Human Technology Institute

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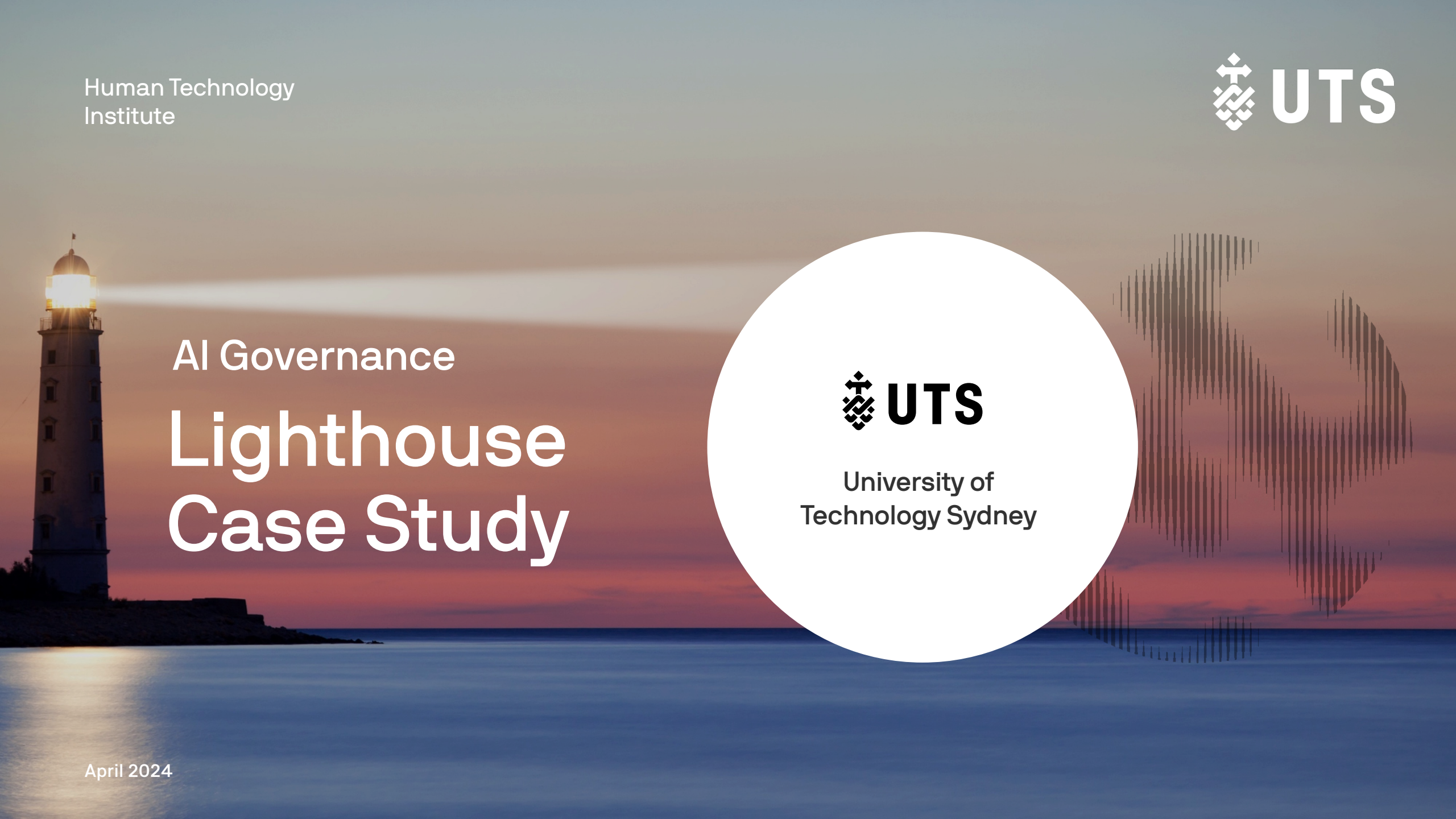


AI Governance

Lighthouse Case Study

UTS

University of Technology Sydney

April 2024

Key Governance Insights

Stakeholder engagement is an important and valuable process that can improve policies, build trust, and increase the confidence of decision-makers in relation to the adoption and use of AI systems.

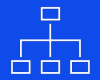
Putting in place clear policies and procedures to govern the adoption and use of AI systems allows for better and easier decision-making by senior leadership.

Successful AI governance requires an interdisciplinary approach, and it is essential that staff with different backgrounds and expertise have an opportunity to come together to discuss these issues and approve solutions

Essential components of AI Governance covered

1. Accountability, oversight, roles & responsibility

2. Governance structures



3. People, skills, values and culture

4. Principles and policies

5. Practices, processes and controls

6. Supporting infrastructure

7. Stakeholder engagement, co-design and impact assessment

8. Monitoring, reporting and evaluation

How is UTS using AI?

UTS

Employees	3,836 FTE (202)
Students	44,615 enrolments (2022
Sector	Tertiary education

As a university of technology, UTS has a deep awareness of the potential for AI to support administrative and operational functions, teaching and learning activities and to improve user experiences.

The Data Analytics Insights Unit (DAIU) has a mature predictive AI practice focused on improving student support and experience, operational efficiencies and revenue generation. Recently, the DAIU have implemented generative AI in different areas, including an environment that allows UTS staff to safely load data to create bespoke applications.

UTS is a recognized leader in research in data science, analytics and artificial intelligence (AI). It is also deeply committed to advancing social justice and leadership in the responsible use of technology.

UTS' research in AI and data science is notably seen through its world-leading Australian Artificial Intelligence Institute and Data Science Institute, its work on policy development for responsible and human-centred technology through the Human Technology Institute, and its expertise in AI for teaching and learning through the Connected Intelligence Centre (CIC). Since 2015, CIC has been inventing and evaluating automated feedback tools with UTS faculties, documenting how educators come to trust such tools, and students' usage and personal responses to such tools. UTS is building research-based evidence on effective education tools and strategies driven by analytics and AI.

As one staff member remarked, 'we have an optimistic approach to technology, but we are making sure all the due diligence is done.' As a leader in artificial intelligence (AI) research, and a university deeply committed to diversity, accessibility, and social justice, it is very important to UTS that its use of AI systems deliver effective, safe and responsible outcomes. The use of AI can be used to improve outcomes for all students, including disadvantaged students, but only if it is well-designed, well-used and well-governed.[1] Accordingly, UTS has invested heavily in significant stakeholder engagement regarding AI and establishing a comprehensive AI governance process.

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1. Leslie Loble and Aurora Hawcroft, *Shaping AI and Edtech to Tackle Australia's Learning Divide* (University of Technology Sydney Report, December 2022).

Why is stakeholder engagement central to UTS's approach to AI governance

UTS places students at the heart of the learning experience. It is committed to student engagement and student contribution to decision making at UTS, as demonstrated by its Student Partnership Agreement.

Driven by a desire to build trust within the university that AI is being, and will be, used responsibly, a key focus of UTS's approach to AI governance has been stakeholder engagement. Recognising that students and staff will be meaningfully impacted by the broadening use of AI systems, from 2021, UTS undertook in-depth stakeholder engagement in a series of workshop consultations that allowed for structured and meaningful conversations with students and staff to work with them to hear their ideas and concerns.

How did UTS undertake stakeholder engagement? What was the outcome?

UTS undertook a novel consultation process with UTS students, casual tutors and academics, using the principles of Deliberative Democracy (DD).

This structured, facilitated process involves the creation of a Deliberative Mini-Public (DMP), which has ability to influence policy and decision-making, is inclusive of diverse viewpoints and representative of the population, and provides for open dialogue and deliberation. Importantly, the DMP must be sanctioned by senior leadership with a commitment that its recommendations matter. “Expert witnesses” brief the DMP, and are quizzed by them, to inform their deliberations. The DMP can also request new witnesses. The purpose of this consultation process was to collectively propose the principles that should govern the use of analytics and AI at UTS.

The 20 members of the DMP were selected from 131 applicants using stratified sampling to ensure a representative and balanced mixture of gender, faculty, and students. Students were balanced in terms of whether they were undergraduate or postgraduate, junior (year 1-2) or senior (year 3-4), their faculty, or had English as a second language. To help attract a broad sample of students, students were reimbursed for their time at the university rate for the workshops and activities. A particular effort was also made to recruit students declaring Indigenous status, given they are often under-represented in higher education and ed-tech development.

Across five facilitated, online workshops run over seven weeks (for a total of 17 hours, including 30 minutes 'homework' between sessions), the DMP identified the principles that should govern UTS' AI use: accountability/transparency, bias/fairness, equality and access, safety and security, human authority, justifications/evidence, and consent.[2]

Whilst these are familiar ethical principles for AI, these processes were valuable in two key ways:

1. Rather than UTS leadership simply deciding and publishing draft principles for comment or undertaking tokenistic consultation, this process provided a more in-depth engagement that gave participants a deeper understanding of what the principles mean in context, and a sense of ownership and responsibility for the outcomes.
2. The DMP developed examples of each principle in action, as they might play out for the different stakeholders: students, academics and the institution.

The evaluation program interviewed DMP participants and senior leaders.[3] Students and staff felt empowered by this process. Staff commented that they had never been involved in such a meaningful consultation at the university before. Students felt privileged to be part of it and found it deeply meaningful. Ultimately, the 'DMP developed a strong sense of ownership of the process and product...The DMP process delivered on its promise to build engagement and trust across diverse stakeholder.'

2. See Appendix 1: Draft Ethics Principles in The UTS "EdTech Ethics" Deliberative Democracy Consultation: Rationale, Process and Outcomes.
3. Swist, T., Buckingham Shum, S. & Gulson, K. N. (2024, In Press). Co-producing AIED Ethics Under Lockdown: An Empirical Study of Deliberative Democracy in Action. *International Journal of Artificial Intelligence in Education*. [preprint]

AI is of course a moving target, so continuing to build on its partnership with students, again using the DD principles and process pioneered in the above consultation, in 2023 UTS initiated 'Student Partnership in AI' workshops on:

- **Generative AI**: This workshop explored how such technology could be used responsibly to assist learning outcomes for students, and issues surrounding the use of automated software to detect AI writing in assessments.
- **Predictive AI:** This workshop discussed a a pilot machine learning model to identify and support students who may withdraw from UTS before census date.

Each workshop had 20 participants recruited to maximize the diversity of voices, such that all faculties were represented at both undergraduate and postgraduate level, and included 4 students identifying as non-binary, 6 identifying as Aboriginal and/or Torres Strait Islander people, and 28 speaking a language other than English at home. Experts briefed the students on the different AI approaches and the educational and ethical issues they raise, to inform deliberation. These workshops provided UTS with an opportunity to hear a diverse range of student voices and consider their feedback and concerns about these technologies.

UTS again built trust amongst its staff and students regarding AI systems by being transparent about what they were intending to do and by addressing issues raised in its stakeholder engagement. The process had credibility as it was supported by senior leadership and who were proactive in responding to these issues. The principles that were identified guided the development of the formal AI Operations Policy and Procedure. When the Board was established, it included a permanent student representative to ensure that student voices remained an ongoing part of the conversation around the use of AI at UTS. Concerns raised in the Generative AI and Predictive AI workshops ultimately shaped decisions around their use. For example, UTS addressed transparency and consent concerns by ensuring students were given detailed information and the ability to opt-out in relation to the predictive analytics pilot.

To develop the Policy and Procedure, DAIU engaged further with and sought input from both academic and professional staff across the university including people from Governance Support Unit, legal, risk, privacy, social impact and technology, with support of the University Leadership Team.

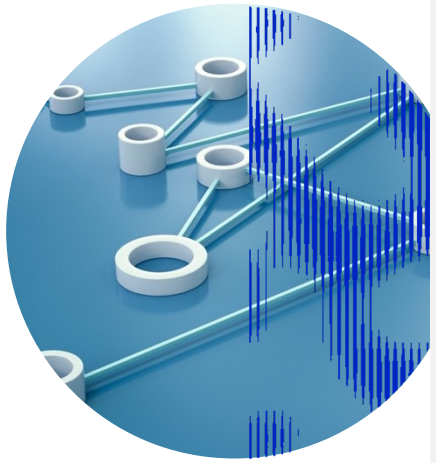
What are UTS' policies and processes for AI governance?

Building on its stakeholder engagement processes, UTS then developed its Artificial Intelligence Operations Policy (Policy), which formalizes the guiding principles of AI use at UTS, the Artificial Intelligence Operations Procedure (Procedure), which sets the decision-making processes, and an AI governance structure in the form of the AI Operations Board, which is the group of the decision-makers.

AI Operations Policy

The Policy guides the use, procurement, development, and management of AI at UTS. It allows for the use of AI at UTS for administrative and operational functions, teaching and learning activities and to improve user experiences as part of the delivery of the university's object and functions.

To ensure confidence in UTS processes, the Policy provides that the use of AI must be ethical, reliable, transparent, secure, and comply with applicable laws, regulations and university policies. Recognizing that all 'AI systems exist on a spectrum of risk', and guided by the NSW Government's AI Assurance Framework, it requires that AI systems at UTS are assessed for risks and opportunities in accordance with the Procedure and the University's Risk Management Policy. It also provides that UTS must follow the NSW Government's Mandatory Ethical Principles for the Use of AI.



AI Operations Procedure

The Artificial Intelligence Operations Procedure supports the implementation of the Policy. Any AI system being considered for adoption undergoes the following six-step process for identification, assessment, approval, implementation and management. The stages include:

1. Identification of primary purpose and assessment against ethical principles.
2. Assessment of risks and opportunities and adoption of mitigation or controls to ensure compliance with ethical principles.
3. Outlining of data governance requirements and undertaking of privacy impact assessment.
4. Submission of proposal by AI business owner to procure, activate and/or develop an AI system to the Board for review and approval.
5. Submission of proposal by AI business owner to deploy an AI system to the Board for review and approval.
6. Ongoing management and monitoring during the lifecycle by AI system owners.

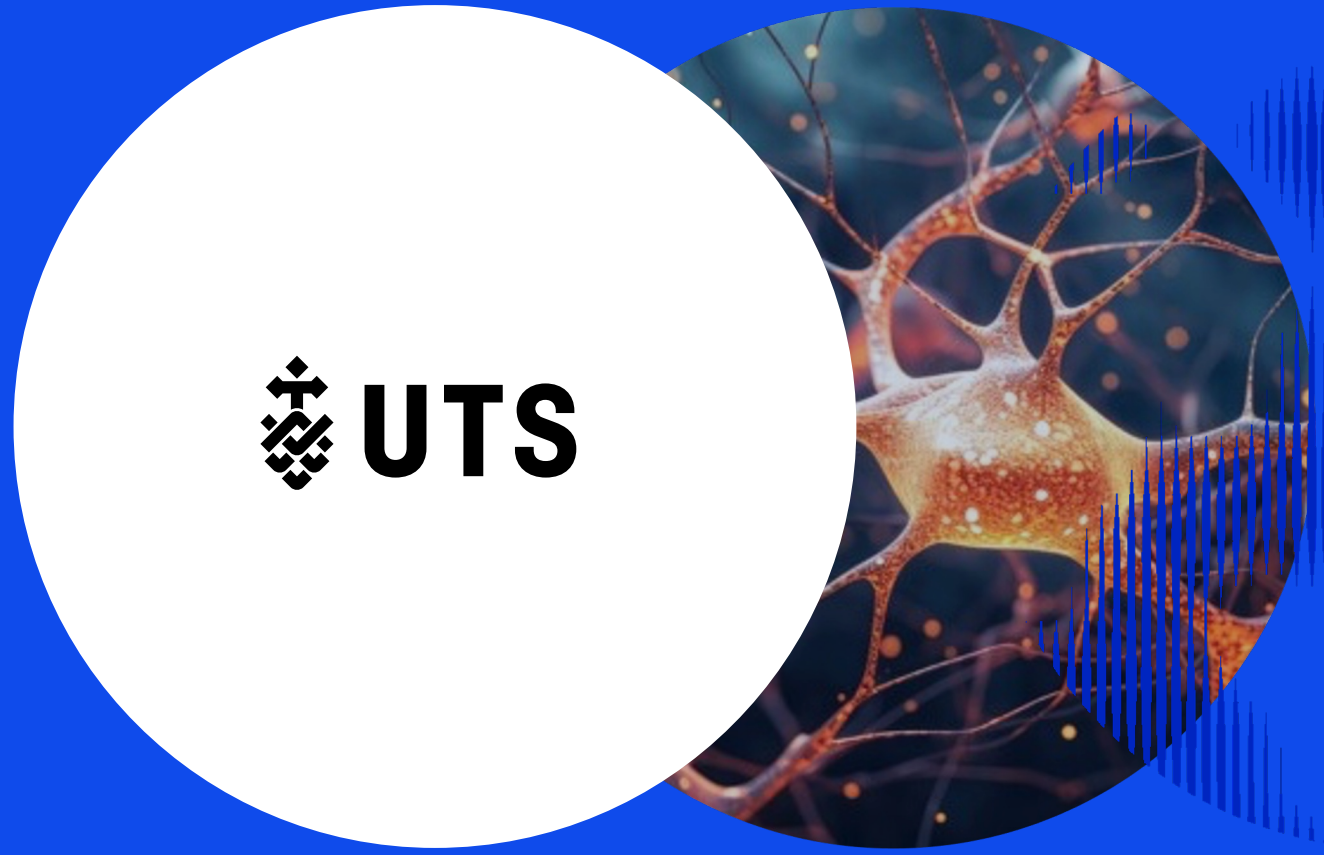
AI Operations Board

The Board oversees the use of AI at UTS and is responsible for implementing the Policy. The Board includes senior university leadership and a student representative. Its responsibilities include providing strategic advice, reviewing AI project proposals, and ensuring AI systems comply with existing legal requirements and UTS policies. After reviewing an AI project proposal, the Board either:

- provides feedback and requests further information, development or risk mitigation;
- endorses the AI system for approval in line with the Policy; or
- recommends that the AI system should not progress.

Changes to approved use cases or processes are reported to the Board to ensure continual feedback and ongoing learning. The Board meets at least four times a year or as required.

What can we learn from UTS?



What can we learn from UTS?

1. Value of meaningful stakeholder engagement with impacted communities
2. A clear policy and procedure supports staff and decision-making
3. Drawing on the collective intelligence and skills of people from the UTS community

1 Value of meaningful stakeholder engagement with impacted communities

UTS undertook meaningful consultation with stakeholders and impacted communities on the implications of introducing AI systems. These processes have delivered value for UTS. The consultations identified stakeholders concerns, provided an opportunity for UTS to pre-emptively respond to and address such issues and helped shaped UTS' AI governance policies, procedures and governance structures. At a time of uncertainty, they helped build student and staff trust in the university's use and adoption of AI systems, and provided the Board and senior decision-makers with the confidence to make such decisions.

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What can we learn from UTS?

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2 A clear policy and procedure supports staff and decision-making

UTS has invested time and effort into creating a clear and transparent Policy and Procedure for AI governance, which are publicly available on the UTS website. To support these processes, there are templates and checklists for approvals to assist AI business owners when submitting their proposals. This allows for the collation of all relevant information, which is then presented to the Board in a simple and easy to follow format (see Appendix 1: AI use case template).

Both board members and staff felt supported by this process. As one board member remarked, ‘as someone is who is not a technical person, I love the simplicity of it. Everyone understands the rules and process that has to be followed.’

What can we learn from UTS?

1. Value of meaningful stakeholder engagement with impacted communities
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3 Drawing on the collective intelligence and skills of people from the UTS community

Stakeholder engagement is not an ‘expensive consultation process, it is about harnessing the collective intelligence of the community’, as one staff member noted. Hearing from a diversity of viewpoints meant UTS gathered new insights and perspectives from students, and benefitted greatly from their staff expertise. For example, drawing on staff expertise regarding Deliberative Democracy and using these principles to guide UTS’ consultation process allowed for significant engagement and buy-in by staff and students.

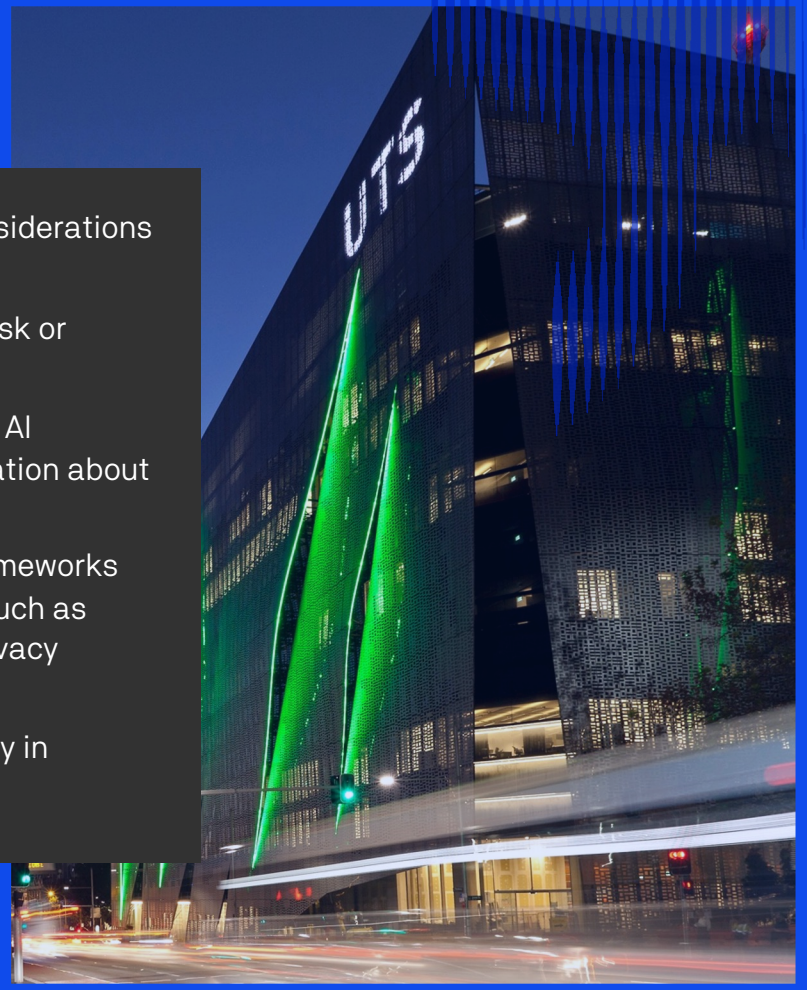
Moreover, there is also diversity in the Board as it includes a mixture of UTS senior leadership, from technical and non-technical backgrounds with many different areas of expertise, as well as a student representative. This has allowed for fruitful and careful discussions of AI proposals, both in terms of their technical effectiveness as well as ethical issues such as consent, equity, diversity, and hearing the potential concerns of students and staff. Successful AI Governance requires an interdisciplinary approach, and it is essential that staff with different backgrounds and expertise have an opportunity to come together in the same room to discuss and decide these issues.

What's next for UTS?

The stakeholder engagement undertaken, as well as the development of the Policy, Procedure and Board, has helped UTS, its staff and students successfully and carefully consider, discuss and respond to some of the challenges and governance of AI systems.

As this process matures, there are ongoing considerations of further changes that may be needed to:

- streamline the process, particularly for low-risk or similar AI use cases;
- apply to third-party products with integrated AI systems where UTS may have limited information about those AI systems or may already be in use;
- ensure effective integration with existing frameworks and processes without duplication of work, such as risk management, data governance, and privacy impact assessment;
- continue to uplift staff maturity and capability in relation to the responsible use of AI.



Appendix 1:
AI Use Case Template

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Business Problem

What are we trying to solve?

AI Output Target

How can the business problem be reframed as a machine-learning problem?

Group/Use Case ID/Exec Sponsor/ Drivers

Increasing Revenue
Operational Efficiency
Student Experience

Value Calculation

How much value do you estimate this initiative to generate (say annually).

What is the Life Time Value (LTV)?

What is the method of calculation?

What action will be taken (Why its valuable)

What action will you take once this prediction is made?

Risk and Ethical Considerations

What Risks and Ethical Considerations need to be undertaken as part of this Use Case?

Undertake Risk Assessment and Ethical Assessment as appropriate.

Estimated Potential

What is the annualised value of this Use Case from a Revenue ($), Efficiency ($) or Student Experience perspective?

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For more information on HTI's AI Corporate Governance Program, or to join our AI Governance network, please contact:

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