The Ethics Canvas: A Tool for Practising Ethics in Responsible Research and Innovation

Wessel Reijers, Arturo Calvo, David Lewis, Killian Levacher

@ethicscanvas
ethicscanvas.org
hello@ethicscanvas.org
• **Integration of Ethics in R&I settings is underdeveloped** and restricted to:
  - **Academia:** ethics clearance
  - **Industry:** meet legal requirements

• Growing impacts that technological innovations have on our society bring along increasing importance to reflect on **ethical implications**

• Increasing need for design teams to articulate and reflect their ethical values during the **application design**

• **Reputational concerns** are rising at an organisational level
We propose a novel methodology for identifying, evaluating and resolving ethical impacts during R&I stages:

- Formation of knowledge and concepts
- Design of the technology
- Prototyping and testing
- Integration of R&I outcomes into society

Foster ethically informed technology design by engaging R&I team with the ethical impacts

Transform Business Model Canvas (Osterwalder, 2010) into Ethics Canvas

Collaborative brainstorming tool with two aims:
- Help teams identify and discuss possible ethical impacts
- Bring about pivots in the design
Practising Ethics in Responsible R&I

• **Dimensions of **Responsible R&I** (Stilgoe, 2013):**
  • Anticipation of future societal impacts of tech design
  • Reflection on the values implied in tech design
  • Inclusion of stakeholders in the design process
  • Responsiveness of tech design to societal changes

• **Established methods** for practising ethics:
  • *Value sensitive design* (Friedman, 2006)
  • *Anticipatory ethics of emerging technologies* (Brey, 2012)
  • *Ethical impact assessment* (Wright, 2011)
  • *Techno-ethical scenarios* (Boenink, 2010)
Levels of practising ethics on responsible R&I (Brey, 2000):
- **Disclosure**: exploration and identification of ethical impacts
- **Theoretical**: frameworks to evaluate the impacts
- **Application**: moral deliberation to overcome negative impacts

We aim to address the neglected **disclosure level** with a methodology:
- **Accessible** to non-ethicist (researchers add important perspective)
- **Enabling** collaborative process
• **Business Model Canvas** (BMC) is a brainstorming tool that analyses how business value is created, delivered and captured

• Developed by Osterwalder & Pigneur, 2010.

• Open Source (Creative Commons) – strategyzer.com

• Nine building blocks describing business in a holistic manner

• Printed canvas and online versions available

• **Fulfills our two aims:**
  • Highly **accessible** to people without specific knowledge
  • Allows participants to engage in **collaborative** process
# Turning towards business modelling approaches

## Key Partners

- How can we identify and align with our key partners?
- What are the benefits of partnering with key stakeholders?
- How can we leverage partnerships to grow our business?

## Key Activities

- How can we define our key activities to support our business model?
- What are the most effective ways to execute our key activities?
- How can we measure the impact of our key activities?

## Value Propositions

- How can we define our value proposition to differentiate our business?
- What are the key features and benefits of our offering?
- How can we ensure our value proposition meets customer needs?

## Customer Relationships

- How can we cultivate and maintain strong customer relationships?
- What are the key factors that drive customer loyalty?
- How can we measure the impact of our customer relationships?

## Customer Segments

- How can we identify and target our ideal customer segments?
- What are the characteristics of our ideal customers?
- How can we tailor our offerings to meet the needs of our customer segments?

## Key Resources

- How can we identify and prioritize our key resources?
- What are the most critical resources for our business model?
- How can we optimize the use of our key resources?

## Channels

- How can we define and optimize our channels for customer acquisition and retention?
- What are the most effective channels for reaching our target audience?
- How can we measure the effectiveness of our channels?

## Cost Structure

- How can we define and optimize our cost structure?
- What are the most significant cost drivers for our business model?
- How can we reduce costs without compromising quality?

## Revenue Streams

- How can we define and optimize our revenue streams?
- What are the most effective ways to generate revenue?
- How can we measure the impact of our revenue streams?
Designing the Ethics Canvas

- **Impacts of technologies in society:**
  - Relationships between *individuals* or between *collective actors* [Pinch, 1984]
  - Changes in individual *behaviour* and *relationships* [Ihde, 2009]
  - *Relationships between* people and collectives [Feenberg, 1999]
  - Impact in the *public sphere* [Feenberg, 1999]
  - Impacts on the *environment* and production processes [Schot, 1997]

- **Iterative design of canvas with the following **success criteria:**
  - Can be completed within 1.5 hours
  - Without having to consult any external source
### Ethics Canvas v1.0

<table>
<thead>
<tr>
<th>INDIVIDUALS</th>
<th>ORGANISATIONS</th>
<th>SOCIETY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals Affected</td>
<td>Organisations Affected</td>
<td>Environment</td>
</tr>
<tr>
<td>Personal Behaviour</td>
<td>Behaviour in Organisation</td>
<td>Economy</td>
</tr>
<tr>
<td>Personal Relations</td>
<td>Relations in Organisation</td>
<td>Culture and Politics</td>
</tr>
</tbody>
</table>

**Ethics Canvas**

- **Project Title:**
- **Authors:**
- **Date:**

© ADAPT Centre, 2016
# Ethics Canvas v1.1

<table>
<thead>
<tr>
<th><strong>Individuals Involved</strong></th>
<th><strong>Individual Behaviour</strong></th>
<th><strong>Informal Relations</strong></th>
<th><strong>Formal Relations</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups involved</td>
<td>Group Behaviour</td>
<td>Relations with other groups</td>
<td>Relations with the public</td>
</tr>
</tbody>
</table>
# Ethics Canvas v1.2

## Project Title:  

### Individuals Affected
- Which types of individuals might be affected by your project?  
- Think of users, non-users, employees, gender, culture,...

### Behaviour
- How do the daily activities of these individuals change?

### Your Ethical Values
- What are your core ethical values?  
- Think about the ways in which you want to better the lives of individuals and society?

### Support/Objections
- How does your project affect either support of objections amongst organisations/groups?

### Organisations/Groups Affected
- Which organisations or groups might support or object to your project?

### Relations
- Informal relations affected  
- Formal relations affected

### Public Sphere
- How does your project impact the public sphere?  
- How does your project impact the public perception of the problem you try to solve?
- Think of government involvement, changing conduct of people in public places like schools, hospitals,...

### Resources
- What non-human resources and infrastructures does your company and your project use?  
- What ethical impacts does the supply chain of the resources/infrastructures you use have?  
- Think of environmental impacts due to energy use or labour exploitation due to outsourcing of labour.

### Social Conflicts
- How does your project either solve or cause social conflicts?  
- Think of equalities or inequalities between groups of people/ or between employer and employee.
<table>
<thead>
<tr>
<th>Individuals Affected</th>
<th>Behaviour</th>
<th>Your Team’s Ethical Values</th>
<th>Support/Objections</th>
<th>Organisations/Groups Affected</th>
</tr>
</thead>
</table>
| • Which types of individuals might be affected by your project? | • How do the daily activities of these individuals change? | • What are your core ethical values?  
• Think about the ways in which you want to better the lives of individuals and society? | • How does your project affect either support of objections amongst organisations/groups? | • Which organisations or groups might be affected by your project? |

<table>
<thead>
<tr>
<th>Relations</th>
</tr>
</thead>
</table>
| • Informal relations affected  
• Formal relations affected |

<table>
<thead>
<tr>
<th>Public Sphere</th>
</tr>
</thead>
</table>
| • How does your project impact the public sphere?  
• How does your project impact the public perception of the problem you try to solve?  
• Think of government involvement, changing conduct of people in public places like schools, hospitals,... |

<table>
<thead>
<tr>
<th>Resources</th>
</tr>
</thead>
</table>
| • What human or non-human resources does your company, project and users need?  
• What ethical impacts does the supply chain of the resources/infrastructures you use have?  
• Think of environmental impacts due to energy use or labour exploitation due to outsourcing of labour. |

<table>
<thead>
<tr>
<th>Social Conflicts</th>
</tr>
</thead>
</table>
| • How does your project cause social conflicts?  
• Think of inequalities between groups of people or between employer and employee. |
## Ethics Canvas

### Individuals Affected
- Are specific types of individuals affected by the project?
- Think about types such as men/women, user/non-user, age-category, etc.

### Changes in Behaviour
- How does the project change the everyday behaviour of individuals?
- Think about differences in habits, time-schedules, choice of activities, etc.

### Changes in Relations
- How does your project change both informal (friends/family...) and formal (employer/teacher/policeman,...) relations?
- Think about changes in the way colleagues work together, students engage with each other or their teacher, family members relate, etc.

### Your Team's Ethical Values
- What are the 4 most important ethical issues you found?
- Discuss how you could summarise the 4 dominant issues from all the issues you found.

### Group Interests
- How will the interests of other groups/organisations be affected by the project?
- Think about relevant interests that other groups might have in your project: e.g., impact on minorities, job

### Organisations/Groups Affected
- Are specific groups or organizations affected by the project?
- Think about environmental and religious groups, competing companies and government agencies; according to an interest they might have in the effects of the project.

### Resources
- What kind of uses of resources for keeping running the project can have ethical impacts?
- Think about the use of energy or raw materials, but also about the use of human resources (e.g., labour in developing countries).

### Social Conflicts
- What kind of social conflict might be strengthened or caused by the project?
- Think about possible conflicts between minority groups, men/women, users/non-users etc.

### Public Sphere
- How will aspects of the public sphere we affected by the project?
- Think about general perception of somebody's role in society

### Date:
Ethics Canvas v1.4 © ADAPT Centre, 2016
**Ethics Canvas v1.5**

<table>
<thead>
<tr>
<th>List of Individuals Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Are specific groups or organizations affected by the project?</td>
</tr>
<tr>
<td>- Think about types such as men/women, user/non-user, age-category, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>List of Organisations/Groups Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Are specific types of individuals affected by the project?</td>
</tr>
<tr>
<td>- Think about environmental and religious groups, competing companies and government agencies; according to an interest they might have in the effects of the project.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problematic Impact on Groups Behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>- How will the interests of other groups/organizations be affected by the project?</td>
</tr>
<tr>
<td>- Think about relevant interests that other groups might have in your project, e.g., impact on minorities, job positions, user or employee exploitation, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problematic Impact on Public Sphere</th>
</tr>
</thead>
<tbody>
<tr>
<td>- How will aspects of the public sphere we affected by the project?</td>
</tr>
<tr>
<td>- Think about general perception of somebody’s role in society (individualism/collectivism) affected by the project and the perception of the problem you are trying to solve.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top 4 Problems &amp; Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- What are the top 4 ethical issues you found?</td>
</tr>
<tr>
<td>- Formulate solutions for these issues</td>
</tr>
<tr>
<td>- Think as creatively as possible about possible ways in which the main issues you identified could be solved; considering changes in design, in organisation and in policies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential Social Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>- What kind of social conflict might be strengthened or caused by the project?</td>
</tr>
<tr>
<td>- Think about possible conflicts between minority groups, men/women, users/non-users etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problematic Impact of Usage of Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Kind of uses of resources for keeping the project can have ethical impacts?</td>
</tr>
<tr>
<td>- Think about the use of energy or raw materials, but also about the use of human resources (e.g., labour in developing countries).</td>
</tr>
</tbody>
</table>

**Consequences of failure to meet expectations**

- asdfasdfasdfasdfsdfasdfasdfsdfasdfasdfasdfsdf
- asdfasdfasdfasdfsdfasdfasdfsdfasdfasdfasdfsdf
- asdfasdfasdfasdfsdfasdfasdfsdfasdfasdfasdfsdf
# Ethics Canvas v1.6

<table>
<thead>
<tr>
<th>Individuals Affected</th>
<th>Changes in Behaviour</th>
<th>Social Conflicts</th>
<th>Group Interests</th>
<th>Organisations and Groups Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss relevant types of individual stakeholders affected by the project, such as men/women, user/non-user, age-category, etc.</td>
<td>Discuss problematic differences in behaviour such as differences in habits, time-schedules, choice of activities, etc.</td>
<td>Discuss possible social conflicts that could be caused by the project, such as labour conflicts, minority conflicts etc.</td>
<td>Discuss relevant ethical interests that other groups might have in your project, such as environmental, privacy, justice interests.</td>
<td>Discuss relevant collective stakeholders that can be affected by your project, such as environmental and religious groups, competing companies and government agencies; considering any interest they might have in the effects of the project.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Changes in Relations</th>
<th>Resolving ethical impacts</th>
<th>Public Sphere</th>
<th>Products and Services provided</th>
<th>Impact of product or service failure</th>
<th>Impact of use of resources</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss problematic changes in relations between people, such ways of communication, frequency of interpersonal contact etc.</td>
<td>Select the four most important ethical impacts you discussed. Discuss ways of solving these impacts by changing your project's product/service design, organisation or by providing recommendations.</td>
<td>Discuss how the general perception of somebody's role in society can be affected by the project, e.g. people behaving more individualistic or collectivist, people behaving more or less materialistic.</td>
<td>Discuss the different types of products and services that your project will provide.</td>
<td>Discuss negative impacts of failure of your products or services such as technical failure, human failure, etc.</td>
<td>Discuss possible negative impacts of the use of resources of your project, e.g. climate impacts, privacy impacts, employment impacts etc.</td>
<td>Discuss the use of energy or raw materials, but also about the use of human resources for your project.</td>
</tr>
</tbody>
</table>
# Ethics Canvas v1.7 - Current version

## Ethics Canvas

<table>
<thead>
<tr>
<th>Sections</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals Affected</td>
<td>Identify the types or categories of individuals affected by the product or service, such as men/women, user/non-user, age-category, etc.</td>
</tr>
<tr>
<td>Changes in Individual Behaviour</td>
<td>Name problematic differences in individual behaviour such as differences in habits, time-schedules, choice of activities, etc.</td>
</tr>
<tr>
<td>Social Conflicts</td>
<td>Capture possible social conflicts that could be caused by the project, such as labour conflicts, minority/majority conflicts, ethnic conflicts, etc.</td>
</tr>
<tr>
<td>Organisation or Group Interests</td>
<td>Identify relevant ethical interests that other organisations or groups might have in your project, such as environmental, privacy, justice interests.</td>
</tr>
<tr>
<td>Organisations and Groups Affected</td>
<td>Identify the collectives or communities, e.g. groups or organisations, that can be affected by your product or service, such as environmental and religious groups, unions, professional bodies, competing companies and government agencies, considering any interest they might have in the effects of the product or service.</td>
</tr>
<tr>
<td>Changes in Individual Relations</td>
<td>Name problematic changes in relations between individuals, such ways of communication, frequency of interpersonal contact etc.</td>
</tr>
<tr>
<td>Resolving ethical impacts</td>
<td>Select the four most important ethical impacts you discussed. Identify ways of solving these impacts by changing your project's product/service design, organisation or by providing recommendations.</td>
</tr>
<tr>
<td>Public Sphere</td>
<td>Discuss how the general perception of somebody's role in society can be affected by the project, e.g. people behaving more individualistic or collective, people behaving more or less materialistic.</td>
</tr>
<tr>
<td>Products and Services provided</td>
<td>Name the different types of products and services that your project will provide.</td>
</tr>
<tr>
<td>Impact of product or service failure</td>
<td>Capture the potential negative impact of your product or service failing to operate as intended, e.g. technical or human error, financial failure/receivership/acquisition, security breaches, data loss, etc.</td>
</tr>
<tr>
<td>Impact of resource consumption</td>
<td>Capture possible negative impacts of the consumption of resources of your project, e.g. climate impacts, privacy impacts, employment impacts etc.</td>
</tr>
<tr>
<td>Resources needed</td>
<td>Capture the consumption of energy, raw materials, human resources, financial capital, social capital (trust, tolerance, ...), marketing capital (reputation, brand, ...), privacy and personal data needed by your product or service.</td>
</tr>
</tbody>
</table>

The Ethics Canvas is adapted from Alex Osterwalder’s Business Model Canvas. The Business Model Canvas is designed by Business Model Foundry. AG. This work is licensed under the Creative Commons Attribution-Share Alike 3.0 Unported License. To view a copy of this license, visit https://creativecommons.org/licenses/by-sa/3.0/. To view the original Business Model Canvas, visit https://www.strategyzer.com/en/.
Designing the Ethics Canvas

- Six thematic sections:
  - [1,5,6] Impacts of technology on individuals (relations/behavior)
  - [2,7,8] Impacts of technology on collectives and public sphere
  - [3,9] Impacts of failure of technology
  - [4,10] Impacts of technology on usage of resources
  - [11] Social conflicts as result of usage of technology
  - [12] Ideas to mitigate these impacts

<table>
<thead>
<tr>
<th>Products and Services provided</th>
<th>Impact of product or service failure</th>
<th>Impact of resource consumption</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Ethics Canvas**

<table>
<thead>
<tr>
<th>Individuals Affected</th>
<th>Changes in Individual Behaviour</th>
<th>Social Conflicts</th>
<th>Organisation of Group Interests</th>
<th>Organisations and Groups Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Project Title:**

<table>
<thead>
<tr>
<th>Changes in Individual Relations</th>
<th>Resolving ethical Impacts</th>
<th>Public Sphere</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Diagram:**

[Diagram showing the Ethics Canvas]

www.adaptcentre.ie
Whatsapp Example: Building block #1

Individuals Affected

Identify the types or categories of individuals affected by the product or service, such as men/women, user/non-user, age-category, etc.
Organisations and Groups Affected

Identify the collectives or communities, e.g. groups or organisations, that can be affected by your product or service, such as environmental and religious groups, unions, professional bodies, competing companies and government agencies, considering any interest they might have in the effects of the product or service.
Whatsapp Example: Building block #3

Products and Services provided

Name the different types of products and services that your project will provide.

- Instant messaging
- Video and audio conference
- Photo and video sharing
Resources needed

Capture the consumption of energy, raw materials, human resources, financial capital, social capital (trust, tolerance,...), marketing capital (reputation, brand,...), privacy and personal data needed by your product or service.
Changes in Individual Behaviour

Name problematic differences in individual behaviour such as differences in habits, time-schedules, choice of activities, etc.

- Become phone dependent
- Frustrated due to Information overload
- Lose interest in each message
Changes in Individual Relations

Name problematic changes in relations between individuals, such ways of communication, frequency of interpersonal contact etc.

- Less face-to-face contact
- Online bullying
- Disturbed at non-work hours
- Non-users become isolated
Organisation or Group Interests

Identify relevant ethical interests that other organisations or groups might have in your project; such as environmental, privacy, justice interests.
Public Sphere

Discuss how the general perception of somebody’s role in society can be affected by the project, e.g., people behaving more individualistic or collectivist, people behaving more or less materialistic.
Impact of product or service failure

Capture the potential negative impact of your product or service failing to operate as intended, e.g. technical or human error, financial failure/receivership/acquisition, security breach, data loss, etc.

- Chaos on business
- Collapse on personal communication
- Personal or business reputations destroyed
Impact of resource consumption

Capture possible negative impacts of the consumption of resources of your project, e.g. climate impacts, privacy impacts, employment impacts etc.

Usage of energy affecting environment

Held captive by messages sent
Social Conflicts

Capture possible social conflicts that could be caused by the project, such as labour conflicts, minority/majority conflicts, ethnic conflicts, etc.

Employees being available 24/7

Sophisticated usage in war areas

Collective humiliation with viral videos
**Resolving ethical impacts**

Select the four most important ethical impacts you discussed.
Identify ways of solving these impacts by changing your project's product/service design, organisation or by providing recommendations.

Mitigate impacts by:

- Interventions in the design of the technology
- Interventions in the business model
- Policy recommendations
• We aim to **present use-cases** rather than evidence of effectiveness

• **Classroom experiment settings:**
  - Ethics Canvas v1.4
  - 9 groups of 4 students working on network applications
  - Business & IT (B.Sc.) and Computer Science (M.Sc.) at Trinity College
  - Students familiar with BMC, no previous experience with ethics
Putting it to practice: classroom experiments

Experiment results:

- All groups completed the canvas in the frame between **60-75 minutes**
- Facilitators did **not interfere** in the discussions
- Each group identified on average:
  - **15** issues
  - **7** ethical impacts
  - **8** different stakeholders
  - **2** solutions to ethical impacts

- We **redesigned the canvas** using students feedback
The Ethics Canvas

- **Canvas current version:** 1.7
- **Web version:** [https://ethicscanvas.org](https://ethicscanvas.org)
- **License:** Creative Commons Attribution Non-Commercial 3.0 Unported
- **Open-source:** [https://github.com/calvodea/ethics-canvas](https://github.com/calvodea/ethics-canvas)
Brainstorm in a group about the ethical implications of your project and represent them in a canvas.
Web Version: Ethics Canvas of Ethics Canvas

Project name: Online Ethics Canvas
Date: 2016-07-22

1. Individuals Affected
- Entrepreneurs
- Researchers
- Customers
- Non-customers

2. Organisations and Groups Affected
- Startups using the canvas
- Startups not using the canvas
- Universities
- Large corporations

3. Products and Services provided
- Create and share ethics canvas for your projects

4. Resources needed
- Developers
- Project Managers
- Servers
- Paper (for offline version)

5. Changes in Behaviour
- Slower progress on projects due to ethical screening
- Less revenue
- Customers of competitors might feel "unethical"

6. Changes in Relations
- Negativity about non-ethical product or service providers
- Unwillingness to work with people that don’t follow Ethics Canvas guidelines
- Social exclusion for non-users

7. Group Interests
- Compete for the ethical leadership
- Being marked as "non ethical" but ethics canvas users

8. Public Sphere
- More collectivist
- Less materialistic

9. Impact of product or service failure
- Anger about lack of reliable ethic projects in society
- Project loss or delays

10. Impact of use of resources
- Environmental impact due to usage of paper and energy

11. Social Conflicts
- Ethics Canvas movement fighting against non-ethical companies or organisations

12. Resolving ethical impacts
- Provide training for companies willing to adopt Ethics Canvas
- Remind “ethics canvas” supporters of ethical implications of discriminating non-ethical groups
- Promote online version vs paper-based
- Generate awareness on value proposition “being ethical”, in the business model, attracting customers

Ethics Canvas v1.7 © ADAPT Center & Trinity College Dublin & Dublin City University, 2016 The Ethics Canvas is adapted from Alex Ostovarci’s Business Model Canvas. The Business Model Canvas is designed by: Business Model Foundry AG. This work is licensed under the Creative Commons Attribution-Share Alike 3.0 unported license. View a copy of this license at: https://creativecommons.org/licenses/by-sa/3.0/. View the original Business Model Canvas at https://strategyzer.com/canvas. Contact us at: hello@ethicscanvas.org
Future work

• Continue to *iterate* the canvas design and its methodology based on feedback in student classes and web version

• Use the online version as a *shared repository* of technology ethics case studies

• Publish a *canvas handout* with guidelines and examples

• Explore how the canvas can improve the integration of technology ethics into the *Computer Science curriculum*

• Look for *collaborators* interested in applying the canvas approach to different R&I projects: *hello@ethicscanvas.org*
Conclusions

- We propose the canvas as tool for **capture and reflection of ethical implications** on R&I settings.

- We promote a **reflective, unmediated, easy-to-use and self-service** approach to the analysis of ethical issues by researchers / developers.

- We applied an **iterative, usability-driven** approach to the design of the ethics canvas.

- We tested it in classroom settings with **promising results**.

- We made it **available to the community**: ethicscanvas.org.
Thanks for your attention!

Any questions or feedback?
• **Value sensitive design** (Friedman, 2006):
  • Incorporating human values in the design of technologies. Stages:
    • *Conceptual*: conceptualisation of human values
    • *Empirical*: study of incorporation of values in technology
    • *Technical*: study of relation between values and properties

• **Anticipatory ethics of emerging technologies** (Brey, 2012):
  • Forecasting methods to anticipate ethical issues

• **Ethical impact assessment** (Wright, 2011):
  • Procedural steps to integrate in R&I projects
    • Threshold analysis

• **Techno-ethical scenarios** (Boenink, 2010):
  • Develop scenarios of future uses of technology
    • Conceptual and creative tools to conduct ethical assessment
References

References

References