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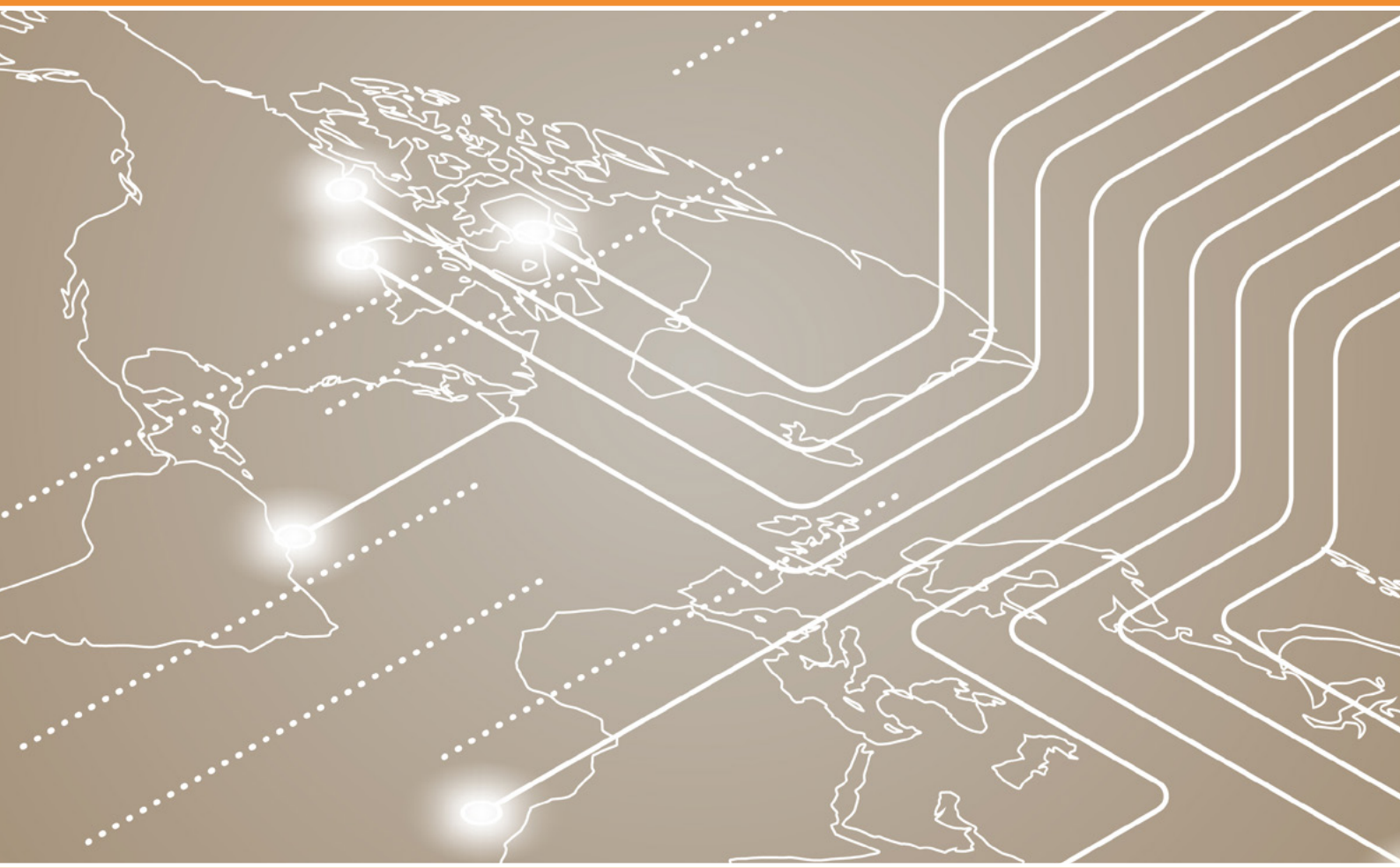
Digital Technology Design and Development for Inclusive Ageing and Engaged Societies

A policy brief based on the Virtual-EngAge study – Virtually Engaged Positive Ageing: Operationalising active retirement associations for engagement



Virtual-EngAge Policy Brief Series, Report No.3

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ACTIVE RETIREMENT IRELAND

What is the purpose of this policy brief?

This policy brief presents development considerations and design criteria to help inform the inclusive development of a digital application that will support engagement in later life.

These considerations and criteria are outcomes of a research-directed, multi-stakeholder co-production process that drew on findings from the Virtual-EngAge study. Virtual-EngAge is a national research programme that examined the lived experience of technology use and non-use for individual and collective engagement by members of a national grassroots membership organisation – Active Retirement Ireland.

This policy brief will present: (1) a short overview of international and national policy on digital development and inclusion for older people; (2) a description of the research methods, and the multi-stakeholder participatory process; (3) a short summary of relevant findings based on composite case studies; (4) concluding remarks, and (5) the development of considerations and design criteria.

In this policy brief, a digital application refers to a digital internet-based application, which can include a website based platform, a smart phone or a smart device-enabled application.

Why is this topic important

Ensuring that the design and development of digital technologies is inclusive of older people's views, and how they want to take part in society, is a critical policy challenge for the future of ageing societies. However, despite digitalisation and demographic change being recognised as two major transformations facing European nations (European Commission, 2020), there is relatively little consideration of how to develop digital technology that is relevant and beneficial for older people (UN, 2020; Council of the European Union, 2020). The challenge for policy is four-fold.

First, research indicates that there can be a persistent failure to involve older adults in the design of technologies that are intended to target their needs. This neglects how needs, preferences and attitudes can differ across groups, and means older people have little say in the digital technologies they are being expected to buy and use (Fischl et al., 2020).

Second, the development of digital technology for older people remains strongly focused on healthcare and health monitoring (Leppiman et al., 2021). This ignores the many other ways older people may want to and need to use technology, and how engagement in society is becoming increasingly digitised in areas such as, social connection, information access, and advocacy.

Third, there is concern that digital technology development for older people is often rooted in a deficit view of ageing, and assumptions of decline and decrepitude (Neven and Peine, 2017). This neglects the daily routines of older people, their engagement and contributions in their communities, and the many ways that some older people are already using technology in their lives.

Fourth, and finally, existing technology development approaches for older people remains technology-led (Poli et al. 2019), and neglects the perspectives, and collaborative potential of multi-stakeholder design and development approaches, overlooking the voices of cross-sectoral stakeholders fundamental for the development and adoption of any potential solutions.

Together, these challenges stifle our capacity to establish meaningful and workable design and development criteria for digital technology that will support engagement in later life. These challenges also prevent the identification of social, political and legislative factors that need to enable the development and adoption of these digital technologies.

About Active Retirement Ireland

Active Retirement Ireland (ARI) incorporates approximately 500 local Active Retirement Associations (ARAs) and a national membership of approximately 21,500 older people. Although supported by a national professional secretariat (four core positions including CEO), ARI is based on a three-level structure involving voluntary committees at local (ARA local leadership), regional (nine regional teams, committee members and Regional Development Officers) and national levels (national steering board).

ARI promotes engagement opportunities for older people to self-organise and engage in social, physical, cultural and educational activities, and aims to serve as a representative voice for older people. ARI utilises a multi-modal approach to communication (e.g. postal; telephone; e-mail) to engage with each of the three levels, and to reflect the wide range of members' and volunteers' digital literacy. Within this structure, it is typically local ARA secretaries that are the primary information conduit between higher organisational levels and individual members.

Policy Context

There have been calls for the consideration of older people's circumstances and situations in the design and development of digital technologies for ageing societies within policy (Murphy, 2022). However, these calls typically: are made more strongly at the wider European or international levels; concentrate on the provision of public service; and generally pay less attention to the actions, recommendations or regulations with respect to the inclusion of older people in the design process (European Union Agency for Fundamental Rights, 2023). The EU Directive on the accessibility of the websites and mobile applications of public sector bodies aims to ensure that the digital communications of provisions of the Member States are more accessible to users, in particular to persons with disabilities. More generally, the OECD has identified good practice principles for public service design and delivery in the digital age (OECD, 2022), highlighting the need to make the design and delivery of public services a participatory and inclusive process.

The outcome of proceedings of the General Secretariat of the Council of the European Union (2020) makes a number of explicit recommendations in order to support older people's human rights in digital societies, and to address innovation deficits more directly. These include the need for the development of a digital platform for greater civic engagement; the need for high quality, accessible and easy-to-use forms of digital communications; and the need for older adult civil society organisations to be included in decision-making around older persons and digitisation. A report on the 'Fundamental Rights of Older Persons: Ensuring Access to Public Services in Digital Societies' helpfully maps the current legislation, policies and practices fostering digital inclusion and access to public services, and asserts that being involved in the design of technological solutions should be a fundamental right (European Union Agency for Fundamental Rights, 2023). As such, it draws attention to the need for inclusive and accessible digital service design (through co-creation, co-design and participatory design) as an important step towards ensuring equal access to digital public services.

In Ireland, the national digital framework – *Harnessing Digital, the Digital Ireland Framework* (Department of the Taoiseach, 2022) – only briefly mentions older people as one group who may be vulnerable to digital exclusion, but general references are made to the need for involving those who will use technologies in their design. In the Digital for Good: Ireland's *Digital Inclusion Roadmap* (Government of Ireland, 2023) older people are noted as one group who are poorly engaged with respect to decisions and developments regarding design of technologies. Although not specific to older people, the Roadmap pledges to include the perspective of all service-users in the design of digital public services, as well as a commitment that these services will be designed to be inclusive,

accessible and literacy-friendly. At the civil society level, Age Action, a national advocacy organisation for older people published a policy position paper on *Digital Inclusion and an Ageing Population* (Age Action Ireland, 2021). While this document does not focus specifically on inclusive design, it references the importance of commitments within the National Disability Inclusion Strategy 2017-2021 to: '...promote the design of public sector websites in accordance with universal design principles'.

What did we do and who was involved?

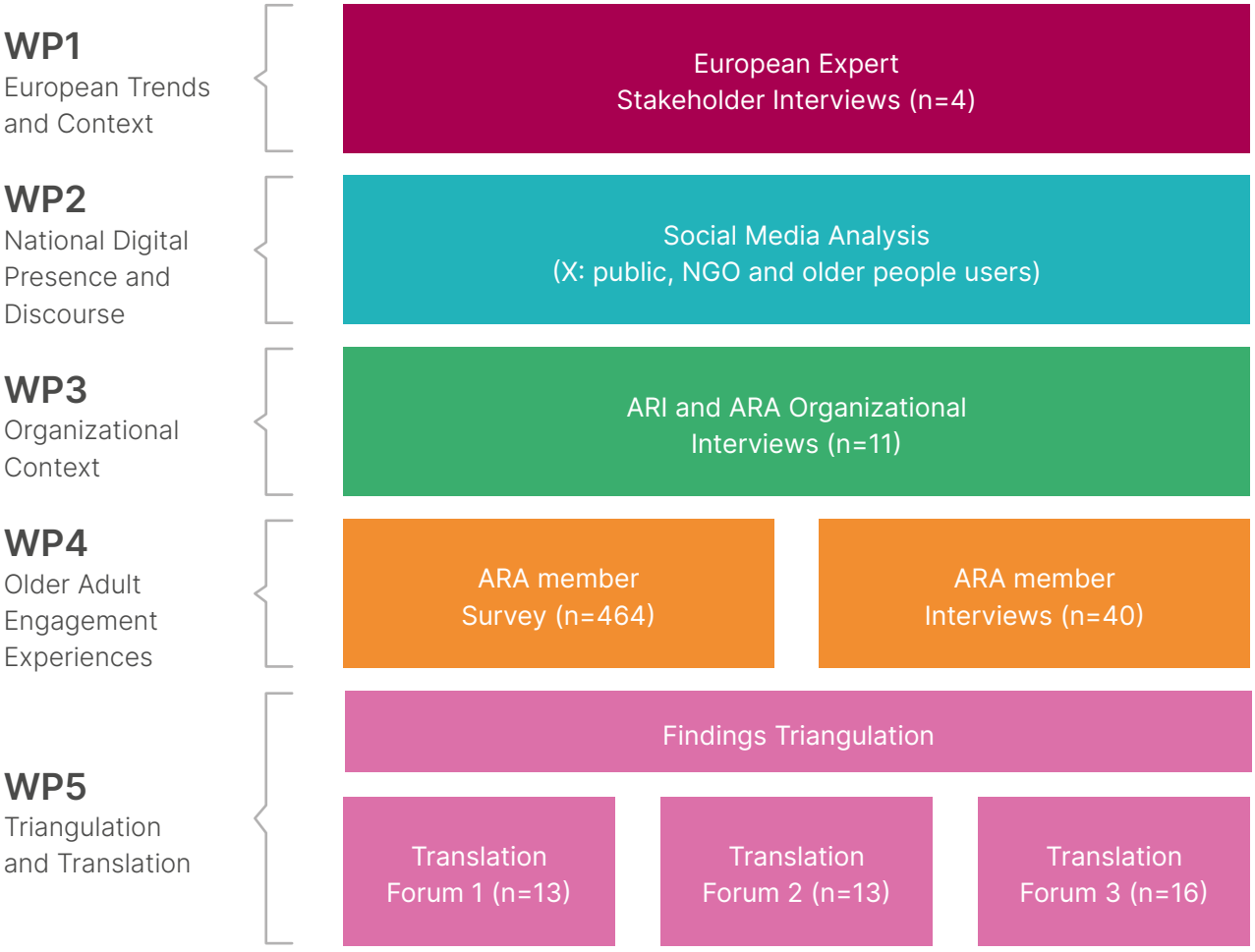
The research evidence used to inform this policy brief was taken from a multi-level mixed-method, interdisciplinary study. A detailed summary of the work-packages (WPs) is presented in the Virtual-EngAge Translation Report Series available from: https://icsg.ie/our-projects/virtual-engage-2/.

The main methods included:

1. **Four expert policy interviews** were conducted with European policy stakeholders to examine policy and digital innovation trends in relation to older adult grassroots organisations.
2. **Social media analysis** of X (Twitter) was completed to investigate the prevalence, the level of interaction and the perceptions of ageing organisations in Ireland.
3. **Eleven semi-structured interviews** were conducted with ARI staff and volunteers to examine the existing and potential role of digital technologies in communication.
4. **A self-completion survey** was distributed to ARA members across 150 local groups. In total, 464 questionnaires were returned (52% response rate) from 369 women and 83 men.
5. **Forty in-depth follow-up interviews** were conducted on routines of collective engagement, and technology use, involving 24 women and 16 men, ranging in age from 63 years to 88 years.

How the development considerations and design criteria were developed?

The development considerations and design criteria presented in this report were based on outline considerations and criteria discussed and agreed at a multi-stakeholder Translation Forum. The Forum, which followed a deliberative-democracy workshop approach, comprised of 16 partners drawn from the participants of the Virtual-EngAge research strands, and from the digital technology research and development community. Forum partners included representatives from ARI's professional secretariat and its national board[1] (n=3), regional development officers (n=2), and six individuals drawn from the older adult interviews. The external research and development partners in the Forum (n=5) included those specialising in data science and application development, interface design, inclusive information system design, and digital market development.



The Forum lasted for 5 hours in total and comprised of three parts. First, an overview of the digital profile of ARA members was presented, followed by a description of any explicit digital technology preferences reported by participants during the course of the research study. Second, in small mixed participant groups, a discussion of the purpose and goal of a digital application to support engagement in later life was held for 30 minutes, with key messages from each of these groups discussed in a plenary session. The remainder of the Forum was dedicated to identifying development considerations and design criteria in response to challenges that had been found in the main study that impede people in using technology for engagement.

1. This included two individuals who had not taken part in the research, replacing previous participants who had since left the ARI organisation.

For each challenge: three key research findings were first summarised for the overall challenge: a composite scenario was then presented that was empirically grounded in the real-life experiences of study participants. Data from two or more participants was used to create these single composite stories to illustrate the 'difficulties' posed by the challenge. The challenge was then discussed in small groups for 20 minutes to identify key development considerations and design criteria. A plenary feedback session was held to discuss differences and similarities across the groups. Participatory Learning and Action (PLA) techniques were used within the forums to help ensure representation of voice amongst the various participant groups. Each small group discussion included ARI members from different levels of the organisation, and a digital technologist.

Summary of what was found

To help contextualise and situate the development considerations and design criteria presented in this Policy Brief, a brief summary of ARI members' digital profile, and ARI's communication and mobilisation challenges are presented. The composite scenarios, based on the lived experiences of interviewees and used within the Translation Forum, are then presented to describe the core factors that challenge older people's use of technology in engagement. For full details of the main findings from the study, please see Virtual-EngAge Translation Reports 1 and 2.

Members' Digital Profile and Technology Use

With reference to Table 1, the ARA member survey reported high rates of internet access and high rates of training completion. This suggests a ***group that is in overall terms engaged digitally***.

The research indicates that older adult ***ARI members are using digital technologies for engagement to a reasonably strong extent***, with an already high-rate of adoption evident for social connection activities (75%), and information access and dissemination spheres (65%), but with a notably lower rate for advocacy activities (19%).

However, ***variations in the frequency of internet use, exposure to technology during working life and digital proficiency suggests a more diverse digital profile***.

During the period of the Covid-19 pandemic, it was also evident that while half of those who used digital technology increased their use, the other half did not, either maintaining their level of use, or reducing their use.

Overall, ***technology use in engagement was largely driven by those with high-digital proficiency, masking digital divides in this population***.

Across the three areas, ***technology was also used less for collective engagement, and more in narrow, instrumental ways***.

With more than a fifth of people not using or rarely using the internet, and with significant proportions of those with lower levels of digital proficiency, ***there remains sizeable gaps between those who use and those who do not use technology***.

Ultimately, the findings highlight that the transition to digital engagement for older people across the three spheres is still developing. It is also ***a digital transition that is advancing at different rates for different groups of older people***.

Table 1: *Digital profile of ARA member survey respondents*

Digital related characteristic	Number (N)	Percent (%)
Group size (total respondent sample)	464	100
Internet access		
Yes	373	87
No	54	13
Missing values	37	
Training course on how to use internet and digital technologies		
Yes	278	67
No	139	33
Missing values	47	
Internet use (frequency)		
Rarely	33	8
At least once a week	64	15
Every day	266	64
Non use	53	13
Use of digital technologies and internet at work		
Never/almost never	187	46
Occasionally	78	19
Frequently/Regularly	139	35
Missing values	60	
Digital proficiency*		
Low	107	32
Medium	58	18
High	163	50
Missing values	136	
Group size (only those who use digital technologies)	363	100
Changes in digital technology use during Covid 19		
Decreased	43	13
No change	126	37
Increased	172	50
Missing values	22	

Notes: *Digital proficiency is derived from the ability to browse the internet, the ability to check information sources on the internet, the use of communication tools, and sharing information, as measured by the Digital Capital scale (Ragnedda et al., 2020; 2018).

ARI's communication and mobilisation challenges

The findings showed that ARI is ***facing tensions and challenges regarding meeting the diverse needs and preferences of a heterogenous grassroots membership***, and how the current balance between the organisation's use of traditional (post; phone) and digital communication (e-mail; digital newsletters) strategies is very much in flux.

Overall, the rate of ***adoption of smart and internet-based technologies has been reasonably strong*** within ARI's members. Nevertheless, communication preferences remain diverse. Furthermore, ***traditional modes of communication are still critical***, with many people relying heavily or solely on these methods.

There was as such a ***reasonably even split between the proportion of survey respondents who chose to be communicated with by traditional postal mail (38%), and e-mail (30%)***, with Smart phone (17%) and analogue phone applications (11%) also evident but less preferred.

The research also indicates, however, that ***many of the communications challenges and tensions facing ARI stem from long-standing organisational characteristics and circumstances***, and the group's multi-level structure. Communications are not just multi-levelled but are, in effect, nested and clustered: information flows between national and regional levels, and then branches to local levels, but with little connection to clusters of individual members connected to these branches.

The research demonstrated that organisational challenges can combine with specific issues regarding digital access, literacy and adoption to disrupt the positive qualities of a digital transformation. ***Digital and organisational communication challenges can compound and reinforce each other***, whereas disjointed communication pathways are likely to complicate the process of managing the introduction and balancing of digital communications. The pressures of digitalisation risk the further fragmentation of information flows.

The research suggests that a two-fold task lies ahead for the future of membership-based grassroots organisations in the face of digitalisation. It seems likely that a ***re-orientation in the communication strategies and practices is necessary*** to help ensure that grassroots groups can be impactful in harnessing digital technologies appropriately to communicate and mobilise older people around collective engagement in Ireland. These efforts ***must be accompanied by a greater leveraging of investment to sufficiently enable and sustain this re-orientation***. There are three development areas in particular that must be considered:

Individual preferences

The research indicated some broad patterns regarding technology preferences in general. In terms of the type of devices, 80 percent of survey respondents used a phone or a Smart phone daily, while 45 percent reported using a tablet or iPad, 41 percent reported using a Smart TV and 40 percent reported using computers and laptops on a daily basis. The use of Smart home devices was also reported but were the least popular (29 percent). Those who spoke about using existing digital applications were more likely to report the use of Facebook and WhatsApp.

From interviews with older people, ***five key features were identified as desired attributes of a digital device or application***.

First, participants spoke about ***the need for convenience***, with many interviewees, regardless of their level of digital proficiency, highlighting the value of the smart phone in this regard.

> It's [smartphone] smarter than I am anyway [laughing]... yeah, I make my calls, I'll send texts or that... I'll send messages, I'll Google and that. Very, very basic."
> (ARA-Member-In-134 - low tech proficiency)

Second, participants noted ***the need for technologies and applications to be user-friendly***, and adaptable to people's needs and preferences.

> I find [the tablet] very user friendly compared to the phone, yeah. Because everything is bigger, quicker, you know it doesn't... you know the phone will click out quickly sometimes, you know if you're in something, you know whereas with the iPad it's a lot easier really. It's a lot bigger and it's... I just find I would give it 100%. (ARA-Member-In-32 - high tech proficiency)

But for other interviewees, it was not just a user-friendly design that was called for, but one that was ***accommodative of accessibility needs***. Accessible keypads, enhanced visual acuity and big screens were all noted as being critical features for some older adults. Participants asserted, however, that this accessibility should not mean a loss of functionality.

Third, and finally, participants noted that ***digital technologies and applications must be affordable***. Interviewees spoke about how access to digital opportunities should be equal across all groups, and how generational expectations could mean that some older people might settle for less and do without the technology they need:

> I mean we were brought [to understand] if you hadn't it you did without it. That's the way we were brought up. You didn't buy a thing unless you had the price for it and if you hadn't you did without it. ... and you buy the best one you could get and that would be it.
> (ARA-Member-In-26 - low tech proficiency)

Determinants of Digital Engagement

Five core factors were identified as influencing the perceptions and use of everyday digital technologies for multifaceted collective engagement: structural aspects and ageism; geographies of engagement; lifelong technological engagement; social relationships; and attitudes to virtual engagement.

The composite scenarios presented below are grounded in the real-life experiences of participants with the challenge. Data (and original quotes) from more than one participant have been used to create each single composite 'story', but with a sole emphasis on the 'problems' posed by the challenge. How individuals worked through these challenges and were able to use technology constructively is described in Virtual-Engage Translation Report 2.

Composite 1: Virtual Engagement and the Life course
Bridget's Story

For some, their earlier working lives, and their hobbies and interests enhanced their use and awareness of technology. But for others, their household and work roles, and major life events, meant they had less exposure to technology, or that this exposure was delayed and disrupted.

Bridget is 70 years old and was married and had children at a young age. Bridget was a homemaker and focused all her energies on these responsibilities. Consequently, there was little time and she had ***limited opportunities for digital engagement*** throughout her adult life:

> "You have to realise your priority when you have a family, is your family, and you couldn't let any of your activities interfere with the business of a growing family."

Bridget feels she was ***disadvantaged in life*** in this way, and contrasts her experience with that of her brother, Peter, who lives near-by and who used technology throughout his working life:

Life-Long (Technological) Engagement

Key dimensions and findings

Life-course shapes digital engagement

Life trajectories such as work, family and care, influence opportunities for engagement and exposure to technology.

Life events and timing

Some events (bereavement, health issues) could delay and disrupt engagement.

Interests and hobbies as catalysts

Continuity of interests evident in general and in relation to how people come to use digital technologies for engagement.

> "Well Peter would have used a computer at work like, you know, and yeah, that's when he would have got the feel of technology. … So he sort of graduated from there [whereas I didn't]."

Bridget also discusses how she encountered different 'delays' in 'getting engaged' at different points in her life, and when she was about to join-in more in her community or take up a computer training course. ***Life events*** like caring for grandkids and ill-health were mentioned. Most recently, Bridget had to give-up a newly acquired job to look after her terminally ill husband. This interrupted not only her opportunities for engaging with technology in a work setting, and the associated learning, but also her ability to engage more socially.

> "I wasn't socially active for a few years there because my husband wasn't well, and he became blind before he died and that was it. So, I had no choice really."

But Bridget has entered a new phase of life and because of her ***interest and hobby*** in genealogy, has been introduced to different on-line resources and interest groups, and has once again begun to look for opportunities to learn about using technology.

Composite 2: Structural Aspects and Ageism
Matt's Story

Many participants feel excluded from the current digital transformation. This exclusion pervades many aspects: language and jargon; technology design and development; device cost; and discriminatory practices in moving to digital spheres - intensifying feelings of trepidation.

Matt is 83 years old and lives alone in a city. Matt has an active lifestyle but feels he suffers from the ***impact of rapid digitalisation*** within society. As he is not completely confident in using technology, he feels he is more and more excluded from participating in key areas of life:

Structural Aspects and Ageism

Key dimensions and findings

Digital exclusion and being left behind

Significant prevalence due to jargon and terminology, unfamiliar technologies, lack of training, and prohibitive costs

Social discrimination and ageism

Discrimination evident in digitalisation of services and leisure activities, and design and development of technologies

Culture of Individual Responsibility

Internalisation of exclusion and ageism found, in terms of self-blame and perceived capacity to adapt

> **"Excluded. You're excluded from the general run of things because you are computer ignorant. You can't do online business, you can't do this, … I can't even send a text!"**

For Matt, who lives on a modest pension, ***the cost of technology*** is prohibitive, and further distances him from being able to participate:

> **"The price of course is the big problem. Yeah. I mean, they're a bit off-putting really in the sense that on a weekly pension, not many people could afford an iPhone…"**

So Matt feels like digitalisation is limiting his participation in activities that he was involved in all his life. But not just because of cost. He used to love to attend GAA matches, and sees the shift towards online ticketing as ***overlooking and discriminating*** against him and his peers:

> **"And when they're… when a decision like that can be made, to make tickets only available by… over the internet, they're forgetting about that population that nurtured youngsters and brought youngsters out to play the game, … and how they helped the game to develop, and here we are now, a lot of them not able to get a ticket for a match."**

Matt does feel though that being overlooked and discriminated against seems to be linked with technology and ageing in several ways, including the ***lack of focus on design*** of technology that accommodates older individuals' needs and preferences:

> **"… I think they're all really developed for whizz kids and such forth. I don't think there's enough emphasis in trying to encourage older people to start from the beginning and gradually get into it. I think it's all whizz kid stuff."**

However, in taking on the ***(individualised) responsibility*** for this exclusion, Matt speaks about how he feels that some of this exclusion is his own fault for not having gone further more quickly, reflecting the impatience of others that has been shown.

> **"I think, if I put my mind onto it, I could do it but I've always had people to help me out. And they get mad at me and annoyed at me, and say, 'We're not showing you this anymore'. But I still don't learn from that, so I think that's my own fault."**

Composite 3: Geography, Engagement and Digital Technologies
Hanna's Story

Where people live influences their capacity for engagement with digital technologies: internet connection, technology access, engagement and training opportunities all matter. But, some places – rural, peripheral or just local areas – have gaps, that may not be easily filled.

Hanna is 70 years of age and lives in the countryside in close proximity to a city with her husband, Pat. While Hanna describes how the relocation of families has improved the area's sustainability, making it less isolated, she acknowledges the practical limitations of a ***lack of amenities*** and good public transport.

> **"I shouldn't say totally isolated but it's still quiet. You know? We're a mile from a shop. We've no public transport. We've no public lighting. So, that's the sort of life. And there are a few houses beside me now luckily enough where young families have settled."**

Because of this Hanna really tries to embrace technology. Hanna likes to look up different topics on her computer, or to use it for drafting materials for her creative writing class. But ultimately for Hanna, technology is frustrating, due to ***poor internet coverage*** in the area:

> **"... I'd be doing something on the computer or looking up something and it would disappear ... The broadband was so bad. You know? You'd be working on something, and you'd have to give it up and go back to it again..."**

Hanna would like to build her confidence in using technologies, so that she could engage more digitally and speaks about doing a course. But the ***absence of digital training*** in her area, means Hanna has limited chances to enhance her abilities and reduce her motivation.

Geographies of Engagement

Key dimensions and findings

Impact of location on engagement

Evident in rural, peripheral and underserved settings

Local environments and conditions

Physical and social environments and amenity and technological infrastructure matter

Community engagement dynamics

Community composition and culture affect engagement and engagement opportunities

> **"Well, I suppose there wouldn't be too many opportunities say where I live... But then... you know, you've got to get to [city] ... you've got to have the motivation to do that and I think the older you get, maybe the less motivation you have."**

Hanna's sense of frustration at the barriers she encounters becomes even more evident when recounting the missed opportunities, due to ***cost and access*** to places to facilitate training.

> **"One of the girls [locally] did the digital programme to be a facilitator. But unfortunately, we have great difficulty getting access to the internet in [place name]. There's one or two places but they charge an arm and a leg to use it, so the lady who did the facilitator programme wasn't able to be useful with it which is a terrible shame."**

Composite 4: Digital Technology and Social Relationships
Mary's Story

For many, relationships play an important role in supporting the use of technology for engagement, through daily technical assistance, informal instruction, and encouragement. However, for others the link between technology and relationships is more problematic.

Mary is 73 years of age and resides in a large regional town in the West of Ireland. After losing her husband Jim three years ago, Mary now lives alone. Although Mary does not feel like she is socially disconnected, she does feel like that she has ***no access to a social network*** that can support her use of technology in her engagement. As a result, she often feels left behind:

> "...I suppose without having someone to help I am getting left behind and I do feel that sometimes, in some ways."

This was not always the case. Mary's husband Jim had provided all the help she needed. He had been the one person she ***relied*** on for accessing technology. His passing and the ***change in social networks*** means Mary is left without a daily, 'tech' support – disrupting not only her interactions online, but her capacity to do everyday tasks for her in-person local group:

> "I'd love to know more about technology. I'd love to know more about how to make a leaflet on a laptop and print it out. My husband used to do all that for me, I'd say, 'Can you do this for me?', and he'd have it done in seconds, and I never bothered learning it as I was busy doing other things."

Mary has considered who else she could ask for help, like her grandnieces. But she hesitates. She is worried about being a ***burden*** on them, and concerned that they may ***lack patience***:

Social Relationships

Key dimensions and findings

Supports people in using technology

Social support role evident in facilitating technology use for engagement, but concerns for those without a network

Over reliance on key relationship(s)

Drawbacks and potential risks associated with relying on specific relationships, due to fear of burden, relocation, bereavement

Negative effects of some relationships

Reinforces a person's negative view of their abilities, lowering self-esteem and efficacy

> "Okay, well I have grandnieces living over the road but... they can't understand how say my age group doesn't understand a lot of the modern technology we have now, you know. And they wouldn't have the patience to help me you know. You hate bothering them too much, you know."

Mary's reluctance to seek help is due to some negative responses in the past, like from her nephew, which diminished her motivation and her confidence in her own abilities:

> "What I've noticed with my nephew, I would ring him if I had anything that I wanted advice on technology, and he'd talk to me but he speaks very quickly and he said to me one day, 'Do you know, I always thought I had an intelligent aunt until now'. I said, 'What do you mean, until now'. Well, he said, 'You're a bit slow at grasping this.'"

Composite 5: Attitudes to Virtual Engagement
Michael's Story

Many participants have incorporated technology as a cornerstone of their daily routines, embracing it as offering possibilities for enhancing connections and interactions. However, the adoption of technology is not universal, with some resistant towards using it at all.

Michael, is a 72-year-old retired teacher living in a large town in close proximity to his kids and grandkids. Although Michael used technology in his career, he is reluctant and ***resistant*** to use it now in his retirement. Michael prefers direct, in-person connections and is wary it will be replaced by technological interactions:

> **"You see, it's a very solitary engagement, technology – I think it's a particular mind-set. And people that I knew that really got into it were... I don't like to use the word 'loners', but a bit like that. Whereas, looking at somebody eyeball to eyeball, having a chat, reading body language, that would be my modus operandi."**

Michael is critical of the online world and in particular the accuracy of information. He points to the amount of misinformation and conspiracy theories floating around, and the difficulties in navigating this ***complex and confusing information*** in virtual environments:

> **"Sometimes you get misinformation... there's other people that put up false information and then they start up this thing of, you know, this is not true and that's not true, about Covid or, you know. There's too much of that online. I wouldn't be confident in it."**

Attitudes to Engagement

Key dimensions and findings

Mixed attitudes across study

Both acceptance and resistance prevalent within participant and survey sample

Grey area of evolving acceptance

Pragmatic move to acceptance for some, as digitalisation seen as inevitable, and value of technology recognized

Reluctance and resistance asserted

Factors driving reluctance included fear, confidence, sense of self-limitation, and an asserted choice not to use technology

But Michael is also cautious about sharing personal information online, especially when it comes to potentially sensitive issues. His approach reflects his sense of privacy as well as his fear regarding data protection. As a result, when it comes to advocacy – which he enjoys being involved in – he explains his wariness in posting on social media, preferring traditional methods of communication:

> **"I have at times written a couple of letters to the newspaper ... It's interesting to see any reaction that there may have been. More recently, I would occasionally post maybe something that's a wee bit controversial onto Facebook, but that is a limited audience and I'm a little bit wary that things that I might put up there, for obvious reasons."**

What European Stakeholders Say

Development, adoption and markets

European policy stakeholders were clear on the potential of digital technologies for ageing societies. However, a number of challenges were noted in relation to the development and adoption of technologies for engagement. Stakeholders mentioned ***fundamental barriers*** across various levels:

> Digital exclusion, it's starts actually on the macro level already. If you don't have the infrastructure there, well you're out, you know... The second one is then... is the openness of it. You know, can everybody have equal access to it? It's not just access, but equal access in there, and that, you know and that can be a cost factor, that can be... certain skills and things like that, so you have to deal with that. And then there's also...how much competition is in there to provide the best service for everyone in there? (Stakeholder-In-01)

Interviewees noted how the ***current market was supply- and innovator-led***, and sometimes excluded the circumstances and views of those who require the technology from the development process. Some participants felt a ***culture shift in how technologies for ageing*** societies are developed was needed, and this should involve a multi-stakeholder approach that recognises diversity:

> When it comes to creating a solution... it has to be co-created with its end user. So, if it's not created with the person for whom it is intended and also, maybe in the particular context it's needed, it would not work. So, the whole idea of putting all stakeholders together; of the citizen, the patient, the SME, the innovator, the carers and but also the policy makers is very important because at the end someone would have to support the adoption.... And then each person is different and has different needs, so that's why I say it should be person centred. (Stakeholder-In-04)

In the same respect, a frequently cited challenge regarded the ***lack of bottom-up involvement in agenda setting***, and the development of a fractured market as a result:

> So you have actually these two (top level and industry) and the thing is they have not come together properly yet...also they have some top down agenda and alignment somehow, but this has to come bottom up, you know? ...and what we have seen in the end is this demand and supply are not really meeting yet... some say it's a fragmented market. You could still say it's a dysfunctional one, because this is not ...matching yet. (Stakeholder-In-01)

Concluding Remarks: Towards assets-based design and development

The development of considerations and design criteria that will be presented as a part of this policy brief should be understood in the context of the broader findings of the Virtual-EngAge study. In Translation Report 1, the ***importance of accessible communications for all***, and the need to build communications capacity for engagement (digital or otherwise) is emphasised.

In Translation Report 2, ***a balanced and fair digital transition*** is called for, where choice and autonomy with respect to engagement should be facilitated (regardless of use or non-use of digital technologies) as a matter of a social right.

In addition, the requirement to foster a supportive and constructive culture, and the ***State's public duty in relation to digital engagement in later life*** were also asserted.

Ultimately, while many of the proposed measures arising from the Virtual-EngAge study speak to how to support older people in utilising digital technologies to enhance their engagement, ***the right to full participation in societal services and engagement channels should be prioritised above all else***. This should be enshrined in legislation that supports choice, and the continued facilitation of in-person engagement. On that basis, ***a quicker adoption of digital technologies, or a digital application is not*** the simple solution for challenges associated with the digitalisation of our ageing societies.

However, ***to counter the neglect of older adult engagement*** evident within digital technology development, and to provide equal opportunities with respect to the availability of effective technologies for those who want them, an ***appropriately designed application could provide a useful tool for many older people***.

The focus and features of this application are critical to ensure the relevance and effectiveness of the application to older people's needs and preferences. This is more likely to encourage adoption and use, and to leverage more meaningful engagement for older people in digitised societies. Nevertheless, the Virtual-EngAge research study, and the findings summarised within this policy brief, indicate that embedding a sustainable process that ensures the consistent creation and development of these inclusive applications ***requires a wider eco-system view of the overall design and development environment for digital technologies***. It was this approach that was called for as a consensus within the multi-stakeholder Translation Forum, that set out to consider what was required for a digital application to enhance engagement in later life.

While inclusive design and forward-thinking processes have been noted to sometimes struggle to support participants from underserved populations to think about previously unarticulated needs and what might be possible, there was clarity amongst Forum members that ***a discrete application was going to do little to address the challenges and opportunities at hand***. It was broadly felt that a wider view was necessary to support a shift towards a more assets-based approach that recognizes the ***need and potential for longer-term change to secure equitable digitising societies*** for current and future generations of older people.

Informed by the research findings, the Translation Forum drew attention to a set of socio-political and socio-technical ***factors that encompasses the legislative, infrastructural and market context, the innovation process, and the implementation conditions*** under which any digital application is rolled out. It also highlighted the ways in which ***attention must be given to different forms of capacity building amongst older populations***. This is to harness their existing knowledge and know-how, and to empower their agency as key design actors, consumers and users in digital societies.

As European stakeholders noted, there is currently a disconnect between supply and demand. As a consequence, there ***remains a requirement for a functional and responsive market for digital technologies for ageing populations***, whether this is underpinned by private economic principles, welfare values and supports or a mixture of both. Older populations who are supported to recognise and exercise ***their power as consumers and rights holders***, and to be vocal about what they require and want, are a key part of that market development. They must therefore be prioritised as such within the design and development of technologies. Further weight to this prioritisation is added by calls for equity of access for older people in digitalised societies by the European Union Fundamental Rights Agency (2023), and Principle 20 of the EU pillar on Social Rights (European Commission, 2020) regarding access to essential services of good quality, including digital communications.

It is in light of the need for a wider ecosystem assets-based approach that this policy brief will now present the development considerations and design criteria.

Development Considerations and Design Criteria

In response to the findings of the research, 38 development considerations and design criteria were identified and agreed as a part of the Virtual-Engage Translation Forum to support digital participation and digital application development. These considerations and criteria are presented in two parts.

The first set focuses on those criteria that help define the function and scope of a digital internet-based application to support the multifaceted engagement of older people. It is intended that these criteria can apply to a website platform, or a smart phone or a smart device enabled application.

The second set of criteria respond directly to the challenges concerning the role of digital technologies in engagement.

In overall terms the considerations and criteria are targeted at addressing: (1) those factors that need to be in place to support the development of an enabling digital engagement environment (including the social, political and legislative context); (2) specific design features within a digital application that can address these challenges; (3) what is required to ensure an inclusive digital application design and development process; and (4) the implementation mechanisms that support the successful roll-out of a digital application. The development considerations and design criteria are presented in the matrix below, and are categorised across these different dimensions.

Application central function(s)	Enabling digital context	Application design features	Design process	Roll out
To be supportive of and enable individual engagement preferences, offering older people opportunities to connect with other individuals and groups, key information systems, and issues and matters important to older people.		X		
With respect to social connectivity the application is required to:				
1. Assist in streamlining communication between ARI and all ARA members, enhancing communication with and between individual local groups, and between members of those groups in order to support the experience of participation in online activities, and in in-person engagement.		X		
2. Support different kinds of social connections, including: personal informal interactions and 'banter'; close interpersonal relationships; virtual group contact and social activities; and the development of online communities based on different interests.		X		
3. Function as a social information brokerage that builds awareness of social participation, provides information and guidance on available social activities and events of interest, and facilitates the organisation of people for the establishment of new social opportunities.		X		
With respect to information access, the application is required to:				
4. Serve as a single information resource and a means to simplify complex administrative processes for accessing services and entitlements to enable greater participation, including in the areas of banking and finance, health, and travel and mobility.		X		

Application central function(s)	Enabling digital context	Application design features	Design process	Roll out
5. Ensure information content is provided in both audio and visually accessible formats, using understandable language with no jargon or specialist terminology.		X		
6. Simplify the complexity of finding your way on online information sources across all devices that enhances intuitive navigation and reduces the need for digital experience or digital skills.		X		
With respect to advocacy the application is required to:				
7. Serve to amplify the voices of older people regarding on-the-ground issues that they experience in their everyday lives, through the facilitation of shared problem identification, the development of awareness campaigns, and the targeting of advocacy activities.		X		
8. Support the mobilisation of individuals and groups regarding common concerns and interests, leveraging an enhanced capacity for strategic group lobbying.		X		
9. Act as a gateway and sounding board for non-governmental organisations, representative bodies and elected representatives to engage with and hear from older people with respect to key topics and concerns.		X		
Challenges	**Enabling digital context**	**Application design features**	**Design process**	**Roll out**
Structural aspects and ageism challenge				
Economic accessibility				
10. Digital participation, including digital technologies and internet access, must be financially accessible to all older people	X		X	
11. Specifically designed digital applications must be able to function on basic and low-cost devices.		X		

Challenges	Enabling digital context	Application design features	Design process	Roll out
12. Digital technologies and participation should be considered as an essential service (like transport), with any cost burden removed or reduced with the aid of a digital allowance, and free device upgrades.				X
13. State supported central hubs with free-to-access devices on-site, tech-support and repair, and longer-term rental arrangements should be available to support diverse digital needs.	X			
14. Negotiate a group-discounted scheme for accessing specific technology devices that have appropriate functionality and applications, to support engagement (e.g. WhatsApp; Facebook).	X			
Regulation reinforcing equity and rights				
15. An assessment of all and any relevant Irish guidelines on digital accessibility must be conducted to ensure their adequacy, and must be informed by the lived experience of older adults.	X		X	
16. Accountability must be reinforced regarding the design and implementation of systems, services and pathways that directly or indirectly discriminate against older cohorts with lower levels of digital proficiency.			X	
Design for inclusion and age equality				
17. The innovation and development of a digital application design must be led by recognition of the diversity of digital needs, preferences and proficiencies amongst heterogenous older populations			X	
18. Device and application design processes must be inclusive and not discriminatory of older adult voices, with a statutory requirement for developers to include meaningful input from a diverse group of older people that ensures final products are needs-led, useable and appropriate.	X		X	

Challenges	Enabling digital context	Application design features	Design process	Roll out
Enabling digital literacy and learning				
19. Task-based training programmes that build digital confidence should be developed to combat internalised blame and ageism amongst older people who feel unable to engage digitally.	X			
20. The establishment of peer-led digital literacy training should be prioritised to enhance the appeal and accessibility of digital training for older cohorts, and to embed a train-the-trainer style process that recognises and promotes the digital agency of older people.	X			
21. Build in a tailored training and instructional programme incorporating manuals in plain-language text, and audio and visual formats within the design of the digital application, and provide direct access to more in-depth digital training that extends beyond the specifics of the application.		X		
Geographies of engagement challenge				
Under served communities and ensuring opportunities				
22. A reassessment of resource allocation and service models in digitally under-served communities must be conducted and used as a basis for rebalancing State and private provider business delivery models, with a fairer distribution of access to digital services and infrastructure.	X			
23. The provision of in-person, analogue and digital modes of communication and engagement must be facilitated in digitally under-served communities to address current infrastructural exclusions.	X			

Challenges	Enabling digital context	Application design features	Design process	Roll out
Infrastructure and Investment in place				
24. A cohesive and holistic transparent planning process must be put in place to address spatial differences in telecommunications and broadband infrastructure and the longer-term digital investment needs in under-served communities.	X			
25. Examine the feasibility of designing and rolling out digital applications with core functionality, based on lower-internet bandwidth connections.		X		X
26. Prioritise the urgent need to scale up digital access, with a focus on expediating the process of broadband implementation and tackling spatial inequalities in access.	X			
Ensuring ancillary infrastructures				
27. The quality and viability of community amenities and infrastructures – such as transport and social outlets - must be assessed and improved as a basis of supporting all forms of engagement, complementing digital infrastructure, or compensating for its absence during the roll-out of digital infrastructure.	X			
28. Support the mobilisation of resources in building local amenity capacity for digital training and engagement, including through the provision of incentives (e.g. resources; grants), and engaging in partnerships with schools, local community centres and amenities.	X			
Social relationships challenge				
Design embedded social supports				
29. Embed a person-led support function within the digital application that incorporates a peer-support community, and where appropriate, professional technical support that connects users with one-to-one assistance.		X		

Challenges	Enabling digital context	Application design features	Design process	Roll out
Design for agency				
30. The digital application should be designed to empower the agency of older people, supporting independent digital learning and skills acquisition, and progressively building digital confidence.		X		
Diversifying and embedding social supports				
31. Diversify and deepen the sources of community-based digital support available to older people with limited existing supports, including establishing peer-to-peer virtual and in-person support communities, credit-based third-level and second-level student volunteer programmes and other intergenerational digital learning initiatives.	X			
32. Foster greater grassroots innovation with respect to digital engagement and roll-out of digital applications, integrating digital supports with existing initiatives – such as Repair Cafés, and Men's and Women's Sheds – and/or nurturing social enterprises to leverage greater socio-economic impact arising from inclusive digital communities.	X			
33. Actively promote virtual communities of interest to motivate online participation through interests and hobbies, and provide opportunities for task-based learning and learning while doing.	X			
Attitudes to virtual engagement challenge				
Responsible content and risk management				
34. A multifaceted strategy to address safety and privacy concerns around digital engagement must be developed, and must include education on misinformation and on how to identify reputable sources and forums that build trust.	X			

Challenges	Enabling digital context	Application design features	Design process	Roll out
35. Technology companies, developers and web-based platforms must take responsibility to ensure safety and veracity of digital application content and communication, including ensuring transparency around data use, measures to control disinformation, and offering assurance regarding privacy.	X		X	
36. Design and embed security and privacy features to include only external links to verifiable and reputable sources, services and supports, reducing the potential for individuals to experience hostile and predatory virtual environments.		X		
37. Reduce anxiety around digital risk and safety through the provision of training on safe internet navigation, in using digital technologies, and the need for critical analysis of information and content.	X			
38. The digital application should feature age-related accessibility measures – such as those that can account for visual, auditory and cognitive impairment – and age-relevant content.		X		X

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