NHH

BUSINESS PROCESS MANAGEMENT AND PROCESS MODELLING

IN5431 IT AND MANAGEMENT

JON IDEN 9.3.22

EFMD EQUIS ACCREDITED
CEMS
PIM Partnership in International Management

Purpose and learning outcome

Why?

- Process thinking is central to digitalization
- Process thinking is central to each of the five building blocks of 'Design for Digital'

➔ You need to know what a business process is, and how we use this approach in digitalization, digital innovation and digital transformation

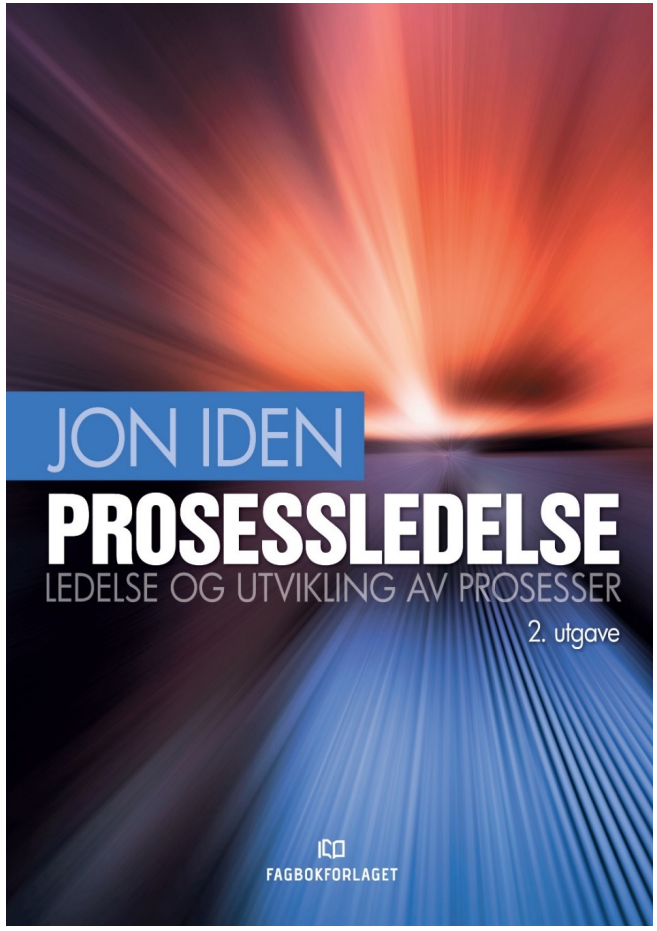
Outcome:

- You will know what a business process is
- You will know what characterize a process-oriented organization
- You will know how we use digital technology to improve business processes
- You will know the basics of process modelling and how to draw and read a process model

What is Business Process Management?

Standardize

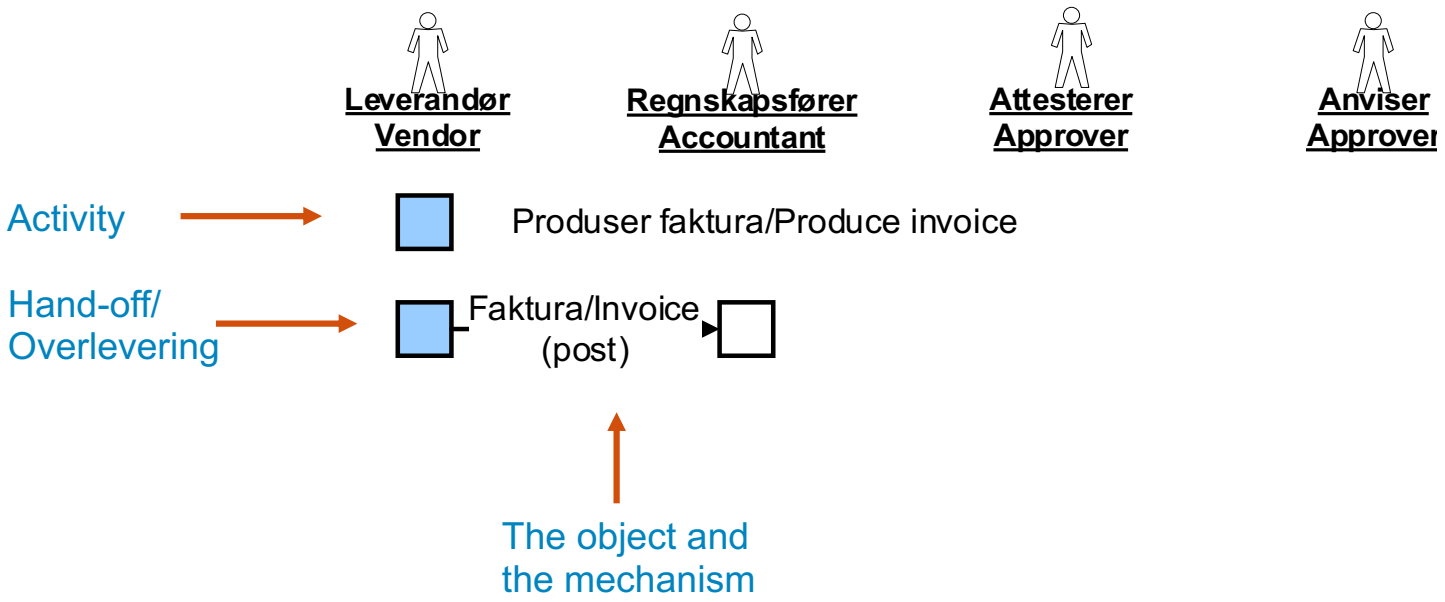
Improve



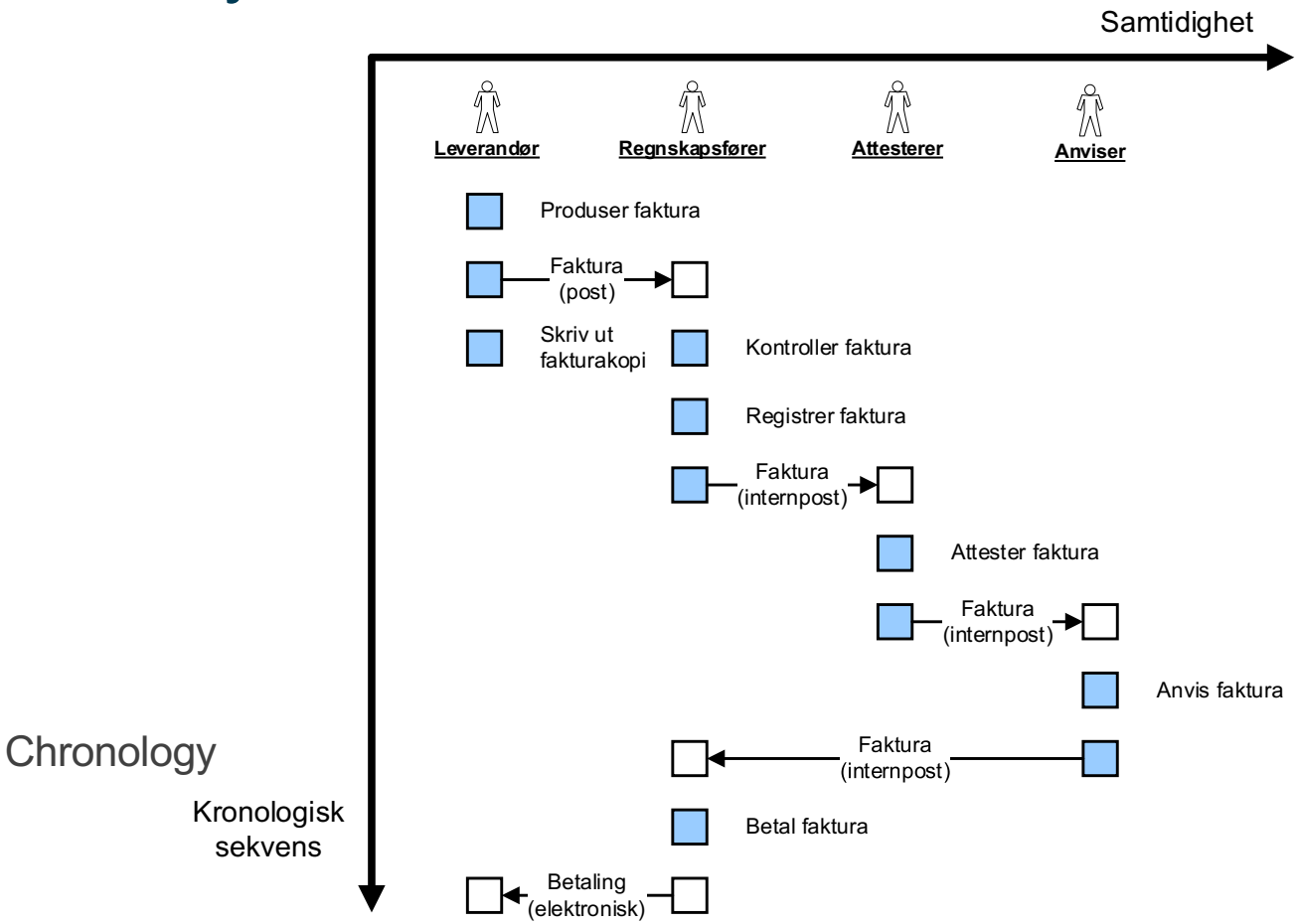
Manage

Control

What is a process?
A process model made with RIS (roller i samarbeid)



The lay-out of a RIS-model



Modelling procedure - simple

- Ask: where does the process start and where does it end?
- Identify the roles og declare the roles at the top of the sheet
- Ask: what happens first. Then draw the activity or the hand-off
- Ask: what happens then. Then draw the activity or the hand-off
- Etc.

Note: use verbs in the imperative form (Fill in name, Copy paper, Register data etc.)

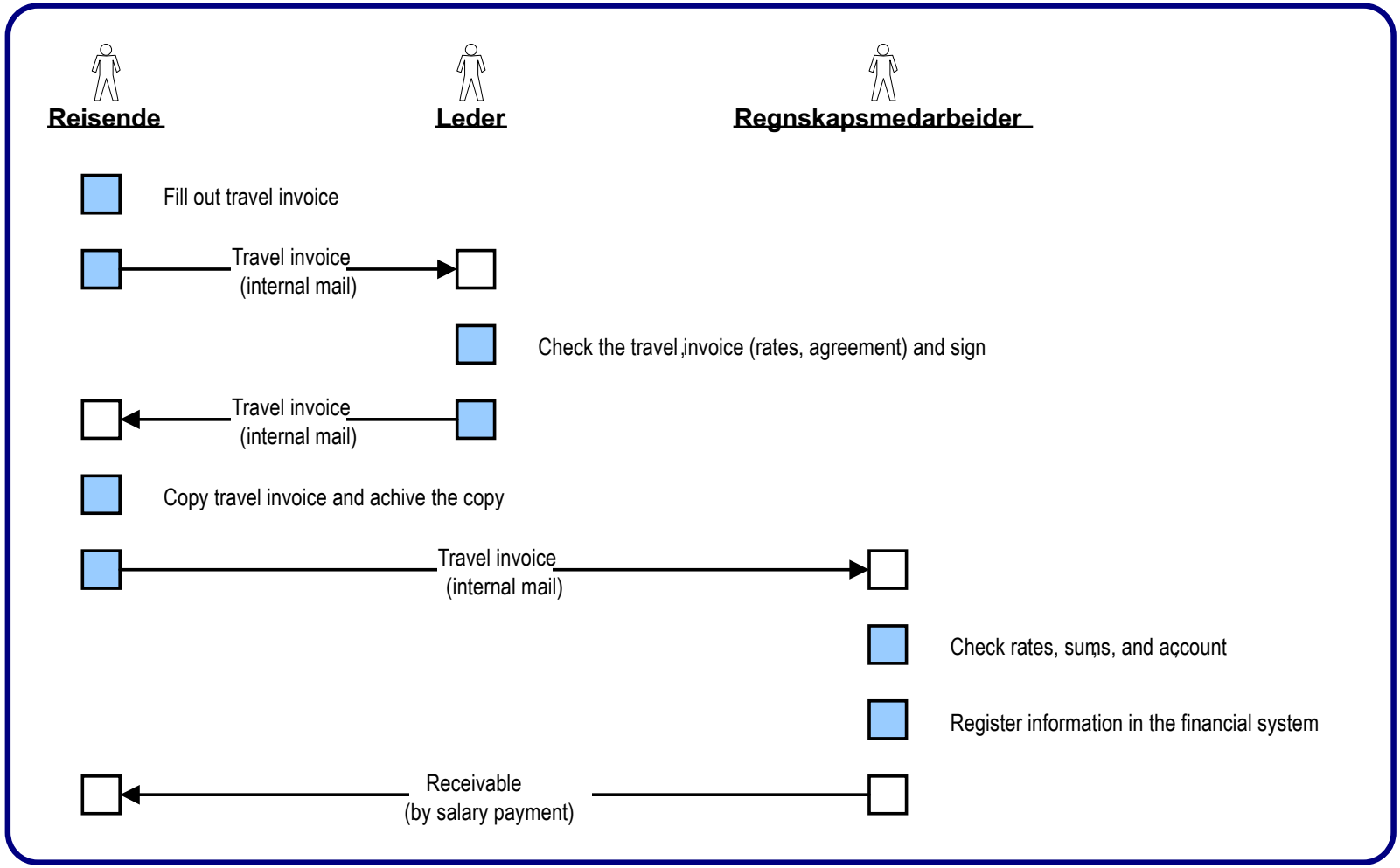
Make a process model for handling a travel settlement

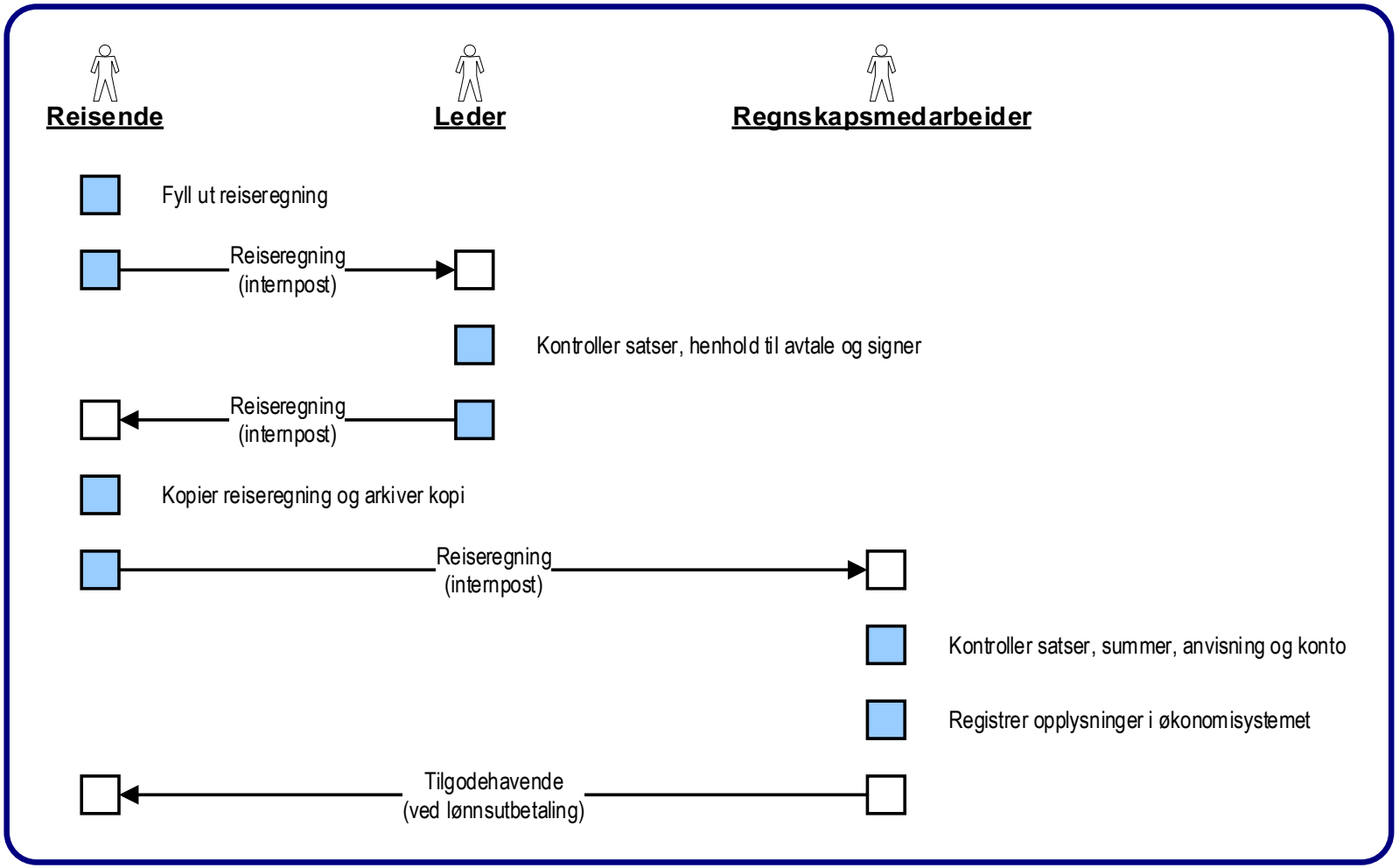
The following roles take part: Traveler, Manager, Accountant

- *Traveler* fills out a travel invoice, and sends it to *manager* by internal mail
- *Manager* checks the travel invoice to see if the corrects rates have been used, and if the travel expenses are in accordance with what was agreed. Then she signs. She returns the travel invoice to the *traveler* by internal mail
- *Traveler* makes a copy of the signed travel invoice and achives the copy. The original is forwarded to *accountant* by internal mail
- *Accountant* checks the completion to see if the use of rates is correct and that it has been summed correctly. She also checks that the expenses have been entered into the correct account
- *Accountant* registers the information from the travel invoice in the financial system. The financial system automatically ensures that traveler receives his receivables at the next salary payment

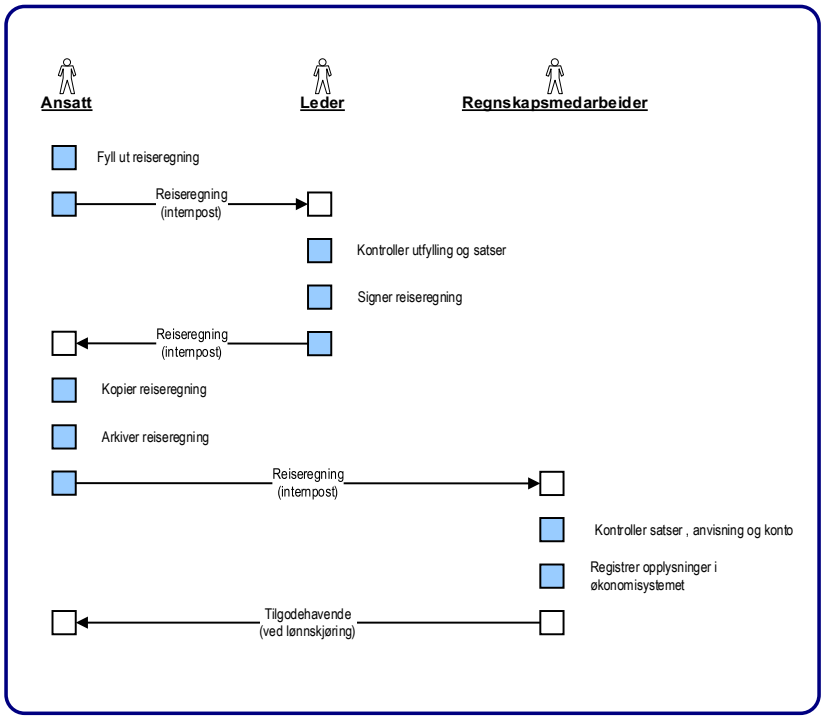
Lag en prosessmodell for behandling av reiseoppgjør
Følgende roller deltar: *Reisende*, *Leder, Regnskapsmedarbeider*

- *Reisende* fyller ut reiseregning. Reiseregning sendes til leder i internpost
- *Leder* kontrollerer reiseregning for å se om det er brukt riktige satser, og om reiseutgiftene er i samsvar med det som var avtalt. Deretter signerer hun. Leder returnerer reiseregning til den *reisende* i internpost
- *Reisende* tar en kopi av signert reiseregning, og arkiverer kopien. Originalen sendes videre til regnskapsmedarbeider i internpost
- *Regnskapsmedarbeider* kontrollerer utfyllingen for å se om bruken av satsene er korrekt og at det er summert riktig. Hun kontrollerer også at utgiftene er ført på riktig konto
- *Regnskapsmedarbeider* registrerer opplysningene fra reiseregningen i økonomisystemet. Økonomisystemet sørger automatisk for at *reisende* får sitt tilgodehavende ved neste lønnsutbetaling


Reisende
Leder
Regnskapsmedarbeider
Fill out travel invoice
Travel invoice
(internal mail)
Check the travel ,invoice (rates, agreement) and sign
Travel invoice
(internal mail)
Copy travel invoice and achive the copy
Travel invoice
(internal mail)
Check rates, sums, and account
Register information in the financial system
Receivable
(by salary payment)


Reisende
Leder
Regnskapsmedarbeider
Fyll ut reiseregning
Reiseregning
(internpost)
Kontroller satser, henhold til avtale og signer
Reiseregning
(internpost)
Kopier reiseregning og arkiver kopi
Reiseregning
(internpost)
Kontroller satser, summer, anvisning og konto
Registrer opplysninger i økonomisystemet
Tilgodehavende
(ved lønnsutbetaling)

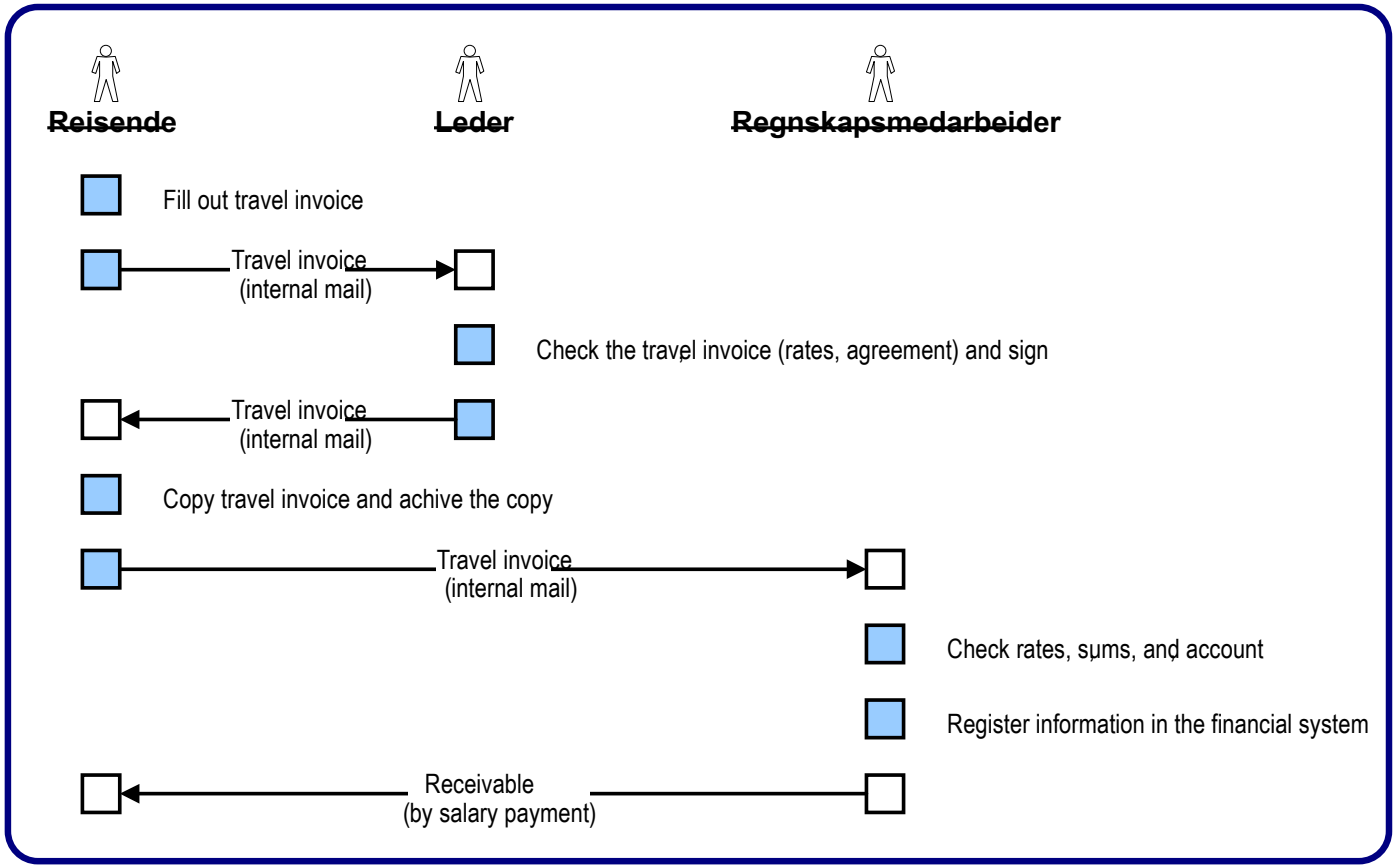
How can digital technology be applied?



- **Capture and record information in electronic format early in the process**
- **Transfer a case electronically and automatically from one role to another**
- **Perform activities automatically**

- **Perform checks that activities are performed correctly, and that all necessary information is registered**
- **Collect, collect and process information from various information sources**
- **Make information available to those involved regardless of geographical location using mobile telephony and tablets**
- **Keep track of where a particular case is (condition)**
- **Communicate with customers**

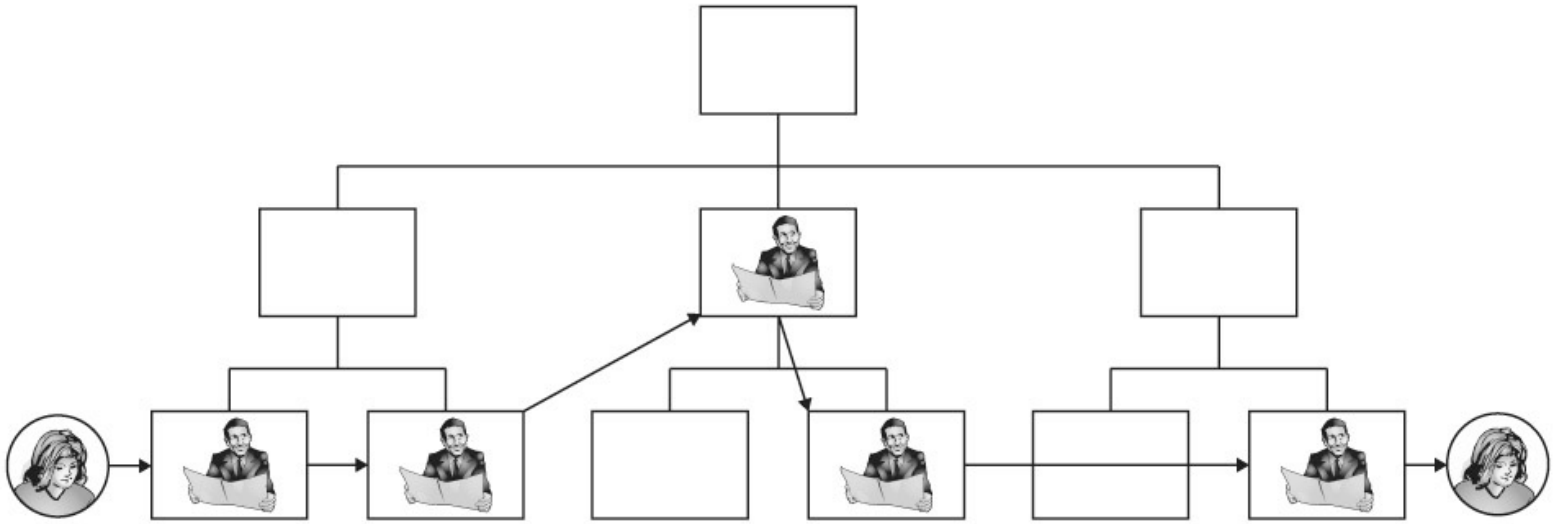
How can we improve this process?



What is a process?

Det flere personer fra ulike enheter i organisasjonen til sammen utfører for å behandle en sak fra den oppstår til den er ferdigbehandlet og overlevert kunden, inklusiv de ressurser som benyttes og de regler som regulerer behandlingen, omtaler vi som prosess.

What several persons from different organizational units do together in order to process a case from the beginning until it is complete and handed over to the customer, inclusive the resources necessary and the rules that regulate the processing, do we refer to as a process.



Iden, J. (2018). Prosessledelse. 2. utgave. Bergen: Fagbokforlaget

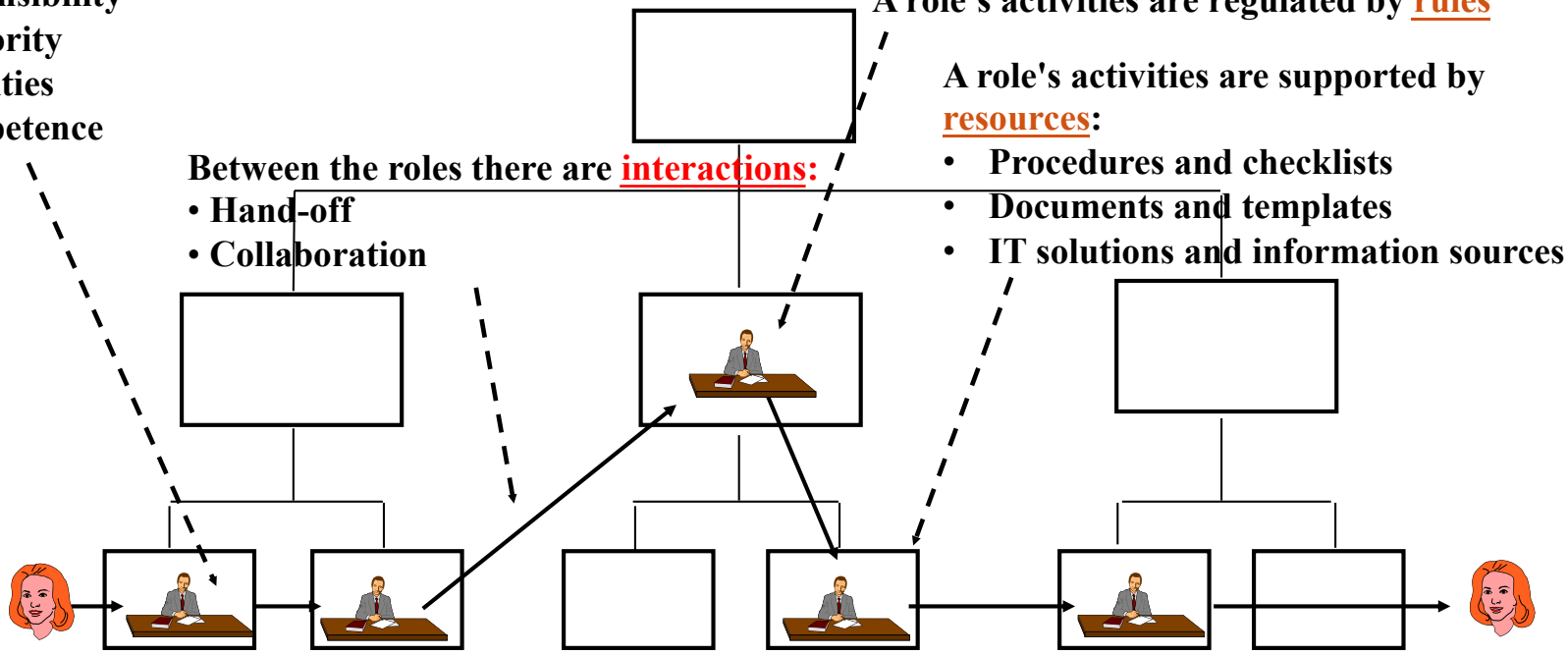
Roles, relations, rules and resources

To each role:
- **Responsibility**
- **Authority**
- **Activities**
- **Competence**

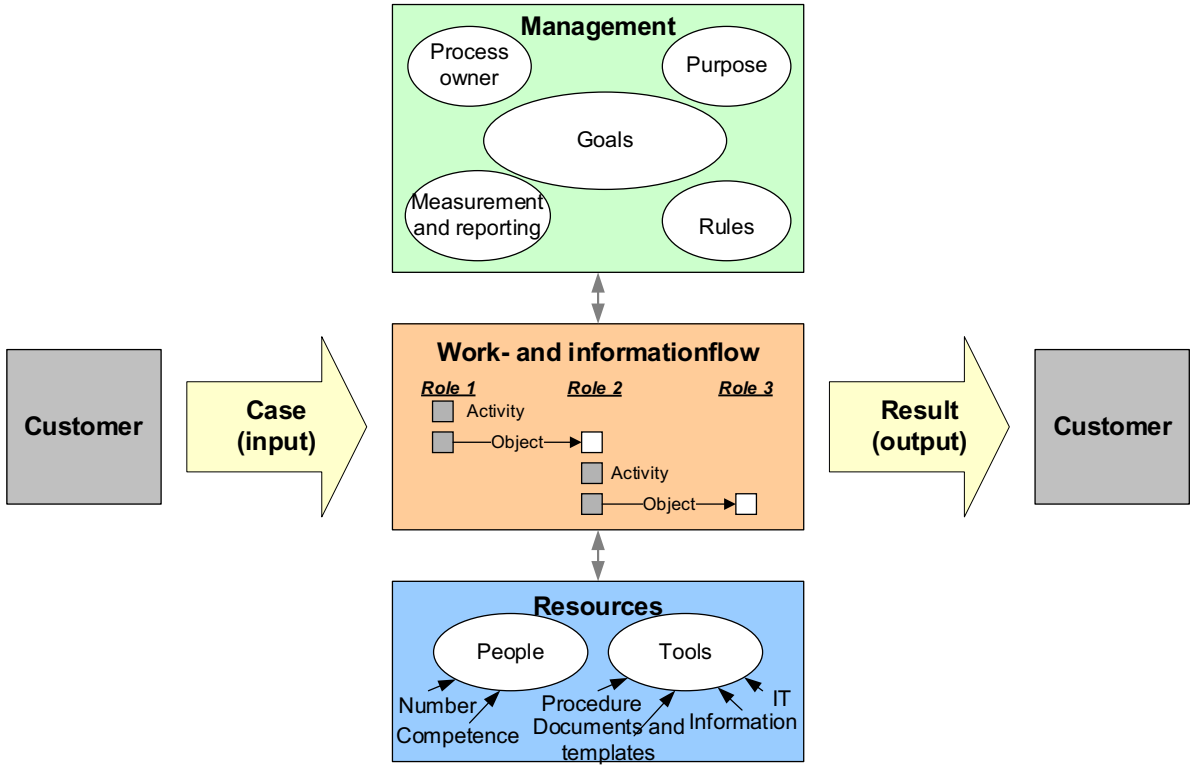
A role's activities are regulated by rules

A role's activities are supported by resources:
- **Procedures and checklists**
- **Documents and templates**
- **IT solutions and information sources**

Between the roles there are interactions:
- **Hand-off**
- **Collaboration**



What do we mean by everything? What does a process consist of? My working model.

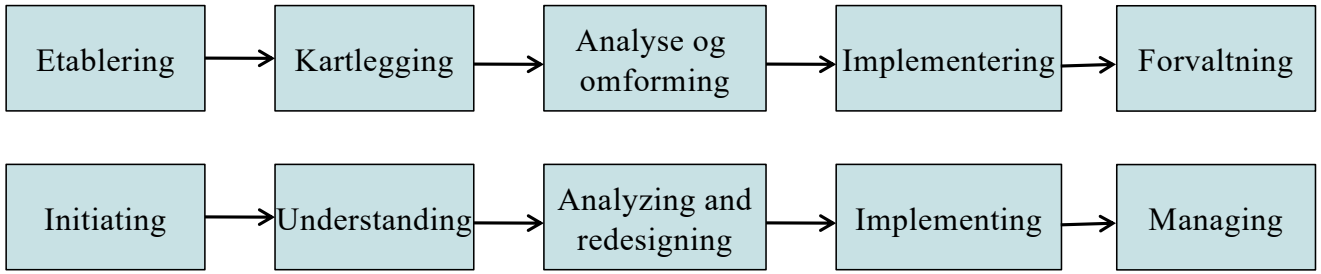


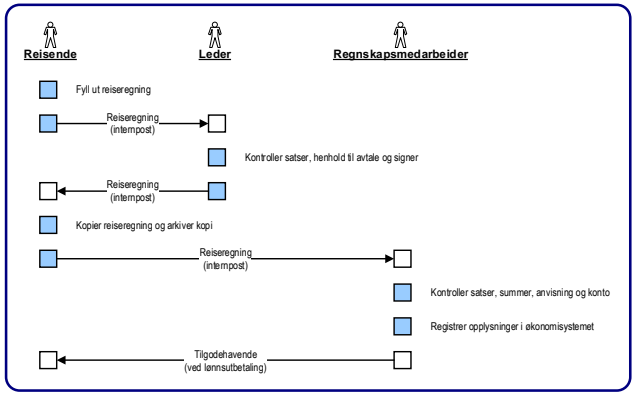
Iden, J. (2018). *Prosessledelse*. 2. utgave. Bergen: Fagbokforlaget,
Iden, J. (2009). Businss Process Management. IPA AS

Process examples

- **Purchase -** from identified a need to received item
- **Invoice processing -** from received invoice to payment
- **Life insurance -** from application to issued policy
- **Non-life insurance -** from notification of damage to settlement
- **Employment -** from identified need to employment
- **Order processing -** from received order to delivered item
- **Travel invoice -** from completed travel invoice to reimbursed expenses

How do we organize a process improvement project?





An example of digitalization by applying Robotic Process Automation - RPA



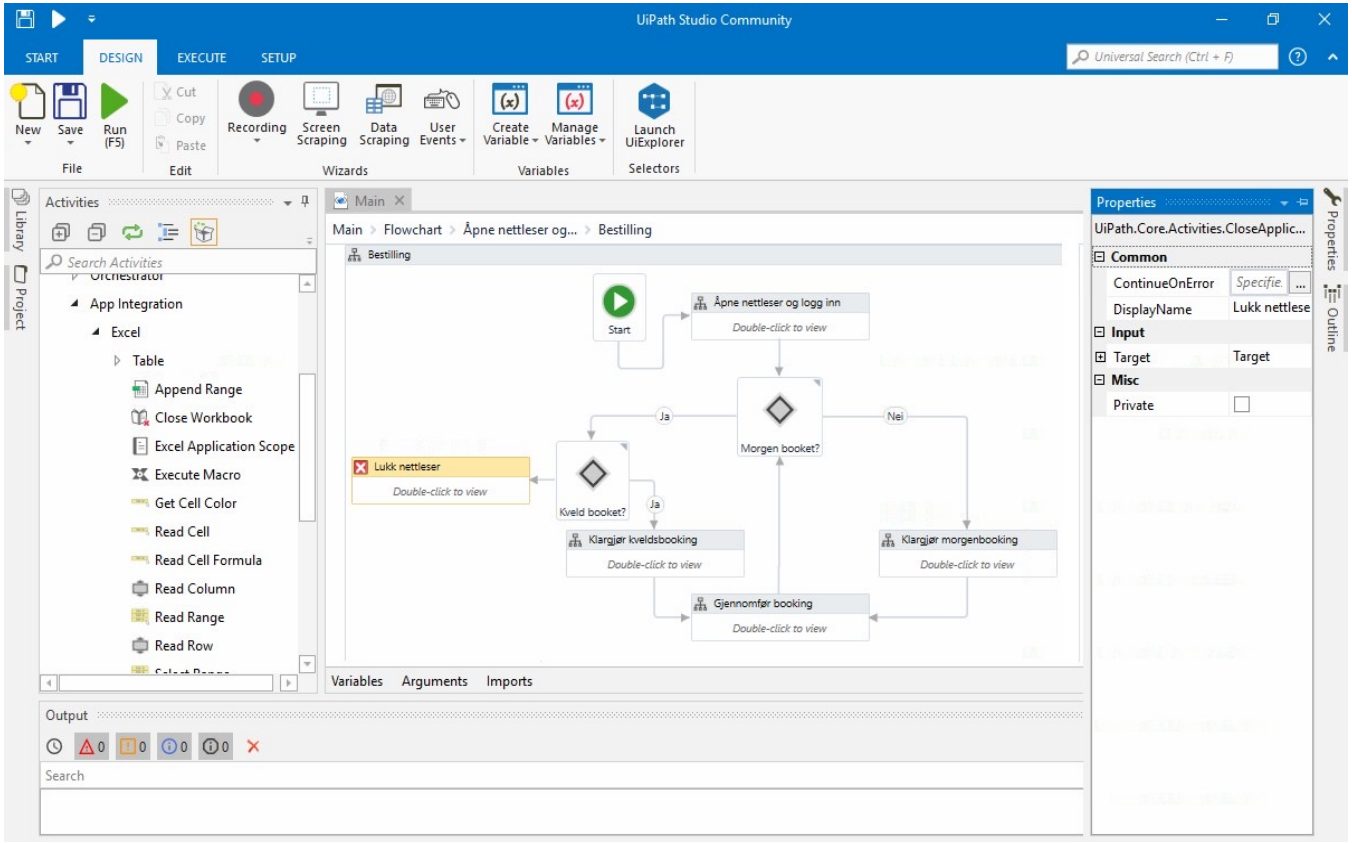
A digital worker

Performs digital tasks

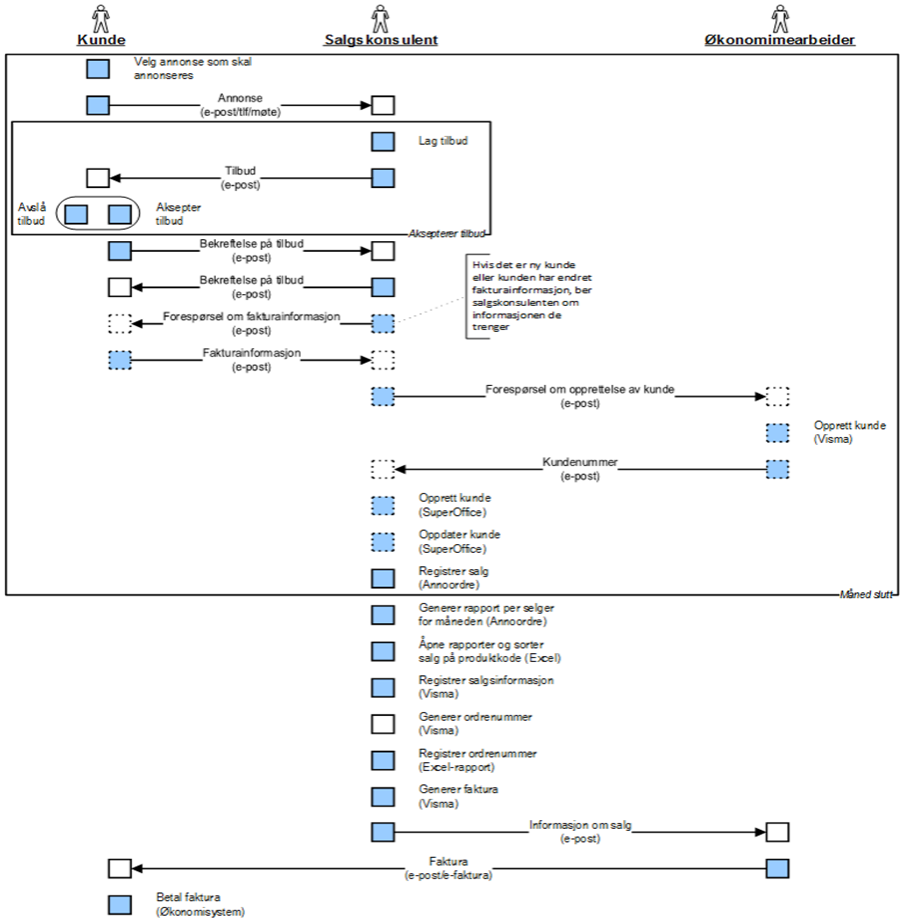
Mimics what a human being does in front of the computer

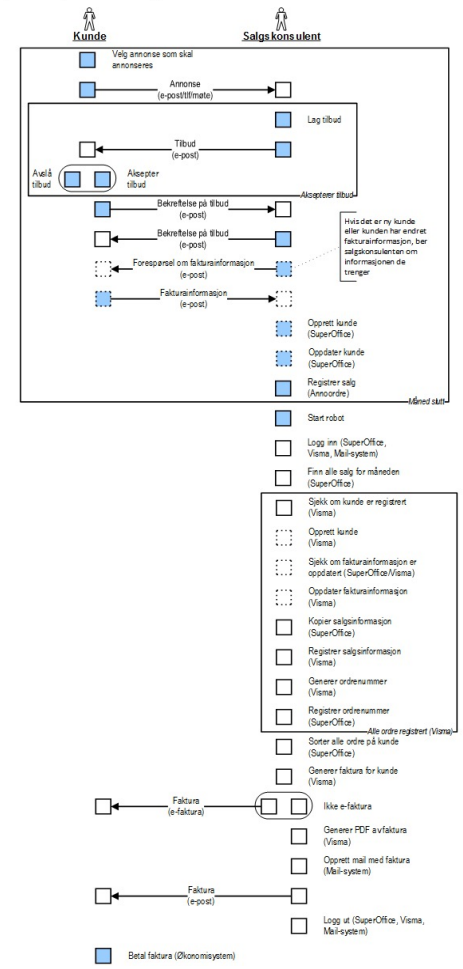
Rule-based tasks with a predetermined result

Robotic Process Automation – the developer's environment



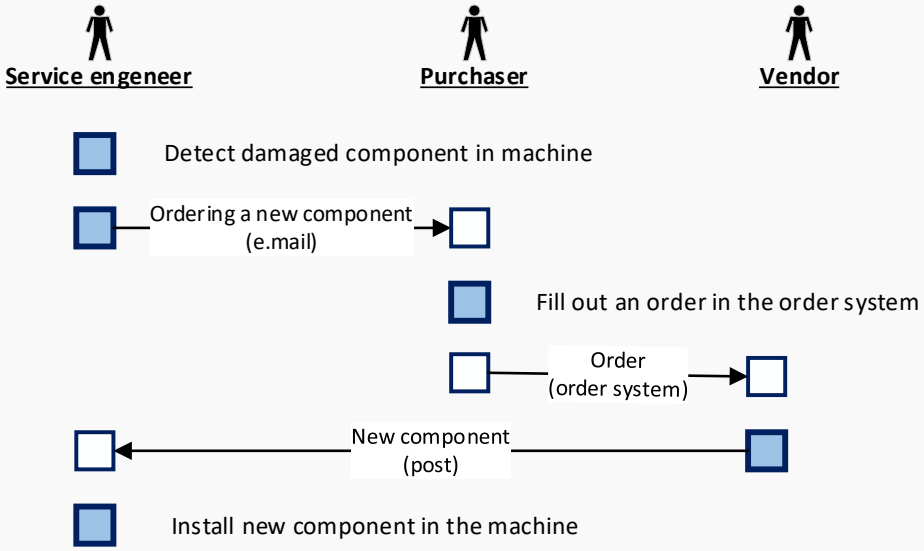
RPA – selling ads in sykepleien.no





Roald et al., (2017). Automatisering av annonsesalg i Sykepleien. Prosjektoppgave i STR453 Digitalisering, våren 2017, NHH.

An example of digitalization by applying 3D printing



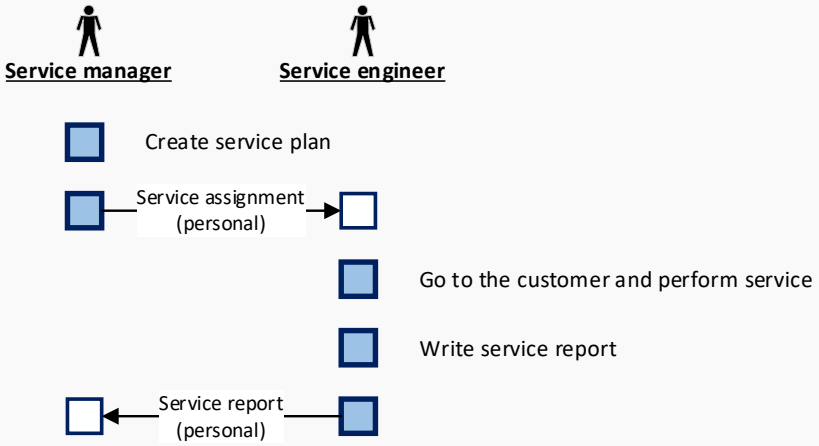
Service engineer

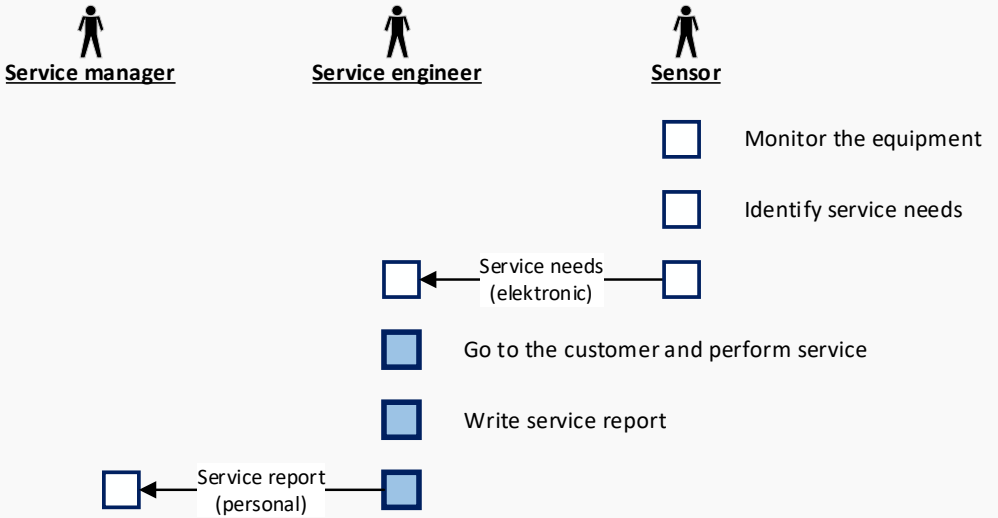
- Detect damaged component in machine
- 'Print' new component (3D printer)
- Install new component in the machine



An example of digitalization by applying IoT and AI







The characteristics of a process-oriented organization

Process awareness	Managers and employees know the processes in the company and see them as central units in the organization
Process ownership	The company has process owners who ensure that the processes are appropriately designed and that they function in accordance with the goals set.
Process metrics	The company has set goals for each process, and systematically collects information about performance and results
Continuous process improvement	On a continuous basis, and on the basis of information obtained about goal achievement and relevance, the company changes the processes as needed

Iden, J. (2018). *Prosessledelse*. 2. utgave. Bergen: Fagbokforlaget

A recent Norwegian survey

- Digitalization has led to an increased focus on Business Process Management (BPM)
- Process owners have a central role in digitalization
- **BPM increases our ability to succeed with digitalization**
- Digitalization makes process standardization more important
- Digitalization leads to more frequently process changes
- Digitalization makes process documentation more important
- Digitalization leads to more training in BPM than before

Iden, Danilova and Eikebrokk, 2022

Summary

- A process designates how a task is performed in an organization, from the beginning to the end. Including roles, interactions, rules and resources
- We draw process models in order to understand the present situation and to envisage how we want the future process to be
- A process-oriented organization is characterized by process awareness, process ownership, process metrics and continuous process improvement
- **Business process management is central to digitalization**

- Hint: practice process modelling. This is a key activity in digitalization