Buckinghamshire **Live Lab** *Trial*
Final Business Case & Impact Assessment

Adult Social Care Sensors

Strategic Case (1)

The Strategic Case sets out why the intervention is needed, how it furthers national, regional and local policy and whether there is a clear case for change.

National, regional and local policy fit	The Care Act (2014) requires local authorities to ensure that people who live in their areas: ▪ Receive services that prevent their care needs from becoming more serious or delay the impact of their needs; ▪ Have a range of high quality, appropriate care services to choose from; and ▪ Have more control over how their care and support is organised.
The case for intervention that meets those policy needs	The objectives of the Adult Social Care Sensors trial are to: 1. Make social care budget efficiencies whilst continuing to provide good quality social care. 2. Improve wellbeing and support to people who require care whilst maintaining their independence in their own homes. 3. Provide support to carers, improving their health and wellbeing. 4. Reduce admissions to clinics and hospitals with on-site care provided as alerted by the sensors. Also reduced as sensors can be used as an early-warning tool to monitor deterioration in health, which can therefore be prevented.
The national, regional & local needs and challenges	The combination of a rise in ageing population and reductions in social care budgets is placing pressure on carers and risks impacting on the quality of care provided to those in need. Therefore this sector is eager for innovative solutions which can reduce the increasing pressure on paid and unpaid carers, as well as monitor and track the health and wellbeing of those in need.
The wider case for the intervention	Provision of accurate and timely data to build a picture of the carer's clients' behaviours over a period of time, can be used to give alerts to family members and carers to any deviation from establish patterns that could indicate cause for concern. This could provide social care budget efficiencies by picking up on issues at an early stage whilst continuing to provide good value social care and reducing carer fatigue. This would support vulnerable people to remain in their familiar home environment for longer whilst being safely supported, providing them with increased independence.

Strategic Case (2)

Social
Achieving inclusive innovation in telecare, leverage technology to provide accessible and affordable care and support to vulnerable people.

Financial
Operational cost saving in the long term after initial capital expenditure.

Environmental
Fewer unnecessary journeys from carers, reduction in fuel consumption and carbon emissions.

Legal
Data Protection Act (2018) applies due to the data being personal and so the data must be treated with care.

Economic
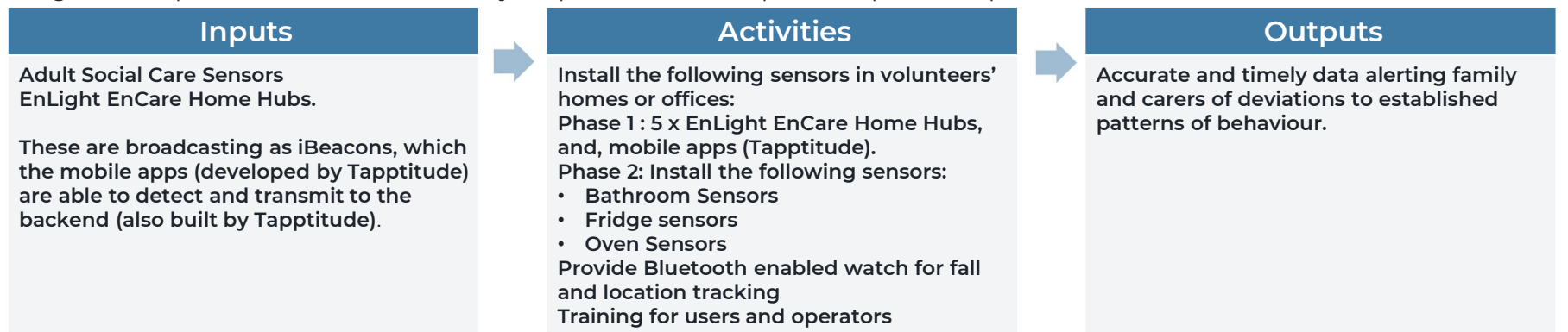Reduction in admissions to clinics and hospitals with on-site care provided.

Future Ready
New ways of delivering quality care with improved outcomes and reduced costs to accommodate for the ageing population.

Strategic Case (3)

The Logic Impact model shows how the inputs and activities carried out during the trial flow through to short, medium and long-term impacts. Where trials are not yet operational, anticipated impacts are provided.

Inputs	Activities	Outputs
Adult Social Care Sensors EnLight EnCare Home Hubs. These are broadcasting as iBeacons, which the mobile apps (developed by Tapptitude) are able to detect and transmit to the backend (also built by Tapptitude).	Install the following sensors in volunteers' homes or offices: Phase 1 : 5 x EnLight EnCare Home Hubs, and, mobile apps (Tapptitude). Phase 2: Install the following sensors: • Bathroom Sensors • Fridge sensors • Oven Sensors Provide Bluetooth enabled watch for fall and location tracking Training for users and operators	Accurate and timely data alerting family and carers of deviations to established patterns of behaviour.

Planned work

Outcomes – Impact

Short-term	Medium-term	Long-term
• Provision of targeted support. • Increased independence for vulnerable people who are safely supported within the comfort of their own homes.	Reduce council expenditure by delaying admissions to residential care and limiting carer burnout. Integration of environmental and personal data will build a holistic view of the environment to support people in the community e.g. people at risk of falls notified of ice on their normal walking routes.	Addressing challenges of economic growth and ageing population: 1. Improved support to people who require care whilst maintaining their independence in their own homes. 2. More efficient use of social care budget. 3. Reduced clinic and hospital admissions.

Intended results

Economic Case – Costs

- Capital and Operational costs (up to 30 users) for a trial (up to 6-months):
    - £51,000 for adult social care sensors trial (supplier: Enlight)
    - £144,000 for the software development costs (supplier: Tapptitude)
    - Total Cost : £195,000

Note: Although the above investment covers up to 30 users, Buckinghamshire Council have undertaken a trial with 6 inhouse users. As this is a proof of concept, the functionality and scope which would drive the capital and operational investment costs required are not yet established for larger scale solution.

Technology proof of concept

Note: The trial was not undertaken with members of the public, rather a group of Buckinghamshire Council staff acted as proxy-users to allow the following range of use cases to be tested:

Service use cases:

Use cases were tested randomly with at least one appointment per user for each of the behaviour described below:

1. An appointment is sent to the service user who is expected to be at their 'home' location where their hub is located during the timeframe of the appointment.

2. An appointment is set to the service user, who should then mark themselves as 'Not at Home' ahead (1h or more) of the planned visit, they should then test the following scenarios:

      A. They leave the home address; and

      B. They remain at the home address;

3. When an appointment is sent to the service user, they should leave home 1h or more ahead of the appointment and not return before the appointment start time.

4. Raise a call back

Technology proof of concept

<u>Carer use cases:</u>

These use cases were tested randomly with at least one appointment with each behaviour described below to prove that the technology operated as expected:

1. Within 1h or less ahead of the appointment time, Carers checked the home screen of the app:

a. When the service user had an appointment marked as 'at home', Carer made the visit. Once at the address (as close as possible to the home hub, not necessarily stepping inside the home) Carer checked in two minutes later, Carer then checked out and left.

b. When the service user was marked as 'at home', the Carer made the visit. In this instance, the Carer does not check in from the app, but spends 2 minutes as close as possible to the home hub, not necessarily stepping inside the home, and leave.

c.. When the service user was marked as 'at home', Carer <u>did not</u> make the visit.

d. When the service user was marked as 'NOT home', Carer does not make the visit.

e. When the service user was marked as 'NOT home', Carer still makes a visit.

Economic Case –
Benefits realised through the trial

The trial did not run under 'real world' conditions with members of the public therefore, the results provide a technology proof of concept ('beta test') rather than determined benefits assessment of a trial with real users.

However, taking the learnings from this successful trial, Buckinghamshire Council are confident that the platform can be adopted, with further development, by the Council's Adult Social Care team for a real-use pilot and potentially to full deployment. Funding has been identified for this next phase.

Monetisable

- Decrease in costs for Council relating to social care as carers can be utilised more efficiently and users can be supported longer in the home environment

Quantifiable, not monetizable

- Reduction in admissions to clinics and hospitals with earlier on-site care provided as alerted by the sensors

Qualitative

- Provide elderly and more 'at-risk' residents with increased independence

- The real-time information received by the carers will help in supporting 'remote/virtual' aspects of the role with flexible hours and remote working patterns

- The sensors can be used as an early-warning tool to monitor deterioration in health, which can be investigated

Commercial Case

Procurement journey

Overall, procurement timescales and processes had a significant impact on the project, which delayed the trial. Exploring ways that procurement of software development and technology services for innovation trials could be improved in the future could reduce the barriers to adopting innovative solutions.

The procurement journey was disrupted due to:

- Suppliers being unfamiliar with public sector commercial terms which caused delays in signing contracts and agreeing to the Terms and Conditions

- Time required to gain Buckinghamshire Council approval of direct award commissions was underestimated

- Procurement routes via the Council's term contractor not suiting small scale software projects .

The procurement of adult social care sensors was via Buckinghamshire Council's contractor, This was done to reduce commercial risk to Buckinghamshire Council but led to high administration costs relative to the cost of services being bought.

Site visits to suppliers would help to assure that delivery is on track and reduce the associated risk.

Suppliers sought different agreements on intellectual property rights which led to contractual agreement challenges.

Financial Case

Affordability

Buckinghamshire Council spent £66.8 million on care for older people in 2019-20, including income from people paying towards their own care. The average weekly cost of a residential or nursing care place is approx. £823 per person.

The aim of the pilot project was twofold. Firstly, to demonstrate whether is it possible to build a picture of client's behaviours over a period of time; this information could be used to alert family and carers to any deviation from establish patterns that could indicate cause for concern. The second aim was to allow improved interaction with the local environment through use of technology and data, the integration of environmental and personal data to build a holistic view of the environment to support people in the community.

The trial is a proof of concept hence it is unlikely to generate any financial benefit at this stage. An investment of £195k was spent to cover up to 30 users, however, the trial proceeded with only 6 no. users (5 no. users + 1 no. Social Carer) with installation and deployment of Phase 1 since Jan 22. Phase 2 has not been installed yet due to supplier order issues and prolonged waiting times on semi-conductors .

The technology proven in this Phase 1 trial can be utilised to coordinate appointments to ensure those in need of care are not missing their planned appointments hence getting the right care at the right time as well as making resource efficiencies for the Council and reducing carer burnout.

Subject to agreement with the 'Project Board' Phase 2 may need to be de-scoped from the Buckinghamshire ADEPT Live Labs due to issues with the supply of the semi-conductors for the sensors, current estimated date of delivery is March 2023.

Buckinghamshire Council reports ~30% of social carer time and car journeys wasted due to the lack of appointment coordination between the carers and those in need of care.

On the basis of the Phase 1 technology costs, it is estimated an annual investment of £2.4m could deliver an estimated annual cost saving of £3.9m for Buckinghamshire Council. It is expected that the cost of the technology should reduce with scale thereby driving a greater saving.

Overall, proof of concept has been successful. There is a lot of interest within BC to continue developing ASC beyond the trial period. Funding for this is in place.

Financial Case

Financial model

For the anticipated future trials, this should expand the scope to include:

- The Phase 2 in-home sensors (subject to agreement with the 'Project Board')

- Real users registered with the Social Services

- An increased number of users and carers

- Extending trial duration to one year.

This would allow a deeper business case to be developed to understand the expected return on investment from operational savings, improvements in quality of care and reduction of CO_2 emissions.

Funding sources

All trial funding was provided by the ADEPT Live Labs programme.

Management Case (1)

Delivery

The installation of the trial was delayed due to:

- Aforementioned procurement challenges

- Lack of clarity around scope and interfaces between the different suppliers of the sensors (by Enlight) and application (by Tapptitude);

- Social Care department was not fully engaged from the start and decided not to participate in the trial based on data privacy concerns. As a result, the trial was carried out using volunteers from Buckinghamshire Council staff which consists of 5 no. users and 1 no. Social Carer. Earlier engagement would have brought data protection issues to light earlier in the project.

- New UK customs regime impacted on delivery of the app as it was developed in Europe and held in customs for a longer period of time than anticipated.

- Phase 2 (sensors) had to be descoped due to prolonged waiting times on semi-conductors which meant the Adult Social Care system sensors could not be properly installed and tested .

Management Case (2)

Delivery plan

The original delivery plan for the trial was not achieved. In addition to issues with installation of the mesh communications network (see separate trial report) and procurement of the trial technology the scope and scale of the trial was reduced due to problems recruiting service users. This was in part due to a lack of timely engagement with Buckinghamshire Council's adult social care team and GDPR concerns.

The lessons learnt are:

- Identify the relevant stakeholders and users and engage with them early on;

- Identify and address issues relating to personal data and associated data ethics at an early stage ;

- Ensure succession planning is in place to enable smooth delivery of the vision;

- Draw on lessons learnt from other trials and deployments to set a realistic timescale for the trial.

Management Case (2)

Benefit realisation and contract management plan

Legacy needs to be planned in from the outset and a benefits realisation plan should be in place from an early stage of the project. The Council's strategy owners should have been involved at an early stage in developing the use cases to ensure they would contribute to strategic objectives and enable decision making at project completion.

It's important to get buy-in from the key stakeholders and users from the outset to obtain their contribution to use cases, agree the technology solution and agree the success criteria of the trial.

Evaluation strategy

Future evaluation of this form of trial must also consider how anonymised data can be provided to overcome GDPR privacy issues.