakeholders . In what key roles will individuals be affected by the system but will not directly interact with it (e.g., for a law enforcement database: citizens, bystanders, lawyers)?

Generate a list of 3-5 indirect stakeholders. For each indirect stakeholder role, note at **least one concern specific to** that role. You may refer back to these roles throughout the project.

# Generate



Indirect Stakeholders

Stakeholders

Time

Values

Pervasiveness

## Long-Term Health and Well-Being

Technology may have both direct and indirect effects on people's health and well-being. How might interactions with the system on a daily basis influence health and well-being?

Imagine that the system you are working on has been widely adopted and is part of daily life for direct and indirect stakeholders across society.

**Reflect upon 3-5 likely ways in which the system influences health and well-being after years of use.**

# Imagine



# Long-Term Health and Well-Being

## Non-targeted Use

Technologies are not always used in ways that the designers intended. Who might use the system for unplanned or nefarious purposes (e.g., frustrated stakeholder or an identity thief)? In what ways?

- Identify three roles that involve non-intended use of the system.

# Identify



Non-targeted Use

Stakeholders

Time

Values

Pervasiveness

## Obsolescence

For a variety of reasons, systems may become obsolete, no longer supported by their developers. How will obsolescence affect those who continue to use the system?

Invent a future storyline in which the system you are developing is no longer supported. Consider how obsolescence affects normal use of the system, and how problems with the system may be resolved.

# Invent



A weathered wooden utility pole stands against a clear blue sky. Multiple black electrical wires are attached to the pole using various hardware like wire clips and small wooden stakes. The pole shows signs of age and wear. A thick red horizontal bar spans across the bottom of the image, containing the word "Obsolescence".

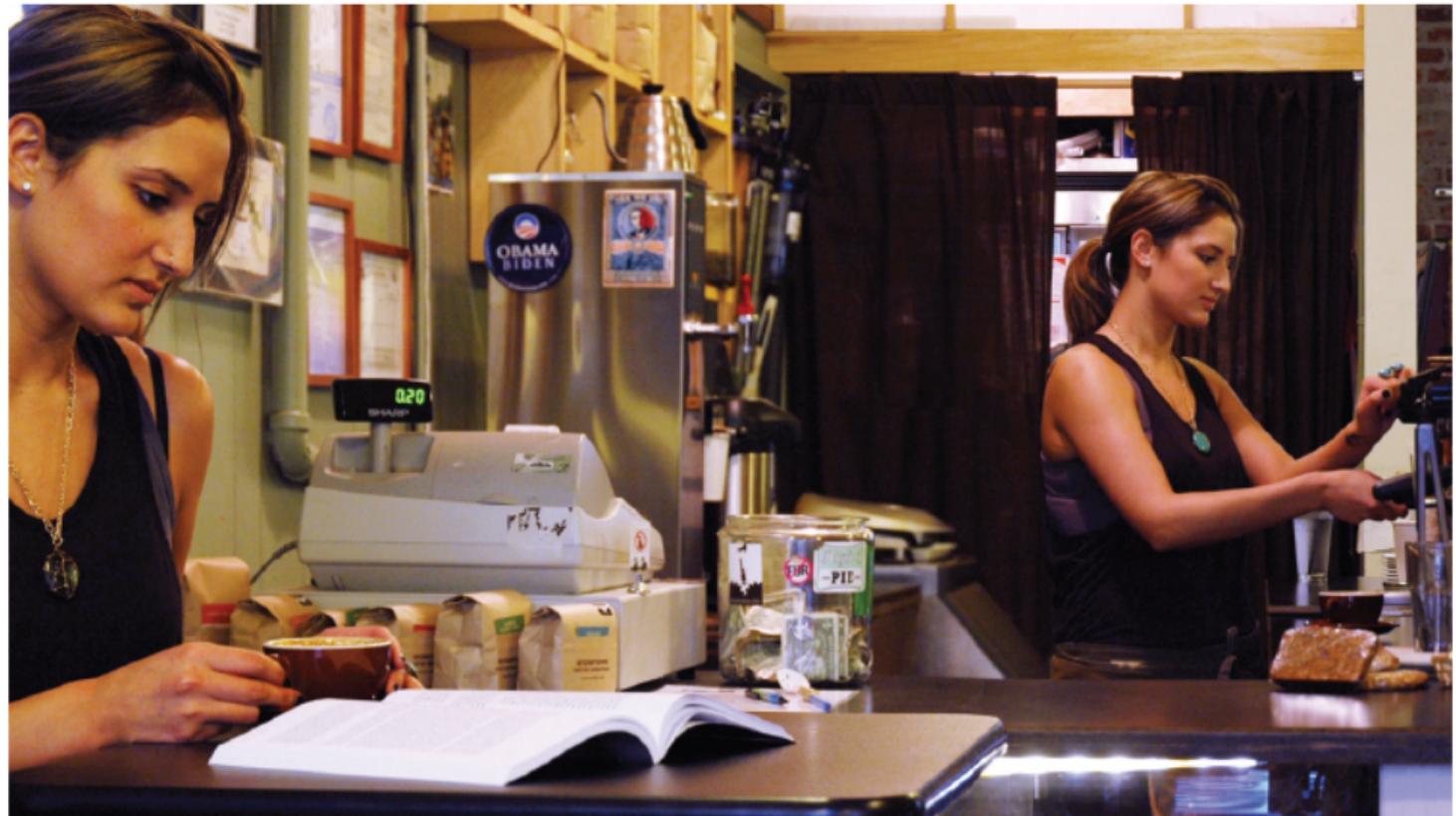
Obsolescence

## One Person, Multiple Roles

The same individual can interact with the same system (e.g., electronic medical records) at times as a direct stakeholder (e.g., nurse practitioner), and at other times as an indirect stakeholder (e.g., patient).

- Sketch a description (1-2 paragraphs) of an individual who at one point in time is in the role of a direct stakeholder with the system and at another point in time is in the role of an indirect stakeholder.

# Sketch



One Person, Multiple Roles

Stakeholders

Time

Values

Pervasiveness

## Perceptions of a Value

Sometimes stakeholders have different perceptions of the definition of a specific value (e.g., some may define privacy as having control over your information vs. those who define privacy as being left alone).

Investigate a value. In user studies, have participants write a brief (1-2 sentence) **definition of that value as it relates to the system.** Identify any substantive differences in participant perceptions.

# Investigate



Perceptions of a Value

## Political Realities

Different political systems (e.g., socialist, totalitarian, democratic) can influence perceptions and practices that emerge in relation to your system (e.g., unmoderated vs. moderated discussion forums).

Characterize two different political environments in which your system is likely to be deployed. Consider how those political realities may **influence how individuals** in those environments may interact with the features of your system.



## Political Realities

Stakeholders

Time

Values

Pervasiveness

## Reappropriation

In some cases, after a system has reached widespread use, it is later reappropriated in novel ways by the same community (e.g., use of telephone wires to deliver Internet service).

Envision 2-3 ways that the system might be reappropriated. Consider how this reappropriation might affect both the community in which it originated and new communities of use.

# Envision



# Reappropriation

Stakeholders

Time

Values

Pervasiveness

## Sustained Friendships

As we integrate technologies into our lives, they may affect or be affected by our relationships with other people. How might the system influence how people make and sustain friendships and family relationships?

**Imagine five years out from now and consider 3-5 ways the system might influence friendships and family relationships.**

# Imagine



## Sustained Friendships

Stakeholders

Time

Values

Pervasiveness

## The Long Now

Your children. Your children's children. Growing up, interacting with, adapting to, and adapting the technology you are working with now. How might generations who come of age with this technology appropriate it for their own purposes?

Envision a 50-year old who has interacted with the technology over a lifetime. Sketch a series of **snapshots at five-year intervals** that highlights how interactions with the system shift over time.

# Envision



The Long Now

Stakeholders

Time

Values

Pervasiveness

## Value Tensions

Value tensions occur when supporting one value in a technology challenges another value (e.g., sharing more information in a social networking system may support sociability, but reduce privacy). They can occur within a single individual (conformity vs. autonomy), between an individual and a group (individual privacy vs. national security), or across different groups (a culture that values independence vs. a culture that values interdependence).

Brainstorm three value tensions that your system may engage. For each value tension, identify one or more design features that favors one of the values over the other.



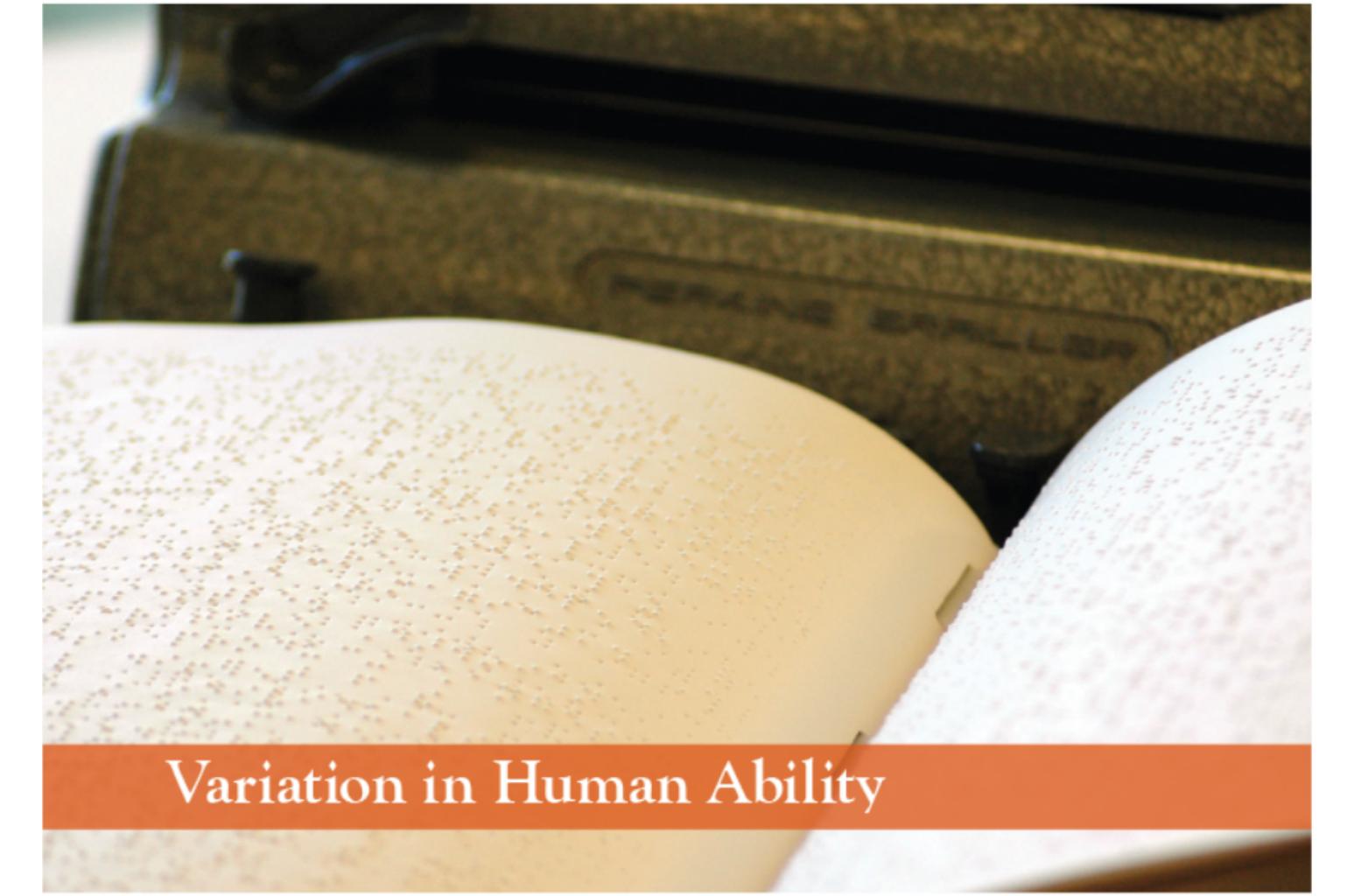
Value Tensions

## Variation in Human Ability

Sight. Hearing. Touch. Speech. Motor control. People experience different physical abilities. Abilities also can be affected by context-of-use (e.g., listening to a cell phone on a busy street). How might the system account for and accommodate variation in physical abilities?

Describe 3-5 breakdowns that may occur when a person with limited vision, hearing, or motor control interacts with the system.

# Describe



## Variation in Human Ability

## Widespread Use

A person's use of a technology may be impacted by how, when, and where other people are using it. How might interactions change as use of the system spreads to thousands or even millions of users?

Envision your system in use by a single stakeholder. Now imagine 100 such individuals interacting with the system. Then 1,000 individuals. Then 100,000. What new interactions might emerge from widespread use? Find three synergistic **benefits of widespread use** and three potential breakdowns.

# Envision



Widespread Use

Stakeholders

Time

Values

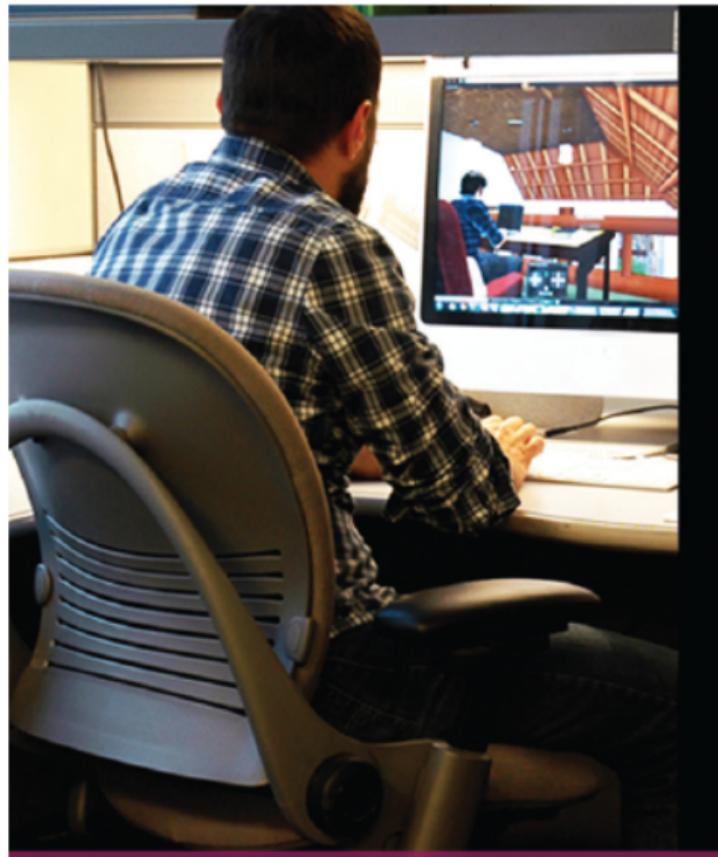
Pervasiveness

## Work of the Future

The introduction of new technologies can change working habits, or even what it means to "do work." How might your system change the nature of work? How might it change what it means to be a worker?

Think about ten years from now. Take a few minutes to brainstorm ways in which your system may change for the better the way people work. Then take the same amount of time to brainstorm ways in which your system may change for the worse the way people work.

# Think



Work of the Future