# Forecasting Case

An important component of running any business is to be able to anticipate and predict what the future will look like. For that reason, the forecast of Spotify's customer numbers is a key part of Spotify's planning.

**Your assignment is to create a forecast of customer numbers 24 months out using the historical dummy data we provide.**

There are two datasets that span from 2019-01-31 to 2021-04-30. Both datasets are monthly in frequency using the end of each month.

**DATASET 1**

- Time series data of customer intake
- Columns
    - Date: The last date of the month, spans 2019-01-31 to 2021-04-30
    - Country: The country of the customers
    - Product: The product the customers use
    - Intake: The total number of customer intake during the month

**DATASET 2**

- Data that measures each monthly cohort of customer intake in DATASET 1 and the number of customers that remain retained each consecutive month.
- Columns
    - Date: The last date of the month, spans 2019-01-31 to 2021-04-30
    - Intake Month: The month the customers were added
    - Country: The country of the customers
    - Product: The product the customers use
    - Net Customers: The number of retained customers still using the product on Date

**Your task: Construct a forecast with the following level of detail**

- Produce a forecast for the next 24 months (2021-05-31 through 2023-04-30) for the two metrics:
    - Net Customers
    - Intake

- The forecast should be broken down by
    - Market
    - Product

    - *E.g. it should be possible to see what the forecast is for Product B in the US for the next 24 months for both Net Customers and Intake.*
    - *E.g. it should also be possible to see what the forecast is for all markets and products combined.*

- State any assumptions you have made clearly
    - You will need to make assumptions
    - Please state what those assumptions are and your reasoning

**DELIVERABLES**

1. **Slides corresponding to a 20 minute presentation**
    a. Aimed for an audience of business stakeholders that takes them through your forecast methodology, core assumptions, end output and other findings.
    b. Expect there to be follow up questions from the audience on what you show.

2. **The files containing your forecast model and output**
    a. Your analysis used to create the forecast (e.g. in a spreadsheet, Python code or similar)
    b. A file (e.g. csv) with your forecast output (Month, Country, Product, Net Customers, Intake)

**Best of luck!**