TSA Conference 2011

ASSIST: Human Factors and Assistive Technology

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Part One: Setting the Scene

Part Two: Facts and Findings

Part Three: Implications

ASSIST Project

- 2-year partnership between
  - Cogent Computing, Coventry University
  - Orbit Heart of England
    - Assisted Living provider
  - Tynetec
    - Assistive Technology Manufacturer
  - Cirrus
    - Assistive Technology Service Provider

ASSIST Project

- Aims to inform best practice for cost-effective deployment of assistive technology (AT) to enable independent older living and enhance quality of life...
- ... through an understanding of the role and value of human factors
- And to support OHE and its providers in becoming UK leaders in the assisted living area

ASSIST: Main Questions

- What is the role of human factors in the deployment of Assistive Technology?
  - How do resident and staff perceptions impact use
  - How do needs impact use
  - How do schemes impact use

ASSIST: Main Questions

- How can understanding of that human factors help us enhance AT deployments?
  - Make them more cost effective
  - Enhance independence and quality of life
- What are the implications?
  - Care / scheme adjustment
    - Interventions including technology shows and 'awareness days'
  - Technology change?
    - Some ideas

Assisted Living

Assistive Technology

- System of communication devices, sensors and alarms
- For checking in and emergencies
- But not ‘fit and forget’ like a burglar alarm or a smoke alarm
- Requires resident awareness and engagement…
- … and induction, education and encouragement by staff…
- … who also need to understand it and act on it

What we need

- Resident engagement with AT
  - know how to use it if they need it
  - Agreement to its use
- Staff engagement with AT
  - Ongoing needs assessment / monitoring
  - Recommendation and explanation of AT
  - Resident induction
    - What it is, why it's there, what it means

Resident perspective

- I need to wear my pendant
- I need to know how to activate it
- I need to be able to reach a cord and pull it
- …

Staff perspective

- I need to know how to operate and respond to the technology
- I need to carry out ongoing needs assessment
  - And be alert to changes
- I need to suggest new items of AT and 'sell' them

So an ask, on both sides

- Ask for knowledge and awareness on both resident and staff sides
- Means that AT depends on human factors
- So what goes on in this relationship?
- What our research is about...

Part One: Setting the Scene

Part Two: Facts and Findings

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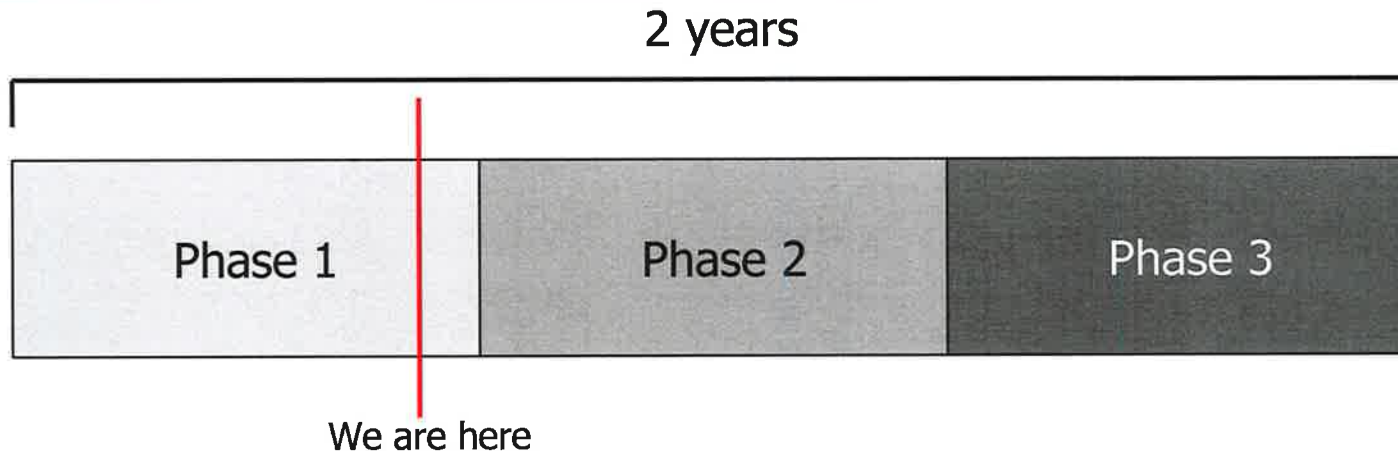
ASSIST timeline



- Phase 1
  - Surveys
    - Staff, residents (perception and attitude data)
  - Call logs
    - Records of events, including incidents
- Phase 2
  - Tracing practice, and understanding change
- Phase 3
  - Resident and staff empowerment initiatives
  - Guidelines

Methodology: Phase 1

- Self-report data around perceptions, attitudes and activities
  - Staff and resident surveys
- Objective data derived from call logs
- 'Triangulated' analysis
  - How does the perception data fit with the objective data?

Methodology: Phases 2 and 3

Phase 2	Phase 3
Phase 1, plus: - Observation / 'shadowing' - Interventions: - AT days - Staff awareness days	Phase 1, plus - Interventions: 'Empowerment initiatives'

Phase 1 Outputs
Assistive Technology: 'just there'?

- The general picture from the data so far is that:
- AT is *just there*
- Appears to work fine
- Attracts little comment

More to explore?

- Everything working fine?
- Do we have the resident and staff engagement we need?
- Let's unpack this

Phase 1 Study

- Surveys of residents and staff
- Gauge perceptions, attitudes and activities around assistive technologies
- Dispersed and sheltered settings
- All residents have a basic AT suite:
  - Voice module
  - Pull cord
  - Pendant

Residents

- Pilot survey of 46 users
  - Dispersed schemes (30, 65% of respondents)
    - separate housing
    - single scheme
  - Sheltered schemes (16, 35% of respondents)
    - purpose built block with integral flats, social areas etc
    - multiple schemes
- Main survey of 122 users
  - Dispersed schemes (54, 44% of respondents)
    - multiple
  - Sheltered schemes (68, 56% of respondents)
    - multiple
- Aggregate: 168 residents
  - 84 dispersed (50%)
  - 84 sheltered (50%)

Staff

- Survey study of 22 staff
  - Multiple schemes
    - Sheltered and extra care

Resident Survey Findings 1
Attitudes to AT c/w General Technology

Assistive Technology	Technology in general
80% positive feelings valuable security and peace of mind	20% 'technoreceptive' 80% own 4 or less items 40% express negative feelings 'hate it' 'not interested' 'not bothered'

Resident Survey Findings 1
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Seems counterintuitive

AT preferred to technology for leisure, entertainment and communications...

Resident Survey Findings 2
Use and Usability

- 50% of all residents say they never use pendant
- 35% say they never use pull cord
- 50% say they never use voice module

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- But 80% say the technology is easy to use

So a good proportion of respondents think AT is usable, without actually having used it

Resident Survey Findings 3
Perceived Needs

- 20% of all residents said they need AT *a bit, not much,* or *not at all*
- 50% say it's *quite important*
- 30% say it's *very important*

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- So only 3 of 10 see an urgent need

Resident Survey Findings 3
Relating Health Issues to Needs

- AT is about falls, accidents, checking in, and communications around personal care etc.
- Would expect forgetfulness / confusion, and mobility, issues to relate to need for support for falls and accidents
- But…

Resident Survey Findings 3
Relating Health Issues to Needs

Sheltered

10/68 self-reported forgetfulness / confusion	15%
32/68 self-reported mobility issues	47%
10/68 said they need help with falls	15%
7/68 said they needed help with accidents	10%
26/68 said they needed help with shopping...	38%

Dispersed

8/54 self-reported forgetfulness / confusion	15%
27/54 self-reported mobility issues	50%
12/54 said they need help with falls	22%
9/54 said they needed help with accidents	17%
22/54 said they needed help with shopping...	40%

Everyday Life

- Shopping more of an immediate priority than accidents or falls
  - How often does an accident happen?
  - What's more important is:
    - Shopping
    - How do I get my pension
- Residents can map health issues to support needs more readily for everyday activities

Recap

- AT only felt to be urgently needed by 30%
- AT actively used by less than 50%
- But perceived to be valuable, and to give peace of mind, by 80%
- And perceived to be usable by 80%
- Everyday activities need support more than falls / accidents, which are less of a priority

So

- The immediacies of everyday life are the most important things
  - The stuff we all do
- AT seems to be experienced as more remote
- Engagement with AT often seems to be *in principle*, rather than *in fact*
- Is that an issue?
- Let's park that for the moment
- And move to the staff survey

Staff Survey

- 66% response rate (22/35)
- Staff are able to describe residents' needs and what technology they use
- Many of the responses are generic, and do not differentiate between different residents

Staff Survey

- The activities staff most frequently carry out are
  - checking in with residents
  - knocking doors
  - going through visiting sheets
  - responding to emergencies (less frequent)

Staff Survey

- AT supports checking in and emergencies
- Mainly about monitoring and checking that everything is OK
- AT appears to unproblematically fulfill these roles
- Not an emotive topic. As staff told us, 'it's just there'; 'it's part of the job'
- Only 50% of staff report positive feelings about AT.

Staff Survey

- 100% of staff report positive feelings about their job
- 100% of staff say they are interested in further training and exposure to AT
- But only 50% of staff report positive feelings about AT

Staff and Resident surveys side-by-side

- Similar picture of the use and value of AT
- Residents and staff open to the use of technology to improve quality of life and promote independence
- Currently the OHE deployment is generic, supporting communications and emergencies
- There appears to be interest and satisfaction for both user groups
- The topic of AT does not attract significant comment

Summary

- Residents and staff both appear not have any basic issue with AT
- Although only 50% of staff are positive
  - Job fears?
  - Technology 'replacement'

Critical staff role

- Residents and staff both appear not have any basic issue with AT
- Although only 50% of staff are positive
  - Job fears?
  - Technology 'replacement'
- But the research shows that AT will not work without human mediators
  - A wealth of experience and expertise
  - Monitoring change, recommending, encouraging

Surveys and Logs

- Surveys are about what people say
- But what people say may differ from what they do
- We also need an objective picture of AT use
- We need confirmation of the survey data by means of triangulating other data, before drawing conclusions...

Call Logs

- Incident logs – all AT comms logged by Altera software
- Call Log over 2 weeks at 1 sheltered site
- Use of AT by 32% of residents (19)
- 82 Calls (6 per day average)
- 8 pull cord (less than one per day)
- 74 pendant (5 per day)

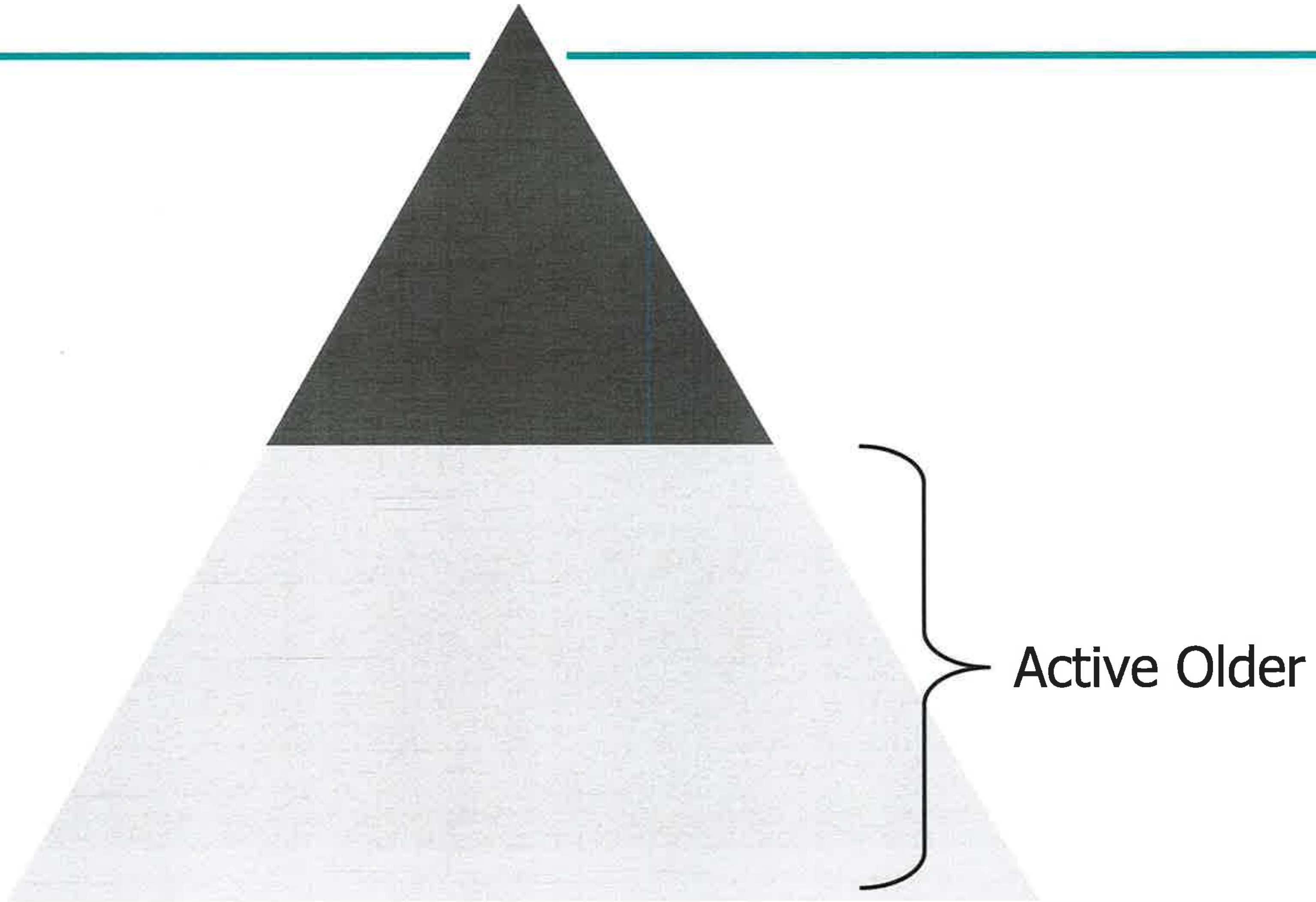
Objective Data and Survey Data

- Some differences
  - Pendant use seem much higher than might be expected – 90% of all AT use
  - Broad comparability
    - About 50% say they never use AT
    - Use of AT by 32% of residents according to call logs
- So survey results look broadly accurate

Unpacking the results

- Old people have different needs
- And those needs change over time
- Ageing is a dynamic process

Unpacking the results



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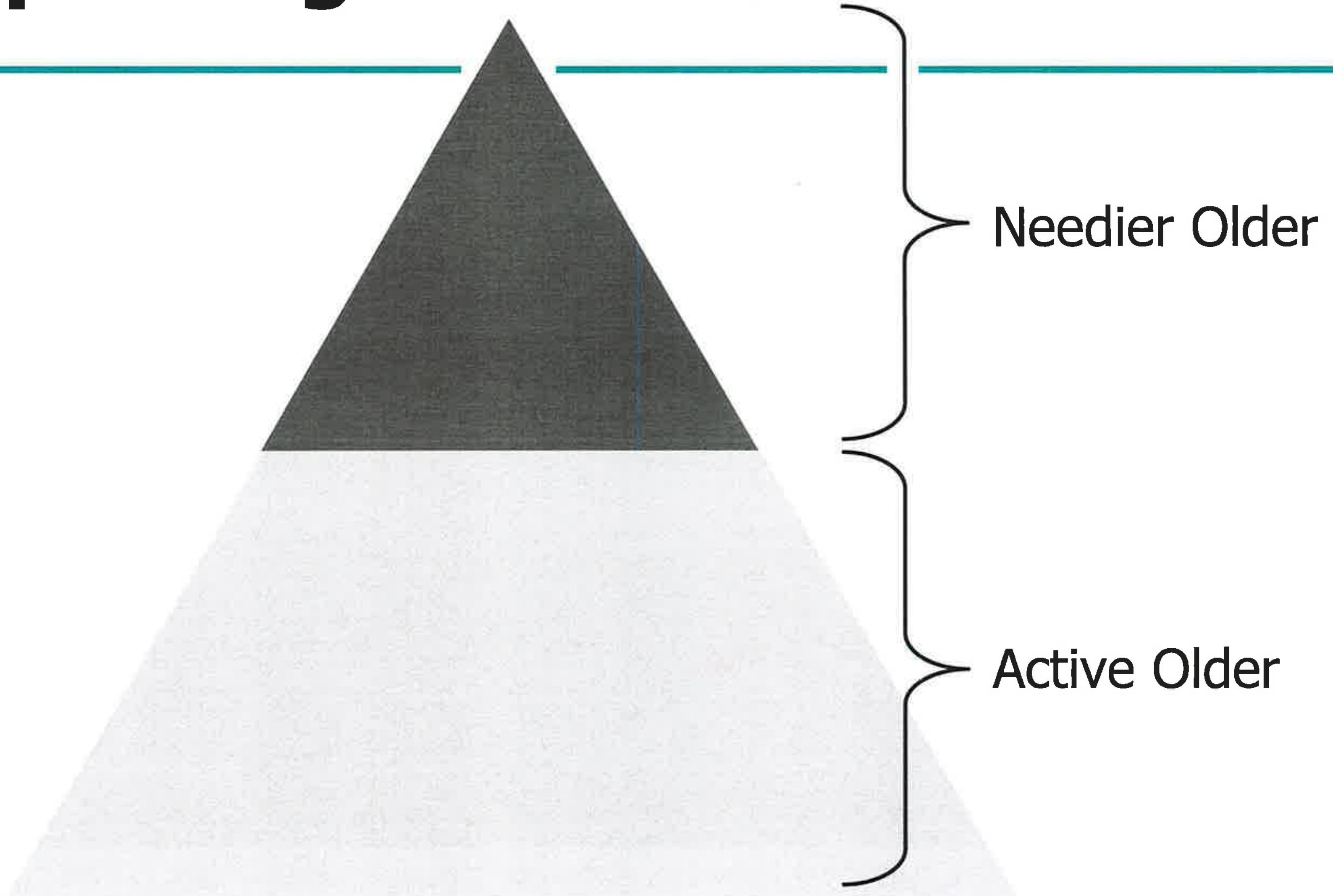

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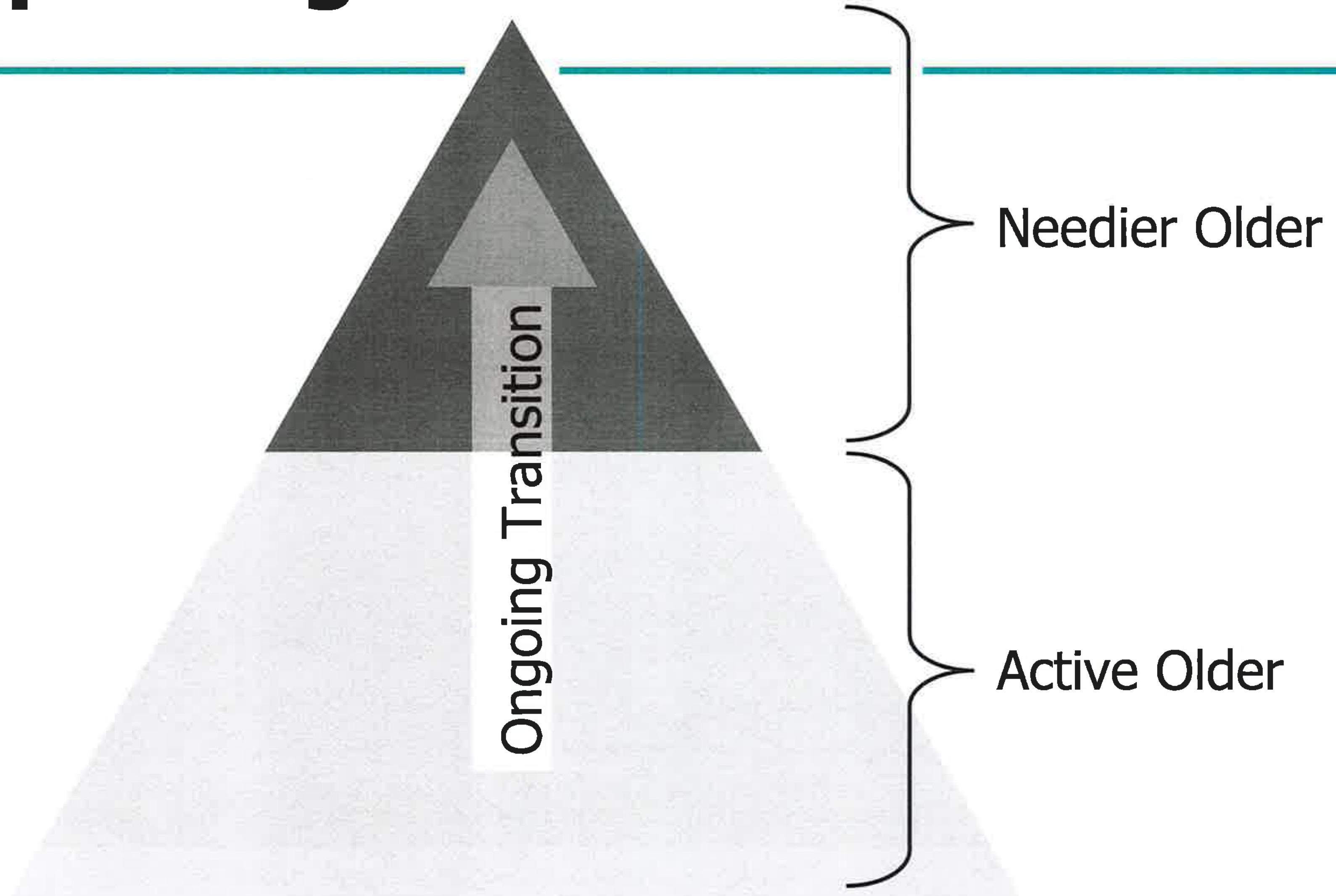

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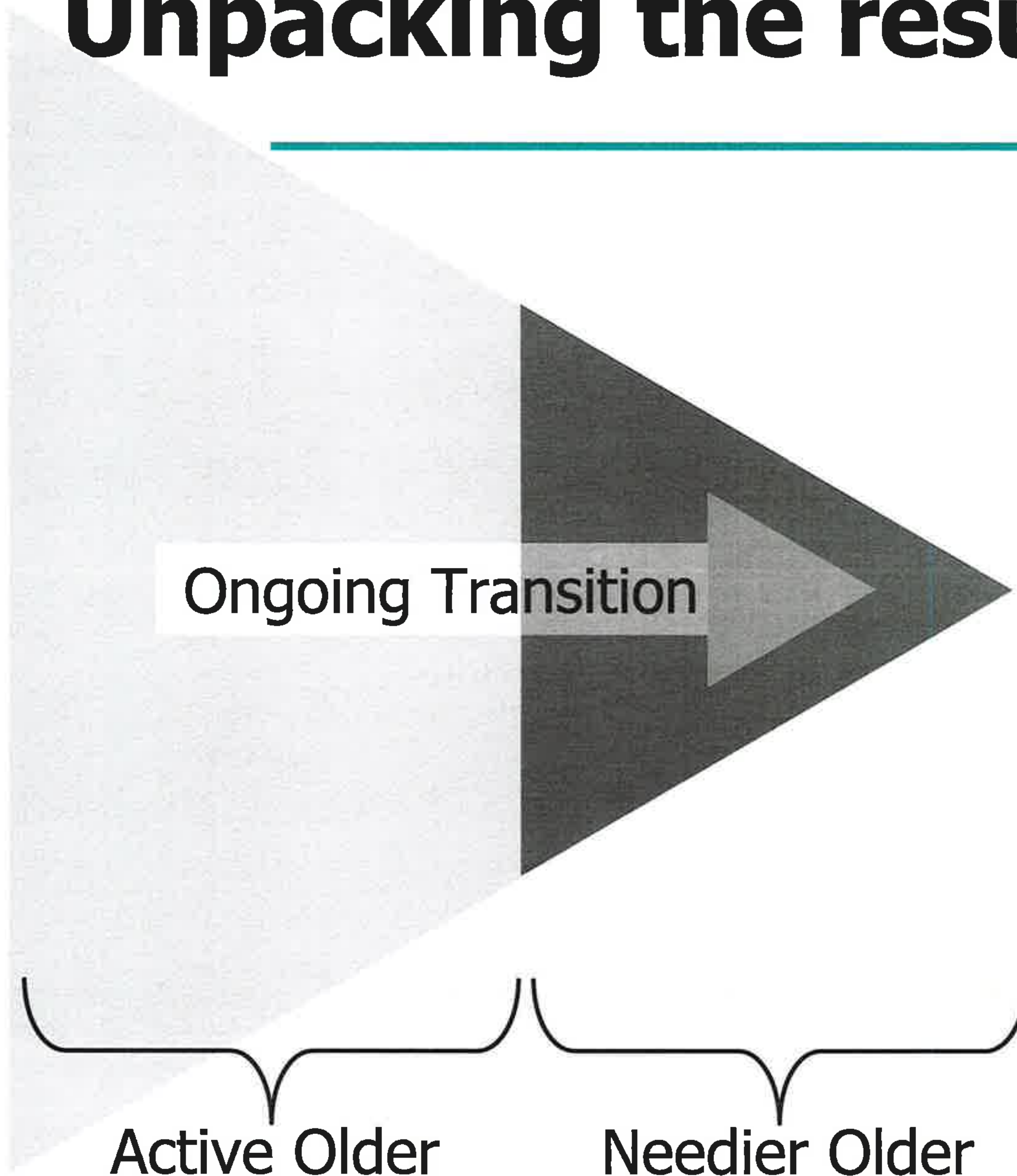


- Reason why there is often engagement in principle rather than engagement in fact is:
  - Many are active elderly
  - They don't particularly need it yet
- So the issue for assisted living is *managing the transition*

Part One: Setting the Scene

Part Two: Facts and Findings

Part Three: Implications

One Day...

- Many residents say they do not need AT 'yet'; or use it 'when necessary'
- 'Good to know it's there'
- For many, good in principle rather than in fact
- It might be needed one day but not now
- However, we need residents to engage *now* in preparation for those days

It's already happening

- OHE staff are skilled in ongoing needs assessment
- Noting and responding to changes
- Recommending new care regimes and technology in timely and targetted ways
- Encouraging and stewarding the uptake of technology

But…

- It still appears to be the case that
  - Residents learn through incidents
- Role for greater resident engagement?
- So engagement is proactive as well as reactive

Needed?

- People know when they need help!
  - 'You'd have to be daft not to know how to pull a cord or press a button' (Resident)
  - 'Why is it usable? It just is' (Resident)
- But an incident is likely to be a very different thing
- Is a resident really prepared for that?

Implications

1. Staff are Champions
2. Residents are Champions too
3. Widening the Technology Agenda
    - Embedding AT in the everyday
    - Pre-facto and post-facto

Staff are Champions

- There are staff champions of AT
- These champions can enthuse others
- Overcome ambivalence
- Explain the place of AT
  - Not a 'replacement technology'
  - How it relates to monitoring and needs assessment
    - Especially as new AT comes on-stream
- Implies some change in organisational practice around dissemination of AT amongst staff

Residents are Champions too

- There may be resident champions of AT
- These champions can enthuse others
- What it's for, how it's used
- 'What it did for me'
- 'What it can do for you'
- Leverages communal nature of assisted living
  - Particularly extra care settings

Widening the Technology Agenda

- AT seems remote
  - Not needed now
- But also…
- AT associated with disability and age
- 'No-one describes themselves as old'
- Negative connotations
- AT decontextualised – 'tech for old people'

Widening the agenda 2

- Clear disconnect between personal technology and AT in survey responses
- But old people are people too
- Many expressed need for communications and entertainment
- Perhaps the technology offer to older people needs to be framed much more broadly to address these needs too

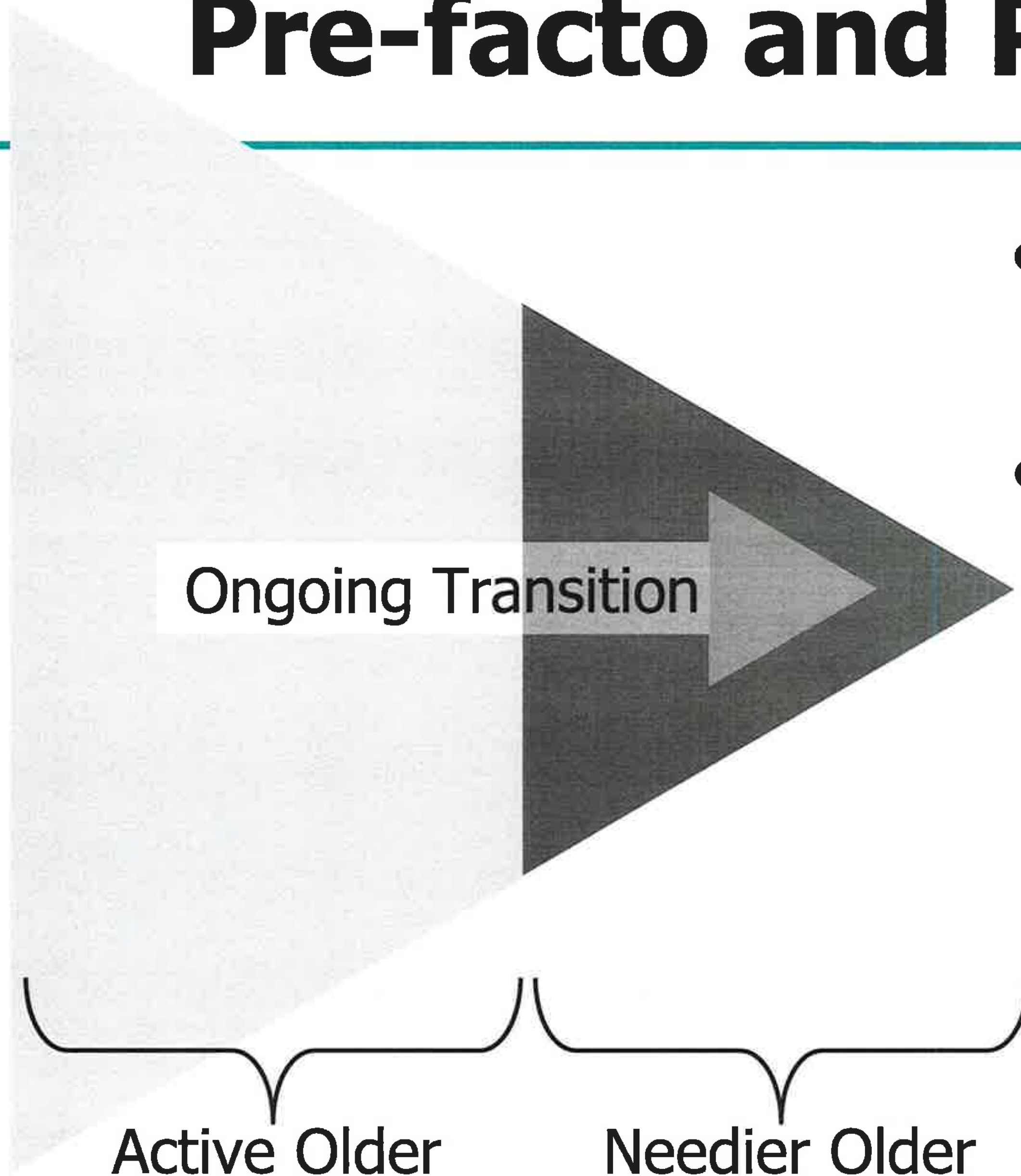
Embedding in a wider offer

- If AT can be embedded within a wider technology engagement agenda it could help remove some of the connotations
- However there are barriers
  - Money
  - Dementia
  - The age group are not 'digital natives'
  - Proactivity and self-perception are big asks

Device convergence
(Another kind of embedding)

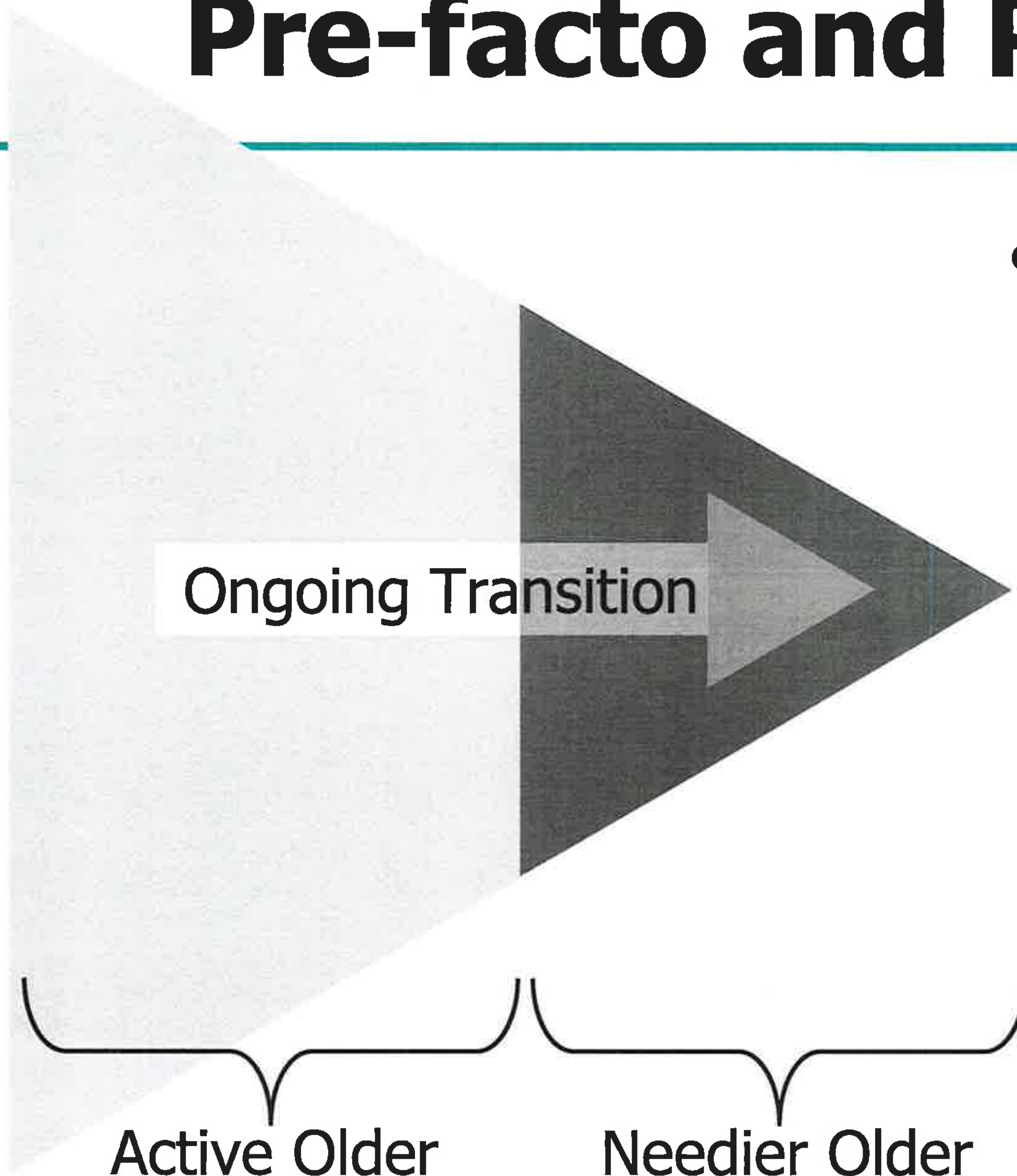
- There is fairly low uptake of ICT
- But those who engage with it appreciate it
- Would it be possible to embed AT within broader ICT?
- E.g. a warden call through an iPad?
- An alarm sent from an e-Reader?
- Fall sensors in mobiles?
- Then AT is not separated out for use some other time in some other circumstance...

Pre-facto and Post-facto



- Issue is managing transition
- Currently post-facto:
  - Alarms after incidents
  - Learning through incidents

Pre-facto and Post-facto



- Could embedded AT enable us to go pre-facto?
  - Alarms before incidents (e.g. near-fall)
  - Learning through near-incidents (before full incidents)

Issues and Questions Arising: Residents

- Research shows a range of issues and questions
  - Low use / low current need for many
  - Issues of mapping disabilities to need for AT
  - Approval and engagement in principle rather than in fact
  - Disassociation of AT from ICT, and negative connotations
  - Those who are not well and really need it are not the survey respondents
- Implications for technology remit, technology design, and resident engagement

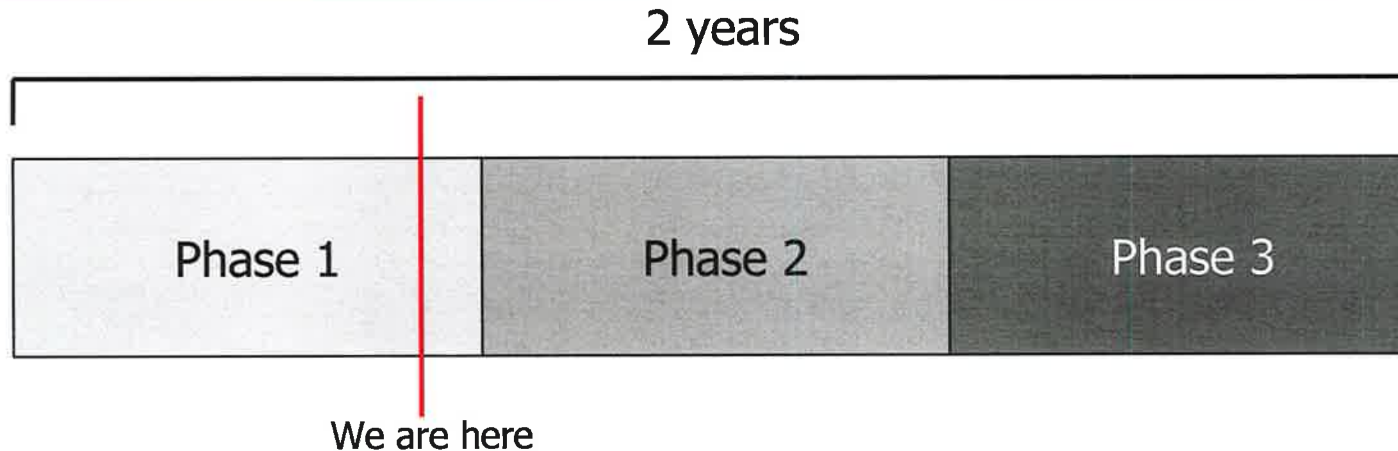
Issues and Questions Arising: Staff

- Research shows a range of issues and questions
  - Ambivalence and job fears
  - The mapping of needs assessment to AT
  - Learning overheads
- Implications for championing within the organisation

The value of a user centered approach

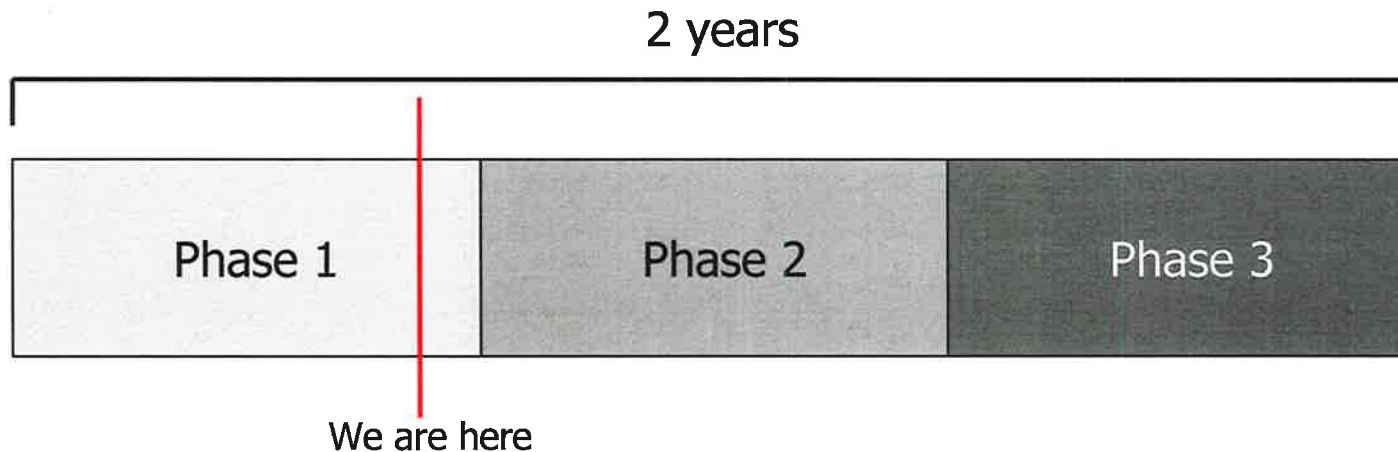
- ASSIST is about understanding the role of human factors in the success of AT deployments
- An AT deployment only as good as human engagement
  - Staff, residents
  - Knowledge, awareness
  - Appropriate and timely action
- We can add value through understanding and engaging with these issues

Next on ASSIST



- Phase 2
  - Tracing practice, and understanding change
    - Issues with staff learning overheads
    - Mapping AT to needs assessment
    - Impacts of change on professional practice and resident acceptance

Next on ASSIST



- Phase 3
  - Resident and staff empowerment initiatives
    - Championing, 'awareness days'
  - Guidelines
    - Issues coming out of the research for Assisted Living and AT providers

Discussion Points

- Do you have experience with user research for AT?
- Could you share it?
- What were the issues?
- What was the value?

Adds

Scheme Type

- Hypothesis: Scheme Type may affect AT deployment
- Dispersed schemes
  - Greater technology disaffection
    - Less ownership
    - Less 'technoreceptivity' (< 10%)
  - Less AT perception
    - 30% claim to having no AT or only one component
- Sheltered schemes
  - Greater technoreceptivity (approx 20%)
  - Greater AT perception (95% say they have all 3)
- No clear data on AT deployment success relative to scheme at this stage

Value to providers

- **Assisted living providers** e.g. OHE
  - Enhancing response
  - Reducing work
  - Making sure tenants' needs are met in timely ways
  - Increasing peace of mind
  - Engaging with independence and quality of life agendas
  - Taking a lead on human factors and technology reframing

Value to providers

- **Manufacturers** e.g. Tynetec
  - Design implications
    - Discreet presence
    - Multiple routes for contact
    - Reduction of user initiative
    - 'Convergence' (?)
  - Remit
    - Embedding of AT in ITC

Value to providers

- **Service providers** (e.g. Cirrus)