

TOHacks 2022 Celonis

by:

Rena Wang, Kevin Ochoa and Anusha Kabber

1. *What method of transportation does the pizza take to Munich District 1, and how much Co2 emissions does this mode of transport generate yearly?*

- a. **Bike, 236 kg**
- b. Bike, 120 kg
- c. Car, 236 kg
- d. Scooter, 0 kg

2. *Navigate to our **Co2 Drill Down** tab on the bottom of the screen. Navigate to the variant explorer*. How many different variants are there for Pizzeria Mamma Mia?*

- a. 150
- b. 200
- c. 250
- d. **207**

3. *Let's look at some of the different variants. Of the first 5 variants, which has the longest throughput time?*

- a. 1
- b. 2
- c. **3**
- d. 4
- e. 5

4. *What do you think happens in Variant 5 that delays the pizza making process?*

A. In comparison to other variants with minimal throughput time, variant 5 actually starts preparation of making pizza after the order has been received. The whole process would move a lot faster if a common base has already been prepared to some degree and then just the toppings are added according to customers' orders and re-baked.

5. For **Variant 4**, how many trees would Pizzeria Mamma Mia have to plant to offset their emissions? **Hint, you'll have to filter by variant 4, then change tabs to find your answer*

- a. 24
- b. 20
- c. **19**
- d. 10

6. Navigate to the "Rework Rate" tab. What is the rework rate* for January 2018?

- a. 25%
- b. **39%**
- c. 33%
- d. 15%

7. Navigate to the **Co2 Drill Down** tab. Look at which of the customer groups generates the most revenue (adult, teenager, senior, student). Filter out this user group with the highest revenue generated. Take 5 minutes to explore the variants for this user group, and the breakdown of carbon emission coming from this customer group's orders. **Then, write below 2-3 ideas on ways to keep these loyal customers, while cutting down on their carbon footprint.**

A. "Student" is the customer group that generates most revenue for the pizzeria. Variant 1, the variant that begins with order by phone, is also the cause of a lot of the carbon emission due to the number of cases that fall under it and the large carbon footprint delivery leaves behind. Van delivery, especially, was found to be the greatest contributor of carbon emission. Van deliveries were mostly used to cater to Munich Districts 4 and 5 and distances larger than 15 km. To control or lessen the carbon emission this customer group inadvertently contributed to without losing their loyalty, we've come up with 2 solutions that the pizzeria can implement:

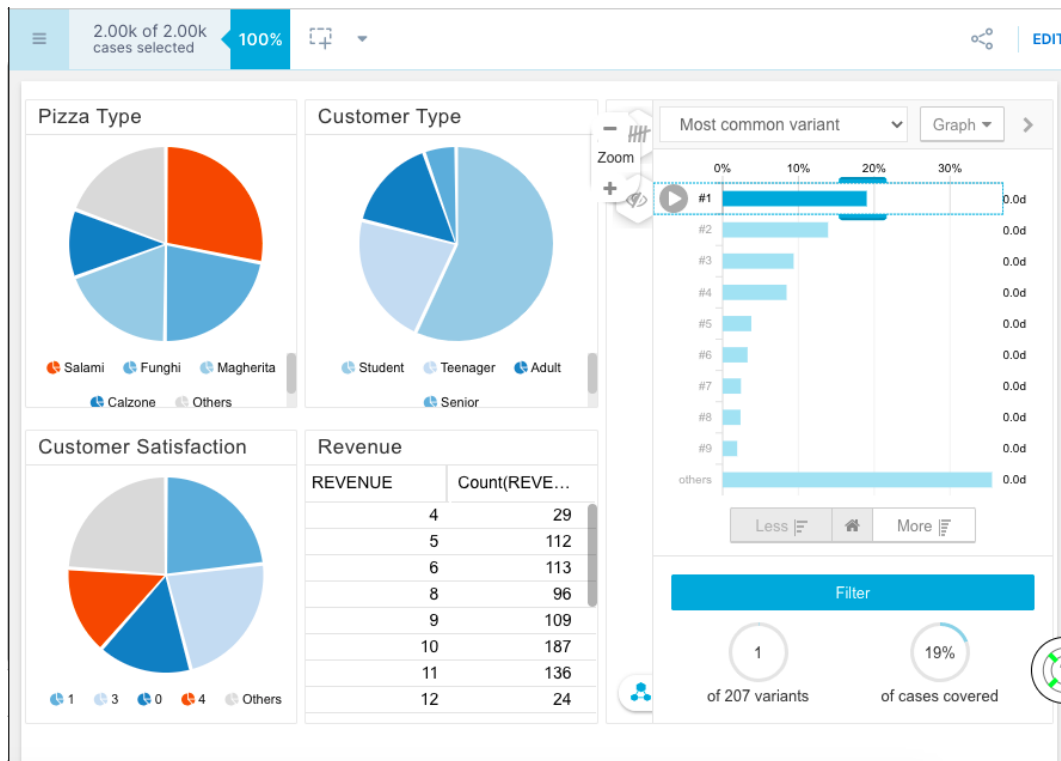
1. Provide a student discount for customer pickup for orders that have delivery distances larger than 15 km. This may encourage students to pick up their order on their way back from school or college and indirectly disincentivize them from choosing home delivery.
2. Limit the number of delivery trips made by vans by introducing fixed delivery times. A certain number of orders must be reached before a van is used for their delivery. If that number or limit is not reached by the fixed delivery time, a car, which has a lower carbon footprint, can be used.
3. The pizzeria can open a low cost outlet in a location closer to Munich districts 4 and 5. A single trip by van would deliver predicted pizza orders for the day and bikes or scooters would be used to deliver them to customers in Munich districts 4 and 5 from the outlet.

OPTIONAL CHALLENGE

For the optional challenge of building your own analysis we've created 2 new analysis sheets to aid the implementation of the points mentioned in Answer 7. The original analysis lacked these comparisons and while answering the questions above, we felt the pizzeria would be benefitted by and processes improved by the addition of these new comparisons.

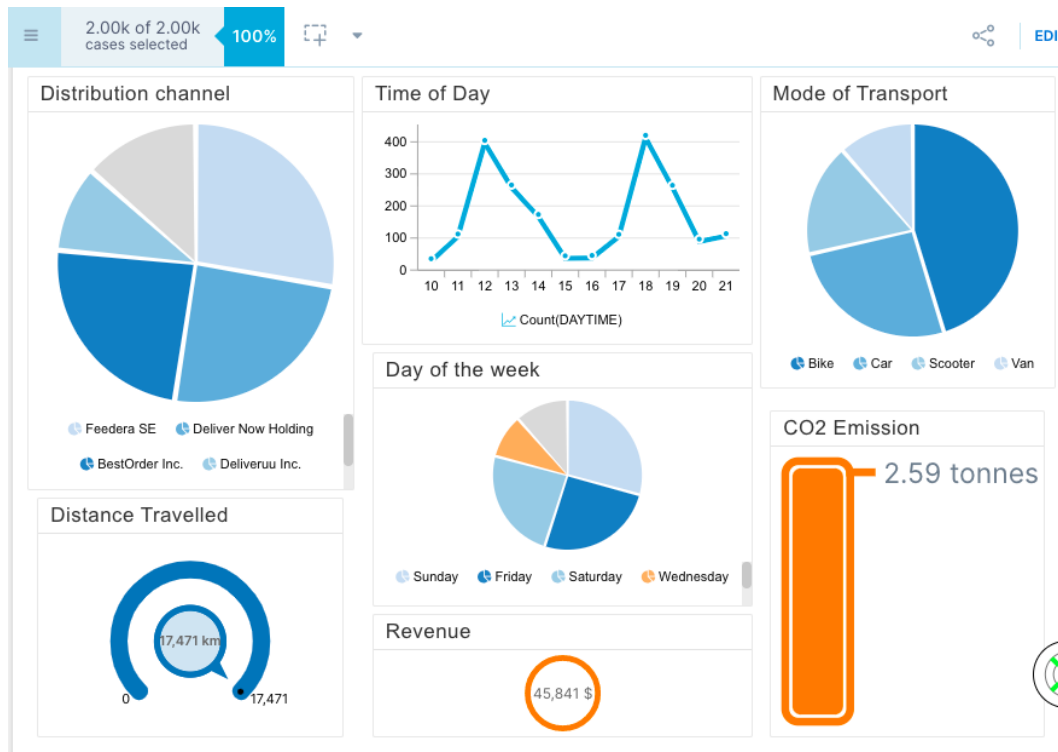
1. Customer Satisfaction

You can toggle the charts and visualise how these entities affect each other. For example, you can see the most common rating for a student or the most common pizza type for a specific variant for an adult and the revenues obtained and so on and so forth.



2. Distribution and Time

Here, you can really get a sense of when which distribution channel is used and how carbon emission is being generated and by what mode of transport. This chart helps gauge when the pizzeria's busiest times are.



Work Breakdown:

All three of us collaborated on the mcqs and there was an even distribution of work with each of us contributing to a point in Q7 and working together on the analysis sheets. I, Anusha, live in India while Rena and Kevin hail from North America, so our primary mode of communication was Discord in the brief period of time all three of us were active. We worked together well and came to conclusions as a team.