

The Digital ICT Acorn Pilot: An Evaluation

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Executive Summary

- The Acorn pilot of ICT solutions for older adults ran in three counties across Ireland: Fingal, Meath and Limerick.
- This evaluation focused on the perceptions of the participants related to their experience of the pilot programme.
- Baseline questionnaires were distributed and the start of the programme and end of the programme to participants in Meath (baseline n =24; follow-up n= 23) and Limerick (baseline = 26; follow-up = 16).
- Fingal had completed the programme before the start of the evaluation and seven participants completed an adapted questionnaire.
- Four separate focus groups, with a total of 18 participants, were conducted to explore the experiences of the participants in more detail with a total of 18 participants (Fingal n = 6; Meath n = 2 and n = 4; Limerick n = 7).
- The age of those that completed the baseline questionnaire ranged from 56 to 85 years, and 53% were female (n = 33). The majority were retired and a third lived alone.
- The participants' use of ICT at the start of the programme varied; while nearly a third had never used a computer or tablet before, a quarter were using them daily.
- There was a high level of satisfaction with the training overall, although the findings from the focus groups suggest that it may be beneficial to carefully consider the differing skill levels of participants in the design of any future workshops/training.
- More than two-thirds of the participants would consider buying the Acorn if it was available in the shops, and over three-quarters would recommend the device to a friend. Usability of the device was rated as above average. These are impressive findings considering the number of technical issues and glitches that the participants reported in the focus groups.

- Confidence in the use of varied ICT related activities increased and computer anxiety was significantly decreased from baseline levels to the follow-up.
- Recommendations are presented in terms of usability (in the technical sense), training, everyday usage, and societal embedding.
- Success will depend on an on going partnership between the technical developers, local and other public authorities and public service providers, and a range of voluntary and commercial service providers. There are gains for all sides if this potential partnership is developed.
- This ambitious project in designing an easily accessible tablet computer, using the latest digital technology, can play a key role in supporting the engagement of older people with services, community and society.

Introduction

Background

The population of older people in Ireland (aged 65+) is projected to increase more rapidly in the coming years than in most other European countries. For example, there were approximately half a million people aged 65 and over in Ireland in 2011, a number which is expected to double to one million by 2031. This increase is most marked amongst the 'oldest old' with a projected increase of more than 450% amongst those aged 85 or over by 2046. During the same period, it is anticipated that there will be substantial projected increases in the numbers of people aged 65+ (70%) and 75+ (330%; Health in Ireland Key Trends 2015, Department of Health).

Maintaining the health and well-being of an ageing population represents a considerable challenge. A key priority is to ensure that older adults can continue to engage in social, cultural and physical activities, which can have a positive impact on their health, well-being and quality of life as emphasised in the Healthy and Positive Ageing Research Strategy 2015-2019 (Health Service Executive, 2017). The National Positive Ageing Strategy (2013) emphasised the importance of ease of access to up-to-date, comprehensive and coordinated information for older adults. As such, ICT skills play an important role in ensuring that older adults continue to participate fully in social and economic life as well as providing access to advice in relation to entitlements, services, support and activities. Conversely, underdeveloped IT skills can act as a significant barrier to accessing public services, health care, social care, transport, community services, as well as commercial and financial services (banking) and local events. Indeed, the Positive Ageing Report (2016) indicated that 35% of those aged between 55-64 and 75% of those aged 65+ never use the internet, even though the internet can "play an important role in ensuring that people can access the information they need on essential and social services, local activities, or education and lifelong learning activities" (p. 105).

Greater utilisation of ICT among older people as a means of accessing relevant information and services can contribute to underlying principles of the Positive Ageing Strategy – independence, participation care, and dignity. The development of broadband infrastructure and the broader use of online platforms are necessary in promoting improved communications for older people. However, without the necessary skills, some older people may continue to be at a disadvantage in accessing mainstream services as the latter become digitised and traditional face-to-face service provision or paper-based transactions are displaced. There have been several initiatives designed to improve the IT skills of older adults, for example Age Action’s ‘Getting Started’ programme provides training in computers, smartphones and the Internet for people over the age of 55 all over Ireland. However, existing platforms may need to be made more attractive to older users and more effective in serving their needs.

Origins and context of the Acorn pilot project

The Acorn project was the brainchild of Philip Hogan, who leads a team at Cliffrun Ltd. The idea arose originally from his own family’s experience of engaging with geriatric healthcare services when he identified issues around isolation and communication facing older people. Conscious of the immense changes in access to smart technology, social networking and service utilization, he sought to find remedies for the digital isolation of older people.

Initially, the problem was identified as the need for a social platform, but later led to the development of more ambitious social engagement tools involving customized hardware and software with a focus on communications and better access to online services. He became aware that the technology skill levels were often much lower in older cohorts.

Promoting social engagement through technology was, therefore, not simply a matter of creating a type of “tinder for older people”. Rather, the challenge starts with the very opening of a computer, laptop or other form of technology. This challenge is very complex: older people are varied in their familiarity with technology, but lagging behind younger age groups. There is a danger that they

become isolated from digital platforms generally. Moreover, we tend to assume that technology is becoming ever more user-friendly, and that the challenges facing older people will evaporate in time with the help of better machines and some training. However, apart from the issue of unequal familiarity with digital platforms, the complex and often age-specific needs of older age groups requires that some customization of technology and content is needed. Considerably more than training in existing tech and apps is thus required if current older people are not to be excluded from today's increasingly digitised world of service provision, participation and citizenship.

Realising that for many older people, the challenge starts with the very opening of a computer, laptop or other form of technology, the focus narrowed to solutions combining a number of elements. First, a tablet computer with a distinctive and elegantly simple launch screen and navigational features. Second, without stereotyping or stigmatizing older people, there needed to be an element around customizing features and content that meet actual needs of older users, for example menus of useful internet services, information, newspapers, etc. While there is a potentially endless range of such avenues online for the "average" person, the challenge was to cut out some of the distracting elements and achieve some form of customization. This led to exploring the curation of content. A third element concerned tools for communication via text, email and voice. Here, the focus was on developing social contact with peers, professional services, family and friends. A fourth element, which needed to be linked to and developed in conjunction with the other elements, was training and practice in using new technology. Finally, perhaps, was the need to sit the whole technical side of things in the societal, service and community context, and join it up with professional services on which older people increasingly rely.

A link up with local authorities, initially, in Fingal County, provided the avenue for this societal embedding of the project, which was progressed in association with local authorities and Age Friendly Ireland. This collaboration between technical

and institutional partners is the wider context for the development of the Acorn itself.

While the present report looks at a narrow set of findings around the Acorn tablet itself, it needs to be seen as part of a wider array of efforts to develop the digital dimension of an age friendly society. This study of the piloting of a new tablet computer for older people is a key part of this more ambitious departure, in which the Acorn itself is situated. It is one aspect in a ground up approach to deeper engagement and communications for older people with services, community and society, using the latest digital technology.

The Acorn Pilot Project

This evaluation relates to a pilot project entitled “*Age Friendly Ireland Pilot Initiative on Smart Technology for Older Persons: Solutions for effective ICT utilisation by older people in the community*” or, in shorter form, the *Acorn Pilot Project*. The *Acorn Pilot Project*, aims to trial digital solutions for effective ICT utilisation by older people and to develop access to wraparound services for older people in towns & rural villages. The project goals can be briefly summarised as to provide a simplified, age-friendly platform that can positively impact on, and contribute, to improved outcomes for older people, particularly those in rural areas or small towns, or isolated or otherwise vulnerable older people.

The *Acorn Pilot Project* focuses on a customised launch platform on a tablet computer – the “Acorn” – set up for online communications. The platform comprises hardware, software, server support, training support and curated information services for older people. The Acorn differs from popular tablets in offering a more simplified launcher and an emphasis on ease of navigation than found on more typical tablets. The Age Friendly Ireland Acorn Project has been piloted among three selected samples of circa 30 older people in three counties (Fingal, Limerick and Meath) supported by the local authorities and Age Friendly Ireland.

The Evaluation

This evaluation aims to examine the perceived strengths, weaknesses, impacts and outcomes from using the Acorn, as reported by the Respondents. The evaluation seeks to draw out findings as to the strengths and challenges of the Acorn platform as a solution to information and communications challenges facing older people in the digital age, and to draw some conclusions relevant to further development and deployment of the platform for use among other groups of older people.

Objectives

The objectives of the evaluation are to report on the experiences of Respondents in relation to:

- **Usability** of the technology, i.e., the difference it makes in terms of ease of use by older people and the advantages it has over other platforms or alternative methods of communication.
- **Usefulness** of the technology, i.e., effectiveness of the tablet and platform in completing a variety of online tasks such as filling in forms, reading news, contacting friends or relatives, accessing service providers, accessing online information sources.
- **Impacts** of the technology perceived by the users, e.g., an increase in confidence and competence in the use of ICT devices, easier access to services.
- **Suggestions** from participants as to the future development of the Acorn based on their experience of using the tablet and platform.

Methodology

The evaluation employed a range of methods, including baseline and follow-up surveys and focus groups to gather data from the older people engaged in the project. It should be noted that the piloting of the Acorn tablet was underway in Fingal County before the present evaluation was initiated. Also, the selection of participants took place before and independently of the engagement of the evaluation team. This put some limitations on the input of the research team to the overall design of the pilot and evaluation.

Baseline Questionnaire

A questionnaire was developed specifically for the study and included questions to collect demographic data, and information regarding prior experience and confidence when using technology (see Appendix 1).

The questionnaire also included the following standardised measures:

- Psychological well-being related to quality of life was measured using CASP-19 (Hyde, Wiggins, Higgs & Blane, 2003). This is a 19-item questionnaire designed specifically for assessment in early old age, and uses a 4-point response scale ranging from 0 for “never” to 3 for “often”. The scores are summed yielding a possible score range of 0 – 57.
- A single item to assess self-rated health status (Van Ginneken, & Groenewold, 2012) on a 5-point scale (1 = very good; 5 = very bad).
- A six-item Computer Anxiety Scale (Lester, Yang & James, 2005). Two items reflect confidence when using computers and are reverse scored so that higher scores reflect greater anxiety.

Follow-up Questionnaire

The questionnaire was repeated towards the end of training, omitting the demographic items, and included questions to assess the perception of the training and use of the Acorn.

- The 10-item System Usability Scale (Brooke, 2013) was used to assess a global perception of the usability of the Acorn.

Focus Groups

A series of focus groups were held with a sample of respondents from each location. These semi-structured discussions focussed on training, the tablet itself, expectations and suggestions for on going development of the Acorn (see Appendix X for questions).

All data collected from the older people was anonymised and treated with strict confidence. Completed questionnaires were coded so that the baseline and follow-up questionnaires could be compared

Findings

It should be noted that the data presented reflects those who completed the questionnaires rather than all of the older adults participating in the Acorn pilot.

In all, 26 participants completed both the baseline and follow-up questionnaires (Table 1). The Fingal cohort had already completed their training when this evaluation started. An adapted version of the baseline questionnaire was designed to capture some of the demographic and follow-up information

Table 1 Completed Questionnaire

	Limerick	Meath
Baseline	26	24
Follow-up	16	23
Both	12	14

Baseline Questionnaire

The baseline questionnaire was distributed to the respondents at the first introductory session. Respondents either completed the questionnaire during the session or at home. 50 participants (Limerick n = 26; Meath n = 24) returned the completed questionnaire. Seven Fingal participants returned the completed an adapted questionnaire.

Demographics

The age of the respondents ranged from 56 to 85 years, and 53% were female (n = 33). The majority were retired. Half of the respondents were married/living with partner while a third lived alone. Respondents were more likely to live in a town or the open countryside rather than city or village. More than half had completed secondary level education, with a 30% completing third level courses.

Over half of the respondents reported doing some voluntary work, averaging about 5 hours per week, with a wide range of 1 to 30 hours

The respondents that completed the baseline questionnaire appear to have a relatively high quality of life with a mean score on the CASP-19 of 43.2 (SD= 9.65) representing more than 75% of the possible total of 57. This finding is comparable to the 42.7 found in the first results of TILDA (Barrett et al., 2011).

The majority of the respondents reported that their health was good or very good, and a relatively high quality of life.

The respondents came into the Acorn project through various routes, about half via an older persons' group (e.g., Active Retirement, Men's Sheds) and the remainder through a friend or relative. See Table 2 for additional details.

Table 2: Participant Characteristics

	Limerick n = 26	Meath n = 24	Fingal n = 7	
Female	17 (56.3%)	10 (30%)	6 (86%)	
Age Mean (SD)	70.88 (5.52) Range: 56-79	68.38 (5.71) Range: 59-81	75.57 (8.20) Range: 60-85	
Married/living with partner	12 (46%)	17 (58%)	2 (29%)	
Single	7 (23%)	1(3%)	1 (14%)	
Separated/divorced	5 (17%)	1(3%)	1 (14%)	
Widowed	2 (7%)	5 (15%)	3 (43%)	
Living alone	13 (43%)	6 (18%)	4 (57%)	
Location				
City/suburb	2 (7%)	-	2(29%)	
Town	15 (50%)	5 (15%)	3(43%)	
Village	2 (7%)	5 (15%)	1(14%)	
Open Countryside	7 (23%)	14 (42%)		
Retired	24 (80%)	21 (64%)	7 (100%)	-
Self-employed	1 (4.2%)	2 (6%)		
Education (highest achieved)				
Primary	5 (17%)	3 (9%)	1 (14%)	
Secondary	13 (43%)	12 (36%)	4 (57%)	
Third Level	6 (20%)	8 (24%)	2 (29%)	
Post-grad	2 (7%)	1 (3%)		
Self-reported health				
Very good	6 (20%)	8 (24%)	2 (29%)	
Good	13 (43%)	11 (33%)	2 (29%)	
Fair	5 (17%)	3 (9%)	3 (43%)	
Bad	1 (3%)	-	-	-
Very bad		1 (3%)		
Requiring help with self-care	1 (4.2%)	1 (3%)	1 (14%)	
Providing help with self-care	1 (4.2%)	3 (9%)	-	
Volunteering	17 (57%)	14 (42%)	6 (86%)	
Hours: Mean (SD) Range	6.36 (8.69) 1 -30 hrs	5.75 (6.36) 1-20 hrs	3.66 (3.78) 8 hrs	1-

Note: percentages may not add up to 100% due to missing data

Use of technology at baseline

Respondents were asked about their use of a range of items of technology commonly associated with communications, media use and other forms of online engagement.

Specifically, respondents were asked to indicate whether they had used each item weekly, less frequently (weekly/monthly), or never. 48 respondents provided full data (Table 3).

Table 3. Baseline Technology Use (n = 48)

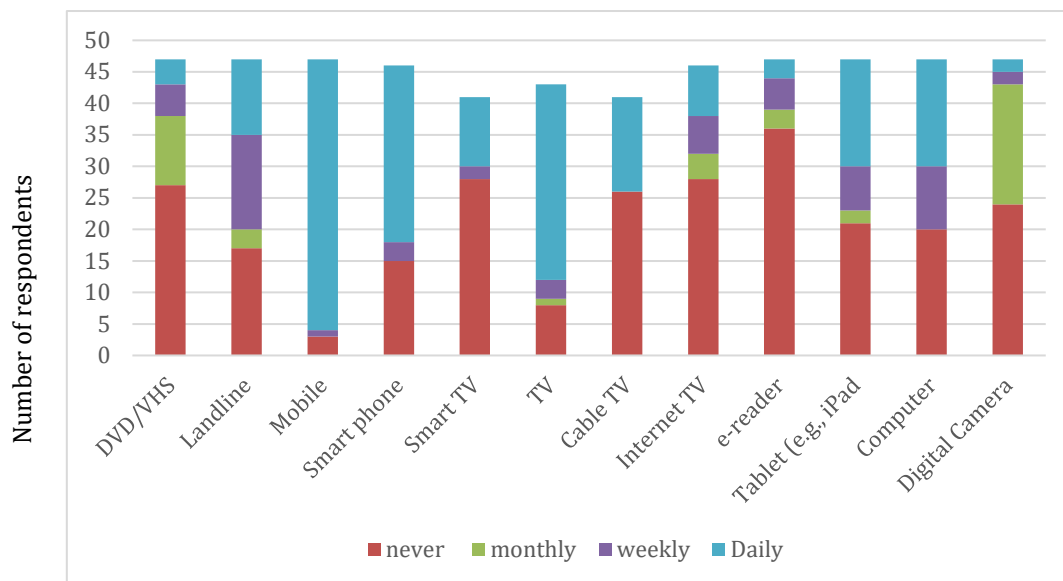
	Never	Monthly	Weekly	Daily
DVD/VHS	27 (39%)	11(16%)	5 (7%)	4 (6%)
Landline	17(25%)	3 (4%)	15(22%)	12 (17.4%)
Mobile	3 (4.3%)	-	1 (1.4%)	43 (62%)
Smart phone	15(22%)	-	3 (4%)	28 (41%)
Smart TV	28 (41%)		2 (3%)	11 (16%)
TV	8(12%)	1 (1%)	3(4%)	31 (45%)
Cable TV	26 (38%)	-	-	15 (22%)
Internet TV	28 (41%)	4(6%)	6 (9%)	8 (12%)
e-reader	36 (52%)	3 (4%)	5 (7%)	3 (4%)
Tablet (e.g., iPad	21 (30%)	2 (3%)	7 (10%)	17(25%)
Computer	20 (29%)	-	10 (15%)	17 (25%)
Digital Camera	24 (35%)	19 (28%)	2 (3%)	2 (3%)

Nearly a third had *never* used a computer or tablet before the Acorn project.

While two thirds used a mobile daily, nearly a quarter had never used a smart phone

Figure 1 illustrates the pattern of use and non-use of certain technologies, with very frequent use of the mobile phone and conventional TV whereas other forms of technology were used less often.

Figure 1: Respondents' usage of technologies at baseline



Follow-up Questionnaire

Training

Respondents were asked to indicate their agreement with a number of statements related to the training they received during the programme. Table 4 presents the results for the three locations. The findings indicate a high level of satisfaction overall, with the majority of respondents agreeing or strongly agreeing with the following statements (showing the range of percentages from the respondents from the three sites):

- The workshops were well organised (77%-96%);
- The workshops were the right length (71-100%)
- The written information about using Acorn was useful (72-93%)
- The tasks helped respondents to learn how to use the features (77-100%)
- The tutorials were easy to follow (71-100%)
- Respondents were able to learn at their own pace (71-100%)
- Respondents were able to learn from other people in their group (72-96%)

Table 4: Perceptions of training in use of the Acorn

	Strongly agree	Agree	Mildly agree	Disagree	Strongly disagree
1. The workshops were well organised					
Limerick (n = 17)	47%	30%	12%	6%	6%
Meath (n = 23)	52%	44%	4%	-	-
Fingal (n = 7)	43%	43%	14%	-	-
2. The workshops were the right length					
Limerick (n = 17)	30%	41%	24%	6%	-
Meath (n = 23)	39%	52%	9%	-	-
Fingal (n = 6)	50%	50%	-	-	-
3. The written information about using Acorn was useful					
Limerick (n = 17)	35%	41%	12%	6%	6%
Meath (n = 23)	44%	49%	9%	-	-
Fingal (n = 7)	29%	43%	29%	-	-
4. The tasks helped me to learn how to use the features					
Limerick (n = 17)	30%	47%	12%	0%	12%
Meath (n = 23)	48%	39%	13%	-	-
Fingal (n = 7)	29%	71%	-	-	-
5. The tutorials were easy to follow					
Limerick (n = 17)	35%	41%	6%	12%	0%
Meath (n = 23)	52%	44%	4%	-	-
Fingal (n = 7)	29%	43%	14%	-	-
6. I was able to learn at my own pace					
Limerick (n = 17)	41%	30%	30%	0%	0%
Meath (n = 23)	52%	44%	-	4%	-
Fingal (n = 7)	67%	33%	-	-	-
7. I was able to learn from other people in my group					
Limerick (n = 17)	47%	29%	12%	12%	0%
Meath (n = 23)	61%	35%	4%	-	-
Fingal (n = 7)	43%	29%	29%	-	-

Using the Acorn

The survey sought to elicit information on the use of the Acorn. Table 5 presents the results for the three locations.

The findings indicate more nuance to this pattern depending on the aspects of considered. The proportion of respondents agreeing or strongly agreeing with the following statements (the range from the respondents from the three sites) are as follows:

1. I was able to customise the features to meet my needs (57-100%)
2. I was able to use the Acorn to plan my day (32-73%)
3. I was able to use the Acorn to keep in contact with my friends (34-74%)
4. I would buy the Acorn if it was available in the shops (65 - 69%)
5. I would recommend the Acorn to a friend/relative (70-100%)
6. I prefer to use the Acorn rather than my phone (19-30%)
7. I used the Acorn outside of my home (32-43%)

These findings are very positive when we consider that the functions being reviewed are not necessarily best performed on a tablet. The obvious case is when respondents express a preference for their phone over their tablet, which seems to be due to the more obvious function of a phone - making phone calls. Indeed the functionality of the Acorn in relation to making calls was quite limited in comparison to a phone. It was heartening that many were able to customise the tablet to personal needs, and that a moderate proportion were learning to use the acorn to plan their day. Also, that a majority would buy the Acorn if available in the shops, or would recommend it to relatives, are very positive findings.

More than 70% of the respondents would recommend the Acorn to a friend or relative

Table 5 Using the Acorn

	Strongly agree	Agree	Mildly agree	Disagree	Strongly disagree
1. I was able to customise the features to meet my needs					
Limerick (n = 16)	19%	38%	19%	25%	-
Meath (n = 23)	14%	68%	18%	-	-
Fingal (n = 4)	50%	50%	-	-	-
2. I was able to use the Acorn to plan my day					
Limerick (n = 17)	13%	19%	13%	56%	-
Meath (n = 22)	18%	55%	23%	5%	-
Fingal (n = 6)	33%	17%	50%	-	-
3. I was able to use the Acorn to keep in contact with my friends					
Limerick (n = 17)	6%	31%	31%	31%	-
Meath (n = 22)	17%	57%	22%	4%	-
Fingal (n = 6)	17%	17%	50%	-	-
4. I would buy the Acorn if it was available in the shops					
Limerick (n = 17)	31%	38%	7%	7%	19%
Meath (n = 20)	5%	60%	25%	5%	5%
Fingal (n = 6)	17%	50%	33%	-	-
5. I would recommend the Acorn to a friend/relative					
Limerick (n = 17)	41%	29%	18%	6%	6%
Meath(n = 22)	23%	68%	5%	5%	-
Fingal(n = 6)	50%	50%	-	-	-
6. I prefer to use the Acorn rather than my phone					
Limerick (n = 17)	13%	6%	50%	19%	13%
Meath (n = 23)	-	30%	39%	17%	13%
Fingal (n = 7)	17%	-	50%	33%	-
7. I used the Acorn outside of my home					
Limerick (n = 17)	19%	13%	19%	38%	-
Meath (n = 23)	13%	30%	26%	22%	9%
Fingal (n = 6)	17%	17%	33%	33%	-

Frequency of use

Respondents were asked how frequently they used the main features of the Acorn (never – daily). This does not take into account the items downloaded by respondents following the update that made accessing google etc. easier.

Features such as email, texting, news headlines, local and national newspapers were used at least weekly by the majority of the respondents (Table 6). Again, we can see too that the respondents did not make much use of the tablet for phone calls, which is consistent with their preference for the phone over the tablet. There is evidence of complementarity between phone and tablet, which is what should be expected. This pattern is what one might expect initially as users focus on familiarisation with the more basic features, with progress to more advanced or novel activities. The key is that the process was beginning.

Progress into other activities depends partly on growing confidence, persistence and the appetite for moving in the direction of digital alternatives to current activities. Progress in this sense also will depend on increased awareness of, familiarisation with and trust in online services, and identifying good sources of relevant information, for example about statutory services. All this takes time and dedication.

Other aspects including, banking and links to health, life and local services were never used by more than half of respondents. Among these factors are the extent of awareness of and comfort in navigating online information and health services. But there is also a major area in relation to trust, particularly in activities where money is involved, for example in relation to online consumer transactions and banking. We should not underestimate the challenge of moving online in these areas. That said, the signs from the initial engagement of the respondents are positive

Progress on this front depends on the extent to which service providers themselves are reaching out to older people to meet needs with online support. Also, it is very important that financial service providers reach out to older

customers who have quite understandable preference for the 'paper trail' as it tried and tested, and has probably served them well in the past.

There is only so far that technology in the hand can go without being joined up with initiatives from the direction of care support providers, health professionals and service providers. Some customisation and investment in establishing what works for older people needs to be initiated by providers.

The most popular features included checking the weather, reading local and national newspapers and communicating through messaging and emails.

Table 6. Frequency of use

	Never	Monthly	Weekly	Daily
a. Used the alarm (n = 42)	69%	17%	7%	7%
b. Checked the weather (n = 43)	26%	7%	19%	49%
c. Used the calendar to check the date (n = 44)	23%	16%	27%	34%
d. Used the Calendar to check Public Events (n= 43)	33%	9%	40%	19%
e. Created events on calendar (n = 42)	45%	21%	14%	19%
f. Used the calendar for your appointments (n = 44)	37%	27%	21%	16%
g. Used the Camera (n = 45)	29%	29%	24%	18%
h. Sent pictures to others (n = 42)	50%	26%	17%	7%
i. Made Phone Calls (n = 42)	64%	17%	12%	7%
j. Sent Emails (n = 43)	12%	26%	35%	28%
k. Sent text messages (n =44)	21%	18%	25%	37%
l. Read the news headlines (n = 44)	9%	9%	25%	57%
m. Read the local newspaper (n = 43)	19%	12%	21%	49%
n. Read a national newspaper (n = 40)	18%	13%	20%	50%
o. Used the banking/finance links (n = 42)	83%	7%	7%	2%
p. Used any of the health links (n = 42)	81%	12%	5%	2%
q. Used any of the Life links (n= 42)	76%	12%	10%	2%
r. Used any of the local services links (n= 41)	59%	22%	12%	7%
s. Listened to the radio (n = 41)	39%	15%	29%	17%
t. Played games (n = 44)	48%	2%	21%	30%
u. Used the transport links	68%	16%	12%	5%

Usability of the Acorn Scale

Scores above 68 on the System Usability Scale are considered above average in ease of use. The mean score for usability of the Acorn was 72.43 (SD: 20.22), albeit with a wide range of scores from 5 to 100 (Table 7). Interestingly, the respondent with the lowest score indicated that the course was 'above my skill level' in the free text section of the questionnaire.

Table 7 Usability of the Acorn

	Mean	SD
Limerick (n = 15)	69.53	25.91
Meath (n = 17)	75.59	16.21
Fingal (n = 5)	71	13.99

Overall, the Acorn was rated 'above average' in terms of usability

We were able to compare any changes, using matched baseline and follow-up responses from the Limerick and Meath respondents on two measures: (1) computer anxiety; and (2) confidence in completing on-line tasks.

Computer anxiety

Computer anxiety was measured at baseline (n = 49; mean: 16.2 SD: 5.35) and was reduced at follow-up (n = 46; mean: 14.17 SD 5.04). Using the matched baseline and follow-up surveys only computer anxiety was significantly reduced following the training programme: $t(26) 2.517, p = .018$. This is very encouraging.

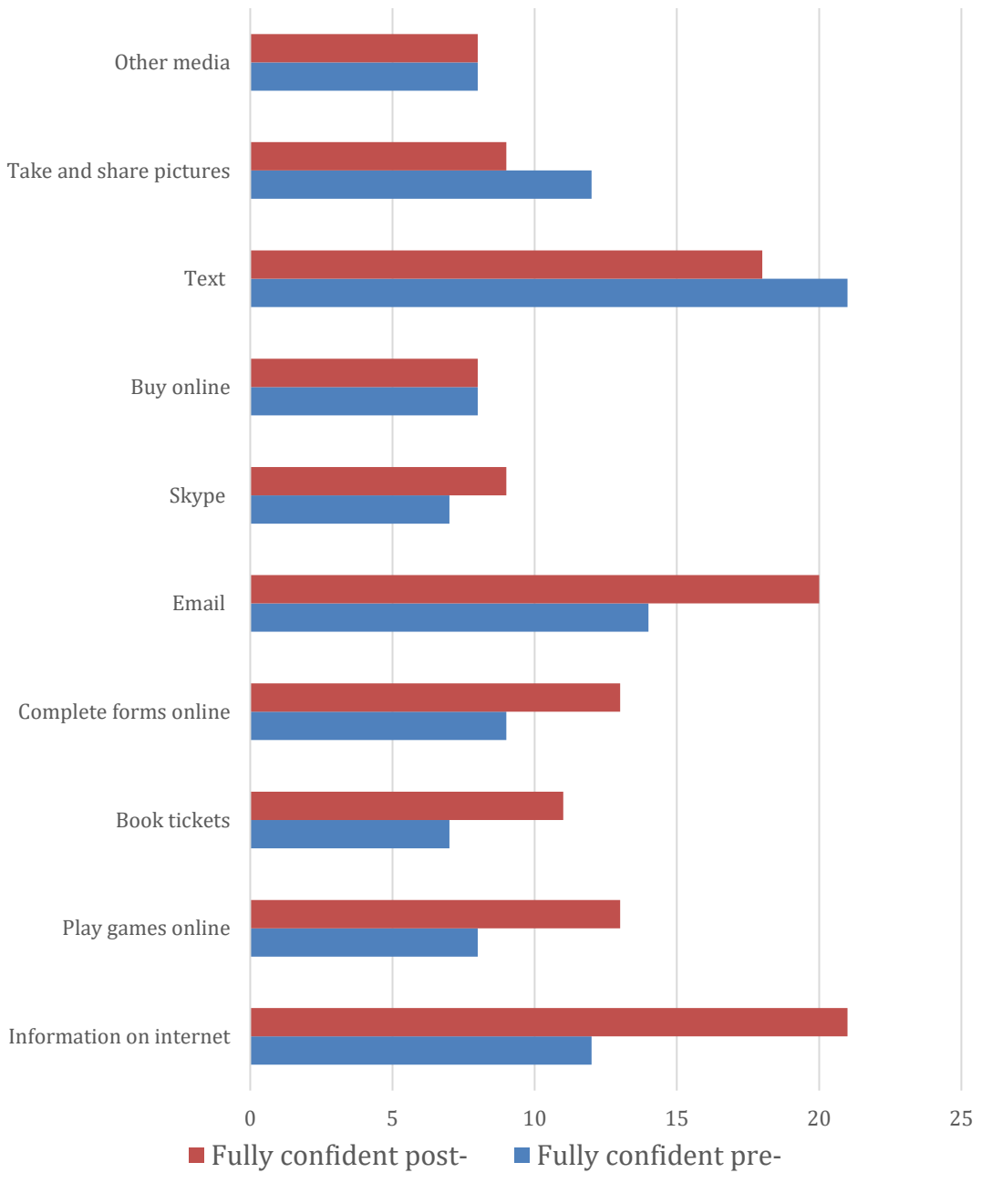
Participation in the Acorn project significantly reduced computer anxiety

Confidence

Respondents were asked to rate their confidence in completing a number of on-line tasks. Using the matched baseline and follow-up data for 27 respondents, there was some increase in confidence on a number of tasks following the training and use of the Acorn (Figure 2). Specifically, people were more likely to indicate they were fully confident at follow-up in getting information on internet (75%), playing games online (63%), booking tickets (57%), completing forms online (43%) and emailing (43%), compared to baseline. However, there was a reduction in the number of those who were fully confident in texting and sharing pictures. Why this is so is not fully clear, it could relate to the differences in how such tasks are handled on the Acorn as compared to devices which the respondent was more used to. In other words, it may be an issue of re-learning to do something familiar but on a different device. Overall, these findings are positive and encouraging.

Respondents were more likely to feel fully confident in accessing information on the internet following the Acorn project

Figure 2: Changes in confidence pre- to post-training



Focus Groups

Four separate focus groups were conducted with a total of 18 participants (Fingal n = 6 [5 female]; Meath n = 2 [male] and n = 4 [2 female]; Limerick n = 7 [4 female]). The participants had a range of prior experience using computers from those that considered themselves to be 'very proficient' to total novices.

The Fingal participants had finished their training several months before the focus group, whereas both Limerick and Meath still had at least one more session to come when we met them.

The majority of the participants had at least some experience with ICT, although the amount of experience and perceived skill level varied considerably. Only three indicated that they had never even opened a computer before the Acorn pilot.

Training

The participants found the trainers and helpers extremely helpful and their input was highly valued. Each session seemed to be an appropriate length, but there were some who felt they would have benefitted from more workshops.

Perceptions differed as to the content and organisation of the training workshops and this seemed to be related to the prior experience of the participants – those with little previous experience felt it was too rushed making it difficult to keep up, and while the tutors were great they were still confused. Those with more experience would have liked to move on to cover other features more quickly.

It was suggested that it would have been helpful to have the interface projected onto a larger screen during the group sessions as the Acorn itself was too small for some to see clearly.

The mixed abilities within the smaller group sessions helped some “it was good to sit next to someone who knew what they were doing”. However, the talking between participants who needed extra help and the mentors was distracting for all and meant that they who could not always hear or follow the main tutor. Some

of the 'novices' felt a little intimidated by the 'geniuses' and this seems to have led to some frustration. The differing background influenced expectations of the device, with some expecting a fully equipped iPad equivalent whereas others wanted something simpler with minimal content at first.

It was also suggested that more written hand-outs would have helped participants to consolidate learning from workshops and support the use of the Acorn at home. One participant highlighted the value of the help videos, and found these to be 'brilliant', others though, had not used them, and some did not seem to know about them.

While the staff and mentors were very approachable, participants were generally reluctant to ask for help outside of the workshops. One focus group recognised that it would have been useful to set up an informal support network amongst themselves to help each other. This may also have facilitated the social aspects of the programme.

While acknowledging that they did not use the Acorn very much between sessions, those with little previous experience were delighted with the progress they had made.

"I was very anxious and afraid about starting but enjoyed the classes and tutors, and got to do quite a bit - Google, send an email, play games. And I was delighted that I was able to follow-up on something I'd seen on TV on line". Focus group participant.

Using the Acorn

The interface was very popular, and the launch page encouraged exploration of the features. There was some disagreement about the size - for some it was perfect and enabled them to read newspapers, for example, that they found difficult on the smaller screens of their phones, for others though, it was too big to be truly

portable. Some participants indicated that they were reluctant to take it out of the house with them, although this was more related to fears that it would be stolen rather than a problem with size per se.

Several participants were continuing to use the Acorn daily, and in terms of the content already loaded the newspapers and checking the weather were most frequently used. Following the update that allowed greater access to the web, some participants were able to personalise their Acorn and downloaded apps for games, newsfeeds for example, and two were using it to link content to their smart TV.

The inclusion of the Sim card was particularly useful for participants to 'get online' without worrying about the availability of WiFi; however there was some confusion about this facility and uncertainty about what would happen at the end of the pilot – would they need to purchase a new contract?

Whilst recognising that this was a pilot programme, and the Acorn was continuing to be developed, there was some disappointment over glitches and technical problems that the participants encountered. For example, issues with messaging may have limited some of the potential social interactions between participants outside of the training. In addition, participants had some concerns over the security of the system and were reluctant to undertake activities such as online banking until all of the technical issues had been resolved.

What next?

The participants remained optimistic and enthusiastic about the potential for the Acorn, and had several suggestions as to how it could develop and who may benefit.

Some add-ons that were considered essential included the companion app, to enable non-Acorn users to phone in, and features such as word processing and a printer driver.

It was suggested that there was a need to identify and target those most in need of a device such as Acorn; this may include those who were socially isolated and Nursing Homes residents. It was acknowledged that someone with no prior learning in ICT would need considerable support in using the Acorn and this would need to be considered if it was available to buy 'off the shelf'.

For the participants themselves, while some have reverted to their phone and own laptop, others 'love the Acorn', have gained confidence and are continuing to expand their ICT skills.

"We need to know how to go on line, and become part of things, we don't want to disengage"

"I did nothing before and am still getting to grips with it...but I have such a sense of achievement"

Focus group participants

Discussion and Recommendations

This evaluation examined the perceptions of the participants in the Acorn pilot across three sites. The baseline survey of 50 participants, while not representative, did reflect the wide variations in the older population in Ireland.

There was a mix of educational background from those leaving school after primary school to those completing third level education. There was also a mix in terms of living arrangements, with both urban and rural living; about a third were living alone.

The initial questionnaire focused on the participants' use of, and confidence with, existing technologies before trialling the Acorn tablet. The findings indicate a varied experience, with some adopting some new technologies already, such as internet television services and gradually lessening their attachment to landline phone technology. Over 40% were using smart phones, and these could be seen as a real competitor to the Acorn, with less than a third of respondents indicating that they would use the Acorn rather than their phone at follow-up. Usage of new technologies that are multifunctional (such as PCs, laptops and tablets) is more frequent among participants than usage of specialised devices such as e-readers and digital cameras. This suggests that there is great merit in organising key functions in devices that are multifunctional and integrated.

There was some variation in terms of ICT experience and skills amongst the participants; over a quarter were using computers (mainly laptops/tablets) daily, while nearly a third had not used a computer at all before taking part in the Acorn pilot. This mix of abilities and skill levels may have had some unintended consequences. The focus group findings suggest that those with more ICT competence found the Acorn a little limited in functionality, particularly before one of the updates that enabled greater interconnectivity with the web. However, having more skilled users may have encouraged the developers to enhance the capacity and capabilities of the Acorn more quickly than may have been the case otherwise. The variation in skill levels does seem to have had some impact on the training experience for both novices and the more skilled, creating some issues with ensuring that the needs of everyone were met during the workshops. Nevertheless, satisfaction with the training workshops was generally very positive.

Whilst participants understood that this was a new product and was 'under development' the technical issues and glitches experienced during the course of the programme led to a sense of frustration in the focus group participants. These difficulties may have influenced the frequency in which some of the features of the device were used outside of the workshops. Despite these issues the Acorn was rated as above average in terms of usability, and critically, confidence in particular ICT tasks increased, and computer anxiety decreased for the majority of the participants over the course of the pilot – all very important outcomes.

The range of tasks that can be completed on the Acorn is very broad, and many tasks are new and challenging, particularly those that require a high level of trust – e.g., banking and health care. There were some concerns over security and confidentiality associated with these online tasks amongst the focus group participants. It seems likely that achieving technical usability and reliability is not the only factor in the uptake of new information technologies as wider societal factors may also contribute to their use.

Scope of recommendations

These recommendations are divided into four sections, usability in the technical sense, training, usage, and societal embedding. These four aspects are important because the development of digital citizenship depends on more than having a tablet in the hand. Success will depend on a partnership between the technical developers, local and other public authorities and public service providers, and a range of voluntary and commercial service providers. There are gains for all sides if this potential partnership is developed.

Usability

- Draw on the evidence of how the respondents are using the tablet to address potential to expand activities to increase usage, especially in relation to apps that could improve their quality of life
- Work on solving any remaining technical problems with the tablet before further roll-out

- Identify any key additional core elements identified by the pilot exercise. For example, look at the key importance of a sim card.
- Consider how the presence of smartphones among users could be complemented by the Acorn, e.g., taking a phone call on the tablet using the phone number on a smart phone.
- Keep improving ancillary items that help in using the tablet, such as stands, cases,

Training

- Streaming of workshops into ability groups could help to address the differences in level of initial understanding.
- Given the possible range of abilities and despite the significant advantages of the launch screens on the Acorn, there will still be a need for 1:1 training for some users
- Follow-up for some users could make the difference to persistence and increasing use of the Acorn

Usage

- Daily use for routine tasks can help to develop the habit of using the tablet for more ambitious tasks.
- Place a strong focus on developing confidence with simple functions e.g., diary and alarm clock, camera
- Pilot a selected day-to-day services such as weather forecast, news feeds, citizen information services and live services such as broadcast sources.

Societal embedding

- The usage and benefits of the tablet in the hand depends also on the extent of outreach by service providers as well as individual user effort.
- The curation of sites and services by the developers should be examined with a view to more effective partnership with selected service providers, local authorities, housing, transport, health, and welfare services,

- Promote helplines, social support services, links to key statutory or voluntary help and advisory services,
- Place a strong focus on support with form-filling and how to use online commercial services including online purchasing and delivery, online banking and other financial transactions.

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ACORN PROJECT EVALUATION

You are invited to take part in a research study designed to evaluate the Acorn Pilot Project.

Your personal views and attitudes will provide us with valuable information about the experience of learning and using the device.

Who are we?

The study is being conducted by Dr Joe Larragy (Lecturer at Maynooth University) and Dr Andy Cochrane (Researcher at Maynooth University).

What is the study about?

We want to gather reliable information to help us understand how the use of the Acorn Tablet can help older people to engage with information technology to manage everyday tasks.

What is involved?

We would like you to complete this short survey at the beginning of your involvement with the Acorn Project. We may also ask you to complete a second survey at the end of the project.

In addition, we may invite you to take part in a one-to-one interview or group meeting so that we can explore further issues related to the project. This is entirely voluntary and, whether you agree to take part or not, this will not affect your involvement in the Acorn project itself in any way.

All of the information you provide will be stored in a secure location in Maynooth University. Your information will be kept safe and secure and treated with strict confidence. Your personal details and views will not be revealed to anyone outside the study team and your name will not be identified in any reports or publications arising from this study.

If you have any questions or concerns, please contact Andy at 08608742181 or email cochrane.andy@gmail.com

Please answer the following question by either writing in your answer, ticking (or in some cases circling) the answer that applies to you. The first few questions help us to learn a little about your life circumstances.

1. How did you first become involved in the Acorn Project?		
a. Through an older persons' group or organisation?		
b. Through a friend or colleague		
c. Approached directly by project organiser		
d. Other		
If other please write in your answer below:		
2. How old are you? (years)		
3. Please circle your answer	Female	Male
4. Your Marital Status		
a. Married/living with partner		
b. Single (never married)		
c. Separated/divorced		
d. Widowed		
5. Who lives at home with you?		
a. Live alone		
b. With spouse/partner		
c. With your children		
d. With other relatives/friends		
e. Non-private accommodation (e.g., residential home)		

6. Which of the following best describes where you live?
a. City / suburb
b. Town
c. Village
d. Open countryside
7. What is your highest level of education?
a. Primary or less
b. Secondary
c. Third level
d. Postgraduate
8. Which of the following best describes your current principal economic status?
a. Employed/self-employed/unemployed
b. Looking after home/family
c. Retired
d. Education/training
e. Other
If other, please write in your answer below:
9. What is your occupation/profession?

10. In general, how would you rate your current health status? (circle the one answer that best applies to you:

Very good

Good

Fair

Bad

Very bad

11. Do you require any help with everyday tasks? (e.g., personal care, shopping, getting out and about)

Yes

No

If yes, for how many hours per week? _____

12. Do you provide care for anyone who needs assistance with everyday tasks?

Yes

No

If yes, for how many hours per week? _____

13. Do you volunteer in your community?

Yes

No

If yes, for how many hours per week? _____

13. Here is a list of statement that people have used to describe their lives or how they feel. We would like to know how often, if at all, you think this applies to you. (Tick one box on each line)

	Often	Some- times	Not often	Never
a. My age prevents me from doing the things I would like to				
b. I feel that what happens to me is out of my control				
c. I feel free to plan for the future				
d. I feel left out of things				
e. I can do the things that I want to				
f. Family responsibilities prevent me from doing what I want to do				
g. I feel I can please myself what I do				
h. My health stops me from doing things I want to do				
i. Shortage of money stops me from doing things I want to do				
j. I look forward to each day				
k. I feel that my life has meaning				
l. I enjoy the things that I do				

m. I enjoy being in the company of others				
n. On balance, I look back on my life with a sense of happiness				
o. I feel full of energy these days				
p. I choose to do things that I have never done before				
q I feel satisfied with the way my life has turned out				
r I feel that life is full of opportunities				
s. I feel that the future looks good for me				

The next few questions ask about your use of technology. (Tick one box on each line)				
14. Please indicate how often you use the following:				
	Never	Monthly	Weekly	Daily
Landline phone				
DVD/VHS				
Mobile Phone				
Smart Phone (e.g., Iphone)				
Smart TV				
Standard TV				
Cable TV				

Internet TV (e.g., Netflix)				
Kindle or other e-reader				
IPad or other tablet				
Laptop / Desktop computer				
Digital camera				
15. Please rate how confident are you in doing the following?				
	Not at all	Need more confidence	Fully confident	
a. Using Skype or other video tools to talk to family or friends				
b. Sending text messages				
c. Using social media (e.g., Facebook)				
d. Using the internet to search for information				
e. Booking tickets online				
f. Buying online				
g. Selling online				
h. Filling in forms online (e.g., Motor tax)				
i. How to send and receive emails				
j. Taking and sharing pictures with others				

k. Accessing media (e.g., films, radio via the internet)			
l. Playing games over the internet			

17. For each of the following statements please circle one answer that corresponds to your feeling

a. I feel confident and relaxed while working on a computer

Strongly agree

Agree

Mildly agree

Disagree

Strongly disagree

b. The harder I work at learning computers the more confused I get

Strongly agree

Agree

Mildly agree

Disagree

Strongly disagree

c. I have sometimes thought that I am too old to learn about computers

Strongly agree

Agree

Mildly agree

Disagree

Strongly disagree

d. I have sometimes thought "computers don't like me"

Strongly agree

Agree

Mildly agree

Disagree

Strongly disagree
e. I always have problems working on computers Strongly agree Agree Mildly agree Disagree Strongly disagree
f. I can usually manage to solve computer problems by myself Strongly agree Agree Mildly agree Disagree Strongly disagree

Thank you for completing the questionnaire

The following information for tracking purposes only and will not be mentioned anywhere in the data or report

Name: _____

Appendix 2. Follow-up Questionnaire

Thank you for taking part in a research study designed to evaluate the
Acorn Pilot Project.

Your personal views and attitudes will provide us with valuable
information about the experience of learning and using the device.

ACORN PROJECT EVALUATION

What is involved?

Now that the Acorn Project is near completion we would like you to complete this short survey. This is entirely voluntary and, whether you agree to take part or not, will not affect your involvement in the Acorn project itself in any way.

All of the information you provide will be stored in a secure location in Maynooth University. Your information will be kept safe and secure and treated with strict confidence. Your personal details and views will not be revealed to anyone outside the study team and your name will not be identified in any reports or publications arising from this study.

If you have any questions or concerns, please contact Andy at 08608742181 or email cochrane.andy@gmail.com

1. Here is a list of statement that people have used to describe their lives or how they feel. We would like to know how often, if at all, you think this applies to you. (Tick one box on each line)

	Often	Some-times	Not often	Never
a. My age prevents me from doing the things I would like to				
b. I feel that what happens to me is out of my control				
c. I feel free to plan for the future				
d. I feel left out of things				
e. I can do the things that I want to				
f. Family responsibilities prevent me from doing what I want to do				
g. I feel I can please myself what I do				
h. My health stops me from doing things I want to do				
i. Shortage of money stops me from doing things I want to do				
j. I look forward to each day				
k. I feel that my life has meaning				
l. I enjoy the things that I do				
m. I enjoy being in the company of others				
n. On balance, I look back on my life with a sense of happiness				
o. I feel full of energy these days				
p. I choose to do things that I have never done before				
q I feel satisfied with the way my life has turned out				
r I feel that life is full of opportunities				
s. I feel that the future looks good for me				

2. These questions are about the Acorn training sessions.					
Please tick the box that applies to you for each statement					
	Strongly agree	Agree	Mildly Agree	Disagree	Strongly disagree
The workshops were well organised					
The workshops were the right length					
The written information about using Acorn was helpful					
The tasks helped me to learn how to use the features on the Acorn					
The tutorials on the Acorn were easy to follow					
I was able to learn at my own pace					
I was able to learn from other people in my group					
3. The next questions are about using the Acorn.					
Please tick the box that applies to you for each statement					
	Strongly agree	Agree	Mildly Agree	Disagree	Strongly disagree
I was able to customise the Acorn features to meet my needs					
I was able to use the Acorn to plan my day					
I was able to use the Acorn to keep in contact with my friends					
I would buy the Acorn if it was available in the shops					
I would recommend the Acorn to a friend/relative					
I prefer to use the Acorn rather than my phone					
I used the Acorn outside of my home					

4. These questions are about the usability of the Acorn (note that disagree and agree have swapped positions)					
Please tick the box that applies to you for each statement					
	Strongly Disagree				Strongly Agree
	1	2	3	4	5
I think I would like to use the Acorn frequently					
I found the Acorn unnecessarily complex					
I thought the Acorn was easy to use					
I think I would need the support of a technical person to use the Acorn					
I found the various functions in the Acorn were well integrated					
I thought there was too much inconsistency in the Acorn					
I would imagine that most people would learn to use the Acorn quickly					
I found the Acorn very cumbersome to use					
I feel very confident using the Acorn					
I needed to learn a lot of things before I could get going with the Acorn					

5. The next few questions ask about how you used the Acorn				
Please indicate how often you have used the Acorn to do the following: (Tick one box on each line)				
	Never	Monthly	Weekly	Daily
v. Used the alarm				
w. Checked the weather				
x. Used the calendar to check the date				
y. Used the Calendar to check Public Events				
z. Created events on calendar				
aa. Used the calendar for your appointments				
bb. Used the Camera				
cc. Sent pictures to others				
dd. Made Phone Calls				
ee. Sent Emails				
ff. Sent messages				
gg. Read the news headlines				
hh. Read the local newspaper				
ii. Read a national newspaper				
jj. Used the banking/finance links				
kk. Used any of the health links				
ll. Used any of the Life links				
mm. Used any of the local services links				
nn. Listened to the radio				
oo. Played games				
pp. Used the transport links				

Did you use any other features not listed? Please write in here

Which features did you find most useful? Please write in here

6. Please rate how confident are you in doing the following?

	Not at all confident	Need more confidence	Fully confident
a. Using Skype or other video tools to talk to family or friends			
b. Sending text messages			
c. Using social media (e.g., Facebook)			
d. Using the internet to search for information			
e. Booking tickets online			
f. Buying online			
g. Selling online			
h. Filling in forms online (e.g., Motor tax)			
i. How to send and receive emails			
j. Taking and sharing pictures with others			
k. Accessing media (e.g., films, radio via the internet)			

l. Playing games over the internet			
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7. For each of the following statements please circle one answer that corresponds to your feeling			
g. I feel confident and relaxed while working on a computer			
Strongly agree			
Agree			
Mildly agree			
Disagree			
Strongly disagree			
h. The harder I work at learning computers the more confused I get			
Strongly agree			
Agree			
Mildly agree			
Disagree			
Strongly disagree			
i. I have sometimes thought that I am too old to learn about computers			
Strongly agree			
Agree			
Mildly agree			
Disagree			
Strongly disagree			
j. I have sometimes thought "computers don't like me"			
Strongly agree			
Agree			
Mildly agree			
Disagree			
Strongly disagree			
k. I always have problems working on computers			
Strongly agree			
Agree			
Mildly agree			
Disagree			
Strongly disagree			
l. I can usually manage to solve computer problems by myself			
Strongly agree			
Agree			
Mildly agree			
Disagree			
Strongly disagree			

If you have any other comments about your experience with the Acorn Project please write below.

A large, empty rectangular box with a thin black border, intended for the respondent to write their comments.

Thank you for completing the questionnaire

The following information for tracking purposes only and will not be mentioned anywhere in the data or report

Name: _____

Appendix 3. Focus Group Topics

Demographics

Previous experience with IT

Expectations

How recruited to project

Training

Length

Content

Mentors

Contact outside of meetings

How much hand-holding needed

Minimum amount of training needed

Tablet itself

What worked well?

What didn't work so well?

Usability

Which aspects did you make most use of?

Relevance

Personalising

Development process

How involved did you feel?

How was feedback managed?

Any specific benefits?

Social

Confidence?

Any Suggestions for future development?

What next for you in terms of IT?

