## **Business Understanding**

### **Business Overview**

MTN Cote d’Ivoire/Ivory Coast requires to upgrade their infrastructure for better user experience of it’s subscribers. They have shared their dataset to myself as a data scientist for analysis and advice on strategy to undertake.

### **Business Objective**

The business objective is to find how MTN Cote d'Ivoire will go about the upgrade of its infrastructure strategy within the given cities

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### **Business Success Criteria**

To compile a list of the most used cities and most used city during business and home hours and Which ones were the most used city for the three days.

### **Assessing the Situation**

**Resource Inventory**

Datasets:

i.cells\_geo\_description.xlsx [[Link]](https://drive.google.com/a/moringaschool.com/file/d/1-rIM5ihDu79RaH7rAs-d-7SQSAQhrY9N/view?usp=sharing)

[(Links to an external site.)](https://drive.google.com/a/moringaschool.com/file/d/1-rIM5ihDu79RaH7rAs-d-7SQSAQhrY9N/view?usp=sharing)

ii.cells\_geo.csv [[Link]](https://drive.google.com/a/moringaschool.com/file/d/1ABZux280OjL3yWcOn8BDA_f5QsyO0QPU/view?usp=sharing)

[(Links to an external site.)](https://drive.google.com/a/moringaschool.com/file/d/1ABZux280OjL3yWcOn8BDA_f5QsyO0QPU/view?usp=sharing)

iii.CDR\_description.xlsx [[Link]](https://drive.google.com/open?id=1cVoNXl25IO5-_yQk97ThdeqhE6yw8YTD)

[(Links to an external site.)](https://drive.google.com/open?id=1cVoNXl25IO5-_yQk97ThdeqhE6yw8YTD)

iv.CDR 20120507 [[http://bit.ly/TelecomDataset1]](http://bit.ly/Telcom_dataset1)

[(Links to an external site.)](http://bit.ly/Telcom_dataset1)

v.CDR 20120508 [[http://bit.ly/TelecomDataset2]](http://bit.ly/Telcom_dataset2)

[(Links to an external site.)](http://bit.ly/Telcom_dataset2)

vii.CDR 20120509 [[http://bit.ly/TelecomDataset3]](http://bit.ly/Telcom_dataset3)

* 1. Software( Github, Google Collaboratory)

1. **Assumptions**
   1. The data provided is correct and up to date
2. **Constraints**
   1. There are no constraints

### **Data Mining Goals**

Our data mining goals for this project are as follows:

* Which ones were the most used cities for the three days
* Which cities were the most used during business and home hours.
* Most used city for the three days.

**Data Mining Success Criteria**

Our success criteria will be measured by the following criteria;

* We target the cities that were most used in the three days and also the most used products.

## **Data Understanding**

## **Data Description**

We have two datasets available for this project. A detailed description of the datasets is provided as follows:

* **Cells Geo Description -** This dataset contains the number of cities,the cells’ status plus the zones they are used from. It consists of ten columns; These columns outline the cities in the country,the cells’ status and the zones they are used from among others.
* **CDR Description-** It focus on the cell products and their descriptions
* **Telcom Dataset**-This dataset focuses on the cell’s product like voice,data or sms, their values and their IDs.

## **Data Preparation**

These are the steps followed in preparing the data

#### **a.Loading Data**

Loaded the datasets from the CSV and the xlsx.

**b.Cleaning Data**

This is what I found out from the exploration;

a) Date\_Time needs to be changed to date type

b) Country A and Country B needs to be dropped as they are not required as per project description

c) Since the 3 datasets have similar fields, they can be combined for ease of cleanup and analysis.

## **4.Analysis**

During our analysis, we were able to single out the following ;

a.Status has two distinct values -> In service and Null values

b.Status and Area are the two columns with null values

The full analysis can be found in the following notebook ;<https://colab.research.google.com/drive/1mB8Wi61rXwyjOtUgzL37zfIRI80kBSR1?usp=sharing>

## **5.Recommendations**

From our analysis, we would recommend that the company focuses more on the most used products,understand why they are most used and inquire how they will improve. They should also focus on the less used products, find the reason why and find ways to improve on . For the cities not using them, the company should research the exact reason why they are not using them and find a way to convince them .