

Submission to the Human Rights and Technology Project

Considerations in improving the ethics and accessibility of technology

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The below is a brief submission for consideration Australian Human Rights Commission in relation to the Human Rights and Technology discussion paper by the Co-Innovation Group at the University of Queensland (<https://www.itee.uq.edu.au/research/co-innovation>). This group is an interdisciplinary research group crossing conventional boundaries comprising social robotics, interaction design, software engineering and human-computer interaction. The projects and partnerships of the group focus on creating new technologies to empower people and their communities. The group involves a range of disciplines including computer science, electrical engineering, mechatronics, interaction design, psychology and occupational therapy, as well as lived experience experts. Lived experience experts from the Florence Project, a project focusing on co-designing technology to support communication with people living with dementia and their care partners, have contributed to this submission. We are willing to provide further information, or indicate related academic or clinical work, on any of the issues raised, but have made this submission brief.

In this submission, we have focused our attention on issues related to:

1. making technology accessible and ethical,
 2. means of supporting creation and production of these technologies,
 3. and ways of providing education and support to help build workforces and consumer awareness and knowledge.
1. Making technology accessible and ethical

Mainstream and specialised technologies all need to consider accessibility and ethics in their design and development. It is important that consideration of the range of accessibility needs, and the potential of multiple accessibility support needs be included within design and testing. While physical and sensory accessibility needs seem to be most often considered, cognitive accessibility seems to be less frequently included within designs. In addition, it is important that designers and developers be aware that people can have multiple accessibility needs – for example, require both simple, clear design for cognitive accessibility, and high-quality audio and features to support hearing accessibility. Managing multiple streams of accessibility considerations may be challenging and may potentially lead to technology that is less accessible because of range of choices and set up requirements. To enable accessibility, it may be useful to develop both easy ways of individualising technologies, and support systems for helping with initial set up and trouble shooting.

Core understandings of access issues and barriers need to be developed. This should include the paid involvement of groups who identify accessibility issues including older people, disabled people and people living in regional and remote areas. The ranges of issues may include inequity in internet access, unavailability of technologies for specific purposes, or unsuitability of existing mainstream technologies to interface with accessibility systems or

to meet individual needs. It is vital that industry and all involved in the creation and sales of technology expand their awareness of the range of issues associated with accessibility. Funding research to document and share the range of access issues for potential users is vital, across technologies for different purposes, user groups and policy, infrastructure, software and hardware related issues and needs.

An important aspect of accessible technology creation is including ethical considerations within all stages of technology development and sales. For example, this may include accessible and meaningful consent in relation to how the technology works (accessible information about what data are collected, who has access to them, potential implications of having this data collected). Developing technologies that consider accessible and transparent approaches to artificial intelligence or other mechanisms is therefore important. This will include inclusive consent processes, prompts, reminders or other communication during use to make processes more transparent, and opportunities to review and revise consent to data collection and sharing in the context of use.

In addition to this, guidelines about what is ethical technology need to be developed for industry use. Consumers with a range of perspectives should be involved in their development. They may help to express “lines in the sand” providing boundaries about acceptable use and properties of technology. For example, some boundaries about technology development expressed by people living with dementia and their care partners included: technology should never be stigmatising or degrading to the users; technology should never fully replace direct human contact in caregiving. The development of these boundaries should be inclusive of a diverse range of users and have accessible processes.

2. Means of supporting accessible technology creation and production

To support the creation of ethical, accessible and useful technologies, a range of considerations are relevant. Technology designers and developers are often willing but not necessarily currently able to create these technologies. In addition, funding models need to be responsive to support the development and purchase and use of these technologies.

In considering the purchase and usage of ethical and accessible technologies, there will need to be supports for making, choosing and buying these kinds of technologies. Incentivisation may be an important step in making existing types of technologies accessible. Making customisation for accessibility a routine and required part of mainstream technology creation will support accessibility with open source and freely available approaches being created and shared. To do this industry and government will need to invest in research and development both for accessible mainstream technologies and technologies built from disability first perspectives. Programs to ensure accessibility should

also ensure (and fund) development and user testing involvement of disabled people, older people and people from a range of living situations.

Funding models for technology should also be considered and adapted to support accessibility. Enabling a shift to long term payment plans for large investment in accessible in technology would support accessibility. Affording upfront payment is a considerable barrier to accessing needed technologies. Government funders of specialised technologies (e.g. NDIS) will require support and education to make sure technologies are appropriately accessible and work together optimally. Feedback from these systems will also ensure future development of accessible ecosystems of technology.

3. Education and support to build awareness and knowledge

In supporting the development, funding and use of accessible, ethical technologies, education will be a key aspect. While many express willingness to create accessible and ethical technologies, they lack knowledge about both ethical frameworks and considerations and accessibility related needs and approaches. In addition, to fully engage in consent for the use of technologies, consumers may also require education about how technologies work and what the implications of use may be. Workforce and consumer education will need a fairly broad remit, and will also need to establish and promote connection between industry and users.

Education about accessibility and ethical considerations will need to be available to:

- Technology developers and designers
- People working in statistics, algorithm development and data analysis
- Users of technology including novice users, users with differing education levels, disabled users, users in regional and remote areas.
- People in sectors where technology is developed and used (eg education, health, aged care, transportation)

An important aspect of education will be making sure key aspects of how technology works (including AI related workings) can be clearly explained, and improving general AI literacy within the community. This will help people to be able to engage in their own, informed decisions about the trade-offs made in using different technologies. Features within the technology design to support this education by making some processes visible and transparent may also be important.

Conclusion:

There is great scope to improve the development and availability of ethical and accessible technologies. Required approaches involve engaging and connecting users from a range of

lived experiences, educators, designers and developers and industry. Education, incentivisation and embedding ethics in an accessible way within technology design, creation and sales will support this improvement.