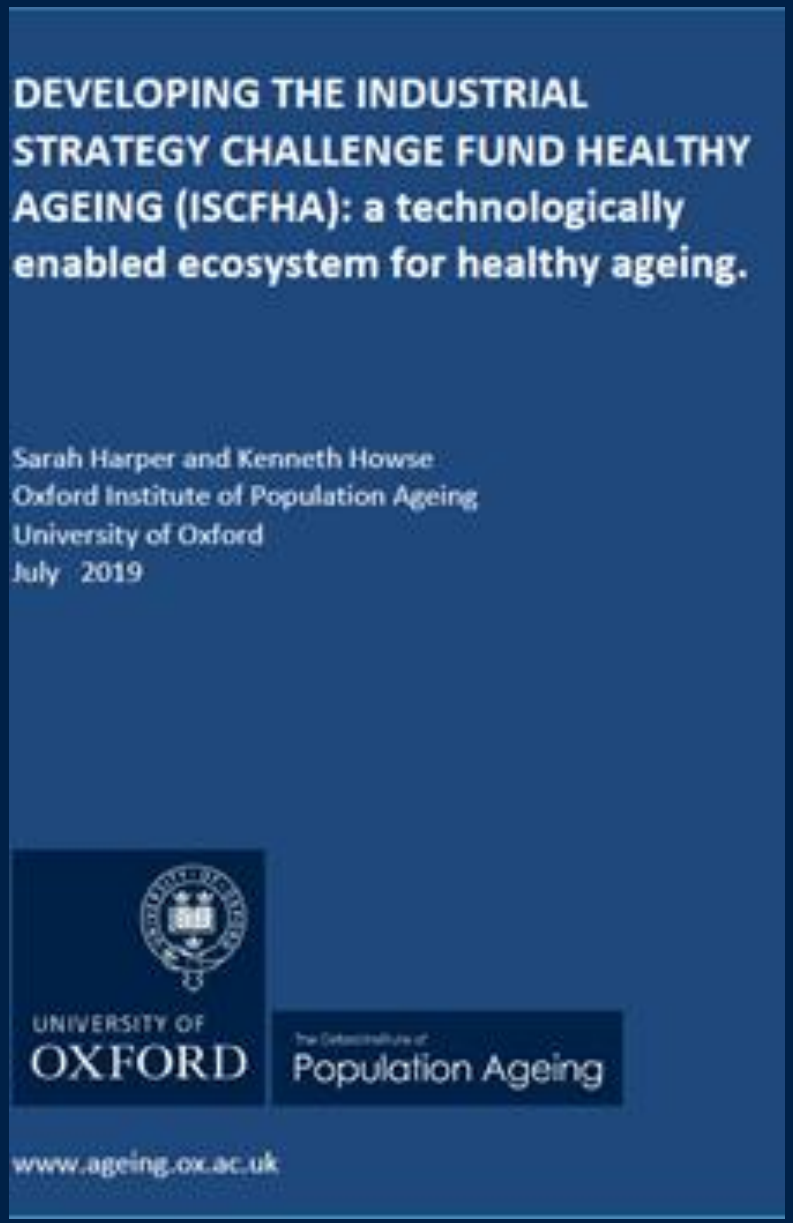

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The Healthy Ageing Challenge

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The Oxford Institute of Population Ageing, University of Oxford was commissioned by UKRI to produce a review of previous government funded initiatives in healthy ageing, to inform the development of an approach to the Healthy Ageing Challenge by providing an independent view of relevant learning from previous initiatives in the field of healthy ageing.

A key challenge for the UK is to decrease the probability of transitioning from one dependency state to another as we age, to ameliorate the impact of that transition as and when it occurs, and to thereby to attain an extra 5 years of active healthy life.

Practical approach is to deliver new products and services which demonstrably support older people in the UK to remain active, productive and independent, delaying transitions into more intensive care services

Context

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A strategic response to this challenge requires two pillars:

1. The first involves interventions to promote positive behaviours throughout life, to maintain health and delay the onset of care needs.
2. The second is about creating inclusive products and services which support older people, and their carers, to maintain their wellbeing and independence.

We argue that a Challenge Programme which focuses on the potential of new technologies to contribute to the promotion of healthy ageing, needs to place **people at the centre** not technology

UK demonstrator programmes/policy pilots reviewed with a strong technology focus

HealthSpace (2007- 2013)
Whole System Demonstrator (2008-2011)
WSD Action Network (2008-2011)
dallas (2012-2015)
Home and Mobile Health Monitoring (2015-2018)
United4Health (2013-2016)
NHS Test Beds Programme (2016-)
Social Care Digital Innovation Programme (2017-)

UK demonstrator programmes/policy pilots reviewed with a service/public health focus

Healthy Community Challenge Fund/Healthy Towns
Partnerships for Older People Projects (POPP)
NHS Diabetes Prevention Programme

Lessons from previous initiatives

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1. Vision: clarity about the purpose of the demonstrator

2. Identify achievable outcomes and measures of success

- The *Whole System Demonstrator* and *United4Health:* had implementation at scale as their primary aim but the innovation was not up and running by the end of evaluation period and participation targets had not been met.
- *HealthSpace* and *Dallas*: participation they actually achieved fell way short of their ambitions or expectations
- *Healthy Towns Programme* set out to test a 'whole systems' approaches to obesity reduction only succeeded in implementing a whole system approach in one of its 9 demonstration sites .

3. Incorporate specific targets for longer-term goals

- **Scale-up** – within the setting
- **Spread** – transfer to new settings
- **Sustainability** – being maintained long term, adapting as required

Lessons from previous initiatives

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4. Recognise Complexity: avoid assumption that the issues to be addressed are either simple or **complicated** (hence knowable, predictable and controllable) rather than **complex** (unpredictable)

- Programmes which were **complicated** in multiple domains proved difficult, slow and expensive to implement.
- **Complexity** in multiple domains poses a massive challenge to scale-up, spread and sustainability. Such programmes did not become mainstreamed nor delivered key intended outputs.

Indeed evaluation of HMHM Programme recommended that a formal analysis of complexity needs to be built into planning process for future digital health programmes

Lessons from previous initiatives

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5. Consider "technology readiness": define the circumstances in which it would be useful to conduct an assessment of 'technology readiness' as part of the planning process

6. Trade-off: acknowledge there is a trade-off between programme ambition and scale, on the one hand, and a manageable timetable, on the other.

It is possible for programmes to be judged prematurely as failures - because the initial timeframe for achieving particular targets was unrealistic. Our recommendation is a 5 year plan.

7. Integration: findings from separate evaluations of distinct interventions need to be integrated so as to provide an easement of overall programme impact

Lessons from previous initiatives

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8. Leadership: directives for both ownership and local leadership to be built into initial plan.

The case studies illustrate different approaches to the balance between national objectives and local implementation.

9. Talent pipe-line: a talent pipe-line is essential to retain knowledge and expertise in the workforce developed over the course of the programme.

10 Adapt: build in adaptation as the programme evolves.

Collect and reflect on emerging data, be creative, but control over ambitious growth, since projects that evolve organically are vulnerable to over-ambitious extension and scope creep.

Considerations

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The relationship of science to technology

Tension between science/academic research and technology which reflects science and technology having different purposes, with

- science aiming to produce models and theories that explain nature and (sometimes) allow predictions of its behaviour
- technology is developed to generate useful artefacts

Misunderstanding technology as "gadgets"

This way of thinking of technologies as "gadgets" misses

- the tacit knowledge needed to develop and operate a technology,
- the dependence of technologies on wider connections to complementary devices, institutions and forms of knowledge.

Problems versus process – process is important

Recognising technologies as **things** (artefacts) that solve problems v. as **innovations** that transform process

"Can"

Considerations

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How the technology is expected to behave v how it will behave (an interaction of artefact, knowledge, process, institution).

There needs to be recognition that technologies may generate profound and irreversible changes in social and physical environments.

Lock-in

There needs to be a recognition that technologies may lock into path dependent trajectories with positive feedback loops and strong selection effects that reinforce the use of a particular technology.

Creating an ecosystem for healthy ageing enabled by technology

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This would involve a multidisciplinary, multi-sector team working together to explore opportunities

- **Co-creation** of solutions by bringing together a diverse range of viewpoints, constraints and knowledge levels so as to sustain the exploration of new scenarios, concepts and related potential products and solutions.

- **Exploration by engaging** all stakeholders, especially user communities, at an earlier stage of the co-creation process to discover emerging scenarios, usages, commercial models and behaviours through live scenarios in real or virtual environments.

- **Experimentation** that implements appropriate technological artefacts in vivo to generate live scenarios involving large number of users whilst, in parallel, collecting data for analysis.

- **Evaluation** that assesses innovative concepts as well as related technological artefacts in real life situations through various dimensions such as socio-ergonomic, socio-cognitive and socio-economic aspects.

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