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Sent via online form

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RE: AI Skills for Business Framework Feedback

Kairoi Ltd ("we" hereafter) warmly welcomes Innovate UK BridgeAI's invitation to provide feedback on *AI Skills for Business Competency Framework* ("the Framework" hereafter).[1] The Framework is a critical document for the responsible design, development, deployment, use and governance of artificial intelligence (AI) tools, systems and research. The Framework puts the necessary responsibility on organisations as employers of those innovating and/or using AI technologies. The Framework also informs AI-related training providers, which are proliferalting and generally have no shared standards for their quality assessment.[2] These are two ambitious goals for the Framework, both of which align very well with the work we lead at Kairoi.

At Kairoi, we consult on AI ethics and research governance. We help innovators, researchers, buyers and end users optimise their decision-making processes to ensure the responsible design, development and deployment of AI systems. We work on organisational practices to enable social change. For example, we have developed the *Responsible AI Interview Questions* for assessing job candidates' readiness to reflect meaningfully on the potential and limitations of AI tools. This resource is free to use and adapt, and listed by the Centre for Data Ethics and Innovation's *Portfolio of Artificial Intelligence Assurance Techniques*.[3]

By both tailoring our work to common organisational practices, and making resources available for their reuse, we enable flexibility in their adoption to different contexts whilst working within commonplace parameters. By centering our clients' values, we co-design impactful processes that are tailored to their needs.

The feedback below results from several years of our staff's and network's experience working with organisations from across industries, the non-profit sector and academia,

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[1] The Alan Turing Institute and The Alliance for Data Science Professionals (2023) AI Skills for Business Competency Framework, *Innovate UK BridgeAI*, online [accessed 28 December 2023]

[2] Kherroubi Garcia, I. (2023) From the Director's Desk: Reflections on the state of AI Ethics, *Kairoi blog*, online [accessed 02 January 2024]

[3] CDEI & DSIT (2023) Kairoi: Responsible AI Interview Questions, CDEI portfolio of AI assurance techniques, online [accessed 02 January 2024]

AI Ethics & Research
Governance Consultancy

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including the Alan Turing Institute. The feedback covers the following topics and is thus structured:

- **Public engagement:** The parties invited to give feedback on the Framework (some employers and training providers) may be too narrow, although this can be improved in the short-to-medium term;
- **AI ethics:** Although "ethics" is mentioned across dimensions A, B and E, awareness of ethical considerations is only needed by the "AI professional" persona, which undermines AI ethics as a skill in the workplace; and
- **Leading by example:** As employers with significant influence in AI, those currently involved in the funding, research, promotion and launch of the Framework should seriously consider adapting the Framework within their own organisations.
- **Feedback form questions:** See Appendix A for the responses to the specific feedback form questions.

Public engagement

The Framework will be iteratively developed through "extensive stakeholder engagement," which we celebrate at Kairoi. Indeed, one of the four pillars of Kairoi's AI Ethics Canvas focusses on the involvement of diverse stakeholders in AI-related projects.[4] In this case, **we believe the Framework will be valuable to an enormous range of organisations; those who innovate in AI, those who make use of AI tools, and those who are yet to adopt AI solutions.**

Currently, feedback is being sought from "employers and training providers [who are] keen on implementing AI solutions."[5] The chosen wording excludes many organisations who will ultimately benefit from the Framework, particularly those that do not yet know whether AI solutions are useful to them. Conversely, feedback may more readily be given by organisations that are well-versed in AI.

The above may be by design – excluding certain voices at this stage of the Framework's development might help reduce less well-informed feedback. However, it is precisely those organisations that know little about AI where the Framework can have the greatest impact. To this effect, **we suggest that – as the Framework progresses – feedback be specifically sought from employers with lower AI acumen.** For this effort to be meaningful, we suggest developing accessible materials for this target audience so that they may critique the Framework from the perspective of the many employers who have little to no understanding of AI.

AI ethics

At Kairoi, we work in the field of AI ethics, enabling our clients to better evaluate the potential impacts of AI research and development activities; impacts on individuals, society

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[4] Kherroubi Garcia, I. (2023) Introducing Kairoi's AI Ethics Canvas at the RSA, *Kairoi blog*, online [accessed 04 January 2024]

[5] Innovate UK KTN (2023) AI Skills for Business Guidance: Feedback Consultation Call from The Alan Turing Institute, *UKRI*, online [accessed 02 January 2024]

and the environment. Unfortunately, AI ethics does not seem to be given sufficient importance, which is diminished in at least two ways.

Firstly, "ethical considerations" is only mentioned in passing and, although pertinent to dimensions *A*, *B* and *E*, is only explicitly mentioned when introducing the "AI professional." At Kairoi, we strive to make AI ethics an area of practice across organisations, so that they may foster responsible AI cultures.[6] Limiting "awareness of ethical considerations" to those whose "core responsibilities concern data and AI" is shortsighted given the wide range of uses (and misuses) of AI tools across industries.[7] The ethics of AI innovations should matter to all employees.

Expanding "ethical considerations" as an area of importance to "AI workers" and "AI Leaders" not only brings AI ethics to the broader workforce, but also brings the Framework to its full potential. Indeed, the Framework can inform a significant part of the UK's working population, and become a reference point for future AI literacy initiatives across the nation. To this effect, the Framework should emphasise the importance of AI ethics across personas.

Secondly, "ethical considerations" is mentioned with insufficient depth. We see this in at least two ways. On the one hand, the term "ethical considerations" appears nested with legal, regulatory and/or compliance questions. Meanwhile, "transparency," "sustainability" and "reflective practice" are listed separately as elements of *Dimension E*. With this, there is a need for greater conceptual rigour, as it is unclear why the term "ethical considerations" appears nested that way, nor the reason behind some ethical considerations being given their own subheadings.[8] Taking the Framework to its full potential as mentioned above, it should clearly articulate relationships between these complex concepts.

On the other hand, there is a clear contrast between the detail given for "ethical considerations" and that of other technical dimensions (e.g.: mentioning "FAIR principles," distinguishing between supervised versus unsupervised learning, and listing different AI architectures). In this respect, **it is imperative that the teams involved in the creation of the Framework bring together diverse disciplines to mitigate against a Framework that caters primordially to "AI Professionals."**

As we value AI as a sociotechnical question at Kairoi, we believe that there is great potential in the Framework expanding on what "ethical considerations" means, possibly by expanding *Dimension E* or creating a new dimension that focuses on reflection. In either case, we urge the project lead to seek independent expertise in AI ethics for greater conceptual rigour and for the Framework to reach its full potential.

Leading by example

[6] Gordon, A. (2023) Building a responsible culture of AI Innovation, *Torchbox*, online [accessed 04 January 2023]

[7] Kherroubi Garcia, I. (2023) Misuses of artificial intelligence (AI) based chatbots across industries, *Kairoi Summaries*, online [accessed 02 January 2024]

[8] Kherroubi Garcia, I. (2023) From the Director's Desk: Reflections on the state of AI Ethics, *Kairoi blog*, online [accessed 04 January 2023]

The Framework is being developed through a collaboration involving a variety of organisations, including UK KTN, Innovate UK, Digital Catapult, BSI Group, Hartree Centre, the Alliance for Data Science Professionals, and The Alan Turing Institute. As employers leading AI-related work, each member of the consortium is part of the Framework's target audience. The consortium should test the Framwork within their own organisations for two reasons.

On the one hand, **putting the Framework to the test within each organisation will produce practical evidence for its improvement.** Questions may emerge from learning and development, human resources, marketing and other departments that lack cannot emerge through speculation about the Framework's implementation. Testing the Framework's in this way also diversifies the ongoing project's methodology, generating data through both consultations and case studies.

On the other hand, **implementing the Framework is a demonstration of both the consortium's integrity, and confidence in the Framework's efficacy.** Indeed, it seems questionable to produce a Framework for employers in AI or AI-adjacent fields that the creators – which are in the same target audience – do not themselves believe in. We, therefore, invite the consortium to lead by example, demonstrate the Framework's usefulness, and show other employers how its implementation enables more fruitful AI innovations and use cases.

Once again, we are grateful for the opportunity to feed into what has the potential to become an invaluable resource for employers across the nation.

Ismael Kherroubi Garcia, Assoc CIPD, FRSA
Founder and CEO, Kairoi
On behalf of Kairoi Ltd

Appendix A: Feedback Form

Personas

To what extent do you agree that this guidance will support employers to understand their organisation's AI upskilling needs and consider associated training needs? (1=strongly disagree 5 = strongly agree)	3
Comments: It is imperative that the teams involved in the creation of the Framework bring together diverse disciplines to mitigate against a Framework that caters primordially to "AI Professionals."	

To what extent do you agree that the guidance addresses the right learner personas for individuals within an organisation? Are there others that should be considered? (1=strongly disagree, 5 = strongly agree)	4
Comments: The personas are broad enough to encompass many roles, but most will likely fall under "AI Citizens" and "AI Workers," which are extremely varied. This may render the personas' description uninformative in practice.	

To what extent do you agree that the persona "AI Citizen" is well defined and represents a useful categorisation for individuals within your organisation? (1=strongly disagree, 5 = strongly agree)	2
Comments: At Kairoi, all our staff are "AI Workers." The "AI Citizen" persona is important and one that we help our clients engage with. Although the persona's definition seems plausible, speaking of "citizens" is exclusionary; not all workers have citizenship status, and not all workers may have the same citizenship. For Kairoi's AI Ethics Framework, we have a similar persona called "End users."[9] Whilst you may wish to use another term, we strongly suggest you keep away from using the word "citizen."	

To what extent do you agree that the persona "AI Worker" is well defined and represents a useful categorisation for individuals within your organisation? (1=strongly disagree, 5 = strongly agree)	2
Comments: "AI Workers" are too broadly defined, possibly rendering their definition uninformative in practice.	

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[9] Kherroubi Garcia, I. (2023) Another piece of the AI ethics puzzle, *Kairoi blog*, online [accessed 04 January 2024]

To what extent do you agree that the persona "AI Professional" is well defined and represents a useful categorisation for individuals within your organisation? (1=strongly disagree, 5 = strongly agree)	2
Comments: "[Possessing] a strong awareness of legal, ethical, regulatory and compliance considerations and know how to translate this into their roles" seems out of scope for this persona. These are complex issues often far removed from the day-to-day of those working "in the design, creation, deployment and maintenance of AI-based systems."	

To what extent do you agree that the persona "AI Leader" is well defined and represents a useful categorisation for individuals within your organisation? (1=strongly disagree, 5 = strongly agree)	2
Comments: The definition is vague and seems to cater to common activities conducted in C-Suite level roles, thereby limiting the Framework's potential to inform change. Questions of ethics and organisational culture are notably absent.	

Dimensions

In regards to *Dimension A: Data Privacy and Stewardship*: To what extent do you agree that this dimension has been accurately articulated and contains the set of skills you would expect in this category? (1=strongly disagree, 5 = strongly agree)	2
Comments: The definition of the data privacy element seems plausible but "data stewardship" seems out of place. For example, "identify opportunities for […] creative reuse of data" intuitively contravenes on the need to ensure the protection of personal data. "Data stewardship," as defined, may be more coherent within *Dimension B*.	

In regards to *Dimension B: Definition, acquisition, engineering, architecture storage and curation*: To what extent do you agree that this dimension has been accurately articulated and contains the set of skills you would expect in this category? (1=strongly disagree, 5 = strongly agree)	4
Comments: The claim that "this dimension will be underpinned by engagement in domain- and/or sector-specific knowledge, and the ability to frame a technical response within these contexts and constraints" is warmly welcomed. However, more detail about the skills and attitudes needed for multidisciplinary engagements would help.	

In regards to *Dimension C: Problem definition and communication*: To what extent do you agree that this dimension has been accurately articulated and contains the set of skills you would expect in this category? (1=strongly disagree, 5 = strongly agree)	4

Comments: We applaud the recognition of relationship management as a valuable skill in the field of AI.Critically evaluating assumptions is another excellent skill identified. However, the following requirement is too vague: "recognise and quantify biases and identify solutions to manage and mitigate these." More guidance would be needed for this to be useful. Finally, under a subheading about "communication," we would advise that ethics form a part. Kairoi's AI Ethics Canvas focusses on four pillars for responsible AI, including better communications. Communicating adequately about AI – both accurately and without promoting myths about the technology through inadequate imagery and metaphors – should form a part of this dimension.

In regards to *Dimension D: Problem solving, analysis, modelling, visualisation*: To what extent do you agree that this dimension has been accurately articulated and contains the set of skills you would expect in this category? (1=strongly disagree, 5 = strongly agree)	4

Comments: This dimension seems to be very robust, partly in detriment to the remaining dimensions. Thought must be put into why this dimension warrants such fine detail, or whether the other dimensions are severely lacking.

In regards to Dimension E: Evaluation and Reflection: To what extent do you agree that this dimension has been accurately articulated and contains the set of skills/values you would expect in this category? (1=strongly disagree, 5 = strongly agree)	3

Comments: "Ethics" is mentioned in passing. Meanwhile, "transparency," "sustainability" and "reflective practice" are listed separately as elements of *Dimension E*. With this, there is a need for greater conceptual rigour, as it is unclear what is meant by "ethics," nor the reason behind some ethical considerations being given their own subheadings.

To what extent do you agree that the five dimensions of the framework address the right skills and values related to AI projects? Are there others that should be considered? (1=strongly disagree, 5 = strongly agree)	3

Comments: The dimensions seem to emphasise technical skills to the detriment of the vast majority of employees whose employers engage with AI in some way. Whilst whether the five dimensions are exhaustive is up for grabs, we suggest putting deeper thought towards this bias, and how less technical professionals can get the most of the Framework.