Mindset-XR Innovation In Mental Health Roadshow

South West England

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Beyond the Pilot Phase:

Boundary Spaces and the Journey from
Innovation to Implementation

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It has been said that the NHS has **more pilots than British Airways...**

...and like many aviation analogies, this one lands uncomfortably close to the truth.

We pilot, we prototype, we prove concepts work.
But what happens after the pilot lands?

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The Implementation Challenge

📊 What We Know:

- Most healthcare innovations **succeed in pilots**

- Most **fail to scale** beyond the testbed

- The gap between "proof of concept" and "business as usual" is **vast**

⚡ Current NHS Reality:

- Tightest budget constraints in decades

- Every penny requires robust justification

- ROI isn't optional—it's **mandatory for survival**

- Staff fatigue from endless "transformational" initiatives

- Pressure for immediate, measurable impact

We're excellent at creating pilots. The UK leads in healthcare innovation research. Yet we struggle with the unglamorous work of making innovations stick.

> *"The NHS remains in the foothills of digital transformation"*
>
> — Darzi Review (2024)

This isn't due to lack of innovation, it's due to our struggle with systematic implementation.

We need frameworks that bridge the gap between brilliant ideas and essential operational delivery

Introduction to Boundary Spaces

Definition and Concept

The success of the innovation process no longer hinges solely on the ingenuity of inventors or engineers but increasingly on the integration of user insights and experiences. But questions arise— How to hear, articulate, amplify and co-create with users?

"A boundary space is a physical and conceptual environment where diverse stakeholders can collaborate to enhance healthcare services through innovation. It serves as a focus for conversations and experiments around digital innovation with a wide variety of stakeholders."

Bessant, Halkes & Peres, 2024

◆ Key Functions

→ Facilitates exchange between patient, clinical & technical expertise

→ Creates "conditions for transformation" through multiple arrangements

→ Enables embodied knowledge exchange beyond cognitive approaches

→ Provides safe environment for experimentation & prototyping

→ Navigates tension between technology and human values

◆ Core Characteristics

◈ Interstitial zone between different knowledge domains, practices, and perspectives

◈ Designated arena where conversations and experiments take place across boundaries

◈ Physical manifestation of innovation intent within institutional structures

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MEETING THE INCLUSION CHALLENGE IN INNOVATION

GIVING VOICE TO USERS

Edited by Tatiana Iakovleva, Elin M. Oftedal and John Bessant

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DE GRUYTER STUDIES IN INNOVATION AND ENTREPRENEURSHIP

"Having a physical focus, an innovation hub, becomes an important element in maintaining interest and activity."

Theoretical Framework - The Three-Way Interface Model

Patient / User Experience
Lived experience of healthcare journeys

- Experiential knowledge often overlooked in technical innovation
- Personal needs, preferences, and contexts
- Tacit understanding of what makes care 'work' in real life

Clinical Expertise
Professional healthcare knowledge

- Workflow and safety considerations
- Integration requirements with existing practices
- Service delivery insights from frontline experience
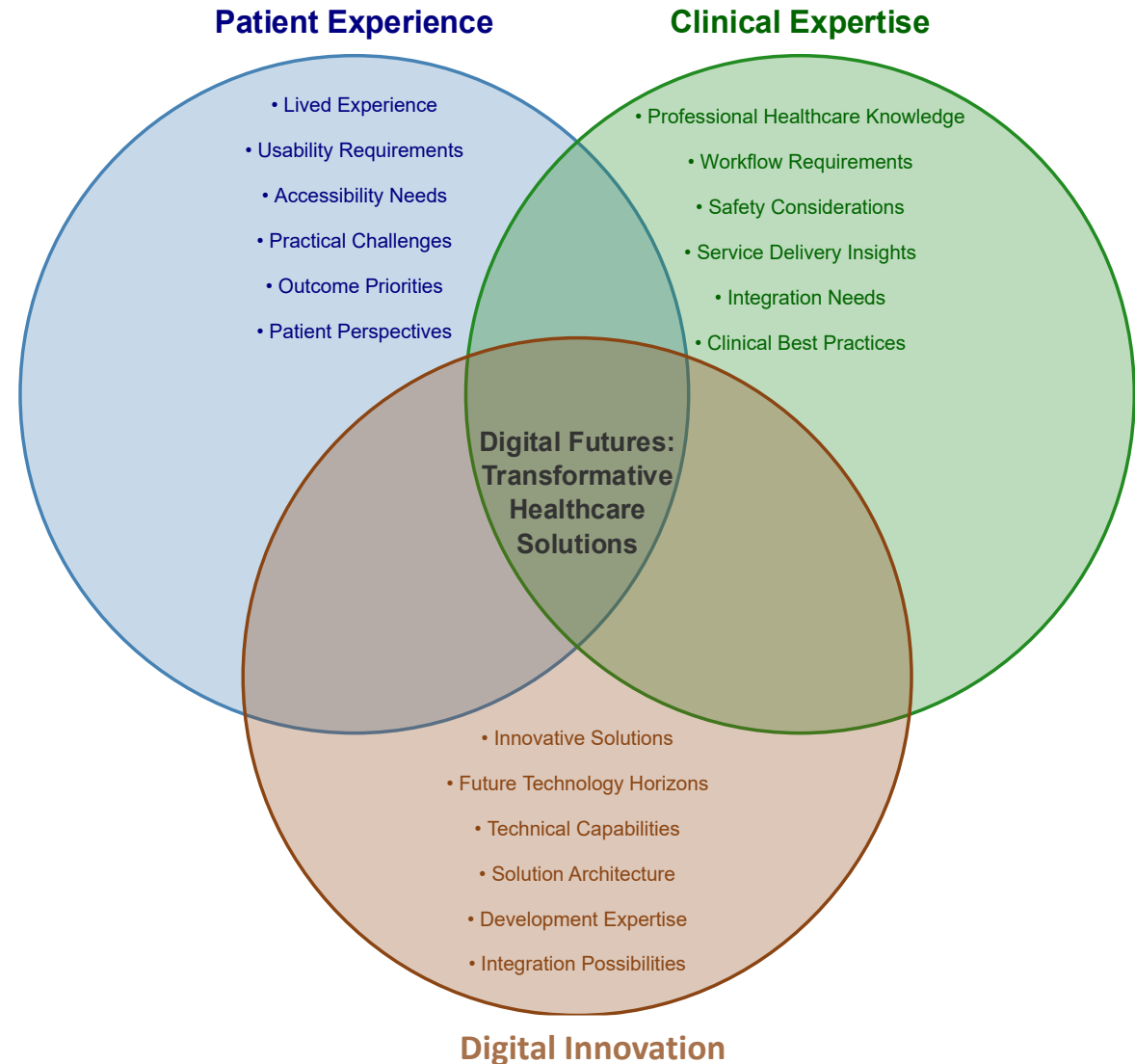
Digital Innovation
Technical capabilities and emerging technologies

- Development expertise and solution architecture
- Integration possibilities with existing systems
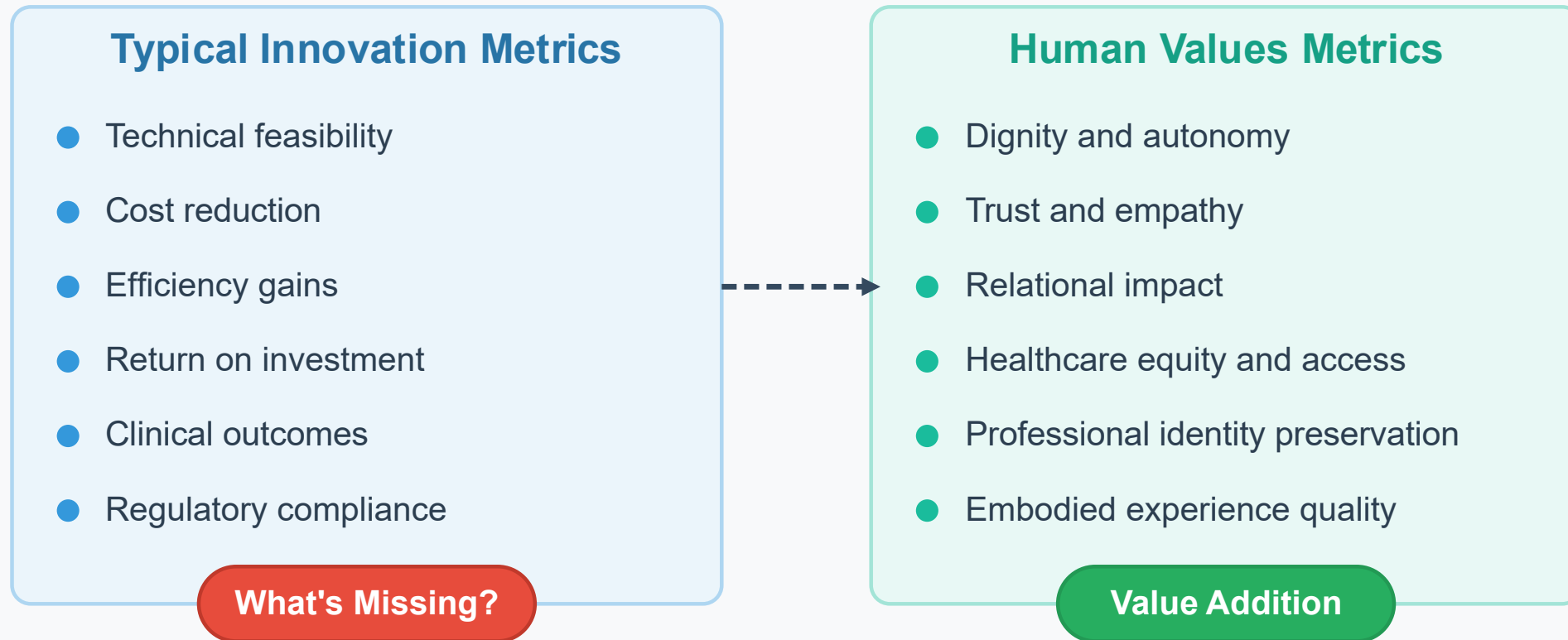- Future technology horizons and possibilities

The Transformative Intersection
Solutions that emerge when all three perspectives are integrated

- Balance of technical capability with human needs
- Innovations that work within real-world constraints
- Sustainable adoption through stakeholder buy-in

Patient Experience

- Lived Experience
- Usability Requirements
- Accessibility Needs
- Practical Challenges
- Outcome Priorities
- Patient Perspectives

Clinical Expertise

- Professional Healthcare Knowledge
- Workflow Requirements
- Safety Considerations
- Service Delivery Insights
- Integration Needs
- Clinical Best Practices

Digital Futures: Transformative Healthcare Solutions

Digital Innovation

- Innovative Solutions
- Future Technology Horizons
- Technical Capabilities
- Solution Architecture
- Development Expertise
- Integration Possibilities

Human Values: The Missing Metric in Healthcare Innovation

Typical Innovation Metrics

- Technical feasibility
- Cost reduction
- Efficiency gains
- Return on investment
- Clinical outcomes
- Regulatory compliance

What's Missing?

Human Values Metrics

- Dignity and autonomy
- Trust and empathy
- Relational impact
- Healthcare equity and access
- Professional identity preservation
- Embodied experience quality

Value Addition

*"Innovation isn't meaningful simply because it's technically impressive or cost-effective.
It becomes transformative when it preserves and enhances human values in healthcare."*

The Innovation Challenge in Healthcare

Healthcare innovation today exists at the intersection of two contrasting narratives that shape how we approach change and technology.

Contrasting Innovation Narratives in Healthcare

Disruption Narrative

- Digital Technology
- Progress & Modernisation
- Efficiency & Speed
- Technical Mastery

The Boundary Space Challenge

How to integrate these approaches

Preservation Narrative

- Human Connection
- Precaution & Care
- Relationships & Support
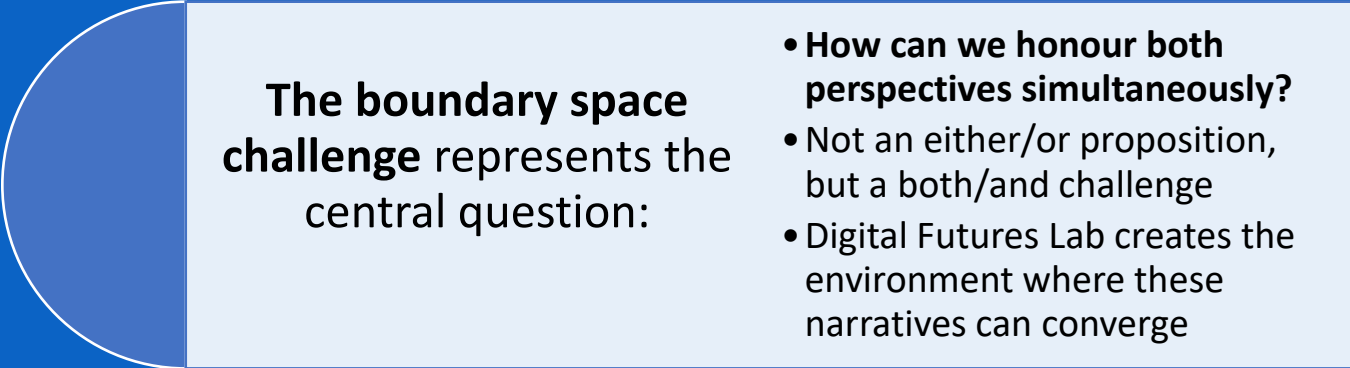- Context Awareness

"The Digital Futures Lab serves as a boundary space where these narratives converge"

The Disruption Narrative emphasises technological advancement and efficiency:

- Digital technologies as drivers of progress
- Modernisation as a pathway to improved healthcare
- Speed and efficiency as primary measures of success
- Technical mastery and control of outcomes

The Preservation Narrative focuses on human dimensions and relationships:

- Human connection at the heart of healthcare delivery
- Precautionary approaches that consider unintended consequences
- Relationships and support networks as crucial infrastructure
- Awareness of social and environmental contexts

The boundary space challenge represents the central question:

- **How can we honour both perspectives simultaneously?**
- Not an either/or proposition, but a both/and challenge
- Digital Futures Lab creates the environment where these narratives can converge

Within the NHS, this challenge is intensified by what we might call a 'punctuated strategic equilibrium' – periods of focused innovation followed by necessary attention to operational priorities.

Case Study: CUREO VR – Chronic Pain Implementation

Pilot to Practice with Phillipa Newton-Cross and the Pain Rehab Team

- **The Challenge:**
- Chronic pain patients with central nervous systems "on high alert and hot-wired"
- Traditional approaches difficult when patients in constant fight-or-flight response
- Need for alternatives to medication-based pain management

- **Implementation Journey:**
- 18-month programme working with ~50 patients with chronic pain and severe anxiety
- 6-week VR therapy courses using CUREOsity software
- £29,000 funding from League of Friends to support clinical pathway
- Only NHS Trust in UK using CUREO VR therapy software

The importance of patient testimonials

Real Patient Outcomes:

• David Malpas (progressive myopathy): "It enabled me to move my body in different ways that I didn't know how to"

• Stuart Spray: Stopped taking codeine after 23 years, "When I put one of these headsets on, I just disappear"

• Emma Stevens: "When I was working with the headset and doing my therapy I wasn't thinking about the pain, it just took me somewhere else where I could do things without discomfort. It is just so helpful."

• Next Stage: XR technology deployed in patients' homes, aligning with NHS 10-year plan shift from hospital to community care, analogue to digital, disease management to prevention = Digital social prescribing

The Implementation Journey: From Pilot to Practice

- **Phase 1: Boundary Space Stakeholder Pilot** *(0-6 months)* Three-way interface model in action: Patient experience (chronic pain lived reality) + Clinical expertise (pain physio protocols) + Digital innovation (Cureo VR technology) - creating safe space for experimentation across traditional boundaries

- **Phase 2: Business Case Development** *(6-12 months)*
£29k League of Friends funding, economic analysis, outcome frameworks

- **Phase 3: Governance Clearance** *(9-15 months)* Information governance, clinical safety review, executive approval

- **Phase 4: Staged Deployment** *(12-18 months)* Controlled rollout to ~50 patients, staff training, technical support systems

- **Phase 5: Review & Evaluation** *(18-24 months)* Outcome analysis, cost-effectiveness assessment, staff adoption review

- **Phase 6: Strategic Roll-out** *(Current)* Regional recognition, media coverage, service integration, patient champions, ROHKEA VR (12-week CBT pain management programme) trial

- **Phase 7: Future Expansion** *(Planned)* ROHKEA VR rollout, broader community deployment, commercial partnerships, VRiT Implementation HUB @Ashburton Health and Wellbeing Centre

Phase 1
Boundary Space Stakeholder Pilot
Three-way interface model in action

Phase 2
Business Case Development
£29k funding, economic analysis

Phase 3
Governance Clearance
Information governance, clinical safety

Phase 4
Staged Deployment
Controlled rollout to 50 patients

Phase 5
Review and Evaluation
Outcome analysis, cost-effectiveness

Phase 6
Strategic Roll-out
Regional recognition, service integration

Phase 7
Future Expansion
ROHKEA trial, commercial partnerships

Success Factors:
Boundary space co-design throughout
Systematic governance progression
Economic case refinement
Clinical safety maintenance

The Uncomfortable Truths About NHS Implementation

Infrastructure Reality:

- Network capacity often insufficient for high-bandwidth XR applications
- Device procurement cycles can take months even after approval
- Integration with existing clinical systems requires months of technical work
- Technical issues arise, so onsite technical support is essential

The "Innovation Weather":

- Strategic priorities change frequently
- Navigating ways around unsupportive processes
- What's supported this year may not be next year
- Information governance red-tape for VR therapy approval

Governance & Regulatory Bottlenecks:

- Multiple approval layers: clinical safety, procurement, executive sign-off
- Medical device regulations add complexity for any XR hardware/software
- Each change request can restart parts of the process

The Money Reality - Even When You Save Money:

- Demonstrable benefits don't guarantee continued funding
- Still fighting for recurrent funding despite proven outcomes
- Annual budget cycles conflict with long-term innovation investment needs
- Key champions change, momentum dies

Staff & Organisational Challenges:

- Previous bad experiences create lasting barriers
- Crisis-driven culture means innovation gets deprioritized during operational pressures
- Digital confidence varies significantly - senior decision-makers often need most support, and will learn better experientially
- Change resistance from established practices

Human Factors:

- Time pressures in clinical environments
- Competing priorities and "pilot fatigue"

VR Champions: Embedding Lived Experience in Co-Design

The Challenge: Traditional patient involvement is often tokenistic - single consultations or feedback sessions that don't influence ongoing development.

Our Innovation: VR Champions programme recruiting patients and service users as regular stakeholders and testers.

Who Are VR Champions? Volunteers with lived experience of long-term health conditions including chronic pain, mental health challenges, and mobility limitations.

What They Do:

- Regular co-design and development workshops with XR products
- Real-world testing providing data outputs and qualitative feedback across diverse health conditions
- "VR buddy" support for new patients experiencing immersive therapy
- Service evaluation and research project involvement
- Community building and peer support networks

Recognition and Reward:

- **Own VR headset** for home testing and continued therapy access
- **Full travel expenses** and **vouchers** for time contribution
- **Formal volunteer supervisor support** and ongoing training opportunities
- **Skills development** and community building opportunities
- **Equipment access** enabling continued personal benefit whilst contributing expertise

The Impact:

- **Authentic** patient voice embedded throughout development cycle across diverse conditions
- Testing data **enriched** with varied lived experience contexts and accessibility insights
- **Enhanced** adoption rates through peer advocacy from properly equipped champions
- **Sustainable** model where contributors benefit personally whilst improving services for others

What's next – embedding boundary spaces into everyday NHS clinical pathways

**VR Summer Series – One Aim, Many Voices**

- **Unite** – VR Champions, clinicians, researchers, and developers around one shared vision.

- **Begin** – Start small, be bold, spark momentum.

- **Sustain** – Make it a habit, gather insights, fuel creativity.

- **Grow** – Learn from mistakes, refine, and move forward together.

- **Achieve** – Together we make the Three-Way Interface Model real.

Authenticity in the NHS: Be true to who you are. Bring your brilliance. Let the bigger purpose lead you."

When heart and innovation meet, we create more than technology — we create pathways of healing, dignity, and hope for every individual living with pain or distress."

Innovation to Implementation – providing a blueprint!
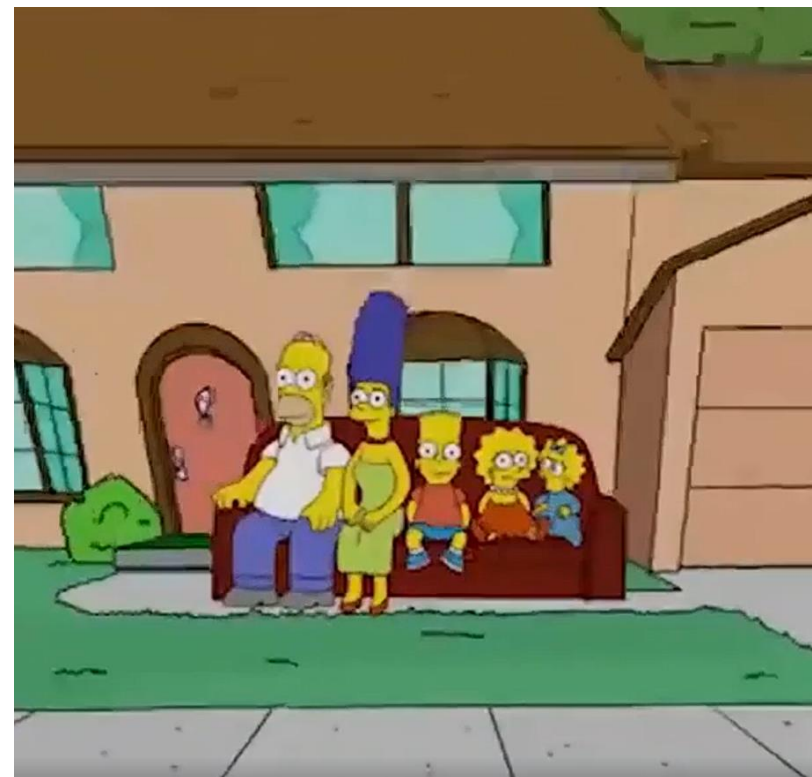
From Rogers' Theory to Healthcare Innovation Scaling

Four Critical Factors for Healthcare Innovation Success

Rogers' Diffusion (1962)

- **Innovation Attributes:** Relative advantage, complexity, compatibility
- **Communication Channels:** How information spreads
- **Social System:** Organisational environment
- **Time/Adopter Categories:** Early adopters → Late majority
- **Decision Process:** Linear adoption pathway

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Healthcare Framework (2025)

- The Innovation
- The Champion
- The Adopter
- The Environment

Four-Factor Implementation Framework

The Innovation   1

- Does it solve a real problem worth solving?
- Is the value proposition clear?
- Can it be understood and used easily?
- Does it deliver clear ROI/cost-effectiveness?

The Champion   2

- Credibility and trust in the innovation champion
- Clinical leadership and peer influence
- Track record of successful implementations

The Adopter   3

- Digital literacy and confidence levels
- Readiness for change and innovation appetite
- Existing workflow pressures and competing priorities

The Environment   4

- Organisational culture and support systems
- Resource availability and strategic alignment
- "Innovation weather" - constantly changing priorities

The Innovation Ambidexterity Challenge

Healthcare organisations must simultaneously excel at two fundamentally different activities

Operational Excellence (Exploitation)

- Zero tolerance for error - patient safety is paramount
- Standardised protocols and evidence-based practice
- Regulatory compliance and risk mitigation
- Predictable, reliable service delivery

"First, do no harm" mentality

Innovation Excellence (Exploration)

- Experimentation requires accepting failure as learning
- Novel approaches challenge established protocols
- Regulatory uncertainty around emerging technologies
- Unpredictable outcomes and iterative development

"Fail fast, learn faster" mentality

John Bessant's Key Insight: The Fundamental Healthcare Innovation Paradox

Boundary spaces don't eliminate the tension, they make it productive. They create environments where both logics can coexist, enabling healthcare organisations to maintain their life-saving operational excellence whilst systematically exploring transformative possibilities.

"Two completely different worlds but what you want is to be both."

The NHS 10-Year Plan: Strategic Opportunities for XR

Three Fundamental Shifts Creating XR Implementation Pathways

1.

Hospital → Community Care

Neighbourhood Health Services - integrated care teams in every community

Investment Rebalancing - shift spending from hospital to community-based care

XR Opportunity:
Immersive home therapy, VR-enabled community centres, accessible therapeutic environments

2.

Analogue → Digital

Digital-First Access - technology as default pathway to care

Integrated Health Records - seamless data sharing across all providers

XR Opportunity:
Output into care record, embodied data collection, AI-enhanced virtual environments

3.

Sickness → Prevention

Early Intervention Services - identify and address risks before crisis

Population Health Management - proactive care using predictive analytics

XR Opportunity:
Early intervention, anxiety prevention, resilience building

Key Implementation Enablers

3% minimum spend
on service transformation (all NHS organisations)

NHS HealthStore
centrally approved and procured apps

Commercial partnerships
encouraged in community settings

Making Innovation Stick

Five Essentials for Sustainable Implementation

1. **Build Business Case Early**
Incorporate ROI calculations from pilot phase

2. **Address Digital Equity**
Consider varying digital literacy levels from design phase

3. **Create Sustainable Support Models**
Plan for ongoing technical support and training

4. **Design for Integration**
Map existing workflows and plan system integration

5. **Maintain Innovation Momentum**
Create feedback loops and continuous improvement processes

Five practical steps to transform pilot programmes into sustainable healthcare innovations

The Path Forward: From Pilot to Practice

Actionable Steps for Different Stakeholders

For External Innovators

- Start with economic value proposition, not technology features

- Engage boundary spaces to build stakeholder coalitions early

- Plan implementation journey through governance frameworks from concept phase

- Build digital literacy support into your deployment strategy

For NHS Staff

- Champion boundary space approaches in your organisation

- Engage with innovation governance processes - your clinical voice matters

- Share implementation stories (successes AND failures) to build collective learning

- Advocate for systematic approaches over ad-hoc pilot programmes

For System Leaders

- Create innovation governance frameworks that balance enthusiasm with implementation realism

- Invest in digital literacy development across all staff levels

- Support boundary space creation - physical manifestation of innovation intent

- Enable innovation ambidexterity through protected experimentation environments

Success means:

Moving beyond proof of concept to transformative healthcare delivery

"From 'that's a great pilot' to 'we can't imagine working without this'"

Thank you for attending!

Mindset-XR Innovation Support Programme roadshow evaluation form