21st Century TeleWEAR Project

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Abstract

Telecare products and services are fast becoming important features in the delivery of public services as they strive to deliver health and social care services in home settings rather to traditional models of institutionalised care. This methodology concurs with service-users' desire to remain at home in independence for as long as possible.

With the increasing importance of these technologies in achieving those aims, a significant issue is that of compliance. Users must feel confident and compelled to use the technology in order to ensure that assistance can be raised quickly in the event of an emergency. Failure to adopt technologies correctly could render the service useless at a time it is most needed, thereby putting the user at risk.

Although developing apace through the release of new and increasingly intelligent technology, Telecare is not an entirely new concept and the basic 'button and box' community alarm has been used for at least four decades in some areas. A recognisable feature of this system is the red button worn as a pendant which the service user will press to raise an alarm.

The aesthetic design of this pendant has changed little since its advent and anecdotal evidence supports the view that it is unattractive – particularly to younger users – and promotes a degree of stigmatisation.

This project therefore brought together service users, potential service users, suppliers and young design students to work together to innovate the current pendant trigger design.

As a result of the process, a range of prototypes were produced by the design students who had drawn on the experiences and aspirations for design expressed by the project participants.

The project aimed to utilise the concepts of co-production and intergenerational practice to achieve true innovation. This evaluation and the final prototype designs will be shared with leading manufacturers to consider adopting such approaches when designing Telecare products.

There were constraints on the project in that it was completed in adherence to the academic term-time and, as such, a fully co-productive process was not tested. However, given the timescale involved the results were very encouraging with participants reporting positive outcomes such as a sense of being involved, meeting people 'in the same boat' and being able to give something back. They also found working with the students inspirational and forged a relationship, albeit relatively short-term in this particular case.

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Workshop photographs –www. wearesnook.com

Telecare in context:

Although there is no single, universal definition of the term ‘Telecare’, the one adopted and used by the Scottish Government is:

Telecare *is the remote or enhanced delivery of care services to people in their own home or in a community setting by means of telecommunications and computerised services. Telecare usually refers to sensors and alerts which provide continuous, automatic and remote monitoring of care needs, emergencies and lifestyle changes using information and communications technologies (ICT) to trigger human responses or shut down equipment to prevent hazards.*

Telecare technology provides the user with a means of raising an alarm – usually via a 24/7 manned monitoring centre. Perhaps the most recognisable Telecare technology is the basic community (or ‘social’) alarm which is activated by the user pressing the red button on a cord pendant.

Telecare is an expanding service in the face of changing demographics and there are now 1.7m users UK-wide. It has been developed by local authorities, housing and Health Service Partnerships across Scotland since 2006 as a result of government investment totalling £20m. More than 29,000 people in Scotland have benefited from a Telecare service since then (Newhaven, 2010).

Background:

The aesthetic design of the pendant has remained largely unchanged since social alarms first appeared in the 1950s.

The idea for the project came about following the responses a postal survey of all community alarm users in Moray, undertaken in 2009. The survey elicited a 62% response rate and the results indicated a significant interest in influencing the design of equipment. Although the service as a whole was viewed very positively by the respondents, a number of compliance issues were identified:

- Almost one-third of clients admitted to wearing their alarm pendant only some of the time. The main reasons given were that it got in the way; had the potential to be set off by accident; or simply that they forgot to put it on.
- Fewer than one in ten wear it at all times, thus rendering them at risk in the event of an emergency.
- More than one in ten had found themselves without their personal trigger in a situation where it was needed.

Regarding design, most people found it adequate, viewing the device as a functional 'safety net' with an 'if it ain't broke, don't fix it' frame of mind. Well over two-thirds of the survey respondents were aged 75 years and over, of which over one-third were aged 85 years and over. This is representative of a generation which has traditionally been more passive in nature and tend to be more unquestionably accepting of solutions, particularly those prescribed by a professional.

However, it is anticipated that in the coming years, older people will have different attitudes, expectations and aspirations and will be more likely to be early adopters of technology. Therefore it was considered the suggestions that were made about potential improvements for the pendant, albeit in the minority overall, merited further investigation.

An illustrative analogy comes from the history of reading glasses. NHS glasses were introduced in the 1930s but their remit was merely to be 'adequate' rather than 'styled', even though they were known to humiliate wearers. However, market demand changed in the 1970s and the importance of styling was acknowledged, albeit at a cost. Today any hint of humiliation has been dispelled and wearing glasses has become desirable, even to people without eyesight problems. There is a real opportunity that Telecare manufacturers could emulate that success by considering design, as well as technology, as a matter of course.

Anecdotal evidence from manufacturers indicates that their involvement of consumers in design tends to more reactive than proactive, simply making small 'tweaks' on the basis of feedback received. None of the three main suppliers systematically involve users at the design stage *[Telecare Services Association Scottish Forum - June 2010].* However, some suppliers have acknowledged that the appearance of devices can be off-putting, especially for younger people.

The project was undertaken in partnership with the Glasgow School of Art (GSA) Centre for Design Innovation, Forres (previously Distance Lab) who were also partners in the survey of 2009. The main aim sought to test the potential value of bringing together service-users, potential service users, suppliers and technology design students in a co-productive process to innovate the current community alarm pendant. Innovation funding was obtained from the Scottish Government's Joint Improvement Team in order to support the project.

Nothing appears to have been documented previously about engaging older people in design processes of this particular technology. However, in 2010 a Research Fellow at Middlesex University wrote about designing with older car drivers. This study acknowledged the fact that older people are becoming more and more important in a consumer market. Older people were therefore involved in a participatory process to design and evaluate novel and new technologies in the context of car safety, taking full account of their current driving skills, needs and aspirations. The research concluded that incorporating such evaluative processes in the early stages of the design process, allowed enhanced understanding of needs of older people, in order to inform and refine design requirements.

Project Aims and Objectives:

The project's ultimate aims were to -

- increase the number of people wearing their personal trigger at all times, which is necessary for round-the-clock protection
- meet the lifestyle expectations of next-generation service users

The objectives to support those aims were -

To co-design and innovate an existing telecare product in collaboration with current and potential future service users. One definition of 'co-design' is '*a way to design a solution for a community with that community'* which presents a sensible approach to ensure success. Good ideas can come from anywhere and the benefit of service users' experiences should not be overlooked.

- To create designs and prototypes for presentation to stakeholders in telecare/telehealth industry who research, design and develop telecare products
- To document the process of collaborative design of a telecare product for possible replication in other areas.

Methodology:

The high-level methods to achieve the above objectives were to-

- Bring together key stakeholders to innovate the current Telecare pendant design by way of two collaborative design workshops, a final prototype exhibition and a follow-up evaluative focus group with the service users who participated.
- Raise awareness of Telecare products with users and carers through hands-on experience.
- Produce design prototypes for presentation to suppliers and purchasers; suppliers to consider commercial viability.
- Provide a test bed to highlight engagement between suppliers and service users as good practice in design processes.
- Evaluation and communication of key findings of the collaborative design process, which can potentially be translated across a range of Telecare devices.

- Exploration of the potential benefits of interdisciplinary and intergenerational collaboration.
- Instil an ethos of continuous improvement in product design to ensure that the needs of future generations are met.

Participants and recruitment methods:

Current Telecare service users.

These were recruited from reviewing the responses from the 2009 Telecare user survey. Those specifically expressing a desire for change were contacted initially and invited to attend. The social work case recording system (Carefirst) was initially checked to ensure that contact details were up to date. Recruitment was undertaken by telephone followed up by a letter and information pack.

Additional recruitment drives took place ahead of each event. Potential participants were either contacted by telephone, followed up with a letter invitation; or by a blanket mailing of invitations. Press releases were distributed ahead of all the events in order to attract further participants. These appeared in the local press and/or broadcast on local radio.

Invitees were asked to confirm attendance in advance and were informed that reasonable travelling expenses would be reimbursed (this was accounted for in the budget).

Potential service users of the future

Service users were also invited to bring along carers and/or younger family members. However, to ensure that there was a significant representation of future service users, Social Work practitioners were also invited to participate in this role, which provided a development opportunity for staff.

Student designers

Level 4 Postgraduate MEng in Product Design Engineering students from the Glasgow School of Art were recruited to participate via discussions with the Head of Department. The whole year were involved and the project contributed to their coursework for the Autumn term 2010.

Suppliers/Manufacturers

Three leading manufacturers of Telecare products -Tunstall, Tynetec and Chubb - were sent a project background and invited to participate in an observational and advisory capacity.

Scottish Telecare Leads

Telecare Leads in the other 31 Partnerships across Scotland were contacted and invited to complete an online survey about perceptions of innovation in Telecare

products (Feedback from the survey is at Appendix A). They were also invited to participate in the workshops if they had the capacity to do so.

General

Attendees at workshop 1were also invited to the subsequent events for continuity.

The workshops/exhibition:

Workshop 1:

The purpose of the initial workshop was for all the participants to get to know one another and to contextualise and define the objectives of the project. The participants worked together to enable the designers to develop an understanding of the technology, its remit and limitations and began to explore design ideas.

Attendees:

- 23 design students
- 5 current service users
- 2 potential future service users
- 1 Supplier/Manufacturer
- 8 Health and Social Care professionals
- 3 facilitators
- 0 Scottish Partnership Telecare Leads

Format:

The workshop was run for an afternoon beginning with lunch to allow attendees to mix socially.

Participants were divided into six groups. Two groups were without a current service user as two of the service users expressed a desire to be in the same group. Those groups without a service user had instead at least one professional with knowledge of the technology to assist the designers' understanding.

Each group was given paper-based tools to facilitate discussion. These included a questionnaire, a profile creator relating to personal interaction with the pendant and 'a day in the life of' journey to determine exactly how service users interacted with the technology on a day-to-day basis.

The groups then generated some ideas for improvement which the designers translated into sketches and basic models using plasticine and other materials. During this idea-generation phase, discussions around possible materials and

functionality took place. The six groups reconvened at the end of the afternoon where the designers presented their group's idea(s) to all participants for feedback.

Cultural probes:

During the first workshop the current service users were also given a cultural probe pack to take away with them to record their situations over the following week and reported back to the design students. The packs comprised a disposable camera and notebook. Disappointingly, only three of the packs were returned used.

However it is interesting to note that even without any clear insight into cultural probes and their use, the participants who engaged with this process had clearly taken on board the discussions from the workshop by providing a diary of their day to day routine. One of the participant's photos was clearly labelled 'The steps where I fell' which were outside. Much of the discussion in the workshop had been around alarm technology having a greater range.

Another participant did not take photos but sketched fairly elaborate designs into her notebook, labelling the component parts and materials.

Workshop 2:

There were six weeks between workshops 1 and 2 during which time the design students worked on a number of ideas and prototypes as a result of the discussions at workshop 1. During this time, the basic ideas were presented to the Project Managers only.

The purpose of the second workshop was to give the designers an opportunity to present the ideas arising from workshop 1 in a practical format.

Format:

The workshop began with a social lunch followed by a contextual introduction for new participants. The students then presented their top two ideas for 10 minutes per six groups, accompanied by powerpoint presentations.

In addition to those who went onto participate in the practical workshop (noted below), a further 14 people (service users, potential service users and practitioners attended the presentation only. They did not go on to join the actual design workshop. None of these had been involved in workshop 1.

As before, workshop participants were then divided into six groups with those who had also attended workshop 1 remaining in the same group. Again, two groups were without a current service user.

Workshop attendees:

- 25 design students
- 6 current service users (a further 2 who had been at workshop 1 were prevented from attending due to ill health/hospitalisation)
- 4 potential future service users
- 2 Suppliers/Manufacturers
- 7 Health and Social Care professionals
- 2 facilitators
- 0 Scottish Partnership Telecare Leads

The students then presented their prototypes more intimately to four of the six groups in a more practical session allowing participants to try them and further discuss materials, size and ease of use etc. The inability to visit all six groups was due to time constraints but posters of the ideas (two per group) were also displayed in the social space for discussion/feedback.

Prototype exhibition (3rd stage of Workshops):

The exhibition was held three weeks after workshop 2.

Attendees:

- 25 design students
- 8 current service users
- 10 Potential future service users
- 2 representatives from one of the leading Telecare Suppliers/Manufacturers
- 8 Social/Healthcare professionals
- 14 Other
- 2 Facilitators
- 0 Scottish Partnership Telecare Leads

Format:

The six design groups each set up an exhibition stand to display their prototypes along with some of the ideas that had formed throughout the process but which had not been developed to prototype stage.

The event opened with lunch and other refreshments provided in an open space in the hall to allow visitors to chat and network. There was no formal presentation as the format was ‘drop-in’ rather than timed. However, a slide show showing photos from the process was played on a continuous loop throughout the event in the social space.

Focus Group

A follow-up focus group was also held with the service users and potential service users who had participated in the project. They were key stakeholders and it was important to get their views on the process.

The focus group questions were designed to obtain views on-

- Whether or not the project's aims and objectives had been met
- How the participants felt about their input into the design process
- Current Telecare design methodology
- Motivation to participate
- Working with young designers
- Contribution to the process
- The ultimate designs

The group felt that in the main, the objectives of the project had been met although they did feel that there is now additional scope to take the ideas forward to Telecare suppliers and manufacturers.

"I just hope something comes out of it. For your sake and for ours"

There was considerable discussion about how mobile technology might be better utilised in the production of Telecare products and how this concept, as well as the designs produced by the project, ought to be considered more by manufacturers. All agreed that the project was successful in allowing them to have their ideas discussed and incorporated into the ultimate design. They did not however, feel that their input solely led the design process – more that experiential discussion with the designers helped them to understand what it is and is not required of an emergency trigger.

"[The students] have taken up the ideas and improved on them really I think."

"They're more au fait more with all the new things more so than we are. I mean I don't possess a computer nor do I own a mobile phone because I don't have the eyesight. So, you're depending on their know-how maybe with what you can use, what you're capable of using. They can add all the modern bits."

The intergenerational aspect was highlighted often and it was felt that the sharing of knowledge and experience was key to the ultimate designs.

"I think our conversations inspired [the students]".

" I think the students have done very well."

"It affected quite a lot of the designs really."

"The students were keen, they're interested and they have discipline about them and their work."

The participants all agreed that they had got something positive out of taking part and had really enjoyed the involvement and more importantly, being asked for their opinion.

"You're not alone. There are so many more in the same boat as yourself."

"You feel as if something is being done. What you want rather than being told."

"It's not all take, a bit of give as well."

"I think it was nice to get someone, like yourself, interested in the older generation to be able to do something."

"We're not often credited with still having some intelligence are we?"

"Something to think about, something to do, somewhere to go to, and it's worthwhile."

"*I think the whole thing has been handled very well. I mean the hospitality and the care. Everybody's so helpful and kind. Whenever you put your foot inside the door there's always somebody there to say hello. Well done all round."*

Challenges

- The project formed part of the curricular activity of 4MEng students from the GSA. However, there was a short lead-in time from confirmation that the project had been placed on the timetable for the Autumn Term of 2010 to the date of the first workshop (just over three weeks).

- Screening and telephoning service users was extremely time-consuming with calls lasting anything up to 30 minutes after which time the invitation may ultimately have been declined. This mainly affected recruitment for the first workshop, given the short timescale. Thereafter bulk mail shots were issued for subsequent events which went some way to mitigating this.
- The very nature of Telecare means that users tend to be frail and even housebound in some cases. This meant that many of the people we contacted felt unable to make the journey to the workshops. Transportation was also an issue even though reimbursement of reasonable travelling costs was offered. Some service users living within a 10 mile radius of the venue who were contacted reported that it was too far to travel.
- It was difficult to maintain continuity of attendance throughout the three key stages. However there was a core of five service users who attended both design workshops.
- Similarly, the geographical location of Moray meant that representatives from other partnerships in Scotland and Tynetec (supplier) were also unable to attend in person.

- Having suppliers involved in the process allowed positive contribution of valuable information. However, there were concerns that the supply sector

view relating to production methods and profitability may have restricted the collaborative design process and inhibited innovation.

- In recruiting suppliers it was very difficult to engage at the right level. For example, although invitations were sent to CEOs and/or their design teams, it was not these people who ultimately attended.
- Due to the fact that the project formed core curricular activity for the design students, there was a larger ratio of designers to other participants.

Outcomes

Service users/potential service users:

"We're not often credited with still having some intelligence, are we?"

Anecdotal evidence from the focus group demonstrated that participants felt a sense of increased self-esteem, usefulness and motivation. They also felt a sense of pride in seeing their ideas reflected in the final designs.

The focus group also felt that working with the younger generation who had the skill to bring their ideas to life was an important and enjoyable part of the process.

An unintended consequence was that it became apparent that communication about the functionality of the current alarm pendant was lacking. For example, users were unaware that Tunstall's Amie pendant is waterproof and can therefore be worn in the shower; and that the pendant can be used to answer incoming phone calls remotely. As a result, all Moray Lifeline users have now been made aware of these features.

The users unequivocally agreed that there should be a range of designs of products which would allow them to make rational choices based on their individual needs and tastes.

The enthusiasm shown by participants has led to an ongoing Involvement Group, made up largely of service users, being set up. The group will continue to look at ways in which technology might usefully deliver quality health and social care services. This group provides a vehicle to involve Telecare service users (and potential users with an interest in the field) in the implementation of the Moray Strategy.

Students:

"It's been really exciting, especially to get the service-users' input. This has been a big part of our degree."

The project formed a core curricular activity for the 4th year MEng students at the Glasgow School of Art concentrating on a product mostly unfamiliar to them.

The students found the collaboration with the users of the product hugely beneficial in producing the final designs. They felt that the interaction they had was invaluable in gaining an understanding of the product including its strengths and weaknesses.

Practitioners:

"As a potential user of these products, I think that the project demonstrated that suppliers need to engage with real people to get better insight for continuous improvement of designs."

The project provided a developmental opportunity for the practitioners who participated to gain an insight into how users engaged with solutions that practitioners are prescribing.

In addition, practitioners were able to put themselves in the role of potential service users and contribute to the design process in that way.

Suppliers/manufacturers:

"The project was very much worthwhile and, I felt, a great way of brainstorming ideas using service users, developers and suppliers input."

As identified above in 'Challenges', the representatives from suppliers who were involved in the design workshops were not employed in the specific area of product design. However, both could see the benefits of the collaborative approach to design adopted by the project.

The suppliers were encouraged to participate by putting themselves in the role of potential future user. However, they reported difficulty in completely detaching themselves from agendas arising from the 'day job' and also offered guidance on technical issues such as battery life and cost of production.

They reported that they did feel there is considerable merit in engaging end users and external designers in product design in this way. One comment made was that in 30 years in the industry they had never been approached to participate in an exercise like this. The project was described as 'pioneering'.

As a result, the representatives involved report having fed back the learning from the project to their design teams who have reacted positively to the concept of learning from users.

Conclusions and recommendations:

The project highlighted the fact that suppliers/manufacturers of Telecare products are not identifying and engaging with the correct 'customer' as a matter of course. There is a tendency to view the practitioners who procure and supply Telecare to end users as the 'customer' which, as a result, is quashing innovation in design. Therefore a shift in the market paradigm is required in order to ensure that products

are future-proofed to meet the changing needs and aspirations of users and that suppliers remain innovative, thus creating a competitive advantage.

The collaborative, co-design approach demonstrated by the project provides a model framework for engaging with end users which can be adapted by suppliers/manufacturers to suit specific circumstances. The project sought to consider the benefits of co-design or co-production albeit on a small scale. However, 'co-design' has many facets. It is important to ensure that the scope of the co-design process and the roles within it – including who has the final say in the event of disputes arising - are clearly communicated and agreed beforehand. Time was an issue in this particular case but if we were to do this again, we would actually involve the participants at the workshop planning phase, which would include this.

The intergenerational approach was a positive outcome with both service users and students giving specific positive feedback with regard to this aspect. Both sets of participants were able to bring different skills and experiences to the table. One supplier representative also remarked that this was a sound approach and that companies should consider engaging with external academic institutions in the future. As was the case here, this provides not only an opportunity of gaining skills for the supplier, but also supports the integration of Telecare and Telehealth learning content into the under-graduate curriculum.

The service users involved in the process unequivocally agreed a desire to be treated as consumers and have some degree of choice in products to allow personalisation. All agreed that they would be happy to pay for something which better suited their individual needs. A suitable analogy in the consumer marketplace relates to mobile phones – some consumers only want a basic handset that simply makes and receives calls, whilst others will pay more for a Smartphone which has a range of functions over and above the basic 'phone application.

The scope of this particular project was finite. Its main objective was to test a collaborative approach to product design and produce six tangible prototypes. It was never in scope to try and get any of the final designs to market. However, having presented the project at conferences, considerable interest has been raised. In addition, the service user group which has been set up has expressed an interest in continuing dialogue with suppliers as they are keen to see ideas taken forward where feasible.

While the focus of the project was on innovating perhaps the most iconic and well-recognised Telecare product – the pendant alarm trigger, the good practice of collaboration in design that it highlights can be translated across a range of products.

Summary of recommendations:

- **Suppliers should consider using users of their products to collaborate in design processes.**
- **Service users should be seen not only as consumers of public sector services but of tangible products as well.**
- **Service providers should be proactive in considering and sourcing various options for users wherever possible.**

- **Academic institutions should consider including Telecare in curricular activities in order to embed its necessary potential from a young age.**

Next steps:

As a result of the project, the service users who participated expressed an interest in having ongoing involvement with Telecare and Telehealth-related issues in Moray. They have therefore formed an involvement group and they will contribute to the ongoing implementation of the Moray Telehealthcare Strategy 2010 – 2013.

They are also keen that Telecare product suppliers and manufacturers note the recommendations arising from this project and would welcome the opportunity for further input.

An interim evaluation report has been sent to each of the three leading Telecare suppliers who were invited to participate in the project and a copy of this full report will also be distributed to them. Tynetec have already made representations that they would like to connect with the involvement group to participate in their regional forums. Participation in these forums has until now, only been open to service providers rather than end-users. This in itself is a positive outcome and one which takes us a step forward to service users being embraced as consumers by Telecare product suppliers.

APPENDIX A – Responses from service user survey in 2009

62.3% response rate: 1324 questionnaires issued, 795 fully completed of which 13 were anonymous

26 not fully completed but notified changes such as user deceased, in a care home or out of area, for example.

Q1. How long have you had a personal trigger?

	Response Percent	Response Count
Less than one year	15.7%	125
1-2 years	24.7%	196
3-4 years	22.4%	178
More than 4 years	**36.0%**	**286**

Q2. How many times have you used your personal trigger to summon help?

	Response Percent	Response Count
0	**64.9%**	**516**
1	10.4%	83
2	7.4%	59
More than 2	15.3%	122

Q3. How many times have you *wanted* to use your personal trigger but it was out of reach?

	Response Percent	Response Count
0	**84.8%**	**674**
1	7.0%	56
2	2.1%	17

2+	2.1%	17

Q4. Why were you given a personal trigger? (tick all that apply)

	Response Percent	Response Count
I suffer with a long term illness	37.8%	298
I live on my own	**73.1%**	**577**
I'm not as mobile as I used to be	**74.4%**	**587**
It was my family's idea	28.1%	222
I wasn't given much choice	8.4%	66
Other	See separate sheet	

Q5. How often do you wear your personal trigger?

	Response Percent	Response Count
All or most of the time	**69.1%**	**549**
Some of the time	18.1%	144
Very occasionally	6.0%	48
Not at all	6.0%	48

Q6. When do you remove your personal trigger? (tick all that apply)

	Response Percent	Response Count
At night	**67.9%**	**536**
Leaving the house	44.4%	350
In the shower or bath	**68.9%**	**544**
No, I keep it on at all times	7.6%	60

Other	(Allowed for free text narrative)

Q7. What is the main reason for wearing or *not* wearing your personal trigger?

Wearing

	Response Percent	Response Count
I feel safer	**70.2%**	**554**
I feel more independent	31.4%	248
It gives my family peace of mind	56.1%	443
I feel supported	36.1%	285
I feel less anxious and stressed	29.9%	236
I need less help from my family	10.9%	86
Other	(Allowed for free text narrative)	

Not wearing

	Response Percent	Response Count
I don't want to be a nuisance	6.6%	52
It's uncomfortable / annoying to wear	4.8%	38
It labels me as vulnerable	2.2%	17
I forget to put it on	**12.9%**	**102**
It's unattractive	3.0%	24
I could press it by accident	**18.6%**	**147**
Other	(Allowed for free text narrative)	

Q8. People have suggested the following changes to the personal trigger. Which do you agree with? (tick all that apply)

	Response Percent	Response Count
It would work outside my home	**54.4%**	**429**
It would have added functionality (e.g. work as a watch or music player)	8.9%	70
It would send a call for help if I have a heavy fall	**69.6%**	**549**
It would be more attractive (e.g. jewellery) & come in a range of styles and colours	12.8%	101
It would not need to be worn (e.g. a voice activated trigger)	21.7%	171

Q9. What would *you* change about your personal trigger and why?

(Allowed for free text narrative)

Q10. If you feel that the equipment you currently have is no longer relevant or beneficial to you please tick the box below and MCHSCP will contact you to discuss other options available – please remember to fill in your contact details on page 1.

32 (ticks)

Q11. Please use the space below to provide any further comments about the service.

(Allowed for free text narrative)

Q12. Are you?

	Response Percent	Response Count
Male	21.6%	172
Female	**78.4%**	**623**

Q13. What is your age?

	Response Percent	Response Count
Under 50	2.6%	21
50-64	6.8%	54
65-74	10.7%	85
75-85	**43.1%**	**343**
Over 85	**35.7%**	**284**

Q14. Do you live on your own?

	Response Percent	Response Count
Yes	**78.1%**	**621**
No	20.6%	164

Q15. Do you have a friend or relative who cares for you?

	Response Percent	Response Count
Yes	60.9%	484
No	35.8%	285

APPENDIX B – Survey responses – Telecare Leads of 32 Scottish Partnerships

Survey Title: Encouraging collaborative design in Telecare

Total Completed Survey: 11

Can you think of a Telecare product that has been progressively improved or modernised since its introduction?

	Response Percent	Response Count
Yes	63.6%	7
No	36.4%	4

If yes, please tell us. If no, why do you think this is?

- Pivotell medication dispenser
- Tynetec's community alarm
- GPS locator & tracking devices
- Not sufficient pressure on the manufacturers to do so
- The Fall Detector has evolved from simple tilt-activation to a device with an accelerometer and shock detector
- 1st generation: community alarm units (from Homelink to Lifeline models); 2nd generation: DDA pager system (perhaps not a progressive improvement, but some versatility in meeting needs)
- Medication minder -Tynetec appears to have made theirs more compact and less clumsy. Bed sensors have definitely become more streamlined and less bulky
- The bed sensor - supplied by Tunstall – is a much slimmer design and can be placed under the sheet rather than putting it under the mattress. There is also a new pendant supplied by Tunstall and other suppliers that looks more like a watch - but it is twice the price of a normal pendant
- In comparison to other areas of the technological industry the design of telecare products has not progressed much at all, I think this is because the suppliers who dominate the market have not seen fit to engage with us, the consumers, in developing their products to become more modern and aesthetically pleasing
- I suspect that there is a 'if it ain't broke, don't fix it' mentality. There is also limited competition so there is not heightened impetus to make the products more attractive either in terms of looks and/or functionality. This appears to be the case with any product related to disability, although the design of glasses and hearing aids seem to offer an exception as their design has moved on.

In your experience, do Telecare suppliers engage directly with service users in the design of products?

	Response Percent	Response Count
Yes	9.1%	1
No	90.9%	10

If yes, please give an example. If no, why do you think this is?

- I am not aware of any engagement by suppliers with service users – possible reasons may be not knowing how to do this and reliance on indirect engagement through service providers
- Some do more than others, Tynetec are a good example
- They have a monopoly of the market
- If 'service users' means both local authorities and their clients then, no. Engagement in my experience tends to happen once a product has been launched and desired refinements are requested by the service user. A good example of this is the Chubb wrist-worn fall detector, which is nearly a really good device
- I am unsure of the product design methods. I assume larger partnerships may be consulted, or service providers use other methods of engaging clients
- Access may have been a problem to organise and at best service providers/commissioners may have felt they were reflecting changing needs and demands of their service users
- I said no... but this is only in my experience. I would think it only prudent that the suppliers should do some sort of market research when designing a new product
- See answer to Q2
- Possibly because more often than not suppliers are dealing with practitioners rather than direct with the users. Therefore they probably see practitioners as their key stakeholders to answer to rather than the end user.

Do you think that Telecare suppliers *should* engage directly with service users in the design of products, on a systematic basis?

	Response Percent	Response Count
Yes	90.9%	10
No	0.0%	0
Not sure	9.1%	1

If no or not sure, please explain:

- Service user engagement is a skilled process – it would be good if the suppliers developed the skills to do this. Otherwise it would be superficial

- Definitely. Telecare practitioners are knowledgeable, practical people looking for solutions that actually work really well for service user. They are probably the best people to design Telecare devices but do not necessarily have the medico-electrical-engineering skills to follow through
- There are some hints that suppliers are starting to think about the look and design of their products more but I do not think the penny has dropped that the demand for a better designed product is growing in momentum and that the end users expectations of the look and feel of telecare products is changing fast.

Do you think that a series of collaborative workshops with young designers, suppliers, and service users, is a credible and viable approach to involving users in shaping Telecare products?

	Response Percent	Response Count
Yes	90.9%	10
No	9.1%	1
Not sure	0.0%	0

If no or not sure, please explain:

- A word of caution - to truly listen to potential users; not to force change for the sake of change to predominate peoples' views. Please note you have not allowed for an explanation under Qn6 (unfortunately). The reason I say yes is that I would wear it (the streamlined version under my jumper, shirt (or playsuit!) neckline. Many users do this happily anyway.
- I think it's certainly worth testing as an option.

As a potential service user of the future, would you be happy to wear the Telecare pendant in its current form?

	Response Percent	Response Count
Yes	18.2%	2
No	81.8%	9

People have suggested the following changes to the Telecare pendant. Which do you agree with? (tick all that apply)

	Response Percent	Response Count
It would work outside	90.9%	10

the home		
It would have added functionality (e.g. work as a watch or music player)	90.9%	10
It would send a call for help if the wearer has a heavy fall	81.8%	9
It would be more attractive (e.g. made as jewellery) and come in a range of styles and colours	81.8%	9
It would not need to be worn (e.g. a voice activated trigger)	63.6%	7

What one thing would you change about the Telecare pendant and why?

- Size - if smaller it could be disguised
- It would have added functionality
- The soap on a rope look - it's not attractive & definitely not for the fashion conscious
- Include it in a tie or a scarf or an item of jewellery or watch to make it less obvious and increase compliance with wear.
- A recent study of pendant wearers in the North East of Scotland found that the majority of service users rarely wear their pendant. Compliance is a serious issue here and is one of the reasons 3rd generation Telecare, technology that also includes health monitoring, should feature strongly on every partnership's agenda
- The way it looks. It identifies the wearer as a 'service-user' instead of being an accessory whose function is not obvious
- Make it less "obvious" - integrate it with modern devices
- Probably to call automatically when a person falls
- I would make it a Functional watchstrap design. However, as stated earlier there is such a pendant now available - but it does cost twice the price of the current pendant
- Even if it came in a range of colours it would be a start! Rather than the light grey/brown-ish colour we know so well
- I would like to negate the need to wear something as obvious and ugly as the current form altogether.

What is your age?

	Response Percent	Response Count
Under 40	18.2%	2
40–50	27.3%	3
Over 50	54.5%	6

APPENDIX C – The designs

snapband

by Active Design

The **snap**band is a bracelet which is aimed to be worn around the wrist at all times. The **snap**band is activated by the user pulling it, thus breaking it from their wrist. This action causes the alarm to be triggered and a signal is sent to the call centre.

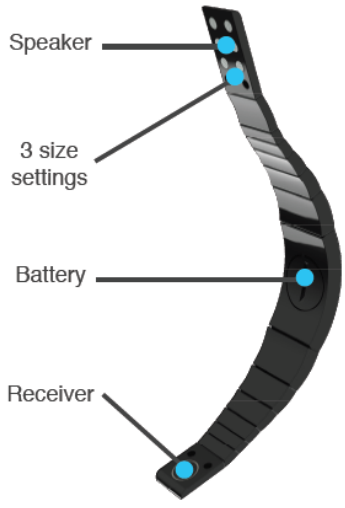
The broken **snap**band changes shape, taking on a form similar to a phone. With an in-built speaker and receiver unit, the user can communicate to the call centre directly. This eliminates the confusion of a distant voice coming from a centrally located base unit, and adds a sense of reassurance.

In case the device is accidentally broken, there will be a short delay before the alarm is triggered. If the **snap**band is reconnected within an allocated time (decided by user and carer), the alarm will not be triggered.

GPS has been incorporated into the design, allowing for the **snap**band to be used ANYWHERE. This gives the user more freedom and a feeling of safety and security wherever they are.

The **snap**band will be made from high quality styrene. This will allow for the alarm to be injection moulded. Styrene is inexpensive and has a variety of finishes. 3 different size settings are built into the design allowing for a wide range of users.

- ☑ The **snap**band will not interfere with the users existing clothing.
- ☑ It can be worn for the entire day, preventing users from forgetting to put it on.
- ☑ The change of form acts as a visual aid to alert the user that the device has been triggered.
- ☑ Phone feature adds sense of reassurance, and familiarity.
- ☑ The design is aimed to suit both male and female



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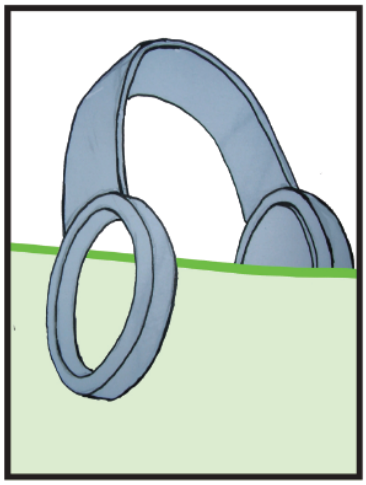
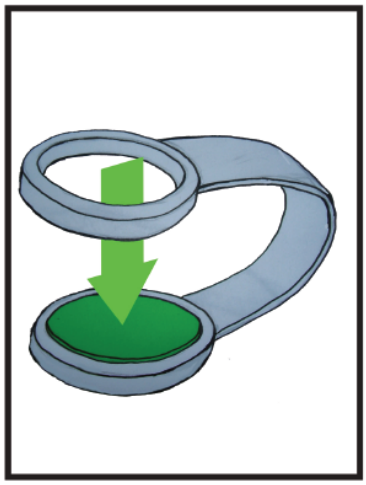
THE LOOP

The loop is designed to attach to the edge of any clothing. The main body of the device is hidden behind the clothing leaving only a discreet ring visible. This reduces the stigma associated with more obtrusive triggers.

The loop uses magnets to attach through the clothing. It is durable, waterproof and can be worn around the wrist in the shower. Pressing the button through the discrete ring on the clothes activates The Loop. A click and LED's in the outer ring provide the user with positive feedback and reassurance that the device is active. The ring acts as a barrier preventing accidental activation. Its does this by creating a recess, avoiding pressure from objects other than the user's finger.





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Contact

A discrete wrist based concept which works by prolonged contact of both the arcs. Two seconds of contact raises the alarm, minimising the likelihood of false alarms and a red light illuminates the bracelet when active.

Contact is designed to be worn throughout the day, even in the shower. During the night the bracelet sits in the dock on the bedside table, with an optional blue glow to make it easier to find. If necessary, the bracelet can be pressed down from above and the alarm raised easily. Through the dock there is potential for future development of the concept to integrate with telehealth.

Contact is unisex and available in three sizes to suit a wide range users.

independant

trustdesign@live.co.uk

We feel that the current approach of "one size fits all" is not appropriate in today's society where people expect choice. That is why we have designed a range of alarms. Our proposed alarm is designed to look like jewellery and we feel this will give the user a desire to wear the alarm.

The independant is worn around the neck on a chain. To activate the alarm the user simply pulls down on the lower "u" shape. A red LED indicates that the alarm has been raised. Once help is on the way the light changes to green, providing reassurance.

- Basic functions can be programmed
- Accidental activation is reduced
- Doesn't look like an alarm
- Waterproof
- Batteries last 5years

Aternative design

This alternative version of the independant is worn on the wrist. The alarm is activated when the bracelet is broken. Depending on the user's needs the alarm can be programmed to either activate straight away or after a set time delay.

Base Unit

We have also designed a base unit in which the pendant is placed during the night.

- Alarm trigger button on the base unit
- Reminds user to wear in the morning
- Removing independant turns the integrated light on
- Records data and alerts relative/carer of non compliance

SMARTtouch

The SMARTtouch is designed so the user can make it personal to them. It is available in different shapes and colours, and there is the option of engraving a pattern or message on to the front face. To simplify the customisation process, it is done online with a family member or carer present to assist if necessary.

To wear the SMARTtouch, users can simply slide it on to their clothes, or attach it to a wrist strap or necklace chain. There are a variety of necklace chains offered, so users can choose a style to suit any existing jewellery they own.

Accidental activation is minimised by incorporating a two-switch system. The alarm button combines a push switch with a capacitive touch sensor, so the user must push the switch with bare skin to activate the alarm. This prevents a false alarm being sent if, for example, the alarm is knocked against a table.

Response

TALISMAN

TALISMAN is a modular telecare concept that offers flexibility in aesthetics and function. Taking inspiration from charm jewellery, the system represents a challenge to the 'one size fits all' approach of telecare products to date, as well as a solution to the accelerating convergence of telecare and telehealth services.

Combining disparate elements of telecare into one contact point between user and service provider, both parties are involved in tailoring the system, to optimise service delivery, encourage compliance and reduce cost. Wireless modules providing GPS tracking, two-way audio communication and pulse monitoring, as well as the essential alarm activation, are shown as examples of a potential range.

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