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Results of Mindings pilot study (trial 2) – Bedfordshire & Cambridgeshire 2013/2014

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1 Executive Summary

The demographic in the UK is changing; the proportion of older people has never been higher and is forecast to continue to rise from 10 million people over 65 in 2010, to almost double this by 2050. Within this total, the number of very old people grows even faster, there were three million people aged more than 80 years in 2010, forecast to reach eight million by 2050. The implications are far reaching, and there is concern about the risk of social isolation and loneliness in older people and the impact this has on health and risk of mortality.

In December 2012, East of England Local Government Association (East of England LGA) ran a competition for adaptive technologies. The competition aimed to stimulate innovative design and development which could be capable of helping to reduce and manage demand for institutional care for older people. Mindings was selected as the best product for further development and investment, in light of the objectives of East of England ELGA.

Mindings has developed a mobile service enabling multiple people to send captioned pictures and messages via text and email to an individual. Described as 'Facebook for the technology shy', Mindings is an App operating via the internet on 'tablet' devices and is aimed towards socially isolated members of the community.

East of England LGA ran two pilot studies (trials one and two) to test the 'Mindings' product between April 2013 and February 2014. Health Enterprise East (HEE) was selected by East of England LGA to assist with the research methodology and evaluation of the second pilot study (trial two). Questionnaire design, face-to-face interviews, data analysis and report preparation were carried out by HEE on behalf of East of England LGA and Mindings.

Trial two was an exploratory pilot study and focused – at a high level - on whether Mindings is able to reduce social isolation, increase actual social contact, impact emotional well-being and assist in the management of personal care. Participants on trial two were each provided with a tablet device that was 'locked' to the Mindings App for a trial period of eight weeks and were interviewed by HEE both pre- and post-trial.

The effect of the Mindings product on participants has been assessed based on both quantitative (adapted from well-recognised surveys on quality of life, health and well-being and scale of depression) and qualitative information (derived from discursive based questioning).

Key questions have been considered, regarding the impact Mindings had on the health and well-being of participants, namely did Mindings:

Improve quality of life?

- Perception of quality of life was high throughout the trial, average score was 4 out of 5, both pre- and post-trial
- 38% of participants did report an impact on quality of life
- Three quarters of those reporting an impact were receiving content >weekly

Improve emotional well-being?

- Participant happiness and emotional well-being was also high, on average, throughout the trial, with scores for happiness identical pre- and post-trial
- 43% of participants did agree Mindings had an impact on their happiness – noting they were happy to see photos of family
- Eight out of the nine participants reporting an impact on

happiness were receiving content >weekly

**Tackle social isolation/loneliness?
Allow participants to form new friendships?**

- Over 70% of participants see family >once/fortnight, many see family daily/weekly and therefore do not perceive themselves to be socially isolated or lonely
- Participants that see family <once/fortnight may be assumed to be at higher risk of isolation/loneliness. 'Social networks' and activities outside the home for those 'at risk' participants were unchanged
- Some people report a perception of improved access to information about family, helping them to feel more 'in the loop'

**Help build and strengthen relationships?
Allow participants to communicate with friends & family?**

- Frequency with which participants communicated with family and friends remained largely unchanged, but participants did enjoy seeing photos, they may otherwise not have seen
- A common complaint/request for improvement was lack of two-way communication

Whether participants will continue to subscribe to Mindings following the free-trial period depends largely on cost and improvements to the functionality of the App – many felt the capabilities of the App were limited and some reported they would prefer to learn to use the internet to access email, superseding the need for Mindings. Most participants would not have purchased such a 'device', primarily due to apprehension about technology and the internet.

Many, in fact 81%, of participants reported a very positive reaction to having technology, such as an iPad, made available to them – beyond the Mindings product itself – and several participants have requested the iPad be unlocked, enabling them to use it for other applications. There is evidence that participating in the trial has 'demystified' technology, by introducing it in a 'gentle' way and helped people to recognise the potential that learning to use technology has for their lives. This highlights the benefits of some assistive technologies, but is accompanied by a cautionary note on the need for more stringent screening of those suitable for such technologies and provision of a well-organised, well-resourced technical support network.

2 Introduction

The demographic in the UK is changing; the proportion of older people has never been higher and is forecast to continue to rise from 10 million people over 65 in 2010 to almost double this by 2050. Within this total, the number of very old people grows even faster, there were three million people aged more than 80 years in 2010, forecast to reach eight million by 2050¹.

We are all becoming increasingly aware of the implications of living in an ageing demographic, with many older people living alone, away from family members and at risk from feelings of loneliness and social isolation. The impact is felt across all sectors of society, with notable effects on health and social care; feeling extreme loneliness can increase an older person's chances of premature death by 14%, and has twice the impact on early death as obesity does, according to research presented at a recent meeting of the American Association for the Advancement of Science².

At the same time, we are a society with increasing dependence on digital technology, with many of us using technology as a means to stay in touch with our 'social network' and as a way to expand and build new networks. Unsurprisingly, the two trends do not correlate - as a proportion of our older generation remain largely digitally illiterate and unaware of the potential benefits of the digital age.

A study on 'The Dynamics of Ageing' produced by the Institute for Fiscal Studies, found that, whilst use of internet in the 50-60 age bracket is around 80% for both men and women, this tails off dramatically in the over 80 age group where only 28% of men and less than 10% of women were using the internet and/or email as of 2011³.

This is considered a missed opportunity; could technology actually be significantly beneficial to this group of society? From the technology-push perspective, there is a growing number of technology providers aimed at meeting the needs of the older generation. There is also growing technology-pull from care providers interested in the potential of adaptive technologies - including digital products - to assist our older generation to continue to live independently, decreasing the reliance on support from family members or more costly social care services⁴.

In December 2012, East of England Local Government Association (East of England LGA) ran a competition for adaptive technologies. The competition aimed to stimulate innovative design and development which could be capable of helping to reduce and manage demand for institutional care for older people. This was viewed as a key part of the 'Innovation in Adult Health and Social Care Project'. Mindings was selected as the best product for further development and investment, in light of the objectives of East of England LGA.

The East of England LGA competition won by Mindings provided £100,000 investment to pilot the technology within a local system in the East of England and to assess the effect the product had on the health and social isolation of participants. The target was to recruit 30

¹ Key issues for the new parliament 2010 - The ageing population

www.parliament.uk/documents/commons/lib/research/key_issues/Key%20Issues%20The%20ageing%20population2007.pdf

² Loneliness is a major health risk for older adults (www.healthcanal.com/geriatrics-aging/47679-aaas-2014-loneliness-is-a-major-health-risk-for-older-adults.html)

³ The dynamics of ageing – Evidence from the English longitudinal study of ageing 2002-2010 (wave 5)

⁴ Building a business case for investing in adaptive technologies in England – <http://www.pssru.ac.uk/archive/pdf/dp2831.pdf>

participants onto trial two; 29 started the trial, with eight failing to complete the final interview for a number of reasons including illness and no content sent.

3 The Mindings App

Mindings has developed a mobile service enabling multiple people to send captioned pictures and messages via text and email to an individual. Described as 'Facebook for the technology shy', Mindings is an App operating via the internet on 'tablet' devices and is aimed towards socially isolated members of the community.



The App enables multiple family members/friends to interact with an individual through sending short messages and images with the intention of reducing their social isolation.

It has been designed to be easy to use – the only interaction the user has with the device is to touch the 'Thumbs Up' sign located on the bottom right corner of the screen when they receive a new item of content. This triggers an automated email to notify the sender that the message/photo has been received – also serving to reassure the sender that the recipient is there and well. To ensure ease of use and peace of mind, contact is intentionally one-way, i.e. the person with the device in their home can receive, but not send, personalised content, and secure; i.e. only senders approved by the account administrator (likely a close family member) can send content to the user.

4 Trials/Pilot studies

East of England LGA ran two pilot studies (trials one and two) to test the 'Mindings' product between April 2013 and February 2014. The pilot studies intended to explore some potential benefits of a technology such as Mindings. The studies were not intended to be run as in-depth research and analysis, rather an investigation into perception of the product, feedback for product development and the appetite within this demographic for assistive technology.

Central Bedfordshire and Cambridgeshire Local Authorities were identified as host sites to manage the recruitment and retention of a cohort of older people and facilitate the trials in conjunction with East of England LGA and Mindings. East of England LGA selected Health Enterprise East (HEE) to assist with the research methodology and evaluation of the second pilot study (trial two).

A third trial was planned at the outset of the project with the same aim as trial two, but a different cohort to specifically include single, divorced or widowed participants. However, as discussed below, difficulty in recruiting participants led to the decision to proceed with trials one and two only.

4.1 Trial one

Trial one was a small trial of five participants located at a retirement/sheltered housing complex managed by Central Bedfordshire. Participants were provided with a tablet device locked to the Mindings App and a standalone, mobile Wi-Fi device avoiding the need for internet connection to be installed for each user. Each participant had a network of five family and friends who could send content.

The trial began in April 2013, and participant experience was used to further develop the Mindings product. User 'stories' were used in publicity and other activities used to recruit participants for trial two.

This report is not intended to detail the outcomes of trial one, analysis of the results of the trial were performed by East of England LGA and Mindings and were used to direct product development.

4.2 Trial two

The principal aim of Trial two was to establish the impact that Mindings has on the health, well-being and social isolation of individuals. In particular, whether Mindings is able to reduce social isolation, increase actual social contact, impact emotional well-being and assist in the management of personal care.

4.2.1 Key stakeholders

Figure 1 illustrates the structure of the team and the various stakeholders involved in trial two.

A project director and project manager were appointed by East of England LGA to run trial two. A technical support officer was hired on a short contract by East of England LGA, to support the Mindings team in setting up the devices for the participants and to support any initial technical queries.

The Mindings team includes Stuart Amott, CEO and Ian Pleasance, software developer. Mindings also provided technical support to participants, account administrators and senders including messaging and phone call responses.

Central Bedfordshire and Cambridgeshire County Councils each appointed a senior manager and project manager who oversaw recruitment and retention of participants and will also manage the exit strategy for the trial.

Questionnaire design, face-to-face interviews, data analysis and report preparation were carried out by HEE on behalf of East of England LGA and Mindings.

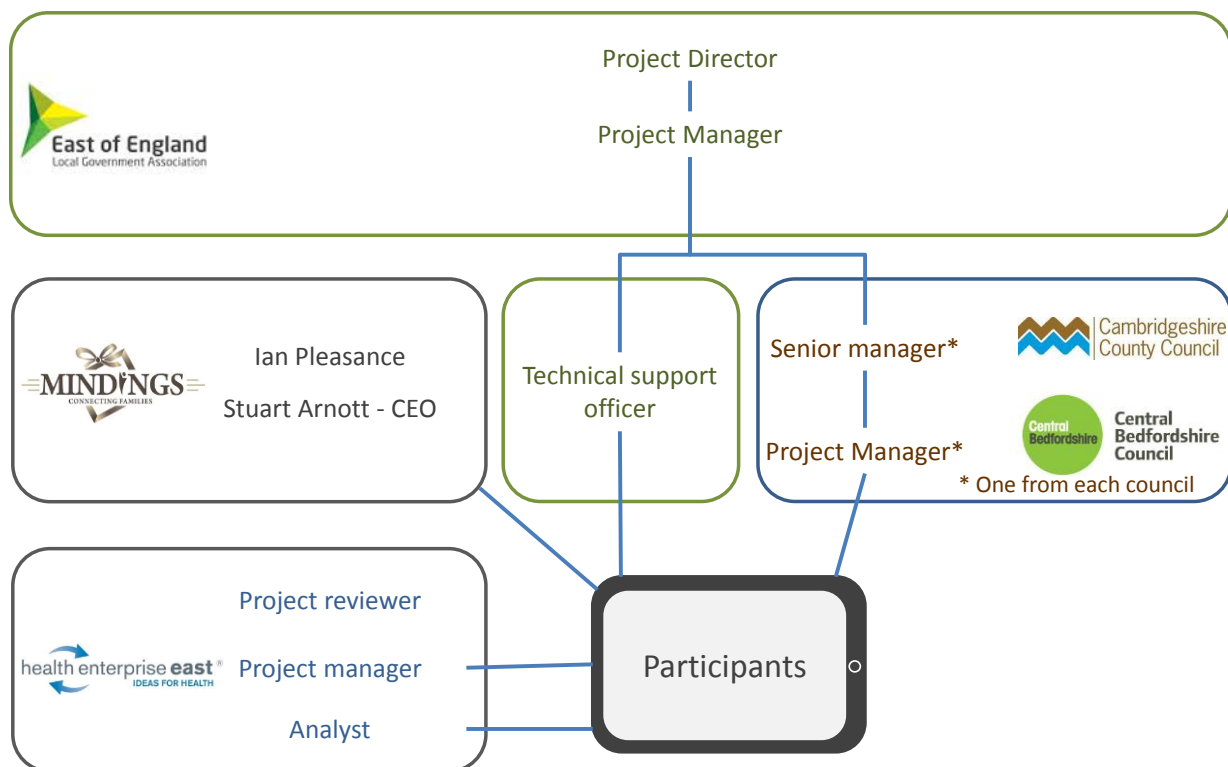


Figure 1 – Key stakeholders involved in trial two

4.2.2 Participant recruitment and research limitations

Participants for the trial were recruited by Central Bedfordshire and Cambridgeshire Councils using screening criteria (Table 1 and appendix) when considering participants for inclusion in the trial. This was intended to enable recruitment of a representative cohort to ensure data was comparative, reduce the risk of outliers and to increase the overall credibility and significance of the pilot study.

Table 1 – Screening criteria used to select participants for trial 2 and % passing/failing

Criteria	% Pass	% Fail
Over 70 years of age	97	3
Not diagnosed with dementia	100	
Not experiencing a limiting or long-term illness	100	
Able to sign consent form	100	
Living in current accommodation for at least 6-months	100	
Does not see family or friends more than once/fortnight	29	71

It is worth noting that (as shown above and in table 6) it was uncovered during the pre-trial interviews that only 29% of participants did actually pass the criteria 'Does not see family or friends more than once per fortnight'. This is likely a reflection of the fact that 76% of participant's live less than 10 miles from their nearest child (or relative) (figure 2).

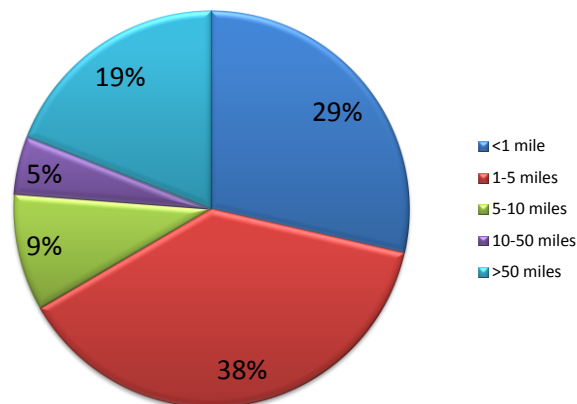


Figure 2 – Distance from nearest child (or relative)

It also became apparent that, particularly when dealing with an older demographic, the health circumstances of participants may change. This was the case with one participant in particular for whom a deterioration and potential onset of dementia came to the attention of the family during the trial. Periods of confusion and fluctuation in understanding became more frequent and exaggerated during the trial period. The trial was completed but the device then removed by mutual consent.

Overall, the recruitment process was more challenging and time consuming than expected by East of England LGA. The two councils spent over three months recruiting participants and used a variety of approaches including local newspaper coverage and local social housing networks. The challenges faced during recruitment highlights that identifying those who are truly 'socially isolated' and 'digitally excluded' in a short time-frame is difficult; they are less likely to be aware or willing to volunteer for such studies, hence the difficulty finding enough participants who genuinely pass the screening criteria set.

The target was to recruit 30 participants onto trial two; 29 started the trial, with eight failing to complete the final interview for a number of reasons including illness, declining to complete the trial and no content sent.

Table 2 – Number of participants by location

Location	Pre-trial	Completed trial	Did not complete
Bedfordshire	17	15	2
Cambridgeshire	12	6	6
Total	29	21	8

4.2.3 Participant involvement

The pilot study (trial two) involved providing participants with a tablet device that was 'locked' to the Mindings App for a trial period of eight weeks, with each participant visited and interviewed face-to-face both pre- and post-trial to assess levels of well-being and social isolation, amongst others. An interim, telephone-based, 'check-up' was carried out by councils halfway through each participant's 8-week trial period. Questionnaires were designed by Health Enterprise East; the aim of each is detailed in table 3.

As noted previously, the 'target users' for the App are those who are 'technology shy' and this was borne out in the fact that 79% of participants had no internet connection prior to starting the trial, therefore, the necessary infrastructure had to be installed before the trial period could begin.

For consistency, the 'start date' of each eight week trial was deemed to be the date of 'first use' of Mindings, i.e. first picture/message received by the participant and not the date of internet or Mindings installation.

As part of the study all participants completing the 8-week trial receive an additional 10-months of use of the App and internet connection free of charge. Beyond the 'free' period participants would have to pay to maintain their internet connection and to subscribe to the Mindings App. All people completing the 8-week trial are 'gifted' the iPad to keep as their own.

4.2.4 Data gathering

Lines of inquiry were developed by HEE collating and adapting a range of questions from established questionnaires including 'WHO Quality of Life' and the 'Geriatric Depression Scale'. All questionnaires developed by HEE are shown in the Appendix. Questions were also designed to gather qualitative evidence on how participants viewed their health and well-being and also perception and satisfaction of 'social network' both before and after the trial, and on their 'experience' of using the Mindings App. There were a number of data gathering points during the trial as shown in table 3.

Table 3 – Questionnaires designed by Health Enterprise East and interview schedule

Questionnaire	When used/purpose	Interviewer/location
Pre-trial	To establish a baseline of social isolation, health & well-being Establish and understand current network	Health Enterprise East/participant home
Interim	To detect any technical issues for resolution during the trial	Councils/telephone
Post-trial	To assess the effect of Mindings on participants completing the 8-week trial Some repeat from pre-trial questionnaire to monitor any change	Health Enterprise East/participant home
Drop out	To establish the reason for any participants opting not to complete the 8-week trial	Health Enterprise East/telephone

All participants were interviewed pre- and during trial, only participants who started to 'use' the product within the period of the trial and who indicated they were happy to complete the 8-week period were interviewed at the end of the trial.

4.2.5 Data analysis

For the purpose of this report, analysis was only performed on participants who completed both an interview pre- and post-trial have been analysed for the purpose of this report. Data on 'actual' receipt of content has been derived from the App and analysed for the relevant participants.

The effect of the Mindings product on participants has been assessed based on both quantitative and qualitative information, alongside illustrative and balanced quotes. In addition, the effect that having the technology alone - i.e. having access to an internet connection and the potential for further access to the capabilities of the tablet device (if unlocked) – has had on the participants – has also been considered.

The impact of the Mindings App on the lives of the participants is assessed in terms of effect on health & well-being and social isolation. Key questions have been considered, including, did Mindings:

- Improve quality of life?
- Improve emotional well-being?

- Tackle social isolation?
- Tackle loneliness/help escape loneliness?
- Allow participants to form new friendships?
- Allow participants to communicate with friends and family?
- Help build and strengthen relationships?

During the interview participants were asked whether - and which - changes they would like to see made to the Mindings product (table 9). In addition to any impact Mindings may have had on their lives and changes they would like to see made to the product, participants were asked about plans for future use of Mindings (table 10) and whether they would:

- Carry on using the product during the remainder of the free trial (an additional 10-months)
- Continue to use the product beyond the free trial (assuming subscription fee is then required in addition to internet 'rental')
- Have purchased such a product had they not been on the trial

A combination of qualitative and quantitative questions to ascertain levels of quality of life and feeling of well-being were asked pre- and post-trial.

- 'Quality of life' questions (adapted from the WHO Quality of Life questionnaire) were scored on a scale of 1-5 - where 5 is good, with the exception of 'low moods' where low score is better
- 'Well-being' questions (adapted from the Geriatric Depression Scale questionnaire) were 'Yes/No' responses.

The results, displaying average responses, are shown in tables 4 and 5.

5 Results: Effect of Mindings

5.1 Effect of the 8-week trial on scale of happiness and well-being

Research by the University of Chicago shows that, in older people, feeling isolated from others can have dramatic consequences for health including disrupted sleep and elevated blood pressure and also increase depression and lower overall subjective well-being².

Participants were asked a series of questions to ascertain how each 'felt' about their health and quality of life, by assigning a numerical score as the response to each question. Exactly the same questions were asked pre- and post-trial and the average scores compared in order to assess whether there was any difference in scores as a result of having had the Mindings technology for eight weeks.

Table 4 shows the majority of participants viewed themselves as having a good quality of life and felt happy and well. Participants were also content with the level to which they were able to get out and about and enjoy leisure activities. The average score given for most metrics was 4 out of 5, pre-trial and this scoring pattern was, on average, unchanged post-trial. There is no direct change noted in perception of quality of life and health as a result of using the Mindings technology for eight weeks.

Table 4 – Data on metrics measuring feeling of quality of life (average rounded score across participants completing questionnaires) (*areas of improvement*)

Metric	Pre-trial	Post-trial
Quality of life	4	4
Enjoy life	4	4
Satisfied with yourself	4	4
Feelings of low moods	3	2
Levels of concentration	4	4
Satisfied with health	4	4
Enough energy for everyday life	4	4
Availability of information for everyday life	4	4
Opportunity for leisure activities	4	4
Ability to 'get around'	4	4
Ability to perform daily living activities	4	4
Satisfaction with sleep	4	4
Satisfaction with personal relationships	4	4
Satisfaction with support from friends	4	4

Participants were also asked questions, selected from the Geriatric Depression Scale, to assess perception of happiness and well-being; those questions were simply 'Yes/No' responses. Again, the same questions were asked pre- and post-trial. The average responses are shown in table 5.

There was improvement in some of the metrics taken from the Geriatric Depression Scale, notably lower perception of boredom, less reluctance to go out and try new things and meet people in a social setting. As shown in table 4, table 5 also indicates there was no change in level of happiness/good spirits or satisfaction with life, since participating in the trial. It should be noted that some participants struggled to provide a 'Yes/No' response and preferred the questions to which they could assign a score. It is recommended that responses shown in table 5 are considered in the wider context of quantitative and qualitative data, as set out in this report.

Table 5 – Data on metrics measuring feeling of well-being & happiness (average of ‘Yes’ responses across participants completing questionnaires) (*areas of improvement*)

Metric	Pre-trial	Post-trial
Satisfied with life	86%	86%
Often bored	24%	14%
Mostly in good spirits	90%	90%
Happy most of the time	86%	86%
Prefer to stay at home rather than try new things	38%	29%
Hard to start new projects	43%	38%
Prefer to avoid social gatherings	19%	14%
Find it easy to make decisions	76%	86%

Discursive questions designed to establish the ‘social networks’ of participants were also asked, whereby ‘network’ was considered in terms family, friends and also clubs attended etc. Post-trial questionnaires were used to assess whether there had been any change in contact with existing network and/or any expansion of that network.

In addition to widespread strong – almost stoic – feelings of happiness and contentment, the majority of participants didn’t view themselves as ‘socially isolated’ pre-trial. Many had already made efforts to ‘escape loneliness’ by getting involved in activities outside of their homes and/or by keeping in regular contact with family. The effect those social activities has had on the high scores participants assigned to their perception of health, well-being and quality of life, concurs with findings from other studies that ‘Older people living alone are not necessarily lonely if they remain socially engaged and enjoy the company of others around them’².

Many participants felt that they are not, in fact, socially isolated. This may be linked to the healthy network of family and friends that surrounded those participants. Table 6 indicates that the majority of participants see family and friends at least once per week, there was no change in this ‘contact pattern’ during the 8-week trial.

Table 6 – Profile of ‘social’ network (for those completing the 8-week trial)

Frequency of contact	Family	Friends
At least once/week	15	13
Fortnightly-Monthly	2	8
At least once/year	4	-
Total	21	21

5.2 Effect of received content on perceived quality of life and emotional well-being

Participants were asked how often they thought they received content on Mindings and were also queried (using discussion based questioning) about the impact the Mindings product had on their perceived level of happiness and quality of life. Data on frequency with which content was received was also analysed from a sample of data derived from the App. Interestingly, participant perception of how often content was received was very close to the frequency with which the App shows content was actually received.

Whilst all participants enjoyed seeing the photos and messages they received, as shown in table 7, only participants receiving content almost daily unanimously reported an improvement in both levels of happiness and quality of life. Those receiving content more than weekly were split between reporting improvement and no real improvement. Whilst 38% of participants report a positive impact on quality of life and 43% an impact on happiness, the positive impact of Mindings tails off as the regularity of receipt of content falls.

"We like having it, we keep checking it, it's quite exciting to see things come through" – content received daily

"It has made me happy to see the photos" – content received daily

"It is a bit exciting when waiting for new photos and has given a bit more interest especially when the weather has been bad" – content received >weekly

"Has improved quality of life a little as it was nice seeing photos and to see how simple it all is and how easy it was to respond, plus reassurance for my daughter that I have got it" – content received <monthly

Table 7 – Frequency of content and impact of Mindings on happiness and quality of life (using receipt data derived from the App)

	Content received (participant perception)	Content received (App data)	Impact on happiness		Impact on quality of life	
			Yes	Not really	Yes	Not really
Almost daily	4	2	2	-	2	-
>Weekly	7	9	6	3	4	5
<Weekly	6	5	1	4	-	5
<Monthly	4	5	-	5	2	3

"I am happy to get pictures and messages but it hasn't made a difference as I am not getting the functionality from it that I expected" – content received >weekly

"No effect really. Pictures and texts are nice to receive but I want to do more, may get a laptop so can have more interaction" – content received <weekly

"Hasn't really had any effect, but haven't had enough content through to tell. I am not housebound and am independent so no effect on everyday living" – content received <monthly

As shown above, 10 participants received content <weekly, with five of those receiving photos or messages <monthly. A common reason given for a low rate of content sent by family and friends is that senders are 'too busy' and don't have time to send many items through. In addition, many 'senders' struggled to send content and stopped trying. Many participants and their 'network' required more encouragement to engage with the technology and, in many cases, further support to be able to successfully send content.

"I rarely get things, my daughters are busy. I could set other senders up but my daughter is too busy to set additional people up" – content received <monthly

"My daughters are busy and don't send much, it's one more thing to fit in. My son is too busy and hasn't sent anything yet" - content received <monthly

"My sons are busy and daughter only had time to send two blocks of photos" – content received <monthly

5.3 Effect on social isolation, ability to tackle loneliness and forming new friendships

To try to establish an understanding of perception of 'social isolation', loneliness and effect of Mindings on formation of new friendships; participants were asked whether – during the trial – their network of contacts had altered, whether the frequency of contact with their network had changed, and whether the activities/clubs they were involved in had changed within the 8-week period they were using Mindings.

Responses for only the six participants who passed the screening criteria 'Does not see family or friends more than once/fortnight' are shown in table 8, as those are the people who could be considered most 'at risk' from 'social isolation'.

Table 8 – Change in network of participants ‘at risk’ of ‘social isolation’

Frequency of visits	Receipt of content	Increase in happiness	Increase in quality of life	Frequency of contact with network	Change in members of network	Groups/ activities
Fortnightly-monthly	<weekly	Not really	Not really	The same	The same	The same
Fortnightly-monthly	<once/month	Not really	Yes	The same	The same	The same
At least once/year	>weekly	Yes	Yes	The same	The same	The same
At least once/year	>weekly	Yes	Yes	The same	The same	The same
At least once/year	<weekly	Not really	Not really	The same	The same	The same
At least once/year	<weekly	Not really	Not really	The same	The same	The same

For 50% of those who could be deemed ‘at risk’ from ‘social isolation’ there is a perceived increase in quality of life, and a third report an increase in level of happiness after the 8-week Mindings trial.

Looking again at responses from all 21 ‘completing’ participants, it is clear, from feedback, that most participants completing the trial enjoyed seeing pictures of their family & friends and 60% reported a feeling of ‘being more in the loop’ and ‘in control’ in terms of access to information about family members, although some do feel there is no control or that its effect is limited by one-way communication. It may be that feelings of access to family and friends did have some effect on helping escape loneliness – even if potentially temporarily -through enjoyment in receiving pictures and text-o-grams.

“I feel more in touch with the family and get little ‘snippets’ of info that [my daughter] would probably forget to tell me about when I see her or speak on the phone” – Content received >weekly

“I feel more part of the family and more included in their daily lives” – content received daily

“I see more of my great granddaughter than I would have otherwise” – content received >weekly

“If you were just relying on Mindings you wouldn’t feel you were in control at all as you can’t reply to the person sending you the photo. But I do feel more ‘in the loop’ as it’s instant access to photos and then photos stay there” – content received <weekly

"No [not more in control] as I can't get in touch with family through it, it's too one-sided and I've got a mobile now" – content received >weekly

"No effect on me, I can see the potential for very elderly who are very lonely, but I am in a different situation and haven't had enough content through to have any effect" – content received <once/month

5.4 Effect on building and strengthening relationships and allowing participants to communicate with friends and family

The study sought to determine whether use of Mindings improved and enriched communication with family and friends. 19% of participants reported having more contact (not face-to-face) with some family members, e.g. grandchildren, through receiving content from them via Mindings. Some reported it is nice to 'talk about the photos on the phone' and all participants enjoyed seeing the photos and 'snippets' of information about family members.

"I enjoy getting the photos and messages. If they ask me a question then I text them back" – content received >weekly

"I am hearing more from grandson than before as he works shifts and it is difficult to get in contact, so I see more photos of his daughter than before" – content received >weekly

The one-way communication was seen to limit the level to which the remaining participants viewed Mindings as an enabler and enricher of communication – 71% reported that level of contact with family and friends was unchanged. Many felt frustrated that they had to wait for people to contact them; over three-quarters of participants complained that communication was exclusively one-sided, meaning participants cannot contact family members or friends through it, or reply when someone contacts them.

"I would like two-way communication to save me having to text people back on my phone" – content received >weekly

"[Frequency of contact] is the same. If I could answer people then it would be different" – content received >weekly

5.5 Continued use of Mindings

Participants were asked whether there are any features of the product they would like to see changed, whether they would continue to use the product for the remainder of the free-trial and the likelihood of them continuing with use (assuming Mindings subscription fee and internet 'rental' is required) beyond that period.

Many participants stated that without (in their eyes, significant) changes to the App, they would find its use of limited interest and benefit. As noted above, the most common change requested was for the product to allow two-way communication. For many, one-way communication was a potential barrier to continued use of the product. Table 9 notes this and other features flagged for improvement.

Table 9 – Features of Mindings participants wish to see improved

Feature	Areas for improvement/change
One-way communication	<ul style="list-style-type: none"> • Two-way communication requested by >70% participants (unprompted) • One-way caused frustration in not being able to reply to a message/comment on a photo • Participants would like to be able to initiate communication or send their own photos
Number of photos	<ul style="list-style-type: none"> • Participants would like more than 10 photos to be shown before oldest drops off when new one arrives • Only one administrator had been informed the maximum is actually 30 • Volume of photos of Stuart Arnott's family sent through by Mindings was 'forcing' content from participants family off the display, causing upset and confusion in some cases
Store function	<ul style="list-style-type: none"> • To be able to 'save' a favourite picture/message to protect it from 'falling off' the display when the e.g. 11th item of content is received
Delete function	<ul style="list-style-type: none"> • To be able to delete unwanted content in order to clear space for new content to come in without affecting other, preferred photos
Recall/menu	<ul style="list-style-type: none"> • To be able to find and show a 'favourite' photo • To be able to view in a menu format all photos and be able to 'manage' them e.g. store/delete/show a friend
Scrolling	<ul style="list-style-type: none"> • Option to stop photos continually scrolling • Option to hold particular photo on screen
Message alert	<ul style="list-style-type: none"> • Audible alert when new content comes through • Participants weren't always clear a new message had arrived unless looking at all content as it scrolls and spotting the 'thumbs up'
'Connected' indicator	<ul style="list-style-type: none"> • An indication that Mindings/iPad is still connected to Wi-Fi
Instruction sheet/book	<ul style="list-style-type: none"> • For participants – some knew/others didn't about the calendar function but weren't clear how to use it. Uncertainty about what else Mindings could do • For administrators – some struggled with set up of accounts • For senders – several senders struggled to send content through, many gave up
Technical support	<ul style="list-style-type: none"> • Participants and administrators not always clear who to call for technical support • Also linked to request for instruction book/clearer instructions

"The constant scrolling of photos is annoying; I would like a menu to be able to recall a favourite photo quickly. The one-way communication is limiting, I would like to be able to send messages back" – content received <weekly

"One-way communication is disappointing, it's not really worth it if you can't contact people in return" – content received <monthly

"It's very one-way – can't we send content back to people? The problem was we weren't left with a clear communication sheet for the user of administrator. I want to be able to store favourite photos" – content received >weekly

"Can I turn it off and back on again? There was no instruction sheet left and no manual for the iPad" – content received >weekly

"It's annoying to lose nice photos and we need better support, we were left with no one to call for help" – content received <weekly

As noted above, as part of the study all participants completing the 8-week trial receive additional 10-months of use of the App and internet connection free of charge. Beyond the 'free' period participants would have to pay to maintain their internet connection and to subscribe to the Mindings App. All people completing the 8-week trial are 'gifted' the iPad to keep as their own.

In order to gain an impression of longevity of an App such as Mindings, participants were asked whether they (and their administrators/senders) would continue to use the App for the remaining free period and (perhaps more telling) beyond i.e. when it ceases to become free of charge.

As shown in Table 10, the majority of participants stated they would continue to use Mindings for the remainder of the free trial – primarily because it is free of charge to do so.

"Yes – it is lovely to stay in touch" – content received daily

"Yes – I will add more people to the list [of senders]" – content received <weekly

"Yes – but I will have to encourage people on the [sender] list to send some content" – content received <once/month

It should be noted that the majority of participants stated they would only continue to use the product beyond the free trial if changes/improvements to the technology (as detailed in table 9) were made, whilst some stated it was dependent on the cost.

"Yes – I wouldn't want it to go away" – content received >weekly

"I'd like to but it depends on the cost involved" – content received daily

"I want to be able to do more with it and to be able to use the iPad for things other than Mindings" – content received daily

"I would want it to do more to justify paying for it" – content received >weekly

"No, I think we may get a laptop" – content received <weekly

Table 10 – Continued use/purchase of Mindings

Use of Mindings	Yes	No	Maybe	Dependent on improved functionality	Dependent on cost
Free trial	16	3	-	2	-
After free trial	3	4	-	10	4
Bought the product	-	18	3	-	-

Participants were also asked for their opinion on whether – had they not been involved in the trial – they would have purchased a product such as Mindings. In most cases this would also have involved purchase of a tablet device and installation of an internet connection.

No one stated they would have bought themselves such a product, had they not been involved on the trial. This was for a number of reasons including – most commonly – an apprehension about technology and the cost. This suggests that viewing the demographic represented by trial participants as the target market may be challenging.

“No I wouldn't have bought it as you can't do enough on it, email would be better” – content received >weekly

“As it stands at the minute it is not value for money” – content received <once/month

“I would have hesitated as I don't buy technology and would have had to install the internet. On a pension other things have to come before luxuries” – content received daily

“There are so many scams out there. I only trusted this because it was through the council” – content received >weekly

“I would have bought the iPad and the internet, but not the Mindings” – content received <once/month

6 The effect of ‘exposure’ to new technology on participants

Underlying all of the data analysis and anecdotal evidence of participants ‘experience of using Mindings, is the effect of access to technology in the form of the internet and an iPad. The majority of participants didn’t have an internet connection prior to starting the trial and so weren’t using any form of technology, beyond – in some cases – a mobile phone. The trial served to demystify technology and challenge assumptions.

Whilst Mindings opened participants’ eyes to the potential of technology, having a device locked to the App, for the purpose of the trial, caused a little confusion and sometimes frustration among the participants who realised this. A common (unprompted) request – by 43% of participants - was for the iPad to be unlocked in order to be able to learn to use the

other features. There was interest in facilities such as email, Skype, Facetime, even ordering the weekly shop and playing Sudoku on it.

"I'd like to use the iPad as an iPad – not just for Mindings" – content received <once/month

"My grandsons are keen to show me how the iPad works and I am interested to learn more about the internet" – content received >weekly

"I am interested in using the iPad and will try to contact the company about unlocking it. I want to try the internet properly now, maybe I can use Skype" – content received >weekly

"I am going on an iPad course at the Apple store with my sister. I know I can get Facetime on it and on my phone and so I may now use other things instead of Mindings" – content received daily

Many, in fact 81%, of participants reported a very positive reaction to having technology, such as an iPad, made available to them – beyond the Mindings product itself. There is evidence that participating in the trial has 'demystified' technology and helped people to recognise the potential that learning to use technology has.

It would, therefore, be of interest to monitor the effect of 'unlocking' the iPads for the remainder of the 'free-trial' and to assess how wider access to technology is actually received and, indeed, how Mindings sits alongside other Apps/use of technology, that may also be used by family and friends to contact participants, but may also be used by participants to initiate contact with members of their 'network'.

"I feel I can have a go with technology now that it has been demystified" – content received daily

"My family were talking about getting me a laptop, having tried this it may give me the confidence to try email etc." – content received >weekly

"[Being on the trial] has started me off on technology and demystified it, I'd like to try the iPad for other things" – content received >weekly

"This [trial] has been a good introduction to technology, I may go on the internet" – content received >weekly

"I am now keen to try a computer and the internet, without the trial this wouldn't have happened" – content received <weekly

This 'eagerness' to try new technology such as laptops, iPads, internet and other Apps such as Skype must be caveated with a cautionary note regarding technical support. Despite 20 of the 21 participants reporting that the Mindings App was 'easy to use', 60% of those reported technical issues, with many contacting technical support at least once – occasionally out of hours. There was also some uncertainty about who to contact for technical support, especially beyond the contractual period for the technical support officer, who provided assistance to many participants.

Technical support issues ranged from uncertainty about whether to unplug the device to move it to another room through to worry when a message was received for an unknown person on a participant's device.

It is clear, then, that any assistive/adaptive technology provided to older people should be accompanied by a well-organised, well-resourced support network.

7 Summary

Mindings is an App aimed towards 'technology shy', socially isolated members of the community, to enable family members and friends to interact with an individual through sending short messages and images with the intention of reducing their social isolation. The purpose of the pilot study was exploratory to assess the effect the product had on the health and social isolation of participants.

The challenges surrounding recruiting participants who were genuinely socially isolated may have affected base data and the outcome of the trial, but may also be indicative of the fact that those who are genuinely socially isolated would not 'volunteer' for such activities and may not 'volunteer' to use adaptive technologies. Indeed, many of the participants did not view themselves as particularly socially isolated either at the beginning or the end of the trial.

There was improvement in some of the metrics taken from the Geriatric Depression Scale, notably lower perception of boredom, less reluctance to go out and try new things and meet people in a social setting.

There were reports by some participants that receiving content made them feel happier and improved their perception of quality of life as they enjoyed seeing the photos and receiving messages. A positive impact of the technology on those metrics was linked with how often content was received; those receiving content >weekly were, on the whole, more positive about the impact the technology had on their happiness and quality of life.

Almost all participants assigned a high score (4 out of 5 or higher) to their perception of happiness and well-being at the beginning and the end of the trial, making it difficult to identify any measurable effect of Mindings on health and well-being.

The use of adaptive/assistive technologies for older people is widely documented and researched, with many companies offering solutions within this space. Mindings has been developed as an App for the 'technology shy' with the intention that it can be used by anyone, even those with no prior experience of technology.

A study on 'The Dynamics of Ageing' highlights that internet use in the 80+ group is lower than 30% - indeed fewer than 1 in 10 of women in this age group reported using the internet as of 2011. The addressable market for an App such as Mindings, could be assumed to be the proportion not using the internet, indeed those who are therefore 'technology shy'. As figure 3 illustrates, the proportion of internet use in the 70+ age groups is in fact lower than 50%, giving a higher addressable market than proportion of internet users.

This balance switches for the <70 age group, however, indicating that as the current <70 age group enter the 70+ age group, the proportion of internet users will increase and therefore the addressable market will decrease. It can be assumed, that as our older people become more

'technology savvy', the addressable market for an App for the 'technology shy' will also decrease.

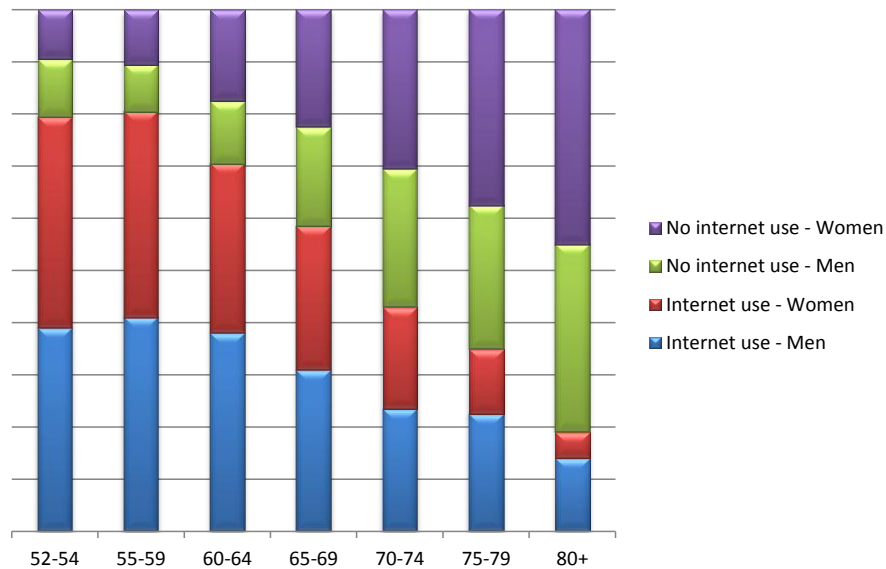


Figure 3 – Proportion of internet use vs no internet use (addressable market) by age group³

On the whole, participants enjoyed taking part in the trial and (despite some frustrations about the App and the iPad being locked to Mindings) enjoyed receiving photos and messages from their own friends and family, with enjoyment correlating to the frequency with which content was received. The App alone was seen as relatively limited in terms of functionality, even to many of those who would have classed themselves as 'technology shy'.

What participating on the trial has done, for many, is to demystify and introduce technology and the internet in a 'gentle' way and has ignited interest in learning more about the potential that technology has for them and their everyday lives. This interest is likely widespread and provides opportunity to provide technology applications to support and harness this desire to learn.

8 Appendix – Questionnaires

8.1 Recruitment pack designed by East of England LGA for trial participants

The Mindings Pilot: Invitation to be part of a new study to help older people enjoy a better quality of life.

This is an invitation to take part in a pilot project to explore new ways to support older people to enjoy their independence for longer.

Local authorities from across the East of England and NHS Midlands have chosen Central Bedfordshire and Cambridgeshire local authorities to work with a group of older people from across both these areas, alongside a team of researchers, on a new study.

The study will aim to find out whether some kinds of technology can improve the quality of life for older people. We want to know if a new product called 'Mindings' can help to:

Keep friends and family connected

Reduce loneliness

Help people find new ways to get involved in social groups

We also want to ask all those who volunteer to use *Mindings* whether it makes sense to them and how easy it is to use.

Finally we are interested in whether any positive effects around reducing social isolation for participants might also have any links with other positive effects on wider health and well-being.

Everyone who takes part in this project will be contributing to a very useful study which could make a difference to the lives of many other older people.

WHAT IS MINDINGS?

Mindings is a service that lets people send personal, captioned photos, text messages, calendar reminders, Facebook content and much more to a digital photo frame. All these types of contacts can be sent instantly from a mobile phone. *Mindings* connects friends, families and new social networks by enabling effortless, regular, personal, and meaningful contact. It has been described as 'Facebook for the technology shy'.

What will I need to do if I volunteer?

You will need to commit to stay involved for the duration of your trial term.

Trial 1 will run from the end of April to September 2013.

Trial 2 will run from September to end of October 2013.

Trial 3 will run from October to the end of November 2013.

Your local project team will advise you of the detail of your schedule if you decide to come on board with this exciting project.

You need to be at least 70 years of age.

You will need to take part in the research exercise. This will include meeting with researchers twice over the trial period to tell them about your experiences and tell them what you think of *Mindings*. It will mean doing a telephone interview or filling in a

questionnaire in the middle of the research. Some participants will be invited to be included in a video so that your views can be easily shared with lots of other people. But you won't have to be part of a video if you prefer not to. When you give your views through a questionnaire, telephone interview or a face to face meeting whatever you say will be represented anonymously. You will be invited to help us find some friends and family who can act as your 'user group', sending you regular updates, photos, messages and reminders depending on how you want to use *Mindings*.

You must have at least one person who is willing to take part as your 'administrator' to be part of the project. The role of an administrator is to be a part of your user group and help you to set up other members of a user group to use *Mindings*. Your administrator needs to know how to send messages and photos from a mobile phone and/or from email or other social media like Facebook for example.

If you do want to volunteer you will need to be in a position to make a clear decision that you would like to take part. You will be asked to sign a consent form to agree to volunteer.

How will I benefit if I volunteer?

Mindings will offer you the chance to test a new service for free. If you don't have an internet service, we will install one and pay for the connection for at least the duration of the trial from September to October or from October to December- depending on which trial start date you have. The service aims to bring you back into regular contact with some of your closest friends and family or other social groups as you choose. We hope that most of our participants will have a lot of fun and enjoyment with *Mindings*.

We will hold occasional social activities for all those taking part in this pilot project. Participants with the most active exchanges will keep their *Mindings* product. All our participants will get lots of support from the *Mindings* team and from your local authority to make sure that your user group knows how everything works and how to fix things if they go wrong.

The research will be carried out by a qualified team and it will be published by East of England LGA for East of England local authorities.

Consent Form for Taking Part in the Mindings Pilot

This consent form shows that you have read and understood what taking part in the research will involve. Please sign if you agree that these statements are true.

I have read and understood the invitation to take part of the Mindings pilot.

I have had the opportunity to ask questions from the organisers of the trial.

I understand that taking part is voluntary. I will do my best to keep my Mindings product for an agreed period and to give feedback at three planned stages. I will report any technical problems if they occur as soon as I can.

I understand that I am free to withdraw if I am unable to continue for any reason.

I understand that my views and opinions shared within interviews or questionnaires will be used anonymously and I will not be identified when my views are presented in any publications or reports.

If I am invited to take part in a video to share my experiences I will be asked to give consent specifically for this and I will be advised of events and forums intended for publication. I understand that I will have no obligation to take part in a video even if I am taking part in this study.

I agree to the local authority or their representative having the following contact details for me for the sole purpose of contacting me directly to arrange research interviews with the research team.

I agree to take part in this study.

Signed Date

Name

Telephone

Mobile

Address

Trial 2 Participants, Mindings Pilot

Dear

We are delighted that you have volunteered to join us in testing this new product. On behalf of everyone on the Mindings team from your local authority and Improvement East, and from Stuart Arnott (the inventor and director for *Mindings*) we'd all like to say a big thank you.

Stuart or some-one from his team will help you to set up Mindings. They will support you to make sure that it works properly. Please inform your local advisor as soon as you can if you have any problems with it working properly. Some-one from your local team will be in touch to get you back on track as soon as possible.

We have appointed an independent and professional research team from Health Enterprise East. Collette Johnson is leading this work. Collette or one of her colleagues will come and meet you soon. They will want to hear all about your experiences with Mindings. First of all they want to find out about your general well-being now so that they can see whether this product has made any difference to your life and the way you feel.

Your feedback will help us to understand how the product could be used in the future and what kind of benefits could be available for older people who use it. As a trial 2 participant your input will really influence decisions and it will give us a chance to make sure that the product is as good as it can be.

As the trial gets bigger we will set up opportunities for you to meet with other participants and exchange your experiences.

When the trial finishes you may be eligible to take part in trial 3. We will ask you about this if you are one of the key groups we want to find out more about (for example, if you are some-one who has been on their own for a while).

Some of our participants will be able to keep *Mindings*. East of England LGA will buy some of the devices so that participants who use it most often can keep it. So thank you once again. We hope you enjoy taking part in this research project with us.

If you want to buy *Mindings*, when the trial has finished, this will be available for the price of the tablet we have given you, which is £80.00.

My Mindings Network for Friends and Family

My name:

My local authority:

My Administrator.

Name:

Email:

Best Contact number:

My Friends and family

Name:

Email:

Best Contact number:

Name:

Email:

Best Contact number:

Name:

Email:

Best Contact number:

Name:

Email:

Best Contact number:

Your local host will make a copy of your friends and family contacts for the project records to help us keep in touch with them in case they need help, advice or technical support.

Please let your local host know if you decide to change any of your friends and family so we can keep our list up to date too.

Thank you!

Screener for participants for the *Mindings* Pilot

For all participants who are to be considered for the pilot the following screener needs to be carried out. A screener is used to make sure that we have the right balance of participants who reflect the wider population who this product is primarily intended for at the moment. It is important that this is done correctly and users are given the opportunity to consider their response.

Participant Name:

Address:

Exclusion criteria (if any of these criteria are answered with a 'yes' the participant is not suitable for the trial):

Diagnosed with dementia Yes/No

Unable to sign the consent form Yes/No

Experiencing a limiting, long term illness Yes/No

Inclusion criteria (all of the following criteria must be answered with a 'yes' in order for the participant to be included in the pilot study):

Age 70 years plus Yes/No

Living in current accommodation for at least 6 months Yes/No

The participant does not see friends or family more than once a fortnight Yes/No

8.2 Pre-trial questionnaire (face-to-face)

General quality of life – Quantitative scale

The following questions ask how you feel about your quality of life, health, or happiness. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

	<i>(Circle the answer)</i>	Very poor	Poor	Neither poor nor good	Good	Very Good
1.	How would you rate your quality of life?	1	2	3	4	5
Any additional comments/quotes go here:						

	<i>(Circle the answer)</i>	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5
Any additional comments/quotes go here:						

The following questions ask about **how much** you have experienced certain things in the last four weeks:

	<i>(Circle the answer)</i>	Not at all	A little	A moderate amount	Very much	An extreme amount
3.	How much do you enjoy life?	1	2	3	4	5
Any additional comments/quotes go here:						

	<i>(Circle the answer)</i>	Not at all	A little	A moderate amount	Very much	Extremely
4.	How well are you able to concentrate?	1	2	3	4	5

5.	How safe do you feel in your daily life?	1	2	3	4	5
6.	How healthy is your physical environment?	1	2	3	4	5
Any additional comments/quotes go here:						

The following questions ask about how completely you experience or were able to do certain things in the last four weeks:

	<i>(Circle the answer)</i>	Not at all	A little	Moderately	Mostly	Completely
7.	Do you have enough energy for everyday life?	1	2	3	4	5
8.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
9.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
Any additional comments/quotes go here:						

	<i>(Circle the answer)</i>	Very poor	Poor	Neither poor nor good	Good	Very good
10.	How well are you able to get around?	1	2	3	4	5
Any additional comments/quotes go here:						

	<i>(Circle the answer)</i>	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
11.	How satisfied are you with your sleep?	1	2	3	4	5
12.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
13.	How satisfied are you with yourself?	1	2	3	4	5
14.	How satisfied are you with your personal relationships?	1	2	3	4	5
15.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
Any additional comments/quotes go here:						

The following question refers to how often you have felt or experienced certain things in the last four weeks:

	<i>(Circle the answer)</i>	Never	Seldom	Quite often	Very often	Always
16.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5
Any additional comments/quotes go here:						

General mood and wellbeing – Yes/No scale

The next set of questions are a set of 'Yes/No' responses. If you could think about and choose the best answer for how you felt over the past week:

	Question	Answer
17.	Are you basically satisfied with your life?	YES/NO
18.	Have you dropped many of your activities and interests?	YES/NO
19.	Do you often get bored?	YES/NO
20.	Are you in good spirits most of the time?	YES/NO
21.	Do you feel happy most of the time?	YES/NO
22.	Do you prefer to stay at home rather than going out and doing new things?	YES/NO
23.	Is it hard for you to get started on new projects?	YES/NO
24.	Do you prefer to avoid social gatherings?	YES/NO
25.	Is it easy for you to make decisions?	YES/NO
Any additional comments/quotes go here:		

Qualitative/Discussion

The next set of questions are not numbers or Yes/No, but more of a chance for a discussion. They are so we can find out more about you and your current situation. Many will only be asked this time around, we will some different questions in this section when we see you again at the end of the trial.

Background/History

26. Could you tell me a little bit about yourself?

27. How long have you been living in your current residence?

28. Before living in your current residence could you give me a brief history of where you lived (*probe if they lived on their own or with significant others*)?

Profile of Network

29. How far away in distance does your nearest relative live?

30. Do you have any children?

31. [If answer to 30 is Yes] Where does your nearest child live?

32. If you have any living brothers or sisters, where does the nearest one live?

33.	How often do you see any of your children or other relatives to speak to?
34.	If you have friends in your neighbourhood/community, how often do you have a chat or do something with one of your friends?
35.	How often do you see any of your neighbours to have a chat with or do something with?
36.	Do you attend any community/neighbourhood or social groups such as clubs for older people, lectures, religious gatherings or any other such activity?
37.	How often do you attend those meetings?

Do you have any comments about the assessment?

8.3 Interim questionnaire (telephone)

Technology installation experience

You had Mindings installed on [INSERT DATE] and started to use the technology on [INSERT DATE] and so I'm just calling to find out how things are going:

1.	How did the installation process go?
2.	Are you using the technology? How often are you receiving items from friends and family?

--

3. Do you need any additional support in using the technology?

4. Do your family and friends require any additional support in how to send content to you?

5. Are you happy to carry on with the trial for the full 8 weeks and to be interviewed again at the end?

6. Have you any questions about the trial?

8.4 Post-trial (face-to-face)

Stories about use of the Mindings technology

We will take you through some questions to help prompt some discussion on your experience of using the Mindings technology first, then – at the end – we will take you through some of the questions we covered in the first interview, which are based on a scale of 1-5 about how you feel about things now compared to at the start of the trial.

Experience of Mindings technology

1.	Please comment on your experience of using the Mindings technology, for example ease of use? (How did you get on)
2.	Which of your family/friends used the Mindings technology by sending you content to respond to?
3.	How did they get on with using the technology? How often did they use it?

4.	Which features of the technology did you and your friends/family use most? (Prompt: photos, text messages, calendar reminders?)
5.	Which features of the technology did you find most useful/helpful? Why?
6.	Which features of the technology did you find least useful/helpful? Why? (e.g. not being able to send a personalised message in return, communication one direction only?)
7.	Have you any stories (positive or negative) about using the technology that you'd like to share?
8.	Do you think you will continue to use the technology during the period that you have the free trial? Why?
9.	Do you think you will continue to use the technology beyond the period of the free trial (a further 10 months)? Why?
10.	Do you think your administrators (people sending you information) will continue to use it and ensure you have a continued flow of information? Why?
11.	Would you recommend this technology to friends/family? Why?
12.	Would you have bought yourself this technology had you not been on the trial? Why?
13.	Would you have liked to see any changes to the technology? Which? Why?

Impact of Mindings technology

14.	How has participating in the Mindings trial affected the way you view your level of happiness and well-being? How/in what way?
15.	How has participating in the Mindings trial affected your quality of life? How/in what way?
16.	Has the Mindings technology affected your sense of control in terms of access to information, contact from family and friends? How/in what way? E.g. feeling 'more in the loop' in terms of contact with people and also technology
17.	Has Mindings affected how eager you are to try new things? How/in what way?
18.	Has Mindings presented new opportunities to you? Which? Were you able to take advantage of them?

Profile of Network – for comparison with pre-trial

We asked some questions about your network of family and friends and social activities during the first interview, if it's ok we'd like to revisit some of those questions to investigate whether it has changed at all as a result of using the Mindings technology.

19.	Do you see your children or other relatives more or less often (or the same) than you did at the beginning of the trial? [BE AWARE OF RESPONSE OF INTERVIEWEE PRE-TRIAL]
20.	Do you see friends more or less often (or the same) than you did at the beginning of the trial? [BE AWARE OF RESPONSE OF INTERVIEWEE PRE-TRIAL]
21.	Are you in contact with family and friends more or less often (or the same) than you were at the beginning of the trial? [BE AWARE OF RESPONSE OF INTERVIEWEE PRE-TRIAL]
22.	Has the network of people you are in touch with changed since you started to use Mindings e.g. hearing from extended family and/or wider network of friends/acquaintances?

23.	Do you still attend the groups/clubs you mentioned last time we spoke? Have you started any new clubs?

General quality of life – Quantitative scale

The following questions were asked before the trial started and we would like to ask them again now that the trial has ended, to understand how you feel about your quality of life, health, or other areas of your life now.

As before, I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

	<i>(Circle the answer)</i>	Very poor	Poor	Neither poor nor good	Good	Very Good
24.	How would you rate your quality of life?	1	2	3	4	5

Any additional comments/quotes go here:						

	<i>(Circle the answer)</i>	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
25.	How satisfied are you with your health?	1	2	3	4	5

Any additional comments/quotes go here:						

The following questions ask about **how much** you have experienced certain things in the last four weeks:

	<i>(Circle the answer)</i>	Not at all	A little	A moderate amount	Very much	An extreme amount
26.	How much do you	1	2	3	4	5

enjoy life?					
Any additional comments/quotes go here:					

	<i>(Circle the answer)</i>	Not at all	A little	A moderate amount	Very much	Extremely
27.	How well are you able to concentrate?	1	2	3	4	5
28.	How safe do you feel in your daily life?	1	2	3	4	5
29.	How healthy is your physical environment?	1	2	3	4	5
Any additional comments/quotes go here:						

The following questions ask about how completely you experience or were able to do certain things in the last four weeks:

	<i>(Circle the answer)</i>	Not at all	A little	Moderately	Mostly	Completely
30.	Do you have enough energy for everyday life?	1	2	3	4	5
31.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
32.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
Any additional comments/quotes go here:						

	<i>(Circle the answer)</i>	Very poor	Poor	Neither poor nor good	Good	Very good
33.	How well are you able to get around?	1	2	3	4	5
Any additional comments/quotes go here:						

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	<i>(Circle the answer)</i>	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
34.	How satisfied are you with your sleep?	1	2	3	4	5
35.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
36.	How satisfied are you with yourself?	1	2	3	4	5
37.	How satisfied are you with your personal relationships?	1	2	3	4	5
38.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
Any additional comments/quotes go here:						

The following question refers to how often you have felt or experienced certain things in the last four weeks:

	<i>(Circle the answer)</i>	Never	Seldom	Quite often	Very often	Always
39.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5
Any additional comments/quotes go here:						

General mood and wellbeing – Yes/No scale

The next set of questions are a set of 'Yes/No' responses and were also asked before the trial started. If you could think about and choose the best answer for how you felt over the past week:

	Question	Answer
40.	Are you basically satisfied with your life?	YES/NO
41.	Have you dropped many of your activities and interests?	YES/NO
42.	Do you often get bored?	YES/NO
43.	Are you in good spirits most of the time?	YES/NO
44.	Do you feel happy most of the time?	YES/NO
45.	Do you prefer to stay at home rather than going out and doing new things?	YES/NO
46.	Is it hard for you to get started on new projects?	YES/NO
47.	Do you prefer to avoid social gatherings?	YES/NO
48.	Is it easy for you to make decisions?	YES/NO
Any additional comments/quotes go here:		

Do you have any comments about the trial?