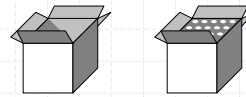


## Aktuell forskning och satsning på kompetensuppbyggnad inom RFID

Mats Johnsson  
Div of Packaging Logistics  
Dep of Design Sciences



## Agenda

- Short about Lund activities
- RFID benefits
- Auto ID areas
- Research needs
- Educational focus
- Future activities

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# Department of Design Sciences, LTH

Dep of  
Design Sciences

**Ergonomics**  
Roland Axelsson  
Mats Boghart

**Certec**  
Bodil Jönsson

**Industrial Design**  
Claus Eckhardt

**Machine Design**  
Robert Bjärmemo

**Packaging Logistics**  
Gunilla Jönson

**Innovation Tech.**  
Charles Edquist



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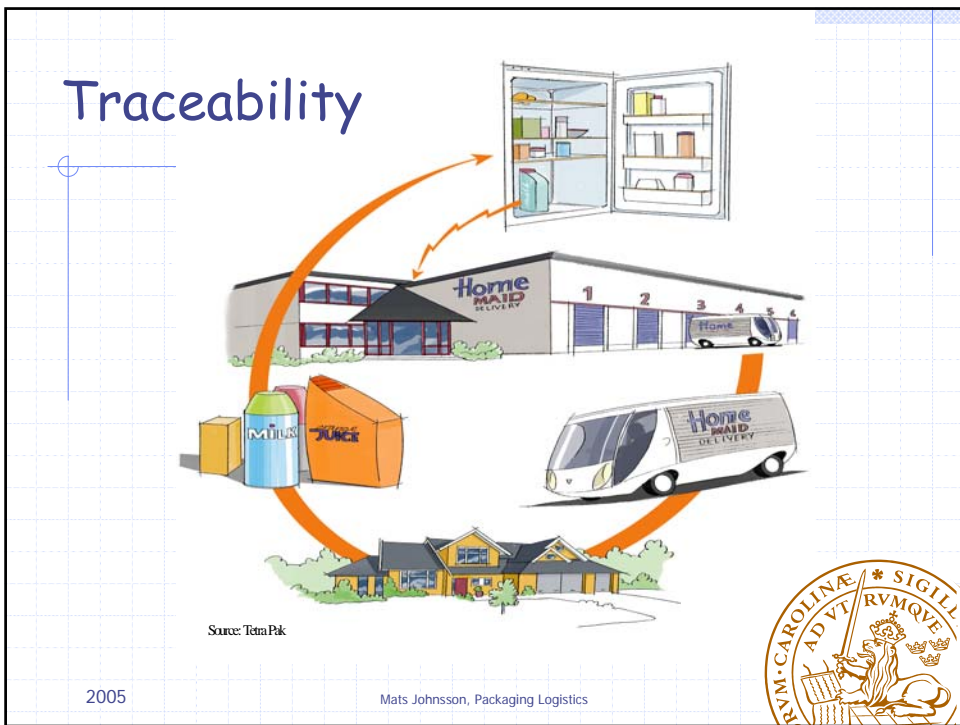
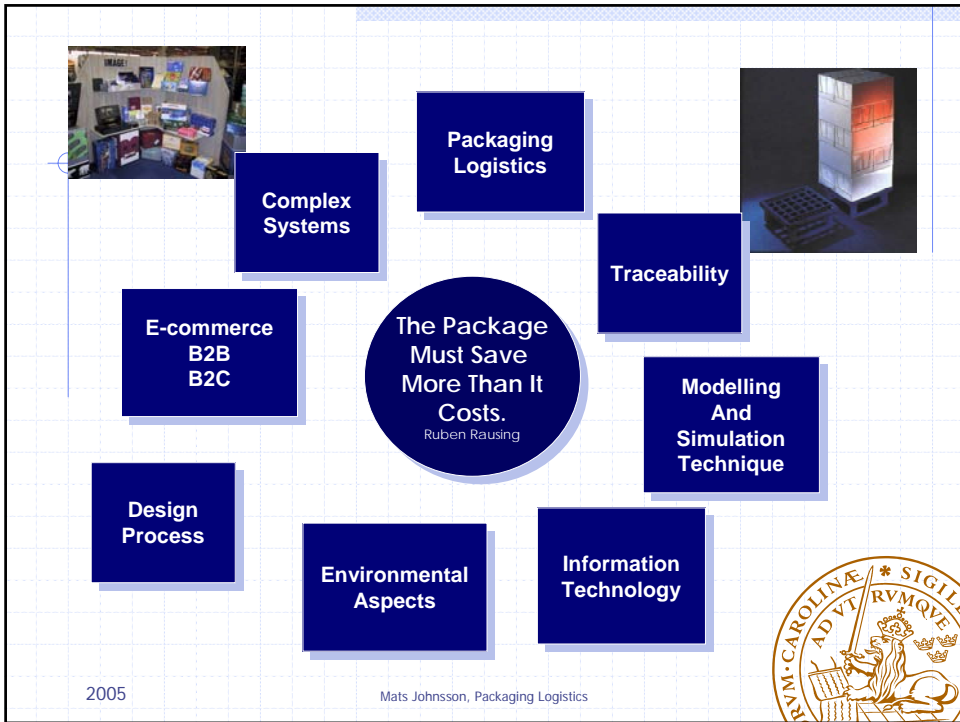
# Ingvar Kamprad Design Centre



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## Convenience



## Shelf life



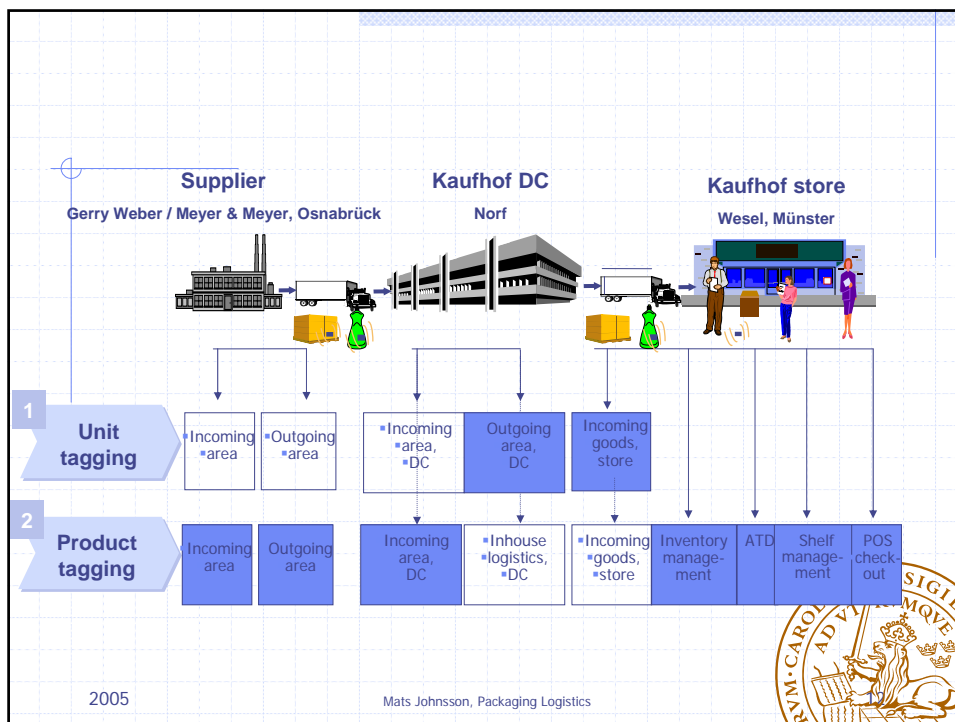
Source: Tera Pak

## Research and education

- Pilot studies
- RFID centres
- University programs
- Other activities

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# Areas of application

## Feasible use cases at the logistics level

- Unit quantity control, incoming and outgoing area
- Item quantity control, incoming and outgoing area
- Incoming area, data acquisition
- Sorting/distribution (questionable due to costs)
- Reusable transport item, tracing

## Feasible use cases at the store

- Inventory registration of all kinds
- Article location
- Cashing
- Preparation of return delivery of goods to the supplier
- Visual sales support for the customers
- Customer service (warranty, kiosk systems, article and range information)

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# Calculation of profitability – qualitative benefits

## Logistics

- Less wrong deliveries
- Full control in incoming area
- Full control in outgoing area
- Error prevention by reduction of manual activities
- Improved communications potential between supplier, Kaufhof inventory and store



## Stores

- Full control at incoming area
- Full control at store outgoing area
- Error prevention by reduction of manual activities
- Fewer out-of-shelf situations
- Less waiting time at checkout
- More time for the customers
- Higher customer satisfaction
- Higher sales volume due to above improvements

Qualitative benefits bring about additional quantitative effects

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THE SOLUTION  
FOR ADC  
REAL-TIME

## The ADC Solution Evaluation Tool


for buyers of Data Collection technology

Sponsored By:








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## Simulerings model

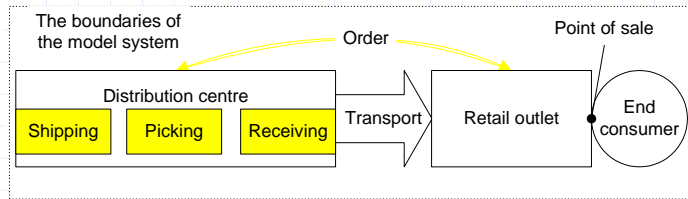


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# The Modelled System



## ■ Distribution Centre

- 2 700 types of ambient FMCG
- Process 350 000 traded units per week
- 150 retail outlets

## ■ Retail Outlet

- Process 9200 units per week
- No backroom inventory
- Demand is week day and week dependent

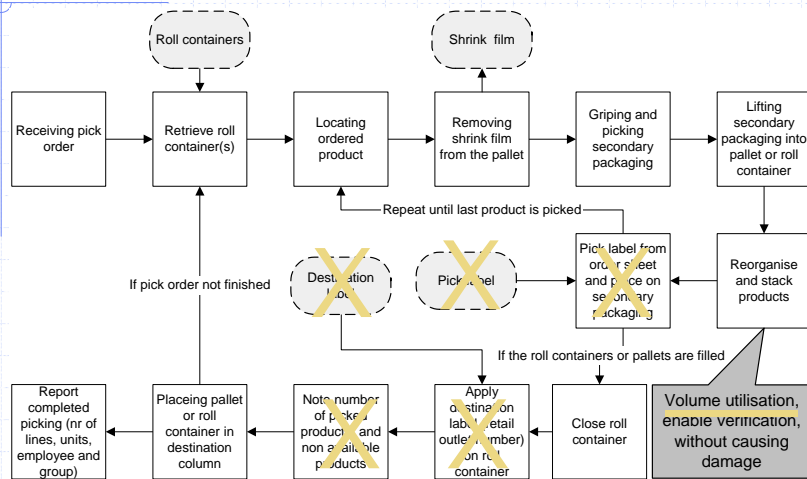
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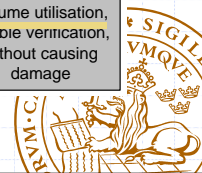
# The Picking Activity

With RFID

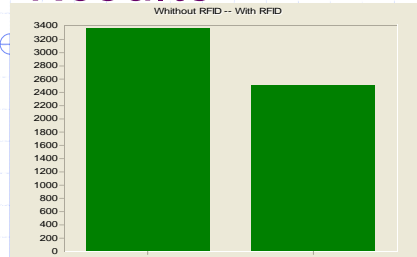


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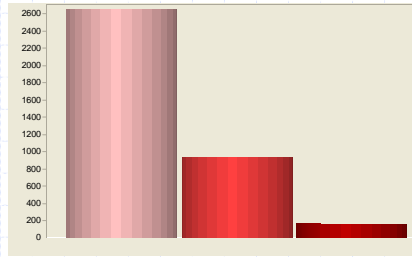
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## Results



Average lead time to pick an order



Number of out-of-stock situations (3 week)

- The speed of the distribution function was increased
- Approximately 20 fewer resources were needed in the DC
  - Pick efficiency improved, resulting in 12 less pick resources
- Out-of-stock situations are reduced
  - Increase sales
  - Increase customer service

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## Ongoing activities in Lund

- RFID centre
- Vinnova application
- Reference group
- Consortium
- Integration in courses and research

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Questions!