

**CAMUNDA
CON
LIVE**

E-Commerce Returns: Human Processes and Automated Decisions

Rutger van Bergen, BuyBay



BuyBay & Camunda

Smart management of
returns & overstock with BPA



a smile in return

Intro | Your presenter: Rutger van Bergen

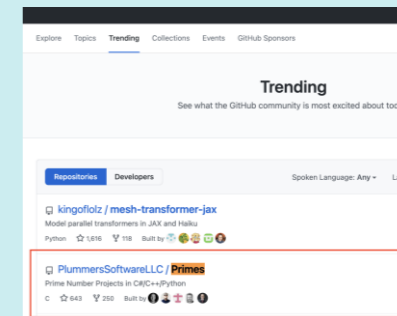


Work

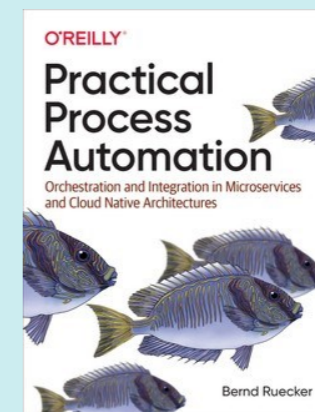
- Started programming at age of 9
- CTO at BuyBay since December 2019
- Responsible for all technology with a CPU
 - Laptops, workstations
 - Network infrastructure
 - Label printers
 - DSLRs
 - Conveyor belts
 - Hand-held computers
 - Barcode scanners
 - etc.

Hobbies

Maintaining trending GitHub repos

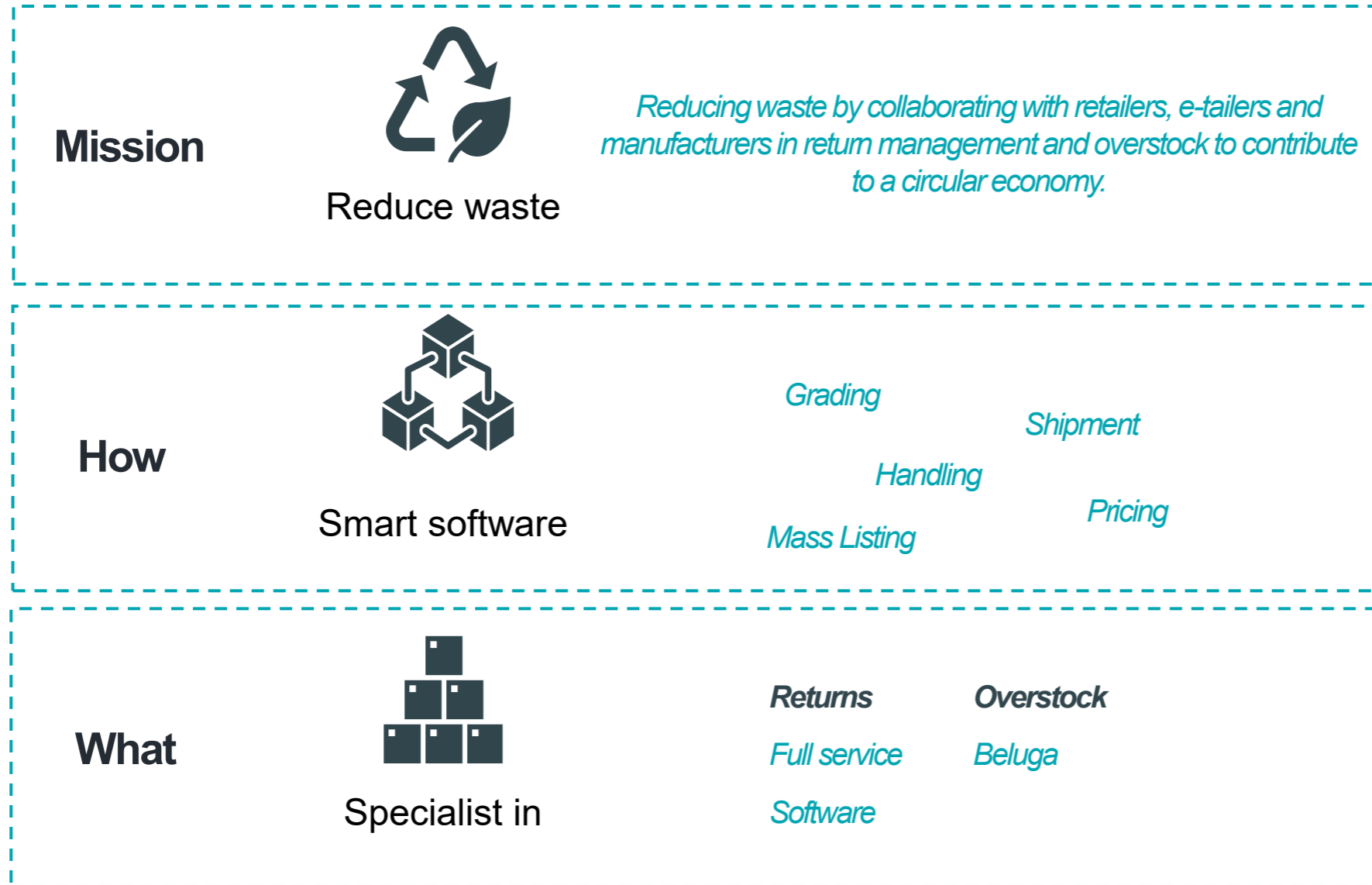


Tech reviewing BPA books





Intro | BuyBay in a nutshell



250 employees and growing



Based in Amsterdam, active in Benelux & DE



Expanding fast in Europe

Partners | Trusted across Europe



E-commerce

Distributors



Manufacturers

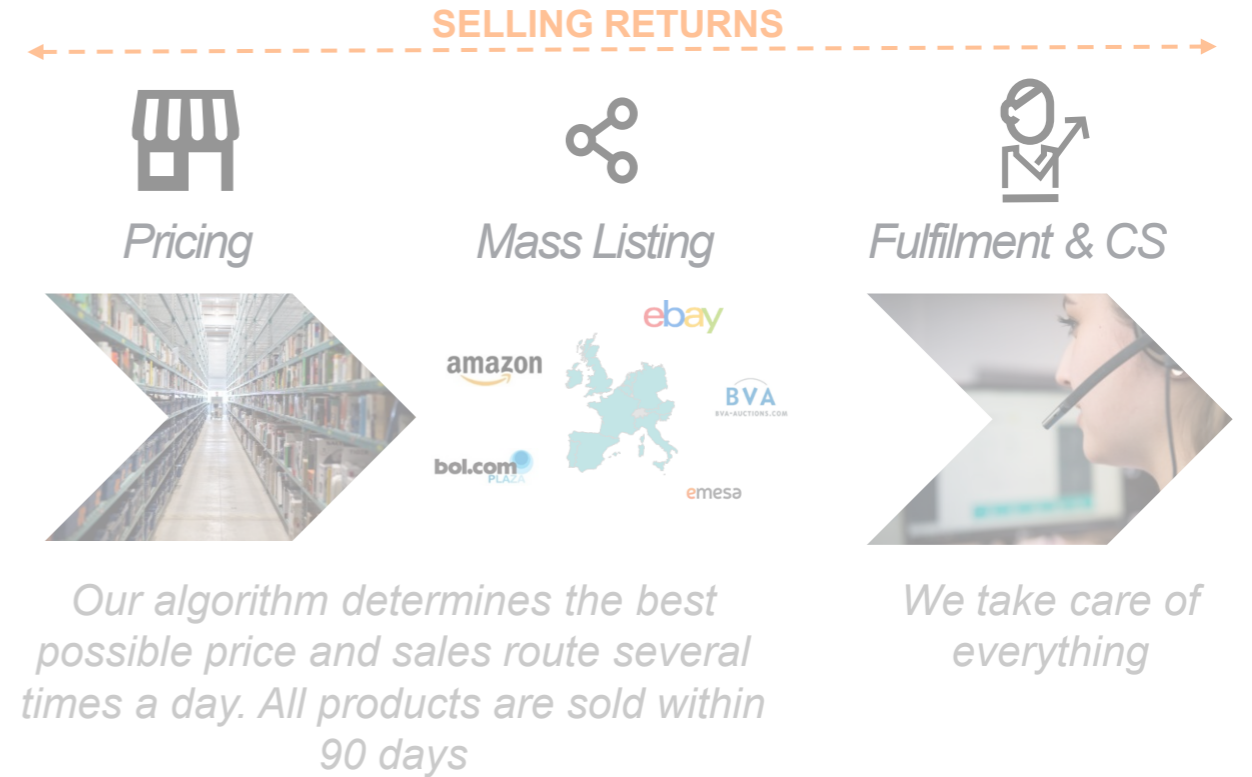
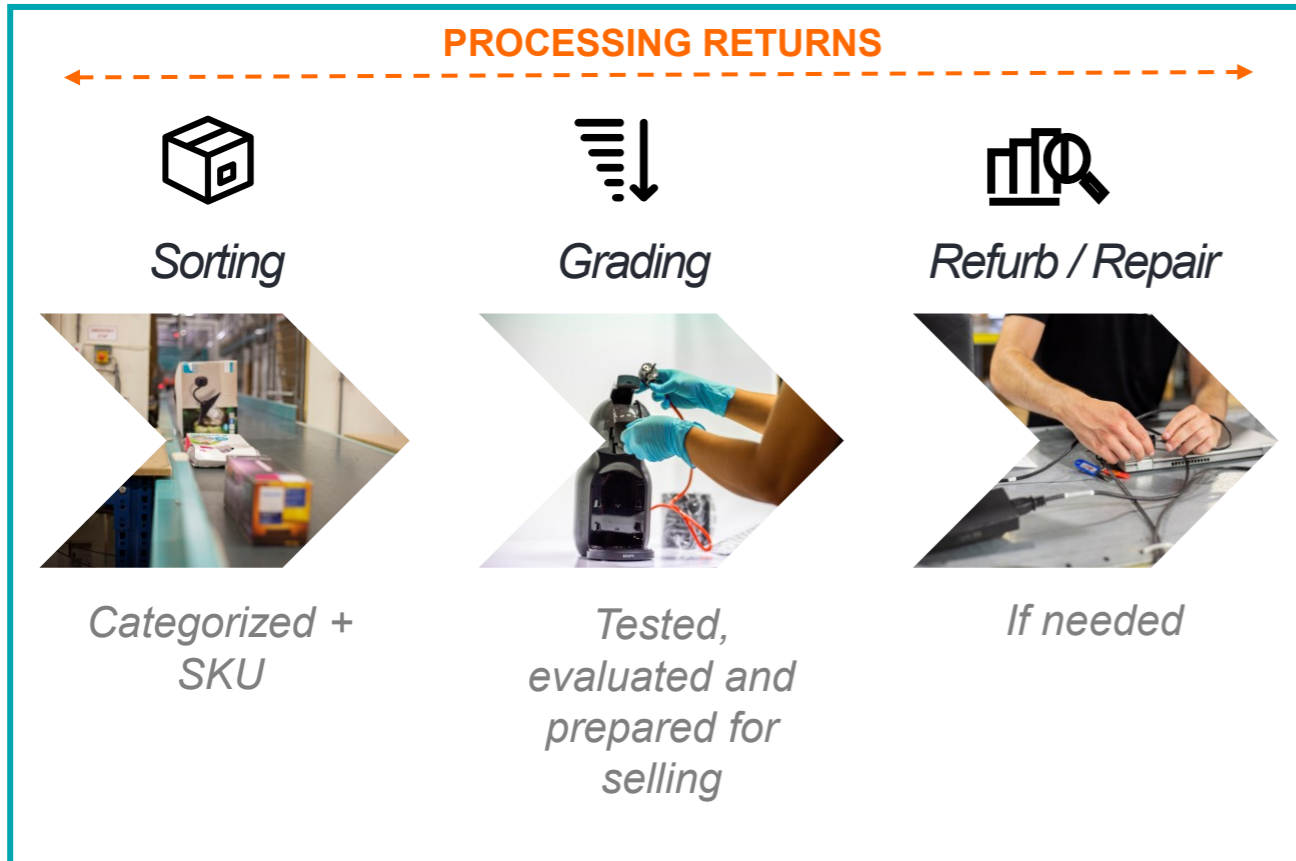
Retailers





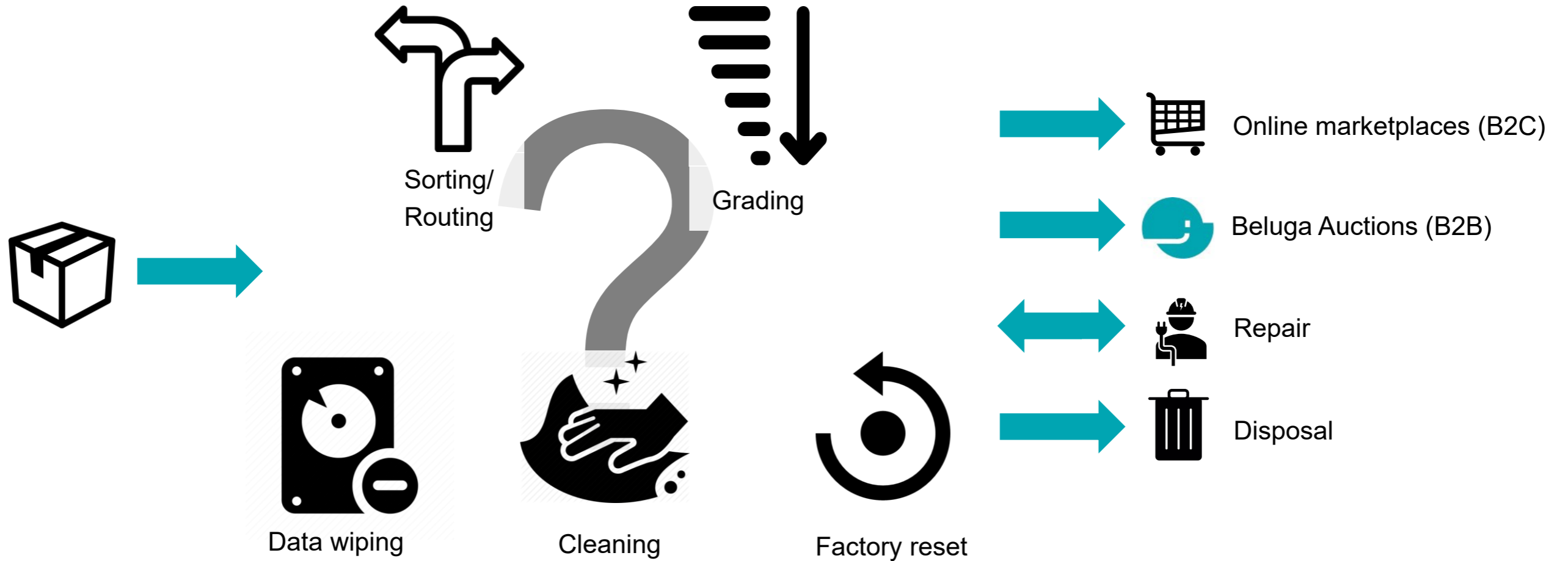
Returns | Processing and selling

N=1 logistics





Smart software | Why do we need it?



Warehouse video





Variations | Incoming product mix

- 5000+ categories
- Everything between glassware, in-ear headphones, electric toothbrushes, phones, tablets, laptops, televisions, washing machines, refrigerators, etc. etc.
- Product conditions between brand new (shrink-wrapped box) and unsellable...
...up to a box for a television that contains a bunch of bricks
- Required steps vary per product category and state:
 - Laptop: route + data wipe + grade (+ repair) (+ repackage)
 - Coffee machine: route + grade (+ clean) (+ repair) (+ repackage)
 - Glassware: route (+ dispose)
- Categories develop over time

“Doorbell”

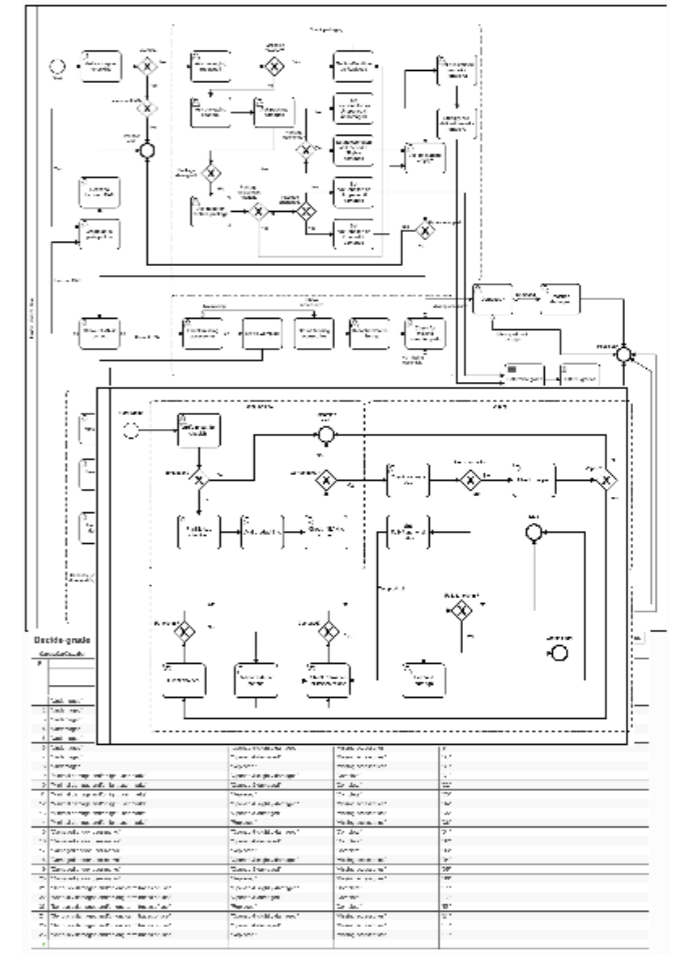




Process automation | Making Camunda work...

Camunda is a pure back-end component

- Workflow complexity captured in BPMN flows that differ across product categories
- Workflow steps define where user input and user actions are required
- Decision complexity captured in DMN, using as input:
 - Pre-announcement of return
 - “Regular” product information
 - Physical measurements (size, weight)
 - Answers provided by users in workflow steps





Process automation | ...to guide people

Front-end is developed in-house

- Users:
 - Receive instructions for manual steps to take
 - Are asked the minimum number of questions needed to complete the workflow and fuel decisions
- BPMN and DMN are invisible
- Seamless integrations with “warehouse peripherals”:
 - Barcode scanners
 - DSLRs
 - Cubic scanner and scale
 - Conveyor belt
 - Label printers



Challenges | Time and language



Timekeeping at the employee level, considering:

- Hand-overs
- Coffee and lunch breaks
- Toilet breaks
- End of shift



Define flows and forms in Camunda, but show different languages:

- Support on-the-spot language changes
- Respect personal preference at hand-overs



Both challenges addressed in interface between Camunda and front-end.



Next steps | Refine, broaden and predict

Increase differentiation of workflows across different product categories

- Maintain balance between category-level process tuning and benefits of “muscle memory”



Apply the knowledge and experience embedded in BPMN and DMN to products in partners' warehouses

- Modular “SaaS” solution with the right integration points



Use product/category features to decide on process branching

- Based on extensive and continuously growing data set on returns that have been processed and resold
- Challenging due to n=1 nature of not-new products



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Questions?

