

Case Studies in Design Informatics 1

Tutorial 3: Responsible Innovation

In the last tutorial, we explored how to critically reflect on a case study using the ethical design framework. In this tutorial, we will explore how we can design and develop technology responsibly through the AREA framework, a tool that helps those involved in technology research and innovation to do so responsibly.

As always, the session will start by taking attendance. The Tutor will then ask you to discuss a question: What do you think Responsible Innovation means?

If you're not sure, you can just say "I don't know". This is not a test!

Introducing the Responsible Innovation Prompt cards

In today's activities, we will explore how we can design technology with Responsible Innovation practices by using the [Responsible Innovation prompt cards](#) designed by Horizon Digital Economy Research Institute at the University of Nottingham. The cards give prompts for design teams and ethicists to reason about the potential uses, misuses, benefits and harms of technological innovations using the [AREA framework](#) – a framework that helps raise questions about the potential impacts of technology innovation – both positive and negative.

There are four card groups, representing the four key activities within the **AREA framework: Anticipating, Reflecting, Engaging and Acting**. The prompts on the cards within each card group aim to support designers and researchers in thinking through four aspects of Responsible Innovation practices, which can be called the **Four Ps: Purpose, People, Process, and Product**.

For example, the **Purpose** card within the **Anticipate** card group encourages us to think about the intentions or purpose of a particular project in terms of its anticipated benefit or impact. This is something that we can consider while planning a project.

Note: Don't worry if you cannot read the cards on the slide. You will have the chance to look at the card deck in a second.

Activity 1: Exploring the Responsible Innovation cards within your group (10 mins)

Get into groups of 3-4 and take 10 minutes to go through the card deck and familiarize yourselves with it.

In your groups, first have a look at the 16 cards in Miro. Each row of the grid shows the card back, which presents a summary of the AREA activity considered by the cards in this row. Each row also includes four card faces, which present examples of questions and actions relevant to this activity in relation to one of the four Ps. Take a few minutes to discuss each row.

If anything in the cards is unclear to you, ask your peers or tutor.

Activity 2: Discussion about priorities for Responsible Innovation in the context of your case studies (50 mins)

In activity 2, we will put the AREA cards into practice to explore ways to approach technology and product innovation more responsibly.

All subsequent activities will be completed using the [Miro board](#).

Part one: Choosing a case to work with (10 mins)

In your group:

1. Decide on a case study to work with – i.e., a data-driven technology together with an application domain (e.g., robots in hospitality, LLMs in a particular creative industry, etc.). Try to be specific with the case study you choose. You will work with this case study in the next tutorial too. Share your choice with us on Miro.

Part two: Anticipating (10 mins + 5 mins)

Now, imagine you were developing a design project in relation to your chosen case study, for example developing a new artefact or interface that uses your chosen technology in context of your chosen application domain. Let's start to think through the process of designing your chosen technology for your chosen context. Go through the **Anticipate** card group and discuss:

1. Which of the four Ps is most critical to consider in your design project for your chosen case study? Why is it important? What actions might you take to support this?
2. Show us the card you picked, share your thoughts behind the decision, and discuss what actions you could take in your design project in response to your chosen card.

Part three: Reflecting (10 mins + 5 mins)

Now let's consider what might happen when designing your chosen technology for your chosen context. Go through the **Reflect** card group and discuss:

1. What is most critical to keep in mind during the process of working with your case study? Why is it important? What actions might you take to support this?
2. Show us the card you picked, share your thoughts behind the decision, and what actions you could take in your design project in response to your chosen card.

Part four: Engaging (10 mins + 5 mins)

Let's consider how we can potentially engage with stakeholders during your design process. Go through the **Engage** card group and discuss:

1. Which form of engagement is most critical while developing and designing the technology for your chosen application domain? What actions might you take to support this?

2. Show us the card you picked, share your thoughts behind the decision, and what actions you could take in your design project in response to your chosen card.

Part five: Acting (10 mins + 5 mins)

Given the insights we've learned from the other cards, how else can we support responsible innovation? What else should we consider and keep in mind? Go through the Act card group and discuss:

1. What is the most critical action for the innovation process for your chosen case study?
2. Share your thoughts. Show us the card you picked, share your thoughts behind the decision, and what actions you could take in your design project in response to your chosen card?

Wrapping up:

In this tutorial we have explored how to approach technology and product innovation responsibly using the AREA framework.

However, it is important to reflect on whether this card deck missing anything. Do you think there are other actions we can take, beyond those included in this card deck, to be more responsible during the technology innovation process?