

# WP3: Production Logistics – Post Doc Work

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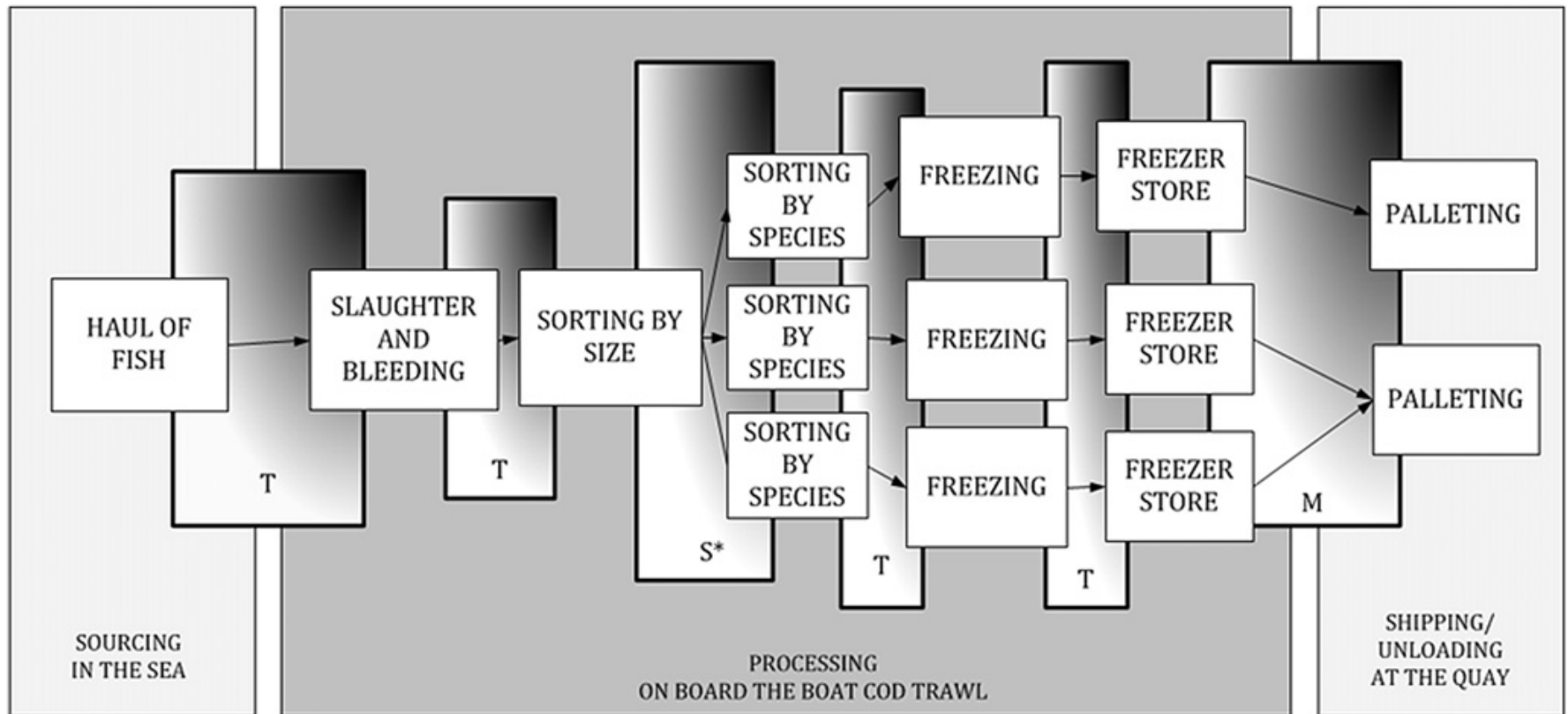
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# WP3: Production Logistics

- Development of concepts, models, methodologies and tools for efficient and effective production logistics, enabling individual handling and supply of product quality and volumes according to market requirements.
- **Tasks: T3.1:** Development of vision and concept for efficient logistics in fish value chains
- **T3.2:** Case land and **T3.3:** Case sea : (1) Identify problem areas and improvement potentials related to production logistics and (2) develop concepts, models and methodologies for planning and control of operations, enabled by new technology and ICT, in onshore processing and on vessels respectively.
- **T3.4:** Development of specifications for data capture and exchange for product differentiation and information transparency.
- **T3.5:** Evaluation of microbial quality and safety during cod processing

# Material flow and transformations in a frozen white fish chain



(Ref: Donnelly and Olsen, 2012)

# Task 3.2. & 3.3. Planning and control of operations

## Goal

Improve planning and control for *cost-efficiency* and achievement of *service levels*

## Means

- Supply chain modelling
  - Current/improved state
  - Cost/benefit-analysis

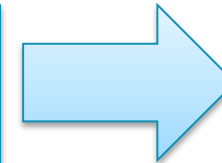
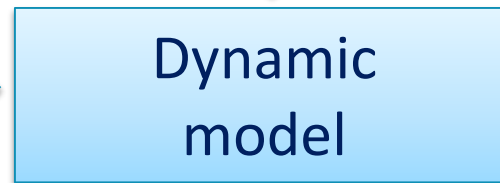
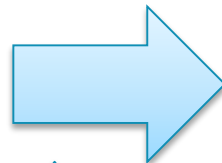
## Modification ideas

- Information sharing
- Coordination between plants
- High-value-added production
- Capture-based aquaculture
- Capacity management

Modifications

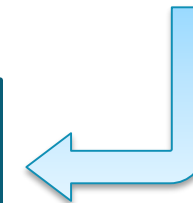
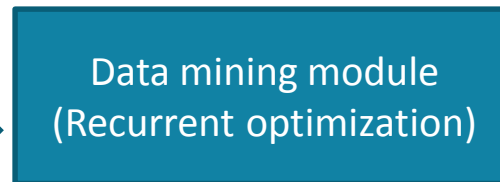


Lead times  
Marginal costs  
Demand data  
Supply data  
ICT (quality) data



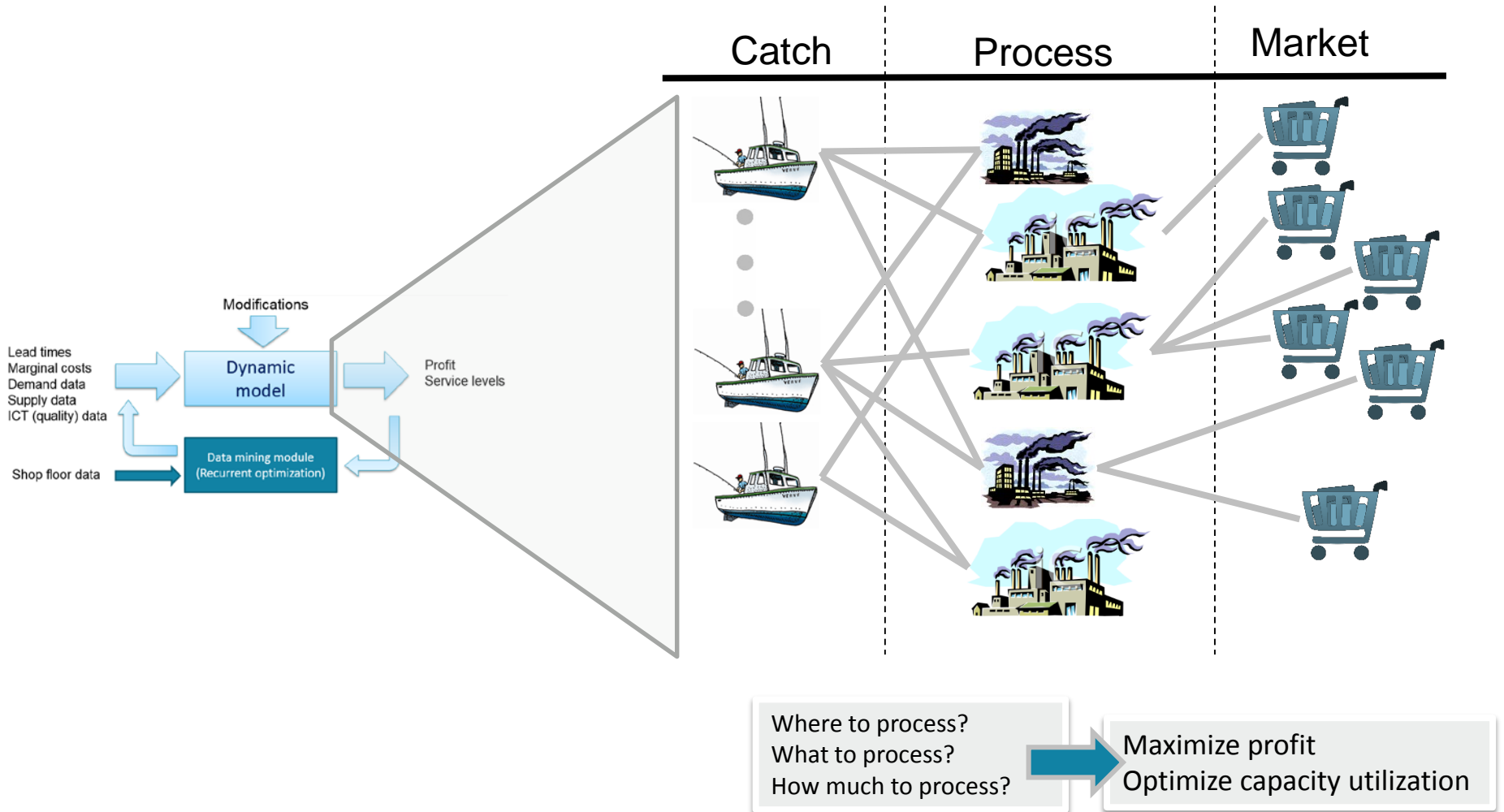
Profit  
Service levels

Shop floor data



# Task 3.2 & 3.3

## Planning and control of operations (Network Planning)



# Task 3.4 – Information Management

## Motivation

- Having the right data is a prerequisite for improved decision making related to production planning and logistics
- How can we use the available information to better plan the production and make sure that the right raw material goes into the right products?

## Topics to be explored

- What data is being collected on board the vessels?
- How the data is forwarded downstream in the chain and what data is being pushed upstream?
- What data is collected during landing and first sale (Råfisklaget for example)?
- What data is collected throughout the supply chain from vessels down to the market?
- What format and software is used for data storage and exchange?



Product and quality data

Dynamic  
model

## Task 3.4. Specifications for data capture and exchange for product differentiation and information transparency

- The post-doc work will focus on **improving decision making in whitefish supply chains** for efficient logistics **by efficient information management practices** through the following tasks:
  - **Supply chain process mapping** in the whitefish chain to identify the characteristics and challenges related to material and information flow and to identify what data needs to be captured where in the supply chain and how it should be exchanged between the vessels and fish processors.
  - **Evaluation of data capture solutions** based on latest technologies including RFID, NFC and Bluetooth sensors to capture various product and process data.
  - **Development of strategies for what, when and how to exchange information** throughout the whitefish supply chain in order to improve decision making for efficient logistics.

# Preliminary observations: material and information flow

- Maintaining the cold chain is a challenge
- High cost of real-time temperature monitoring systems
- Fish not always traceable to a specific batch
- Interested in automating the process of documenting quality discrepancies and its communication to the vessels and exporters



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Modifications



Dynamic model

Tasks  
3.2, 3.3

Profit  
Service levels

Task 3.4

Lead times  
Marginal costs  
Demand data  
Supply data  
ICT (quality) data

Shop floor data

Data mining module  
(Recurrent optimization)