

A top-down view of a white ceramic bowl filled with muesli, featuring rolled oats and several pecan halves. The bowl has a dark, ornate metal rim and sits on a light-colored wooden surface. To the right of the bowl, a wooden spoon with some white residue on its head is visible. The background is a wooden table with a visible grain.

# Muesli from Order to Customer







# Status Quo

## Data Description

- Company provides 4 datasets
  - Orders
  - Order Process Data
  - Campaign Data
  - Intern Study Data
- Period 03.January 2017 - 30. December 2020 for orders only!
- Company deems having full visibility on order date and on truck date
- Other datasets sporadically cover orders in 2019 and 2020

A wooden spoon and a metal plate are shown on a wooden surface. The spoon is light-colored wood, and the plate is dark metal with an ornate pattern. A small white icon of a wheat stalk is positioned near the spoon. The background is a warm, textured wood grain.

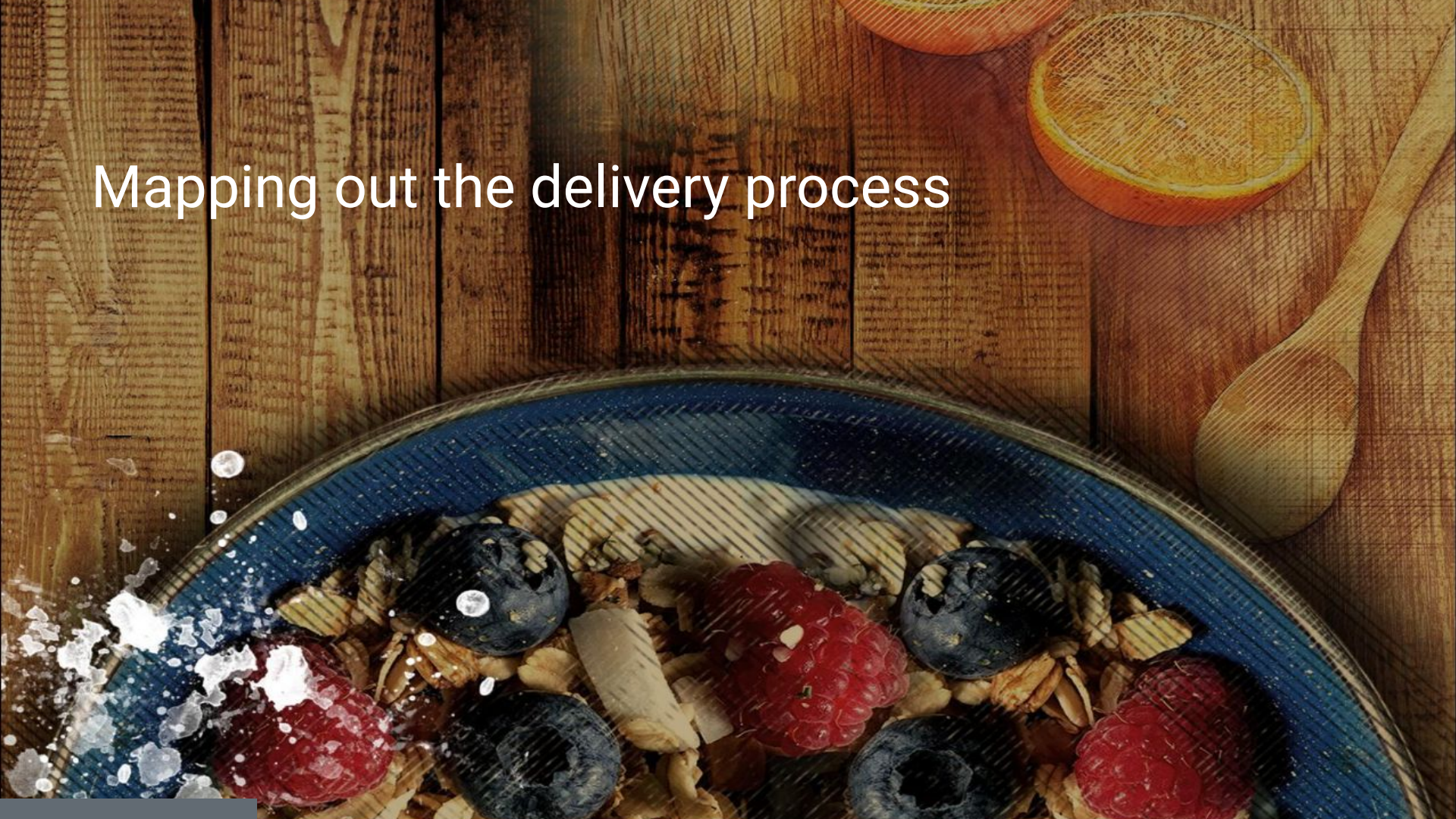
## Tasks & KPIs

For process and performance  
monitoring

1. Review & visualise process
2. Process time per order
3. Process time per ship mode
4. Track delivery time
5. Proof process assumptions
6. New KPIs & Improvements



# Mapping out the delivery process



Order in

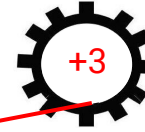
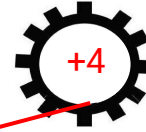
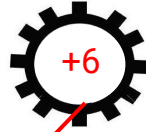
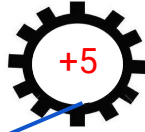
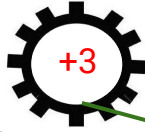
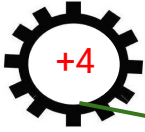


First step: Orders in

Order in



Process



Truck available



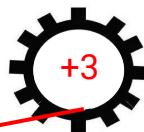
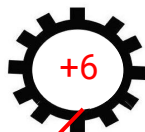
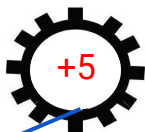
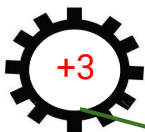
Process with 'Standard delivery'



Order in



Process



Truck available



Delivery



Customer  
(days after order)

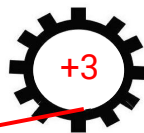
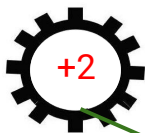
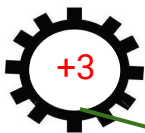
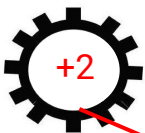


Process with 'Standard delivery'

Order in



Process



Truck available



Delivery



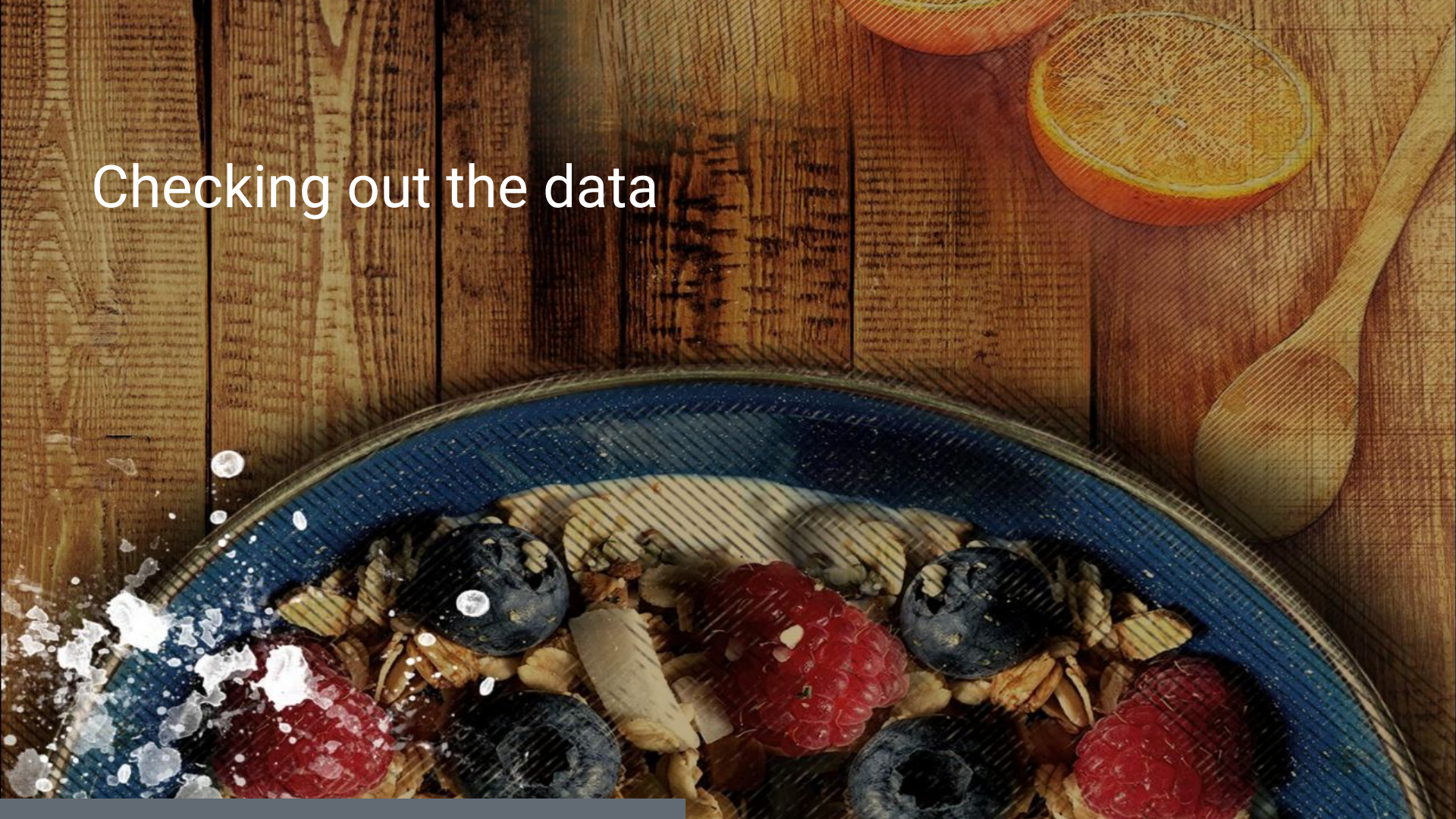
Customer  
(days after order)



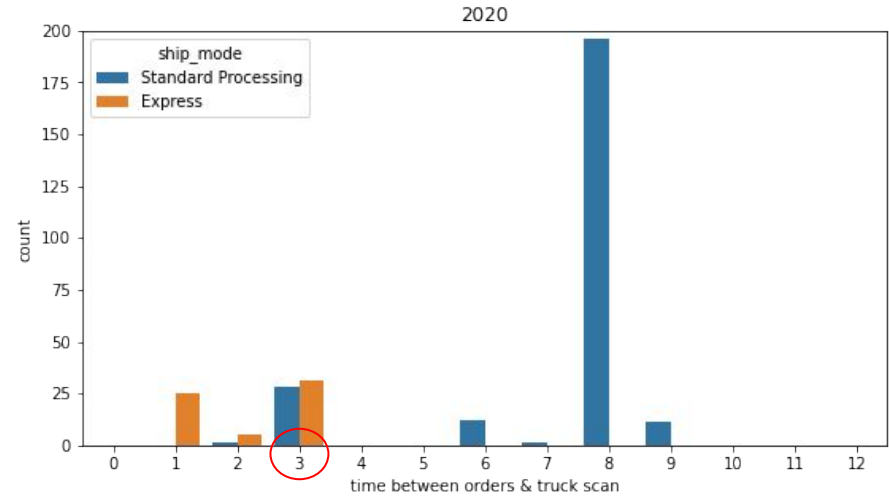
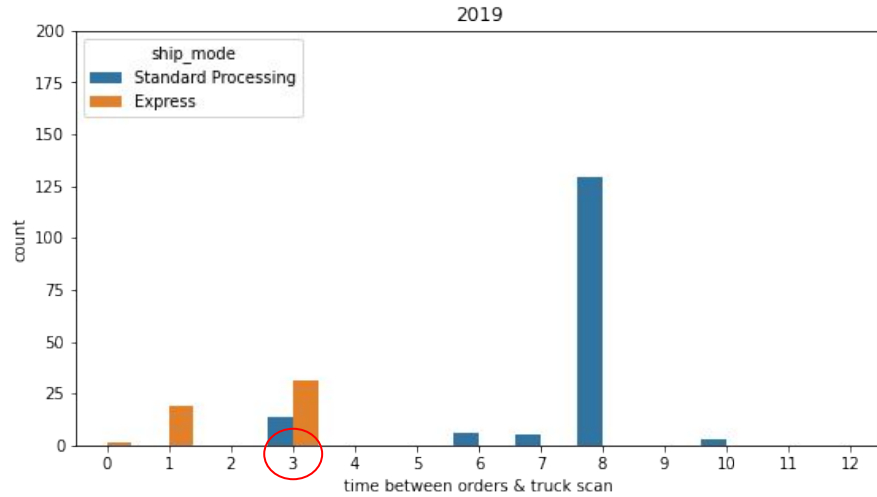
Process with 'Express delivery'



Checking out the data



Order on Tuesdays (assumed delay until truck scan = 3\_std / 3\_exp)



Tuesdays: 70% of all orders aren't processed in assumed time



A still life photograph of a wooden table. In the upper right, two orange slices are placed. A wooden spoon lies diagonally on the right side. In the lower foreground, a blue plate with a textured rim contains a dish of food, including what appears to be blueberries and a piece of bread. The lighting is warm, highlighting the textures of the wood and food.

# 93%

of orders with standard shipment aren't  
processed in the assumed time

78% of all orders used standard shipment



A still life photograph of a wooden table. In the upper right, two orange slices are placed. A wooden spoon lies diagonally on the right side. In the lower foreground, a blue plate with a white rim contains a mix of fruit, including blueberries and a slice of kiwi. The background is a rustic wooden surface with vertical grain.

# 31%

of orders with express shipment aren't processed  
in the assumed time

22% of all orders used express shipment



A close-up photograph of a wooden surface, possibly a table or countertop. A wooden spoon lies diagonally across the upper left. To its left, a portion of a metal plate with an ornate, embossed pattern is visible. Scattered across the wooden surface, particularly around the spoon, are numerous small, irregular white splatters, resembling salt or sugar. The wood grain is clearly visible, running vertically.

## Findings

- Real process does not correspond to the assumptions
- Data does not comply with the assumptions
- Process has changed between 2018 and 2019
- Express orders seem to be processed differently than assumed

A close-up photograph of a wooden surface, likely a table or countertop. In the foreground, there is a blue bowl filled with granola, blueberries, and raspberries. A slice of orange is visible in the top right corner. The text 'New KPIs & Improvements' is overlaid on the left side of the image.

# New KPIs & Improvements

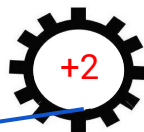
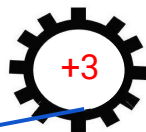
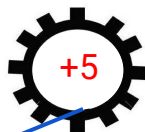
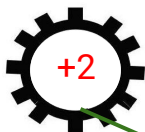
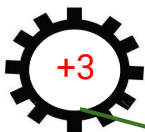
- Create a process which is tracked constantly
- Track orders with a timestamp (order\_date with timestamp)
- Track ready\_for\_truck with timestamp
- Logistic company track on\_truck with timestamp
  - Fixed time slot for package pickup by logistics company
- Describe the process step by step
- Stock overview per product ID



Order in



Process



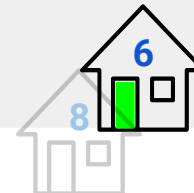
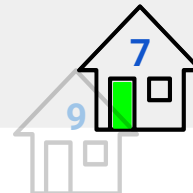
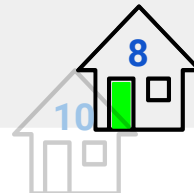
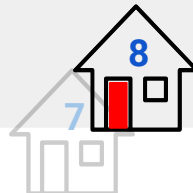
Truck available



Delivery



Customer



Improved Process for Express Deliveries



# 30%

of all express orders would be delivered 2 days faster

19% of all express orders would be delivered 1 day slower



A close-up photograph of a wooden table with a bowl of granola, blueberries, and raspberries. The text 'How did I get to the results?' is overlaid on the top left, and 'Slowly but Steadily :-)' is overlaid on the bottom left.

# How did I get to the results?

Slowly but Steadily :-)

1. Creating DataFrame from 'muesli\_raw\_orders'
  - a. Explore Data
  - b. Clean Data incl. Delete Duplicates
2. Creating DataFrame from 'muesli\_truck\_data'
  - a. Explore Data
  - b. Clean Data incl. Delete Duplicates
3. Merge both DataFrames on 'order\_id'
  - a. Drop a lot of columns
  - b. Drop columns without truck\_data
  - c. Create columns with workdays and delays between order\_date and truck\_scan\_date
4. After Merging and cleaning I just had data for 2 years (2019-2020)
  - a. Visualise



A detailed illustration of a still life scene on a wooden table. In the foreground, a dark, ornate bowl filled with cereal and milk sits on the table. To the right of the bowl, two slices of orange are placed. A wooden spoon lies on the table to the right of the orange slices. The background is a soft, out-of-focus area, possibly a wall or a window, with a light, warm tone. The text "Much success!" is written in a white, serif font across the center of the image.

Much success!