

Operation Room Black Box (ORBB)

What is Operation Room Black Box?

Operation Room Black Box (ORBB) is a newly created system, made to improve patient safety at hospitals. The system was implemented at Rigshospitalet in 2020 and is going to expand to seven different operation rooms in January 2024.

The Black Box is a device that films and records the operation rooms, enabling the operation team to retrieve the material after surgery, so that they can improve their work.

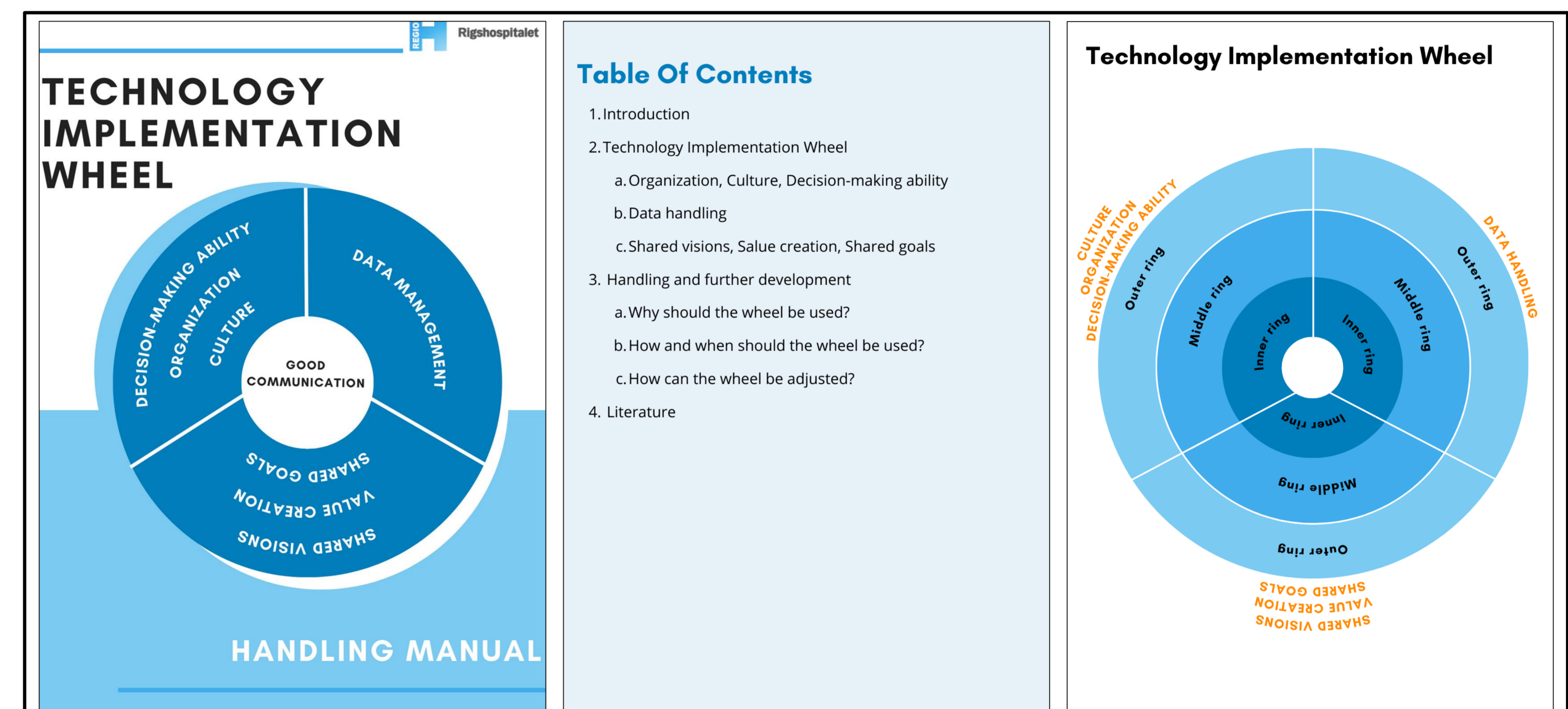
The implementation and idea has met some resistance amongst workers at Rigshospitalet, but why? In order to accommodate this issue as best as possible, we arrived at following problem statement to help us out:

How can the OR management facilitate a forum in which various stakeholders have the opportunity to negotiate the change management process of adapting OR Black Box, in order to ensure a positive technological development?

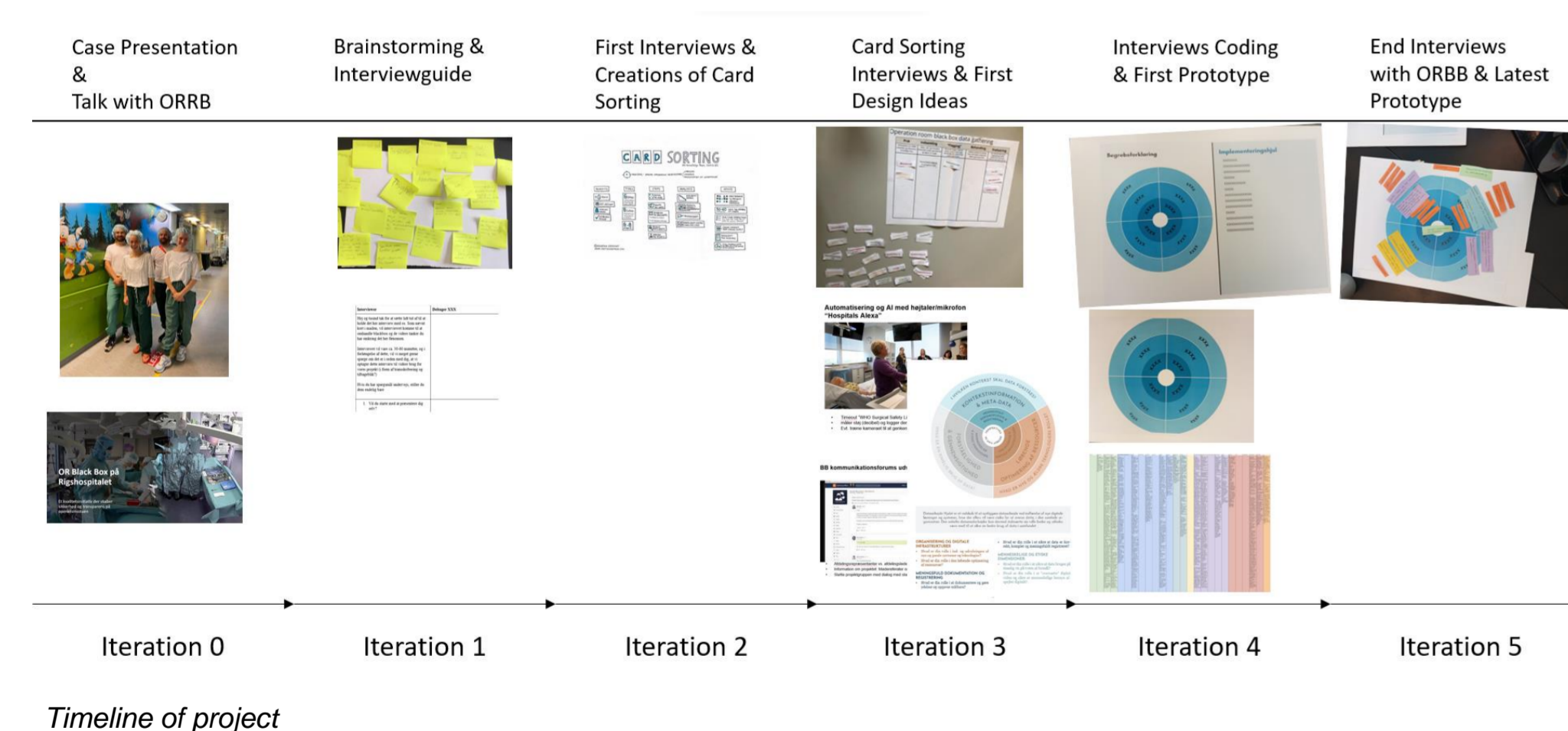
Background for our design / Methodology

- Preliminary case holder interview (semi structured)
- Desk research
- Two interviewers
- Development of interview artefact: card sorting
- Four interviews (semi structured)
 - Participatory Design
 - Short listing of ideas
 - Intervention design using ORRB flyer
- Brainstorming of technological solutions
- Data sorting: Coding of transcriptions
- New focus: From technological solution to implementation solution
- Development of first iteration of the TIW
- Closing design intervention with case holder
 - Participatory Design
 - Refinement of TIW

Technology Implementation Wheel



Prototype of Technology Implementation Wheel



Results

Missing technological implementation framework

- Mixed opinions; different sensemaking's of ORBB (usage and goals)
- Misalignment between value proposition of ORBB and needs of health workers: ORBB seen as low impact technology
- Communication gaps/challenges; in particularly the use of channels
- Lack of support from opinion leaders and key stakeholders
- Misalignment between innovation process and information process
- Unclear vision: Research project or quality project
- Regulatory and legal challenges
- Project scoping: difficult to implement complex technology in a large and conservative organization with limited innovation readiness
- Complicated cross inter-departmental organizational communication
- Early project critique complicated the implementation
- Organizational tensions between different roles: nurses and doctors are placed different in the hierarchy
- Poor technology adaptation of ORBB and involvement gap
- Negative frames/views of past technological implementation
- Costly project with disputes of resource allocation

Solution: Technology Implementation Wheel

How it works

The Technology Implementation Wheel is created to make the implementation of new technologies more visible, and to optimize the general implementation of innovative design and systems. The wheel should also highlight various aspects, to minimize oversights when implementing technology in an organization.

What can it do? - Purpose of TIW

Clarify worries of various stakeholders in implementation processes
 Create a collective language to discuss new innovations
 Act as a medium between innovators and users of new technologies
 Act as a point of departure for a constructive implementations process
 Give agency & accountability to various stakeholders

How to use

Workshops (2-10 people) facilitate constructive dialogue about technology implementations.
 Used as "collective other" when speaking of new innovation.
 Seeks facilitate a constructive framework for an inclusive implementation..

Structure of wheel

structured as three different sections, with 4 layers each.
 The three different sections symbolizes the decision-making ability, the data management and the shared vision of the innovations.
 The outer ring poses a questions to the users
 The middle ring poses the information needed to gather
 - The inner ring poses the core value needed
 NB: Our wheel (tabel 1.1), is a prototype of what will become the final result soon.

Theory & Literature behind the wheel

- (Critical) Sensemaking
- Accountability & Agency
- Participatory Design
- Design Intervention
- Business Model Canvas
- Business Model Innovation
- Frames
- Technology Adaptation
- Data Driven Workflows
- Technological Embeddedness