NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

Human-Centered Design

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Responsible AI

- Artificial intelligence (AI) technologies are complex sociotechnical systems
- While holding much promise, they have caused societal harm.
- In response, corporations, non-profits, and academic researchers have mobilized to build responsible AI

But How?

- It is unclear for product teams in industry as to how to remedy existing problems or avoid them in the future.

But How?

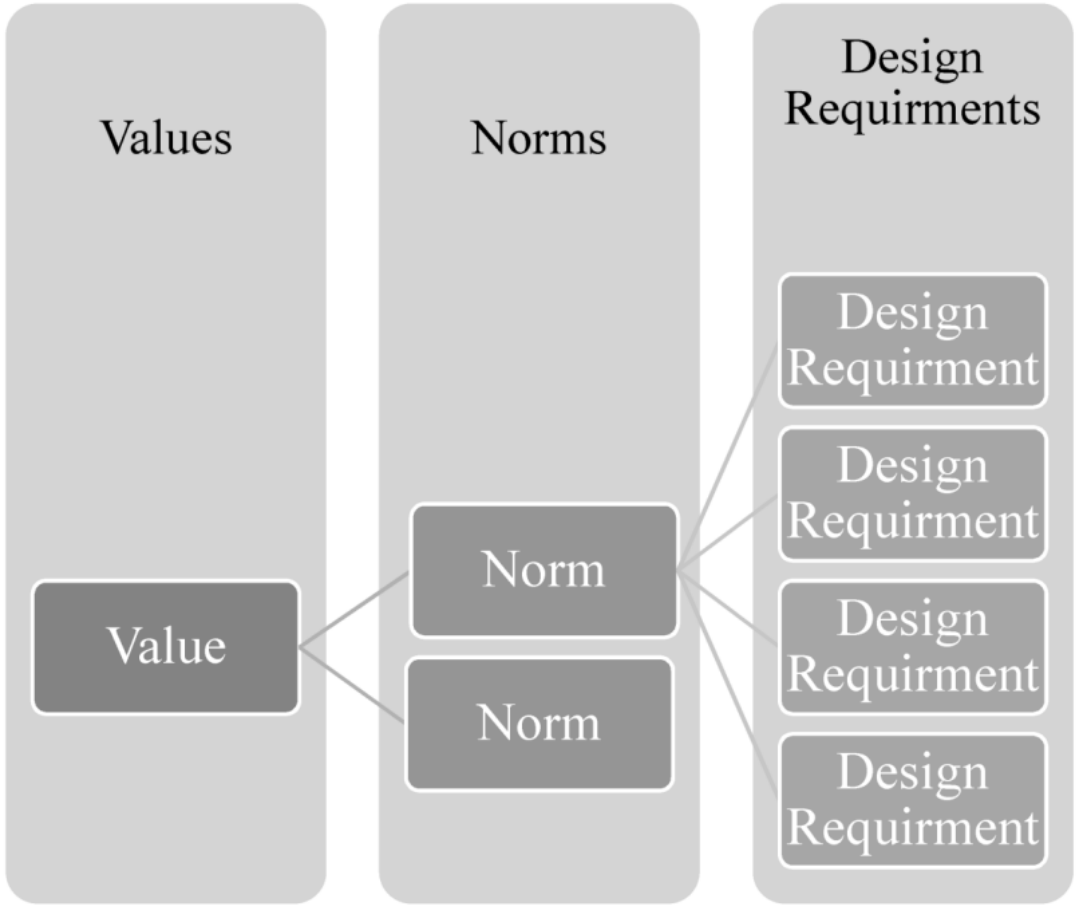
- One critical step is to raise AI product teams' awareness about the ethical considerations related to the technologies they are designing and building.
- To support product teams' exploration of these ethical concerns, engaging, high impact methods that facilitate **envisioning around specific ethical principles** are needed.

Value Sensitive Design (VSD)

- Value sensitive design seeks to provide theory and method to account for human values in a principled and systematic manner throughout the design process.

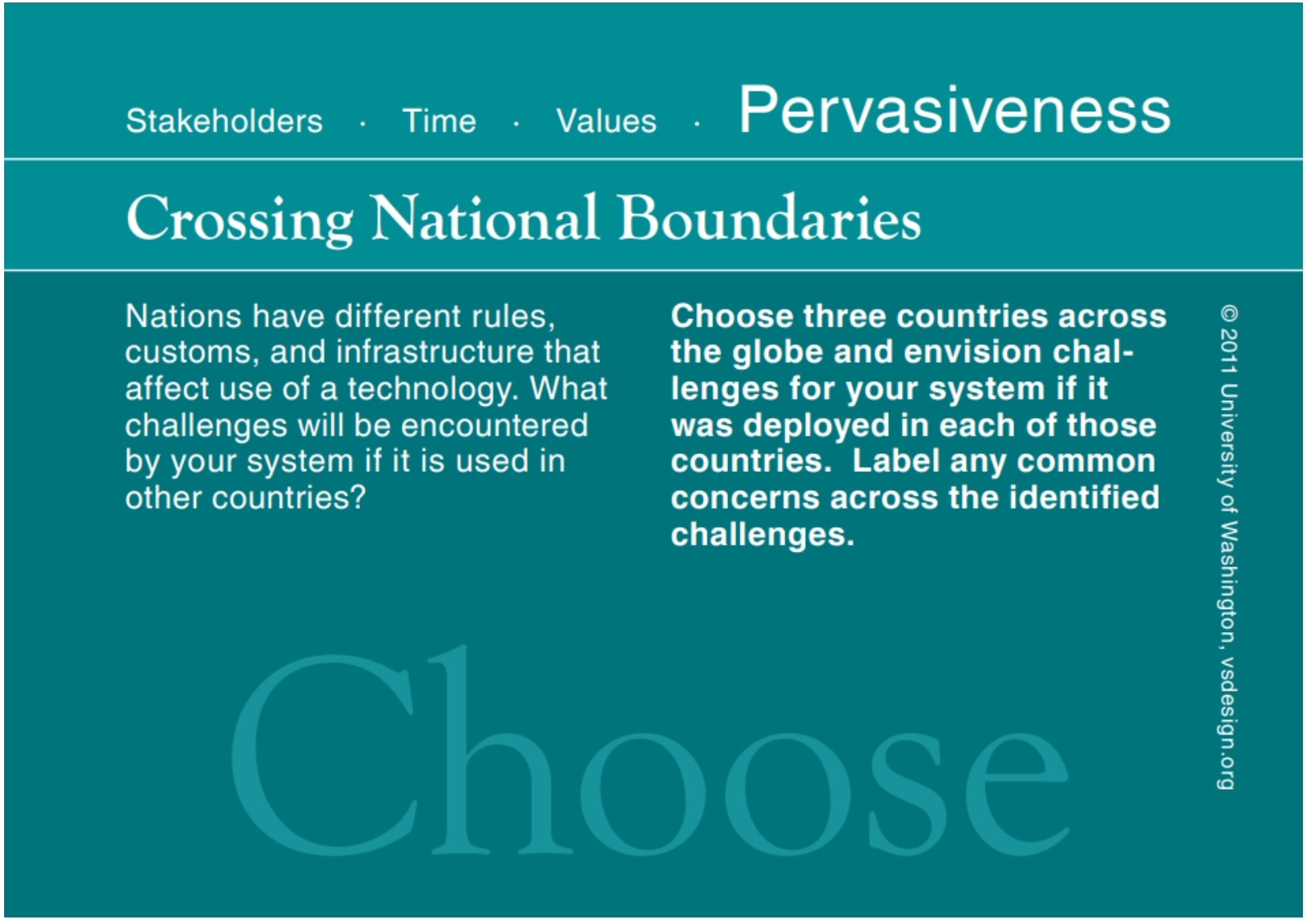
- Central to a value sensitive design approach are analyses of
  - both direct and indirect stakeholders;
  - distinctions among designer values, values explicitly supported by the technology, and stakeholder values;
  - individual, group, and societal levels of analysis;
  - the integrative and iterative conceptual, technical, and empirical investigations; and
  - a commitment to progress (not perfection).

Value Sensitive Design (VSD)



VSD: For Use During Brainstorming

The VSD Envisioning Cards



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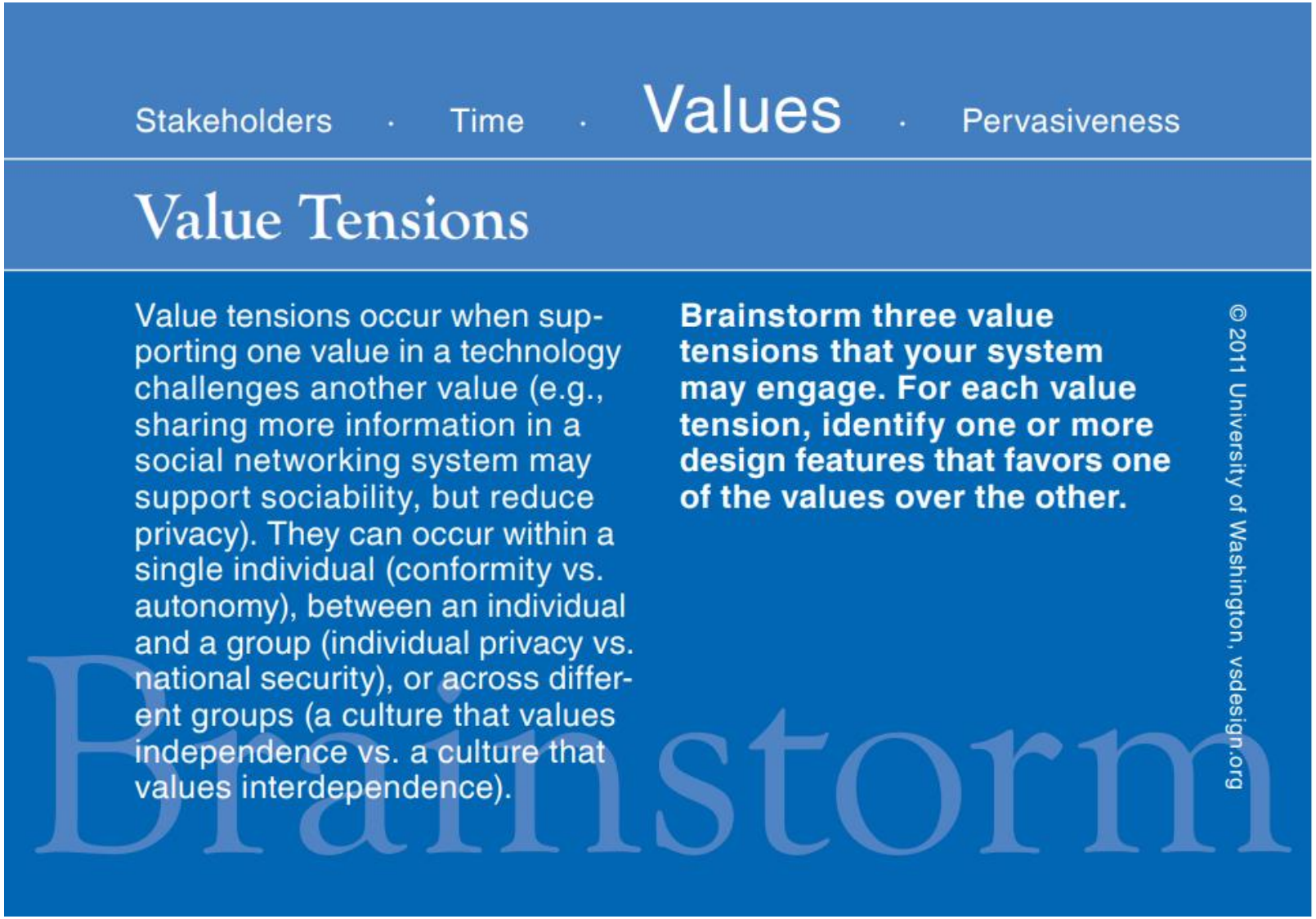


Envisioning AI Ethics

- Judgement Call:
  - A game that draws on value sensitive design (VSD) and design fiction to surface ethical concerns

S. Ballard, K. M. Chappell & K. Kennedy, "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 (DIS'19)*, pp. 421–433, 2019.

Judgement Call: How to Play

- Product teams identify their stakeholders
- Then, write fictional product reviews by pretending to be those stakeholders related to ethical principles.
- The reviews scaffold discussion in which specific ethical concerns are highlighted
- Solutions are then considered

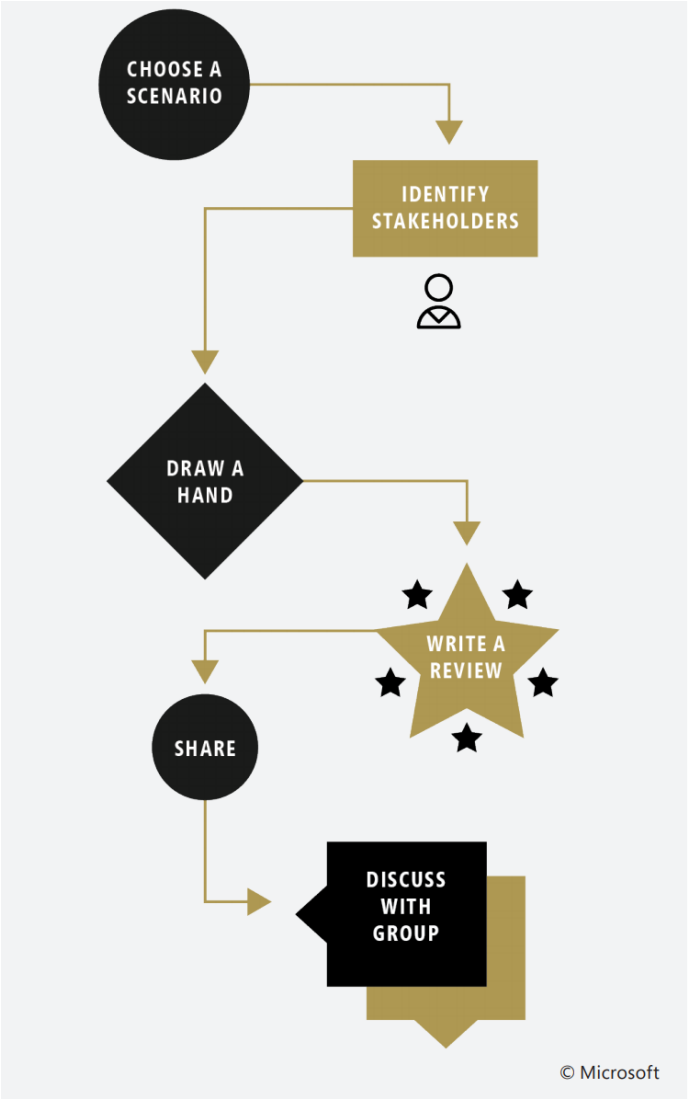
Judgement Call: How to Play

To play

1-10 players
60-90 minutes

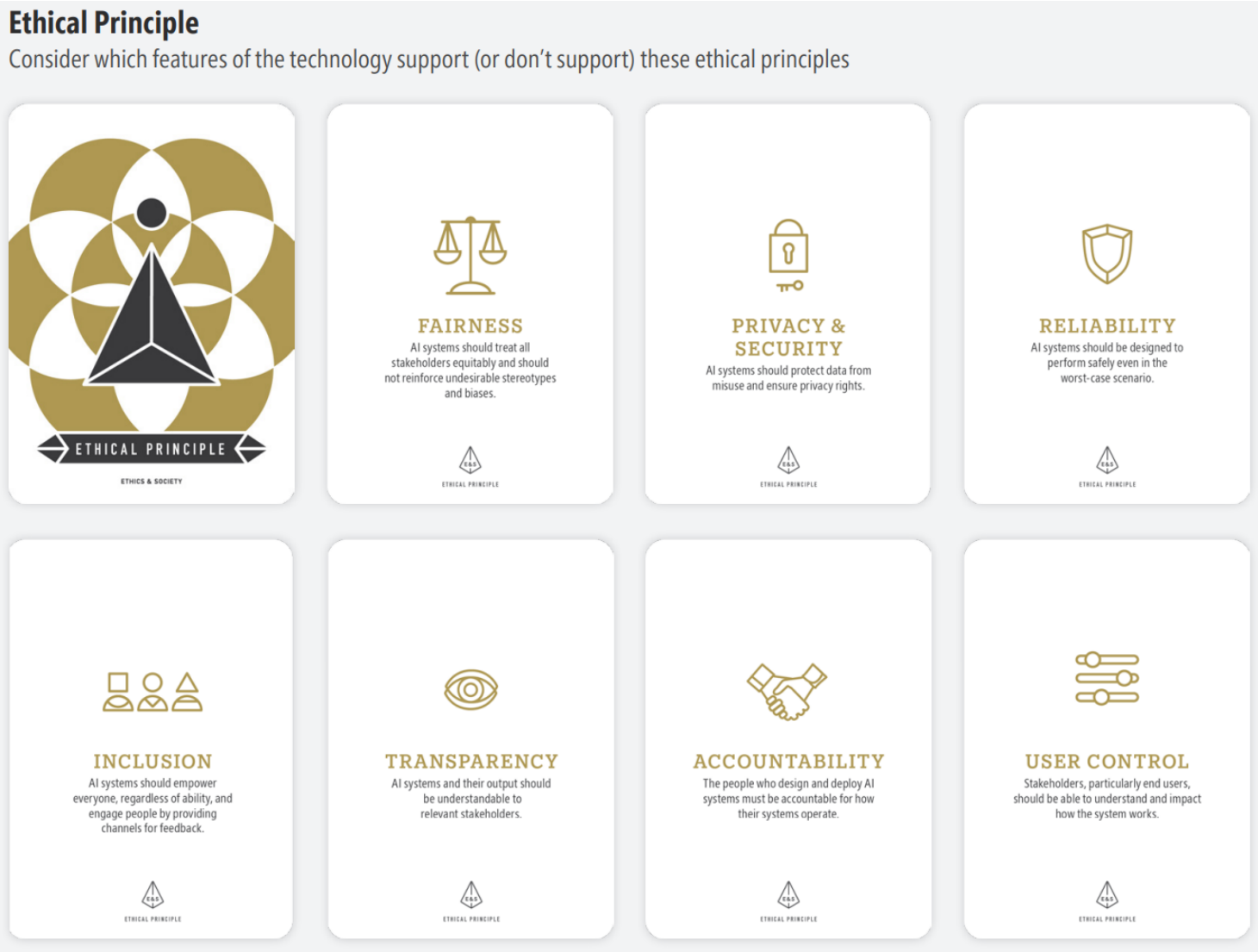
You'll need

- white board
- dry erase markers
- index cards
- pens/pencils

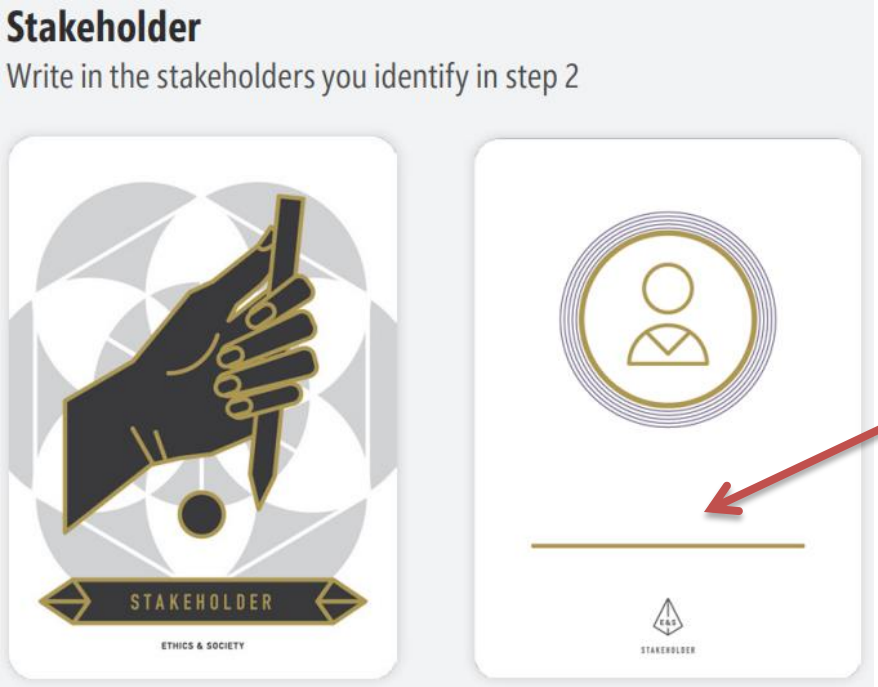


Judgement Call: How to Play

The Cards: Ethical Principles



The Cards: Your Role



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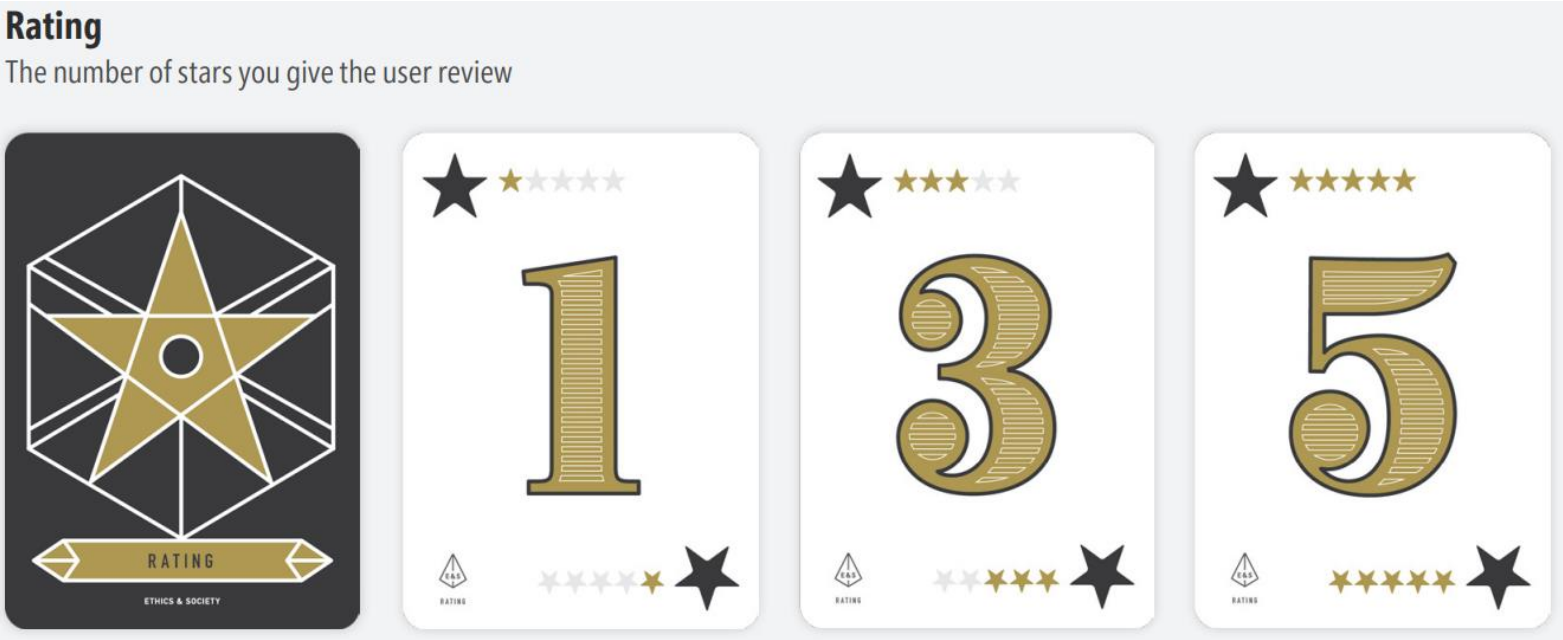
The Cards: Your Stance



Step 1: Choose a Scenario

- There are two types of scenarios,
  - Product scenarios
  - Fictional scenarios
- The game was designed to be used by product teams with real products, but using either type of scenario for gameplay can lead to excellent discussion about ethics and technology.

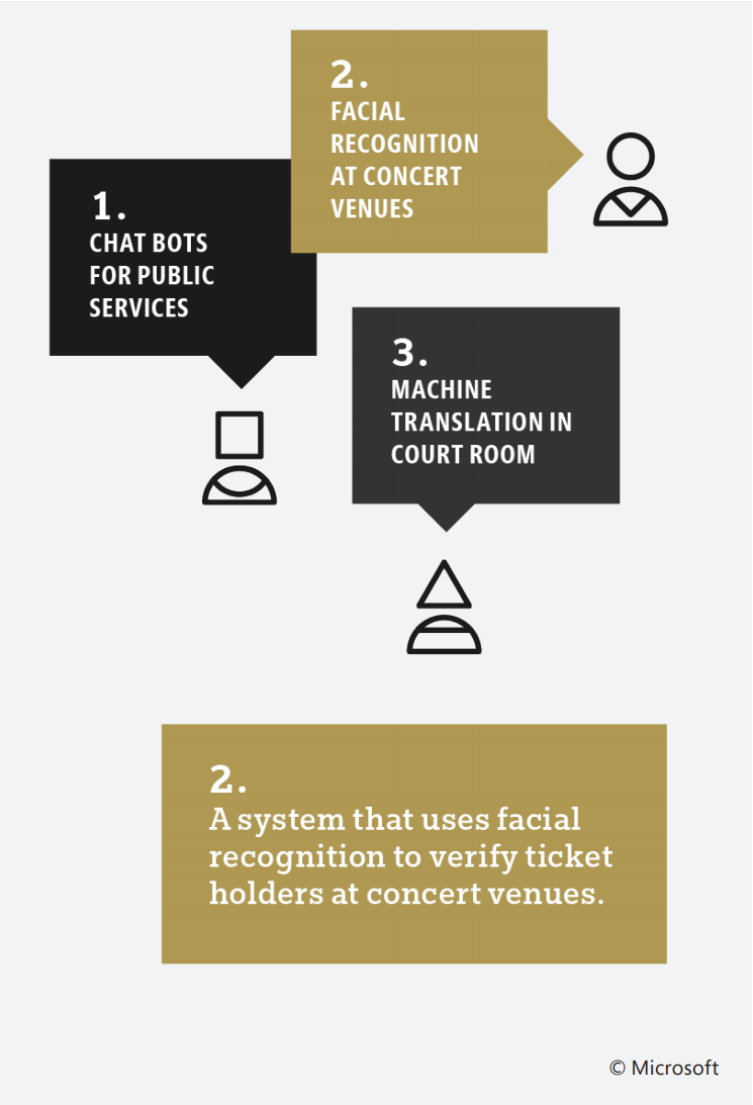
Step 1: Choose a Scenario

- Tips for clarifying a product scenario:
  - Take a moment to review the current design of the technology.
  - What elements of the design have recently changed?
  - What features still need to be resolved?
  - If the product is a platform technology, specify an application area
    - “Facial recognition technology used in an airport” is better than “facial recognition technology”.

Step 1: Choose a Scenario

- Tips for choosing a fictional scenario:
  - A good fictional scenario will include both a specific technology and application area.
    - "Autonomous drones for commercial package delivery" is better than "autonomous drones".
  - After you've decided on the scenario, spend a few minutes discussing the technology's features and the social context.
  - Fictional scenarios are typically less detailed than product scenarios and the technology at hand may be unfamiliar to many players.

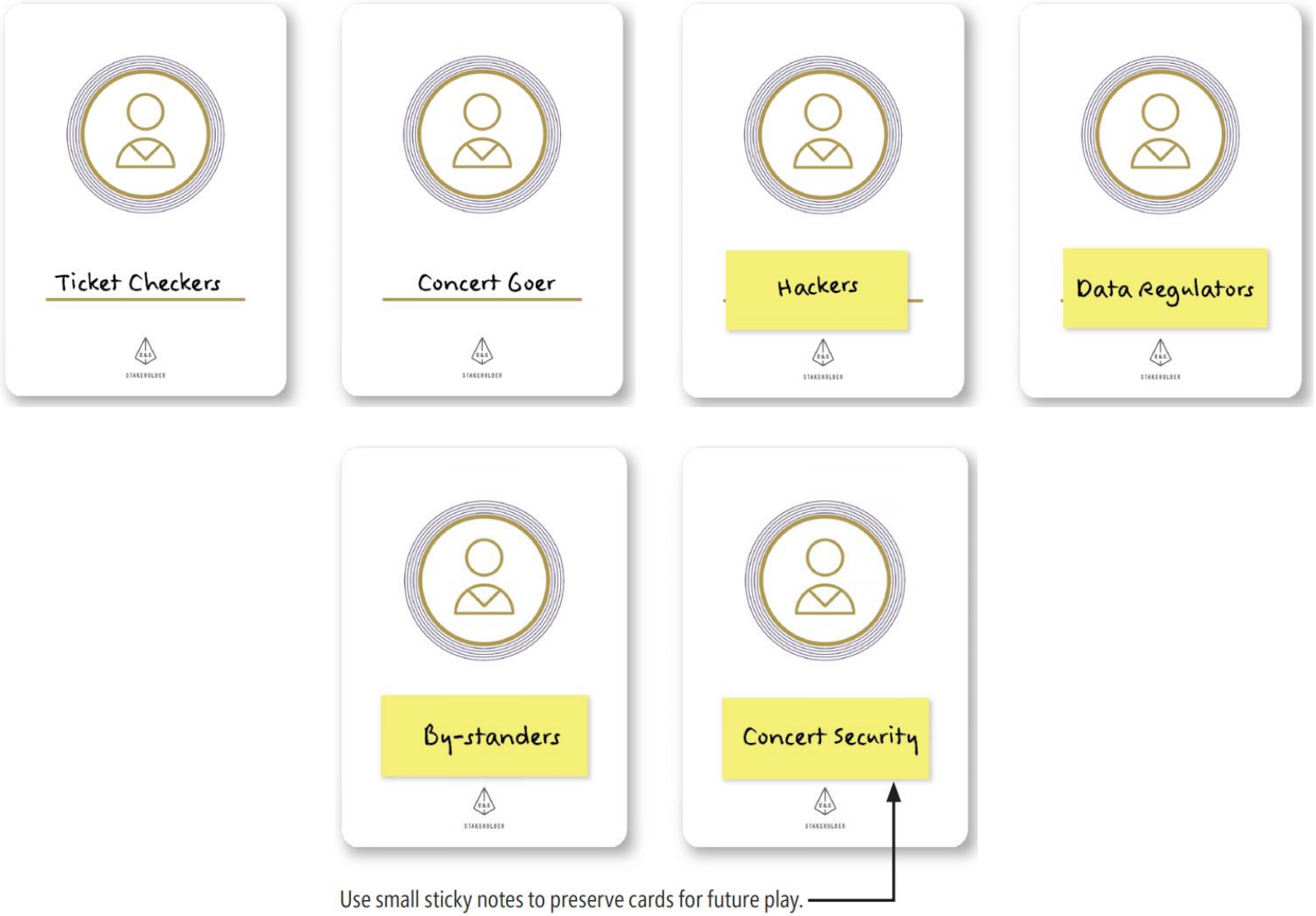
Step 1: Choose a Scenario - Examples



Step 2: Identify Stakeholders

- **Direct Stakeholders** are those who interact directly with the technology
  - end users, designers, engineers, hackers, and administrators.
- **Indirect Stakeholders** do not interact with the technology but are affected by its use.
  - advocacy groups, families of end users, regulators, and society at large.
- **Excluded Stakeholders** are those who cannot or do not use the technology
  - Reasons for exclusion can include physical, cognitive, social, or situational constraints.
  - For example, a technology that relies heavily on visual elements will exclude stakeholders with low-vision.

Step 2: Identify Stakeholders



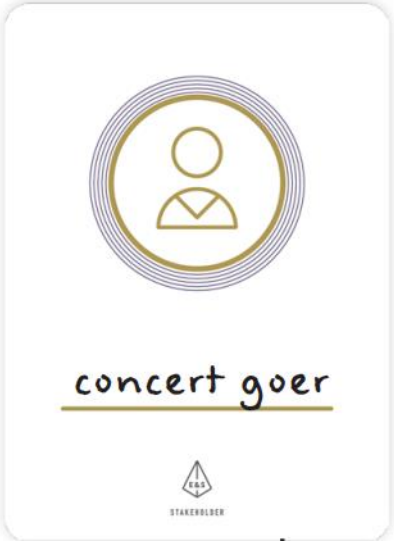
Step 3: Draw a Hand

- For each round, each player draws
  - **one rating card**,
  - **one stakeholder card**, and
  - **one ethical principle card**
- and uses these three cards to write a product review.

Step 3: Draw a Hand

- Each player receives one wild card per game to play during any round.
  - Draw a new rating card. For when you'd like to try the review with a different number of stars.
  - Draw a new stakeholder card. For when you are unfamiliar with the stakeholder or uncomfortable representing their views.
  - Give a zero star review. For when the technology failed the stakeholder completely and even one star is too many.

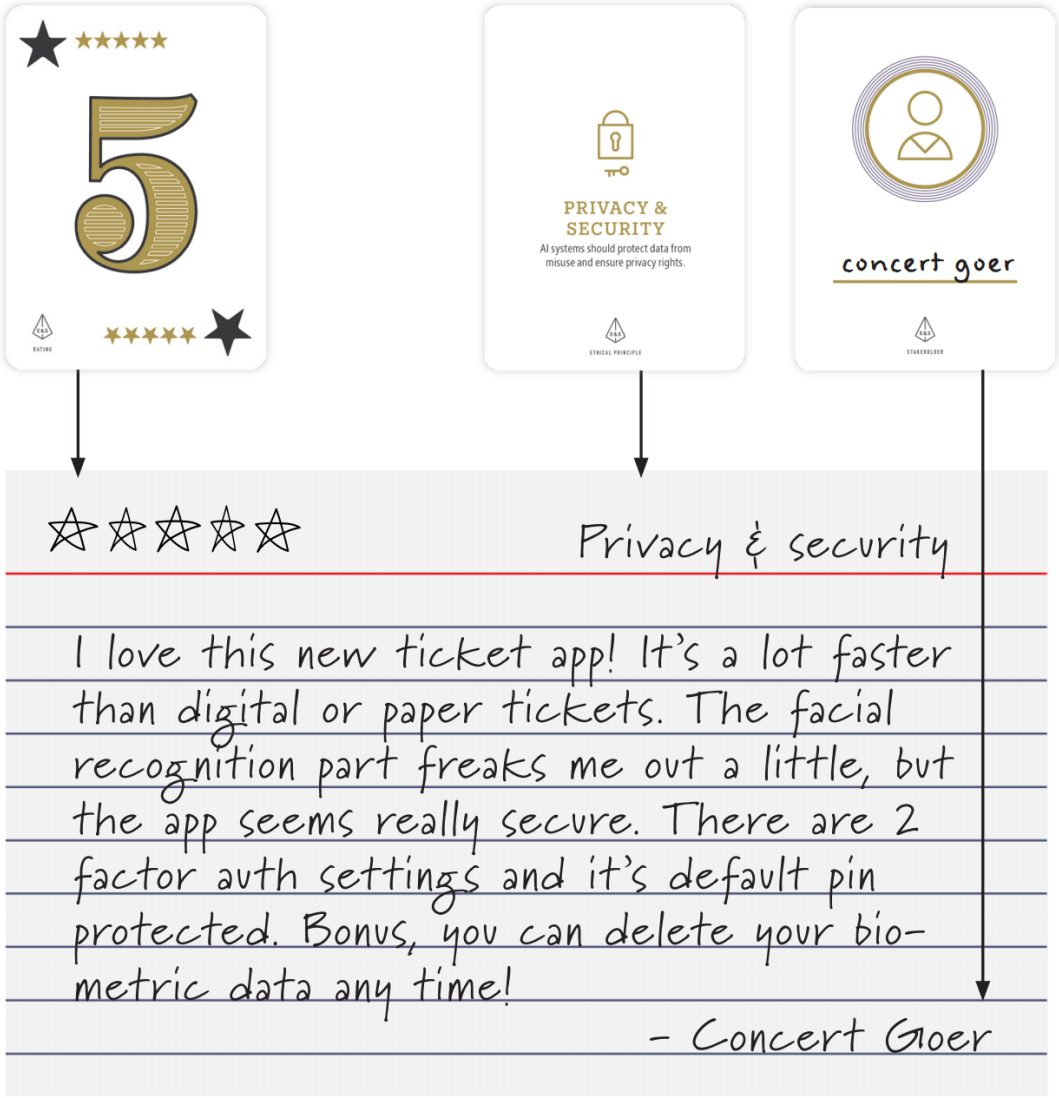
Step 3: Draw a Hand



Step 4: Write a Review

- Before you begin writing, think about the experiences and perspective of the stakeholder.
- Be specific about the features of the technology, even if they aren't plausible. This will make the discussion more concrete.
- Don't be afraid to use abbreviations, emoticons, and other playful language to express the stakeholder's feelings about the technology.

Step 4: Write a Review



Step 5: Share and Discuss

- Once all reviews are completed, have one player collect, shuffle, and redistribute them.
- Take turns reading the reviews aloud. Listen for themes to emerge.
- After all the reviews have been read, discuss them as a group.

Step 5: Share and Discuss

- Individually, the reviews highlight aspects of the technology from the perspective of a specific stakeholder.
- Together, they paint a more holistic picture by providing multiple perspectives of the same technology.

Step 5: Share and Discuss

- Questions to consider in discussion:
  - Are there both positive and negative reviews about the same features?
  - Do any of the stakeholders' concerns surprise you?
  - What changes could you make to the product based on what you learned today?
  - Was it challenging to write from the perspective of different stakeholders?
  - What can you change about the technology to alleviate some of the concerns you identified?

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