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Framework for artificial intelligence-enabled assistive technologies

We have released a framework to promote innovation and development of safe and effective Artificial Intelligence (AI)-enabled Assistive Technology (AT).

- Framework for artificial intelligence-enabled assistive technology as supports under the NDIS (DOCX 785KB)
- Framework for artificial intelligence-enabled assistive technology as supports under the NDIS (PDF 744KB)

The framework will assist the NDIS to guide AI-enabled AT market development and support better matching of technologies to a person's individual needs.

The framework will be used to create resources to help compare the risks and benefits of emerging technologies.

It can also be used by:

- people with disability and their communities to help decide if AI-enabled AT is right for them
- developers and researchers as they design, create and evaluate technology for people with disability
- funding bodies to support assessment of research funding applications.

The CSIRO is now drafting a roadmap to provide a pathway for the implementation and adoption of the framework.

We continue to work together with users, families, carers, industry and the disability workforce as we progress this initiative.

To find out more about this research you can email our research team at research@ndis.gov.au.

Background

Artificial Intelligence (AI) technology can help to boost independence and increase community participation for people with disability. But not all AI is right for everyone and there is often limited guidance on its use.

In April 2021, we convened a round table discussion on the role of AI in NDIS funded supports.

NDIS participants, families and caregivers as well as other key stakeholders such as industry developers, researchers and regulators were involved in the discussion.

At the heart of this discussion was exploring how the AI sector and solutions will contribute to supporting NDIS participants.

Insights from the round table included a recommendation for the NDIA to support the development of a framework and roadmap to guide the development, testing and implementation of AI-enabled assistive technologies.

The NDIA engaged CSIRO's Australian eHealth Research Centre to develop this framework, which focuses on 6 key principles:

- user experience
- value
- quality
- safety
- privacy and security
- human rights.

Method

To develop the framework the CSIRO conducted:

- Desktop research to review guidelines and assessment frameworks developed to assist people in selecting AT and AI technologies.
- Interviews with NDIS participants, their families, carers and other supporters. They gave an understanding of the needs and experiences of participants with AI.
- Focus groups with industry and service providers to add to and offer other insights to support the work.

Findings

Findings from the desktop research:

- Many technologies exist with the potential to support individuals with disability.
- Several frameworks have been developed to help people select and use AT.
- These frameworks aim to help the person with disability find the best technology for them based on their environment, tasks to do, their goals and other factors.
- Frameworks to help the evaluation of AI-enabled ATs are limited.
- There was a clear message across papers for the need for a national strategy or framework for safe, responsible and strategic implementation of AI.

What CSIRO heard from the focus groups and interviews:

- Participants use a range of AT products (some of which used AI technology) to assist with their day-to-day tasks including hearing and vision aids, mobility aids, smart in-home devices and computer hardware and software.
- Participants described benefits of the products including independent living, maintaining a personal routine and an improved quality of life.
- Participants said finding the right technology for their goals can be challenging. This is generally done via:
    - recommendations from health professionals, peers, family and friends

    - internet searches
    - social media
    - forums and reviews.
- Participants had concerns around the transparency of information given by manufacturers and suppliers, and said they wanted access to consistent and reliable information about the technology all in one location.
- Industry stakeholders noted the framework could empower end-users to be more informed, provide them with a better understanding of what impactful technology looks like and give them the chance to choose what works for them.
- When considering technology, there were factors important to both participants and industry stakeholders. They aligned to user experience, value, quality, safety and privacy/security. People also raised the importance of the Human Rights Impact of the technology.

Evaluation of NDIA thin market trials

In the NDIS context, thin markets exist where there is a gap between participant needs and their use of funded supports.

Our evaluations of thin market trials explore what market inventions are successful, for who, when and how.

We are evaluating the Disability Reform Council (DRC) and Agency-initiated thin market trials to guide how we intervene in markets in the future.

Our goal is to understand what approaches are successful, for which types of participants and in which context so that participants can get services and support they need.

What are we evaluating?

In 2019, the Disability Reform Council (DRC) agreed that each State and Territory would host a trial to address market challenges in thin markets. We also initiated trials in a number of other thin markets nationally.

We are conducting ‘realist evaluations’ of these trials. Our methods include:

- statistical analyses of plan utilisation and market indicators
- an online survey of service providers in trial locations
- stakeholder interviews.