Implementing Assisted Living at Scale – Kings Fund 2/3 March 2011

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ALIP update
Headline aims:

(1) enable greater independence

(2) make technology better, cheaper and more desirable
Assisted Living Innovation Platform 2007 - 2012

Knowledge Transfer and Standards

Short Term R&D
- Home based systems & UCD (running)
- SCDE (running)

Long Term R&D
- Economic & business modelling
- Social & behavioural studies

Programme Outputs
- Define
- Demonstrators of Assisted Living Lifestyles At Scale

Standards

Independence Matters

Ambient Assisted Living (AAL169)

External to ALIP: Whole Systems Demonstrators

Funding partners:
- Technology Strategy Board
- Driving Innovation
- EPSRC
- National Institute for Health Research
- AAL
Technology Strategy Board
Driving Innovation

Improving the Technology – Collaborative R&D
Driving Innovation

Story so far...

- **Home Based Systems and User Centred Design**
  - 9 Projects totalling £14.3m
  - Our investment: £6.3m (with NIHR, EPSRC and ESRC)

- **Smart Care Distributed Environment**
  - digital communications and connectivity issues
  - 7 projects totalling £16.2m
  - Our investment: £6.3m (with NIHR and EPSRC)

- **European programme - AAL 169**
  - UK involved in 9 projects worth 24m Euros
  - Our investment: 2.5m Euros

- **Knowledge Transfer programme and annual showcase conference** (this year June 7/8 in Glasgow)
Driving Innovation

- Tynetec Innovation Centre
- Enhancing the delivery of New Product Development
- Consumer / Service User Insight
- Market Research
- Customer Feedback
- Idea Generation
- Development Forums
- Industrial Design – Aesthetics / Ergonomics
- Flexibility & Choice
- Customisation

www.tynetec.co.uk
Tynetec – Activity monitoring

Kitchen for Site C188364 on 26/04/2010
Driving Innovation

Docobo HealthHUB Version 3
Driving Innovation

Technology Strategy Board

PEACE (ALIP1) and PEACEanywhere (ALIP2) Projects
(PErsonal Care Environments Anywhere at Anytime)

To help overcome the problems caused by fragmented families, social isolation and the digital divide

- Voluntary Groups
- Social Care Services
- Community Services
- Telecare Services
- Health Care Services
- Hospital Clinicians
- Community Clinicians

INTERACTIVE CONTENT

3G IP NETWORK

Home Environment

User with Wearable Platform and novel sensors with location
Care Staff With wearable ID authorisation Unit and mobile devices
Voluntary Carers

Additional PEACEanywhere Project Aspects
- Connectivity and information availability
- Anywhere – anytime access
- Data transfer standards
- Wireless body sensor integration

Peace Project Aspects
- User Acceptability
- Focus Groups
- Evaluations
- Interworking of Telehealth and Social Care Services Data transfer standards
- Interworking with Professional Clinician/Carer Services
- Interworking with 3rd Party Community and Volunteer Services

Docobo Telehealth Solutions MWC
Improving the Technology – Standards, Interoperability and Broadband
Interoperability, Broadband, Smart Homes?

- Interoperability of assisted living devices (or rather its absence), is seen as a major obstacle to widespread deployment and national roll outs.
- Its absence increases costs, and reduces effectiveness of deployments.
- The introduction of broadband is becoming another practical barrier to deployment.
- Future issues to address include integration of smart home services, including smart meters, environmental monitoring and entertainment.
In the home..

- If you will have a multitude of devices in the home. They will be designed to do different tasks.
- Wireless, wired, stand alone.
- Different frequency.
Continua Alliance

- The **Continua Alliance** mission is to establish a system of interoperable personal telehealth solutions that fosters independence and empowers people and organizations to better manage health and wellness”.

- **BUT**, is not itself a standards making body. Its product certification programme endorses standards e.g. IEEE that provide the desired interoperability. The TSA NOWIP project has agreed a route to Continua certification
Broadband issues

- Telecommunications infrastructure - a dependable asset for the telecare industry for many years. Systems have evolved within highly regulated environments with 99.999% availability. BT 21CN - first sign of change.

- Audio path discontinuities will occur when jitter buffer lengths change, either during a voice call or when modems or faxes are detected. End to end delay - round trip processing delay increase for all calls.
Next Generation Networks

- Alternative service providers (ASP’s) such as Talk Talk, Sky, Virgin Media etc have, or are, installing their own infrastructure.
- The result: Telecoms provision over NGN’s can mean diverse routing via different carriers, locations and technologies which change during a call as opposed to traditional point to point.
- We have learned post implementation that the new networks are not as robust for telecare and security equipment. NGN UK working with TSA.
- Many now specifically exclude social alarms in their T&C’s.
Work in Standards...

• ALIP standards work commenced 2011.
• Working with TSA NOWIP group, Standards bodies including BSI, IEEE, Continua and identifying priorities for standards work.
• Can be done. Interoperability/interworking a requirement for our proposed demonstrator programme.
Changing the Business Model – 8 New projects just underway - £12M investment.
Understand current and future markets for assisted living technologies.
Understand the barriers to adoption of assisted living technologies
A Demonstrator Programme ?
Demonstrators of Assisted Living Lifestyles At Scale

Source: http://www.flickr.com/photos/dph1110/471774454/sizes/o/in/photostream/
Maximising investment to date

- Aim: Implementation of innovative services at scale in the UK by building the supply chain
- Care should be available anytime and anywhere
- Build on existing activities & projects (ALIP & WSD)
  - i.e. not just existing “off-the-shelf” technology
- Flagship to drive Awareness and Adoption
- Help stimulate private sector involvement
- “Bring it all together”
Approach to date

• WSD shows we can support people with Long Term Conditions (level 3)

• ALIP shows we can also support milder conditions (level 1&2)

Telecare and Telehealth
“To help people live more independently for longer”
Implications for us

- Need to build on WSD methodology to cover level 1&2
- Consider transition between levels – we need to drive management and prevention not acute treatment

Telecare and Telehealth
“To help people live more independently for longer”
Focus of the demonstrator sites?

- Level 1: Well controlled
- Level 2: Poorly controlled single disease
- Level 3: Complex co-morbidity

Size = natural care community

1/3 or 2/5 sites

2/3 or 3/5 sites

Population Wide Prevention
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DALLAS

Sites

Evaluation

Interoperability

Cost / Benefit Analysis

Inter-site networking and improvement
DALLAS - our definition

• Interoperability
• Cost target to help drive future deployment
• User-centric to size of 10k+ users, lasting up to 36 months
  – With scalability to the size of a natural care community
  – Providing economies of scale on equipment cost
• Embedded & integrated with societal/lifestyle needs
  – Ageing, age-related disabilities, quality of life, wellbeing
  – Co-morbidity and/or older people and/or long term care
  – not just a single condition
• Regional footprint connected UK-wide (3-5 UK sites)
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Technology Challenges
Technology Challenges

- Integration of (some but not all) legacy equipment, including social alarms, with telehealth, and with video consultation.
- Services within the home can interwork, but can the set top box become the home hub? Can all services within the home become interoperable?
- Are the wide area networks sufficiently reliable and resilient?
- Can we integrate location based services?
Technology Challenges cont’d

• Beyond the assisted living sphere, are we satisfied that “our” data can be transmitted intelligently to the electronic patient record?
• Finally, addressing issues around security, privacy and trust.
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Conclusions
Conclusions:

• Successful outcomes from the Whole System Demonstrator programme;
• Improvements in technology capability + acceptability/desirability (ALIP/others);
• Agreement to introduce greater technical interoperability;
• Reductions in equipment cost;
• Changing the business/service process;

= Integrated assisted living services at scale is now feasible.
But ......

- Some immediate practical technology challenges have to be addressed and changes to the existing business and organisational model are required.
- We want to show that demonstration at scale will provide economies of scale, but cost and clinical benefits may not be achieved unless appropriate human resources are allocated.
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