

Technology-Enabled Service Change

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Health Innovation Network South London

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Health
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Executive Summary

Technology-enabled service change is about using digital tools and new ways of working to create services that are more effective, efficient, and responsive to people's needs. Its importance has grown as the [10-Year Health Plan for England](#) calls for significant structural change, particularly in tackling the "transformation challenge." This paper sets out a practical blueprint for how health and care organisations can design, implement, and scale technology-enabled services in a way that is sustainable and beneficial across the system.

To begin unpacking the transformation challenge, it is useful to categorise innovations into different "types", each requiring its own approach. At the Health Innovation Network South London, we categorise innovation into three core types: pharmaceuticals and medical products, digital health products, and new care models and pathway changes. By understanding the different needs of each type of innovation, it is possible to identify where innovations can be spread quickly and how any disruptions can be managed constructively.

Various gaps in the implementation stage of an innovation become barriers that can slow down progress. These challenges include cultural resistance, limited organisational capacity, lack of evidence, technical and interoperability issues, and financial pressures. Making change that is lasting, rather than temporary, hinges on bridging these gaps.

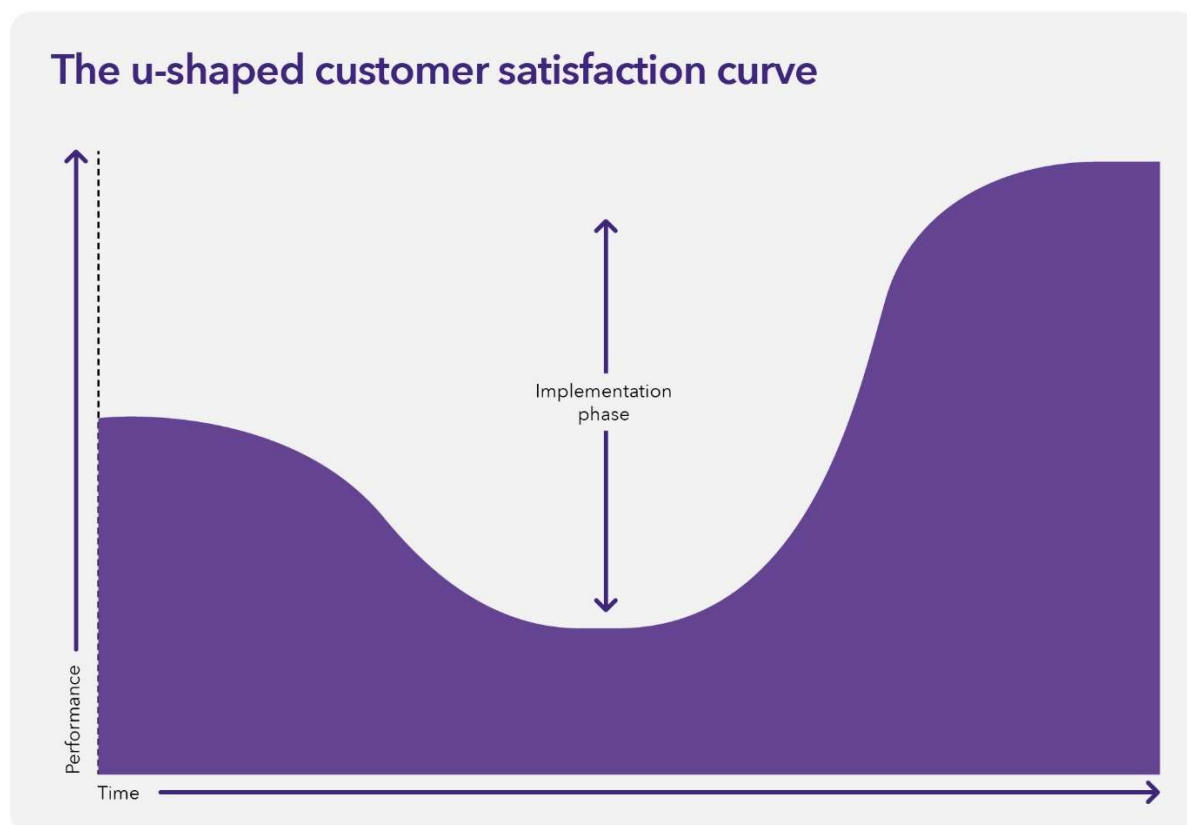
This document also outlines practical steps organisations can take to help implement technology-enabled service changes. To achieve this, it is imperative for organisations to define a desired outcome, account for complexity, make responsible use of tools including artificial intelligence (AI), and ultimately run an effective pilot that lays the groundwork for scaling. Adopting appropriate processes at each step will generate insights that inform future actions for successful delivery.

Implementing technology-enabled services requires careful navigation of competing demands. Success depends on striking the right balance when managing key tensions that arise during implementation. Frameworks informed by real-world experience are essential for making context-sensitive decisions.

To create the ideal conditions for accelerating the spread and adoption of an innovation, nuances of local contexts must be factored in. Deliberate planning, strong partnerships, and a clear understanding of the systems that innovations are being introduced into are imperative to achieving scale. Frameworks and shared learnings can provide practical guidance, helping organisations balance consistency with adaptability to support sustainable change.

The transformation challenge

Transforming any mature publicly funded, universal health system is inherently difficult. Most change processes follow a U-shaped performance curve, where initial implementation leads to a temporary dip in performance before improvements are realised. In healthcare, this dip is particularly problematic – any reduction in performance can directly impact patient safety and outcomes, making it unacceptable.



In other industries, such as financial services or travel, innovation is often driven by new entrants who introduce novel solutions that replace incumbents or influence them to adapt. These models thrive on competition and consumer choice. However, in public healthcare systems, this approach is harder to apply. Introducing innovation through new market entrants can create inequities in access, which are difficult to manage in systems designed to provide universal care.

Technology offers a powerful opportunity to improve health outcomes, patient experience, and system efficiency. The NHS 10 Year Health Plan for England¹

¹ *Fit for the future: 10 Year health plan for england (accessible version) (2025) GOV.UK.* Available at: <https://www.gov.uk/government/publications/10-year-health-plan-for-england-fit-for-the-future/fit-for-the-future-10-year-health-plan-for-england-accessible-version>.

suggests five major areas – ‘Five Big Bets’ – where technological innovation can drive transformation:

- **Artificial Intelligence (AI)** to enhance productivity and support patient choice
- **Genomics and predictive analytics** to enable earlier, more personalised interventions
- **Wearable technologies** that empower individuals to manage their own health
- **Robotics** to assist clinical teams and reduce physical strain
- **Joined-up data systems** that improve coordination and decision-making across services

These innovations can support a wide range of improvements. Patients benefit from better access to their data and information about their condition, offering them more choices, and enabling more effective self-management. Clinicians gain tools for earlier diagnosis and decision support, while staff across the system are supported by technologies that reduce bureaucracy, free up time to care, and promote cross-disciplinary working. Digital platforms also offer scalable solutions for staff training, helping to build a more agile and skilled workforce.

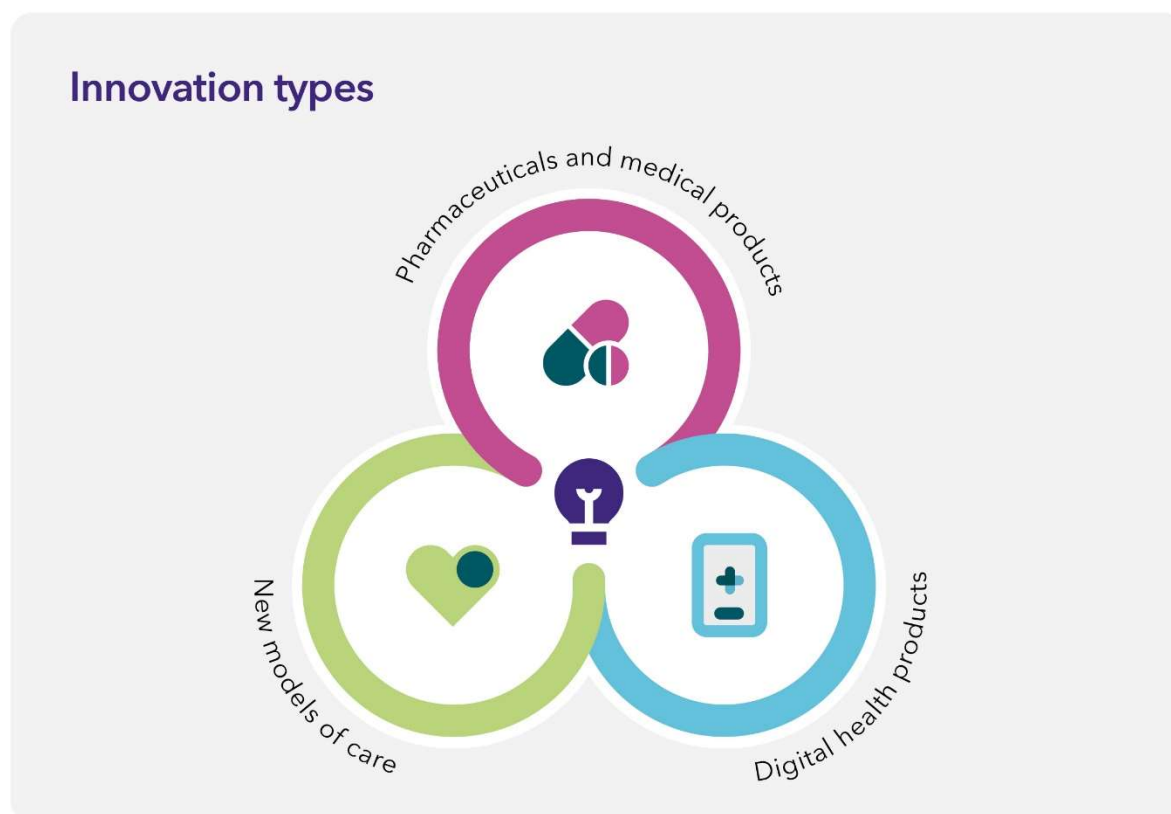
However, these benefits cannot be realised without the transformation of services. The usage of technology often only addresses one bottleneck (like access), which creates more pressure further down the pathway or identifies more people who are currently underserved, increasing demand for already stretched services. Radical technology-enabled service change programmes are therefore crucial, allowing us to radically rethink our delivery models and realise the full benefits of these five big bets.

Understanding innovation: different types, different needs

Innovation is not a single concept – it varies widely in form and impact, ranging from incremental improvement to radical transformation. At the Health Innovation Network South London, we categorise innovation into three main types:

- **Pharmaceuticals and medical products**, which benefit from well-defined regulatory and funding pathways. These innovations are typically supported by established mechanisms for approval and reimbursement
- **Digital health products**, where the regulatory landscape is less clear and public payment mechanisms are still developing. These products may follow either a pharmaceutical-style model or a consumer technology model, and the direction taken will significantly influence the speed of adoption and the level of investment required

- **New care models and pathway changes** which involve altering how care is delivered or who delivers it – including patients themselves in self-administered care. These innovations often require changes to clinical roles, workflows, and service design



Some of the most impactful innovations combine elements from multiple categories. For example, weight management is ripe for transformation as we can integrate the use of GLP-1 medications with digital weight management platforms, rethinking where and whom services are delivered by. This represents a combinatorial innovation opportunity that enables entirely new models of care for people already living with obesity and an opportunity to prevent illness by intervening early to reduce cardiometabolic risk and the morbidity associated with diabetes, heart attacks, stroke and renal disease.

Managing disruption

Each type of innovation brings a different level of disruption to existing services. Where disruption occurs, additional support is essential to manage operational risks, to train staff, and often to dual-run services during the transition. This ensures continuity of care and maintains safety while new models are tested, adapted and embedded.

Transformation is not just about adopting new technologies – it is about reshaping services in a way that is safe, equitable, and sustainable. With the right support and strategic planning, we can unlock the full potential of innovation in health and care.



Graphic adapted from the Health Innovation Manchester (HInM) [Strategy Development 2024-2027](#).

Where innovation spreads quickly

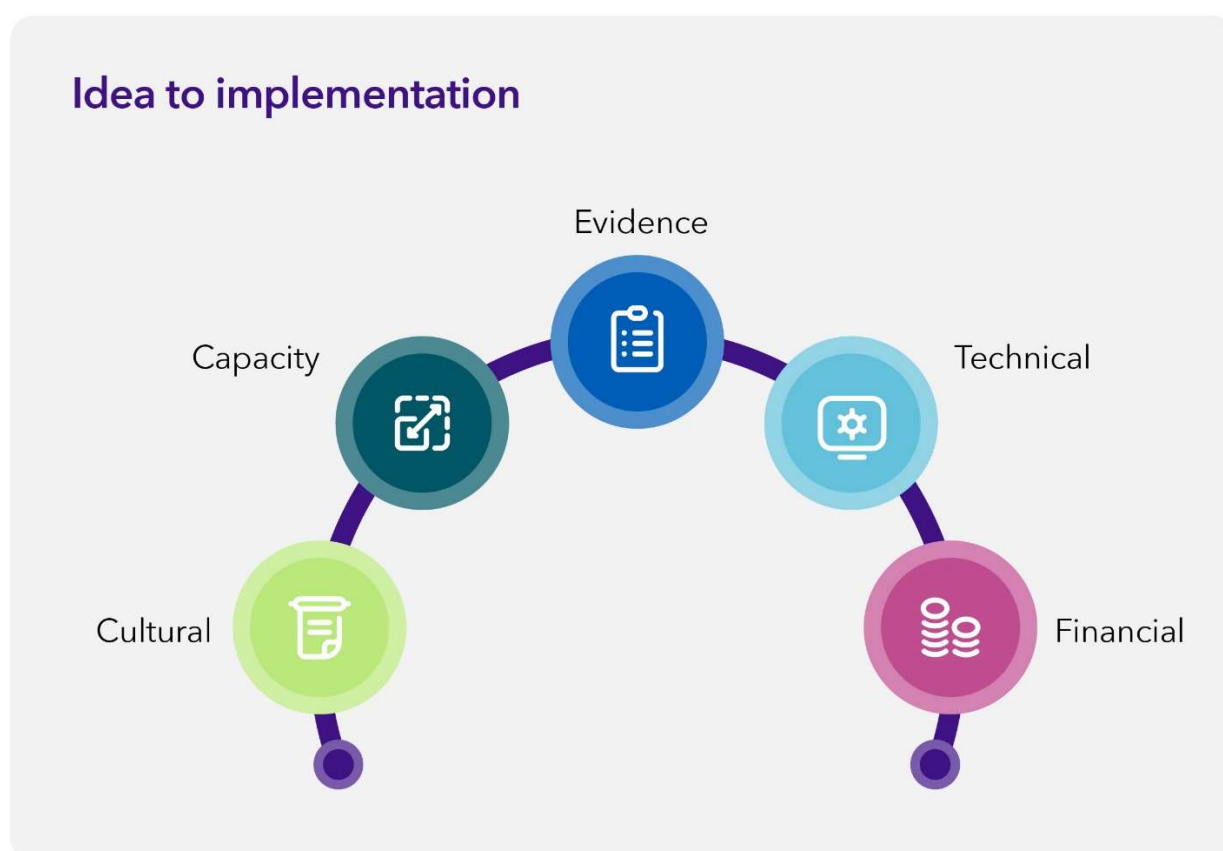
Despite these challenges, there are many examples of innovation spreading rapidly within mature health systems. Specialist services, with focused teams and clear pathways, often lead the way in high-income countries. Innovation often spreads more quickly in low- and middle-income countries with fewer legacy systems and greater flexibility, which can enable faster adoption. Private healthcare providers, driven by competition and investment, also tend to implement new technologies more quickly, though often targeted to a narrower section of the population.

These examples demonstrate that transformation is possible, and where we can learn what works in practice – it also highlights that change requires the right conditions, including leadership, investment, and a willingness to adapt.

Gaps to bridge during implementation

While the promise of innovation in healthcare is clear, the journey from idea to implementation is often complex. Even the most promising solutions can falter if key gaps are not addressed early and systematically.

At the Health Innovation Network South London, successful implementation has been achieved by bridging five critical gaps: cultural, capacity, evidence, technical, and financial. These are not just operational hurdles—they reflect deeper challenges in how people, systems, and processes interact. Addressing them requires thoughtful planning, inclusive engagement, and sustained support.



The cultural gap

Innovation in healthcare is a collective endeavour. It requires collaboration across a wide range of stakeholders, including clinicians, patients, IT teams, finance departments, operational leads, transformation specialists, HR, procurement, and contracting. Each brings valuable expertise but also distinct priorities, terminology, and ways of working.

These groups can often operate in silos and slow change based on a desire to minimise risk. Clinicians often focus on clinical safety, while IT teams need to ensure

system stability and cybersecurity. Finance staff will be managing cost control, while transformation teams may look to scale slowly and progressively rather than roll-out change quickly. Without shared goals, a common language, and a joint approach to managing risks, misunderstandings can arise which in turn slows progress and undermines trust.

Bridging the cultural gap means recognising that there is risk associated with existing delivery models, while balancing the risks associated with change against the opportunity to improve care. It involves creating opportunities for dialogue and co-design, which is facilitated through building mutual understanding, aligning goals, and fostering a sense of shared ownership. When people feel heard and included, they are more likely to support and sustain change. This is especially important in digital transformation, where success depends not just on the technology, but on how people use and relate to it.

The capacity gap

Even when there is enthusiasm for innovation, the reality on the ground can make implementation difficult. Many staff are already stretched thinly, managing high workloads, backlogs, and the ongoing demands of recovery. Change fatigue is widespread, and new initiatives – however well-intentioned – can feel like just another burden.

This is particularly true when past experiences with technology have been frustrating. Clunky systems, duplicated data entry, and poor usability have left many clinicians and administrators wary of digital tools. As a result, even promising innovations can be met with scepticism.

To bridge the capacity gap, we must recognise the pressures staff are under and design implementation processes that are realistic and supportive. This includes providing protected time for training, engagement, and feedback. It also means ensuring that new tools genuinely reduce workload, rather than add to it. Building capacity is not just about resources – it is about involvement, empathy, and trust.

Organisations that succeed in implementation often invest in local champions, peer learning, and phased rollouts that allow teams to build confidence gradually. These approaches help create the space and support needed for change to take root.

The evidence gap

Evidence is the backbone of healthcare decision-making. But when it comes to innovation, the type of evidence needed is often misunderstood or incomplete.

Traditional clinical trials are essential for demonstrating efficacy, but they do not always reflect the realities of frontline care. Technologies that perform well in controlled settings may face unexpected challenges in busy clinics or when care is delivered in people's homes. NICE reviews, while rigorous, often focus on clinical and cost-effectiveness without addressing how a technology fits into existing workflows or pathways.

This creates an evidence gap; a gap between knowing that something works under controlled conditions and knowing how to make it work in routine practice. To bridge this, more pragmatic, place-based evaluations are needed, which combine quantitative data with qualitative insights. Mixed-methods approaches can reveal how technologies interact with local contexts, what adaptations are needed, and what support is required for successful adoption.

Implementation evidence – how a technology is used, accepted, and sustained – is just as important as efficacy data. Without it, innovations may be technically sound but operationally unviable. Embedding evaluation into the implementation process, rather than treating it as an afterthought, is key to building confidence and informing scale.

The technical and interoperability gap

Digital transformation depends on infrastructure. Yet across the health system, digital maturity varies widely. Some organisations are ready to adopt advanced tools while others are grappling with outdated systems and technical debt.

Many digital products are standalone, offering limited integration with existing systems. Others can write back into electronic health records but still require manual workarounds. The most effective solutions are those that are fully embedded into clinical workflows, enabling seamless data exchange and reducing duplication.

Achieving this level of integration is challenging. It requires not only technical compatibility but also strategic alignment between suppliers, IT teams, and service leads. Interoperability must also be designed in from the outset. Without addressing the technical gap, innovations risk becoming isolated tools that add complexity rather than reduce it. Bridging this gap is essential for creating a coherent, connected system of care. National standards, shared architecture, and collaborative procurement can all help accelerate progress.

The financial gap

Building a compelling business case for innovation is often one of the most difficult tasks. While many technologies promise to free up capacity or improve patient flow, these benefits can be hard to quantify and realise – especially in systems facing significant backlogs and workforce pressures.

Our experience is that innovators can find it difficult to create a compelling case for finance teams – a case that needs to demonstrate the benefits of a product, confidence in achieving the benefits, whether savings rely on decommissioning existing services to fund new ones and which savings are realisable over the short-term (i.e. within one year). Many of our innovator support programmes at the Health Innovation Network South London have focused on helping innovators address these challenges.

This highlights a deeper issue: traditional financial frameworks often do not capture the full value of innovation. Improvements in quality, experience, and staff wellbeing may not translate directly into cost savings, but they are critical for sustainable improvements in care and should be assigned some form of value.

To bridge the financial gap, we need more flexible and realistic funding models. These should account for the true costs of implementation – including training, dual running, and change management. They should consider the time to benefits realisation (which often runs across financial years) and recognise the broader benefits that innovation can deliver. Aligning incentives across commissioners, providers, and suppliers is also key to unlocking investment.

Building bridges for sustainable change

Innovation is not just about new technologies—it's about making those technologies work in real-world settings. That means bridging the gaps between people, evidence, systems, and finance by:

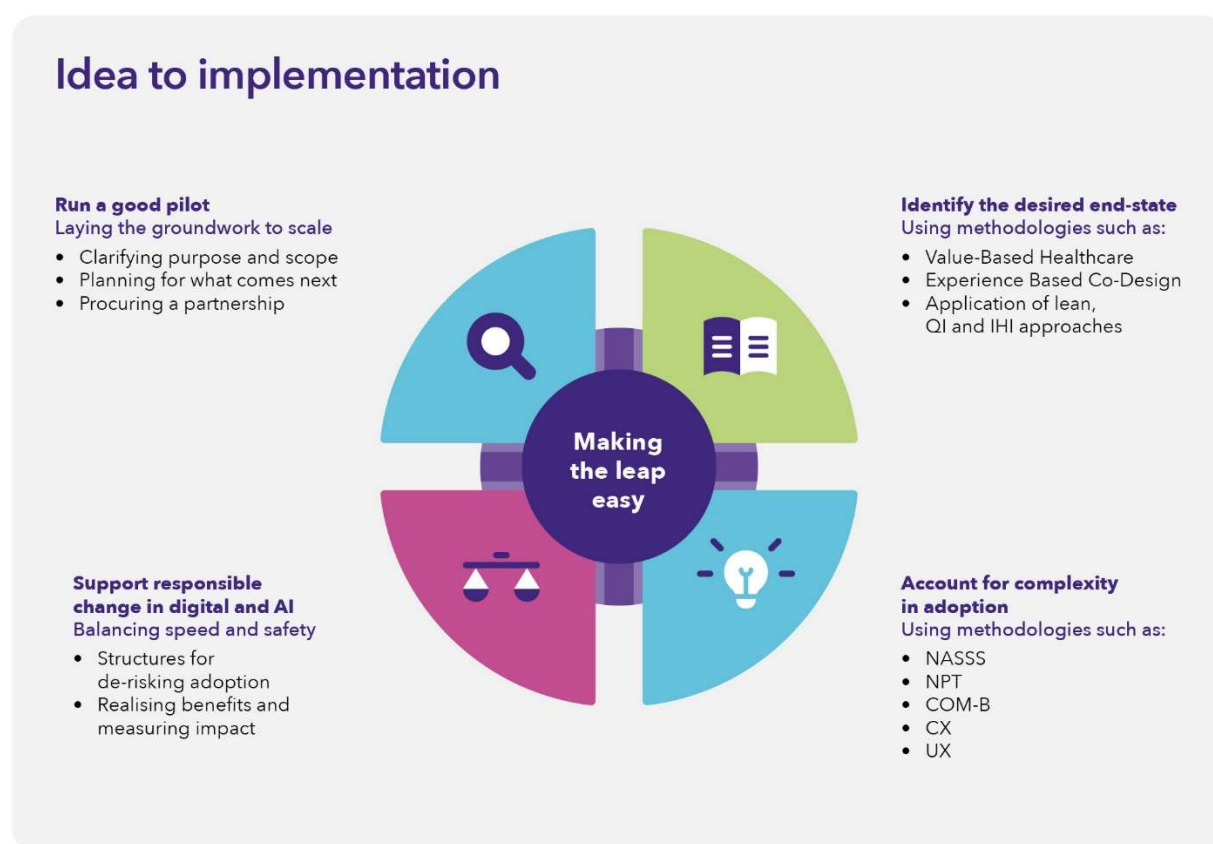
- **Investing in relationships and capacity** to enable effective collaboration across teams and disciplines
- **Generating the right kind of evidence**—focusing on implementation and real-world impact, not just validation
- **Tackling technical barriers early**, ensuring solutions are interoperable, embedded, and aligned with existing systems
- **Rethinking financial models** to reflect the full value of innovation, including quality, experience, and sustainability

By addressing these gaps, we can move beyond pilots and prototypes to deliver lasting, system-wide change. The journey is complex, but the destination – a more responsive, equitable, and effective health system – is well worth the effort.

Making the leap easy

To successfully implement new technology to the NHS, we must be deliberate in how we identify desired outcomes, design adoption processes, identify and manage risks and evaluate impact.

This requires a shift from reactive implementation to strategic transformation. It means using robust methodologies to **define the end-state**, **understand complexity in adoption**, and **support responsible change**. It also means recognising that **pilots** are not just trials – they are critical tools for learning, refining, and scaling innovation.



Identifying the desired end-state

Before any innovation is adopted, it is essential to define what success looks like. The aim is not simply to deploy a new tool, but to improve care quality, patient and staff experience, and system efficiency. Several methodologies can support this process, each offering different strengths depending on the context and goals.

Value-Based Healthcare (VBHC)

[VBHC](#) provides a strategic framework for aligning healthcare delivery with outcomes that matter most to patients, relative to the cost of achieving those

outcomes. It encourages systems to focus on value rather than volume, making it particularly relevant for evaluating digital and AI-enabled interventions. VBHC supports the development of outcome measures that reflect patient priorities and helps guide investment decisions toward interventions that deliver meaningful impact. However, successful implementation requires robust data infrastructure and a shared understanding of what constitutes “value” across diverse stakeholders.

Experience-Based Co-Design (EBCD)

EBCD is a participatory approach that brings patients, carers, and staff together to design services based on lived experience. It ensures that innovations are grounded in real-world needs and preferences, fostering a sense of ownership, trust, and relevance. EBCD is especially powerful in digital transformation, where usability and acceptability are critical to success.

Frameworks such as the **Double Diamond**² – which guides teams through phases of discovery, definition, development, and delivery – and **Human-Centred Design**³ – which prioritises empathy, iteration, and co-creation – are commonly used within EBCD. These approaches help teams move beyond assumptions, uncover unmet needs, and design solutions that are both effective and meaningful.

Application of Lean, QI, and IHI approaches

Lean Six Sigma, Quality Improvement (QI), and Institute for Healthcare Improvement (IHI) models have long been used to drive operational efficiency and service improvement. While valuable for refining existing processes, these methodologies often focus on incremental change and may not fully address the complexity of digital transformation or system-wide redesign. They can struggle to incorporate the behavioural, cultural, and structural shifts required for disruptive innovation⁴ to succeed at scale. As such, they are best used in combination with broader strategic and design-led approaches.

²The Design Council's **Double Diamond** is a visual representation of the design and innovation process. It's a simple way to describe the steps taken in any design and innovation project, irrespective of methods and tools used.

<https://www.designcouncil.org.uk/our-resources/the-double-diamond/>

³ Interaction Design Foundation - IxDF. (2021, June 14). What is Human-Centered Design (HCD)? Interaction Design Foundation - IxDF. <https://www.interaction-design.org/literature/topics/human-centered-design>

⁴ **Christensen's Disruptive Innovation Theory** - this theory distinguishes sustaining innovation, which improves existing products for current customers, and disruptive innovation. In turn, it introduces simpler, cheaper alternatives that eventually overtake established solutions by appealing to overlooked or new markets.

Christensen, C.M., Raynor, M.E. and McDonald, R. (2015) [Harvard Business Review](#), 93(12), pp. 44-53.

Accounting for complexity in adoption

Not all innovations are equal in complexity⁵. Some involve simple changes to workflows while others require deep shifts in behaviour, culture, processes, and infrastructure. Understanding this complexity is key to designing effective adoption strategies.

Several frameworks can help:

NASSS (Non-adoption, Abandonment, Scale-up, Spread, and Sustainability)

NASSS⁶ helps assess the complexity of technology adoption across seven domains, including the condition, technology, value proposition, adopters, organisation, wider system, and embedding over time. It's particularly useful for identifying risks and tailoring support.

The **NASSS (Non-adoption, Abandonment, Scale-up, Spread, and Sustainability)** framework offers a comprehensive approach to understanding the challenges of technology adoption in the NHS. Its 'Adopter' and 'Technology' domains help analyse the human-technology interface, including the roles of clinicians, patients, and the systems involved. The 'Condition' domain adds further nuance by considering the complexity and variability of the health condition the technology is intended to address.

The 'Wider Context' domain supports examination of external factors such as data privacy, regulatory compliance, and public attitudes toward technologies like AI. It also captures concerns around surveillance and the potential loss of human connection in care. Uniquely, NASSS addresses the symbolic and identity-related impacts of technology, which often shape acceptance and sustained use. These elements can be explored through the 'Adopter' and 'Value Proposition' domains.

Successful implementation depends on integration into clinical workflows. The 'Organisation' domain enables assessment of organisational readiness and adaptability. Given the rapid evolution of some technologies, the 'Embedding and Adaptation Over Time' domain is critical for evaluating scalability, technical maturity, and long-term sustainability.

⁵ **Barlow's Healthcare Innovation Complexity** - Barlow emphasises the unique challenges of healthcare innovation, including blurred boundaries between technology and practice, risk aversion, and political constraints. This framework is especially relevant to NHS settings, where systemic complexity often slows or fragments innovation adoption
Barlow, J. (2016) Managing innovation in healthcare: Challenges and opportunities. London: Imperial College Business School.

⁶ Greenhalgh, T., & Abimbola, S. (2019). The NASSS Framework - A Synthesis of Multiple Theories of Technology Implementation. *Studies in health technology and informatics*, 263, 193-204.
<https://doi.org/10.3233/SHTI190123>

NPT (Normalisation Process Theory)

NPT⁷ focuses on how innovations become embedded in everyday practice. It examines the work people do to make a new technology “normal,” including sense-making, engagement, action, and monitoring. NPT is valuable for understanding the human factors that influence adoption.

COM-B (Capability, Opportunity, Motivation – Behaviour)

COM-B⁸ provides a behavioural lens, identifying what needs to change for people to adopt a new practice. It forms the central hub of the Behaviour Change Wheel⁹, which can support the design and evaluation of targeted interventions. COM-B is especially relevant for digital tools that require new habits or skills.

According to the **COM-B** framework, one or more of its components must be changed to facilitate effective and long-standing behaviour change. The three components to any behaviour (B) are:

- **Capability (C)** refers to whether we have the knowledge, skills and abilities required to engage in a particular behaviour
- **Opportunity (O)** refers to the external factors which make the execution of a particular behaviour possible
- **Motivation (M)** refers to the internal processes which influence our decision making and behaviours

To perform a particular behaviour, one must feel they are both psychologically and physically able to do so (C), have the social and physical opportunity for the behaviour (O), and want or need to carry out the behaviour more than other competing behaviours (M).

The Behaviour Change Wheel (BCW) was adapted from the COM-B and is another tool that can be utilised to encourage behaviour change. It uses the initial three components of capability, opportunity, and motivation to provide seven ‘policy categories’ and nine ‘intervention functions’, which can be used to develop effective behaviour change interventions.

⁷ Murray, E., Treweek, S., Pope, C. et al. Normalisation process theory: a framework for developing, evaluating and implementing complex interventions. *BMC Med* 8, 63 (2010). <https://doi.org/10.1186/1741-7015-8-63>

⁸ A guide on the COM-B Model of Behaviour.

https://social-change.co.uk/files/02.09.19_COM-B_and_changing_behaviour_.pdf

⁹ Michie, S., van Stralen, M., West, R. The Behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science* 6, 42 (2011)

The value of good customer experience and user experience

Customer experience (CX) and user experience (UX) are often overlooked in healthcare innovation—but they are critical to success. A well-designed interface can reduce cognitive load, improve efficiency, and enhance satisfaction. Poor design, on the other hand, can lead to frustration, errors, and abandonment.

Good UX is not just about aesthetics – it’s about functionality, accessibility, and alignment with user needs. In clinical settings, this means designing tools that fit seamlessly into workflows, support decision-making, and minimise disruption. In patient-facing tools, it means ensuring clarity, empathy, and ease of use.

Investing in CX and UX is not a luxury – it’s a necessity for adoption, engagement, and impact.

Supporting responsible change in digital and AI

While digital and AI technologies offer transformative potential, they also raise new challenges, including how to more effectively manage risk.

Balancing speed and safety

The tech industry mantra of “move fast and break things” does not translate well to healthcare. Here, the stakes are higher, and the tolerance for error is lower. At the same time, excessive caution can stifle progress. Responsible innovation requires a middle path – one that allows for experimentation while safeguarding quality and equity.

Structures for de-risking adoption

To support safe adoption, clear processes are needed for identifying and responding to problems. These include:

- Roll-back plans in case a technology causes harm or fails to deliver
- Post-rollout monitoring to track performance, usage, and unintended consequences
- Feedback loops to adapt and improve tools based on real-world experience

These structures should be built into the adoption process from the outset, rather than added later.

Realising benefits and measuring impact

Innovation must deliver value – but that value is not always immediate or easily measured. Benefits may include improved outcomes, reduced costs, enhanced

experience, or increased capacity. To realise these benefits, the following are needed:

- Clear metrics aligned with the desired end-state
- Baseline data to compare against
- Ongoing evaluation to track progress and inform any required adaptations

Impact measurement should be proportionate to the scale and risk of the innovation, plus the amount of investment required to realise the benefits. It should also be transparent, inclusive, and focused on learning – not just accountability.

Logic models can be used to represent the theory of how an intervention produces its outcomes. It is a graphic that can identify, describe, and arrange critical aspects of an intervention to represent how the intervention produces change, with arrows often used to indicate causal relationships between the aspects.¹⁰

[The Health Innovation Network South London provides support](#) to help organisations understand the benefits of outcomes frameworks and deliver outcome monitoring solutions.

Running a good pilot: laying the groundwork for scale

Pilots are a vital step in the innovation journey. When well-designed, they generate the insight and confidence needed to move from concept to system-wide adoption. A good pilot is not just a test; it's a structured opportunity to engage key stakeholders in the early phase of adoption and to learn, adapt, and prepare for scale.

Clarifying purpose and scope

Before a pilot begins, it's essential to define what you are trying to test, for whom, and why. This might include:

- Whether the product works in a specific setting
- How it fits into existing workflows
- What adaptations are needed for usability and effectiveness

¹⁰ UK Government. (2018, August 7). *Creating a logic model for an intervention: Evaluation in health and Wellbeing*. GOV.UK.
<https://www.gov.uk/guidance/evaluation-in-health-and-wellbeing-creating-a-logic-model#:~:text=Logic%20models%20identify%2C%20describe%20and,causal%20relationship%20between%20the%20two>.

- Whether training materials are appropriate for staff

These questions should be shaped with input from a multi-professional team including users, digital leads, finance, operations, and transformation teams, to ensure the pilot reflects real-world needs and priorities.

Running pilots or undertaking research

It's important to distinguish a pilot from a research study. While both generate evidence, a pilot is about building operational confidence and assessing cost-effectiveness in practice. It focuses on value, usability, and readiness for scale rather than academic generalisability.

Planning for what comes next

A good pilot is designed with the future in mind. This includes:

- Drafting the business case for adoption before the pilot begins, with gaps to be filled by pilot data
- Defining how the product will be funded if successful
- Agreeing on what success looks like, using both qualitative and quantitative measures

When testing a solution that has worked elsewhere, the focus for a local pilot should be on whether it can be adapted to the new context and what support is needed to make it work.

Procuring a partnership, not just a product

Insights from the [Remote Monitoring Developmental Partnerships Report](#) highlight the importance of procuring a partnership, not just a product. This means selecting a supplier who is willing to:

- Co-develop and iterate the solution based on frontline feedback
- Share risk and learning throughout the pilot
- Support integration, training, and change management
- Be transparent about product development and future iterations

Procurement processes should reflect this collaborative model – evaluating not just technical fit, but the supplier's ability to work as a long-term partner. Procuring a partnership, rather than just a product, ensures that the solution remains relevant and responsive over time through co-development and shared learning. This approach helps ensure the pilot lays the foundation for sustainable, scalable adoption.

From insight to action

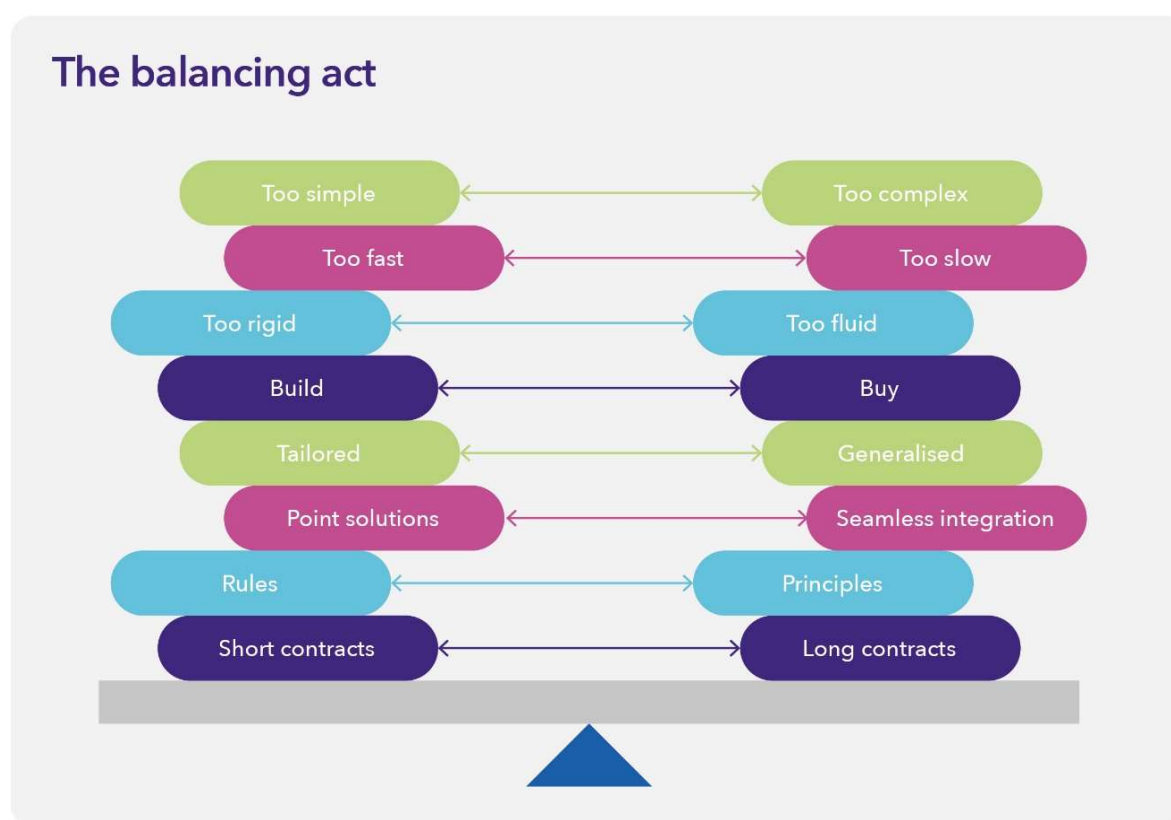
Innovation is not just about new ideas, it's about making those ideas work. That means using the right methodologies to define goals, understand complexity, and support responsible adoption. This includes valuing design, measuring impact, and learning through pilots.

By investing in these processes, we can move from isolated successes to sustained transformation – delivering better care, better experience, and better value at scale across the system.

Achieving balance in implementation

Implementing innovation in healthcare is rarely straightforward, and there are many ways to fail. It often involves navigating between extremes - too simple or too complex, too fast or too slow, too rigid or too fluid and other tensions. Striking the right balance is essential to ensure that innovations are scalable, sustainable, and safe.

This section explores the key tensions that arise during implementation and offers guidance on how to manage them. It draws on frameworks such as NASSS and real-world experience to help leaders make informed, context-sensitive decisions.



Too simple versus too complex: matching the approach to the challenge

Implementation often falls into one of two traps: oversimplification or overcomplication. On one hand, there's the belief that "I've fixed it – why doesn't everyone just do what I did?" This mindset assumes that a single solution can be universally applied, ignoring the diversity of local contexts, digital maturity, and operational pressures. On the other hand, some teams treat every site as entirely unique, leading to bespoke solutions that are difficult to scale and sustain.

The key is to match the adoption approach to the level of complexity and risk. For example, simple automations or AI tools used in administrative or back-office functions may be suitable for rapid, standardised roll-out. In contrast, clinical-facing technologies – such as decision support or patient engagement platforms – require more tailored approaches, with attention to safety, workflow integration, and user experience.

As mentioned in the previous section, the NASSS framework is a valuable tool for assessing complexity. It helps teams identify where the greatest risks lie – whether in the technology, the adopters, the organisation, or the wider system – and guides decisions about where to focus effort and support. By using NASSS early, teams can avoid both oversimplification and paralysis by complexity, enabling a balanced, risk-aware implementation strategy.

Too fast versus too slow: finding the right pace

Pacing is a critical factor in successful implementation. Moving too quickly can overwhelm teams, introduce operational risk, and leave little room for learning. Conversely, moving too slowly can erode momentum, delay benefits, and frustrate stakeholders who are ready for change.

A well-paced implementation is ambitious but manageable. It often involves a phased approach – starting with a pilot or limited deployment, followed by iterative scaling informed by feedback and data. This allows teams to refine processes, build confidence, and address issues before full roll-out.

Agile methodologies can support this balance. They encourage short cycles of testing and adaptation, enabling teams to respond to real-world conditions rather than rigid plans. Importantly, pacing should be shaped by the nature of the innovation, the level of risk, and the readiness of the system – not by arbitrary deadlines or external pressure.

In practice, successful programmes often combine early wins with long-term planning. They build momentum through visible progress while maintaining the flexibility to adjust course as needed.

Too rigid versus too fluid: codifying without constraining

Once an innovation is adopted, there's a tension between codifying the model and allowing it to evolve. If the approach is locked down too early, it may fail to adapt to feedback, changing needs, or new contexts. But if it's never defined clearly, it becomes difficult for others to replicate, adapt, or scale.

The solution lies in structured flexibility. This means identifying the core components that must remain consistent – such as safety protocols, data standards, or key outcomes – while allowing variation in delivery based on local needs and contexts. It also means documenting lessons learned and updating guidance as the model evolves.

Codification should support learning, not limit it. It enables others to build on success, avoid common pitfalls, and adapt solutions without starting from scratch. This is especially important when scaling across multiple sites, where consistency in outcomes must be balanced with flexibility in implementation.

In digital health, this might include creating adaptable training materials, modular implementation guides, and shared evaluation frameworks which are all designed to evolve as the innovation matures.

Build versus buy: choosing the right development path

Choosing whether to build in-house tools or buy off-the-shelf solutions is a strategic decision with long-term implications. In-house development offers control and customisation, allowing organisations to tailor solutions to specific needs. However, it requires sustained investment in development, maintenance, and support. Companies may struggle to keep pace with rapid technological change.

Off-the-shelf products are often more mature, scalable, and supported by dedicated vendors. They can accelerate deployment and reduce development burden but may be less flexible and harder to integrate with existing systems.

The decision should consider:

- Version control: Can the solution evolve with changing needs?
- Support model: Who maintains and updates the tool?
- Interoperability: Will it integrate with current infrastructure?
- Procurement strategy: Are you buying a product or seeking to enter a long-term partnership?

Increasingly, systems are looking for evergreen solutions – tools that are regularly updated and supported, with a roadmap for future development.

Tailored versus generalised: designing for equity and scale

Innovations often begin by addressing the needs of a specific subgroup – such as a particular patient population, clinical specialty, or service setting. The challenge is deciding when and how to generalise the solution for broader use.

Tailoring can improve relevance and effectiveness, especially for populations with specific needs or risks. But over-customisation can limit scalability, increase complexity, and create inequities in access. Generalising too early, on the other hand, may dilute impact or overlook important contextual differences.

The decision should be guided by the level of risk – clinical, financial, or operational – and the controls in place to manage that risk. For high-risk innovations, a more tailored and cautious approach may be appropriate. For lower-risk tools, broader roll-out may be feasible with minimal adaptation.

Equity is a key consideration. Generalisation should not mean one-size-fits-all. Instead, it should involve designing solutions that are inclusive, adaptable, and responsive to diverse needs. This requires thoughtful planning, inclusive design, and ongoing evaluation to ensure that innovations deliver value across the whole population, not just the early adopters.

Point solutions versus seamless integration: planning for interoperability

Access to data is a cornerstone of effective digital health. A key decision in implementation is whether a point solution (where patients or clinicians manually update information) is sufficient, or whether automated data flow is required.

Technologists often default to extremes: either full integration or complete independence. In practice, a pragmatic approach is often best. This might involve:

- Prioritising integration for high-risk or high-volume workflows
- Using manual updates where automation is not yet feasible
- Planning for staged integration over time

The goal is to ensure that data is available where and when it's needed – without over-engineering the solution or creating unnecessary complexity. Interoperability should be seen as a journey, not a binary choice.

Standardisation versus adaptations: recognising cultural preferences

Organisational culture plays a major role in how innovations are adopted and spread. According to Sutton and Rao¹¹, some organisations prefer standardisation, while others value local adaptation.

In standardisation cultures, scaling means replicating a proven model with fidelity. In adaptation cultures, scaling means spreading principles and allowing local teams to interpret and adapt them. Both approaches have merit, as most systems need a blend of the two.

Understanding your organisation's cultural orientation can inform how innovations are introduced, codified, and scaled. It also helps anticipate where resistance may arise and what kind of support is needed to build buy-in.

Rules versus principles: regulation as an enabler

Regulation is essential for ensuring safety, equity, and accountability – but it must also enable innovation. Overly rigid rules can stifle progress, while too little oversight can expose patients and systems to harm.

As digital and AI tools become more prevalent, regulators are evolving their frameworks to balance these tensions. Implementation teams must stay informed about regulatory requirements and engage early with governance bodies to ensure compliance.

Proportionate, risk-based regulation, aligned with the complexity and potential impact of the innovation, is key. Where technology is developing quickly, this may also mean using principles-based rather than rules-based approaches. National and regional guidance in these areas can be very helpful particularly where they define acceptable use-cases and include clarity on technical requirements such as clarity on data protection, clinical safety, and ethical use, particularly for AI-driven tools. The HIN has produced a set of [10 e-learning modules on regulations for medical devices](#) as part of their Mindset Extended Reality for digital mental health programme, for example. Supporting exemplar sites to share their experience with others is also a welcome approach and works well in existing innovation networks where trust has been built over time.

¹¹ Sutton, R. I., & Rao, H. (2016). *Scaling up excellence: Getting to more without settling for less*. Random House Business Books.

Short versus long term contracts: navigating a rapidly evolving landscape

The digital health market is dynamic and fast-moving. Large vendors are developing increasingly sophisticated tools—but often charge high fees for integration, support, or customisation.

Procurement decisions must consider:

- Market maturity: Is the product proven or emerging?
- Speed of development: Will the vendor keep pace with innovation?
- CX/UX trade-offs: Is the product easy to use, or highly customisable (and potentially complex)?
- Contract structure: Are you buying a product, a service, or a partnership?

Longer contracts may offer stability but risk locking systems into outdated technologies. Shorter contracts offer flexibility but may limit continuity, price negotiations and partnership development. A balanced approach – such as modular contracting or outcome-based procurement alongside clear exit points – can help manage these risks.

Striking the balance

Implementing innovation in healthcare requires navigating a series of tensions: between simplicity and complexity, speed and caution, rigidity and flexibility. This section has highlighted the importance of context-sensitive decision-making, guided by frameworks like NASSS and informed by real-world experience. By embracing structured flexibility, proportionate regulation, and culturally attuned strategies, leaders can create conditions for scalable, sustainable, and equitable innovation. As we move forward, the focus shifts to how these principles can be embedded into system-wide strategies for long-term impact.

Accelerating spread

Spreading innovation across a health system is not simply about replication, it's about adaptation, alignment, and ambition. While pilots and early adopters play a critical role in proving what works and how to implement changes, the real value of innovation is only realised when it reaches scale.

Accelerating spread requires more than enthusiasm. It demands a clear strategy, strong partnerships, and a deep understanding of the systems into which innovations are being introduced. Drawing on frameworks like Rogers' Diffusion model¹² (see [page 35](#)) and spread work we have undertaken like [FREED](#), this section explores the key enablers of successful spread and how to build the conditions for scale from the outset.



The role of the spread partner

A key enabler of spread is the spread partner—an organisation or team responsible for coordinating activity, sharing learning, and maintaining

¹² Rogers' Diffusion of Innovation theory explains how new ideas and technologies spread through a population over time via five adopter categories: innovators, early adopters, early majority, late majority, and laggards. Rogers, E.M. (2003) *Diffusion of Innovations*. 5th edn. New York: Free Press. [Access summary via ERIC](#)

momentum. This could be an innovation hub, a collaborative of provider organisations or a health innovation network. Their role includes:

- Designing and managing the spread plan including aligning it with the governance processes within each of the adopters
- Engaging with and understanding future adopters through, for example, site visits, shared learning events, communities of practice
- Helping to create the conditions for scale including via communications activities and the co-development of outcomes frameworks and business case templates
- Developing shared tools such as training materials or implementation guides to aid adoption and adaptation across different contexts
- Supporting adopters to realise the benefits of scale like efficiencies and joint procurement approaches

A strong spread partner acts as a bridge between early adopters and future implementers – ensuring that insights are transferred, barriers are addressed, and progress is sustained.

Health Innovation Networks (HINs)

The **Health Innovation Network (HIN)** is the innovation arm of the NHS and the collective voice of the 15 health innovation networks across England. They were originally established as Academic Health Science Networks (AHSNs) by NHS England in 2013 to help adoption and spread of innovation at pace and scale to improve health outcomes and generate economic growth.

The Network provides a range of practical support to healthcare organisations and businesses. This includes connecting them with the NHS, academic organisations, local authorities, charities, and industry to facilitate change across health and social care economies.

Innovation support is offered at each Network, designed to support innovators at every stage of development to help them understand NHS challenges and connect them to the help they need to succeed.

[Find your local HIN.](#)

Set the ambition early

Clarity about the intended scale of spread is essential. Whether the goal is to expand across a single trust, an integrated care system, or nationally, this ambition should be defined early and revisited regularly.

Setting the scale from the outset helps shape decisions about the:

- Level of investment required
- Design of implementation tools
- Scope of evaluation and data collection
- Structure of partnerships and governance

The ambition should be grounded in evidence but not limited by it. A well-run pilot should be designed with scale in mind, even if the initial implementation is small.

Stakeholder mapping and engagement

No innovation succeeds in isolation. Effective implementation and spread depend on engaging the right people, at the right time, in the right way.

Stakeholder mapping is a critical first step. This involves identifying:

- Who will use the innovation (e.g. clinicians, patients, administrators)?
- Who will fund or approve it (e.g. finance leads, procurement teams, boards)?
- Who will support it (e.g. IT, HR, transformation teams)?
- Who will be affected by it (e.g. service users, carers, partner organisations)?

Once identified, stakeholders should be engaged early and meaningfully. This means involving them in shaping the vision, co-designing solutions, and planning for implementation. Engagement should be ongoing – not a one-off consultation – and tailored to each group's needs, concerns, and influence.

Building coalitions of support is especially important when scaling across organisations. Shared ownership, mutual accountability, and open communication are the foundations of successful collaboration.

RACI framework

The [RACI framework](#) is a simple matrix that clarifies who is **responsible**, **accountable**, **consulted**, and **informed** for every task in a project.

It helps establish clear communication, improve decision-making, and ensure accountability for tasks or deliverables.

Involve future adopters from the start

Future adopters should not be passive recipients of innovation – they should be active participants in shaping it. Involving them early builds ownership, surfaces local insights, and increases the likelihood of wider adoption.

This involvement can take many forms:

- Representation on steering groups
- Co-development of evaluation frameworks, training, and implementation materials
- Participation in early testing or feedback cycles

Engaging future adopters also helps identify variation in readiness, infrastructure, and governance – allowing for tailored support and realistic planning.

Communications and engagement

Effective spread depends on trust, and trust is enabled by credible, relatable communication. Care should be taken to ensure that communications and engagement are two-way, with the space for concerns or misperceptions to be raised and addressed as quickly and effectively as possible.

Communication is particularly important during the initial stages of any spread process to raise widespread awareness and encourage engagement with the project. This initial momentum can be sustained by planning for a regular “drumbeat” of communications celebrating successes and reminding people of the common purpose of the work.

Advocates who can speak to the value of the innovation from lived experience are a compelling way to build trust in the work.

These advocates might include:

- Clinicians who have used the tool in practice
- Patients who have benefited from the change
- Operational leaders who have seen improvements in flow or efficiency

Communications packs can also be developed once for use by all stakeholder organisations to ensure consistency in messaging and efficiency of production. However, the packs should include a set of materials tailored for different audiences and channels, using stories, data, and visuals to bring the innovation to life.

Standardise what you can do once

Some elements of implementation can and should be done once, centrally or regionally, to avoid duplication and ensure consistency. These include:

- **Procurement specifications** that define minimum requirements and standards (including interoperability and data standards)
- **Outcomes frameworks** that align evaluation across sites
- **Business case templates** that support local decision-making
- **Communication materials** to ensure consistency in messaging
- **Training materials** that can be adapted but do not need to be reinvented

To do this effectively, it's important to involve a broad group of stakeholders – including users, payers, and enabling infrastructure teams – from the outset. This ensures that shared tools are relevant, usable, and aligned with system priorities.

Understand local governance and decision-making

Every organisation has its own governance structures, decision-making processes, and key stakeholders. Mapping these early helps avoid delays and ensures that the right people are engaged at the right time.

This includes understanding:

- Who needs to approve adoption (e.g. digital boards, clinical governance groups)
- Which meetings or forums are relevant
- What documentation or evidence is required

A clear map of governance pathways for all future adopters allows spread partners to plan engagement strategically and avoid unnecessary bottlenecks.

Develop implementation tools with early sites

Initial test sites are a valuable source of insight. Their experiences can inform the development of practical tools that support wider adoption, such as:

- Step-by-step implementation guides
- Training and onboarding materials
- Troubleshooting FAQs

- Case studies and testimonials

These tools should be co-created with early adopters and tested for usability before being shared more widely. It is important to determine any differences between initial test sites and future adopters as this will inform any adaptations required to the implementation tools. Digital infrastructure and maturity are key areas to map.

Build communities of practice

Communities of practice provide a space for shared learning, peer support, and continuous improvement. They help maintain momentum, surface challenges, and spread innovation through relationships as well as processes.

These communities can be formal or informal, virtual or in-person, and may include:

- Regular learning sessions or webinars
- Online forums or discussion groups
- Shared resource libraries

A strong community of practice can be one of the most powerful drivers of sustained spread. However, it only works for adopters that are already actively committed. Alternative approaches are required for those who are not, where more one-to-one engagement and mapping of the barriers/enablers might be required to determine the right adoption support mechanisms.

Use data for improvement and benchmarking

Data is essential for demonstrating impact, identifying variation, and guiding improvement. Spread efforts should include:

- Agreed metrics for success
- Baseline and follow-up data collection
- Dashboards or reports that allow for benchmarking across sites

Data should be used not just for accountability, but for learning. This often includes helping teams understand what's working, where support is needed, and how to adapt.

Use frameworks to guide investment

The frameworks mentioned in part 3 - such as NASSS, NPT, and COM-B - can help identify where to focus time and resources during spread. They support structured reflection on:

- Where complexity lies
- What behaviours need to change
- What systems and supports are required

Using these frameworks helps ensure that spread efforts are targeted, efficient, and responsive to real-world conditions.

Take a proactive approach to risk management

Scaling innovation involves risk—but risk can be managed. A proactive approach includes:

- Identifying potential risks early (clinical, financial, operational)
- Developing mitigation plans and escalation routes
- Building in feedback loops to detect issues quickly
- Ensuring roll-back options are available if needed

Risk management should be embedded in the spread strategy, not treated as a separate or reactive process.

Implementation requires balancing many factors in a local context

Accelerating the spread of innovation in health and care is a nuanced endeavour that goes beyond simple replication. Success depends on clear ambition, robust partnerships, and the involvement of both early adopters and future implementers through the process. Spread partners, such as health innovation networks, play a pivotal role in coordinating activities in complex change processes by managing knowledge transfer, and ensuring lessons learned inform broader adoption. Early and meaningful stakeholder engagement – supported by effective communication and co-developed tools – lay the foundation for sustainable change.

Standardising key elements such as procurement specifications and outcomes frameworks increases efficiency while allowing for local adaptation. Building active communities of practice, leveraging data for improvement, and adopting structured frameworks like NASSS help maintain momentum and adaptability. Risk management must be proactively embedded, with clear mitigation plans and feedback loops. A thoughtful, context-sensitive approach enables scalable, sustainable, and equitable innovation across complex healthcare systems.

Rogers' Diffusion Model

Innovation attributes

Successful innovations tend to score highly on Rogers' five key attributes: relative advantage, compatibility, complexity, trialability, and observability. In health and care, innovations that are easy to trial and visibly improve outcomes or workflows often gain traction more quickly. However, challenges can arise when the perceived advantage is unclear, or when integration with existing systems and processes is complex or resource intensive.

Stages of adoption

Most health innovations begin with a small group of early adopters – organisations or individuals with a strong appetite for change and the capacity to experiment. As confidence builds, adoption can accelerate into the early majority, particularly when supported by evidence, peer endorsement, and system-level alignment. However, spread often slows as innovations reach more cautious or resource-constrained settings, requiring tailored support and reassurance.

General factors influencing spread

Rogers identifies five key elements that shape the diffusion of innovation: the innovation itself, the adopters, communication channels, time, and the social system. In practice, clinical and operational champions play a vital role in influencing peers, sharing learning, and building trust. Communication strategies that use real-world stories, data, and peer networks are often more effective than top-down messaging.

Procurement implications

As innovations move beyond early pilots, procurement strategies should reflect the need for partnerships, not just products. This means selecting suppliers who are willing to co-develop, adapt, and support integration across diverse settings. It also means considering the maturity of the market, the pace of product development, and the supplier's ability to evolve with the needs of the system. Procuring a partnership supports long-term success and aligns with Rogers' emphasis on the importance of relationships and social systems in driving adoption.

Working together to make it happen

Innovation in health and care is not a luxury – it's a necessity. The pressures facing our system demand new ways of working, new tools, and new partnerships. But inventions alone are not enough. We must also commit to implementation, evaluation, and spread.

This document has outlined a practical, people-centred approach to transformation. It recognises the complexity of the system, the diversity of stakeholders, and the need for balance at every stage. It also highlights the importance of learning, adaptation, and shared purpose.

The call to action is clear:

- **For innovators:** Design with users, plan for scale, and build in evaluation from the start
- **For clinicians and staff:** Share your insights, challenge assumptions, and help shape the future of care
- **For patients and communities:** Be active partners in co-design, feedback, and advocating which changes should be prioritised to happen early
- **For system leaders:** Create space for experimentation, invest in infrastructure, and support responsible adoption
- **For research organisations:** Prioritise implementation research and allocate a greater proportion of resources to understanding what works in practice
- **For employers and training organisations:** Ensure training in transformation, evaluation and digital fundamentals are built into training for new staff and support is available for existing staff to broaden their skills in these areas

Together, we can move from isolated pilots to system-wide change – building a health and care system that is more responsive, equitable, and sustainable, through shared effort, practical action, and continued learning.

Case study

Ambient Voice Technology (AVT) in London

In 2024, there were many unknowns about whether ambient voice technology (AVT) could effectively transcribe and summarise clinical consultations in UK settings. Questions included:

- Which specialties would benefit most?
- What types of consultations were suitable?
- Would transcription be accurate in noisy environments?
- Would patients consent to AI listening in?

To address these, a series of [engagement events](#) were held with patients, clinicians, and technology staff. A finance roundtable helped shape the business case. One AVT product was procured for the pilot, recognising that it had enough features to be applicable across similar tools and provide lessons for implementation. This was particularly important as the field was developing fast all the tools would develop additional functionality during the period of the pilot.

The pilot ran across eight sites – including acute, community, mental health, primary care, and ambulance services – supported by NHSE London, with research led by GOSH and benefits frameworks developed with the Health Innovation Network. The pilot helped identify where AVT worked well and where it didn't, informing the rollout of AVT in other healthcare settings and geographies. The [T.E.S.T. framework](#) was developed to support sites in their selection of the best technology.

This case illustrates how a well-designed pilot can de-risk adoption, build confidence, and lay the groundwork for system-wide change.