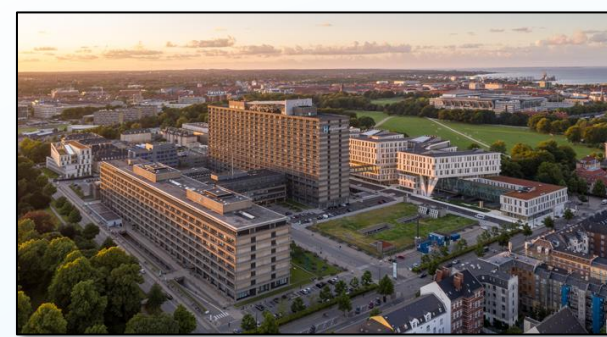


Assessing trust in healthcare data

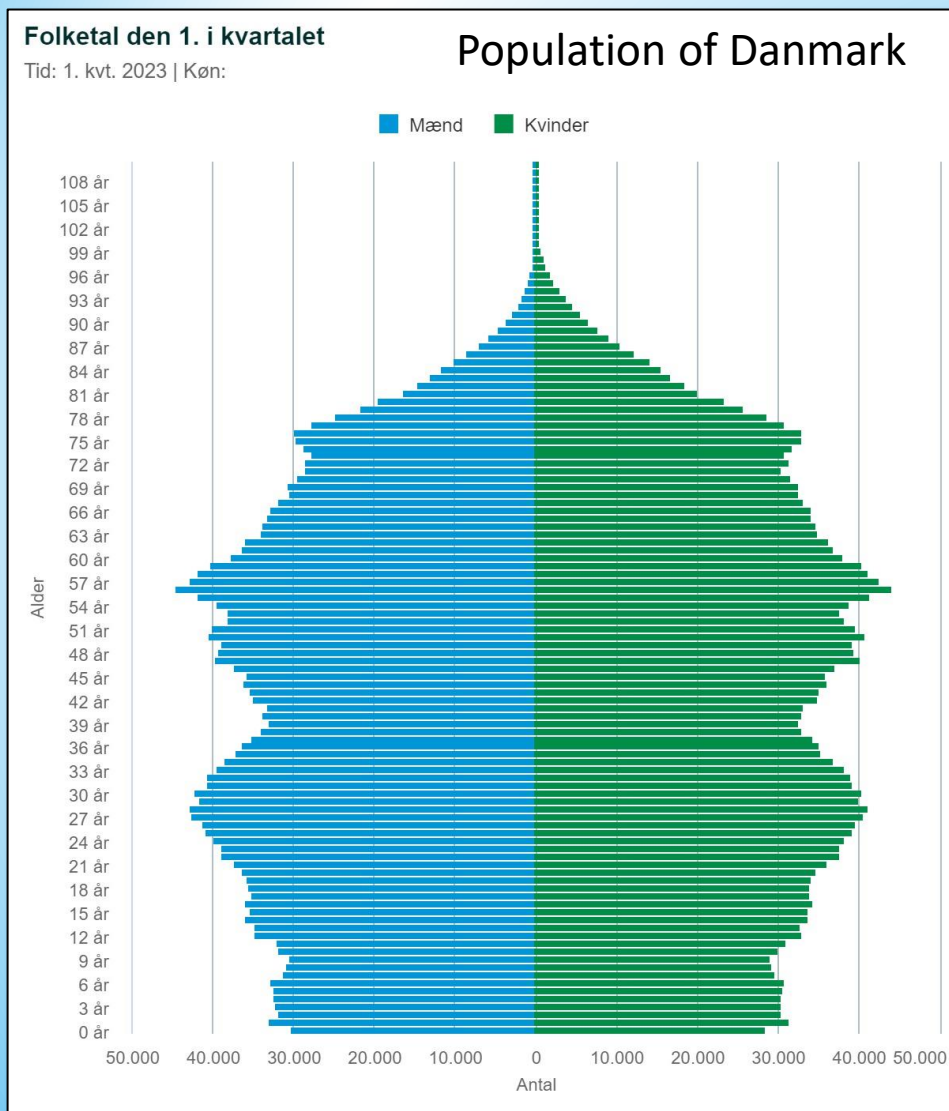
Evaluating perceptions and consequences among healthcare personnel and patients



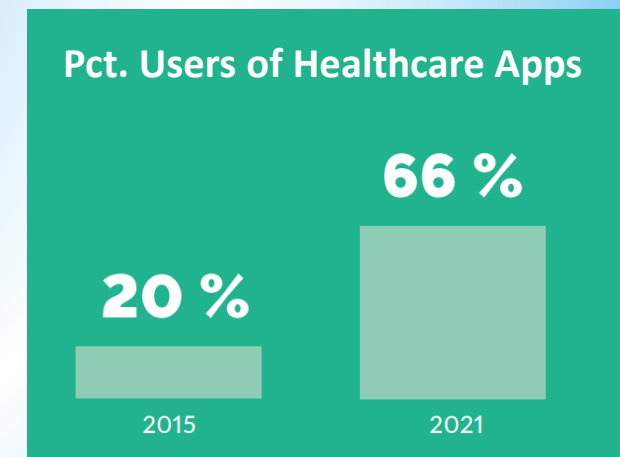
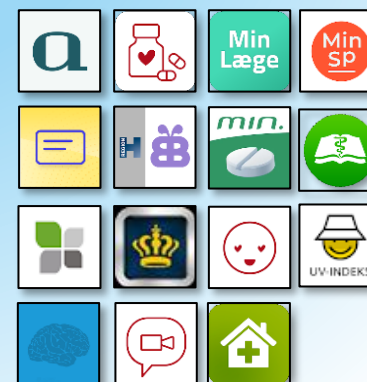
Contents

1. What is the digital transformation in Healthcare
2. How are we contributing to this transformation
3. Problems along the way - Need to understand
4. Main research theme and potential sub-themes

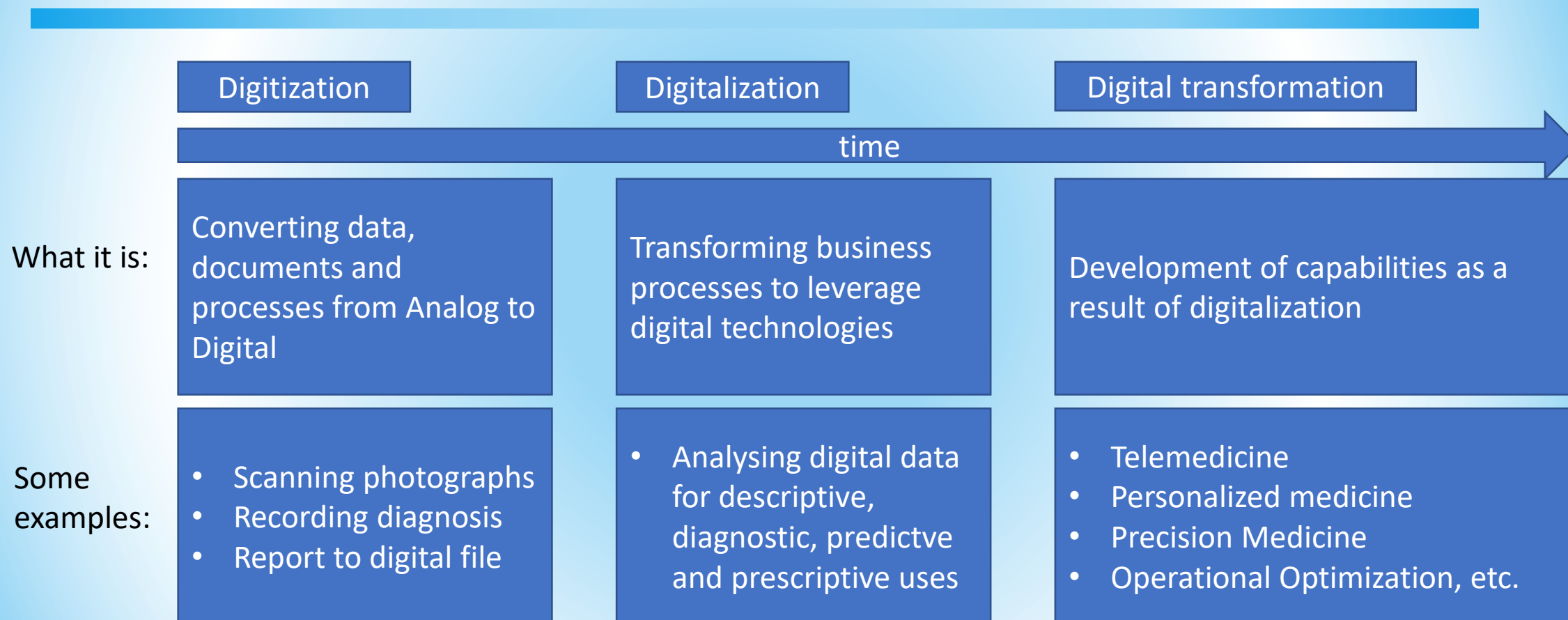
Digital transformation is happening



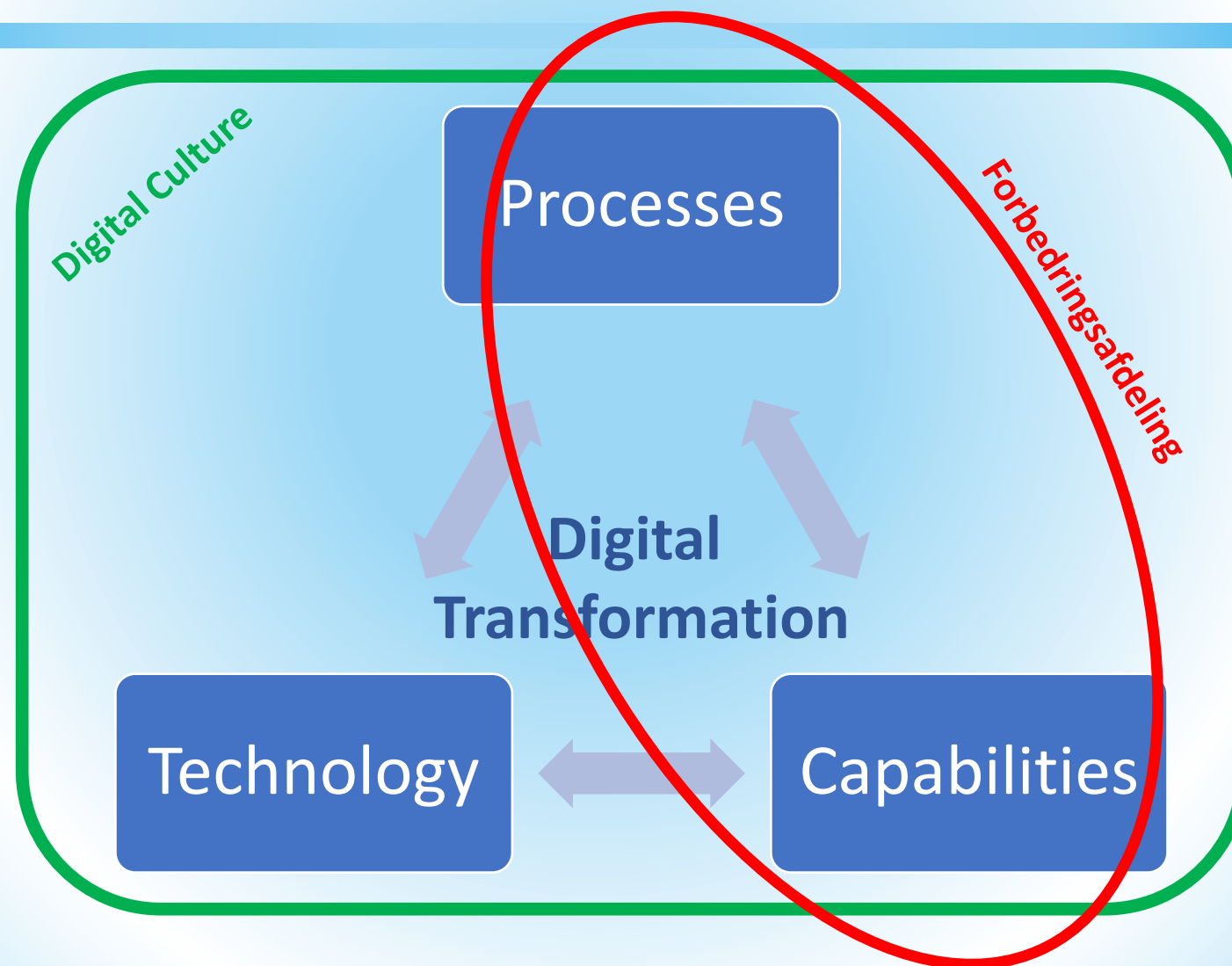
Source: Denmark's Digitalization Strategy Report, May 2022



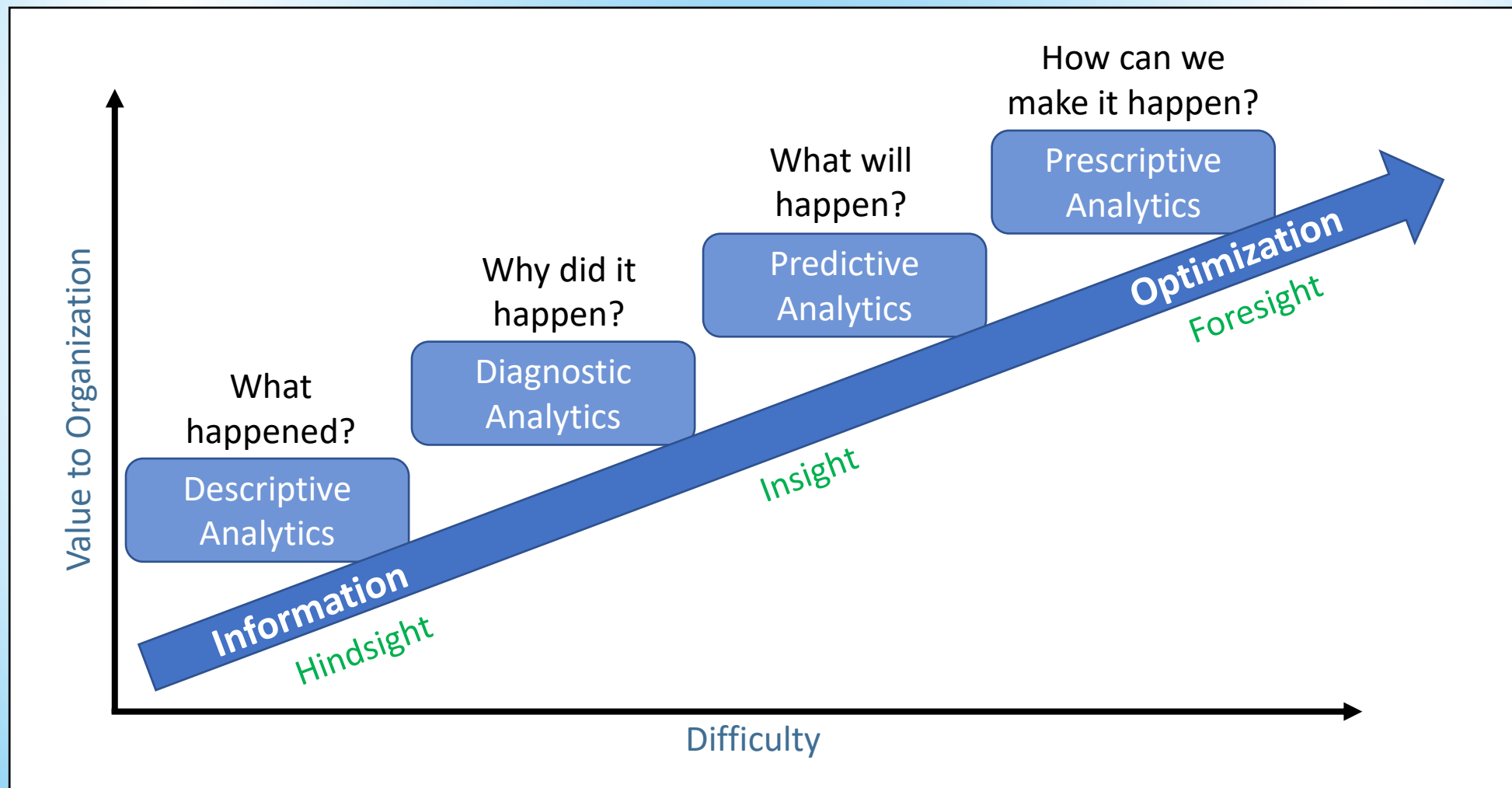
Digital Transformation



Digital Transformation

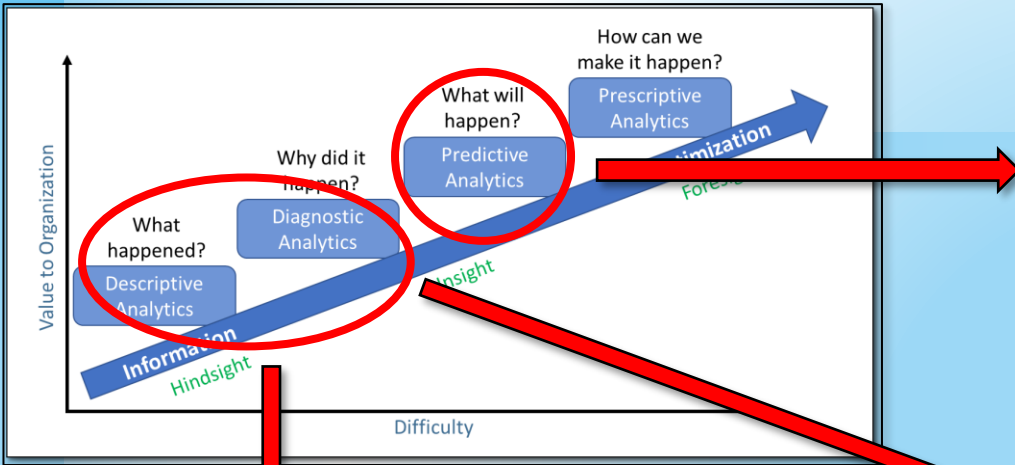


Data Analytics

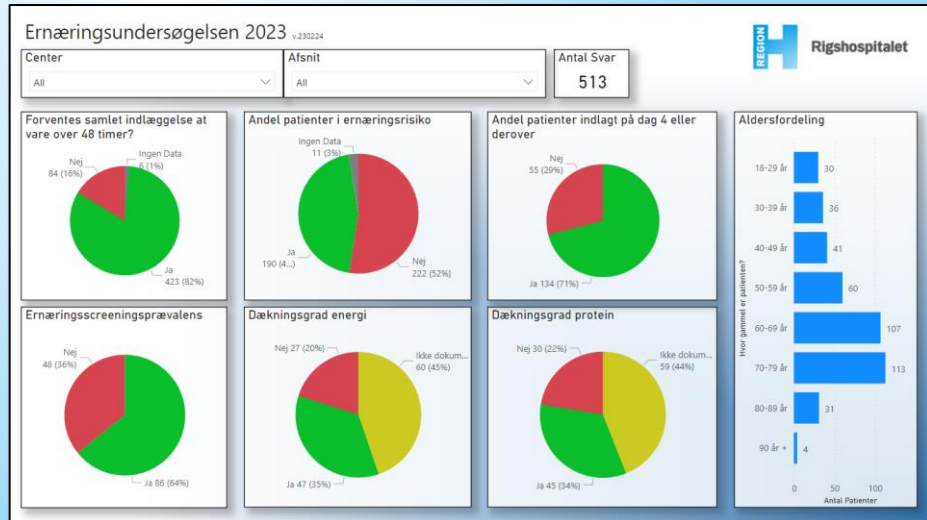


Examples

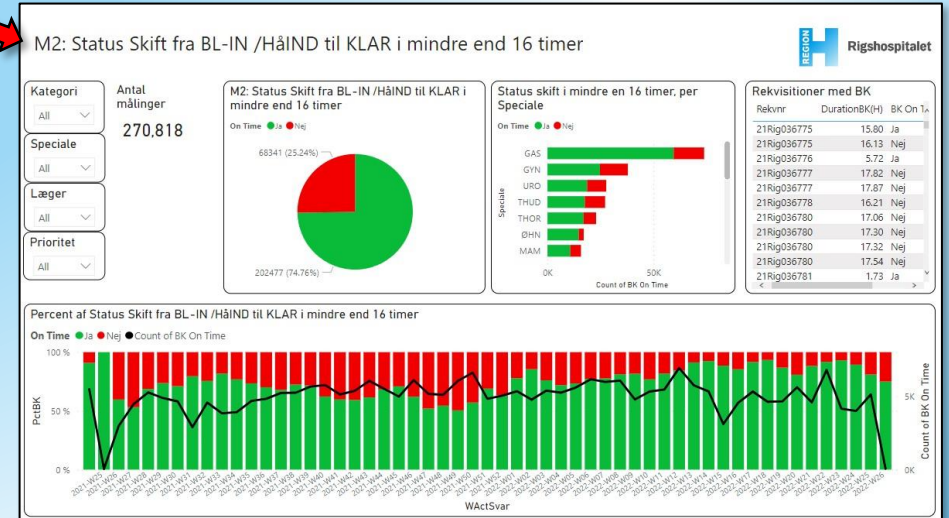
Storage space use in Glostrup Hospital



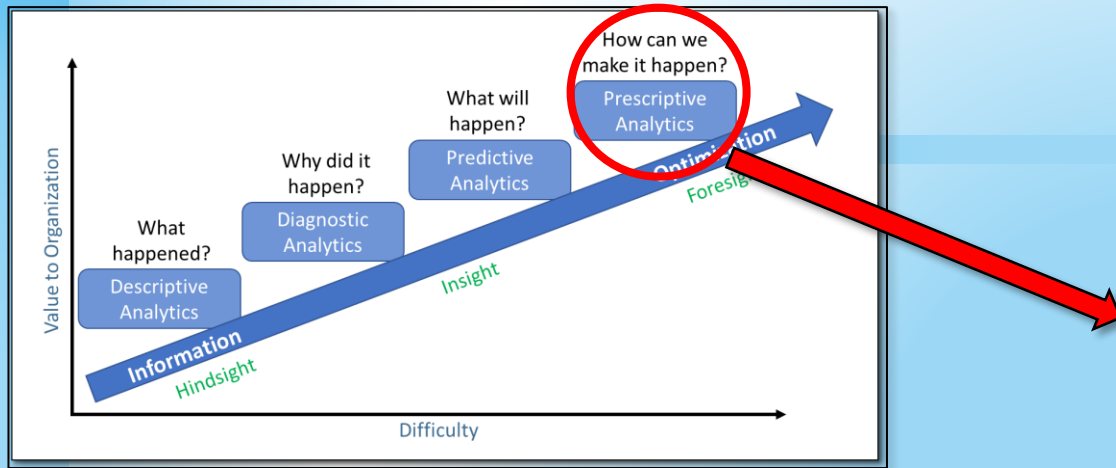
Nutritional Prevalence



Process and service analysis in Pathology




Examples



Timetable scheduling



Optimization Model



Technical University of Denmark
Department of Technology, Management, and Economics Management Science

Physician Scheduling at Rigshospitalet
a Case Study of the Anesthesia Department
Master Thesis

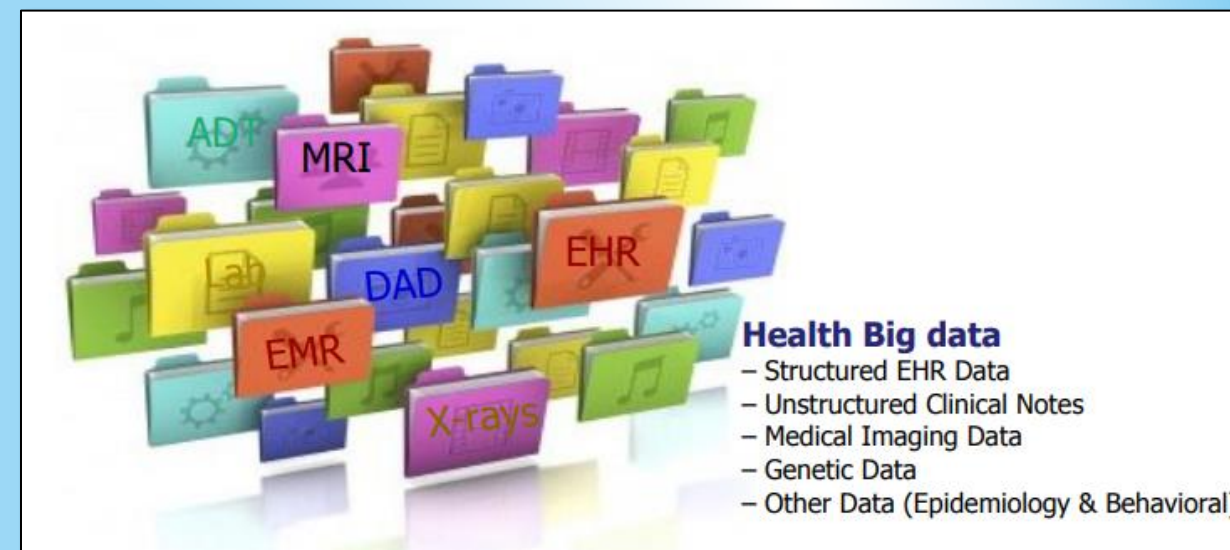
Original process
2 days per month

Optimized process
2 hours per month

$$\begin{aligned}
 \text{Min} \quad & \sum_{p \in \mathcal{P}} (St_p^{\text{ohr}} h_p^{\text{ov}} + 10 h_p^{\text{un}}) + \sum_{p \in \mathcal{P}} (30 St_p^{\text{ohr}} NR_p h_p^{\text{ov}}) + \\
 & \sum_{p \in \mathcal{P}} \sum_{c \in C^{\text{perc}}} (hC_{p,c}^{\text{ov}} + 5 hC_{p,c}^{\text{un}}) + \sum_{c \in C^{\text{prio}}} p_c^{\text{prio}} + 10 \sum_{p \in \mathcal{P}} \sum_{d \in \mathcal{D}} p_{p,d}^{\text{wish}} + \\
 & 10 \sum_{p \in \mathcal{P}} \sum_{d \in \mathcal{D}} p_{p,d}^{\text{adm}} + 10 \sum_{p \in \mathcal{P}} \sum_{d \in \mathcal{D}} \sum_{s \in \mathcal{S}} p_{p,d,s}^{\text{adms}} + 10 \sum_{p \in \mathcal{P}} \sum_{d \in \mathcal{D}} \sum_{a \in \mathcal{A}} p_{p,d,a}^{\text{admA}} + \\
 & 50 \sum_{p \in \mathcal{P}} \sum_{q \in \mathcal{Q}} pWk_{p,q}^{\text{work}} + 100 \sum_{p \in \mathcal{P}} pFD_p^{\text{u}} + 1000 p^{\text{OLG}} + \\
 & 500 \sum_{c \in \mathcal{C}} \sum_{d \in \mathcal{D}} (o_{c,d}^{\text{dem}} + u_{c,d}^{\text{dem}}) + 5 \sum_{p \in \mathcal{P}} \sum_{d \in \mathcal{D}} p_{p,d}^{\text{row}} + \\
 & 20 \sum_{p \in \mathcal{P}} (p_p^{\text{pres}} + p_p^{\text{alert}} + p_p^{\text{call}}) + 10 \sum_{p \in \mathcal{P}} \sum_{d \in \mathcal{D}^{\text{all}}} p_{p,d}^{\text{YL}} + \\
 & \sum_{p \in \mathcal{P}} (50 pF_{p,1}^{\text{w}} + 200 pF_{p,2}^{\text{w}} + 800 pF_{p,3}^{\text{w}}) + \\
 & \sum_{p \in \mathcal{P}} (200 pF_{p,1}^{\text{oh}} + 800 pF_{p,2}^{\text{oh}} + 2600 pF_{p,3}^{\text{oh}}) + \\
 & \sum_{p \in \mathcal{P}} \sum_{c \in C^{\text{t}}} (1000 pF_{p,c,1}^{\text{cou}} + 2000 pF_{p,c,2}^{\text{cou}} + 3000 pF_{p,c,3}^{\text{cou}})
 \end{aligned}$$

Data Trust in Healthcare Personnel

- **Massive amounts of data:** Electronic health records, patient surveys, wearables, Medical Devices, Lab data, etc.
- **Success of healthcare data-driven initiatives:** largely on the trust in the data they collect and analyze.
- **Personnel's perceptions around data:** Ensure data quality, confidentiality, and integrity... and USE & IMPROVEMENT.



Importance of Data Trust

- Healthcare personnel: primary users and gatekeepers of healthcare data.
 - Their trust in data directly impacts data quality, confidentiality, and integrity.
 - Lack of data trust can lead to errors in diagnosis, treatment, and patient safety.
 - Higher trust leads effective use.
- An illustration of a healthcare professional, likely a doctor or nurse, standing behind a computer monitor. The professional is wearing a white lab coat over a pink top and has a stethoscope around their neck. The monitor displays a blue screen. To the left of the monitor is a shield with a white cross on a yellow background. To the right are a clipboard with a checklist, a pill bottle, and a blister pack of pills. A speech bubble with three horizontal lines is positioned above the professional's head. The entire scene is set against a light blue background with faint white circles.
- What **Factors** influencing healthcare personnel's perceptions around data trust:
 - data security, privacy, accuracy, relevance, etc..?
 - What **investments** can improve data trust:
 - data governance, training (which type)?

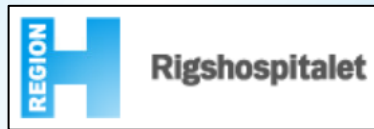
Assessing trust in healthcare data: evaluating perceptions and consequences among healthcare personnel and patients

Understanding perceptions and attitudes towards healthcare data.

- 1.- **Factors:** quality of data, data accuracy, data security, data transparency, others.
- 2.- **Impact:** diagnosis, treatment, overall quality of care.
- 3.- **Differences** in perceptions and attitudes between different groups of healthcare personnel
- 4.- **Potential solutions**
 - **effectiveness** of data collection, management, and analysis,
 - **feasibility** of these strategies
- 5.- **Issues** for Telehealth, and potential remedies for it.
- 6.- **Gaps** in understanding or frameworks

Output

- Provide insights into the factors that contribute to trust and mistrust in healthcare data,
- Inform potential strategies to improve trust in healthcare data in the future.



Thank you

Daniel Sepulveda Estay

Daniel.alberto.sepulveda.estay@regionh.dk

Specialkonsulent, Digitalization Unit
Forbedringsafdeling, Rigshospitalet

