

Mainstreaming Telehealth: Challenges of Current Business Models





Outline

- Define what is a business model
- Our approach
- Data collection and main findings
- Conclusions and future directions



What do we mean by 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.

(Bouwman, de Vos, & Haaker, 2008)



Rolls-Royce – ‘power by the hour’

- Rolls-Royce used to sell aero engines to airlines, then offer to service the engines through their life under a separate contract – giving two sources of income, but it meant the customer bore the cost of servicing the machines.
- Now Rolls-Royce sell ‘**power by the hour**’ – a new business model
- Under this arrangement Rolls-Royce sells **power of the engine** and the customer pays an agreed sum for **hours of power supplied**
- Benefits are that the customer knows the costs of that power for the lifetime of the engine
- Rolls-Royce now need to know the life cycle costs of the engine for the next 10+ years.

What was nice to know, has now become an essential part of operating the new business model





Impact of ‘power by the hour’

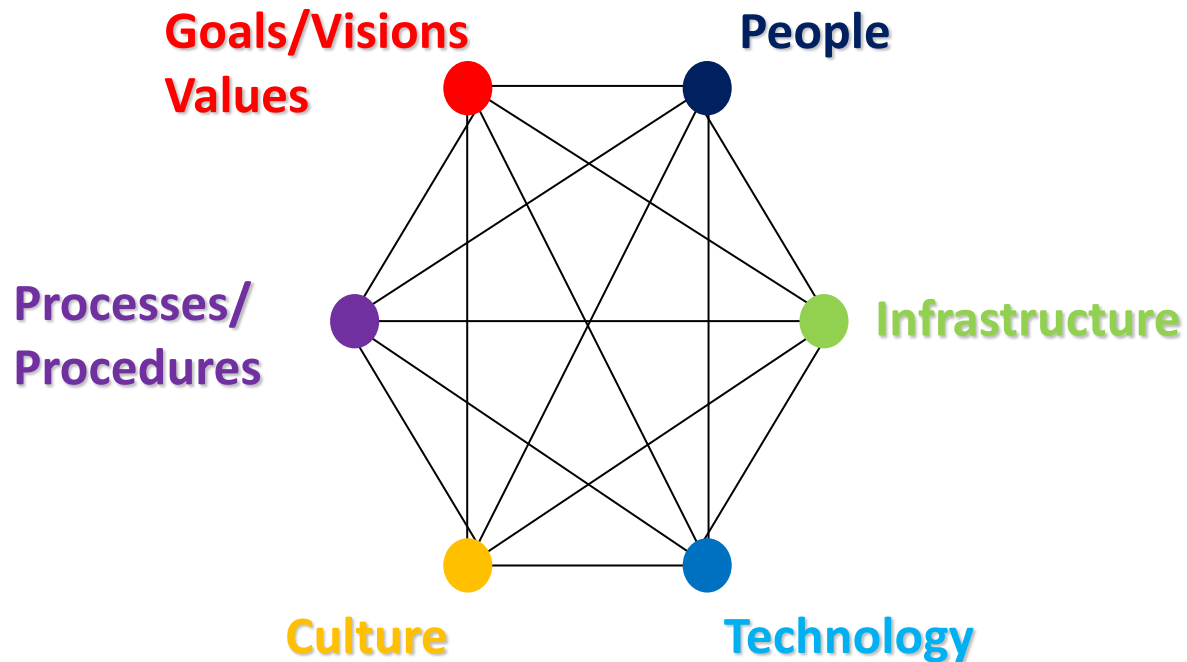
- This means the design community in Rolls-Royce now needs:
 - **New tools** that enable them to predict life cycle costs
 - **New roles** that include consideration of life cycle costs
 - **New relationships** with service engineers around the globe, that allow them to understand, analyze and reduce life cycle costs

The new business model has changed roles and working practices





Socio-technical approach





Interviews

| Research site | Participant group | | | | Total |
|---------------|-------------------|--|-----------|--------|-------|
| | Front line staff | Managers, commissioners, business partners | Patients* | Carers | |
| 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*





Workshops

- Two workshops per research site
- An average of 20 participants
- Objectives:
 - Determine vision for delivery of services
 - Share research findings
 - Identify priorities for change
 - Model change (scenario planning)

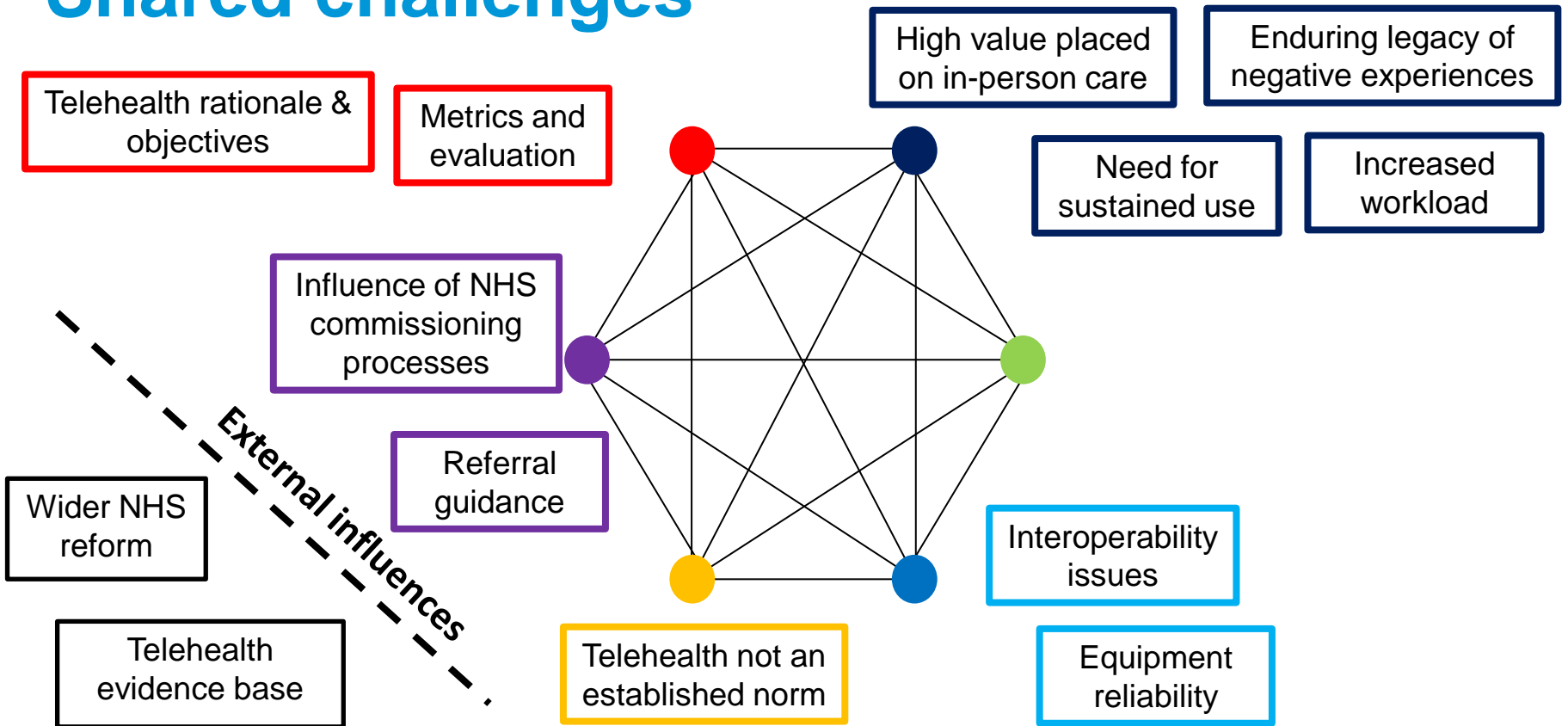


The telehealth services

- All based in the Yorkshire and Humber region
- Ranged in size from 40 to 200 units of equipment
- Used in the care of patients with long-term health conditions; predominately COPD and CHF
- Used by a range of different specialist nursing teams and community nursing



Shared challenges





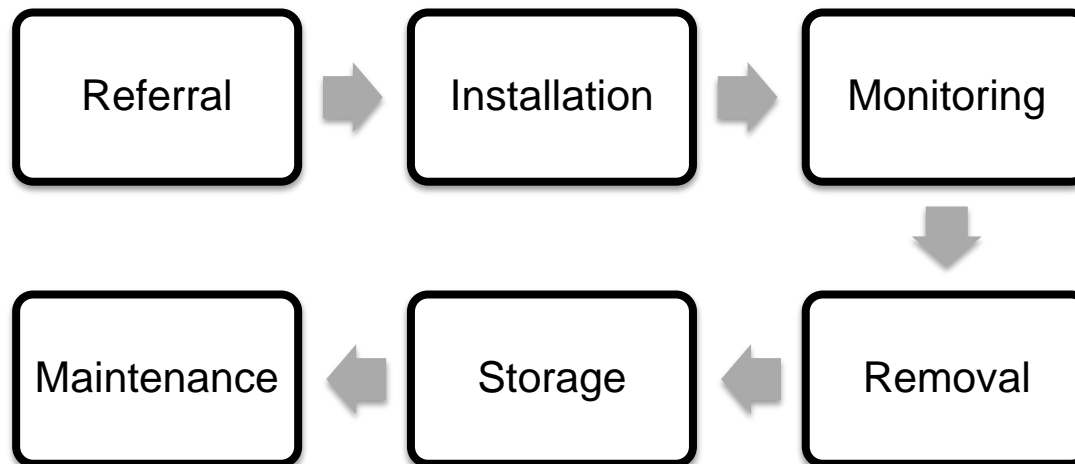
Shared enablers

- Telehealth champions
- Clear referral guidance
- Clear referral processes
- Having a range of telehealth solutions (flexible use)
- Step down solutions



Service design

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





Existing business models

Organization of Work

- Different design choices were associated with different impacts:

| In-house resourced | Externally resourced |
|--|-----------------------------|
| Logistical challenges | Interoperability challenges |
| Development and training opportunities | Issues of trust |
| Integration into existing workload | Relationship management |
| Flexibility in working practices | Increased standardisation |



Existing business models

Equipment

- 3 of the 4 sites had purchased based business models; these models were reported as;
 - Limiting flexibility over choice and volume of equipment
 - At risk of obsolete and aging equipment
 - Incurring variable equipment repair costs
 - Receiving poor on-going support from manufacturers
 - Having fixed upfront equipment costs



Conclusions

- Different business model choices have different impacts throughout the work system; these impacts have implications for the mainstreaming of telehealth services.
- Telehealth services are one part of a wider work system; to design better solutions all aspects of that system need to be jointly understood and co-designed.
- Workshop scenario planning revealed that the generation of new, innovative business models requires a move beyond examining existing services - this work will be achieved in phase 2.
- Created a one-off workshop which provides a framework for innovating future business models.





SOCIO-TECHNICAL CENTRE

Putting people at the heart of design



Thank you for listening

MALT project website: <http://malt.group.shef.ac.uk/>

Socio-Technical Centre website: <http://lubswww.leeds.ac.uk/stc/home/>

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