Müsli data analysis

Delivery times

Presented by Stephan, Gio, Matt & Susanne

Agenda

- Introduction
  - Objectives
  - Flow of current business process
- Overview of orders and delivery process and KPIs presentations
  - Order received
  - Order processing
  - Order delivery

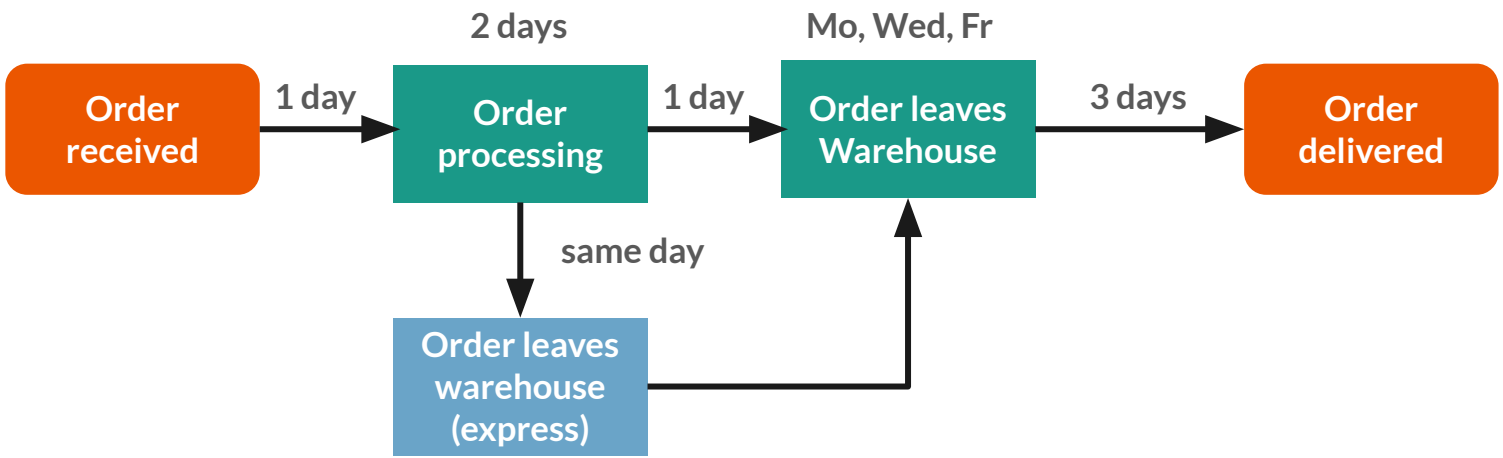
Objectives

Goal: provide valuable insights to the delivery process with the aim to im

prove the overall service you provide to your customers.

1. Get overview of the process flow
2. Create and evaluate KPIs
3. Develop hypotheses
4. Draw conclusions

Flow of the business process



Order received

KPIs:

- KPI 1: Number of orders
- KPI 2: Number of orders per ship mode

Hypothesis:

- The number of orders received differs according to the day of the week
- The number of orders received varies according to the ship mode (standard vs. express processing), e.g. one ship mode is prioritised over the other

Order received per weekdays and ship mode


```
[145]  1  orders_weekdays.ship_mode.value_counts()
       ✓  0.0s                                                    Python

...    ship_mode
       Standard Processing    3958
       Express                1052
       Name: count, dtype: int64
```

Order process

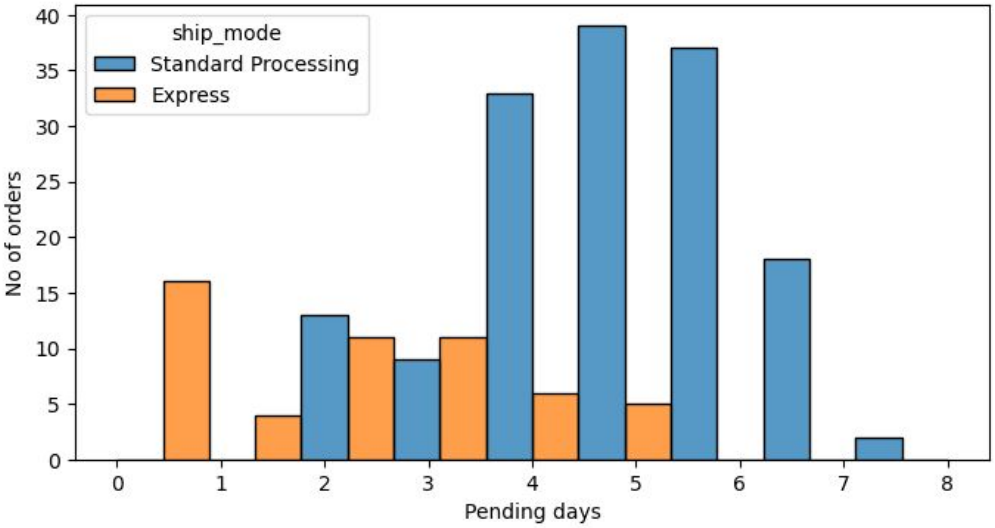
KPIs:

- KPI 1: Time order is ready to be shipped
- KPI 2: Ship mode of the order

Hypothesis:

- The overall time for an order to be processed is related to the ship mode
- The majority of orders are processed on Monday due to no orders being processed on the weekends

Orders process per day of the week and ship mode



		order_processing_day
ship_mode	order_processing_day	
Express	Friday	5
	Monday	14
	Thursday	10
	Tuesday	13
	Wednesday	11
Standard Processing	Friday	21
	Monday	44
	Thursday	26
	Tuesday	25
	Wednesday	35

Order delivery

KPIs:

- KPI 1: Pickup date at warehouse
- KPI 2: Deliver date to the customer
- KPI 3: Overall time of full delivery (from the truck to the customer)
- KPI 4: Order lead time (end to end)

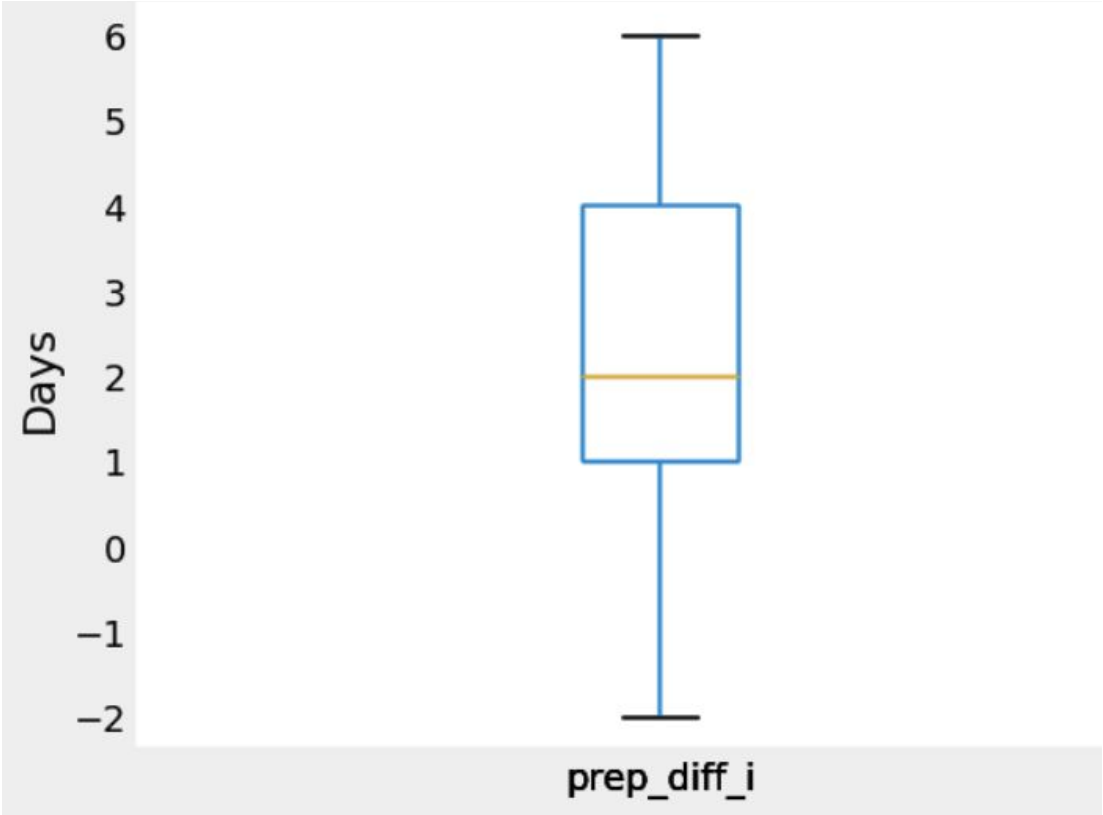
Hypothesis:

- Orders take 2 days to process
- The order lead time takes no longer than 5 days

Pickup pending time

Expectation vs reality

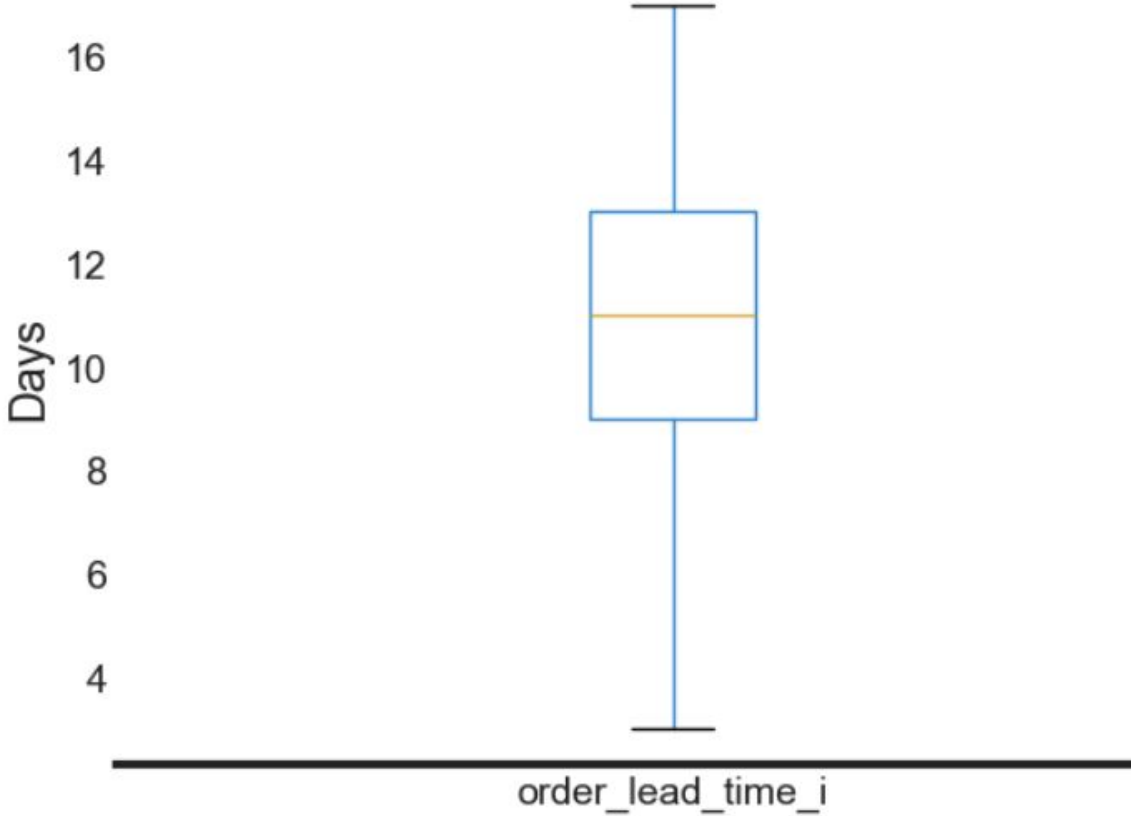
delta / difference between
order_date &
ready_to_be_shipped



Order lead time

Days needed from order date to order delivered with customer

- Average = 10.83 days
- no weekend deliveries were made
- double the assumed lead time!



Recap of key findings

- The majority of orders are made via Standard Processing Shipping (75%).
- Process of order should take max 2 days, however standard delivery takes on avg 5 days
- Most orders processed on Mondays, over 50% of weekly orders
- Mean Lead time for standard process is 12 days, not 6 to 7 days
- Mean Lead time for express process is 7 days, not 5 days
- Amount of orders increased over the last four years around 45%

Recommendations

- Implement the KPIs.
- Expand data collection.
  - Collect data from logistic company.
  - Collect data from local distributions.
- Renegotiate with logistic companies to provide more trucks.
- Renegotiate with logistic companies to provide pickup on Tuesday and Thursday as well.
- Treat weekend orders as express shipping for Monday.
- Clear expectations settings with customer about delivery time.

FEEDBACK FROM GROUP

Niko/Content: great idea on the delta, a lot of data analysis. too much time talking on the intro, not enough on the results/Data. Good slides, minimalistic

Katrin/comms: good camera/eye contact, some movement. -overtime 18mins. Good graphs, could have had some focus/highlighting

Renan/visuals: lots of time periods, numbers, faces of graphs. Lots of talking, more slides to present as well

Sabrina/technical: nice flow of presentation, one person sharing. Code sharing as well. Label of week not sorted. Methods well explained

Konni, good slides, good details. Intro was too long, maybe even cut it. Slide transitions to match what we say, to support the messages. Same colours, unless you want highlight something. Good recap and suggestions

Laura:intro too long, but overall a well-structured presentation. Good summary &recommendations. Good pace, good connection to audience. 17 mins. Nice minimalist slides with 3 bullet points. Some plots could have been added to support things we said outside. Nice sharing purpose of KPIs

Jugnu. Great story telling, best part. Clear goal, clear flow. Concise slides. Use headings for main msg “Tuesdays are the….”. Few missing slides - next time have a “general overview of data” when talking about aspects not shown on current slide. Calendar days. Great key findings recap. Show process/time flow on slide(heading, bottom) out of sight to show continuation. Business days vs calendar days?

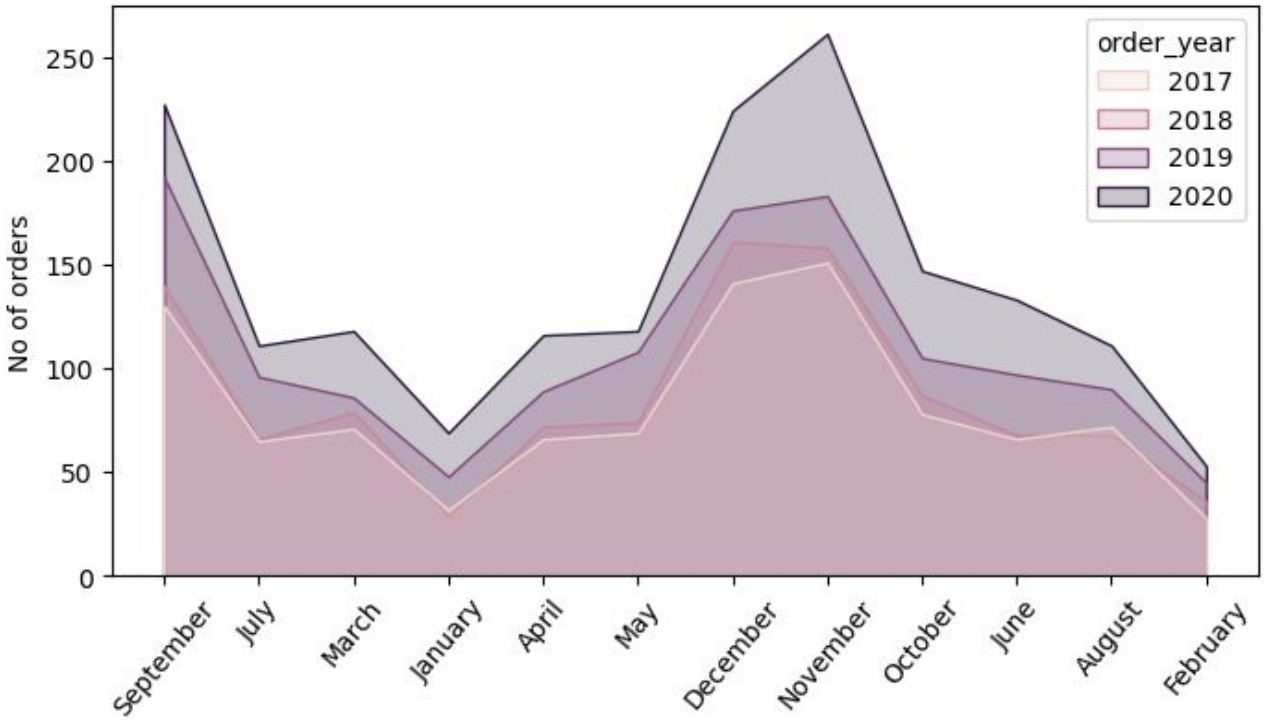
Extra findings

Nice to have : not essential for meeting

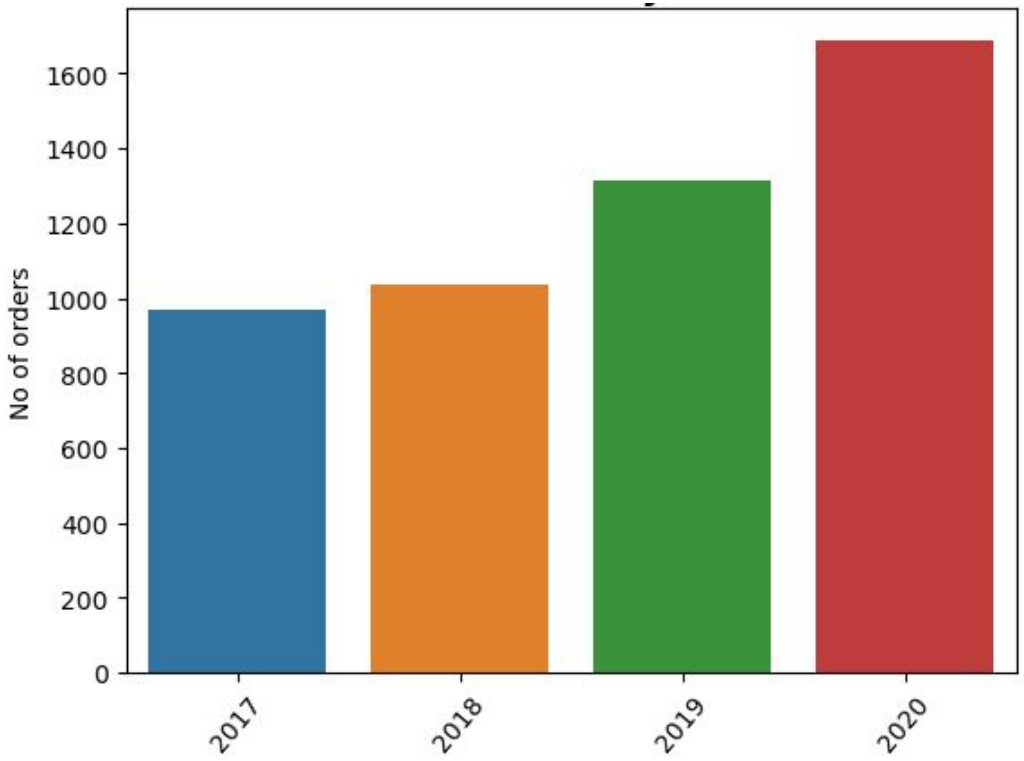
Peak periods consistently seen across Sept, Nov & Dec

Orders increased continuously over the last 4 years

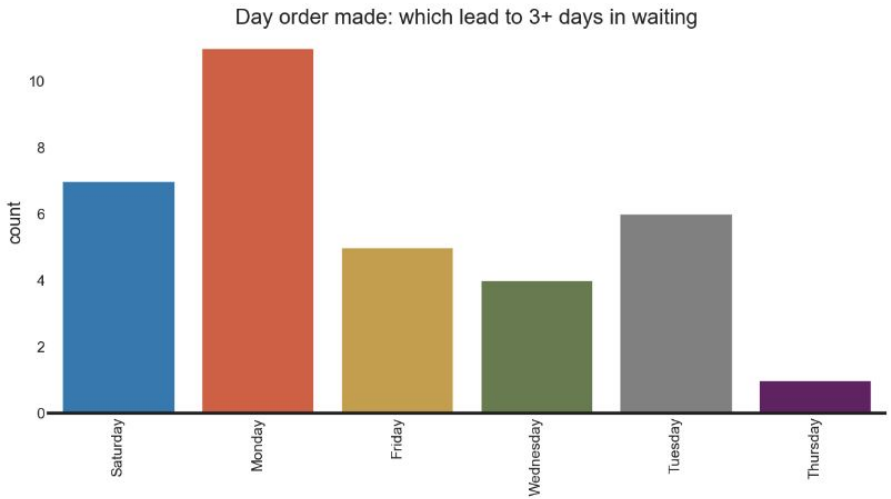
Orders received over the year



Growth of the number of the orders from 2018 to 2020



Days that result in order pickup delays



Order delivery descriptive statistics

Time between order load to the truck and order is delivery to the customer.

- Most of the orders arrive with customers on Mondays, with 215 packages (65%)
- Tuesdays & Fridays similar amounts of packages (N= 40), Wednesdays and Thursdays each (N=20)
- Mean lead time for express processing = 7 days
- Mean lead time for standard processing = 12 days

FEEDBACK TO PRESENTATION

Xx: asdad

Jugnu: x

Storytelling with Data

- Effectively communicate the most important (top 3) insights using narratives and visualisations
- Used to share context and inspire action
- Create compelling business case
- Storytelling is used to evoke emotional responses to aid in your points being memorable & acted upon

Steps

- Set the scene giving context to the data/study/hypothesis
- Highlight the core findings
- Present maximum of 3 insights of data as supporting pillars to help the audience understand the narrative
- Talk through with visualisations

Tips

- Use simple charts that need little time to digest
- Use meaningful chart titles to reflect the message / action
- Use colours for contrast / highlighting key parts