

The slide features a light beige background with various coffee-themed illustrations. In the top left, there are three red coffee beans and a sprig of green coffee leaves. In the top center, there is a sprig of green coffee leaves. In the top right, there is a stylized coffee cup with an orange handle and a black body. In the bottom left, there is a large, stylized coffee cup with a light blue handle and a black body, resting on a wooden surface. In the bottom center, there are two red coffee beans. In the bottom right, there is a sprig of green coffee leaves.

# Brewing Success

A Data-Driven Journey of Our Coffee Shop

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# What happened? Process & Descriptive Analysis

2018 Event Log Cases:1826

Avg. Time per Case: 0.7 hours

Delivery Rate:  
76.5%



Phone Order Rate:  
61.2%



Web Order Rate:  
17.6%



82%

## Speed Ordering

82% more efficient if the ordering process of phone delivery is as quick as the counter order, equal to more time to deal with around 1034 takeaway cases.

5.2

## Quick Brewing

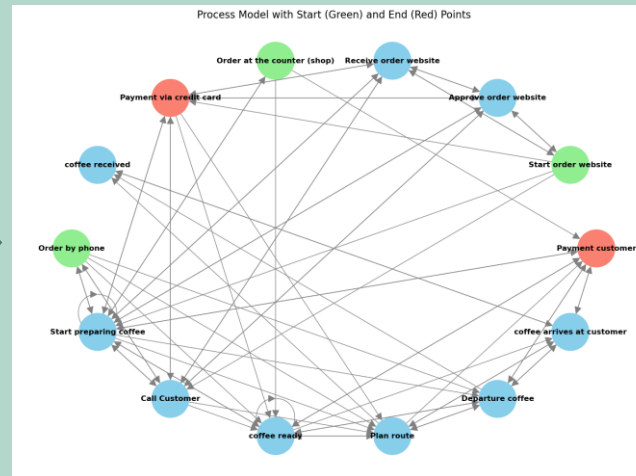
5.2 minutes will be saved if the process in phone ordering could be automated or digitalised, which will shorten the delivery process.

2/5

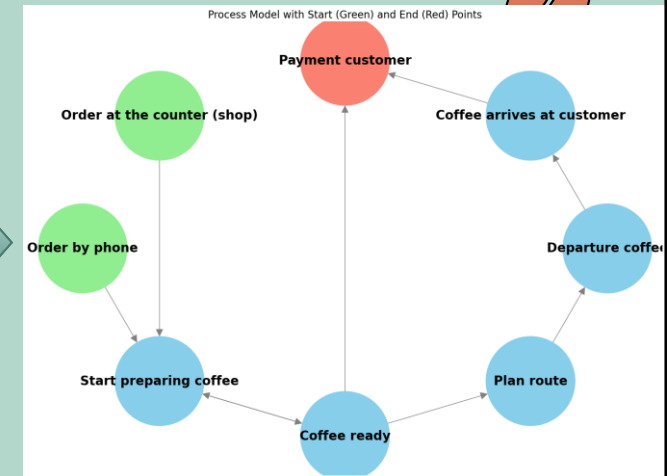
## Easy Payment

2/5 of the time in phone ordering cases is waiting for the customer payment. Introducing an easy way of payment can lessen customers' time in the whole process and lead to more satisfaction.

Whole Process



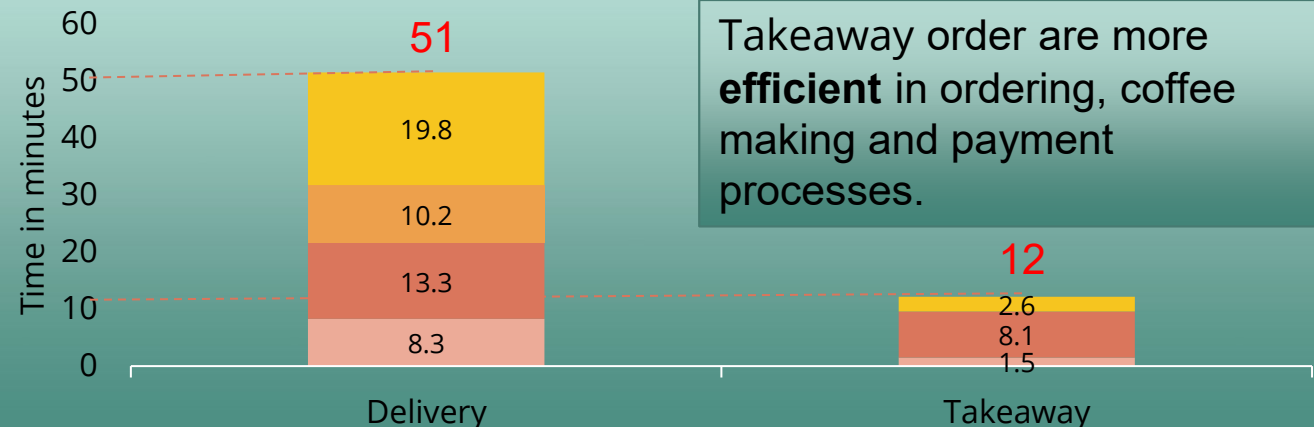
Top Process



Delivery and Takeaway Time

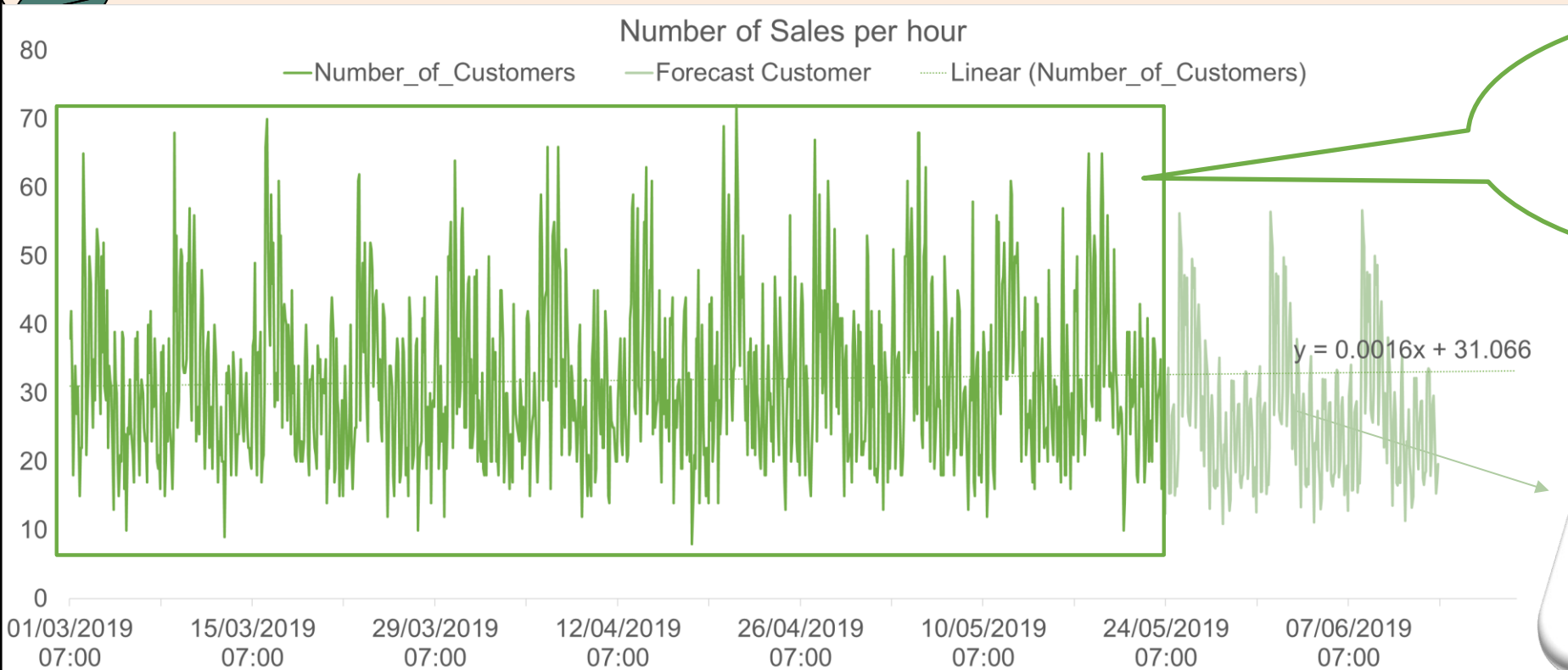
## From Order to Payment

Ordering Make Coffee Delivery Payment

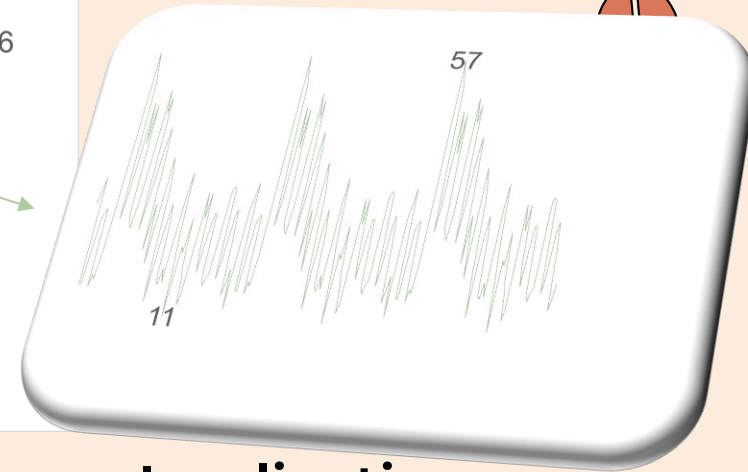


Takeaway order are more **efficient** in ordering, coffee making and payment processes.

# What will happen? Predictive Analysis



Historical data indicates that the sales plateau but rise up a little every day!



## Prediction

Using the **exponential smooth** method to predict the following 3 weeks' sales, the model's MAPE is 10.04%, meaning the predictions deviate by an average of 10.04% from the actual values, suggesting reasonably good predictive accuracy.

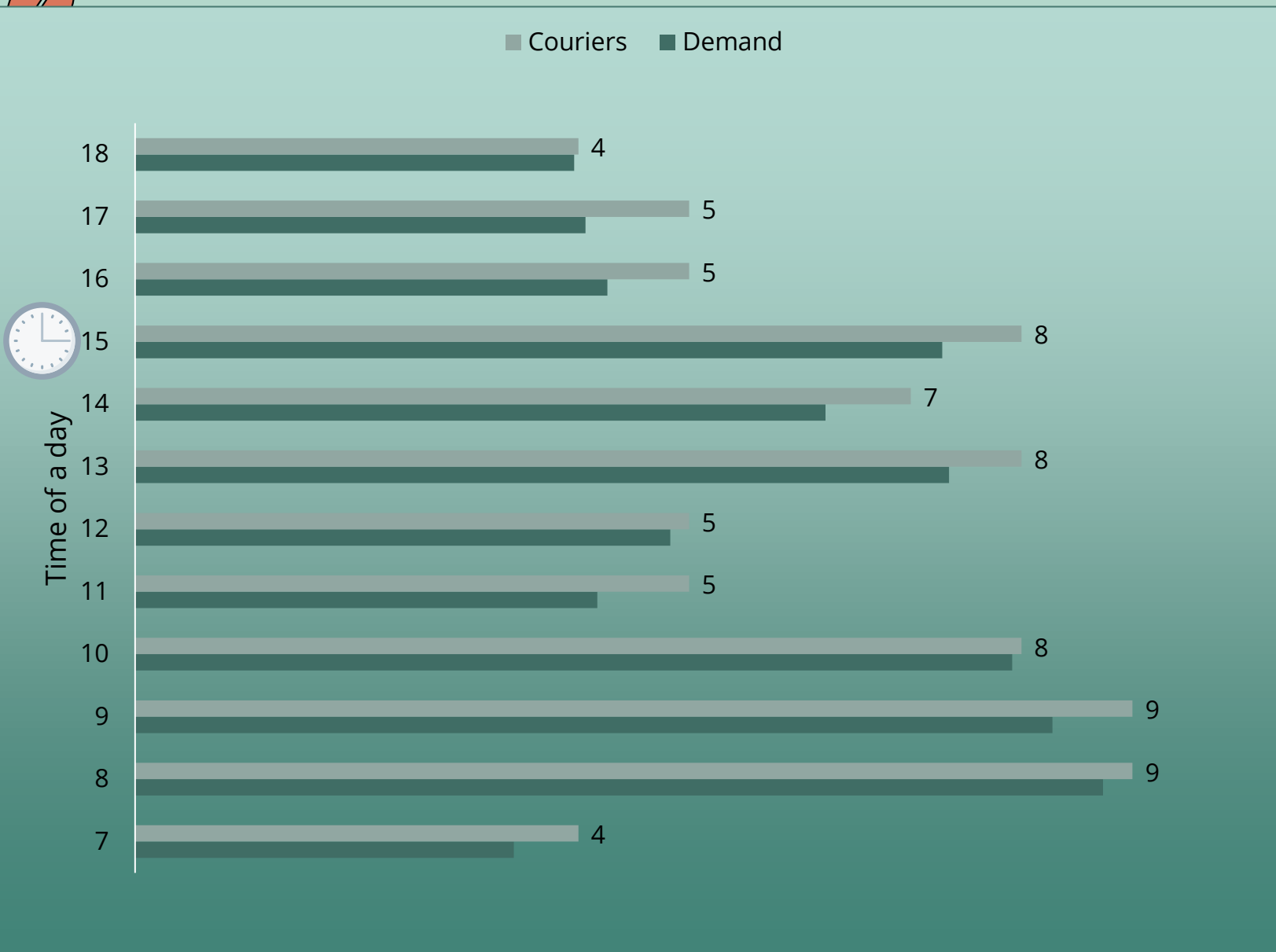
## Performance

The predictive light green colour line shows the sales peak 57 on Saturday, and hit down to 11 around Tuesday. The high period is always around the weekends and it meets low period around Tuesday.

## Implications

- Stock more supplies and have extra staff for busy weekends (especially Saturday).
- Reduce staff on slow days like Tuesday.
- Run promotions or discounts on Tuesdays to boost sales during the quiet period.

# What should I do? Prescriptive Analysis



## Optimisation

Based on the 2 datasets, we know the delivery rate (76.5%) and the predictive highest demand a day (dark green bar on the left), we use the **integer programming** tool to get the optimised couriers on shift per hour. Considering the various costs and limits, couriers cost will minimise at €1155.



## Recommendation

- Assign between **4 and 9 couriers per hour**, ensuring the forecasted demand for each hour is met.
- Consider splitting courier shifts into shorter intervals or making use of part-time couriers, especially during peak times, to prevent excess idle time and reduce total costs.
- Introduce promotions during slower periods.

# Summary & Recommendation

Order

01

**Speed Up**

Quicker order can make the operations more efficient.

Brewing

02

**Optimisation**

Optimise brewing time for delivery orders will see a shorter process time.

Delivery

03

**Dynamic Shift**

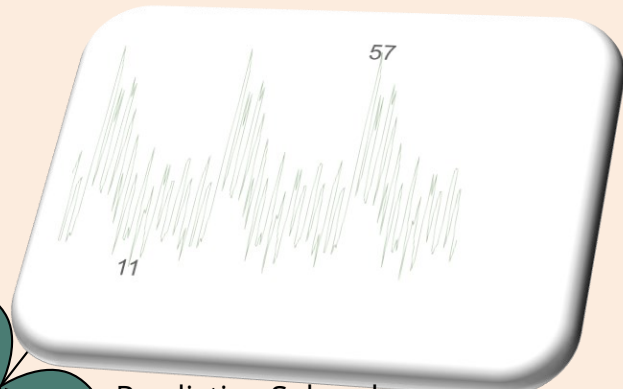
Assigning 4 to 9 couriers per hour will meet with the predictive highest sales day.

Payment

04

**Automation**

Automate the payment process for more customer satisfaction.



Predictive Sales shows more orders around weekends and less customers in weekdays.

**More staffs on weekends  
More promotions on weekdays**