1. **Business Understanding**

ICT in Cote D’Ivoire has experienced growth in the recent years led by telecoms expansion of services and digitization supported by government regulations and increased investment. The sector is mainly dominated by mobile network operators which takes the larger share of 85%, followed by information technology companies, 12% and internet service providers, 3%. An enhancement in the telecoms infrastructure will see a rise in the Country’s ICT Development index and most importantly MTN as an organization.

**Business Objective**

The goal of this report is to identify different products that are in the market which certainly make the pillars of the telco, how often are these products being used by the customers and what can be done to boost the market penetration to drive sales.

1. **Data Understanding**

**Data Understanding Overview**

For this project, we are using data provided by MTN from the below datasets.

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

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

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

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

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

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

**Verifying Data Quality**

None of the datasets had any missing values. There were also no known data errors in the data sets.

1. **Data Preparation**

These are the steps followed in preparing the data

**1.Loading the data**

I loaded data from the csv and excel files to my Python workspace.

**2.Cleaning Data**

While exploring the data, I checked for duplicates and dropped them. Replacing missing data in columns and rows with 0.

1. **ANALYSIS**

I went on to get descriptive statistics of each product(Voice, Data and SMS). This includes mean, standard deviation,maximum and minimum values and the percentiles. Extensive information on the analysis has been provided from the attached python notebook.

1. **RECOMMENDATIONS**

From the analysis, it has been observed that voice is widely and the most used product in the country followed by sms then data. The cells on site have been noted to not affect values on the three products. However, there is no cell on site for provision of data hence this could be linked to the low usage.

The company is therefore advised to invest more on data so as to drive digitization as the world is growing digitally in order to capture the market while it’s still young. This can be done by coming up with incentives on smartphone handset purchases from retail shops and providing affordable mobile data plans as a strategy.