CEL CONSULTING

Supply Chain & Operations
Emerging Markets

Data science case study

› November 2017

Case Study objective

- A client has given us data from January 2017 to February 2017
- We need to explore this data to get some first understanding of our client's supply chain
- In order to do this, we ask you to perform some standard analyses:
  - Plot the daily volume over the period
  - ABC classification of SKUs
  - ABC classification of clients
  - Compute service level by SKU and by client
- Your analysis will be presented to the consulting team. The analysis should provide:
  - An overview of the data
  - More specific details concerning the Service Level for "A" SKUs and "A" clients
  - Some recommendations for further investigations

Data Science Case Study

Specific details

- Data considerations
  - Data is in two files: sales and cancellations
  - The two files need to be considered to compute service level
- Service level:
  - The service level is the ratio delivered quantity over ordered quantity
  - It can be computed at various levels:
    - Per SKU (item code)
    - Per client (address number)
    - Per Order
    - Over a given period…
- To perform an **ABC classification** on SKU, first sort SKUs by volume then compute cumulative sum in percentage of total. The category of the SKU will be determined by this cumulative percentage:
  - A category less than 80%
  - B category from 80 – 95%
  - C category is above 95%
- An ABC classification can be performed on clients using the same approach
- Expected output format
  - The analysis should be performed in R or python
  - Both the code and the result should be presented
  - Graphs are required
  - Key insights should be written in plain English
  - Ideal presentation of the result would be based from an R Markdown file or a Jupyter notebook