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SILVER ECONOMY ACCELERATING STRATEGIES

Funding Models for Silver Economy Housing:

Financial innovation for age-friendly housing and agetech adoption

Report 2A – United Kingdom

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1. Introduction

Our first report on this topic, *Report on Funding Models for Silver Economy Housing* (Dec 2019)[1], set out the background on the case for and costs of age-friendly housing design and incorporation of agetech products. We made some broad suggestions of innovative financial models and mechanisms that could help to increase the scale of adoption, with the core principle being that cost-effective expenditure in this area will both save money in reduced health and social care costs by preventing later problems, but also enable people to live longer, healthier and happier lives at home rather than going into care or hospital.

It was stated that the additional costs of basic age-friendly design improvements at the point of construction (level access, wider doorways etc) can cost as little as £/€2000 extra on a house or apartment[2]; and a useful package of agetech products could be installed or retrofitted for up to £/€5000[3]. In terms of an average house or flat of say £/€250,000[4] this might add £/€6k or 2.4% to the cost.

The final reports are 4 short documents, one per partner country, looking at what financial innovations might enable these costs to be funded on the basis that they would be an investment worth enabling, and seeking the path of least resistance towards achieving this.

We are now writing in the COVID-19 period and expect the financial landscape to change significantly as the recovery happens. If finding ways to creatively finance better age-friendly housing and technology was becoming increasingly urgent before the crisis, it will be even more so afterwards. National governments, local authorities and housing providers are all now more sensitised to the need to provide households with smarter services to enable them to cope with threats to their health and wellbeing. This also creates **opportunities** for the providers of relevant products and services, and for those who invest in them, so the benefit is both social and economic.

Awareness of the need and opportunity may be greater, but availability of funding may be reduced. This makes it all the more important that the value for money and cost benefit case of products and services is made more strongly, and ideally that they rely less on state funding. We look at ways of developing independent funding solutions or other self-funded mechanisms as progress may otherwise be delayed.

It is important to note that this report is not specifying a particular set of design features for new build or retrofit packages, or of any particular agetech products. It is assumed that the **cost-benefit case** can be made by focussing on those that provide the best value for money for each setting and for particular groups of older people according to their needs. We are dealing solely with the challenge of how in principle the cost of such design, adaptation or packages can be incorporated into the financial model of different phases of the construction and operation of housing that improves healthy independent living.

[1] Available on SEAS2Grow website www.seas2grow.com
[2] Lifetime Homes website – 'costs' http://www.lifetimehomes.org.uk/pages/costs.html
[3] Based on Smart Homes NL experience
[4] UK average house price £250,547 or €275,600 at 1.10, October 2020 – Halifax house price survey

Some of the 'costs of failure' here are high and were discussed in the previous report. But with hip and femur fractures costing health systems around £30,000 it is self-evident that interventions that might reduce them by even 10% would be worth spending up to £3,000 to achieve.

Smart caring home products that are beginning to address such issues in an integrated manner are now widely available (see appendix) as well as a range of other complementary agetech products for more specific conditions (see previous report).

The challenge is how to improve awareness and robustness of the case, and then how to fund wider adoption.

Our key recommendations are:

1. Establishment of a national agetech bank or fund to overcome financial barriers to adoption of agetech products and accelerate the realisation of their benefits, including savings to national health budgets.
2. Use of relevant property policy levers such as the planning system, stamp duty and other tax incentives to increase the supply of age-friendly housing as a proportion of all new-build, as well as to encourage retrofit of existing properties with age-proofing adaptations and agetech products for healthy independent living.

2. High impact products and services

Suitable products must achieve financially recognisable outcomes resulting in a willingness to pay either by a purchaser up front or through ongoing payments over the customer or product's lifetime. They would also need to either operate without an additional monitoring or maintenance cost, or for those to be covered separately by or on behalf of the user.

The AgeTech Accelerator UK database now contains over 1100 innovative products mainly from UK, US and EU which address a variety of challenges and needs as set out in the box:

Organising products by support focus

- Well-being tracking
- Communication
- Memory care
- Healthcare – virtual
- Falls and falls prevention
- Home care delivery
- Social activities
- Mobility
- Exercise and fitness
- Telecare
- Care Management
- Robotics
- Medication reminders/adherence
- Community
- Vital signs tracking
- Education and learning
- Companion – virtual
- Security
- Sleep
- Furniture and household
- Sense assist
- Household assistance
- Voice control
- Medical device
- Finance
- Leisure activities and travel
- Eating and drinking
- Marketplace
- Legacy
- Transportation
- Work in retirement
- Frailty
- Clothing
- End of life planning
- Continence
- Hygiene

It is possible to create bespoke solutions for any thematic area and applied in any context. We set out two consumer focussed packages for different types of older person profiles, in the appendix.

However given that B2C is a notoriously difficult route to market in this sector at the moment, we will focus here on the local authority social care sector which is where so many of the challenges of rising demand and falling budgets are found. Some of the key financial and operational challenges are outlined.

NB Product prices are based on available information and are not necessarily current. Some offer an outright purchase price or a rental option. No reliance should be placed for public service delivery without checking with the producer. It also important to note that there may be additional costs of installation, monitoring and maintenance which should need to be factored in.

Local authority social care

User profile: Local authority social care department
Key issues and data (from various UK NHS and social care sources):

- Social care services are means tested.
- Cost of purchasing care is increasing: 3.4% 2015-2019 mainly to external suppliers.
- Jobs growth almost at standstill and **vacancies hard to fill** – 7.8% vacant posts and increasing.
- Companies handing back contracts.
- Service users not able to find suitable care.
- **Efficient communication with the NHS is a problem**
- Requests for support, receipt of care, expenditure, delayed transfer from hospital – all issues. 2018/2019 – 1.9 million requests for support – increase of 3.8%.
- Ageing population means LAs have around 1000 more older adults each year.
- Rate of requests increasing for working-age people but remaining static for older people.
- **77% are requests from people in the community.**
- 22% originating in diversion or discharge from hospital.
- Number of older people receiving support is declining while number of working age adults receiving support is increasing.
- Many LAs moving to asset-based and **self-help approaches**.
- General increase **in short term care.**
- **Increased focus on preventative approaches.**
- Financial thresholds have been frozen and are worth £3,500 less in real terms.
- Levels of disability in pension age adults remaining unchanged though rising slightly in working age adults. Though **absolute levels are increasing** as the population ages.
- **Levels of unmet need remain significant at 24%.**
- Most money is spent on **long term physical care - £4.8bn and memory and cognition - £1.3bn**.

IMPROVING EFFICIENCY AND SPEED OF SERVICES			
Agilisys Care	https://www.agilisys.co.uk/	Digital platform for public services	
Novoville	https://novoville.com/	Software to help mobilise, triage and assign resources for LAs.	
People Too	https://www.peopletoo.co.uk/	Service design and transformation for adult social care.	
INTRODUCING ELEMENTS OF THE SMART CARING HOME			

Alcove	http://www.youralcove.com/	Technology enabled system helps track wellbeing	
Breezie	https://www.breezie.com	Full integrated smart home system with tablet interface for senior care	From $10 per month
Homefit AR	https://aarpinnovationlabs.org/homefit-ar/	App which scans the home and recommends improvements to make it a 'lifetime' home	
Kraydel Konnect	https://www.kraydel.com/	Set top box which turns TV into a comms portal with wellbeing sensors. Different levels of function for NHS, care sector and consumer market.	NHS £50/mth Care £60/mth Consumer £25/mth
Memo Hub	https://memohub.co.uk/memo-for-local-authorities-and-business/	Advanced home monitoring service	
STAFFING			
Florence	https://www.florence.co.uk/	Online marketplace for independent and temp nurses and carers	
WELLBEING TRACKING			
Alertacall	https://www.alertacall.com/	Wellbeing checking service for less tech savvy people	
Acticheck Assure	https://www.acticheck.com/	Wearable with falls monitor and SOS function for people open to wearable tech. Broadband or cellular enabled.	£230 to £340.
Care Calls	https://www.carecalls.co.uk/	Daily phone calls with reminders and check-ins	£12/mth
SELF HELP			
Brain in Hand	https://braininhand.co.uk/	Digital product to help with anxiety, difficulty with decision making and dealing with unplanned situations. Commissioned by 20% of councils in England.	
Connect to Support	www.connecttosupporthampshire.org.uk	Well designed self help and info finder	
Frog Systems	https://frog.net/	Community support using real life examples and videos	
SENSE ASSIST			
Dolphin Guide Connect	https://yourdolphin.com/en-gb/products/individuals/guide-connect	Talking digital assistant to support those with failing eyesight	£545
MEDICATION ORDERING AND ADHERENCE			
YourMedPack	http://www.yourmeds.net/	Organises medication, audible alerts and auto orders	
PREVENTING FALLS			
Peak Med Tech	https://www.peakmedtek.com/	Helps prevent falls at night.	Still in development
STAYING MOBILE			

Sit n Stand	http://www.sitnstand.com/	Portable smart rising seat	
ENCOURAGING GENTLE EXERCISE AND ACTIVITY			
Keep on Keep Up	https://apps.apple.com/gb/app/keep-on-keep-up/id1155051089	Digital app which encourages gentle exercise for people who are generally inactive	Free
AVERTING CRISIS			
Safe and Found	https://safeandfoundonline.co.uk	Helps quickly find someone with dementia if they have gone missing. Apps on smartphone.	

Towards the Smart Caring Home

We also present below a basic smart caring home package for a user profile which is perhaps most urgently in need of such support: an older person living alone who is at the start of physical and/or cognitive decline which could accelerate, particularly if a critical incident such as a fall were to occur. In terms of the Life Curve presented in the previous paper, they are at risk of starting a rapid decline which is potentially costly to the state in terms of social care and hospitalisation. The products listed address a set of challenges, not all of which are likely to apply at the same time, but can be selected as appropriate in order to provide support which can slow or even reverse the decline and change the journey along the life curve to one which is extended in time, flatter in deterioration and less marked by painful incidents.

User profile – living alone, declining cognition, risk of falling, low tech user			
Main product focus: low level intervention aimed to prevent first healthcare crisis with combination of face to face and technology solutions			
Passive sensor system monitoring changes to routines, health signs, wellbeing			
Tendertec	https://www.tendertec.co.uk/pricing	B2C product designed to pick up potential problems. Falls alerts, daily living activity reports, exit and wander alerts, visit alerts, trend monitoring.	£79/mth subscription
Kraydel Konnect	https://www.kraydel.com/	See below – also has wellbeing monitoring sensors	£350 plus monthly £30-50
Health Navigator	https://www.health-navigator.co.uk/	Proactive health coaching to prevent unplanned hospital care	Free
Falls prediction and prevention (also included in above)			
Zing	https://zing.fm/	Smart night light that learns personal routes and light up pathway	$49 ea
WOM phone	https://wom-mobile.com/about-us	User friendly phone with design cases which incorporates alarm, fall detection and fall prediction.	No costs on website
Cognitive Function maintenance			

Mitocholine	https://mitocholine.com/	Compound to add to food and drink which increases brain energy and slows down cognitive decline	Close to market but no price info
My Cognition	https://mycognition.com/product-home/	Training programme designed to improve cognitive fitness	No costs on website
MemRabel Clock	https://medpage-ltd.com/Memrabel-2-Dementia-Clock	Digital clock with reminders and alerts	£120
Social contact and interaction			
Buddy Hub	http://www.buddyhub.co.uk/	Matching older people to new friends	No costs on website
Local treasures	https://www.localtreasures.me/about-us/	Vetted local people to help with everyday tasks	No costs on website
Kraydel Konnect	https://www.kraydel.com/	TV-based communication portal with built in wellbeing sensors	Hub = £350 + monthly subscription = £30-£50
Move It or Lose It	https://www.moveitorloseit.co.uk/	Local exercise classes for seniors	Currently digital £6.99/month
Safety and security			
RF Lightwave technology	https://lightwaverf.com/	Smart home tech that will turn off all sockets downstairs when the upstairs light is turned on	Lighting and power starter kit £239
Medication adherence			
YourMedPack	http://www.yourmeds.net/	Organises medication, audible alerts and auto orders	Buy now link on webpage not working
Nutrition, hydration and exercise			
SitnStand	http://www.sitnstand.com/	Portable smart rising seat	£450 - £500
Droplex Hydration	https://www.droplet-hydration.com/	Smart base fits onto specially designed mug or tumbler with reminder to drink. 5 piece set.	£35
Hygiene			
Wash seat	https://washseat.co.uk/	Toilet seat which incorporates a warm wash	£235 or £55/month

Ad van Berlo of Dutch partner Smart Homes comments that in addition to a suitable sensor system and any additional specifically agetech products to assist the resident, a blend of more conventional smart homes products would add further benefits:

- extra IT infrastructure: €1500
- electronic doorlock: €500
- automatic lighting + dimming: €300
- energy control: €200
- wireless audio (good quality) around the house: €1000
- security alarms €300
- installation €500.

However the question of recurring charges for some agetech products requiring monitoring could be a barrier for some potential installations. In NL monthly fees for approved products are partially reimbursed.

In summary, a combination of suitable but mainly generic smart home products and carefully selected agetech specific products is the start of the smart caring home becoming a reality.

We believe that the first products and packages which combine proven benefits, clear cost-effectiveness and dedicated sources of funding – and are communicated in a trustworthy way to users – could take off exponentially.

3. Policy options outlined

How could such packages be funded to increase adoption?

Our earlier report identified a set of initial plausible financial innovations classified into 3 broad categories:

1. Mechanisms to unlock additional funding sources
2. Tax reliefs or other policy levers
3. Business model innovations.

They were also broken down by whether they are targeted at the developer or provider of the housing (both public and private); the consumer or their family; or another actor such as a local authority or home improvement agency.

Each country in the project was asked to consider the example financial mechanisms and these questions:

1. Which of the possible models on the list is relevant to your country, and why?
2. What financial innovations for age-friendly housing and technology are you already aware of? Is there anything similar to those items on the list already happening?
3. What financial innovations in other sectors could be applied to agetech?
4. Which single financial innovation would be the best one to propose for your country?
5. Do you have any expert contacts who might help?

The UK options are outlined in the following table.

Evaluation for UK

The ideas from the first report are set out in this table and assessed for how relevant and feasible they are in each national context.

A. Mainly new funding mechanisms:

Mechanism	Detail	Discussion, pros and cons	Relevance/feasibility score 1-10 (10 = high)
1. Consumer loan for age-focussed adaptations including approved technology packages	a. Repaid by an outcomes contract with a statutory social care provider *And/or:* b. Repaid by private individual or their family on death, linked to value of estate where sufficient.	Payment by results contracts have proved problematic. UK has some experience of Social Impact Bonds (SIBs) but only work where there is clear cause and effect, a clear financial saving and a single public sector body with a remit to pay for outcomes achieved. It is unlikely that UK DHSC / local authority relationships at present are capable of facilitating such an arrangement – although under a fully integrated system this might be possible. Clearly the most financially effective interventions would be preferred initially. Some parallels with disabled people's mobility funding and (discontinued) Green Deal renewable energy and insulation scheme. Details to be worked out including which products for which conditions are approved and eligible; how the loan is made and possibly secured.	UK 5 – ie. possible but difficult Role for a forward-funding mechanism. UK = 8?
2. Loan to local authority or housing association for additional cost of age-focussed design and technology, with or without outcomes link	a. Sourced from state: eg. department of health or similar; or from or on behalf of a social care department. b. sourced from commercial loan finance or social investment according to market appetite for risk and/or investor mission goals	Similar issues to above – repayment mechanism would be the main challenge, but becomes achievable if a lease/rental approach can be agreed for suitable products and funding streams.	Possible eg. 5, rising to 8 if lease/rental principle applies to products
3. Government-backed equity release for approved downsizing	Could link to wider assistance for older people to purchase purpose-built or equipped accommodation, secured on asset	An example from a UK think tank has been developed for how to do this at little or no cost to the government. London Rebuilding Society has been working on innovative equity release for older people who own their own houses but do not have the funds to repair and refurbish them (asset rich, cash poor).	Difficult – 4 Further case for a loan funding mechanism to facilitate
4. Government/local authority innovation fund	Grants/loans for products with the greatest cost-benefit potential for positive impact	Innovate UK currently funding the development of new products and services in the ageing space but all held centrally and routed primarily through businesses and investment funds. Local authority innovation in technology enabled care is not consistently funded.	Unlikely to see much extension to current arrangements – 3 Develop something new

B. Mainly tax/policy

5. Private developer/ housebuilder incentive – if they cannot directly charge a slight increased price on the basis that the unit is more marketable to its target audience who will be willing to pay for peace of mind, they could be incentivised by:	a. Tax break for inclusion of age tech as suggested by the UK Institute of Mechanical Engineers among others; b. Covered by a separate investment where the return is paid by either the resident as a service charge or on their behalf by a health or social care agency. This could be sourced from a social investor or other government fund such as Big Society Capital or other dormant assets. 'Age Friendly Housing Investment Fund'? c. A version of government low cost finance for first time buyers, but where older people buying an age-friendly home are given assistance with the extra cost e.g. in the form of an interest free loan, which could be recouped when they move (unless to another age-friendly home) or die.	Where the planning system is not achieving the necessary levels, or developers are resisting on viability grounds such as reducing the amount of affordable housing because of the additional cost requirement for age-friendly units, government and LA may need to allow developers and housebuilders to recover some or all of the cost of additional design or technology features including 'care-tech readiness'. If tech is not incorporated at the point of construction a payment may be made in lieu (specified in S106 therefore link to planning system below) which is available for agetech in that development as needed, administered by the LA TEC department or local HIA Objection that this cost is ultimately being absorbed by the state in the form of reduced tax receipts. Counter-objection is that developers will find ways to implement it more cheaply (or to avoid it, which must be addressed by building control). Could aim for a hybrid model where the up-front costs are borne by the housebuilder but recovered in the form of a tax relief; and then the government recovers some of that through a small charge from residents or operators (LA, HA, retirement village etc). Create an investment fund that pays the up-front costs of equipment in new build or existing stock, and receives a revenue payment over time from the appropriate agency or the householder where able to pay. 'Independent living fund' with 'independent living service charge'.	Most of these ideas will require a long process of lobbying so are realistically around 4/10 Another role for an 'AgeTech Fund'
6. Planning system discounts	Linked to achievement of age-specific requirements above minimum standards Age-friendly and agetech-enabled housing can be created simply by requiring it as a condition of planning permission for all developments over a certain size and/or in areas where there is a known demand for or under-supply of housing for older people.	Some LAs are doing this without offering any financial incentive simply by insisting on a certain proportion of homes in all new developments to have specific age-friendly design features (eg. Mid Bedfordshire, UK – 35%) and then enforcing this in the planning application process. This process will be regarded as restrictive by developers, and it may indeed have a real cost, but if it becomes standardised like other aspects of the costs of securing planning consent it is simply factored in to development appraisals. We would like to engage with such local authorities to discuss whether and what types of technology could be included in such conditions.	Already happening and is a good route for new build – continue this, 8/10. But doesn't easily cover agetech 2/10

C. Mainly new business models

7. People with money/assets – a hybrid funding model combining public money and self-pay	Could achieve more than either on their own. This could help address the challenge of funding long term social care, which the UK government has repeatedly delayed addressing properly	Approach already used by some local authorities and home improvement agencies.	Build on this, 8/10. Adding cashflow funding capability would assist.
8. Home improvement agencies	Beginning to move into the self-funded (i.e. private) market, building on the high level of trust they enjoy as local authority agencies, and could both extend the impact of adaptations to more older people but also help cross-subsidise delivery to lower income people.	Trusted installation function is an essential part of the mix…	…but not straightforward to build their capacity quickly – 6/10

4. Evaluation of best ways to achieve impact

The various approaches in the table split into two main groups: those that would use financial and non-financial policy levers to influence the delivery of property development or maintenance; and those that would benefit from some kind of funding mechanism to increase the rate of adoption of agetech and age-friendly housing design. We will discuss the merits of each in turn.

a. Key approach 1: Simple policies to incentivise age friendly housing and agetech

Governments should identify the simplest policy levers they can use to create more age-friendly housing in new construction, working in partnership with the planning system, local authorities and housebuilders.

Planning policy is the most fundamental place to start and should mandate a certain proportion of new build to incorporate well-known age friendly design features as well as a basic level of technology readiness or standard products.

Alongside this, financial incentives can be used in several parts of the development process to offset some of the likely industry pushback against additional costs where these cannot be absorbed as part of the overall development model or passed on to the purchasers or renters.

Housebuilders whether private, public or not-for-profit sectors are subject to different taxation arrangements. In the UK VAT is not charged on most aspects of new build construction but does apply to some elements: these could be discounted. Where SDLT[5] or Section 106[6] planning contributions are payable by a developer for site acquisitions this could be an opportunity to offer a meaningful discount. SDLT payable by a housebuyer could be reduced similarly. SDLT discounts are already well established to assist first-time buyers, who pay no tax on a house up to £500k compared with the regular rate of 2% from £125-250k and 5% above £250k. This makes a maximum discount of £15,000 showing that the government is willing to sacrifice some quite large sums in pursuit of this policy objective; smaller sums of £5-10k could make a very meaningful difference to increasing age-friendly and agetech-enabled housing delivery.

A similar exercise can be undertaken with existing housing stock in need of retrofit. Here VAT applies in full at 20%, so VAT reduction to 5% or zero on work and products being installed would be the simplest approach.

The following table sets out recommendations based on UK terminology but can be adapted to the specific situation applying in other countries. It is based on the typical stages of the housing development process, enabling policy-makers and lobbyists to consider the most relevant policy levers

[5] Stamp Duty Land Tax, the UK property purchase tax which applies to all purchases by individuals or corporate bodies above a certain level and rises the more expensive the property is.
[6] Payments required under Section 106 of the planning act, to enable local authorities to cover the costs of infrastructure associated with new housing or commercial developments. Categories include transport, education, health, community facilities and public art.

and financial mechanisms available to achieve step-change outcomes in terms of age-friendly housing and agetech embedding.

Table: Summary of property-related incentive options

Development stage	Non-financial policy lever	Financial policy mechanism
SITES	State-owned land allocation	Stamp Duty Land Tax on acquisition – reduced rate for higher level age-friendly delivery (repayable if not achieved in practice; or reimbursed on achievement)
PLANNING POLICY	Site designation for specified levels of age-focussed housing	S106 requirement – but could be compensated by rebate on other required contributions
CONSTRUCTION	Tax deductions Building control system to check compliance with design and technology standards	Already no VAT on new build but does apply to fees therefore could offer reduced rate to schemes that meet a minimum standard Reduced corporation tax up to a percentage (eg. 50%) of approved age-related costs
SALE	N/A	SDLT reduction – ie. purchaser of new build age-friendly and/or tech enabled housing pays less purchase tax. Existing precedent with first time buyers Help with purchase – similar to Help to Buy for first-time buyers (up to 20% government equity loan to increase mortgage percentage to 95%, interest free for first 5 years)
RENTAL	N/A	VAT reduction on service charge for additional tech
RETROFIT	N/A	VAT normally applies on adaptations – reduce to 5% or zero rate
CARE PACKAGES	More likely to be business model innovations needed here	Approved technology in care to be zero VAT or otherwise tax deductible

These are all important avenues to pursue but other than local authorities choosing to use the existing planning system more effectively, will require primary legislation and therefore extensive lobbying and making the case.

Given the difficulty of achieving legislative change in support of the proposals outlined, we suggest instead focussing on the other recurring theme in the table evaluating the various options, which is the concept of a fund to provide the up-front cost of agetech installations.

b. Key approach 2: Accelerating progress through a new financial innovation: a National Agetech Fund or Bank

The key financial innovation we wish to suggest should be capable of more rapid progress than legislative approaches, and will in fact strengthen the case for them. It involves responding to the variety of funding requirements outlined in the table by creating a **National AgeTech Fund**.

This would be a funding mechanism or vehicle to provide the necessary up-front funding for agetech product installation. It would lend to different parties to enable the take-up of suitably approved products where forward or cashflow funding would make a critical difference to the speed or scale of outcomes. Key targets would be to enable consumers to access products, to adapt or downsize their housing, or to assist housebuilders in adding features that would not otherwise be possible.
The range of potential interventions and relevance to different parties is really quite broad:

- **Individuals or their families** – where a product or package cannot be paid for outright a loan is made which is either repayable in standard instalments or with full or partial assistance from a local authority social care department if means-tested, or DHSC under medical assessment.
- **Local authorities and housing associations** where capital finance is not available to fund all desirable interventions but revenue funding and self-payer contributions could cover costs if the payment period is extended.
- **Home Improvement Agencies** – to increase capacity and numbers of installations – mainly offering customers a credit facility in effect
- **Housebuilders and developers** – could take out a loan to cover the additional cost of agetech installation in new build housing which, once installed, signed off by building control and tested, is repaid either from the actual sales of the units or from s106 or other construction-related taxation. A further iteration would enable the housebuilder to pass the loan covering the higher price of the age-friendly unit to the purchaser or renter allowing them a period of time until they can repay this.

We could call this the **UK AgeTech Fund or AgeTech Bank**[7]. Its role is to accelerate delivery of agetech into new and existing homes, and stimulate the market for smart caring homes, by providing the capital funding for product installation where the costs can be recovered downstream from customers or from others that support them.

Potential funding sources where there is a good reason for a particular stakeholder to contribute because it helps deliver relevant outcomes is a wide-ranging list – itself usefully demonstrating that there should be potential to start with one type and build up the system over time. There is also scope to include aspects of the property industry which we earlier considered in relation to fiscal incentives. Contributions could be made as grant or loan capital into the fund in order to purchase an agreed value of installations which can reimburse the investment if necessary. Or agreements which cover the rental or lease payments would enable the fund to borrow against them. The range of interested parties could include:

[7] 'Bank' has a specific legal meaning, and additionally there are others starting to use the term Agetech Bank to describe a vehicle that might invest in products and services in this sector. Alternative names could include the Independent Living Loan Fund or AgeTech Finance Scheme.

- **Central government** – Department of Health and Social Care where a preventative agenda is seen as increasingly valuable in reducing more costly serious health problems downstream;
- **Local authorities** (or their national/regional body the Local Government Association) – for service or outcomes contracts;
- **Housing associations** whose tenants benefit could pay into the fund in recognition of the benefit to their operations in terms of reduced tenancy disruptions;
- **Social investors** – existing social lenders could contribute to deliver mission impact; or the public could be invited to subscribe for shares or bonds – heightened public awareness created by has increased the likely appeal, and indeed wealthier older people may wish to contribute to their less fortunate fellow elders; other commercial investors might invest not because the returns are likely to be particularly attractive but in order to stimulate the wider independent living / healthy ageing market;
- **Innovate UK** to deliver Healthy Ageing Grand Challenge outputs;
- **Housebuilder taxation or Section 106** (planning gain) contributions as suggested in the policy section above;
- **Insurers and pension funds** could pay in so that customers get an enhanced service.

Helpful precedents

There are several examples of large-scale schemes backed by the state to deliver similar 'common good' outcomes, both here and in partner countries.

Housing and property based schemes backed by the UK government include the **Help to Buy**[8] scheme where mainly first time buyers are given a government loan of 20% of the new build property value, interest free for the first 5 years, to reduce the amount of deposit/equity the buyer has to find. This is part of the government's drive to encourage home ownership and is said to have assisted with this whilst also being criticised for increasing house prices in some areas, partially self-defeating itself.

The **Green Deal** insulation and energy efficiency programme operated in the UK from 2012 to 2015[9] to enable home owners to have an approved programme of works delivered free or at reduced cost with the repayment derived from continuing to pay the original level of fuel bill above a new actual lower level, with the difference theoretically paying for the installation. Around 15,000 households used the scheme before it was closed because of lower uptake than planned, and alternative grant funding opportunities. Green deal finance also suffered from inflated expectations of the financial benefit – the so-called 'performance gap'.[10] Agetech products may suffer from the same problem and fail to deliver expected benefits or savings, so this would be an issue to consider very carefully.

Any version of this that applied to older people could recognise the higher capital cost of specialist age-focussed accommodation.

[8] https://www.helptobuy.gov.uk/

[9] https://www.gov.uk/government/news/applications-to-the-green-deal-home-improvement-fund-close

[10] There is a new 'Green Homes Grant' being launched in the UK as a response both to climate change and the need for a post-Covid economic recovery, which will part-fund home insulation and heating schemes but without the same performance-linked funding model. https://www.gov.uk/apply-green-homes-grant

c. An existing financing scheme to adapt

The most directly relevant welfare-based equipment leasing example for our purposes in the UK is the **Motability Scheme** which enables disabled people to lease a car, scooter, powered wheelchair or Wheelchair Accessible Vehicle[11]. The scheme works by exchanging all or part of their mobility allowance to lease the vehicle of their choice from a selection of price options within the range permitted by the level of higher rate mobility allowance. The cost is taken from the benefit payment every four weeks, then paid directly to the Motability company by the Department for Work and Pensions (DWP), with any balance still received by the individual. The standard lease is over three years, or five years if leasing a Wheelchair Accessible Vehicle. Motability take care of running costs such as insurance for up to three named drivers, servicing, maintenance, breakdown cover and tyre and windscreen repair and replacement.

The allowances used for the scheme are all around £60 per week or £260 per month, which is a typical level of conventional car leasing price. Just like such schemes where a lump sum is usually paid at the start, Motability customers can choose a more expensive car by paying an Advance Payment.

Motability itself is a charity which owns and controls a wholly owned subsidiary company to deliver the service[12]. Surpluses passed up to the charity enable it to support a wider range of mobility services and also offer an innovation service promoting better aids to mobility. The company is authorised and regulated by the Financial Conduct Authority for the purposes of consumer hire agreements.

Motability Operations (formerly Motability Finance Ltd) was established by the UK clearing banks in 1978, working solely for Motability, to deliver the Motability Scheme. Any profits are non-distributable and are retained for the benefit of the Scheme. This can include donations to Motability or to its sister 'Motability Tenth Anniversary Trust'.

Motability Operations employs around 800 people based in two locations, London and Bristol. They work with over 30 leading car manufacturers, who provide a choice of 2,000 makes and models through 18,000 trained Motability Scheme Specialists at their franchised dealerships. They currently serve 634,000 customers with a £7.5bn fleet value. Last year it was able to make an £852M donation to the charitable foundation from surpluses.

The key principle is that Motability is an independent not-for-profit solution to convert recurring benefits payments into a capital item for a specific period. The same principle could be applied to the provision of agetech equipment and potentially aspects of age-friendly housing design. The concept could be developed as an independent not-for-private-profit scheme but would be better if state-backed or potentially state administered. Its foundation would be based on converting part of a person's relevant benefits or state pension into a loan for approved equipment, supplemented by the person's own income where assessed, or by family, or from a relevant local authority budget.

Welfare benefits to examine for the best fit with this proposal include:

- Attendance Allowance – non means tested, paid to everyone over state pension age who is assessed by DWP as needing 'frequent help or constant supervision during the day, or supervision at night' and is paid at £59.70 per week. NB recipients may be reluctant to give up

[11] https://www.motability.co.uk/
[12] https://www.motability.org.uk/about/

some of their human contact unless the agetech system offered more than outweighs this, or enhances it.

- Disabled Facilities Grant covers basic building adaptations such as widening doors or installing ramps, installing a stair lift or door entry system, providing an adapted bathroom or kitchen, or improving or installing a suitable heating system. This operates as a lump sum means tested allowance of up to £30,000 but might be extended by adding a technology loan arrangement.
- Personal Independence Payments (PIP) – though only for 16-64 age group.
- Wealthier pensioners who feel uncomfortable about receiving winter fuel allowance could allocate it in this way.

Key conditions that all need to be met for the idea to be viable are, as a minimum, that:

1. Up-front cash shortfall is recognised as a barrier to adoption of agetech to address the needs of older people, both among institutions that would like to extend its deployment (such as local authorities) and among those older consumers who are unable or unwilling to purchase.
2. The state is willing to seek or facilitate a solution to meet this need through increased investment or allowing it to be sourced through the solutions proposed.
3. The fund/bank only supports those cases where repayment is possible from customer, LA or another source. In the case of LAs there would have to be the means to pay agreed from a contract whether performance related or not, and they would need to authorise installation and agree to monitor and maintain the system. Private purchasers would be encouraged to set up monitoring with family and existing carers but could subscribe to a support package.
4. Suitable products are available and proven. Having the funding would require the necessary discipline in understanding which products would fit the financial parameters in terms of cost effectiveness and value for money. To qualify for funded installation whether on a loan or grant basis, approved products must have been tested and validated, eg. by AgeTech Accelerator or another credible programme.

d. Initial financial parameters and thoughts on piloting

Our intention would be that the existence of the proposed fund at scale could improve product pricing both in terms of bulk orders and creating a more competitive lease/rental price than offered by those companies offering their own rental package.

What sort of scale would this service need to operate at to provide a reasonable response to the level of need, and to operate sustainably? We need to indicate how many customers, unit transaction, repayment period, interest rate, defaults etc.

An example of what the operation might look like at county scale is set out below and looks reasonable as a geography both for a pilot as well as scaling up. Spreadsheet modelling is required to calculate starting and peak capital requirement (around £4-5M), and determine what level of interest covers defaults and operational costs. The example county, Cambridgeshire, is approximately 1% of the UK population so multiplying by 100 for a national estimate could theoretically achieve 100,000 installations per year at a cost of around £200M peaking at total financing requirement of £4-500M. This is a fraction of the size of Motability.

Outline worked example of agetech fund scale based on Cambridgeshire

- Population of 650,000 (almost exactly 1% of the UK population)
- Focussing on the 'older old' eg. 75+ needing specific assistance to stay at home and avoid care home or hospital
- 75+ population is around 8% or 40,000.
- Helping the first 5% of these who had the greatest need combined with funds available (of their own or covered for them) would be 2000 people.
- Assume overall 50% of cost is contributed by customers' own funds (eg. one third pay 100%, one third have all costs covered for them, one third pay 50%).
- Say average £4k installation to 2000 customers paying 50% therefore requires £2m pa if all installations done within 2 years (assuming delivery capacity allows).
- Repayment average 3 years.
- Aim for lower interest rate than typical for leasing (12%+ AER)
- Allow for a rate of defaults – 5%?
- Possible simplified build-up:
  Y1 1000 installations @ £2k = £2m. Repayments start – capital plus interest
  Y2 1000 installations £2m
  Y3 1000 installations £2m
  Y4 first 1000 repaid ie. £2m, 1000 more added
- Continue to steady state or adjust upwards if demand requires.

Assuming the financial modelling and assumptions are reasonable, where could the necessary capital for a pilot be found? It might be a suitable proposition for a UK bank, lease finance company, social investor or philanthropist depending on the scale and perceived risk of the pilot. Some or all of the initial pilot funds might need to be put up at some risk but over time they could be replaced by more traditional sources as the model stabilised. Ultimately Motability itself would be a natural partner.

Allia's own legal structure as a Community Benefit Society has the ability to raise capital for social impact activities through issuing shares and bonds, and make grants and loans in pursuit of its objects[13]. Such societies benefit from relatively light regulation under the Financial Conduct Authority, which may give it a competitive advantage in terms of cost of operation. A CBS can itself have charitable status which has some advantages and disadvantages, or it could set up, or be owned by a separate charity similar to the Motability arrangement.

We would suggest starting with one local authority district where there is sufficient support for the concept and a good platform in terms of existing delivery of technology-enabled care. The UK Smart Homes and Buildings Association (SH&BA[14]) is exploring the possibility of a consortium model to increase provision of smart caring homes as a service in a small home counties district council area using a rental model for agetech equipment. Allia's own base in Cambridge makes a pilot in Cambridgeshire and/or Peterborough attractive. Conversations with East of England Local Government Association (EELGA) could open up relationships with other districts in the region.

[13] https://communityshares.org.uk/resources/handbook/community-benefit-societies
[14] https://shaba.eu/

Over time the model would be extended or franchised to additional counties or regions. Using a more centralised back office as in the Motability model could make sense to reduce overheads and ensure all areas have a minimum level of service.

A network of trusted installation partners would be critical – this parallels the Motability sale and support network – starting with local authorities' own teams and the growing number of Home Improvement Agencies, supplemented by trusted traders[15].

Given the close link between the agetech systems being installed and the properties in which this is being done, it would be attractive for the fund to diversify into relevant property investment or development such as extra care, retirement villages and smart caring homes for all ages. As achievement of the mission requires housing standards to be improved it makes sense to engage with this area, influencing design and outcomes. As well as achieving impact it would also help with cross subsidy and risk mitigation.

A variety of other ideas to contribute to the development of the concept, and add additional functionality could be considered, for example:

- Link to a helpline to create the marketing and support required. One approach would be to use CareUK call centre capacity for part of the formal care support system – alongside informal carers and any statutory support.
- To incentivise proper usage of the products and compliance with any prescribed regime, whoever is responsible for monitoring can confirm this back to the funder on a periodic basis which triggers reduced repayments or other rewards (free products, vouchers etc) similar to the model used by Vitality to encourage healthy living.[16]
- Widen appeal to younger demographics wanting smart caring home features to stay fit and healthy preventatively. This would be part of marketing the products and the service attractively to all ages, and avoiding stigma which also puts off older people themselves.
- Finally the organisation could use surplus funds to support innovation to develop new agetech products meeting identified gaps in provision, and to fund pilots with evidence and results shared openly.

Allia should aim to progress these discussions as well as continuing to develop the database and testing systems to ensure robust validation of all products.

[15] https://www.findmyhia.org.uk/
[16] https://www.vitality.co.uk/rewards/

5. Discussion and recommendations

We propose that in the first instance there is in fact a single unified economic model for all 4 regions (nations) as follows:

> **To achieve improved healthy ageing outcomes, each state must find the most financially efficient way to cover the cost of high impact (high ROI / rapid payback) forms of improved new build design and agetech installation, as well as the larger task of adding agetech retrofit and adaptation to existing stock. The goal is to achieve better than current overall outcomes and value for money for all key stakeholders ie. senior citizens, state, housing providers and care providers, thereby improving independent healthy living outcomes whilst preventing unaffordable levels of expenditure.**

Each country/region has a different mix of housing culture and policy, and arrangements for financing the care and support of senior citizens. So the details of the best version of this economic model vary in each region.

Within this overall economic model there are separate strands or sub-models which are also common to the 4 regions but need to be tailored to the specific circumstances. They are best considered in a logical sequence based on either the provision of new build housing or of adaptations to existing housing. These have been identified from the list of ideas proposed in the previous discussion paper, and represent the most promising approaches.

In each case the primary role to stimulate the increased level of activity comes best from central or regional government as it has the overview and can take decisions where increased investment in one area has benefits across other areas, for example housing funding achieving health savings.

However, other actors can initiate change by piloting innovative approaches, for example local government, housing associations and property developers especially those targeting the elderly. These can demonstrate how scaling a successful approach would be possible through government support.

See diagram overleaf:

Economic model interventions for age-friendly housing

1

The most fundamental is to start with **planning policy** to ensure that the most ambitious standards are set for smarter caring housing that increasingly looks after its occupants as they age, thereby improving healthy ageing outcomes and reducing state expenditure. Closely linked to this is the ability of the state to identify sufficient of its own **land** (or to acquire it) to control the delivery of such planning goals more precisely, and with conditions attached to specifications and targeted residents.

The economic model case is that the cost of achieving planning policy targets is generally absorbed into the business models of private sector developers and/or the housing market. At the margins there may be a trade-off between setting aspirational targets and achieving a lower scale of delivery.

2

The next logical step, if the first means of achieving the economic model cannot be used (either because of policy resistance – perhaps in the form of lobbying from the property sector – or in the case of housing that has already been completed) then national and local government should find efficient and robust ways to **incentivise housing developers and builders** to achieve age-friendly and agetech outcomes, including the buyers of completed units.

We propose a tax relief on the rate of taxation of developer profit proportionate to the number and level of age-friendly design/technology inclusion in new build schemes.

The economic model here is based on the amount of tax revenue foregone leveraging a greater sum in future revenue expenditure saved.

3

Next comes any means to enable and **incentivise older people and/or their families** to purchase age-friendly or agetech fitted housing, or to retrofit products into existing housing.

Simplest route: Reduce or remove VAT on renovations, adaptation and agetech products; or reduce or remove Stamp Duty Land Tax (SDLT – purchase tax) on new age-adapted housing.

Economic model: the tax revenue foregone model applies here.

4

Next there are **self-payers who need an appropriate and affordable level of service** which can also help to **cross subsidise those who cannot pay** – enabled through supporting home improvement agencies to grow and become a key part of delivery.

There is a need for coordination of adaptation information and funding into a single point of contact – this could help coordinate the practical delivery of adaptations by trusted public and private sector contractors.

Economic model: better coordination and building the capacity of silver economy companies to deliver high quality installations will achieve economies of scale and greater impact without any necessary increase in public expenditure.

5

Finance system to increase agetech uptake and enable individuals, their families and local authorities to cover the upfront cost of agetech installation through a standardised rental or leasing model repaid by the best combination of self-payment, welfare benefits, insurance policy or state cost savings. Creating an organisation to address this would also address the identified problem of the lack of information about suitable products and the best way of funding them.

Economic model: Part of the reason for slow uptake of agetech products is a market failure caused by lack of liquidity combined with lack of information about products and funding opportunities among the target audience (or their families). Both problems can be addressed by modest initial expenditure to create the vehicle that offers the credit function, with the liquidity itself being ultimately revenue neutral or in fact profit-making (and therefore able to assist the most needy individuals as well as foster innovation) as is the case with the parallel Motability example operating in the UK.

In conclusion there is an opportunity for the UK and other governments to accelerate progress towards age-friendly and agetech-enabled housing for their ageing populations through adopting and supporting some of the financial and economic model innovations outlined.

The opportunity is increased by recent mass awareness and sensitisation to the issue – Covid-19 has helped raise awareness of the needs of the elderly in general, but particularly around loneliness and vulnerability; and also the problems of care homes. At the same time, the need for technology familiarisation that was previously held as a barrier to progress has now been accelerated by the pandemic.

Other outstanding challenges remain:

- A proven product range with clarity on optimum deployment, cost effectiveness and financial returns – AgeTech Accelerator has a key role in testing, validating and assisting with investment for further products that will improve on the capability and cost-effectiveness of options available to frontline teams
- An effective marketing system which enables consumers to understand what is becoming available
- Trusted installation partners such as local authority AT/TEC departments and their in-house or trusted installers; and forward-thinking Home Improvement Agencies.

With further progress here we will be in a strong position to start developing the financing system to accelerate this deployment.

Has the time for silver economy housing and its ultimate expression, the smart caring home, finally come?