



# Assistive Technology Strategy

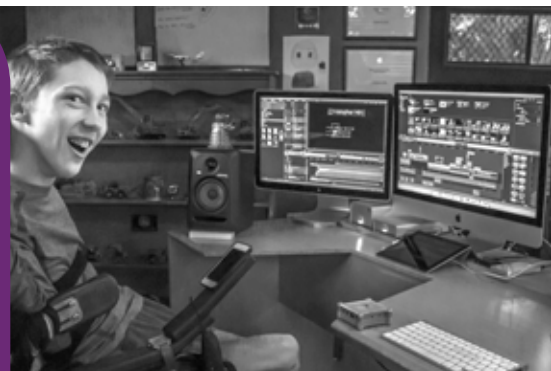


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# Executive summary

Technology is increasingly enabling people with disability to perform tasks they could not otherwise do, to perform tasks more easily, and to perform them more safe and securely. It is allowing many people with disability to reach their potential at home, in their community and in the workplace. The National Disability Insurance Agency (NDIA) wants to optimise the opportunities that technological advancement and digital disruption is offering society, putting people with a disability at the forefront of these opportunities.



The National Disability Insurance Scheme (NDIS) was founded on a simple goal – to provide all Australians who are born with or acquire a permanent and significant disability before the age of 65 with the necessary supports to live a better life and one of inclusion. Advancements in technology will be crucial as the Agency works towards achieving this goal.

This document represents the NDIA's Assistive Technology (AT) strategy development to this point. As the proposed initiatives in this strategy are developed and the NDIS moves to full roll out in July 2016, the strategy will continue to be refined and updated.

The NDIA's vision in AT is to *build an empowering, sustainable and consistent approach to ensuring National Disability Insurance Scheme participants have choice in, and access to, individualised assistive technology solutions that enable and enhance their economic and community participation.*

In line with the vision, the document outlines the three strategic priorities for achieving this vision and proposes initiatives to meet each of these strategies:

## **STRATEGIC PRIORITY 1:**

**Support and stimulate a vibrant and innovative supply-side market by providing a conduit for innovation and promoting the take-up of technology solutions.**

## **Proposed Initiative**

The proposed initiative is to establish an innovation hub that: (1) captures information and builds an evidence base around disability needs to stimulate innovation; (2) stimulates the uptake of existing, new and mainstream technologies; and (3) tests and trials new technologies to stimulate industry solution development.

## **STRATEGIC PRIORITY 2:**

**Support and stimulate informed, active, participant-led demand by empowering participants to choose technology that best supports their needs**

## **Proposed Initiatives**

The proposed initiatives are to (1) investigate and determine the right multichannel national model – online, face-to-face, over the phone – for providing information about assistive technology options to NDIS participants; (2) refine and finalise the participant capacity-building framework – a framework used to determine the capacity of a participant to choose and implement assistive technology; suggest ways to build upon this capacity; and, recommend a level of professional support for selection of assistive technology; and (3) review Agency processes, policies and systems to optimise their support for participant choice and control.

## **STRATEGIC PRIORITY 3:**

**Deliver a financially robust, sustainable scheme that generates economic and social value with the Agency only intervening to optimise outcomes for participants and economic value for the Scheme.**

## **Proposed Initiatives**

The proposed initiatives are to (1) employ an approach to assistive technology sourcing ranging from free market to central sourcing by the Agency; and (2) develop the organisational capability and governance needed to ensure sustainability and value creation.

The proposed initiatives should improve the market development of assistive technology, increase investment into innovative technology that will be of greatest benefit to NDIS participants, improve the knowledge and capacity of NDIS participants to choose the assistive technology that best meets their needs, and help the NDIA with its role in the different product markets of AT, a role ranging from no intervention to central sourcing.

A high-level implementation roadmap and a work plan for each of the proposed initiatives has been developed, along with a comprehensive stakeholder engagement strategy to ensure Scheme participants, suppliers, allied health professionals and others understand the proposed path forward and its rationale.

# 1. Introduction

This document lays out NDIA's proposed strategy for the provision of AT. AT is used in this document as an umbrella term for the large and diverse group of products, systems, services, devices and technologies used by people with a disability to support and enhance their economic and social participation. Assistive technologies, from the new and sophisticated (smartphones, satellite navigation) to the old and simple (home telephones, maps) are ubiquitous and used by people with and without disability in their daily lives. The term is neutral and inclusive in the context of disability, in line with NDIA's philosophy and approach.



NDIA's overarching vision for AT is *to build an empowering, sustainable and consistent approach to ensuring NDIS participants have choice in, and access to, individualised assistive technology solutions that enable and enhance economic and community participation.*

In support of the vision, this document outlines a strategic framework and initiatives to transform the selection, sourcing and supply of technological solutions for people with disability, and to leverage technology to revolutionise disability service delivery and outcomes. Execution of the proposed initiatives will:

- i. Support and stimulate a vibrant and innovative supply-side market by providing a conduit for innovation and promoting the take-up of technology solutions;
- ii. Support and stimulate informed, active, participant-led demand by empowering participants to choose technology that best supports their needs; and,
- iii. Deliver a financially robust, sustainable scheme that generates economic and social value with the Agency only intervening to optimise outcomes for participants and economic value for the Scheme.

The strategic framework outlined here aligns with the NDIA's commitment to be a leader and role model in embracing the technological advancements occurring in society. This extends beyond AT to the use of technology solutions used by the Agency to deliver effective, cost-efficient interactions with NDIS participants.



## 1.1 CONTEXT AND BACKGROUND

### 1.1.1 Context

Technological transformation and digital disruption are changing the lives of people all over the world. Opportunities that were not previously available and some that were unimaginable are now available. Technology will continue to develop, and these opportunities will continue to expand. The AT market will look very different in five and ten years time from what it is today. The NDIA wants to put people with a disability at the forefront of this development and these opportunities.

Over the last five years, many new technologies have emerged to support social engagement, communication, employment, learning, memory and planning, and to meet mobility and personal care requirements. This innovation is welcome; given the tremendous value it can offer participants and the NDIS. In particular, there are a number of disruptive technologies emerging to support better lives and opportunities for people with intellectual and psychosocial disability, where traditional aids and equipment have traditionally had nothing or very little to offer.

The Agency is committed to staying up-to-date with the developments of the AT market and foster its growth and development in Australia.

### 1.1.2 Background

Assistive technology, as defined by the World Health Organisation, is ‘any device or system that allows individuals to perform tasks they would otherwise be unable to do or increases the ease and safety with which tasks can be performed’.<sup>1</sup> For NDIA this definition covers the full range of technological solutions that allow people with a disability to be more independent and connected, and provide opportunities for them to realise their potential as active members in their families, schools, workplaces and communities.

Beyond the traditional aids and equipment used by people with disability, including home and vehicle modifications, prosthetics and hearing aids, AT in the NDIS includes devices used by people without disabilities (e.g. smartphones, tablets and “apps”) that are offering new ways to form connections and increase participation. In addition, each year sees more innovative and sophisticated devices and software developed for the disability sector coming onto the market.

The AT market though has both complexity and risks with AT provision. The strategic framework and initiatives outlined here are designed to deal with growing complexity in the nature and provision of AT as efficiently and effectively as possible. This strategy aims to put the Agency

in a position to meet its AT vision, and to put policies, processes and practices in place to ensure the Agency responds nimbly and effectively to participants’ changing needs and the evolving technology landscape.

In addition, the AT strategic framework and initiatives support the achievement of the NDIA’s overall strategic objectives, as outlined in the 2013-16 Strategic Plan, of particular relevance are the objectives:

i. *To promote the independence and social and economic participation of all people with disability.*

AT provides participants with the means to grasp opportunities and perform that they may otherwise have been unable to take up and complete.

ii. *To maintain sustainability of the scheme.*

AT procurement and deployment will deliver value to the participants and the scheme.

## 1.2 STRATEGY DEVELOPMENT

Appendix 1 provides a list of the previous work undertaken by this Agency, as well as by others, to inform development of the Agency’s first Assistive Technology Strategy, which is explained in this document.

1 World Health Organisation, *A glossary of terms for community health care and services for older persons*, p.14 Geneva 2004

## 2. Rationale for an AT strategy

AT enables people with disability to live a better, more independent and more inclusive life. It enables people with disability to maximise their abilities at home, in the community and in the workplace, ensuring greater economic and social participation.

The rationale for the AT strategy and the Agency's commitment to develop the strategy over time is due to a number of external and internal factors. Below is a brief outline of these factors.



### 2.1 EXTERNAL FACTORS

#### 2.1.1 Mainstream technological advancements

Technology is advancing at a rapid rate. It is enhancing the lives and the opportunities of the entire Australian community – for example, smart phones can be used for shopping or banking on the go, satellite navigation to find a way to a destination, and video technology allowing people to stay in touch with overseas relatives and friends.

These advances in mainstream technology, both in devices – hardware – such as tablets and smart phones, and software including a range of apps, can be of great benefit to people with disability. The technological developments will continue and the Agency is committed to keeping up-to-date with these changes to mainstream technology and how they can benefit people with disability.

#### 2.1.2 Emerging technologies in aged care and health sectors

There are common needs in the disability, health and aged care sectors. Solutions in one sector can often be used across the other

sectors. The aged care and health sectors are large and growing. As they continue to grow they will attract increasing amounts of investment, leading to more innovation and more emerging technology solutions. There is opportunity for the Agency to: (1) embrace technological developments in the aged care and health sectors; (2) collaborate with stakeholders in these sectors; and (3) to co-invest in AT with aged and health care bodies.

### 2.2 INTERNAL FACTORS

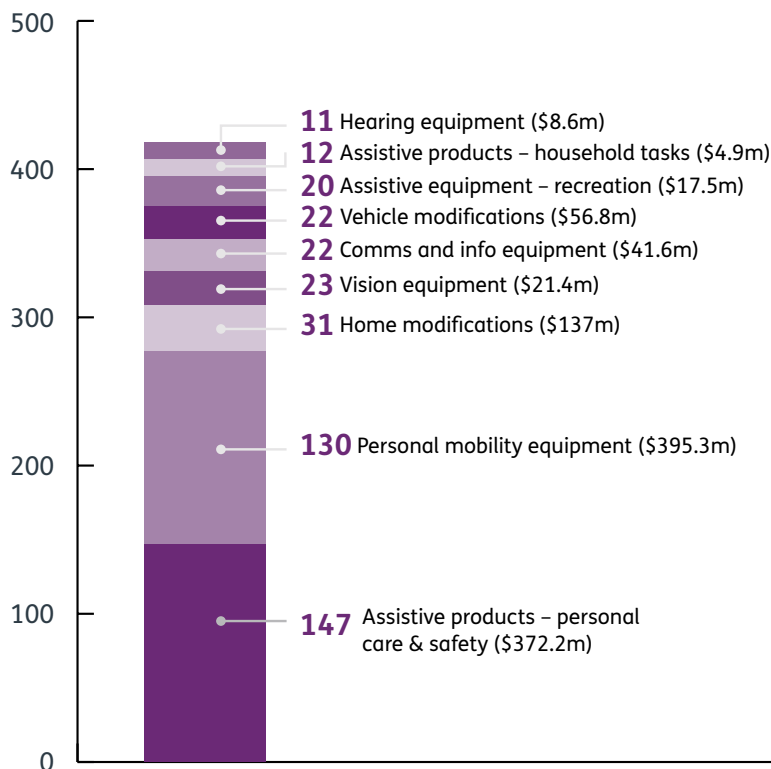
#### 2.2.1 Demonstrated importance of AT in trial sites

AT is very important for a large number of participants across the existing seven trial sites. Experiences from these trial sites indicate that AT will be very important as the scheme rolls out nationally from July 2016.

At the NDIS trial sites, AT is included in 39% of participants' broader plans, rising to over 50% for participants who are over 45 years old, and for children. Of over 400 AT support item types, the two largest value clusters coming out of the trial sites are assistive products for personal care and

safety, and for personal mobility (Figure 1). Personal care and safety products include consumables such as home enteral nutrition (HEN) and continence products, as well as capital items such as bathroom and bedroom equipment. Personal mobility equipment includes capital items such as wheelchairs, walkers, hoists and transfer equipment.

The highest committed AT expenditure from the trial sites to date is for participants with 'other neurological disabilities' (approx. \$8.7m), followed by those with cerebral palsy (approx. \$6.8m) and intellectual disability (approx. \$3.0m). While approximately 70% of scheme participants have an intellectual disability, AT spend in this area has historically been low, but new technologies—many used in the mainstream, such as tablet and smartphone applications—are offering opportunities to enhance independence, confidence and participation outcomes for this group.



Note: Values in brackets total \$1b, and represent full scheme funding estimates for AT in 2019-20, based on NDIA actuarial forecasts, BCG analysis, World Health Organisation

**FIGURE 1: AT supports and expenditure by cluster at full scheme**

## 2.2.2 NDIA investment in AT

Spending on AT is expected to reach \$1.06 billion per annum when the scheme is fully rolled out in 2019-20.<sup>2</sup> Spending of this size will develop the AT market in Australia, encouraging investment, and the development of emerging technology solutions. As knowledge of this spend filters through the Australian and global technology community, the expectation is that Australia could become a hub of AT innovation.

There is already evidence of interest from global technology companies. Attendants at the upcoming *NDIS New World Conference: Disability in the 21st Century* – which focuses on the role of technology in bettering the lives of people with disability – include representatives and Chief Accessibility Officers from leading

technology companies such as Apple, Microsoft, and IBM. The global AT will increasingly see the Australian market as a potential incubator for new technologies and will explore the market opportunities presented by the NDIS.

## 2.2.3 Challenge of uptake of AT by participants

People with a disability have a wide range of levels of understanding of the AT options available to them and a wide range of capacities to choose the best technology for them. The Agency's strategy therefore needs to focus on how to provide better information of the options available, then determine the participant's capacity for choice and build upon this capacity to maximise choice and control for participants.

## 2.2.4 Value creation

The rationale for developing a robust, clearly articulated AT strategy is also to enhance the value creation it offers both for participants and for the scheme. The strategy development process took into account opportunities to decrease AT costs where this could be achieved while delivering the same or better outcomes for participants. Many of these opportunities come from changes to sourcing. Its implementation is expected to deliver the scheme net incremental financial benefits of approximately \$161 million per annum by FY19-20 and \$1.2 billion over 10 years.

Efficiency gains are expected from the potential for new and emerging technologies to disrupt support and service delivery,<sup>3</sup> and increase participants' independence and capacity for active social and economic participation. This could potentially have a significant impact on Agency expenditure; for example, by reducing the cost of personal and community supports, which at 45% of spend on average, is the biggest annual expenditure item in participants' plans.

Further, technology solutions offer the potential to increase economic participation for participants, which will deliver significant benefits in confidence, independence and self-esteem for participants; diversity benefits for businesses and communities; and economic benefits for the nation.

In addition, implementation of the AT strategy will support the achievement of the Technology Authority Strategy to lead in the use of technology to oversight and manage the scheme.

<sup>2</sup> Excludes special assessment setup and worn-hearing devices in the hearing equipment category. Figures based on NDIA actuarial team data on participants and plans, as at April 30 2015

<sup>3</sup> Harper I, Anderson P, McCluskey S, O'Bryan M, *Competition Policy Review*, final report, March 2015

### 2.2.5 Rural and remote areas

Technology solutions will be valuable in addressing some market supply gaps, particularly in rural and remote areas. For example, telehealth functionality could be used to supply some services and supports from allied health professionals. Such functionality will never fully replace the personal delivery of these kinds of services and supports, but could be used in a complementary way to increase access frequency for participants in rural and remote settings, while supporting scheme sustainability.

#### CASE STUDY

Dean, 13, has a moderate intellectual disability. To attend a weekly post-school swimming lesson, he has a support worker for 2 hours to take him from school to the pool and then home, though he doesn't actually need the support for the bulk of that time, when he's in the pool.

Dean's mother Maria is a member of an online network of parents with children whose needs and goals are similar to Dean's. When another mother described how a smartphone was allowing her daughter to catch the bus to and from her dancing classes without a support worker, Maria investigated the possibilities for

Dean. She found she could use GPS technology and video calls to ensure he was safe and to easily locate him if he got lost.

Once the smart phone was configured, the support worker helped Dean use it and within four weeks he was travelling independently to and from his swimming lessons, text messaging Maria when he arrived at his destination. When the bus was detoured for roadworks, Dean was able to send his mother a picture of where he was and she used the GPS technology and video messaging to make sure he got home safely.

#### INVESTMENT:

- Smartphone = \$450 (based on iPhone5-replaced every 2 years)
- Data plan = \$40 per month
- GPS = \$0 (built-in functionality)

#### PARTICIPANT OUTCOMES:

- increased independence and confidence
- use of a mainstream device (not disability-specific or stigmatising)
- reduced need for family support
- inclusion and integration opportunity into mainstream community

#### SCHEME OUTCOMES:

- Net cumulative savings for the Scheme of \$44,580 by age 25 years



# 3. AT strategy

The overarching vision for the AT strategy is to **build an empowering, sustainable and consistent approach to ensuring NDIS participants have choice in, and access to, individualised assistive technology solutions that enable and enhance economic and community participation.**



The strategic priorities to support the vision and the areas in which opportunities and initiatives have been identified are:

- i. To support and stimulate a vibrant, innovative supply-side market;
- ii. To support and stimulate informed, active, participant-led demand; and
- iii. To deliver a financially robust, sustainable scheme that generates economic and social value.

Work is underway on the first two priorities to scope initiatives and put detailed implementation plans in place. The work on the third strategic priority – scheme sustainability and value delivery – is most advanced, with sourcing initiatives costed and ready to begin implementation in 2015-16.

Figure 2 shows the overall strategic framework, the individual elements of which are described in detail in the following sections.

<b>Vision</b>	<i>To build an empowering, sustainable and consistent approach to ensuring NDIS participants have choice of and access to individualised technology solutions that enable and enhance economic and community participation.</i>		
<b>Strategic Priorities</b>	Support and stimulate a vibrant, innovative supply-side market	Support and stimulate informed, active, participant-led demand	Deliver a financially robust, sustainable scheme that generates economic and social value
<b>Opportunities</b>	<ol style="list-style-type: none"> <li>a) Provide a conduit for innovation in the market</li> <li>b) Promote the take-up of technology solutions</li> </ol>	<ol style="list-style-type: none"> <li>a) Address information asymmetry on AT choices and options</li> <li>b) Support capability-building to optimise participant decision-making and choices</li> <li>c) Ensure Agency operations support participant choice and control</li> </ol>	<ol style="list-style-type: none"> <li>a) Support competitive market development centred on participant choice and control</li> <li>b) Intervene in the market where that optimises both value for the participants and economic returns for the scheme</li> </ol>
<b>Proposed Initiatives</b>	<ol style="list-style-type: none"> <li>1. Establish an innovation hub to:               <ul style="list-style-type: none"> <li>• Capture information and build an evidence base to stimulate innovation</li> <li>• Stimulate the uptake of existing new and mainstream technologies</li> <li>• Test and trial new technologies to stimulate industry solution development</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Investigate and determine the right model for nationally consistent multichannel information portal</li> <li>2. Refine and finalise the participant capacity building framework</li> <li>3. Review Agency processes, policies and systems to optimise their support for participant choice and control</li> </ol>	<ol style="list-style-type: none"> <li>1. Employ a differentiated AT sourcing approach (i.e ranging from free market to central sourcing) based on product bundling</li> <li>2. Develop the organisational capability and governance needed to ensure sustainability and value creation.</li> </ol>

**FIGURE 2: AT strategy framework**

## THE PRINCIPLES OF THE STRATEGIC FRAMEWORK

The following principles apply to all components of the framework:

1. Participants can be empowered by building their capacity to make decisions about their AT needs;
2. Participants have access to all the information they require to identify AT options and explore the 'fit-for-purpose', relevance and utility of potential technology solutions; 3. The range of AT options to explore and choose from is broad enough to offer real choice and ensure quality, informed by direct engagement with, and input from, people with disability;
4. AT solutions are affordable for participants and provide both financial and participant outcomes and returns to NDIA, and all costs associated with AT assessment, trial, delivery, set-up, fitting, implementation and on-going support can be identified and effectively managed; and
5. Innovation in product design is market-driven and harnessed to optimise AT products and their value to participants wherever possible.

## STAKEHOLDER ENGAGEMENT

The strategy development was informed by consultation with, and contributions from, stakeholders, including the AT Sector Reference Group and the Aids and Equipment Services Working Group (State Managers of Equipment Schemes). Appendix 2 lists the membership of each group. Data to inform the strategy were also gathered from a number of like agencies in Australia (Department for Veteran's Affairs and Victoria's Transport Accident Commission), as well as overseas (Enable New Zealand).

The NDIA's discussion paper 'Towards Solutions for Assistive Technology', attracted 70 submissions in response (35% from disability service providers [DSPs], 25% from suppliers, 14% from allied health professionals and 8% from participants or family members). This feedback, along with follow-up stakeholder consultation, and engagement with the NDIA's Independent Advisory Council, also informed strategy development.

Co-design with people with a disability and other sector stakeholders, was and will continue to be a fundamental element of strategy development and implementation. The NDIA has developed an engagement program to be rolled out in coming months that will lock in consultation, collaboration and co-design with participant advisory groups, trial sites, peak bodies and others. In addition, if central sourcing is selected as the best solution for some types of AT, NDIA will include participants at each stage to inform the end-to-end procurement process.

The stakeholders engaged will include, but not be limited to:

- Scheme participants, AT users and their peak bodies;
- Practising and specialist clinicians and others using current AT systems, and their peak bodies;
- The Aids and Equipment Services Working Group (current state and territory programs);
- Representatives of adjacent sectors and programs (e.g. aged care, veterans' affairs, similar insurance schemes);
- R&D partners (e.g. universities, private sector developers);
- AT suppliers and their peak bodies;
- NDIA management and staff; and
- The broader community.

The sections that follow describe the context for NDIA's three strategic priorities in AT, the opportunities raised for the Scheme in that context, and the initiatives proposed to realise the opportunities.

## 3.1 SUPPORT AND STIMULATE A VIBRANT, INNOVATIVE SUPPLY-SIDE MARKET

### 3.1.1 Context

With \$1bn per annum expected to be spent on AT from 2019-20, the global AT sector is beginning to see the Australian market as a potential incubator for new technologies. This makes the Agency uniquely positioned to stimulate and support innovation in AT services and product design. The Agency can stimulate investment and innovation in AT because:

- It is a national body with significant market scale;
- It has a large investment commitment to AT;
- Its commitment to participant choice and control and outcomes focus are creating new product/service opportunities;
- It is committed to seeking technology solutions to ease pressure on the provision of physical supports; and,
- Scheme establishment has increased public awareness of and interest in the disability sector, leading to entrepreneurship and innovation in product development.

Observed market developments make innovation a strategic priority for NDIA. For example, many advances in mainstream technologies, particularly in communications and robotics, are likely to prove useful for people with disability. This is also true of emerging technology solutions in the large and growing aged care and health sectors.



## Research and development

AT research and development is well established in Australia and internationally, though coordination is needed to ensure efforts are not duplicated and lessons are shared across sectors, research communities and jurisdictions.

In Australia, the National Disability Research and Development Agenda (2011) outlines national priorities for disability-related research. The main finding of the recent Audit of Disability Research in Australia 2000-2013<sup>4</sup> was that the current disability research base is not ‘fit for purpose’ in relation to the reform agenda, and is fragmented across topics and study designs.

The audit also found that:

- research on priority topics in the National Disability Strategy, the National Disability Research and Development Agenda and the NDIS is not at critical mass;
- successful disability research funding models in other countries involve investment in strategic and priority areas; and,
- there was little involvement of, and contribution from, people with disability in the research base.

While research in the disability sector has largely been the province of tertiary institutions and the National Health and Medical Research Centre (NHMRC) agenda, tax incentives and initiatives like the Entrepreneur’s Infrastructure Programme make it possible for entrepreneurs to be more active in the sector. Opportunities exist to collaborate and co-invest in research and development efforts—for example, generic programmes could be extended or targeted to areas of particular need, and needs that are common to the disability, health and aged care sectors could be investigated in a coordinated way to generate scale economies and stimulate market activity.

Given the clear rationale for an innovation strategy and for NDIA to play a leading role in supporting market-led innovation, the AT Sector Reference Group has developed a set of principles that have been used to guide opportunity identification and strategy development. These principles, which define the NDIA strategy as open, leading, commercial and collaborative, are shown in Appendix 3.

Some examples of disability research centres

### AUSTRALIA

- Melbourne University: Centre for Developmental Disabilities Health Victoria (CDDHV) conducts research, education and clinical work
- Deakin University: Disability@Deakin researches the use of assistive technologies

### UK

- International Centre for Evidence in Disability researches the magnitude, causes and distribution of disability in low and middle income countries; the impact of disability on people’s lives; the development of scalable interventions and community-based rehabilitation; and the utilisation and management of health and rehabilitation services for people with disabilities

### CANADA

- Canadian Centre for Disability Studies conducts research guided by ‘philosophies of independent living and community living, emphasising human rights, self-determination, interdependence, equality, a cross-disability focus, and full and valued participation of the community’

### US

- National Institute on Disability and Rehabilitation Research (NIDRR) promotes ‘the transfer of, use and adoption of rehabilitation technology for individuals with disabilities in a timely manner’

<sup>4</sup> Professor Gwynnyth Llewellyn, Report of Audit of Disability Research in Australia, Centre for Disability Research and Policy, University of Sydney, May 2014

### 3.1.2 Opportunities identified by the NDIA

In the context described above, NDIA has identified two broad groups of opportunities to stimulate the market to foster the development and early adoption of innovative AT solutions, as described below.

#### A) PROVIDE A CONDUIT FOR INNOVATION

The Agency has the opportunity to create a conduit for innovation by providing clear signals on market challenges, supply gaps and opportunities that stimulate disability-specific innovation and potentially attract new market entrants. Timely, accurate market information will allow existing suppliers and market entrants to target their products and services more closely to particular needs and market segments. Good information on market potential is likely to capture the interest of suppliers in mainstream markets, whose products and services could be of value in the disability sector with minimal or no changes to functionality. This type of market-led innovation will generate significant value for scheme participants and the Agency.

#### Public bodies capturing & disseminating information

There are clear precedents for publicly funded bodies to capture and disseminate information to stimulate market innovation; examples include the Australian Government's Mineral and Energy Resource assessments, data releases from the NSW Transport Data Exchange and government-funded trade missions.

This type of market analysis is under-developed in the disability sector—a simple comparison between Australian Institute of Health and Welfare (AIHW) statistics on disability and Bloomberg, Euromonitor and IBIS data on business makes the point. This lack of good, timely information is a constraint for entrepreneurs in the disability sector.

#### Engaging people with disability

The market will operate best when people with disability are engaged in the innovation process. NDIA is well placed to ensure these voices are heard and that market information is underpinned by real examples and lived experience. In addition, as a national body NDIA

can highlight supply gaps and demand opportunities in specific markets. For example, in rural and remote areas, AT products with ultra-resilient materials and technologies are needed to respond, in particular, to the needs of Indigenous people with disability. Entrepreneurs who take up this type of challenge may also find markets in developing countries.

#### Collaborating and co-investing

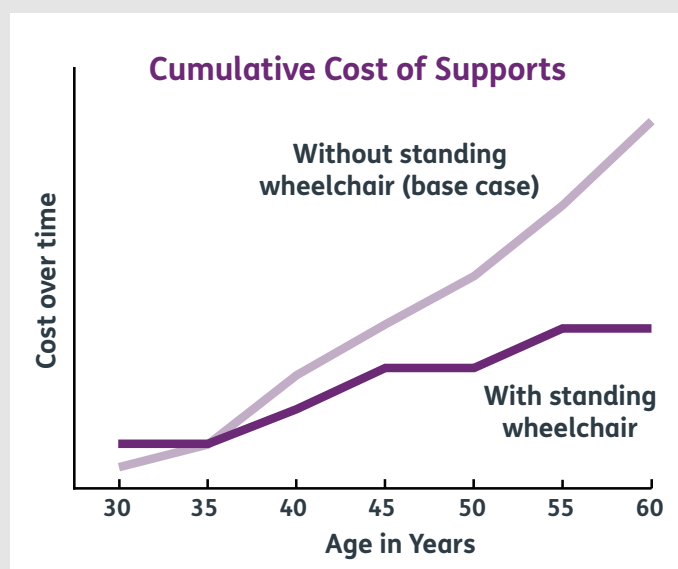
In addition, NDIA has an opportunity to provide a conduit for innovation by collaborating and co-investing with organisations in adjacent sectors such as aged care and health. This type of collaboration is likely to attract innovators and investors given the size and scope of the potential market, and will in turn deliver the best return on investment for participants and the Agency. In particular, where technologies can be leveraged to reduce reliance on face-to-face service delivery by support workers, participants will enjoy the benefits of increased independence and cost savings can be directed to other value-creating endeavours.

### EXAMPLE: RETURN ON INNOVATION INVESTMENT

A 30-year-old male with high-level paraplegia needs to stand to participate in twice-weekly vocational training. He needs 3 hours a week from a carer to support the training.

OT assessment identified a standing wheelchair as an alternative. The trial of the chair, which required a \$32,000 investment, has been successful.

The participant has improved health, social, economic and quality of life outcomes. He no longer needs personal supports (\$120 a week), standing frame replacement (\$5,000) or some home modifications (\$8,000). Breakeven in terms of return on investment was reached in around 3 years, after which the savings to age 60 are projected to be substantial.





### **Prioritise certain R&D activities**

Technology innovation—whether through novel uses for mainstream technologies, or robotics to supplement (or potentially replace) support services, or the development of exoskeletons for people with impaired mobility, to name a few—is fast-moving and leading to exciting developments. However, many ideas, with great potential, fail to make it to the prototype stage, much less commercial rollout, because of funding constraints. NDIA has a role to play, in conjunction with adjacent sectors, to understand what is happening in the field, and recommend priority R&D activities that promise the greatest benefits. This could be as the result of advocacy efforts with governments, suppliers, research bodies, health professionals and others, or by collaborating with the aged care sector or other centres of excellence (e.g. the Australian Industry and Disability Insurance Network) to support disability-specific R&D.

### **B) STIMULATE THE TAKE-UP OF TECHNOLOGY SOLUTIONS**

NDIA has an opportunity to accelerate the take-up of existing and emerging technologies, given the scale of demand at full scheme. The opportunity exists to identify, and promote, the use of technologies that were not developed for the disability sector, but could benefit people with disability and may not have been considered or tested in that context. While efforts to stimulate take-up in the past have largely been directed at people with physical disabilities, opportunities exist to further promote the use and uptake of mainstream technologies, sometimes in conjunction with specially developed apps, for the 70% of scheme participants with intellectual disabilities.

### **Strategies used by other government agencies**

Strategies used by other government agencies to stimulate technology take-up include awareness building and technology demonstration programs, information search and referral services, technical assistance and consultancy, leasing, trialling and training, and standards setting, among others. NDIA has the opportunity to embed strategies like these in participants' interactions with Local Area Coordinators (LACs) and their planners, and in scheme-deployed systems and tools to support informed choice (e.g. planning kits).

#### **Sponsoring trials**

The Agency may fund prototype technologies by 'sponsoring' participant trials and tracking their outcomes, using learning from the health sector in relation to 'curative' technologies and developing an evidence base before a trial is funded. Such trials will facilitate 'pull through' for new and emerging technologies. Technology may also be valuable in ensuring trials are responsive and participant-led.

#### **Take up of mainstream technologies**

Mainstream technologies like smartphones and tablets are offering potential solutions in some parts of the disability sector. These require further investigation and efforts to encourage take-up, given tablets and smartphones may provide similar functionality to a specialist disability device and are generally lower cost. These mainstream devices often have accessibility functions that provide an increasing range of specialist applications and are more integrated with broader community activities and needs, easier to upgrade and, more adaptable to meet a participant's changing needs.

### **Reach out to broader community**

There is also an opportunity to support the scheme with initiatives to reach out to the broader community in ways that promote the early adoption of technology solutions. For example, NDIA could co-invest and collaborate with other agencies in education campaigns or product expos, and innovation awards and accreditation programs for the disability sector.

### **3.1.3 Proposed initiatives**

The NDIA proposes to **establish an innovation hub** that provides a basis for collaboration and co-investment with researchers, like agencies (e.g. aged care), the private sector and consumer and peak bodies. The hub will have three key areas of focus:

- Capturing information and building an evidence base to encourage innovation. NDIA will collaborate with research institutions with an interest in AT and related research. A programme will be established to leverage the scheme's demand signalling data project and undertake ethnographic research with participants. The ethnographic research in particular will provide opportunities for exploration and collaboration with people with disability to capture innovations and share experiences so the best use is made of existing and potential AT solutions. The outcome will be a rich, up-to-date evidence base to identify opportunities to address Agency and participant challenges.
- Stimulating the uptake of existing, new and mainstream technologies. NDIA will support the early adopters of new technologies and new ways of using existing technologies. The Agency will, for example, support and promote multichannel access to

information, expos, and planner and participant capacity-building to ensure participants, planners and therapists are aware of and promote innovative technology solutions.

- Testing and trialling new technologies to stimulate industry solution development. NDIA will evaluate the early adoption of new technologies and new ways of using existing technologies through participant-led tests, trials and pilots, and disseminate the outcomes to promote market development and industry solutions.

The innovation hub will likely incorporate both an online and physical presence. A feasibility, scoping and governance study is underway to determine its exact structure and funding model. Co-design with scheme participants is a critical element of the strategy to ensure participants' needs and perspectives are understood and incorporated into the hub design.

## 3.2 SUPPORT & STIMULATE ACTIVE, INFORMED, PARTICIPANT-LED DEMAND

### 3.2.1 Context

People's lives are improved when they can exercise choice and control in relation to the services and supports they receive.<sup>5</sup> The NDIS design will resolve many of the challenges people with disability have faced in exercising choice around AT, given previous

**funding schemes have, by necessity, limited the subsidies available for AT, which limited many individuals' ability to choose the best solutions for them from a range of options.**

Challenges noted in the research include:

- system complexity, including multiple access pathways;
- gaps in access to some AT items;
- poor understanding of referral processes and funding streams;
- dependence on therapists and suppliers for assessment and technical expertise, coupled with delays in access to therapists and consequently to AT solutions;
- inflexible criteria for eligibility for particular types of allied health support and therefore access to funding for AT; and,
- inconsistent provision of AT solutions and long application processes—the research shows that the most significant challenges are AT affordability, inflexibility in the face of changing needs, and long waiting times for access.<sup>6</sup>

The research also shows that people who reside in rural and remote communities, and Aboriginal and Torres Strait Islander communities, have limited choice and control over access to AT solutions and products made with materials and in designs appropriate to their needs and environment.

The NDIS Independent Advisory Council, in its analysis of choice and control<sup>7</sup>, noted that the essential enablers, to overcome existing challenges are:

- access to information;
- support in decision-making;
- power over resources and relationships; and,
- the opportunity to think and dream about alternatives.

Together, these constitute the prerequisites for an effective demand-side market.

AT uptake and usage are expected to increase when demand is driven by participants' own informed decision-making — in contrast, the research suggests a 30% abandonment rate for AT when the user has had little opportunity to exercise choice and control.<sup>8</sup> In addition, innovative solutions are more likely to be generated, and to be genuinely valuable to and embraced by the disability sector, when people with disability are afforded the dignity of exercising choice, based on thinking and dreaming about alternatives to current services and resources.

Digitisation, internet access and social media have massively increased all consumers' access to information on generally available products and services. Providing the same kind of access to AT information, knowledge and experience will support people with disability to understand the available options and make informed decisions on them. Some recent progress has been

5 Harper I, Anderson P, McCluskey S, O'Bryan M, *Competition Policy Review*, final report, March 2015

6 Harris, C., Rosenwax, L., Hunter, S., & Andrews, A. (2014). An Evaluation of Assistive Technology Outcomes for Home and Community Care (HACC) Clients of the Independent Living Centre (ILC) Assistive Technology Service: Final Report January 2014. ILC WA: Curtin University. The study found that the ILC multichannel model delivers a range of benefits.

7 <http://www.ndis.gov.au/document/780>

8 Strong, J. G., Jutai, J. W., Plotkin, A. D. and Bevers, P. (2008) 'Competitive Enablement: A Consumer-Oriented Approach to Device Selection in Device assisted Vision Rehabilitation' in Mann, W. C., ed. *Assistive Technology Research Series, Volume 22: Aging, Disability and Independence*, Amsterdam: IOS Press, 175-195)

made with the establishment of networks (often on social media platforms) where information on AT can be shared and reviewed, and technology solutions can even be bought and sold ('The Roundabout' website is an example). This is a positive development but the answer is not simply more of the same—an explosion of information does not necessarily lead to knowledgeable consumers. Setting aside concerns about accuracy and credibility, flooding people with all the available information can lead to limited decision-making, with only one variable, such as price or brand, considered.

### 3.2.2 Opportunities identified by the NDIA

The NDIA AT Sector Reference Group agreed on four AT elements or cornerstones that, from a participant perspective, need to be included in the delivery of AT services. The four cornerstones of AT service delivery are:

#### **FIRST PHASE:**

**Initiation, Assessment, Solution, Selection**

#### **SECOND PHASE:**

**Authorisation, Acquisition, Sourcing and Procurement**

#### **THIRD PHASE:**

**Implementation, Delivery, Set-Up, Training**

#### **ONGOING: Follow-up and Review**

These cornerstones underpin all the service components that should be included in a participant pathway. The cornerstones are further explained at Appendix 4. From this work, the following opportunities were identified to maximise informed, participant-led demand.

### **A) ADDRESS INFORMATION ASYMMETRY ON AT CHOICES AND OPTIONS**

Suppliers and therapists generally have more information about available AT than scheme participants or their families or carers. As identified by economist George Akerlof, information asymmetries can reduce the quality of goods<sup>9</sup> so addressing these will not only increase participants' choice and control in relation to AT but should also improve the quality of future AT. This view is supported by feedback on the NDIA discussion paper disseminated to disability support providers, suppliers, allied health professionals, and participants and family members in December 2014. The feedback confirmed the need for comprehensive and current information about all AT options, including product pricing and after-sales support, to be easily accessible in a range of mediums. Participants should also be able to choose how they access and distil the information they need.

The opportunity for NDIA is to respond by using new and existing AT information and support models to provide resources to inform decision-making and optimise the use of technology solutions. Multichannel information sources – online, in person, over the phone – are needed to meet the diverse needs of individuals with different types of disabilities in locations with a variety (and sometimes a dearth) of information avenues and resources. In addition, access to intermediaries (e.g. therapists or independent experts) through a multichannel model will assist participants in the decision-making process and support informed choice and control.

### **B) SUPPORT CAPACITY BUILDING TO OPTIMISE PARTICIPANT DECISION-MAKING AND CHOICES**

The NDIA, in conjunction with the AT Sector Reference Group has developed a participant empowerment framework (see Appendix 5) that provides guidelines for increasing participants' capacity to make informed choices on AT selection, access and use. The guidelines are intended to reduce, where appropriate, participants' reliance on therapists to 'prescribe' AT on their behalf. The four elements to be considered in building a participant's decision-making capacity are:

1. The environments in which the AT solution will be used; the user's abilities and impairments; the functional impact of the solution and likely changes in the user's role or environment in the immediate future, and the implications for AT;
2. The user's ability and desire to gather, evaluate and interpret information about AT products and their specifications and functions;
3. The user's ability and desire to source and trial a technology, critically evaluate the options, and use them in a way that meets their needs; and
4. The user's ability to contact, negotiate and manage relationships with allied health professionals and/or AT suppliers.

Differences in these four areas will determine whether a participant requires more or less support to exercise the greatest possible choice and control around AT decisions.

9 Harper I, Anderson P, McCluskey S, O'Bryan M, *Competition Policy Review*, final report, March 2015

Activities to increase a participant's capacity may be undertaken ahead of the assessment and selection process or in combination with it. Whatever their capacity, most participants will need some level of professional support to select and use highly configurable and/or technically complex AT items, as is the case for technology consumers in the broader community.

### **C) ENSURE AGENCY SUPPORTS CHOICE AND CONTROL WITH AGILE PROCESSES AND SYSTEMS**

It will be important to ensure that the Agency's internal processes, systems and tools do not create their own barriers to choice and control. They need to be agile, flexible and inclusive to encourage innovation, keep up with the pace of change as technologies evolve, and maximise participants' opportunities to understand the options available and select those that will meet their goals.

As indicated in the Harper Review, 'existing laws and institutions often struggle to keep pace'. The design of full scheme operations and AT guidelines will need to balance the need for participants to be afforded the dignity of risk-taking and decision-making autonomy with policies, processes and systems that protect Scheme sustainability in a rapidly evolving technology market.

### **3.2.3 Proposed initiatives**

#### **1. Investigate and determine options for a multichannel information model**

The NDIA will analyse requirements and identify the options for a nationally consistent multichannel – online, face-to-face and phone – information model to give NDIS participants and staff access to:

- 'Look - try - discuss' information;
- Travelling tours (to regional, rural

and remote areas);

- Participant capacity building and peer mentorship programs;
- AT set-up, support and training via group workshops; and
- Technical and other support.

The model selected will be closely linked with the proposed innovation hub (see Section 3.1.1). It will leverage the NDIA's proposed eMarket platform to provide information and guidance about AT products, as well as direct links to AT providers, and will potentially host an AT self-selection tool, such as 'Ask Sara'.

One important criterion of model selection will be the provision of information about AT independent of suppliers. A recent survey of Independent Living Centre NSW users gave impartial and independent information and advice a 91.8% importance rating.

Section 3.3.4 provides an estimate of the savings expected to flow from this initiative; Section 3.3.5 describes the risks to be mitigated and/managed.

#### **2. Refine and finalise participant capacity-building framework**

NDIA will refine and finalise the participant capacity-building framework into an accessible format for NDIA planners and Local Area Coordinators (LACs), as well as Allied Health Professionals. Embedding the framework into plans will be an important component of full scheme design. The participant capacity-building framework identifies the level of participants' capacity for selection and implementation of assistive technology, then provides suggestions for building this capacity, and finally recommends a level of professional support for assistive technology selection based on participant capacity and assistive technology type.

The framework can be found in Appendix 5.

The need to credential allied health professionals in specialist areas will also be examined and detailed recommendations developed. While peer-to-peer information sharing is valuable, the niche markets and complex AT solutions and home modifications in the disability sector mean solutions are often unique in that they are the products of a multi-stage process of needs identification and customisation. They therefore cannot be rated or reviewed in a way that provides reliable, relevant valid information for large numbers of participants.<sup>10</sup>

### **3. Review NDIA policies, processes and systems to optimise support for choice and control**

The Agency is a new organisation, purpose-built to support the participant-centric, empowering philosophy that underpins the NDIS. Its policies, processes and systems have been established to support participant choice and control. However, as an agile, learning organisation, it will review its operations to ensure lessons from the trial sites and the Agency's broader engagement and research activities are used to continuously improve participants' ability to make informed decisions that improve their lives, and that this is achieved in the context of a sustainable, value-creating scheme.

To that end the Agency will:

- Introduce straight-through processing for low-risk, low-cost AT items;
- Review operational guidelines and policies to enhance agility and support for innovative solutions, including quoting guidelines, when the Agency requires allied health

10 Summary of the issue of information sharing which is NOT professionally-mediated, by Emily Steel of the University of Queensland, whose current PhD study concerns choice and information for AT users <e.steel@uq.edu.au>



professional assessment and clarification of the health and disability interface;

- Benchmark AT pricing to reduce quote submission numbers;
- Incorporate the AT participant capacity-building framework into the planning process;
- Refine and develop AT pathways, including support and training needs in reference packages, and work with actuaries to review the lifetime cost estimator to create a clear business case tool for AT investment, especially in relation to digital technologies;
- Develop procurement guidelines to trial emerging technological solutions, including governance and outcomes measurement; and
- Use single point of contact (SPOC) processes as the first point of call to support Agency staff with complex decision-

making, consistency and other process issues, and incorporate AT advisors on the Technical Advisory team to assist with clinical advice and expertise.

### 3.3 DELIVER A FINANCIALLY ROBUST, SUSTAINABLE SCHEME THAT GENERATES ECONOMIC AND SOCIAL VALUE

#### 3.3.1 Context

The third strategic priority for NDIA is AT market development in the context of the Agency's responsibility to deliver an efficient, effective and sustainable scheme. The question of AT sourcing and procurement is central to this responsibility.

The fundamental principles applied in determining the appropriate role for NDIA in sourcing and

procurement was that it should deliver outcomes that are as good, or better than, what could be achieved otherwise, and also deliver net financial benefits for the scheme (and ultimately taxpayers).

In that context, seven broad potential approaches for NDIA were examined, along a spectrum ranging from a completely free market (no intervention) to a centrally controlled market (maximum intervention). Table 1 summarises the role that would be played by NDIA in each of these approaches. Some roles are not strictly sourcing (e.g. information provider) but do influence market development, while others (e.g. buyer through tender or market panel) are traditional sourcing roles.

NDIA role in market	None: free market	Information Provider	Regulation	Buyer: tender or panel	Buyer: demand or aggregator	Buyer: 'pool model'	Producer / supplier
Description	NDIA plays no role in service delivery	NDIA facilitates engagement between participants and suppliers in the market		NDIA is an active intermediary between participants and suppliers (role in care)			NDIA is the source of AT
Nature of market intervention	None	No formal govt standards Aggregates and shares information on products, price, quality	Sets rules, standards, specifications and/or pricing for AT support items	Competitive tender process with 'winner' as preferred supplier Participant can 'opt-out'	Actively manages demand through bulk purchases	Actively manages demand and supply 'Cycles' equipment between participants	Develops, manufactures and distributes AT (potentially with a partner organisation) competitive market

**TABLE 1: Range of potential roles for NDIA in AT sourcing and procurement<sup>11</sup>**

The opportunities arising from this set of options for NDIA are discussed below.

<sup>11</sup> Based on BCG experience, Harper Competition Policy Review Chs12 &14, team interviews, state interviews

### 3.3.2 Opportunities for NDIA

Broadly speaking, the sourcing/procurement opportunities for NDIA, in the context of a sustainable value-creating scheme, are to support competitive market development anchored in participant choice and control, and to determine if, where and how to intervene in the market to optimise value for participants and economic returns for the scheme.

The opportunities and the approach taken to crystallising them are outlined below.

#### **A) SUPPORT COMPETITIVE MARKET DEVELOPMENT CENTRED ON PARTICIPANT CHOICE AND CONTROL**

Comprehensive, timely, accurate and accessible information is the prerequisite for a well-functioning AT market. At present, such information is not available to participants, including their families and carers, or to allied health professionals and suppliers.

The opportunity for NDIA is to actively address information asymmetry. This opportunity and the initiatives to realise it are described in Sections 3.2.2 and 3.2.3. Implementation is expected to lower search costs, promote choice, empower good purchasing decisions, increase transparency and improve supplier performance through feedback based on data collection and analysis.

In addition, NDIA has a related opportunity to provide quality assurance for certain categories of AT, where that will improve product quality and consequently value for money (with value defined as both social and economic). This would see NDIA setting rules, standards, specifications, and/or pricing for selected AT support items. Analysis performed in developing the AT strategy suggests this approach will

be applicable for AT categories that account for approximately 10% of AT expenditure.<sup>12</sup>

#### **B) INTERVENE IN THE MARKET WHERE THAT OPTIMISES VALUE FOR PARTICIPANTS AND ECONOMIC RETURNS FOR THE SCHEME**

AT covers a very wide range of products, devices and technologies used by a diverse group of people with equally diverse desires and needs. Some parts of the market are consolidated, with large suppliers producing similar products; others are fragmented, with small suppliers producing highly customised products. Some products are sophisticated and rapidly evolving; others less so. Some are produced for the disability sector only; some for the mainstream market.

In the face of such diversity on both the demand and supply sides, the opportunity for NDIA is to select the level of market intervention for the right categories of AT (rather than adopt a universal approach to the role it plays in the market). The guiding principle for that selection is to maximise value for participants and economic returns for the scheme. In addition, the role selected must be congruent with NDIA's first two strategic priorities: to support the development of an innovative AT market and participants' ability to exercise informed choice and control in that market. In that context, any market intervention should be the minimum necessary to meet the objectives of participant and scheme value.

To crystallise this opportunity and enable the development of practicable initiatives to realise it, 375 AT items were grouped into 33 marketable parcels to provide a basis for considering what role NDIA should play in their sourcing

and procurement. For example, 29 continence support items<sup>13</sup> that account for an estimated annual expenditure of \$230 million (or around 25% of total AT spend)<sup>14</sup> were grouped into one marketable parcel on the basis that they are provided by similar suppliers and are all consumables with similar lifecycles of use.

To determine the right role for NDIA in each of the AT parcels, they were mapped based on, first, the importance of choice as a function of customisation level and participant ratings; and, second, the value potential from central sourcing as a function of scale sufficiency (i.e. whether the proportion of total spend on the category is sufficient to justify market intervention), potential scale benefits (i.e. whether, based on savings generated by central sourcing at the state level are substantial), and reissue potential (i.e. whether the item might be reissued to another participant—a child-sized wheelchair that the user has outgrown would be an example). This allowed the development of hypotheses on the right level of market intervention for each parcel. The hypotheses were tested and validated through 'deep dive' analysis for each parcel, including:

- Refining the estimated value potential from central sourcing through detailed analysis of data from existing tender/panel arrangements and pool models;
- Refining the estimated importance of choice for high-value parcels (e.g. continence products and wheelchairs) through participant interviews and other engagement models;
- Analysing the market landscape in every Australian state and territory; and
- Developing a high-level business

<sup>12</sup> See below for the approach to categorizing or bundling AT items.

<sup>13</sup> Examples include adult absorbent pull ups, child nappies, single-use inserts

<sup>14</sup> Estimated annual AT expenditure, linearly extrapolated from committed trial site funding based on NDIA actuarial team assumptions.

case for parcels requiring government intervention, including estimated financial and non-financial benefits, up-front and on-going costs and risks.

This work resulted in an initial sourcing model for each parcel, including estimated costs, benefits, risks and risk mitigation strategies. In its role as market steward and as a category manager of AT, the NDIA will monitor outcomes and adjust sourcing models if required.

### 3.3.3 Proposed initiatives<sup>15</sup>

#### 1. Employ a differentiated AT sourcing approach based on product bundling

NDIA will centrally source 14 of 33 AT parcels (accounting for around 50% of AT expenditure) but participants may choose to opt in or out of sourcing their AT through NDIA. The approach to central sourcing will differ by parcel:

1. A tender or panel will be adopted for two parcels (approx. 30% of AT expenditure) to lower prices by leveraging scale; and,
2. A pool model, where AT is initially purchased through a tender or panel, will be adopted for 12 parcels (approx. 23% of AT expenditure) to increase utilisation and reduce wait times.

Where possible, NDIA will run joint tenders with other agencies to maximise scale efficiencies.

Table 2 shows the categories (marketable parcels) where the recommended initiative is to centrally source either through a tender/panel alone, or in combination with a pool model, where AT is initially purchased through a tender or panel.



Sourcing model for NDIA as buyer	Marketable parcels	No. support items	Estimated annual spend in full scheme (% total) <sup>16</sup>
Panel or tender	Continence products	27	\$230m (~25%)
	HEN products	13	\$14.7m (~2%)
Pool	Bathroom products	47	\$29.9m (~3%)
	Prams & strollers	4	\$22.7m (~3%)
	Hoists and slings	11	\$19.6m (~2%)
	Ceiling hoists and lifts	5	\$14.6m (~2%)
	Air cushions	4	\$7m (~0.8%)
	Postural support (off-the-shelf)	9	\$28.6m (~3%)
	Commercial tablets	2	\$28.5m (~3%)
	Walking equipment	21	\$17.1m (~2%)
	Pressure mattresses	4	\$14.6m (~2%)
	Beds	20	\$34.2m (~4%)
	Standing frame	5	\$13.4m (~1%)
	Basic wheelchairs	10	\$10m (~1%)
Totals	14 parcels	182	~\$485m (~53% <sup>2</sup> )

**TABLE 2:** Recommended AT parcels for central sourcing, and annual spend by parcel

<sup>15</sup> The proposed initiative to address information asymmetry is described in Section 3.2.3

<sup>16</sup> Annual AT expenditure by marketable parcel at full scheme, linearly extrapolated from committed trial site funding, based on NDIA actuarial team assumptions

For 15 other marketable parcels, NDIA will not intervene in the market beyond its information provision role (Table 3).

**TABLE 3: Recommended AT parcels for a free market, and annual spend by parcel**

Sourcing model for NDIA	Marketable parcels	No. support items	Estimated annual spend in full scheme (% total) <sup>17</sup>
<b>Free market</b>	Other assistive devices	10	\$15.9m (~2%)
	Low vision equipment	26	\$10m (~1%)
	Adapted recreation equipment	9	\$8.1m (~1%)
	Alarms	8	\$5.2m (~0.6%)
	Environmental control	7	\$3.7m (~0.4%)
	Sleep system	1	\$3.3m (~0.4%)
	Orthoses & footwear	3	\$2.2m (~0.2%)
	Standard home fixtures and fittings <sup>2</sup>	1	\$2m (~0.2%)
	Change tables	2	\$2.1m (~0.2%)
	Transfer equipment	8	\$2.0m (~0.2%)
	Therapeutic splints	2	\$0.6m (~0.1%)
	Bespoke wheelchairs	30	\$160m (~17%)
	Custom wheelchairs	18	\$95m (~10%)
	Other ICT equipment	32	\$19.5m (~2%)
	Scooters	5	\$11.7m (~1%)
<b>Totals</b>	<b>15 parcels</b>	<b>162</b>	<b>~\$342m (~37%3 )</b>

NDIA will play a regulatory role in the sourcing of four marketable parcels (Table 4).

**TABLE 4: Recommended AT parcels for a regulatory role, and annual spend by parcel**

Sourcing model for NDIA	Marketable parcels	No. support items	Estimated annual spend in full scheme (% total) <sup>18</sup>
<b>Regulatory role only</b>	Orthoses & footwear (custom-made)	15	\$58.0m (~6%)
	Postural support (custom-made)	5	\$19.9m (~2%)
	Guide dogs	9	\$12.6m (~1%)
	Prostheses	8	\$7.0m (~1%)
<b>Totals</b>	<b>4 parcels</b>	<b>31</b>	<b>~\$97m (~10%2)</b>

Implementation of the differential resourcing model will deliver improved outcomes for participants as well as a positive financial impact for the scheme (see Section 3.3.4), as outlined below.

First, for all centrally sourced AT parcels, the recommended approach will enhance participants' ability to choose products that meet their needs by offering an appropriate range of pre-tested products from a tender or panel, based on merit (superior quality, competitive price). In addition, the multichannel information portal (see Section 3.2.3) will enable simple, accessible product and service comparisons (including on price, specifications and participant ratings). NDIA will measure the percentage of participants who elect to source AT from this range of products to determine the success of this approach and make refinements where required.

Second, the recommended approach will improve product and service quality in highly technical AT parcels (e.g. prostheses and orthoses). NDIA's regulatory role will achieve this by regulating product and service quality, improving supplier performance on the basis of feedback through the information portal, and improving quality through ongoing tender or panel processes where relevant. NDIA will measure the success of this approach by collecting and analysing participant satisfaction ratings for relevant products or services, using the multichannel information portal.

Third, the recommended approach will reduce waiting times for AT parcels with a high reissue value (e.g. beds, walking equipment). It will do so through the operation of a responsive 'pool' model that meets real-time participants' needs using refurbished products and devices, as well as through well-

<sup>17</sup> Annual AT expenditure by marketable parcel at full scheme, linearly extrapolated from committed trial site funding, based on NDIA actuarial team assumptions

<sup>18</sup> Annual AT expenditure by marketable parcel at full scheme, linearly extrapolated from committed trial site funding, based on NDIA actuarial team assumptions



functioning tender and/or panel arrangements that track and meet participants' AT needs. NDIA will measure wait times to understand trends and refine the approach as appropriate to underpin continuous improvement.

## **2. Develop the organisational capability and governance needed to ensure scheme sustainability and value creation**

The following internal conditions need to be established for NDIA to successfully implement the differentiated sourcing strategy required for scheme sustainability and value creation:

- The organisation structure for sourcing and procurement should be the minimum sufficient to provide end-to-end accountability for AT category and sourcing management, and should also be aligned with the overarching NDIA sourcing model and approach, as well as leverage existing shared services (e.g. Contract Management Office).
- The governance model for sourcing and procurement should dictate regular interaction with the NDIA Board to ensure ongoing strategic alignment with the overall Agency vision and objectives; the sourcing and categorisation approaches should be subject to independent annual review, including through engagement with participants and suppliers; and strong relationships should be established with participants and suppliers (potentially delivered through IAC) to encourage honest and constructive feedback.
- Sourcing roles and responsibilities should be clearly defined across every layer of the organisation; and skills

and capabilities aligned with responsibilities.

- Capabilities in category management should be developed across all parcels to monitor participant needs, outcomes, trends and market capabilities; and skills in pricing and regulation, sourcing, supply chain management and product development developed and/ or acquired for those parcels where more market intervention is required.

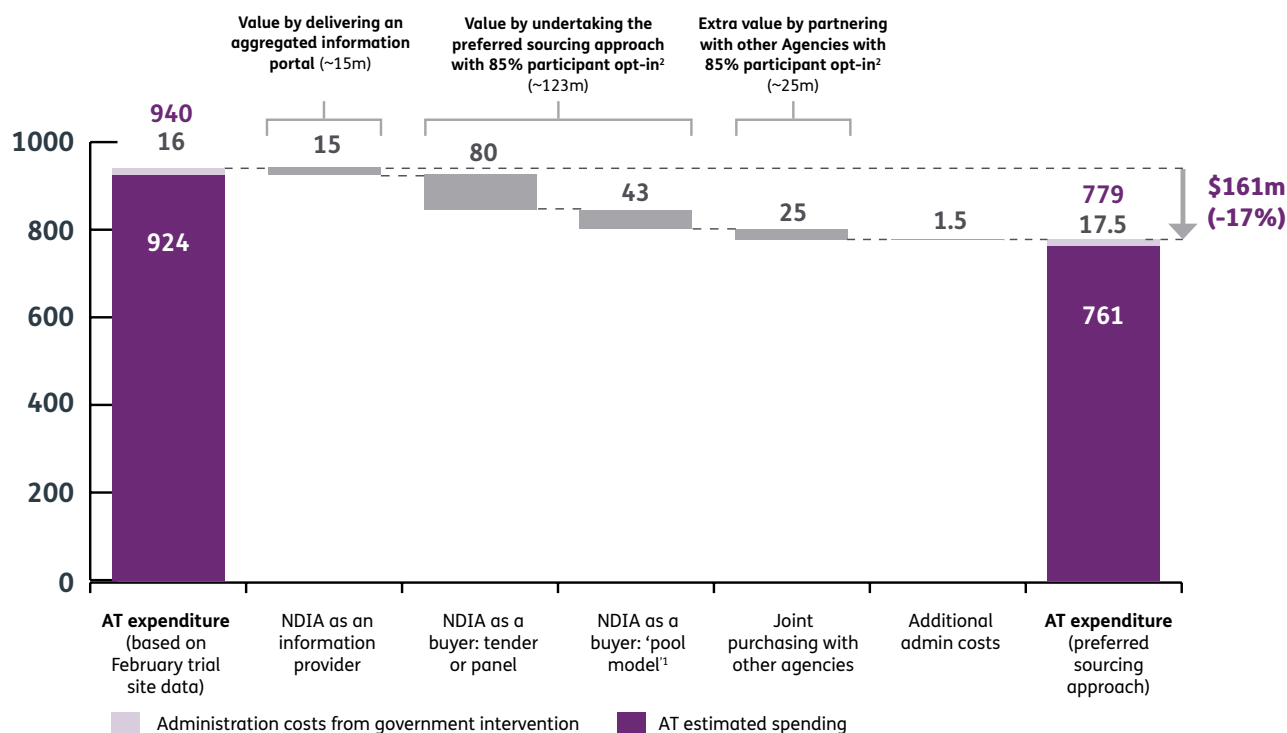
### **3.3.4 Financial impact of implementing differential sourcing**

As well as the improved outcomes for participants described above, implementing the proposed sourcing initiatives will deliver the Scheme net incremental financial benefits of an estimated \$161 million per annum by FY19-20 (Figure 3) and more than \$1.2 billion over 10 years (Figure 4). These are conservative estimates based on observed savings with the implementation of analogous initiatives in Australia and elsewhere, economic modelling using NDIA actuarial estimates and an 85% opt-in rate for centrally sourced items, compared with an observed rate of over 90% in similar schemes.

It should be noted that the baseline, annual expenditure on AT (forecast to be \$0.94 billion by 2020), was calculated assuming that, in the absence of a new strategy, the current state (where NSW, Vic and SA are leveraging existing state schemes and the benefits of their procurement contracts and reissue pools) would be able to be maintained to support the NDIS at full scheme.

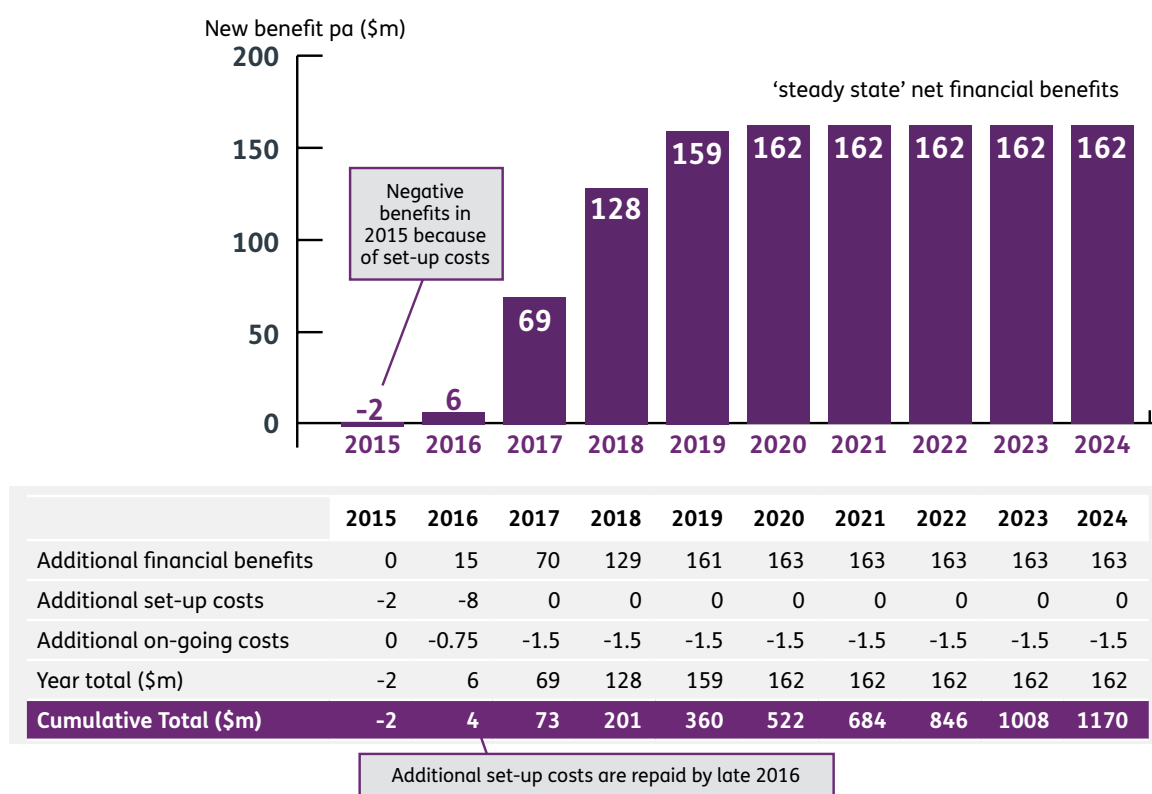
The financial benefits will be delivered through the following means:

- The multichannel information portal for all AT will facilitate better choices and lower prices, delivering an estimated \$15 million per annum;
- Scale purchasing through tenders or panels for an estimated 30% of AT will deliver \$80 million per annum; and
- Higher AT utilisation through pool models for an estimated 23% of AT, where AT is initially purchased through a tender or panel, will deliver an estimated \$43 million per annum.
- In addition, joint tenders with other government agencies could drive further scale benefits in the order of \$25 million per annum.



1. In all pool models, any new AT is purchased through a tender/panel to leverage scale benefits. 2. Assumed opt-in rate based on South Australian (~80% opt-in) and NZ sourcing models (~90% opt-in).  
**Note:** There are no parcels where sourcing model 5 (demand aggregator) and model 7 (NDIA as a producer) were deemed suitable.  
**Source:** BCG analysis; NDIA actuarial estimates (July 2013 – February 2015); NDIA AT workshops (April, May and June 2015); interviews with state schemes, SMEs, participants (April, May 2015); AT volume and price data from all 8 states and territory programs; A&E Working Group meeting (May 2015)

**FIGURE 3: Net savings breakdown and estimated annual AT spend in FY19-20**



**Source:** BCG analysis; NDIA AT workshops (May, June 2015); NDIA AT Participant Usage data (May 2015); Cost estimates from DES (SA) for ‘pool model’ (FY 13-14); Cost estimates from DES for joint tender with Victoria (2013-14)

**FIGURE 4: Additional net economic benefits from AT sourcing initiatives, 10-year profile**

### 3.3.5 Risks and mitigation approach

There are a number of reasons this AT strategy may not achieve its strategic priorities and lead to (1) participants not being able to access appropriate AT supports, and/or (2) expenditure on AT being unsustainable for the NDIS. Below is a brief list of how to mitigate and handle risks and problems that may arise to ensure that the benefits for participants and the scheme are delivered in full:

- Failure to agree to transition arrangements and the loss of expertise and benefits of state and territory schemes can be mitigated by continued engagement and ongoing sharing of knowledge between programs.
- Failure to deliver based on a lack of sourcing management capability in NDIA, can be mitigated by going to the market to recruit suitably skilled and experienced people and drawing on external expertise;
- Failure to implement the strategy based on organisational or other internal barriers, can be mitigated through clarification of, and early agreement on, roles, responsibilities and accountabilities for implementation across the Agency;
- Failure to implement based on poor stakeholder understanding of, and support for, the strategy, can be mitigated through a comprehensive, on-going stakeholder engagement strategy;
- Market-stifling collusion in less competitive AT markets with implementation of the multichannel information model, can be mitigated by ensuring barriers to participation are low (e.g. through easy registration on the website) and drawing on expert advice;

- Constraints on choice as a result of a narrow product set in the tender/panel models, can be mitigated by including participants in the product selection process, coupled with the opt-out provision;
- Failure to achieve the projected financial benefits from the pool/tender models based on a low opt-in rate, can be mitigated by limiting participant funding to the pool/tender price for the same item; and
- Failure to deliver projected benefits based on low reissue rates based on inadequate incentives and capabilities can be mitigated through competitive tenders, strict service KPIs and non-conformance penalties.

Given changes of the nature and magnitude described here—in particular the approach to AT sourcing—a structured, phased approach to implementation will be critical to success. NDIA has developed a three-year implementation roadmap for each element of the AT strategy, including stakeholder consultation; governance, organisation, process and capability changes; and the work needed to finalise, build and operationalise the innovation hub and multichannel information model.

Implementation will be closely monitored, with the plan adjusted and refined as required, based on outcome metrics.



# Appendices



## APPENDIX 1 STRATEGY DEVELOPMENT

Development of the strategic framework and initiatives in the AT strategy was informed by:

- NDIA 2013-16 Strategic Plan;
- 'Research for National Disability Agreement Aids and Equipment Reform' (Jenny Pearson & Associates, 2013);
- 'Price Disparities for Disability Aids and Equipment' (Queensland Competition Authority 2014);
- **Report and Discussion Document** on the Scoping of State and Territory Aids and Equipment Services (Jackie Hiller-Broughton & Heather Browning, NDIA, April 2014);
- EMG paper 'Transition to sustainable national aids and equipment provision in the NDIS', presented 7 October 2014;
- NDIA discussion paper 'Towards Solutions for Assistive Technology' (December 2014);
- The findings and recommendations of a team from The Boston Consulting Group, which worked in collaboration with an internal team to develop the AT sourcing strategy; and
- The Australian Government *Competition Policy Review* (Harper Review), March 2015.

## APPENDIX 2 MEMBERSHIP OF AT REFERENCE AND WORKING GROUPS

### AT Sector Reference Group

Chair = Mary Hawkins, Branch Manager, Supports and Services.

Membership includes a nominated representative from each of the following;

- i. Francis Vicary – nominated by NDIA Advisory Council
- ii. Damian Griffiths – nominated by First Peoples Disability Network – FPDN
- iii. Sean Fitzgerald – nominated by Disability Advocacy Network Australia Ltd – DANA
- iv. John Harmer – nominated by South Australia NDIA (nomination of person with a disability sought from a launch site)
- v. Chris Sparks / Dr Michael Summers – nominated by Assistive Technology Suppliers Australasia – ATSA
- vi. Dr Natasha Layton – nominated by Allied Health Professionals Australia – AHPA
- vii. Dr Lloyd Walker – nominated by National Committee on Rehabilitation Engineering – NCRE
- viii. Sandra Lowe – nominated by Independent Living Centres Australia – ILCA

- ix. Dr Anthony Hobbs – nominated by Therapeutic Goods Association
- x. Bev Freeling – Carer Representative nominated by South Australia NDIA (in lieu of representative from Carers Australia)
- xi. Tony Spano – nominated by DVA
- xii. supported by Heather Browning and Jackie Hiller-Broughton – Project Managers.

### Aids and Equipment Services Working Group

Chair = shared between Project Managers Jackie Hiller-Broughton and Heather Browning

Membership included a Manager from each of the Jurisdictional Aids and Equipment Schemes.

- xiii. South Australia – Matthew Massy-Westropp
- xiv. Victoria – Jeni Burton
- xv. New South Wales – Maria Passarello / Bronwyn Scott
- xvi. Tasmania – Peter Maree
- xvii. Queensland – John Vasil
- xviii. Northern Territory – Valli Camara
- xix. ACT – Michael Keen
- xx. West Australia – Linda Higgie / Linda Sperring



## APPENDIX 3

### PRINCIPLES FOR OPPORTUNITY IDENTIFICATION AND STRATEGY DEVELOPMENT

The AT Sector Reference Group developed the following principles to guide innovation opportunity identification and strategy development

#### OPEN

Successful AT sector innovation depends on openly **encouraging and capturing ideas** and concepts. There are many potential contributors, from our community, professionals in the AT system, and environments (including international) who can contribute. Opportunities and creative thinking can emerge **from unexpected outcomes** which a successful AT innovation approach will have the **mechanisms for stimulating, seeking, evaluating and capitalising** on these.

#### LEADING

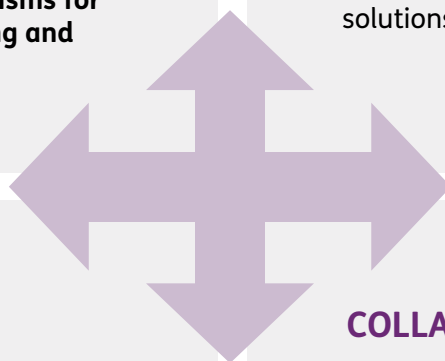
The **NDIA is a leader** in guiding the policies and outcomes of other agencies and bodies to **deliver optimal access and support** to AT development. This will mitigate the potential for the constraining effects of fragmented policy and regulations. It will also lead and facilitate collaboration and creativity and promote all efforts to deliver innovative and novel AT solutions for people with disability.

#### COMMERCIAL

The NDIA recognises that innovation **is best stimulated in private markets**, and so will embrace the opportunity to work with stakeholders from all sectors, including a broad spectrum of private sector players **from start-ups to corporates** in order to drive the development of scalable AT solutions.

#### COLLABORATIVE

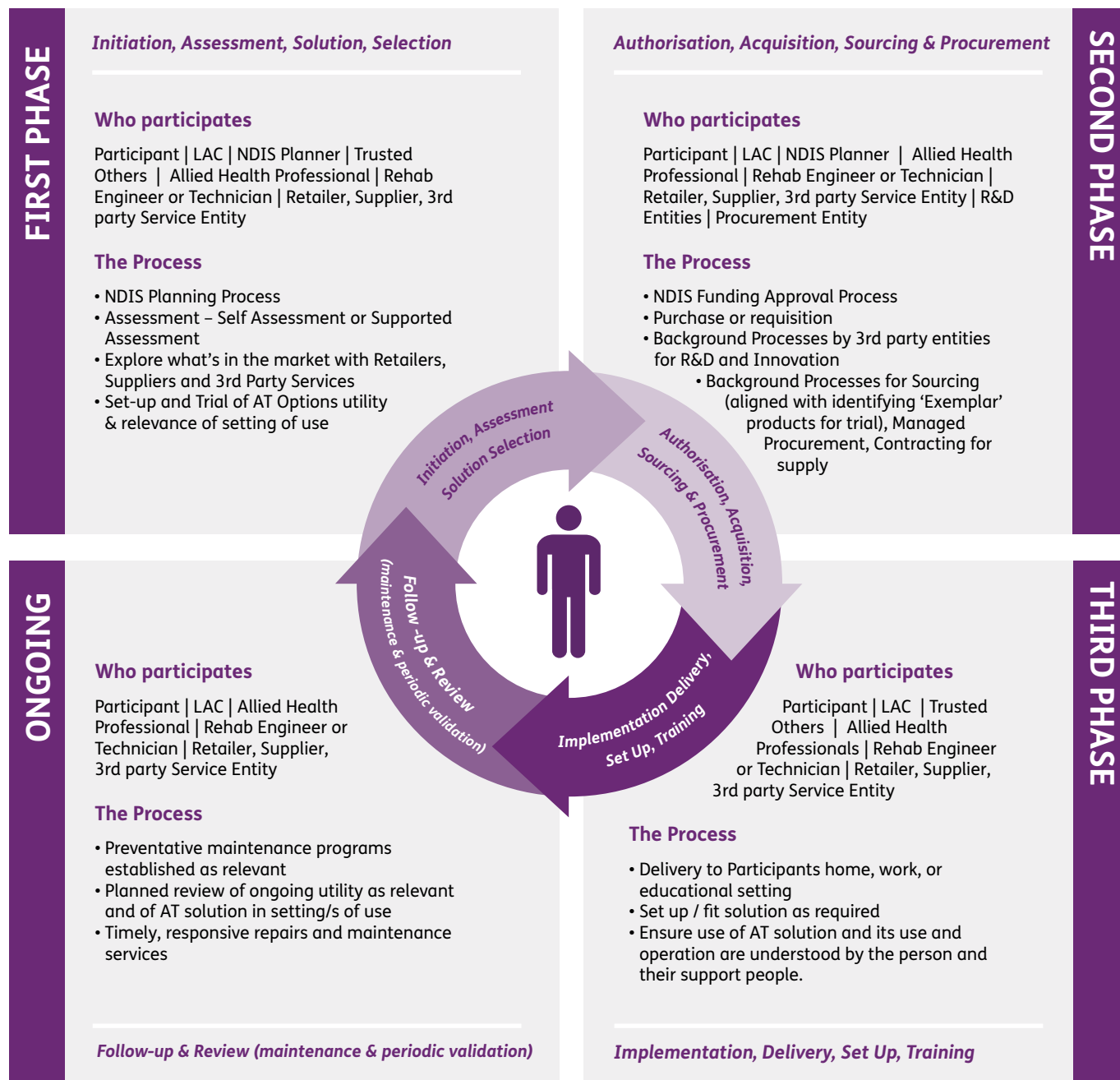
The NDIA is a **facilitator and enabler** to form and strengthen links and partnerships. The NDIA promotes collaboration between existing stakeholders, innovation centres and clusters, particularly engaging with AT users. These virtual or physically co-located groups have the capacity to address AT innovation projects/areas, yet be flexible enough to **share and adapt to the rapidly changing demands and expectations of participants**.



## APPENDIX 4

### CORNERSTONES OF AT SERVICE DELIVERY

The AT Sector Reference Group agreed on four AT elements or cornerstones that, from a participant perspective, need to be included in the delivery of AT services





## APPENDIX 5 PARTICIPANT CAPACITY-BUILDING FRAMEWORK

### Overview of tools and approach

The proposed NDIA Assistive Technology Assessment Framework starts with the participant's capacity to assess and select assistive technology solutions. Next, capacity building activities are considered. Finally the need for professional support to select assistive technology products is considered in light of the participant's capacity.

### Three simple tables

**Table 1** - Aims to assist a participant in determining the level and type of support they require to make effective assistive technology product selections. It can also be used to identify the type of supports that could be used to increase the participant's capacity to make more independent choices or to engage more actively in assistive technology selection.

The participant could do this independently or they could be supported to evaluate their expertise in each area.

### Using the Tables 2 and 3

#### STEP 1:

Evaluate the participant's current skills knowledge and capacity for self-directing assistive technology solutions. Looking at Table 1, column A, work down the column and circle the description that best describes the participant's current experience and life circumstances in relation to making assistive technology product choices. Repeat this process for columns B, C, and D.

#### STEP 2:

For participants with current skill levels of 'novice' or 'developing' consider how the participant's capacity may be enhanced using Table 2. These capacity building activities may be implemented by an allied health professional employed to assist in assistive technology product selection and solution design or they may be implemented independently.

#### STEP 3:

Using Table 3 make a recommendation in regards to the level professional support required. Consider the persons current capacity, capacity building activities and the equipment's complexity.

**TABLE 1: Levels of participants' current capacity in relation to AT selection and implementation**

Current capacity	Experience using AT, current circumstances and understanding of impact of impairment	Ability to access AT information	Access to suppliers and trial equipment	Capacity and experience self-directing AT choices
<b>Novice</b>	<p>The person has little experience using AT or their needs, goals, or living situation are new or changing significantly. For example:</p> <p>Onset of the condition or impairment is recent</p> <p>There are recent significant changes such as improvement or deterioration in condition</p> <p>The person is entering a period of significant life transition</p>	<p>The person is unable to access information about the AT and its expected impact. For example:</p> <p>They have significant difficulty accessing or understanding information. E.g. due to illiteracy</p> <p>They do not have access to the internet or alternate information sources</p> <p>Meaningful information about the relevant AT is not available or is not applicable to their situation</p>	<p>The person does not have ready access equipment for trial for an effective period. For example due to:</p> <p>Living remotely</p> <p>The Assistive Technology solution required is usually customised or custom made for their needs</p> <p>The equipment is not available in Australia</p>	<p>The person has not previously made AT choices or engaged with a supplier. OR</p> <p>The person will require substantial support to indicate their preferences or make AT choices</p> <p>OR</p> <p>The person has behaviours of concern which impact decision making or negotiating and engaging with a supplier</p> <p>OR</p> <p>The person's circle of support lacks sufficient experience or capacity to assist</p>
<b>Developing</b>	<p>The person has experience using AT to meet their needs that is not directly applicable. For example there is:</p> <p>A gradual change in condition for example due to ageing</p> <p>A change in place of work or study or moving to a new but similar home</p> <p>A significant development in the availability or type of AT the person can access</p>	<p>The person is able to access some information about AT but it is less than optimal in some way. For example the person needs:</p> <p>Assistance to find available electronic information</p> <p>Support to access information lines or to request assistance from suppliers</p> <p>Help to navigate, distil and evaluate the amount of information available</p> <p>Help to work out a strategy to fill information gaps</p>	<p>The person can access trial equipment but trial is not optimal due to:</p> <p>Exact model is not available to trial</p> <p>Equipment could not be trialled in all environments</p> <p>Equipment could only be briefly trialled and the trial time is insufficient to demonstrate its effects and limitations.</p>	<p>The person has not previously directed AT choices but has directed other supports. OR</p> <p>The person requires some support to set up effective trials such as interacting with suppliers/ allied health but can then make AT choices and engage a provider</p>
<b>Expert</b>	<p>The person has significant experience using AT for an impairment that is stable or changing minimally. Their environments of use and life circumstances are not significantly changed and the developments in the AT are incremental.</p>	<p>The person is adept at finding information, distilling it and evaluating it. E.g. the person can find and sort information and distinguish between marketing claims and information which may demonstrate effectiveness. The person is able to identify information gaps and devise a strategy to fill them.</p>	<p>The person has had access to an optimal trial. A trial can take place in the person's place of intended use for sufficient period to make decision about effectiveness. OR</p> <p>The Assistive Technology solution is replacing an effective item with a like product.</p>	<p>The person has previously made effective AT choices and managed engagement with all provider(s)</p>



**TABLE 2: Suggestions for building participant capacity**

Participant's relevant AT experience in relation to their needs	Participants ability to access AT information	Participants access to trial equipment	Participants capacity and experience self-directing AT choices
<p>Consider pairing the participant with a peer mentor who can discuss or demonstrate AT they are using.</p> <p>Ask an Allied Health Professional or other Assistive Technology Service Provider with experience in Assistive Technology for the type of disability, to discuss how Assistive Technology may assist in achieving planned goals, and related factors of relevance (e.g changes in condition)</p> <p>Consider the relevant resources available to the participant to increase their knowledge of strategies and experiences of others with a similar disability such as fact sheets, internet resources etc.</p>	<p>Introduce the participant to web based resources including the Independent Living Centres sites, Ask Sara etc.</p> <p>Introduce the participant to help lines for example Independent Living Centre</p> <p>Provide a list of relevant Assistive Technology service providers with a guide sheet on "Key Questions to Ask"</p> <p>Provide personal support to access the internet, sort information and identify information gaps</p> <p>Participate in capacity building workshops which include information about how to critically evaluate information</p> <p>Create opportunities to have allied health professionals available as coaches</p>	<p>Assist the participant to identify suppliers who have display or trial stock</p> <p>Introduce the participant to Independent Living Centre display centres and rural mobile services</p> <p>Link participants to other people with equipment they can try</p> <p>Assist the participant to identify suitable length and location of trials and strategies to negotiate this with a supplier</p> <p>Hire equipment and negotiate to deduct the hire from the cost of equipment if selected</p> <p>Negotiate trial of like stock or a mock-up of equipment that helps the participant determine effectiveness.</p>	<p>Encourage the participant to self-direct low cost, non-complex and low risk AT choices in the first instance.</p> <p>Provide a mentor or other support to rehearse steps or implementation /negotiation activities</p> <p>Develop participant skills and understanding through their active partnerships and engagements with a range of entities involved in the Assistive Technology supply chain and its management</p>

**TABLE 3:** Recommended level of professional support for assistive technology selection based on participant capacity and assistive technology type

Complexity of Assistive Technology	Participants status following capacity building	Allied Health Professional Recommendation	Additional direction to allied health professional	Supplier recommendation
<b>Custom Made Solutions</b> The AT is custom made for the person by an expert provider. e.g. Prosthetic Limbs, Orthotics, Specialist Seating & Postural Support and other bespoke solutions	Novice participant	Specialised AT Assessor AHP with demonstrated experience, competence or additional qualification in specific AT area. If not available (i.e. rural or remote) ensure active supervision from suitably qualified AHP  *Could also access an AT mentor for additional support	Capacity building activities should be added to the assessment time.	Specialist Assistive Technology Supplier and / or Fabricator / Manufacturer  Access to specialist workshop and equipment. Experienced /specialist staff directly employed and/ or contracted Promotes a multidisciplinary approach. Supplier will repair and maintain AT.
	Developing participant		Where possible, capacity-building activities targeted to areas of need in order to progress to expert status.	
	Expert participant		Assessment only, assessor should be aware of and adapt approach to account for participant expertise	
<b>Complex Solutions</b> The AT is 'off the shelf' but is configured specifically for the person  OR requires interconnection or integration with other AT or the persons home/work/ place of study,  OR carries significant risk e.g. pressure care, modular seating, complex wheelchairs, communication devices	Novice participant	Specialised AT Assessor AHP with demonstrated experience as described above *Could also access an AT mentor for additional support	Capacity building activities should be added to the assessment time.	Specialist Assistive Technology Supplier (incl. Refurbishment Supplier)  Focus on supplying AT for PWD and older Australians. Experienced /specialist staff directly employed and/ or contracted Promotes a multidisciplinary approach. Supplier will repair and maintain AT.
	Developing participant		Where possible, capacity-building activities targeted to areas of need in order to progress to expert status.	
	Expert participant	Optional - Specialised AT Assessor as described above *Could also access an AT mentor for additional support	Assessment only, assessor should be aware of and adapt approach to account for participant expertise	
<b>Standard Products and Solutions</b> AT product is available 'off the shelf' and either needs minor adjustments or straightforward training (i.e. adjust shower chair legs, instruct in use) e.g. basic commodes, basic folding wheelchairs, mobile hoists, adjustable bed	Novice participant	AT assessor with relevant professional qualification *Could also access an AT mentor for additional support	Capacity building activities suggested in table 2 should be added to the assessment time.	Range of Suppliers Including; Retail Specialist Suppliers Refurbishment Services
	Developing participant	Optional - AT assessor with relevant professional qualification. *Could also access an AT mentor for support or other capacity building	Professional may assess, provide capacity building or support first time self-assessment.	
	Expert participant	Participant Self-Assessment	NA	
<b>Basic</b> Mass-produced commonly available items such as non-slip bath mats, built up cutlery.	Novice participant	Participant Self-Assessment	Could be directed to an AT Mentor or ILC for additional support	Retailer And range of suppliers with various expertise
	Developing participant		NA	
	Expert participant		NA	



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