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UK Research
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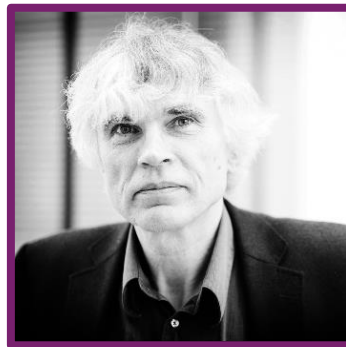
Responsible Innovation Advantage in Knowledge Exchange



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Responsible Innovation practice



- To better understand **why** you are doing **what** you are doing
- To **avoid problems** before they happen
- To get the **most value** out of your time, research and/or innovation

Aim:



To investigate how Responsible Innovation (**RI**) could be better embedded within the **innovation pipeline to improve** the development, deployment, use and governance of **AI systems**.



Embedding RI in the business sector

A purple rounded rectangular box containing a white icon of a speech bubble above three stylized human figures, followed by the text "Embedding RI in the business sector" in white.



Embedding RI in business: work with Kainos

- To identify opportunities and challenges of incorporating RI into the commercial sector
- To support the development of an agile and sustained RI culture within Kainos

Methodology:

- Kainos' **Delivery Managers** (8) used **RI Prompts and Practice Cards** within their **ongoing projects** (teams and clients)
- **Weekly report** –research survey (anonymous)



8 weeks

RI Prompts and Practice Cards (RI Cards)

<p>Anticipate</p> <p>In the AREA-4Ps framework the first key activity is to Anticipate the possible outcomes and implications of the work. By considering possible futures we can direct our efforts in the present more carefully and effectively. It is important to consider possible risks, unintended consequences or misuses of the work, as well as its intended benefits.</p> <p>All of the cards in this deck can be used to support anticipation, for example through the prompts or questions on each card. While anticipation and reflection are closely related, in this deck the Anticipate cards are broad and forward-looking.</p> <p>2023-06-06</p>	<p>People Affected</p> <p>Considering the outcomes of the work, who would be directly affected, for better or worse? Who could be indirectly affected? Who could be left out or excluded?</p> <p>Example actions: 2023-06-02</p> <ul style="list-style-type: none"> Identify potential stakeholders (see both "Example Stakeholders" cards). Include vested interests that may gain or lose out. Include indirect and long-term effects. Identify potential trade-offs between stakeholders. <p>Anticipate People</p>	<p>Sustainability</p> <p>How sustainable are the products and the process? How will they affect animals and plants? How long will products or outcomes be useful for? How will this affect communities?</p> <p>Example actions: 2023-05-08</p> <ul style="list-style-type: none"> Assess direct and indirect environmental impacts. Minimise energy and resource consumption. Design for long-term use, e.g. reparability. Make it self-supporting. Plan for product and project "end of life" or continuity. <p>Anticipate Product</p>	<p>Intention</p> <p>Should this work be undertaken? What benefits will it bring? Who will benefit? On what timescale? How can we measure its impact?</p> <p>Example actions: 2023-05-16</p> <ul style="list-style-type: none"> Map possible impacts. Use existing literature reviews and prioritisation reports, e.g. UN SDGs. Solicit a range of lay, expert and peer inputs. Involve intended beneficiaries. <p>Anticipate Purpose</p>	<p>Project Risks</p> <p>What risks might participants, team members or other stakeholders be exposed to? What other risks are there? Have these risks been assessed and mitigated? Are required approvals in place?</p> <p>Example actions: 2023-06-02</p> <ul style="list-style-type: none"> Follow local policies and best practice, e.g. risk assessment, health and safety, research ethics, monitoring and audit. Seek peer and expert input. Identify and apply emerging best practice. Increase stakeholder involvement. <p>Anticipate Process</p>
<p>Reflect</p> <p>In the AREA-4Ps framework the second key activity is to pause and Reflect on the work, including our own involvement and motivations. A critical interrogation of the work can identify problems and opportunities, allowing us to learn, and avoid wasting time and resources. Ideally this would be done throughout the project.</p> <p>All of the cards in this deck can be used to support reflection, for example through the prompts or questions on each card. In this deck the Reflect cards bring a more reflexive emphasis to the corresponding Anticipate cards.</p> <p>2023-06-08</p>	<p>Equality, Diversity & Inclusion</p> <p>How inclusive are our practices? How diverse is the team? How representative are participants and stakeholders? Are the process and the outputs both accessible? Is anyone excluded?</p> <p>Example actions: 2023-06-01</p> <ul style="list-style-type: none"> Conduct an Equality Impact Assessment (EIA) and develop an Equality, Diversity and Inclusion (EDI) action plan. Use accessibility guidelines and resources. Ensure reasonable adjustments are in place. Employ positive action. <p>Reflect People</p>	<p>Unintended Consequences</p> <p>How could the work be used or mis-used? What negative consequences might it have? What might happen if it goes wrong? Is anyone excluded?</p> <p>Example actions: 2023-05-05</p> <ul style="list-style-type: none"> Identify unanticipated outcomes from related projects. Consider state, military, and criminal applications. Solicit a broad range of lay, expert and peer inputs. Design to minimise risk from unanticipated or malicious use. <p>Reflect Product</p>	<p>Potential Conflicts</p> <p>Are there groups or organisations opposed to the work? Are there reasons NOT to do it? What legislation and regulation apply? What will happen if the work is unsuccessful?</p> <p>Example actions: 2023-06-07</p> <ul style="list-style-type: none"> Evaluate alternative approaches. Agree how to handle anticipated objections and whether to approach potential opponents. Solicit a range of lay, expert and peer inputs. <p>Reflect Purpose</p>	<p>Means of Reflection</p> <p>What assumptions do we bring to the work? Does everyone in the project understand RI? How and when do we make time to reflect? How do we measure or monitor the work?</p> <p>Example actions: 2023-06-08</p> <ul style="list-style-type: none"> Reflect on past projects. Identify your own priorities, privileges and biases. Agree an RI Action Plan and review periodically. Convene an advisory board. Schedule sessions and agenda items dedicated to RI. <p>Reflect Process</p>
<p>Engage</p> <p>In the AREA-4Ps framework the third key activity is to Engage with a diverse range of stakeholders. Engaging with other stakeholders – of all kinds – helps to challenge the assumptions that we hold and gives a more complete understanding of the work and its context.</p> <p>Engagement is something that can help at all stages of a project, including conception. In this deck the Engage cards highlight key forms of engagement. There are also two instructions cards which list some "Example Stakeholders" to consider.</p> <p>2023-06-06</p>	<p>Under-represented</p> <p>Are any groups of stakeholders under-represented, overlooked or excluded? How can they be included and supported? Can anyone else represent them?</p> <p>Example actions: 2023-05-30</p> <ul style="list-style-type: none"> Monitor whether participants and data are representative. Identify possible reasons. Work with specialist organisations and community leaders. Provide material support for people to participate (e.g. travel & child support). <p>Engage People</p>	<p>Stakeholder Input</p> <p>How can stakeholders influence the product or outputs? Are a wide range of stakeholders considered? When and at what stage? Does this include people with relevant lived experience?</p> <p>Example actions: 2023-06-08</p> <ul style="list-style-type: none"> Define objectives and expectations for stakeholder input. Employ human-centred design methods. Get early and frequent feedback. <p>Engage Product</p>	<p>Public Dialogue</p> <p>Is the work known to the general public and other groups? Is it easy to get involved in discussions? Are the aims of the work acceptable (and to whom)? Are diverse voices heard?</p> <p>Example actions: 2023-05-08</p> <ul style="list-style-type: none"> Organise or join public engagement and outreach events. Involve organisations representing relevant groups. Employ lay members in advisory groups. <p>Engage Purpose</p>	<p>Stakeholder Involvement</p> <p>Can stakeholders have more substantial involvement in the work? Can they shape the goals or how the work is done? How is stakeholder involvement supported and acknowledged?</p> <p>Example actions: 2023-06-07</p> <ul style="list-style-type: none"> Involve stakeholders when defining aims, research questions and methods. Give stakeholders substantive project roles. Employ co-design or co-creation methods. Be flexible, e.g. allow online involvement. <p>Engage Process</p>
<p>Act</p> <p>In the AREA-4Ps framework the fourth key activity is to Act, that is to use the insights gained from anticipation, reflection and engagement in order to make a difference in the work being done. This closes the loop of responsible innovation: ultimately responsibility can only be discharged through action.</p> <p>Within the deck, every card includes a number of example actions. These lists are not exhaustive, and there are many other resources and practices available to support responsible innovation. In this deck the Act cards look beyond the current project.</p> <p>2023-06-02</p>	<p>Training and Equipping</p> <p>What training and support do team members need? How do we help participants and partners to grow and develop? How do we support formal and informal education?</p> <p>Example actions: 2023-06-08</p> <ul style="list-style-type: none"> Be transparent about the work and any products. Publish and publicise the outcomes. Develop an education or outreach plan. Contribute to local public engagement events. Continue to engage with stakeholders afterwards. <p>Act People</p>	<p>Openness</p> <p>How can others build on the work done? Is support available for the work? Are publications and reports widely available? Is data appropriately archived?</p> <p>Example actions: 2023-06-07</p> <ul style="list-style-type: none"> Be transparent about the work and any products. Publish and publicise the outcomes. Make data FAIR (Findable, Accessible, Interoperable, Reusable). Adopt open licenses. Support adoption by others. <p>Act Product</p>	<p>Shaping the Future</p> <p>How can we shape a better future for everyone? How can we reduce inequalities? Are publications and reports available? What legislation and regulation apply?</p> <p>Example actions: 2023-06-02</p> <ul style="list-style-type: none"> Talk to policy makers. Request evidence from government, regulatory and public bodies. Run a publicity or impact campaign. Contribute to professional bodies and standards. <p>Act Purpose</p>	<p>Continuous Improvement</p> <p>What actions can we take throughout this project to improve ourselves, the work and our organisation? What can we learn from this and previous projects? How can we support RI more effectively?</p> <p>Example actions: 2023-06-08</p> <ul style="list-style-type: none"> Share resources and ideas with peers. Hold periodic reviews. Proactively raise issues at an appropriate level, e.g. project, department, organisation. Recruit strategically. Champion responsible innovation. <p>Act Process</p>

Intention

Should this work be undertaken?
What benefits will it bring?
Who will benefit?
On what timescale?
How can we measure its impact?

Example actions: 2023-05-16

- Map possible impacts.
- Use existing literature reviews and prioritisation reports, e.g. UN SDGs.
- Solicit a range of lay, expert and peer inputs.
- Involve intended beneficiaries.

Anticipate **Purpose**

Sustainability

How sustainable are the products and the process?
How will they affect animals and plants?
How long will products or outcomes be useful for?
How will this affect communities?

Example actions: 2023-05-08

- Assess direct and indirect environmental impacts.
- Minimise energy and resource consumption.
- Design for long-term use, e.g. reparability.
- Make it self-supporting.
- Plan for product and project "end of life" or continuity.

Anticipate **Product**

Potential Conflicts

Are there groups or organisations opposed to the work?
Are there reasons NOT to do it?
What legislation and

Unintended Consequences

How could the work be used or mis-used?
What negative consequences might it have?

➤ Prompts

➤ Actions

↓ Practice

Total 34 cards



Findings

➤ Context is vital:

- Team set-up
- Priorities

➤ Safe space

“cards helped us provide a framework for a **sensitive** discussion and to **be brave**”



Findings

- Provided a structured framework

"the card helped to **shape** the conversation and keep it **structured**"

- reassurance

"it is nice to be able **to link** the **things we are doing** with elements of **responsible innovation**"



Findings

➤ Increased **focus** of discussion

“the questions helping to direct the conversation to achieve an **outcome quicker than usual**”

“**decisions were made** on next steps for each of the items so **we will progress them**”



Findings

- Required ringfenced time

“We were time bound ...
discussion could have
gone **longer**”

Findings

- Provided a way to check own biases



“we agreed to help each other notice and hold each other **accountable to innovate in the right way**”

Findings

➤ Brings the team together

“[they] ... felt it was a very **wholesome activity** that they would like to do more of”

“Sharing these as a group helped us foster a **sense of closeness**, understanding where each other is coming from”



Findings

- Supported broader considerations
 - Sustainability
 - Shaping the Future (e.g., Open sourcing)

“Discussed ways we can continue **to share** the work we are doing with **a wider audience**”

Summary: Kainos RI practice supported by RI Cards

➤ Actionable tool:

Provided **structure** and **time efficiency** (quicker outputs)

Helped **reflection, decision making** & creating a **RI action plan**

➤ Helped teams: **personally and professionally; empowered** teams

➤ Values led:

Helped delivery teams to innovate in the “right way”

Supported boarder considerations: e.g., Sustainability and Open source



Next...

- **Toolkit:** co-creating with Kainos a way to embed these findings into their Delivery Toolkit (development and delivery lifecycles)



Ongoing...

- Engagement with **AI industry networks:** to explore awareness of, training in and application of RI by UK organisations involved in development and provision of AI products & services (e.g., BridgeAI, Matrix NI Industry Panel, Creative networks)
=>res. survey
- Exploring current **RI training practices** within UKRI AI CDTs (benefits vs. challenges)
=> res. survey

Thank you!



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THANK YOU!

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