Technological advances are occurring rapidly ... service providers have to be adaptable to capture the benefits of the new, although not so fast to engage with the new that they embed systems that may become redundant soon after.

IMPLEMENTING SMART ASSISTIVE TECHNOLOGIES: ORGANISATIONAL PERSPECTIVES

SUPPORTING PEOPLE WITH DISABILITY

Purpose:

This paper presents the key organisational influencers of successful smart assistive technology implementations in a disability service setting.

Reading time:

15 minutes

In 2009, 4 million Australians (18.5% of the population) had some form of disability. Of those, 1.3 million (5.8% of the population) needed help with core activities. While many people with disability are able to live independently and participate in society without assistance, or with the help of informal carers, others require formal specialist disability services and support to study, work, interact with the community, or carry out everyday activities. The number of people using disability support services grew by 29% (to around 317,600 people) over the 5 years to 2011–12. (AIHW 2013)

4 In 2009, **4 million** Australians had some form of disability

1.3 million needed help with core activities

In 2009, it was reported that a total **of 2 million people** used aids and equipment, needed because of disabling conditions.

The number of people using disability support services grew by 29% in 2011–12

One in ten Australians (40% of people with a disability) use and rely on aids and equipment

Almost $\frac{1}{2}$ of people aged under 65 with severe or profound core activity limitation living in the community have contacted formal services for help

Of these, the most common activities of support were:

Help with communication (65%)

Support with cognitive and emotional tasks (63%)

Use of aids and assistive technologies

The Disability, Ageing and Carers (SDAC) Survey (Australian Bureau of Statistics, 2009) identified that there is a range of aids and technologies that are used to assist and support people who wish to remain in their own homes. In a broad sense, assistive technology refers to any device designed, made or adapted to help a person perform a particular task. Products may be specifically produced or generally available for people with a disability (World Health Organisation, 2011). The intersection between technology and disability is a complex issue for a number of reasons; as technology can be a barrier or a means to independence and participation in the community.

Assistive technologies form an important component of recent strategic and policy direction in Australia, principally resulting from the available evidence indicating that access to assistive and mainstream technologies results in greater levels of engagement between people with diverse abilities (Filed & Jette, 2007). In addition, service providers have begun to embrace assistive technologies as a cost-effective means to improve the quality and safety of care, particularly in locations where appropriate staff and expertise is limited.

> The role of government in facilitating increased adoption of assistive technologies is still evolving.

To some extent, the role of government in facilitating increased adoption of assistive technologies is still evolving. Existing government policies in Australia provide general direction towards including assistive technologies in disability services, but the policies currently lack the systematic planning which is necessary to facilitate the introduction of these technologies into current service delivery models. The challenge here will be transforming these general statements into policies that specify a detailed and well structured plan to roll out well-integrated assistive technology services to meet the needs of consumers.

DisabilityCare Australia (the National Disability Insurance Scheme) is utilising a very different approach to service provision compared to previous regimes of block-funded service, adopting a strong emphasis on participant control and individualised funding, potentially providing greater capacity for the inclusion of assistive technologies within individualised funding packages.

What is clear is that technological advances are occurring very quickly. Funders and service providers have to be adaptable to capture the benefits of the new technologies. However, care is needed to ensure that action to adopt is not so fast that they embed systems that may become redundant soon after, and not so slow that they miss out on the advantages that the new technology brings.

> Implementation is complex … more than 75% of telemedicine initiatives fail during the operational phase.

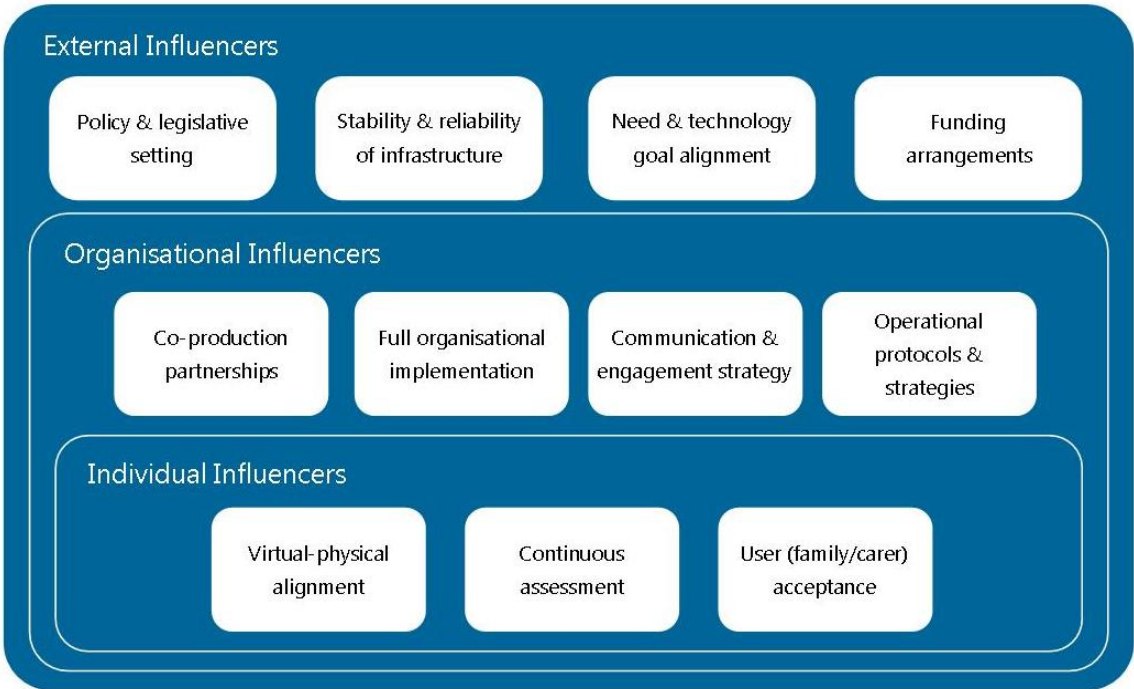## IMPLEMENTATION OF SMART ASSISTIVE TECHNOLOGIES

Use of smart assistive technologies (SAT), when well planned and carefully implemented, can result in positive client outcomes for the elderly and for people with disabilities. Research has shown that positive outcomes are achieved in terms of increased independence, confidence to live at home, delay of entry into residential facilities, less anxiety about one's safety and general improvement in quality of life. Service providers are increasingly looking to implement SAT as a component of their overall service offering and to increase their competitive advantage.

Implementation is complex, particularly when considering the range of potential users of the technology (health professionals, formal and informal carers and by vulnerable people reliant on locally provided services). One study indicates that more than 75% of telemedicine initiatives fail during the operational phase (Broens et al., 2007), and identified that understanding the attitudes of key stakeholders towards the intervention is critical in improving success rates.

Determinants of Implementation Success

At the highest level, service providers must develop a high quality central management system in order to establish large scale SAT services. This requires the support of management and the development of appropriate policies and procedures as a precursor to the integration of SAT.

Based on our recent experiences in Australia which are supported by recent studies in the US, UK and Australia, we have identified 11 key influencers (categorised by external, organisational and individual influencers) of assistive technology implementation success.

Although all of these influencers are important in the overall success of any large scale smart assistive technology implementation, this paper's focus is on the organisational influencers of:

- Co-production partnerships

- Full organisational implementation

- Communication and engagement strategy

- Operational protocols and strategies

Co-production partnerships

The relationship with the technology supplier is critical to the success of providing SAT services. It is necessary to ensure the supplier has a fully committed and resourced SAT program which encompasses all technical aspects of equipment approval, quality assurance, reliability, maintenance, warranty and replacement. The supplier must also have access to technical support and a systematic problem resolution methodology. Agreements should be in place to allow the service provider to install equipment confidently (with supplier support), and to monitor client services trusting that the equipment (and software) work reliably.

> Co-production approaches involve the joint design and/or delivery of services ... and empower local communities.

The experience of the technology partner is very important. Experienced suppliers are expected to be better able to deliver reliable support and technology, leading to higher acceptance during the implementation stages for support staff and clients.

In our recent experiences in the Australian disability context we have observed the need for SAT suppliers to consider a revised contracting model that better facilitates the adoption of SAT by providing a contracting model that shares risk, cost and responsibility. Perhaps more broadly, in the context of device accessibility and service funding, the question of whether providers should be device owners (and suppliers in their own right) should be assessed at not only an organisational level, but considered by policy makers and funders. For example, it has been observed that device suppliers, although enthusiastic to distribute their products, typically call on service providers to hold all client contracts (i.e. a single umbrella contract) rather than having individual client contracts, thereby shifting contractual risks to the providers, thereby creating a barrier to SAT adoption.

In essence, what is required in a co-production approach that involves the joint design and/or delivery of services by a combination of funder, provider, supplier agents and includes the active participation by consumers. Co-production empowers local communities, raises social capital, and strengthens local infrastructure (Tony Kinder, 2010).

Organisational implementation

The implementation of assistive technology requires business planning, financial investment, extensive technical training, inventory management systems and a new set of documentation and assessment processes which have not traditionally been used within the sector. A high level of financial commitment and support is required from executive management in order for implementations to be successful.

Support is needed during both the deployment and operational phases. Support needs to be at the technical level on how to install and sustain the system and also on how to deal with errors and problems. If this support is not in place, problems lead to de-motivation and a high probability of abandoning the system.

Training is required at all levels: for managers and others who need to interpret the data; clinicians who need to read vital signs; social and health professionals who have to administer the practical components of the system.

Communication and engagement strategy

Marketing and education are critical components of the change strategy in successful SAT implementations.

For clients and support staff to be positive towards SAT, the equipment must be easy to use (Wade, Cartwright & Shaw 2012). For this reason involvement by the client and professionals in analysis and design is crucial to encourage feelings of ownership, enjoyment, self-efficacy and pride early in the development process. For acceptance, information that is gained through the use of the technology must be meaningful (correct, relevant and up-to-date) and ideally personalised as necessary for the clients and the professionals. The level of education, age and exposure to technology of each person involved should be considered. Devices could be actively marketed to existing support groups and local networks to ensure proper understanding and promotion.

Diffusion and dissemination of SAT is difficult if equipment is highly specialised to particular population groups. Implementation will be easier when the technology is generic to a number of client populations and all interested parties are familiar with the intervention.

Utilising champion-led service rollout is useful. The best way to overcome resistance is to continuously promote the services through enthusiastic ambassadors. During the design phase the partners are the consumers and the technology supplier. During implementation, the key stakeholder is the one in close physical contact with the client (primary caregivers); this championing role is crucial in convincing users to actually utilise the technology and in removing reservations. The local care team's attitude is a decisive success factor during the final stages of implementation (Postema, et al., 2012).

Operational protocols and strategies

Operational protocols are frequently lacking for SAT. The structure of service and health organisations may be impacted on as well as collaborations with other organisations. The work practices needed for an effective model of support using SAT do not always fit with existing traditional working protocols in health care. Intramural and extramural work practices may need to change, and new work policies developed. This means the assistive technology program needs to be integrated into the organisations providing services, not a small orphaned siloed program.

> The support and management of technologies needs to be incorporated into everyday care.

A comprehensive framework for support needs to be available, with sufficient top management support and a basic set of procedures. If operational protocols are not clear or not adhered to this has been shown to lead to misunderstandings and impromptu decision making. This can lead to differences in service provision across teams, complicating coordination.

From an organisational perspective the provision of SAT services requires a significant commitment from staff to learn how to use the technology and incorporate it into their service delivery practice. The support and management of technologies needs to be incorporated into everyday care. As such, Care Managers and visiting staff should be able to assess the ongoing impact and benefit of each component of the technology in Clients' homes. Visiting staff members must be comfortable with the technology, and understand how to help the service provider to maximise the benefit of each component for the Client, and minimise the need for special "operational" trips (e.g. battery replacement, volume adjustments, positional changes and other minor operational issues). With this in mind it is important that all staff is trained and capable of supporting the devices, so that support is incorporated into other client visits and improving overall sustainability.

ISSUES FOR FURTHER CONSIDERATION

The fact that the evidence base for SAT is still evolving makes it clear that ongoing research is needed. This means that:

- Research and evaluation should be built in to all SAT endeavours, so that over time evidence to assess the impact of these service models is developed (within the context of a service improvement framework).

- Key criteria for evaluating success must be identified. Decision makers require useful indicators to determine whether innovative assistive technology programs have been successful or not in comparison with other programs. The development of an evaluation matrix that contains all the elements that are necessary for evaluating success is critical.

- Adopting this strategy at the beginning of the process will provide funders, providers and governments with the information they need for decision making in the future.

Key Messages

- The role of Government is still evolving. The development of detailed and well structured plans from Government to support the broader policy positions are needed.

- A high quality central management system will be required in order to establish a large scale smart assistive technology service. This requires sound planning and organisational systems.

- The relationship with the technology supplier is critical to the success of the service provider's implementation. Co-production approaches improve implementation outcomes.

- The attitude of those involved is crucial. Marketing and education are critical components of the change strategy in successful implementations.

- Smart assistive technology programs need to be integrated into the provider organisation, not a small orphaned siloed program.

More information?

Health Outcomes International (HOI) is a health care and community services consulting firm. The HOI team has extensive experience in consulting and management in the acute, subacute, primary and community-based services, mental health, disability services and Aboriginal community controlled sectors.

Contacts:

Lilian Lazarevic   lilian@hoi.com.au
Managing Director

Darren Button   darren@hoi.com.au
Associate Director

Web: www.hoi.com.au

Phone: +61 8 8363 3699

Post: PO Box 2065, Glynde Plaza LPO, Glynde, SA 5070

Location: 5A Glynburn Road, Glynde, SA, 5070

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