The moral-IT deck – how to use it?

The Moral-IT deck[1] comprises 52 cards, each posing critical ethical questions for designers to consider in the development of new technology. These questions are thematically clustered into four categories: privacy, ethics, law, and security. It's important to note that the ethical groupings or issues on the cards are not exhaustive or definitive (if that can ever be claimed), serving as starting points for discussion. The deck reflects the authors' multidisciplinary training in computing, technology law, human-computer interaction, Science and Technology Studies, and critical theory. Blank cards are included for participants to add their own questions or highlight any missing concepts.

As a design probe, these cards are valuable for sparking discussions around practical ethical considerations in the early stages of the design process. The deck can be utilized in various contexts and team configurations, from individual to team-level, and in interactions with users and stakeholders. We encourage project teams, and ethics owners, in particular, to creatively use these cards and adapt them as needed.

Impact Assessment Workshop

One concrete way to use this card deck within a project team is by employing a streamlined 'impact assessment,' structured by the designers. This helps to facilitate collaborative discussions, maintain focus on distinct steps, and assists the team in developing an action plan based on their reflective engagement with the cards. This process involves utilizing the provided impact assessment board, which visualizes and maps discussions, facilitating collective deliberation. The board helps constrain the deliberation process to specific steps, ensuring that discussions of ethics remain bounded and reducing the potential for users to feel overloaded by the diversity of issues. Additionally, the board is reusable, allowing the team to work through risks one at a time, reusing cards in different ways to develop a range of strategies to address various challenges. The Moral-IT Impact Assessment Board identifies four key stages pertinent to Ethics by Design: identifying possible risks, assessing the significance or importance of the risk and its likelihood of occurring, establishing suitable safeguards to these risks, and exploring practical implementation challenges. This process assists in planning appropriate safeguards and identifying challenges that need to be overcome for implementation.

Workshops typically last 2.5 hours, accommodating between 2 and 10 participants. With one deck of cards available, the group has flexibility in deciding how to use them. For instance, when selecting 5 cards (see step 3), the group can decide whether to go through all the cards together or have each participant select a specific number of cards before negotiating a final selection. The workshop is ideally led by a facilitator, who can also participate, steering the sequence of the various steps, ensuring everyone is involved, and keeping track of the time. Additional background information is available in a research paper written by Moral-ITdeck developers Urquhart and Craigon[2].

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[1] The Moral-IT deck by Lachlan Urquhart and Peter Craigon is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (https://creativecommons.org/licenses/by-nc-sa/4.0/)

[2] Urquhart, L.D. and Craigon, P.J. (2021) The Moral-IT Deck: a tool for ethics by design. *Journal of Responsible Innovation* 8(1): 94-126. DOI: 10.1080/23299460.2021.1880112

Here is a suggested sequence to follow for the impact assessment workshop:

1. **Defining the technology:** Summarize the technology and write it on a post-it note placed at the top left of the impact assessment board. This could be a real or hypothetical system.
2. **Defining the main ethical risk:** Provide an overall ethical risk for the technology. Whilst multiple risks exist, choosing an overarching focusses the discussion. Write this on a post-it note and place it on the top right.
3. **Associated risks:** Select the most important 5 cards from the Moral-IT deck associated with the overall ethical risk. The decision-making process is left to the group.
4. **Ranking:** Rank and arrange the selected cards from least to most important, placing them in the row provided on the process board.
5. **Annotating Risks:** Record the reasoning behind the card choices on post-it notes and place them directly below the chosen cards on the line marked annotations.
6. **Safeguards:** Use the cards to identify principles as safeguards that may mitigate the identified risks. Place them directly below the relevant risk on the line below.
7. **Annotating Safeguards:** Record the reasons for selecting certain cards as mitigations on post-it notes and place them on the line below.
8. **Challenges of Implementation:** Consider and document practical elements that might challenge the implementation of the safeguards (e.g., legal, organizational, social, technical barriers) and record these on post-it notes on the line below.
9. **Discussion:** Encourage ongoing discussion throughout the exercise. Following the completion of the Impact Assessment process, hold open summative discussions, reflecting on the process, the value of the cards as a reflective tool, substantive ethical questions arising for the technology, and their impact on future work.

The Moral-IT Deck

Privacy

The Moral-IT Deck

Ethics

The Moral-IT Deck
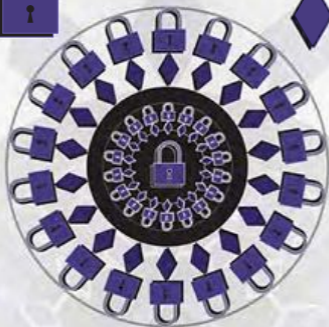

Law

The Moral-IT Deck

Security

A

**What's the most
embarrassing thing
about your technology?
Would you change
it now?
Why?**

A

Identities Management

2 ♦

Does your technology enable citizens to hold & manage multiple identities?

2 ♦

Obfuscation

3 ♦

How does your technology protect people's identities? Does it use anonymisation or pseudonymisation techniques?

3 ♦

Secrecy

4 ♦

Does your technology
keep secrets?
From whom?
Why?
Should it?

4 ♦

Trustworthiness

5 ♦

How does your technology
create trustworthy, secure
relationships
with users?

5 ♦

Confidentiality

6 ♦

How does confidentiality feature in your technology? Does it use methods such as encryption, by default?

6 ♦

Usable
Security

**Are the security mechanisms
in your technology
intuitive to use &
easy to understand?
How &
for whom?**

Resilience & Low Redundancy

8 ♦

Is your technology robust to unforeseen vulnerabilities? Can it maintain optimal service when challenged?

8 ♦

Data Breach Management

9 ♦

How does your technology manage security breaches? Can it notify users & regulators within 72 hours?

9 ♦

Physical Safety

10 ◆
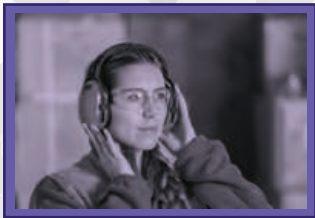
How does your technology affect the physical safety of users?

10 ◆

Attribution
& Responsibility

J
♦

Can all the harmful effects
of your technology be
clearly attributed
to it?
Should they be?

J
♦

Q

Integrity

Is your technology honest?
Can people
rely on it?

Q

Secure for Whom

Is security equally available to all people impacted by your technology? How?

K ◆

K ◆

Blank Card

Blank Card

B

B

How can your technology embody human virtues?

Environmental Protection

2 ♣
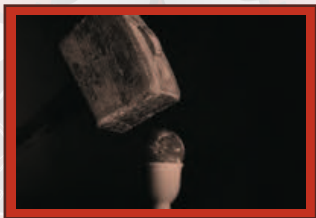
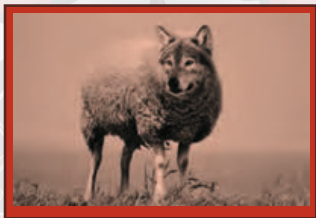Is your technology environmentally sustainable now & in the future? Can you explain how?

2 ♣

Accessibility

3 ♣
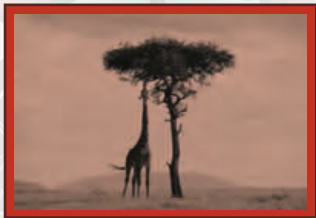
Can your technology be
reasonably adjusted to ensure
it can be used by as
many people as
possible? How?

3 ♣

Consumer Protection

4 ♣

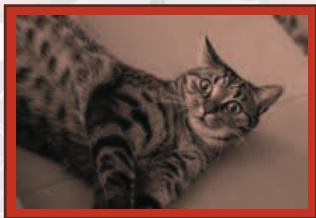Does your technology protect people from unfair commercial behaviours causing harm or discrimination ?
How could it?

4 ♣

Rule of Law

5 ♣

Is everyone subject to the
same rules when using
your technology?
Are they aware
of these?

5 ♣

Due Process

6 ♣

How does your technology avoid enabling arbitrary decisions? Does it follow a clear, justifiable decision making process?

6 ♣

Risk Minimisation

7 ♣

What steps have you taken
to address the biggest risks
arising from your
technology?

7 ♣

Liability

8 ♣

What are the foreseeable harmful effects created by your technology? Who is responsible for these?

8 ♣

Proportionality

Are your responses
to risks appropriate?
Do they go too
far or not
far enough?

Precautionary Principle

10 ♣

Appraising future risks of your technology, should you still proceed i.e. "Just because you can, should you?"

10 ♣

Duty of Care

J ♣

Does your technology
provide reasonable care
for the wellbeing
of citizens?
How?

J ♣

Intellectual Property

Does your technology respect or challenge IP interests of others, incl. trademarks, copyrights, patents & design rights? How?

Criminality

K ♣

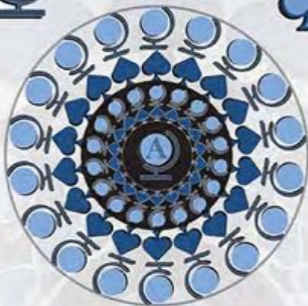How does your technology manage use in undesirable, socially unacceptable or criminal applications?

K ♣

Blank Card

Blank Card

Consider the setting this technology will be used in & why this is important.

Legibility & Comprehension

Can everybody understand what your system does? How?

User Empowerment & Negotiability

3 ♠

How do you ensure people can exercise ongoing choice about using your system?

3 ♠

Overt Bias & Prejudice

Does your technology overtly treat one group of people differently? Why?

Autonomy & Agency

5 ♠

What are the consequences of your technology for the freedom of choice of users? Does it unreasonably limit it? How?

5 ♠

Trust

How do you ensure and
maintain citizens'
trust?

Meaningful Transparency

Do you know why your technology acts the way it does? Can you explain that to people?

Sustainability & E-Waste

8 ♠

What effects does your technology have on the environment, from creation to destruction?

8 ♠

Power Asymmetry

Where does power reside in your technology?

Is it balanced?

Fairness & Justice

10 ♠

How do you ensure your technology acts in a fair manner & does not cause injustice to users?

10 ♠

Temporality

J ♠

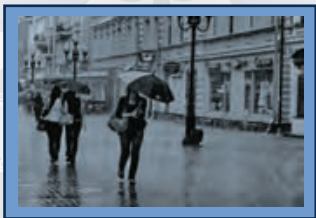How long does your
technology last?
How does it manage its
impacts from creation
to destruction?

J ♠

Wellbeing
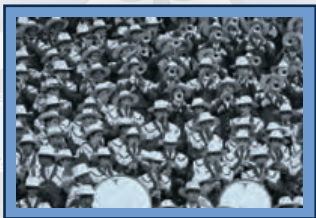

Does your technology
improve the lives
of its users?

How?

Participation

Can citizens participate in decisions about your technology?
How?

Blank Card

Blank Card

A ♥

A ♥

Think of a time that you
were amazed by a
new technology.
Why?

Limited Data Collection

2 ♥

Does your technology collect the minimal data necessary, for a specific purpose? Is it stored for a limited time?

2 ♥

International Data Transfer

3 ♥

How does your technology
protect data sent
overseas?

3 ♥

Spectrum of Control Rights

4 ♥

How does your technology accommodate users seeking greater control over their personal data?
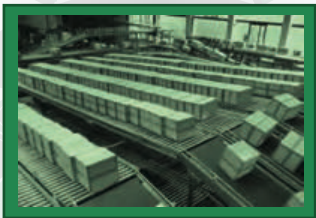
4 ♥

Transparency Rights

5 ♥

Do you provide sufficient, clear information about how your technology uses personal data? How?

5 ♥

Lawful Processing

6 ♥

Does your technology process personal data lawfully? Specifically, how do you obtain consent?

6 ♥

Data Security

7 ♥

Does your technology protect data from unanticipated disclosures? How? Can you notify users of a breach quickly?

7 ♥

Taking Responsibilities

8 ♥

Have you systematically assessed privacy impacts of your technology? What technical & organisational safeguards should you implement?

8 ♥

Privacy in Public

9 ♥

Does your technology use information collected in a public space? How do you protect privacy rights of those involved?

9 ♥

Location Privacy

10 ♥

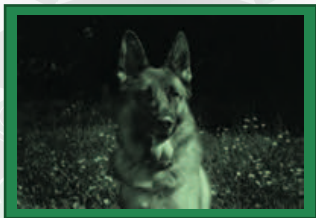Does your technology collect the location of users?
Why?
Does it need to?

10 ♥

Compliance & Accountability

J ♥

What measures have you used to comply with EU Data Protection Laws? How do you demonstrate these to users?

J ♥

Special Categories of Data

How does your technology
obtain explicit user consent
for processing sensitive info incl.
health, religious,
political, ethnic
origin & sexuality?

Privacy Virtues

K ♥

Does your technology shape the autonomy, dignity and identity formation of users? How?

K ♥

B

Blank Card

B

Blank Card