

Retail shops case

Case

The KPN Group sells its products through different channels. Besides sales through the online and telephone channels, we sell KPN products through our own retail stores as well as third-party stores. The KPN formula present in the Dutch shopping streets comprises the KPN shop, Telfort shop, the Multibrand store and the KPN XL store. The KPN and Telfort shops only sell the corresponding brands. The Multibrand store combines the brands KPN, Telfort and XS4ALL, while the KPN XL store combines the consumer and small business segments.

Recently, the KPN Group announced to integrate the Telfort and XS4ALL brands in its largest brand KPN. A small part of this announcement can be read in the fragment below.

KPN Group focuses on the KPN brand

The KPN Group aims to be the indisputable quality provider with the best products, customer service and network. It has the ambition to serve all customer groups and segments, with services from budget to premium. As such, The KPN Group will focus solely on strengthening the KPN brand with combined services for Dutch households and businesses.

As part of the execution of this strategy, the KPN brand will integrate the strengths of subsidiaries Telfort, Telfort Business (Telfort Zakelijk), XS4ALL and Yes Telecom. This decision will not affect customers of these brands. The KPN Group has the objective to fully merge these brands into KPN on the longer term.

<https://overons.kpn/en/news/2019/kpn-is-fully-committed-to-the-kpn-brand>

With this emergent change in the brand portfolio of The KPN Group, the store composition will be revised as well. The Finance Analytics team is asked to advise in this strategical question. The sales channel controller provided a data set with the current store composition, the corresponding sales per shop per day (in sales quantity and revenue), enriched with information about the store's shopping context. The Senior Data Scientist of FA has formulated a few questions to structure the advice:

Research questions:

1. Which characteristics are most important for predicting the (contracted) revenue per store formula (Telfort, KPN, KPN XL)?
2. Which Telfort stores should be transformed into KPN stores, and what is the expected (contracted) revenue after this transformation?
3. Our budget enables the transformation of 5 KPN stores into KPN XL stores. Which KPN stores should we transform to optimize the revenue?
4. Possibly continue with remaining questions to complete this advice.

We ask you to prepare this advice based on these research questions, the accompanied dataset "dataset_shops.csv" and the file explaining this dataset "definitions_dataset_shops.xlsx".

Expectations

- **A Jupyter Notebook**

The case should be developed in a Jupyter Notebook preferably using Python. The notebook should be readable independently, hence provided with sufficient explanation and structure. We should be able to interpret the decisions you made and judge your coding skills before the walkthrough session.

- **A presentation for a non-data science audience**

Besides coding and data science skills, we evaluate your communication skills. To this end, we ask you to prepare a presentation targeted at an audience without a data science background. You can use the “kpn_template.pptx” file as a starting point for your presentation.

Evaluation

We find it more important that you are able to communicate and defend your advice well, than that you build the most advanced model. Therefore you should think about the complexity of the solution you choose in order to explain your decisions to an audience without explicit data science background. We do value a solid reasoning behind the chosen data transformations, etc.

Logistics

We give you a week to work on this case. During this time you are free to contact us in case you get stuck or have additional questions, if so, reach out to Huib Keemink (huib.keemink@bigdatarepublic.nl) or Tom Kloosterman (tom.aw.kloosterman@kpn.com). Please send the two files before noon the day prior to the walkthrough and presentation sessions to Tom.

Next steps

After you hand in the case, we will schedule a final appointment for two succeeding meetings. In the first meeting of 45 min we will ask you to walk us (two data scientists) through your solution, in the second one (also 45 min) you will present your solution to the non-data science audience.