

# How can I help?

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Business Fundamentals project work - Data Science Bootcamp - METIS 2021  
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# Importance of customer service (CS)

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## Goal of the project:

### Improve customer experience by customised CS representative rota

- Everyone uses it in a way
- Contact point to companies
- Amazing effect on company's figures



# Affects on Customers

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**73%** - stay loyal

**69%** - would  
recommend the  
company

**72%** - expect businesses  
to understand their needs  
and treat them as unique individuals

**67%** - would  
pay more

(Source: [blog.hubspot.com](https://blog.hubspot.com), [groovehq.com](https://groovehq.com))

# Methodology

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- Sample Call Centre datasets from Kaggle
- Data cleaning, EDA - Google Sheet
- Visualization - Tableau

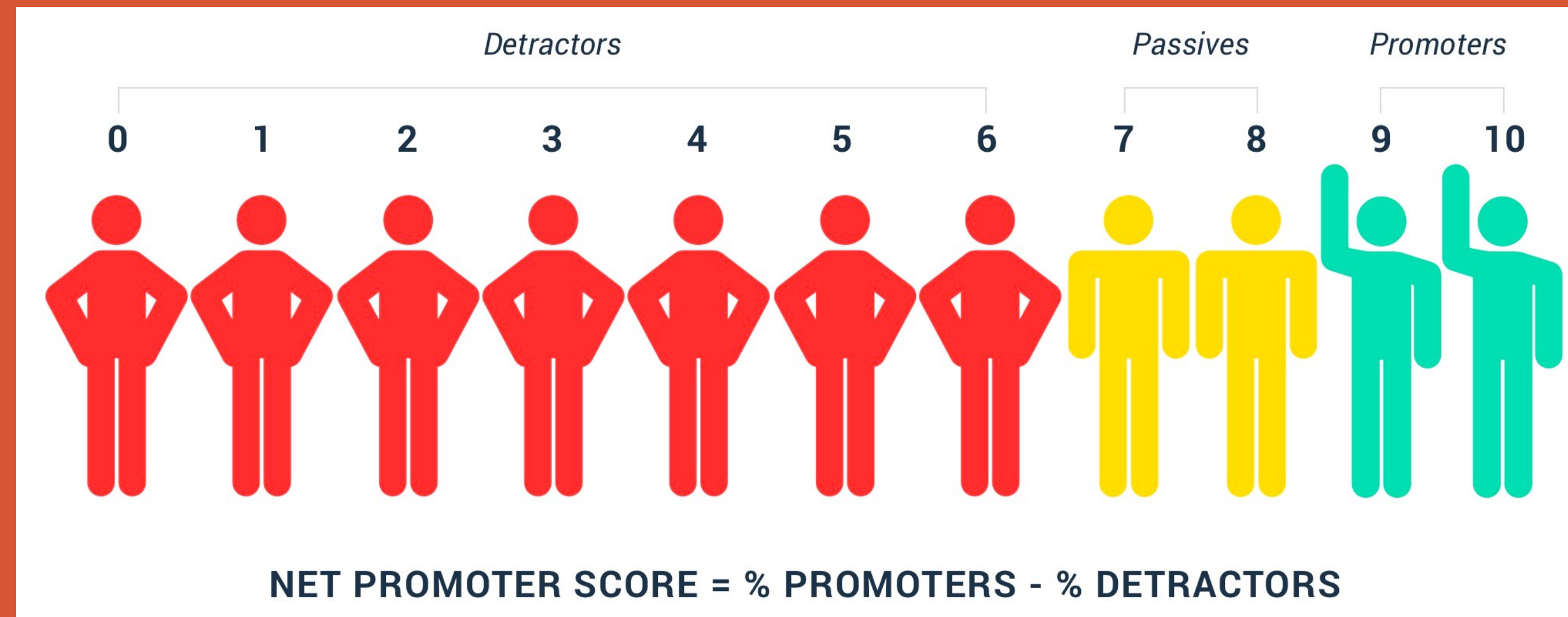
# Business Problem

- Abandoned calls and long waiting time
- Caused by:
  - Quality
  - Quantity of Customer Service representatives
- 1/3 customers hang up after 1 min of waiting 2/3 after 3 mins
- **Decrease NPS (Net Promoter Score)**



# Success Metrics: NPS (Net Promoter Score)

“How likely are you to recommend us to a friend or colleague?”



- 20-60% of overall growth rate, 12 points increase —> doubling company's growth rate (Bain and Company)
- International benchmark: Apple - 75 NPS score

# Quantity

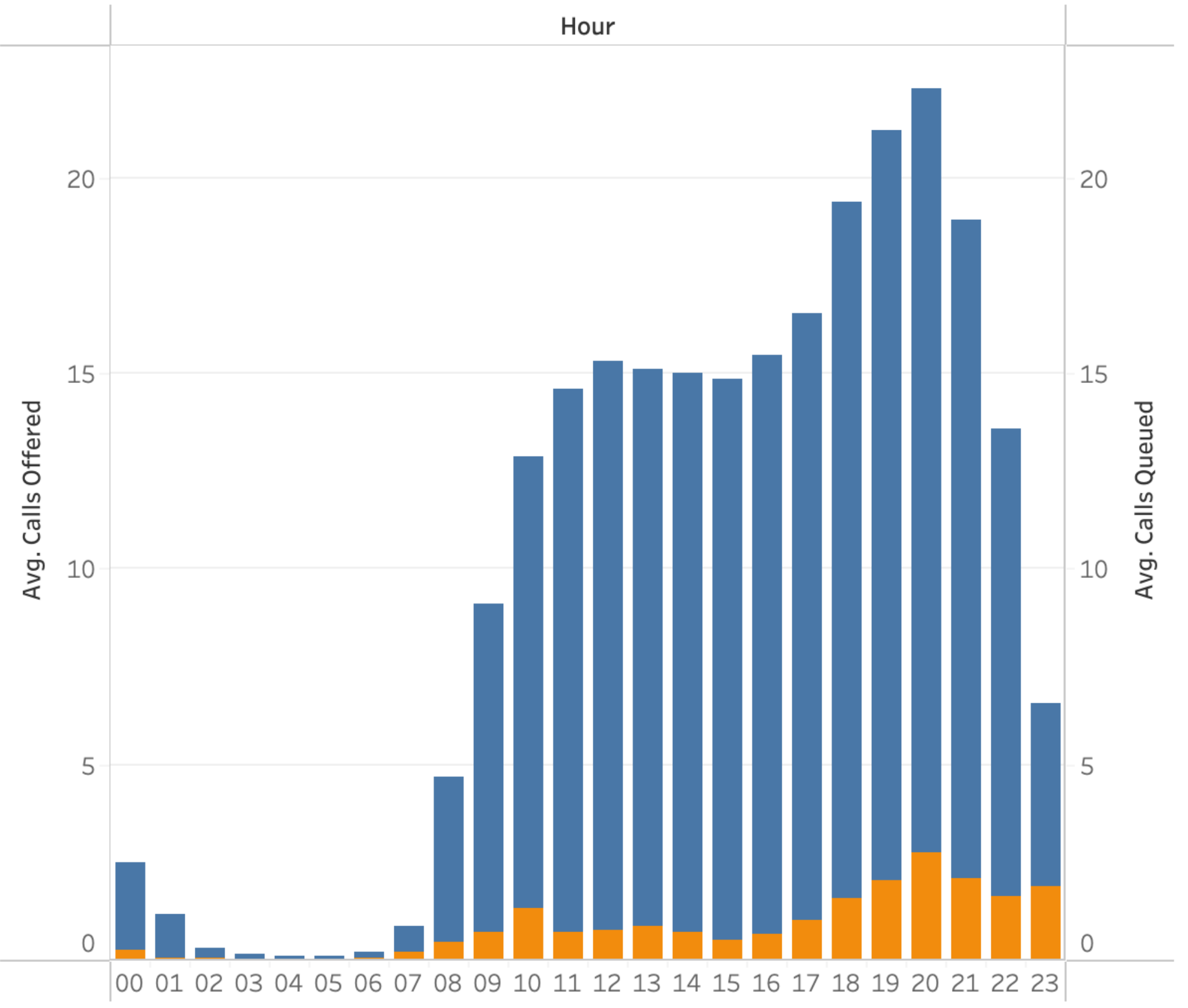
Long waiting  
time

Busy periods  
of the year

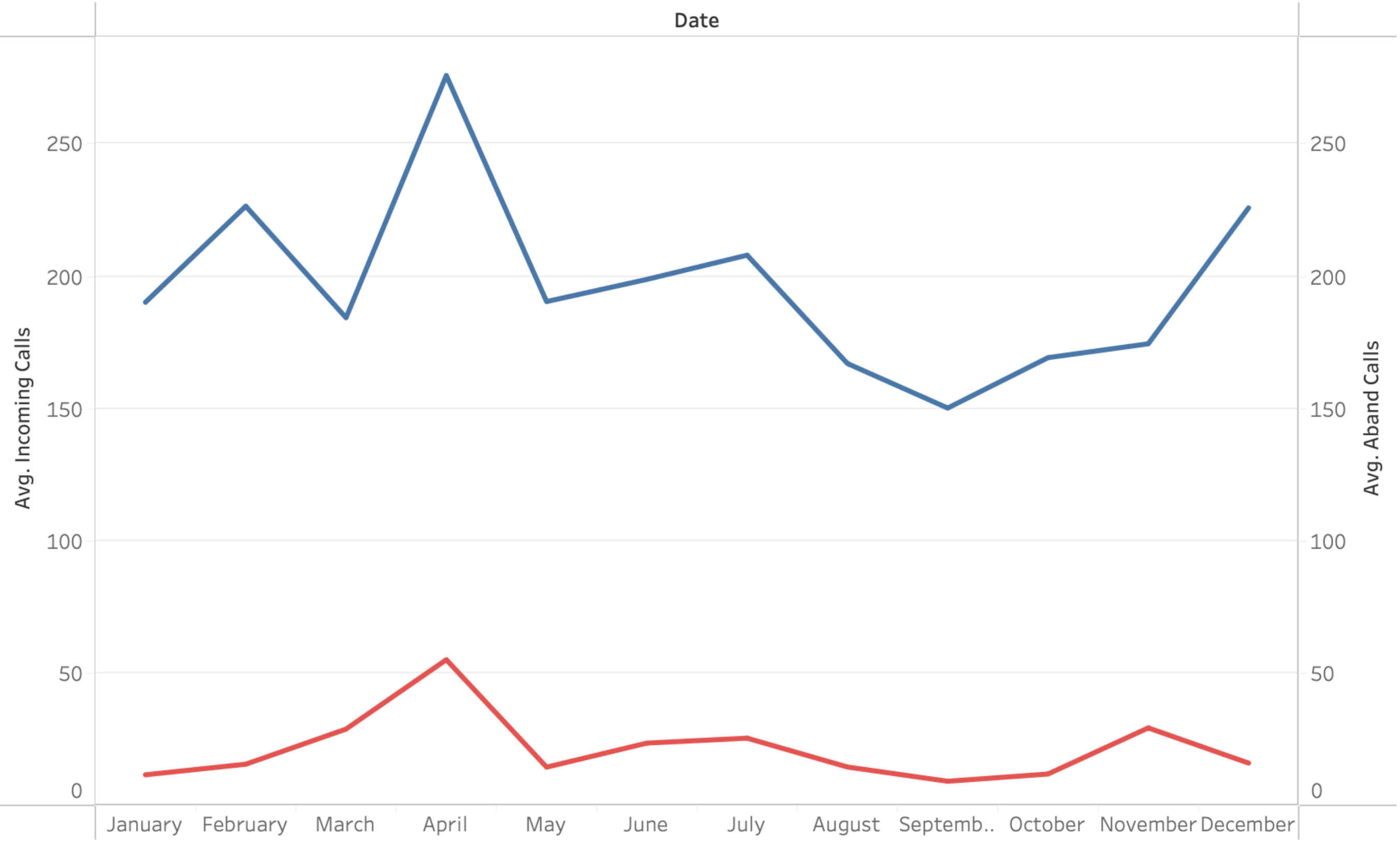
Busy periods of day

# Call Statistics

Average number of calls by hours



Incoming/Abandoned calls per month



Avg. Aband Calls  
Avg. Incoming Calls



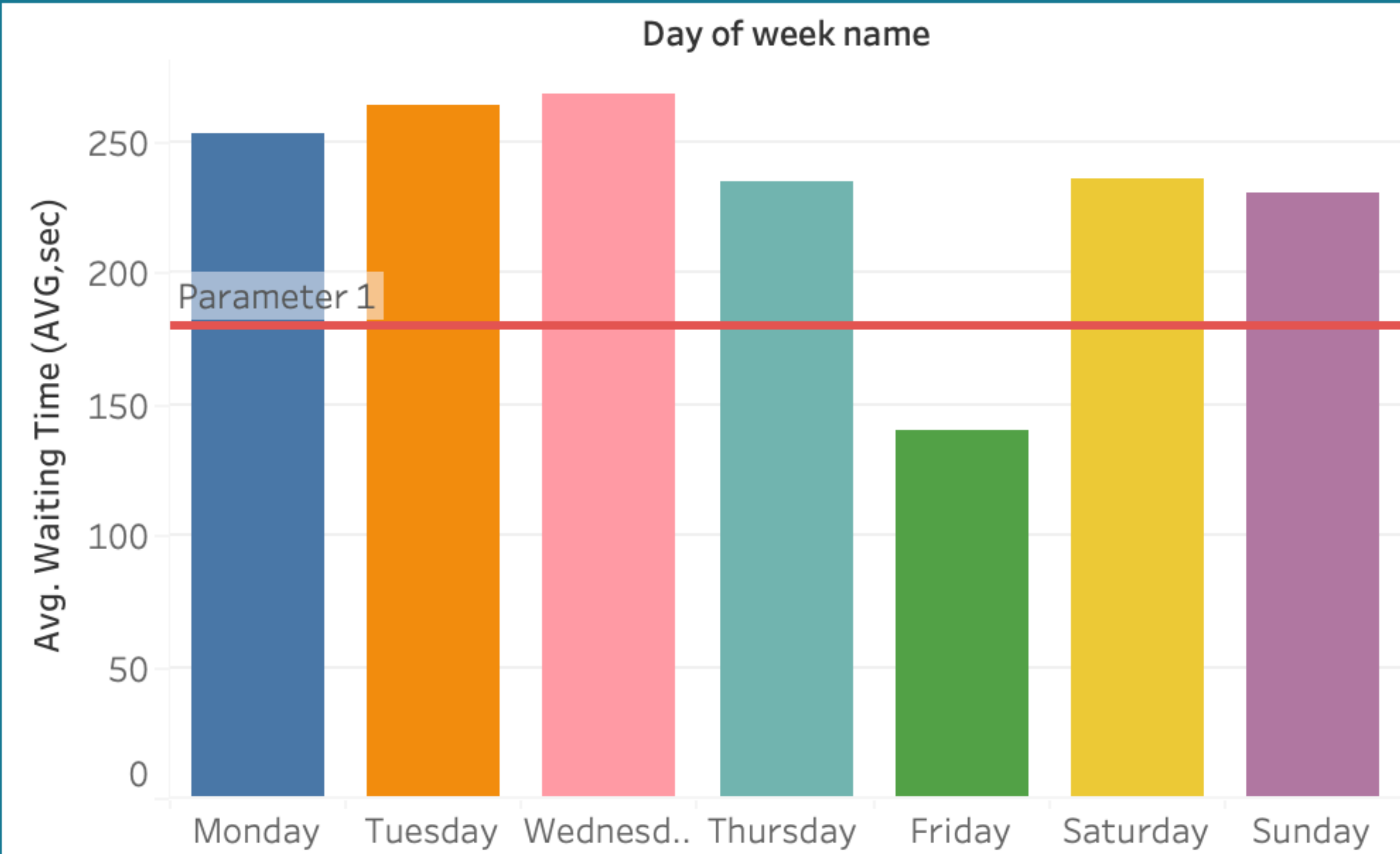
# Average waiting time per days of the week

Day of week name	
Monday	253.6
Tuesday	264.2
Wednesday	267.7
Thursday	235.2
Friday	139.8
Saturday	235.6
Sunday	230.0

Parameter = 180 sec (3 mins)

Most waiting time: Wednesday

Less waiting time: Friday



**Identify issue frequency  
and prioritise training on that area**

**Identify strength  
and weaknesses**

# **Quality**

**Continuous  
training plan**

**Skill Matrix**

**Keep employees  
motivated**

# Solution Path

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- None data science step:
  - increase information on website
- Data science steps:
  - virtual assistant —> **A/B testing**
  - predict busy periods of year, week, day —> **dynamic linear model**
  - identify the best “mixture” of staff for a shift, skill matrix
  - clustering problems by characterises
  - asking customers to describe the issue with a few words—> **NLP, probability model**

# Cost of Failure

Incorrectly identified combination of the customer service can cause:

- Overstaffed shifts - **Extra cost, lack of engagement**
- Longer waiting time, customer churning - **Damage in reputation, decrease in sales**
- Low NPS - **Decrease in growth rate**

***“There is only one boss. The customer.”***

*- Sam Walton (founder of Walmart)*