



**SOCIO-TECHNICAL
CENTRE**

PUTTING PEOPLE AT THE HEART OF DESIGN

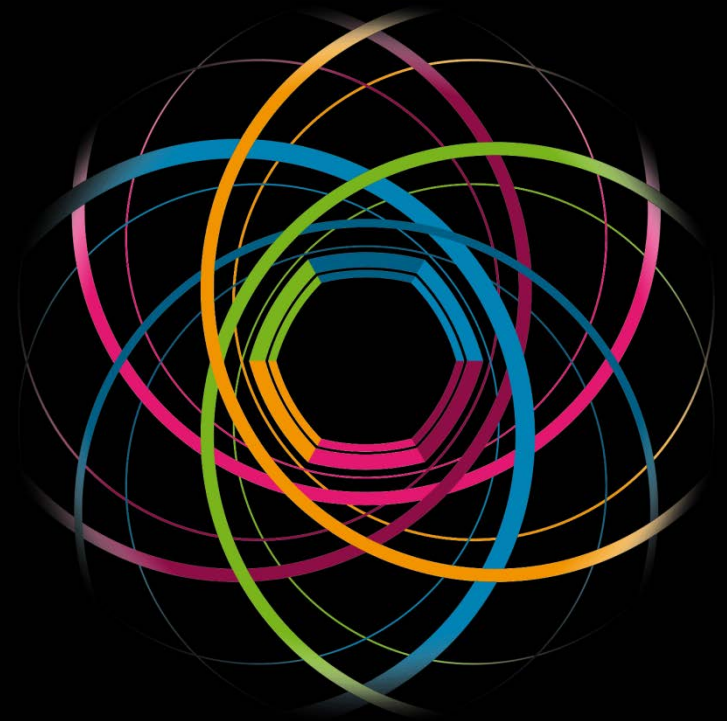


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A Socio-Technical Approach to the Design of Telehealth Business Models

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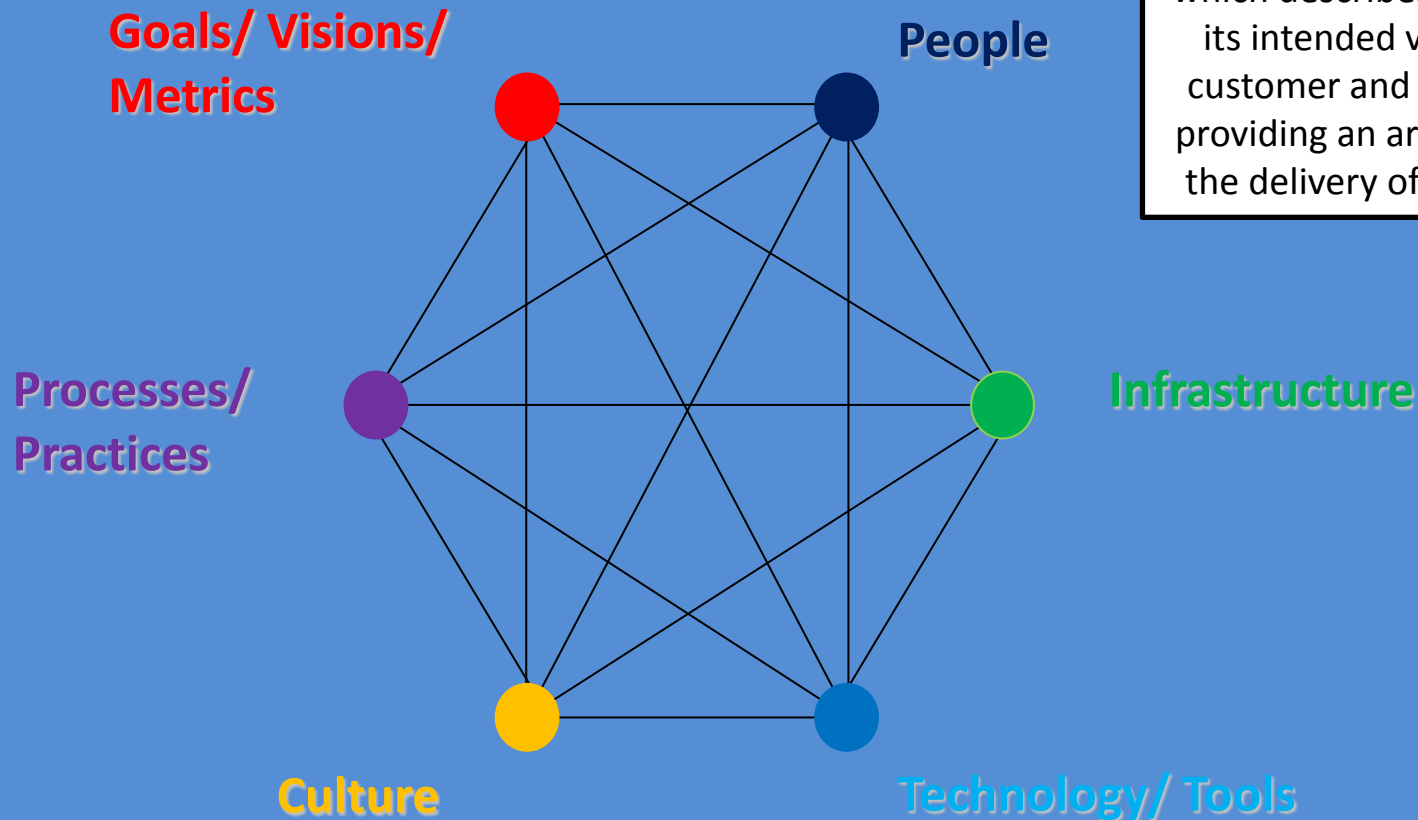
Socio-Technical Centre



Major Achievements (since 2009):

- Committed research **income** to date > **£6.1m**
- **Range of funders:** EPSRC, ESRC, Rolls-Royce, TSB, EU, Leverhulme, Yorkshire Water, Amey, Maersk, the Worldwide Universities Network (WUN), Arup
- **Strong corporate engagement:** Rolls-Royce, Arup, Yorkshire Water, Toyota, Argos, Bosch, Metropolitan Police, East Lothian and Borders Police, RIBA, RAE and DCLG
- Only group of social scientists in the **Rolls-Royce global network** of long term research partners
- Recently cited as one of **top 20** research centres in the **world** in our field (Cooper & Sparrow – Lancaster)
- Amongst the **most cited group** of organisational psychologists outside the US
- 2 new **MSc programmes** (n=21) and strong cohort of **PhD students** (n=25)
- **Ahead of** our academic and financial **targets**

Socio-Technical Approach



Business Model = A blueprint which describes a service, by its intended value for the customer and the provider, providing an architecture for the delivery of that service.



Organizational Change in the NHS

- Change can be costly and initiatives can often fail due to unforeseen barriers
- A high profile example is the **National Programme for IT (NPfIT)**
 - ❑ A 10 year IT change project in the NHS established in October 2002
 - ❑ Aim of introducing new IT services
 - ❑ Vision = “*delivering better care*” to patients; equipping staff with “*the latest information at their fingertips*”
 - ❑ It was abolished early in 2011 when it could not deliver against its original aims

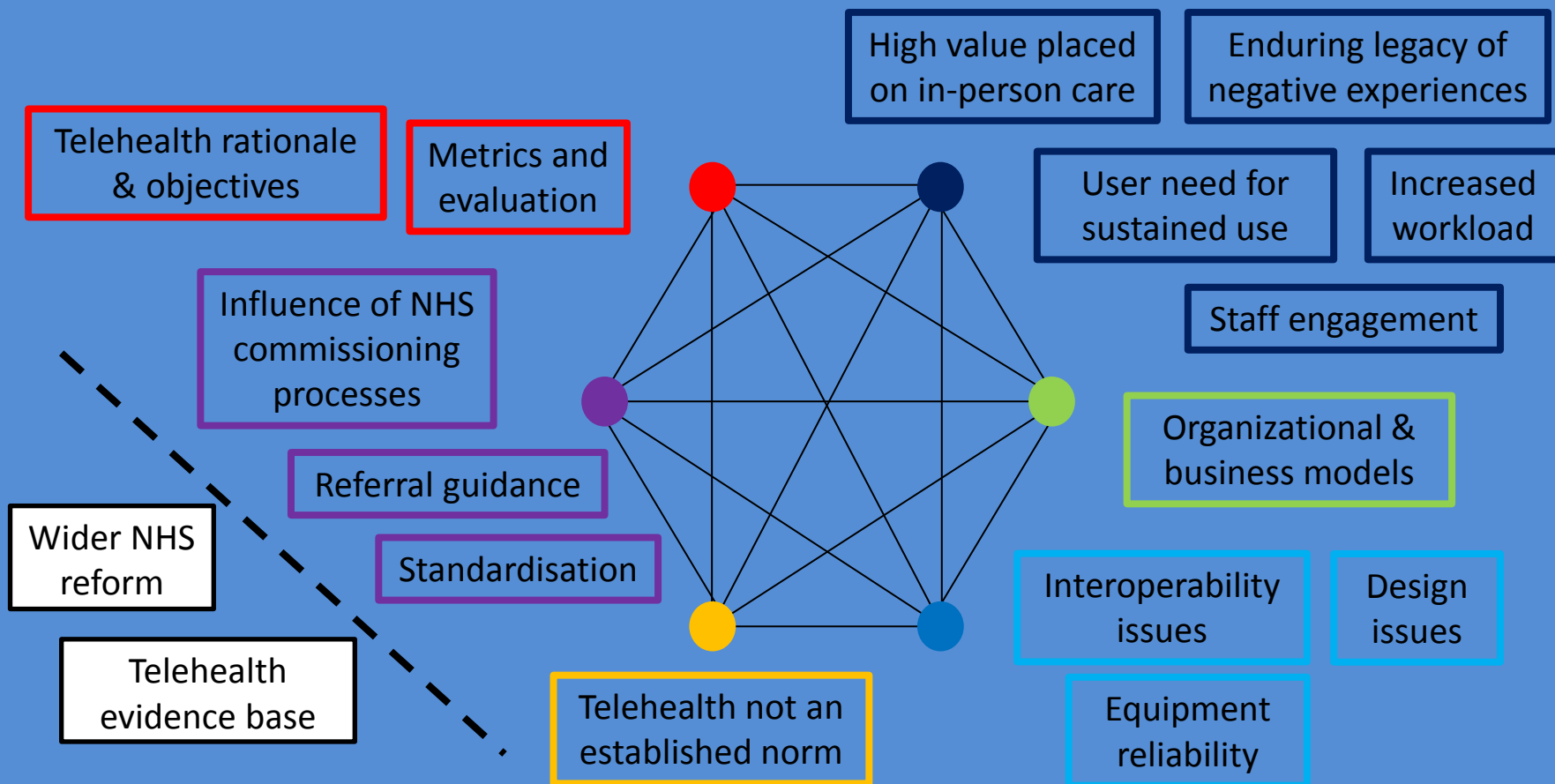
*“...let down the NHS and wasted taxpayers' money by **imposing a top-down IT system on the local NHS, which didn't fit their needs.**”*

Andrew Lansley, Health Secretary (2010-2012)





“As-Is” Shared Challenges





Organisation of Work

Different design choices were associated with different impacts:

In-house resourced	Externally resourced
Logistical challenges	Interoperability challenges
Development and training opportunities; new roles; greater skill sets	Issues of trust
Integration into current workload & existing services	Relationship management; knowledge
Flexibility in working practices	Increased standardisation
Issues around scale & sustainability	Enables greater scale

Scenario Planning



- Scenario planning defines the current ‘as is’ way of working and several alternatives or ‘to be’ scenarios are generated.
- The activity can:
 - ✓ innovate new ways of working
 - ✓ empower employees
 - ✓ bring together system stakeholders
 - ✓ improve design
- Incremental change to existing systems modelled, yet radical new approaches to telehealth business models and service designs are needed.
- By analysing uncertainties that were highlighted, which affect future business model choice, we can see several design dilemmas.





The Design Dilemmas

Institution as a service provider

Telehealth as a revenue stream

In-house resourcing

Fully integrated service

Outcomes based approach (long-term)

Technology platform

Passive approach

Individual consumerism (personal budgets)



Institution as service consumer

Telehealth as an expenditure

Out-of-house resourcing

Stand-alone service

Inputs based approach (short-term)

Single application technology

Active approach

Institutional based commissioning



The Alternative Futures



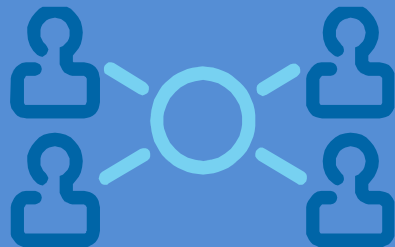
Hub Central



Thousand Flowers



Navigating Networks



Laissez Faire

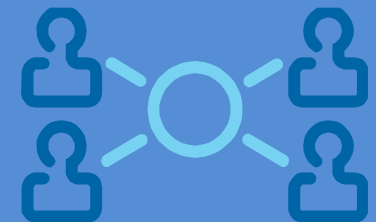


Alternative Futures Workshops ("To-Be")

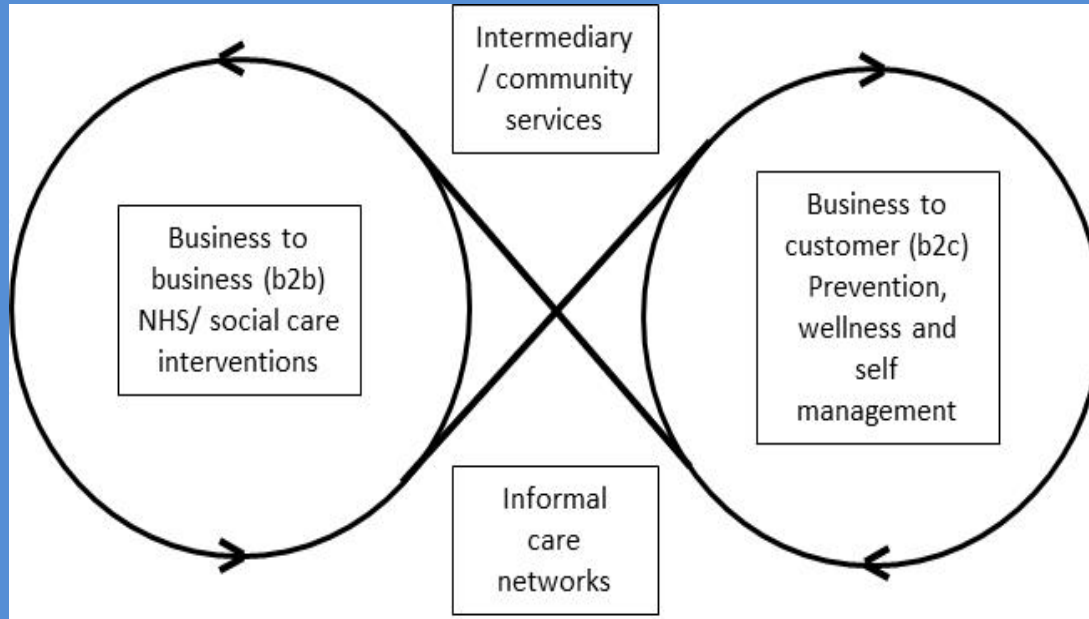


With NHS commissioner and care providers

- Key elements reported by sites to be important when designing telehealth services reflected our design dilemmas e.g., bespoke vs. standardised care, preventative vs. curative etc.
- Preferred future = **hybrid** based on 2 futures. An element of statutory provision within a **hub structure** to standardise use, yet with a **network** hosted alongside to deliver a range of self-monitoring and healthy lifestyle interventions.
- General public; technology interoperability; organizational processes; patient data.



b2b and b2c Markets



- **Business to business (b2b)** – Suppliers sell to bulk purchasing businesses in the NHS/local authorities for social care interventions
- **Business to customer (b2c)** – Supplier sell direct to individuals/family members looking for support for prevention, wellness & self-management of health conditions

- Both markets will exist and telehealth will not mainstream from just one market; technology suppliers are required in both
- A **network** can act as a point between b2b and b2c markets
- Importance of **holistic socio-technical approach** to implementation of new business models

Final Project Stages



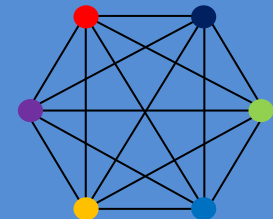
More industry engagement! (Phase 2 – currently ongoing)

- Take findings from NHS workshops direct to industry to:
 - Gather industry data on the alternate futures in order to understand industry/supplier perspective
 - Identify preferred ways of working together that can be taken forward
 - Develop ideas for new mutually acceptable business models



Tool development (Phase 3)

- Toolkit to draw together learning from across the project
- Aim to allow organizations to take a **socio-technical approach** to the development of telehealth services e.g., system diagnosis, scenario planning
- Improve implementation and design of business models





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APPENDIX



Phase 1 Interviews

Participant group

Research site	Front line staff	Managers, commissioners, business partners	Patients*	Carers	Total
1	23	4	13 (6)	2	42
2	17	7	6 (2)	-	30
3	19	7	8 (2)	-	34
4	21	7	12 (4)	-	40
Total	80	25	39	2	146

**Brackets indicate number of interviews carers contributed to*



Service Design

All telehealth services studied had common processes that together define how telehealth is delivered:

