# Factors in utilization and abandonment of assistive technology in the home: Experiences of consumers and service providers in the UK

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# Aim

To determine factors in acquisition, utilization and abandonment of ‘assistive’ technology in the home in the UK

# Assistive Technology

- “any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities”
*US Technology-related Assistance of Individuals with Disabilities Act 2004*

# Background

- around 10 million people in UK covered by Disability Discrimination Act 1995
- around 6.9 million people of working age with ‘long-term disability’
- despite widespread use of AT, many devices are quickly abandoned or never used:
  - Hocking (1999) – up to 56% of devices not used or misused; up to 15% never used
  - Wachtel (2002) – around 90% of devices

# MATILDAH

- Making Advanced Technology useful for Independent Living for Disabled People at Home
- 2 year project funded by Economic & Social Research Council (ESRC)
- multi-disciplinary research team
- adults with disabilities (aged 18-65)
- Scotland and England

# MATILDAH

- multiple strands to research
  - literature review
  - ‘user club’ group discussions
  - home interviews
  - meeting with designers & engineers to discuss issues raised

# Methods

- semi-structured in-depth interviews with individuals with disabilities (n=13)
- focus-group style User Clubs (n=9)

# Methods

- purposive sampling
- recruitment through service-user organisations
- inclusion criteria: self-reported disability including physical, mental health, sensory and learning disabilities
- interviews conducted in individuals homes

# Qualitative Data Analysis

- Modified Framework Analysis (Richie & Lewis, 2003)
  - themes independently identified and content coded by two analysts
  - constant comparative coding approach (Hewitt-Taylor, 2001)

# Interview Participants

- age: 26-61 years (mean 49.2)
- gender: 9 male, 4 female
- wide variety of impairment types
- 9 Scotland, 4 England

# Preliminary Results

- topics focussing on:
  - acquisition of devices
  - utilisation of devices
  - abandonment of devices

# Preliminary Results

- structure for analysis based on factors identified by Wessels et al 2003:
  - personal
  - related to the assistive device
  - related to the user's environment
  - intervention related

# Acquisition

| personal | | device | | environment | | intervention | |
|---|---|---|---|---|---|---|---|
| positive | negative | positive | negative | positive | negative | positive | negative |
| - physical limitations<br>- attitude to technology<br>- independence | - physical limitations<br>- attitude to technology<br>- personal preferences<br>- resistance to change | - cost<br>- design<br>- function<br>- compatibility<br>- reliability<br>- safety/peace of mind<br>- size/ appearance<br>- performance<br>- ease of use<br>- flexibility | - cost<br>- design<br>- compatibility<br>- reliability<br>- size/ appearance<br>- ease of use<br>- benefit<br>- design | - own initiative<br>- funding/ assistance<br>- awareness<br>- availability<br>- improved home layout<br>- testing before purchase | - sourcing<br>- funding/ assistance<br>- awareness<br>- availability<br>- purchase before testing<br>- obsolete technology<br>- practical barriers<br>- support to get set-up<br>- opportunity<br>- false marketing | - provision<br>- improvement/ improvisation<br>- training<br>- choice<br>- assistance in selection<br>- device tailored to users needs<br>- instructions | - process<br>- choice<br>- training<br>- instructions<br>- device does not match users needs<br>- time taken to supply device |

# Acquisition - drivers

- physical limitations

  *"a thing for opening and shutting the blinds would be handy, because if it's open too much I wake up too early, and yet if I have it shut I sleep in"*

- function of device

  *"I would like to have something that would basically operate everything within the house...cookers, kettle, coffee pots... washing machine"*

# Acquisition - deterrents

- cost

  *"they tend to bump costs up because they think 'well if it's going to be for people that need it, then we can charge whatever we want'"*

  *"I just havenae got the money to buy one"*

- personal preference

  *"I didn't see the point in just getting a new one for the sake of it"*

  *"I'd like more up to date wireless technology without having to buy... an XBox 360"*

# Utilisation

| personal | | device | | environment | | intervention | |
|---|---|---|---|---|---|---|---|
| positive | negative | positive | negative | positive | negative | positive | negative |
| - attitude to technology/ competence<br>- physical limitations<br>- own initiative to improve<br>- personal preferences<br>- independence/ QoL | - physical limitations<br>- attitude to technology/ competence<br>- personal preferences | - peace of mind<br>- compatibility<br>- function<br>- ease of use<br>- design<br>- flexibility<br>- reliability<br>- performance<br>- size/ appearance | - compatibility<br>- size/ appearance<br>- function<br>- performance<br>- design<br>- ease of use<br>- reliability<br>- flexibility<br>- running costs | - social circle support<br>- awareness<br>- environment | - awareness<br>- opportunity<br>- assistance required<br>- environment<br>- sourcing parts<br>- support | - support<br>- training<br>- follow-up service<br>- assessment of needs | - remote location<br>- support<br>- initial training<br>- maintenance<br>- users opinions not taken into account<br>- device does not meet users needs<br>- choice |

# Utilisation - drivers

- physical limitations; personal attitude; function; ease of use; follow-up support

*"[technology is] so much quicker and it's allowed people like me to do much more with their lives and be more independent"*

*"it seems pretty straightforward - even my wife can work it now!"*

*"it's very much what you need it for and does it do the job"*

# Utilisation - deterrents

- function

  *"I can only dial the 10 people [stored], so if somebody rings me and I've missed it, if they're not programmed in then I can't ring them back"*

- performance

  *"there are times I'll sit and swear at it"*

# Abandonment

| personal | | device | | environment | | intervention | |
|---|---|---|---|---|---|---|---|
| positive | negative | positive | negative | positive | negative | positive | negative |
| - personal attitude to abandonment | - physical limitations<br>- personal preferences<br>- attitude to technology/ competence | | - performance<br>- design<br>- ease of use/ effort<br>- size/ appearance<br>- reliability<br>- safety<br>- function<br>- flexibility<br>- obsolete technology<br>- incorrect device<br>- device stopped working | - provision | - accessibility<br>- temporary loan | | - support<br>- incorrect device<br>- instructions |

# Abandonment

- physical limitations/progression of illness

  *"I've got my PlayStation, but I don't play it much cos I've got arthritis in my hands"*

  *"I used to use the [amplified] telephone more but... my hearing changed, basically"*

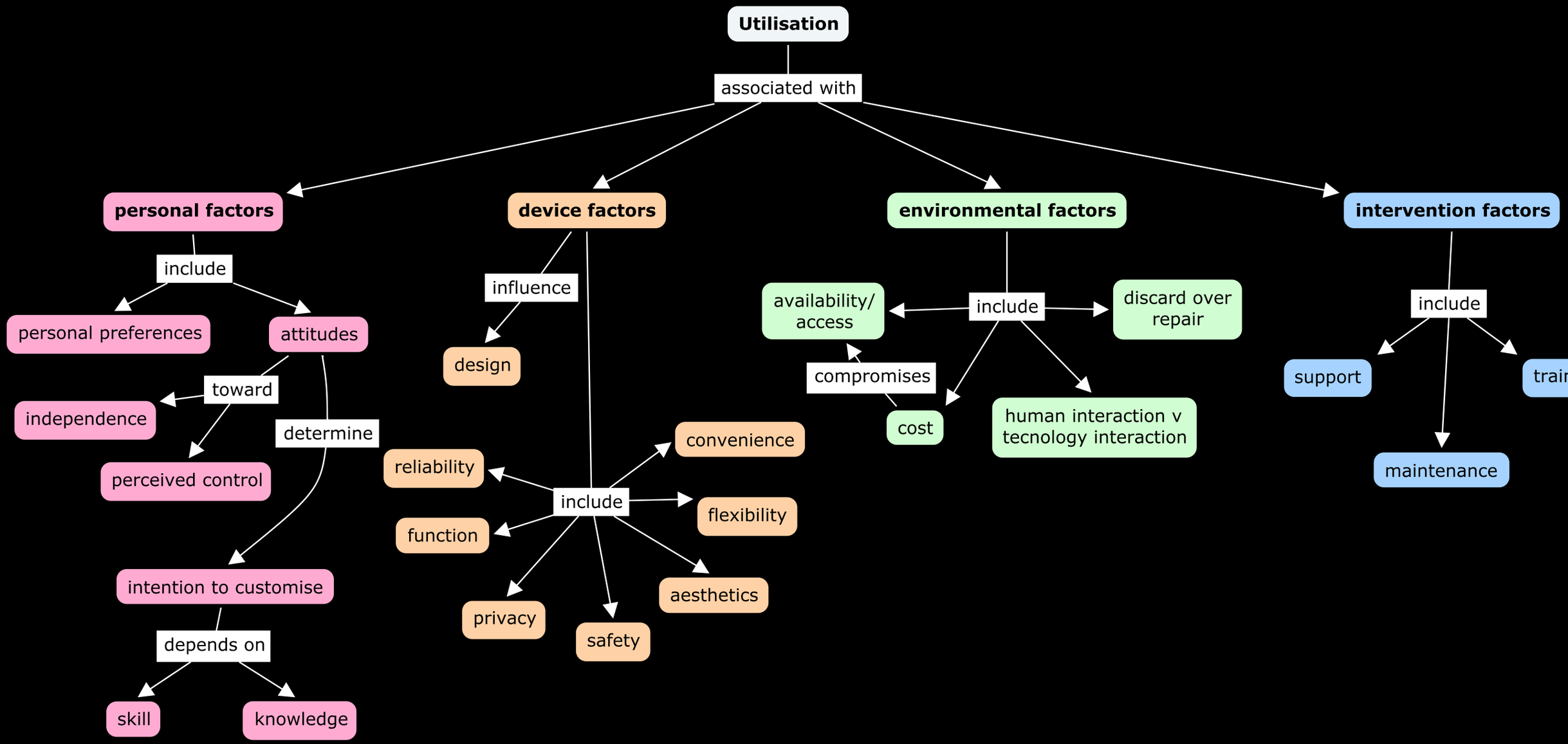
- ease of use

  *"I just avoid [online shopping] because it seems complicated, you know?"*

# Abandonment

*“ I did have a neck loop for my mobile phone but I stopped using it. It was such a hassle... you put the neck loop on and you plug it in...you switch your phone on...hearing aid’s [switched to] ‘T’... If someone rings you, can you imagine? ‘whoops where’s the phone?! whoops where’s the neck loop?! Plug it in, hold on a minute’... It was a nightmare!”*

# Preliminary results - User Clubs



# User Clubs - utilisation

- personal factors - eg ‘Independence’

  *“I do like shopping online because I do it myself for myself but I do like getting a trip round [store name] every now and again to see what they’ve got on the shelves”*

- device factors - eg ‘Design over-specification’

  *“A £200 phone is absolutely no use to me because I don’t want to take photos, I don’t want to listen to music on it…”*

# User Clubs - utilisation

- environmental factors - eg ‘Rapidly changing technology environment’

  *“…We don’t need a main line phone, we’ve got mobiles. I mean, do you think, we’re going to get to the age where everybody will be using mobiles?…”*

# User Clubs - utilisation

- intervention factors - eg 'Support and maintenance'

*"…There's a responsibility on us enablers or supporters because often we are advising our service users,…you open their wallet and spend their money and you are then borrowing on the information that you're giving…you can be buying technology that is just not ticking the right boxes for the people you are supporting and it's a huge responsibility."*

# Implications for future technology

- people want devices with functions which compensate for their physical limitations
- people want devices which are easy to use and do not cost too much to buy
- good support is essential - initial training/ selection and ongoing support/maintenance
- a positive personal attitude to technology helps

# Next steps...

- plans to interview a total of 40 people - 20 in England, 20 in Scotland
- 11 group discussions held
- analysis of the issues which matter to disabled people themselves
- bring forward people's views to discuss with designers and engineers

*Thank you for listening!*

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