Introduction

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INNOVATION, IMPROVEMENT, IMPLEMENTATION, SPREAD, SCALE-UP AND SUSTAINABILITY:

DEFINITIONS, FRAMEWORKS AND PARADOXES

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acknowledging the IRIHS research team, especially Assoc Prof Chrysanthi Papoutsi

Scan me!

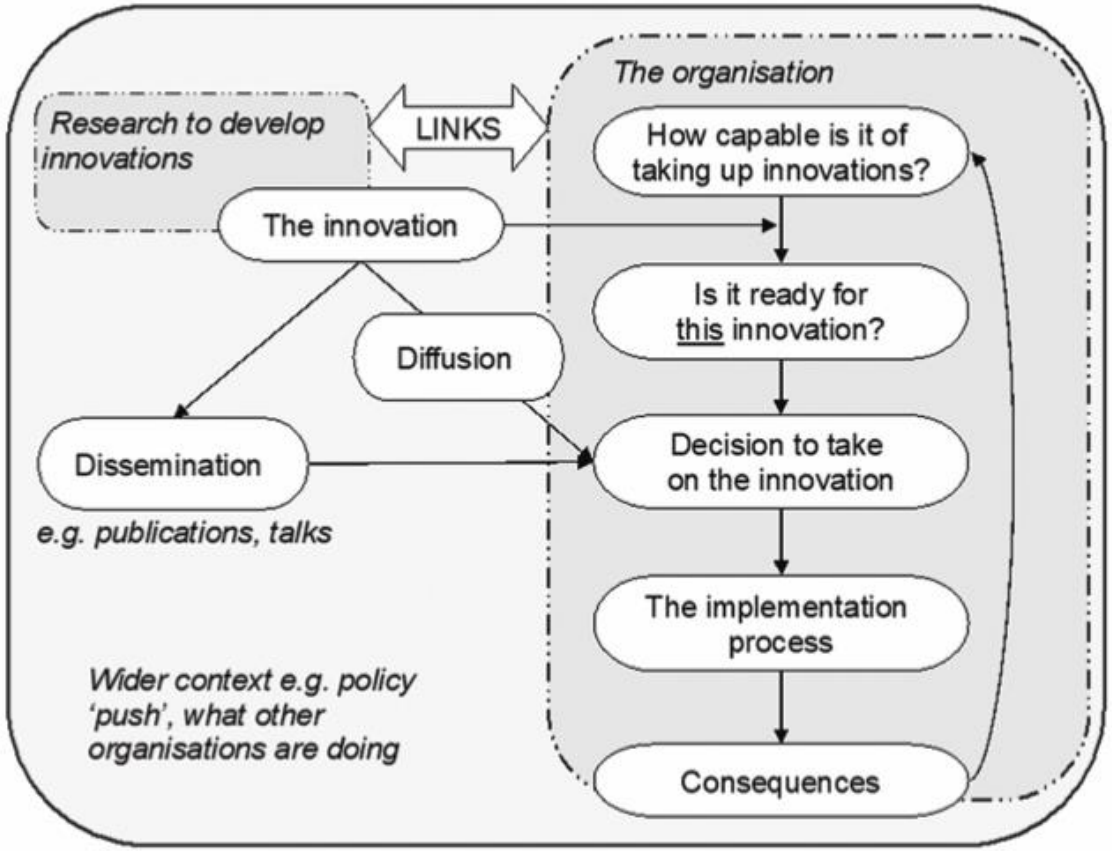
INNOVATION

A novel set of behaviours, routines, and ways of working that are directed at improving health outcomes, administrative efficiency, cost effectiveness, or users' experience and that are implemented by planned and coordinated actions.

Greenhalgh et al 2004

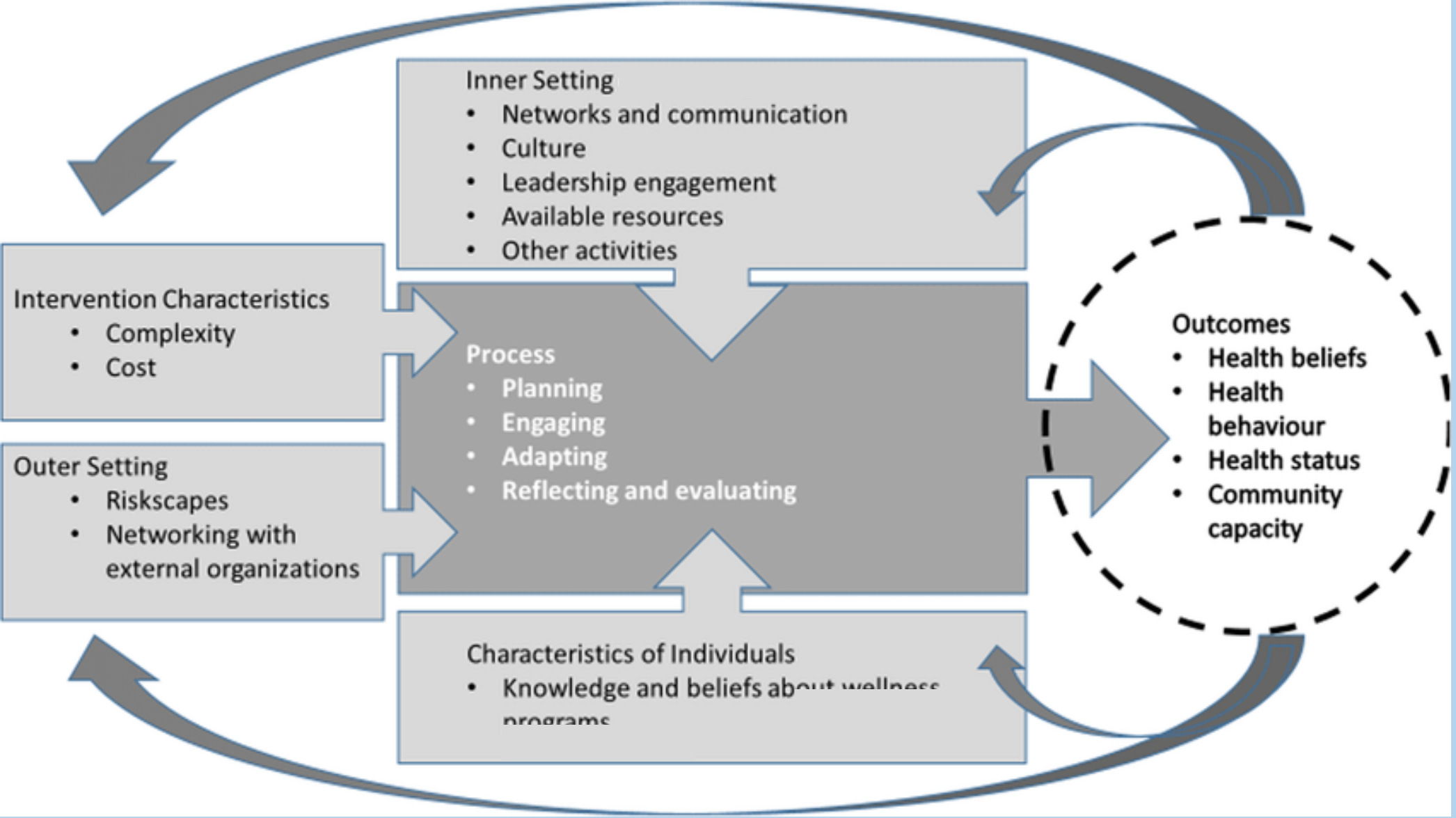
1. THE INNOVATION

Relative advantage
Compatibility
Low complexity
Trialability
Observability
Potential for reinvention



Greenhalgh et al 2004

Greenhalgh et al Diffusion of Innovations framework 2004



Damschroder et al 2009

Wells et al 2015

A version of Damschroder et al's Consolidated Framework for Implementation Research, developed by adapting the Diffusion of Innovations framework (diagram from Wells et al)

IMPROVEMENT

A more organic and continuous process of identifying something to improve, making a change and evaluating its success. Sometimes "continuous quality improvement" (CQI) and "improvement collaboratives".

Grol et al 2007

Quality improvement collaboratives

- Can drive up performance through sharing of best practice ideas

- BUT must distinguish warranted from unwarranted variation

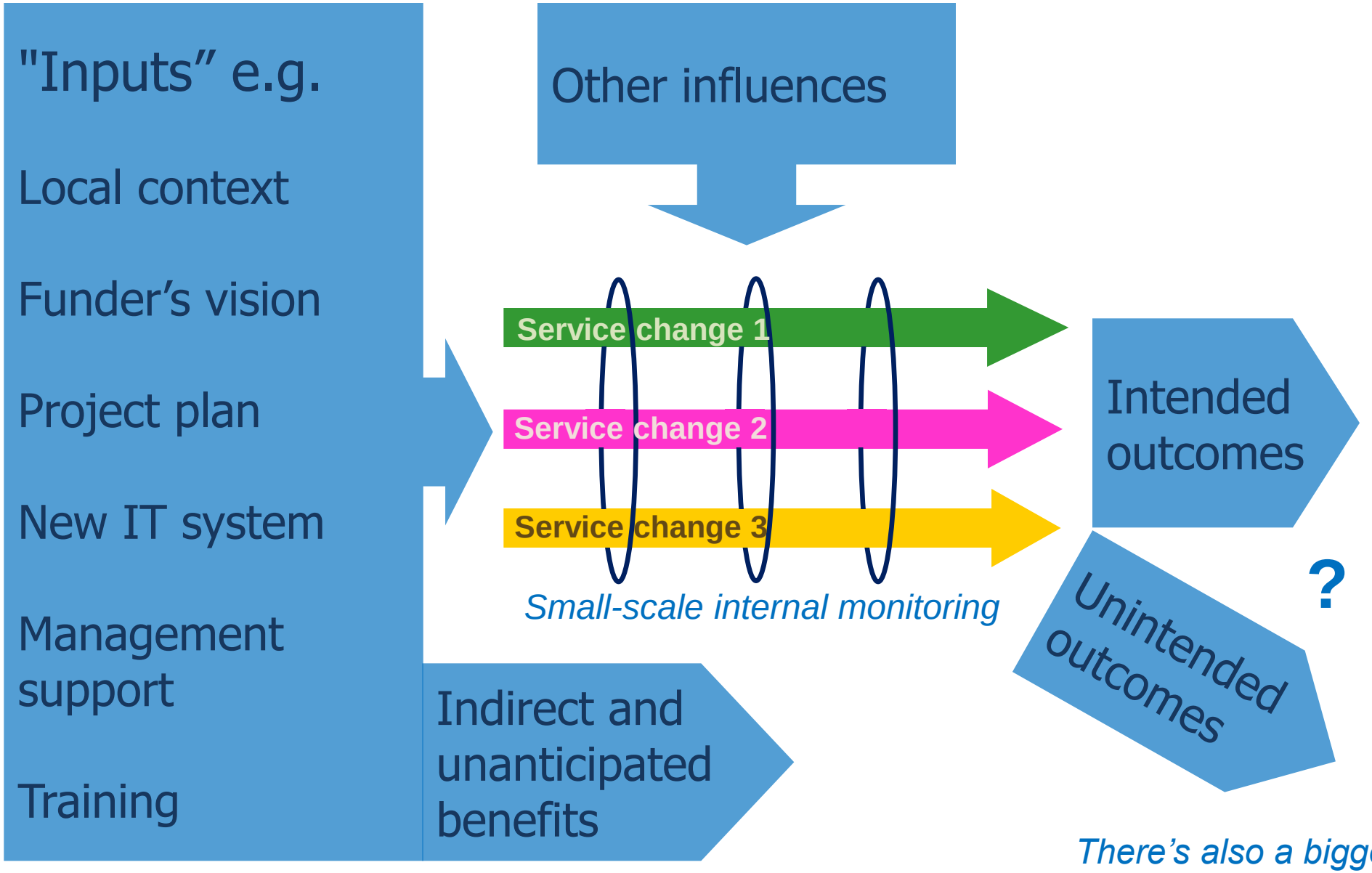
Greenhalgh et al 2024

IMPLEMENTATION

Efforts made by individuals, teams and organisations to help the uptake of an innovation or improvement initiative. Includes following through on strategic decisions (e.g., making a purchase), introducing the idea to staff and patients, training people, adjusting work practices and pathways, and evaluating and monitoring the change.

Papoutsi & Greenhalgh 2024a

Evaluating implementation is complex!



There's also a bigger story to tell

SPREAD

Transferring successful innovations or improvements beyond the original adoption setting. Example: Diabetes service in hospital X introduces remote glucose monitoring by smartphone app. Later, some diabetes services elsewhere do the same.

Papoutsi & Greenhalgh 2024b

SCALE-UP

The extent to which an innovation or improvement is adopted widely across a sector. This involves improving infrastructure and resourcing and incentivising the desired model.

Papoutsi & Greenhalgh 2024b

"Infrastructure is what other things run on"

– Susan Leigh Star

1. A material scaffolding, 'backgrounded' when working but becomes visible on breakdown
2. Embedded in systems, relationships and practices
3. Collectively learned, known and practised
4. Patchworked and path-dependent
5. Institutionally supported and sustained

Star 1999

Greenhalgh et al 2019

This beautiful, modern, ‘simple’ wearable technology for the child with epilepsy....

... must somehow interface with this patchworked, over-regulated and slow-to-change infrastructure

SUSTAINABILITY

Maintaining an innovation or improvement over time, with appropriate adaptation to local context and emerging contingencies and challenges.

Papoutsi & Greenhalgh 2024b

The more we sustain an innovation and maintain its 'fidelity', the less we can adapt it to a new or changing setting.

Evolution and embedding of a programme may lead to 'failure' against the original objectives

THE SUSTAINABILITY PARADOX

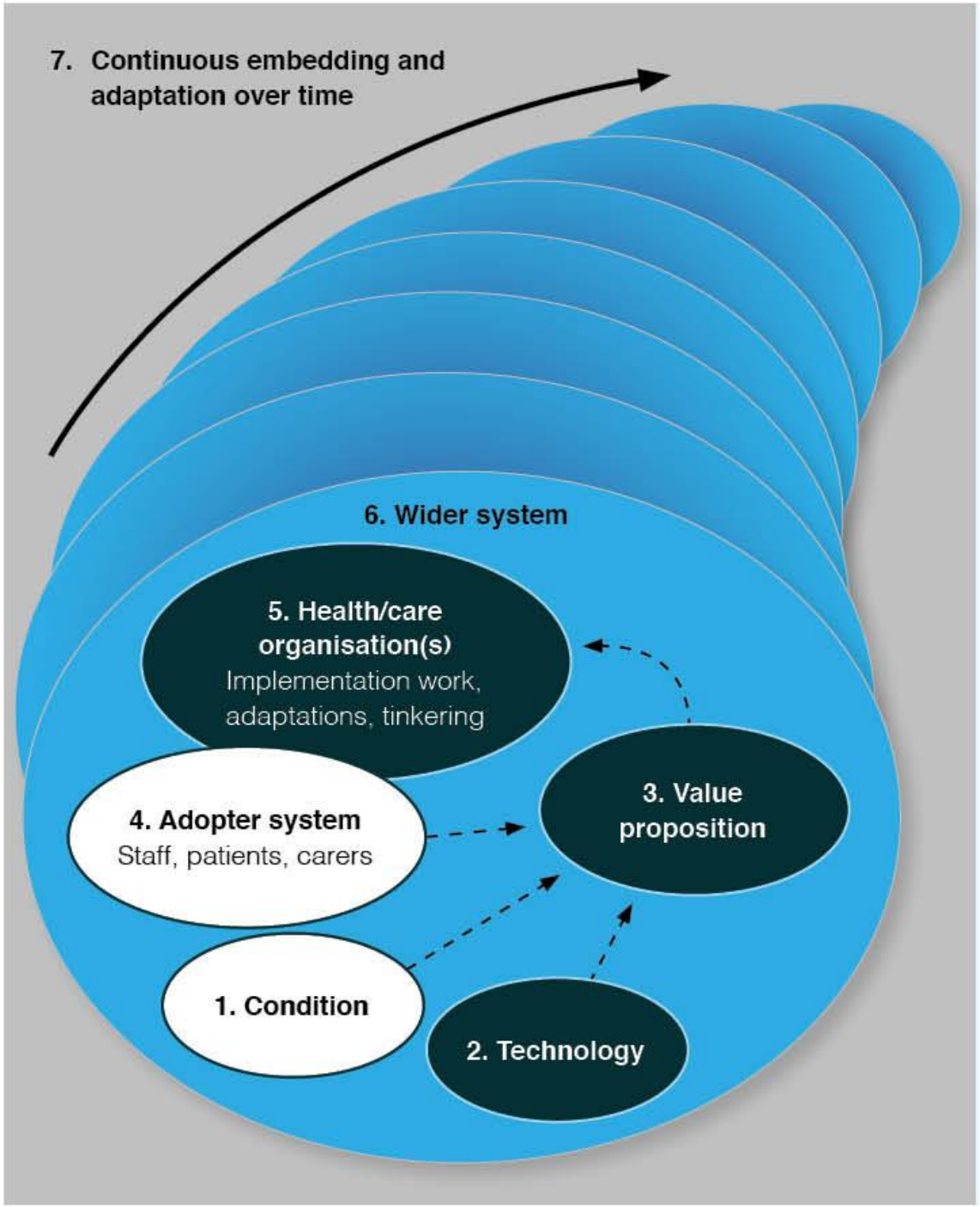
Greenhalgh et al 2012

2 complementary kinds of evaluation:

- 'Logic model' component, which asks "did we achieve each of our objectives?"
- Narrative case study component, which asks "what has changed and why?"

THE SUSTAINABILITY PARADOX

Greenhalgh et al 2012



1. **CONDITION**
   - Nature of condition or illness
   - Comorbidities
   - Sociocultural factors
2. **TECHNOLOGY**
   - Material properties
   - Knowledge to use it
   - Knowledge generated by it
   - Supply model
   - Who owns the intellectual property?
3. **VALUE PROPOSITION**
   - Supply-side value (to developer)
   - Demand-side value (to patient)
4. **ADOPTERS**
   - Staff (role, identity)
   - Patient (passive vs active input)
   - Carers (available, type of input)
5. **ORGANISATION(S)**
   - Capacity to innovate in general
   - Readiness for this technology
   - Nature of adoption and/or funding decision
   - Extent of change needed to organisational routines
   - Work needed to plan, implement and monitor change
6. **WIDER SYSTEM**
   - Political/policy context
   - Regulatory/legal issues
   - Professional bodies
   - Sociocultural context
   - Interorganisational networking
7. **EMBEDDING AND ADAPTATION OVER TIME**
   - Scope for adaptation over time
   - Organisational resilience

The NASSS framework:
To help build a narrative about the adoption, non-adoption, abandonment, and challenges to spread, scale-up and sustainability of digital innovations

Greenhalgh et al 2017

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THANK YOU FOR YOUR ATTENTION

Grol et al 2007

Greenhalgh et al 2004

Greenhalgh et al 2019

Papoutsi & Greenhalgh 2024a

Star 1999

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Damschroder et al 2009

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