Agenda

1 ***Dashboard – Overview and Building Process***

2 *Designing and Backend*

3 *Data Visualization*

Impact of Data Visualization – Hans Rosling

What is a Dashboard ?

A dashboard is an **information management tool** that visually tracks, analyzes and displays key performance indicators (KPI), metrics and key data points **to monitor the health of a business, department or specific process.**

It’s customizable

It is **customizable** to meet the needs of an organization or a process

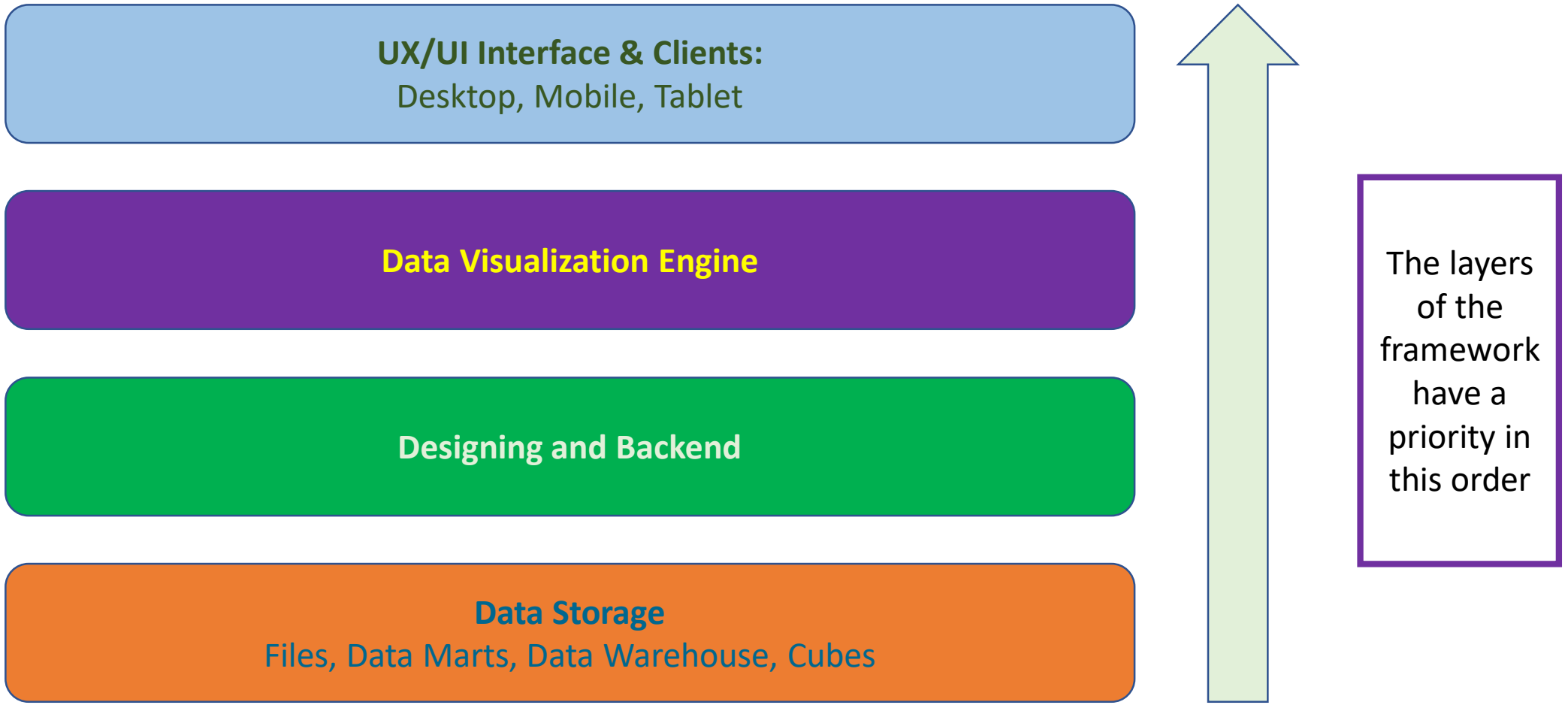
It’s efficient

It is the most **efficient** way **to track multiple data sources** because it provides a central location for businesses **to monitor and analyze performance.**

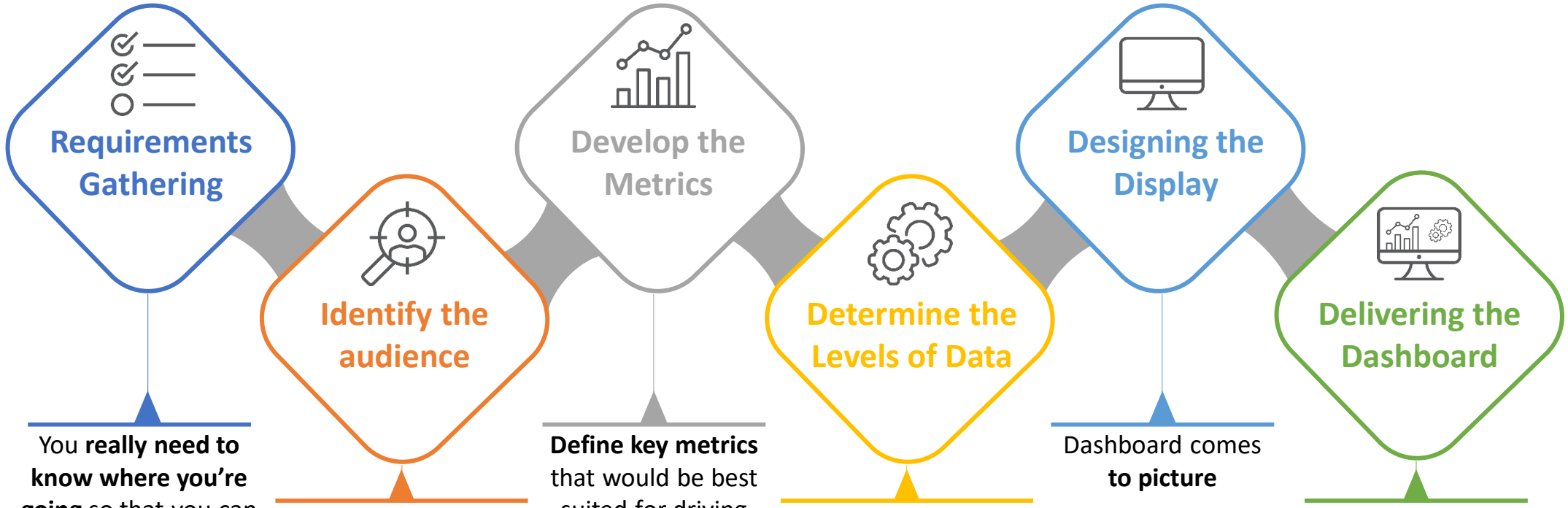
It’s real time

Real-time monitoring **reduces the hours of analyzing** and long line of communication that previously challenged businesses.

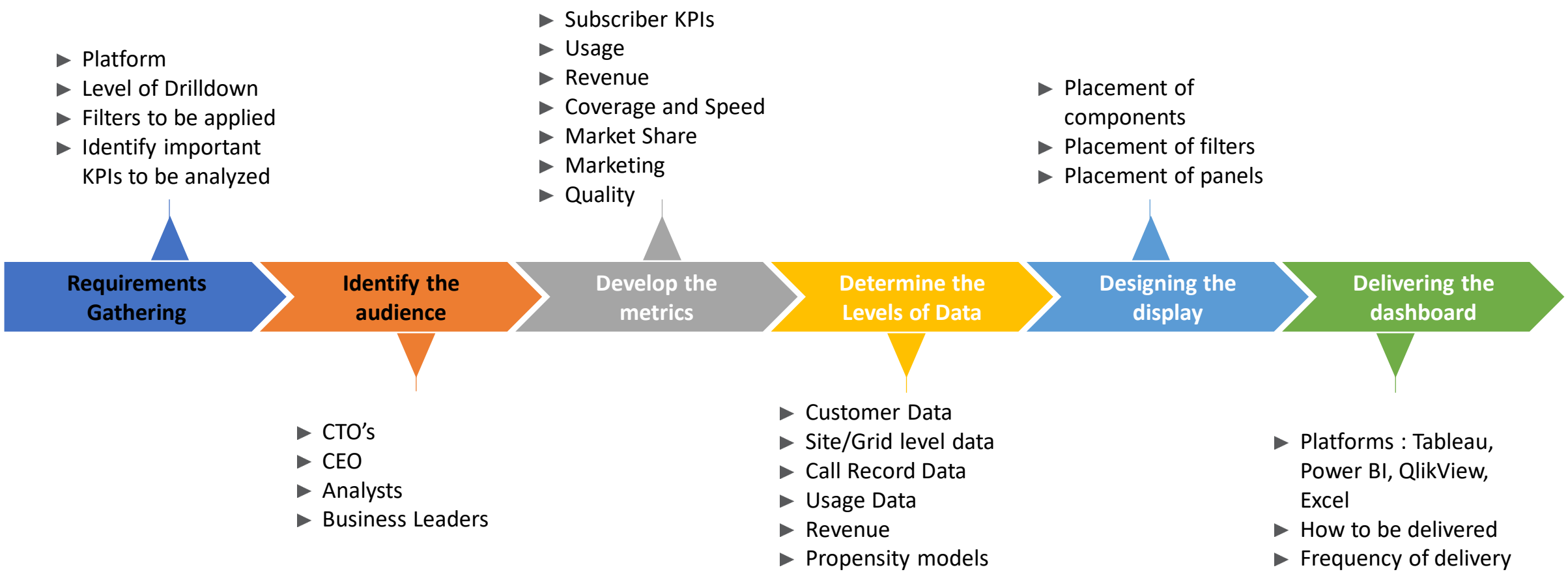
Dashboard Framework



Dashboard Building Process



Dashboard Building - Inputs



Group Level Dashboards/KPI/Report Views

Executive Views

- Summarized views for CXO Level
- Strategic Dashboard/Scorecard / KPIs at Org/ OpCos level
- Decision Support System

Sample Dashboards/KPI

- Campaign Effectiveness
- Net Churn Trends
- QOE Dashboards
- Aggregated Program Profitability

Operational Views

- Operational Level (Opcos, Product etc.) views for Unit head/ Managers
- Guided Analysis with Interactive interface
- Information aggregated at opcos / products
- Decision system system

Sample Dashboards/KPI

- Campaign Measurement
- Segment wise Churn trends

Analyst Views

- Self-serve Interactive Reporting
- Customer Journey with guided and Analytical journey
- Drill down and slicing and dicing at the lowest level of information
- Create new analysis

Sample Dashboards/KPI

- Calculate Campaign Management
- Campaign Response
- Daily / Weekly customer net adds
- Propensity model/Segmentation dashboards

Agenda

1 *CVM Dashboard – Overview and Building Process*

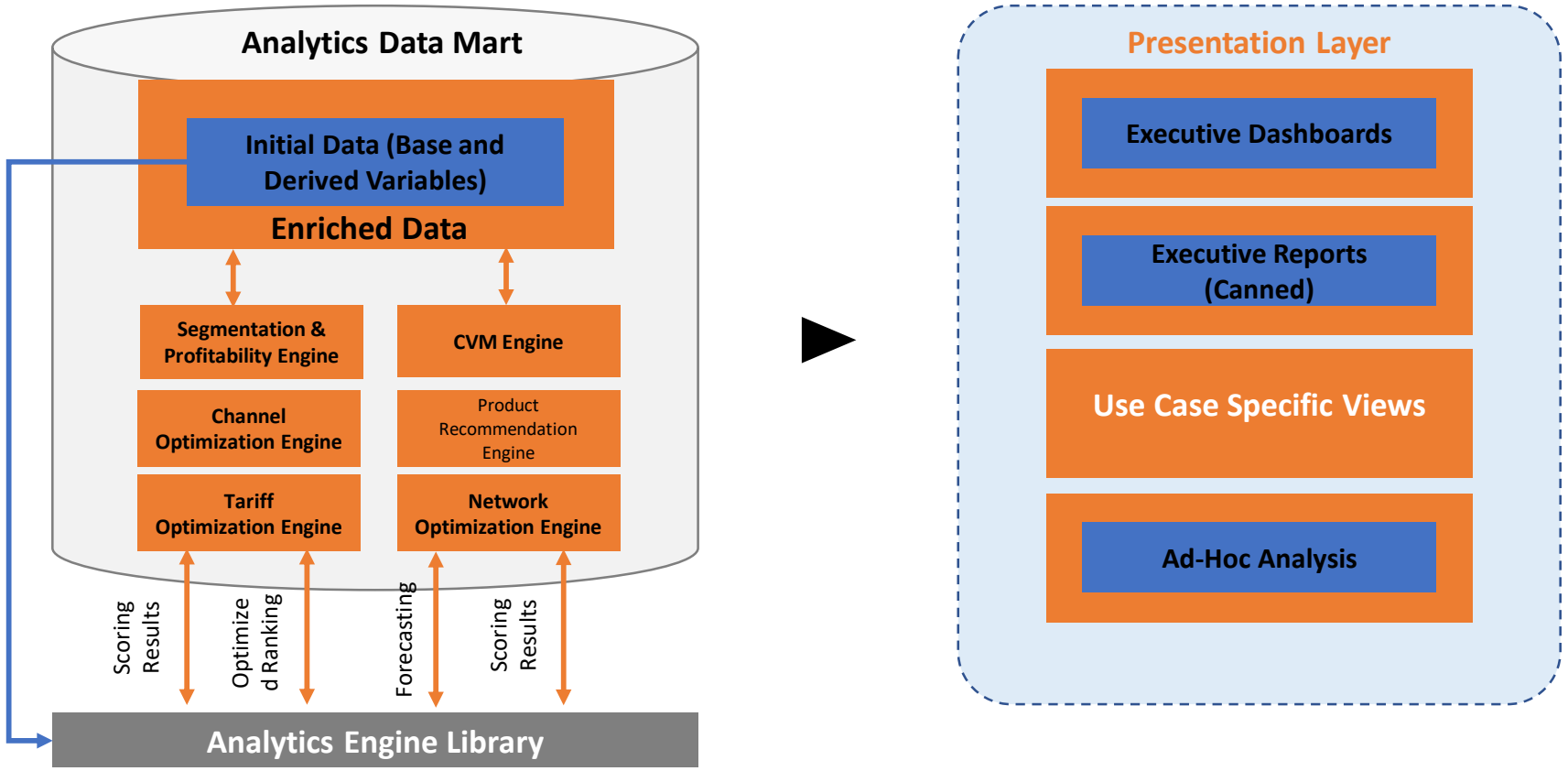
2 ***Designing and Backend***

3 *Data Visualization*

Designing & Backend

- This is where the **dashboard** truly begins to **come to life**.
- This part focuses on **how the Telecom data will be displayed, what will be displayed (KPIs of Telecom Usage).**
- It answers the question of **how to generate the telecom data** in the backend?
- It also answers the question of **what functions shall be performed at each click**, if there is a drilldown **what is the level of drilldown** etc.

Dashboard – Architecture



Build 1: Executive Dashboard, Canned reports and Ad-hoc analysis can be created from the Initial data mart having base and derived variables

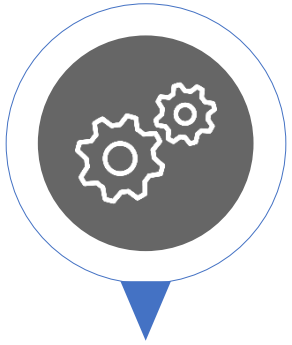
Build 2: Executive Dashboard, Canned reports, Use case specific dashboards and Ad-hoc analysis can be created from the enriched data mart having base variables, derived variables and data from analytics engines for each use case

Telecom KPIs

DISCUSSION TIME!

Come up with some KPIs with respect to revenue, usage, subscribers which can be useful to represent in dashboards

Initial data at backend to be used for dashboard (1/2)



Subscribers (Subs)

- Total Subs
- Subs Segmentation: Prepaid, Post Paid
- Churn per month
- Subscriber per Employee

Usage

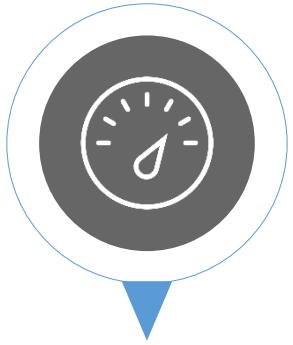
- Minutes of Usage (MOU)
- Minutes Per Site
- Number of Calls
- Number of Calls per Subscriber
- Average Call Duration
- Roaming Minutes
- International Roaming Minutes

Revenue

- ARPU(Average Revenue Per User)
- ARPM(Average Revenue Per Minute)
- Average Revenue Per Call
- Average Revenue Per Cell Site
- Average Revenue Per Employee

Coverage and Spread

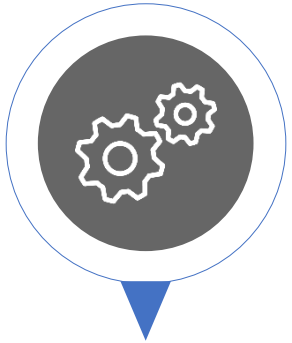
- Towns Covered
- Population Covered
- Area Covered
- Globalization: Number of Countries Operating Entity



Market Share

- Subs Share
- Revenue Market Share
- Minutes Market Share

Initial data at backend to be used for dashboard (2/2)



Operational Efficiency

- Average Margin Per User (AMPU)
- Employee Cost / Town Covered ($2500)
- Number of BTS Sites
- Number of MSC Sites
- Number of Employees

Marketing

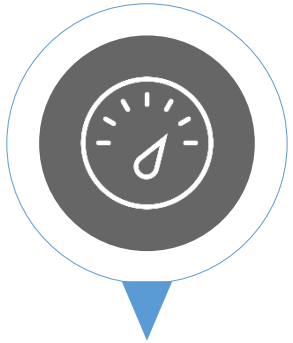
- Subscriber Acquisition Cost (SAC) : Dealer Commission, Terminal Subsidy, Sales, Marketing, Distribution
- Sales Outlet

Quality

- Service Performance
- Network Congestion
- Connection Establishment (Accessibility)
- Connection Maintenance (Retainability)

Telecom Tower

- Tenancy Ratio
- Average Rental per Tenant Per Month



Incremental Performance

- Share of Net Adds Subs
- Share of Incremental Revenue
- Quarterly Sites Added MRPU (Marginal Revenue Per User)

Abbreviation Glossary

MOU	**Minutes of Usage:** Average communication time per one month per one user
ARPU	**Average Revenue Per Unit:** Average monthly operating revenues attributable to designated services on a per user basis
ARPM	**Average Revenue Per Minute:** Average Revenue on per minute basis
AMPU	**Average Margin Per User:** AMPU is equal to total revenue minus total costs divided by the number of users
SAC	**Subscriber Acquisition Cost:** Amount of money that a business entity spends for each new subscriber that they gain
MRPU	**Marginal Revenue Per User:** Marginal Revenue Per User

Analytics engine data for dashboard

Segmentation & Profitability Engine

- Customer value segmentation on monthly basis
- Other customer segments
- Segment moving across time
- Customer profitability score

Channel Optimization Engine

- Sale performance for different channel
- Sales vs inventory
- Store sales data
- Store attributes – size, channel etc.
- Inventory details and schedule – when, how many units, product attributes

Tariff Optimization Engine

- Existing Tariff data
- Usage as per existing tariff
- Recommended tariff for a subscriber

Product Recommendation Engine

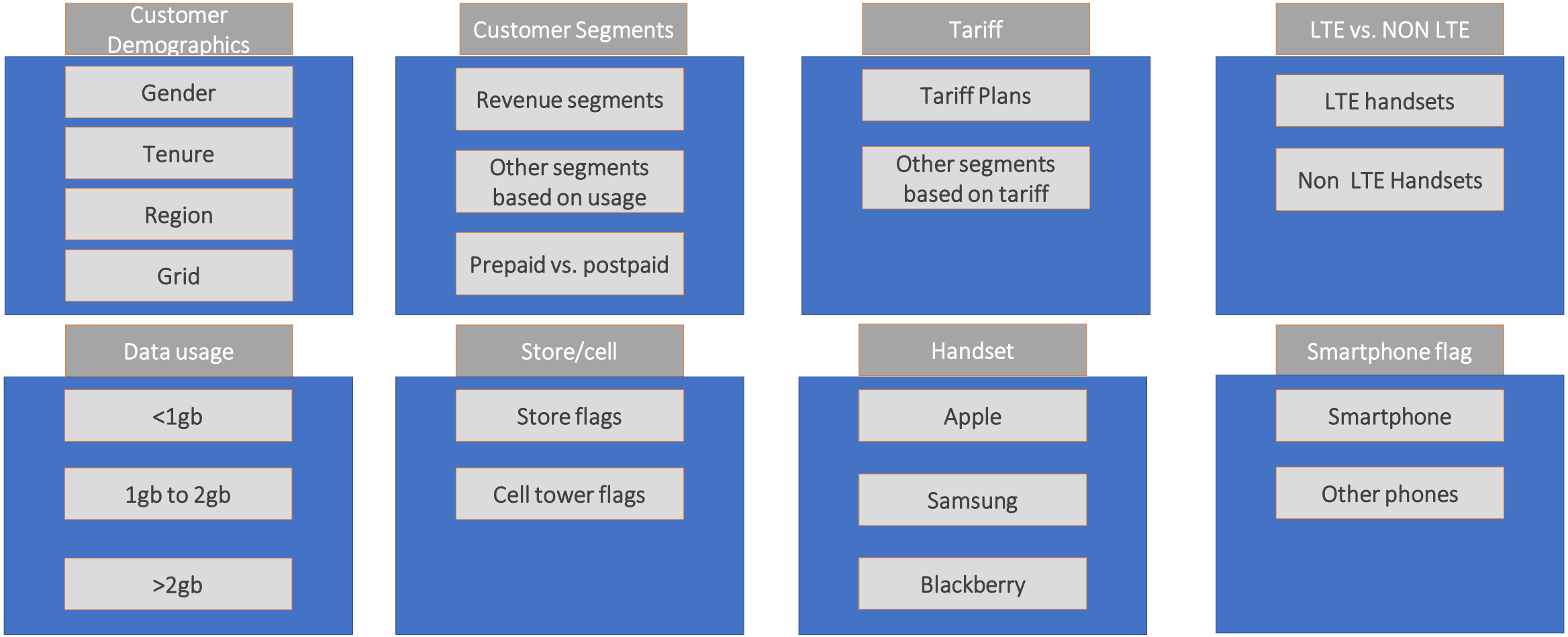
- Cross-sell data at subscriber level
- Up-sell data at subscriber level
- Churn score
- CLTV data
- Offer recommendation

Network Optimization Engine

- Customer experience data on network
- Wireless reliability data by region
- Access points nodes & towers

Drill down options for dashboard

Adding filters in the dashboard can help users specify which data is shown in the view. This will help business to understand various KPIs at the most granular level for effective decision making



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What is Data Visualization ?

Data visualization is a general term that describes **any effort to help people understand the significance of data** by placing it in a visual context.

Patterns, trends and correlations that might go undetected in text-based data can be exposed and recognized easier with data visualization.

Data visualization **allows the user to select the best way of presenting the data.**

Improvement in Telecom with Data Visualization

Customer Retention

Customer service quality is a **driving force behind customer satisfaction**. Visualize how customer satisfaction be improved as well as which service areas are faltering and why.

Network Operations

Monitoring wireless network usage **allows operators to plan hardware upgrades, meet SLAs and minimize dropped calls.** Performance analysis of the radio network, core network and business layer can also prevent revenue leakage.

Buyer Behavior & Target Customer Profiles

Thoroughly envision your market needs. What are optimal locations for new stores? What products should be stocked at each location? Is the website being properly optimized? Can any services be added?

Data Visualization as a Solution in Telecom

- With data visualization, **business executives at Telecom companies can compare the performance between all operators** for a key indicator – such as accessibility or percentage of dropped calls – on a single screen for a quick overview of pertinent strengths and weaknesses.

- Data visualization **supports us in identifying network shortcomings** and **making fast improvements.**

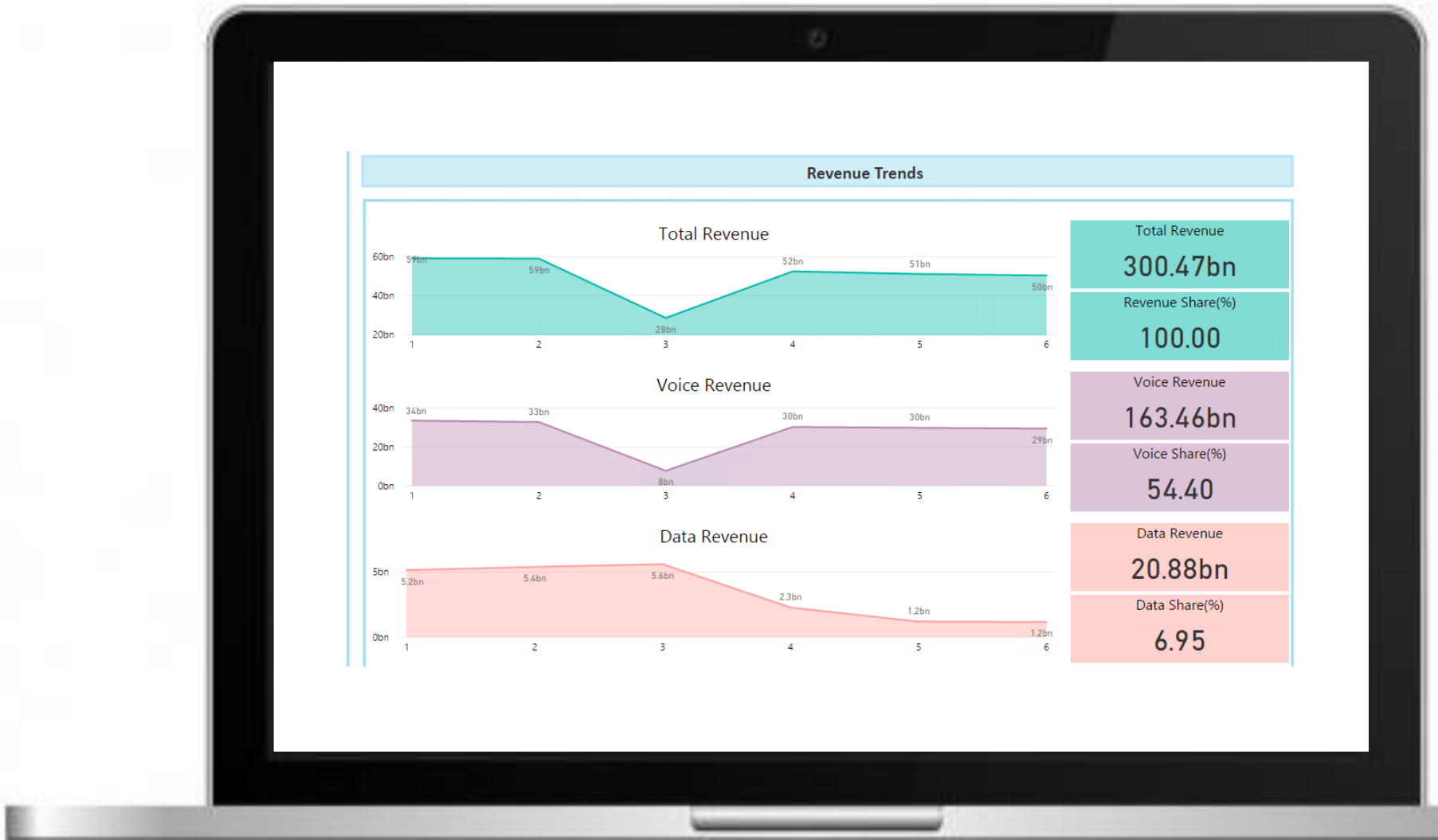
- It also **allows us to calculate the statistical correlations between various KPIs** for more effective further analysis.

- Data visualization has **allowed us to identify profitable areas that we can strengthen in terms of infrastructure and services to be marketed.**

Data Visualization Screenshots – Voice Usage

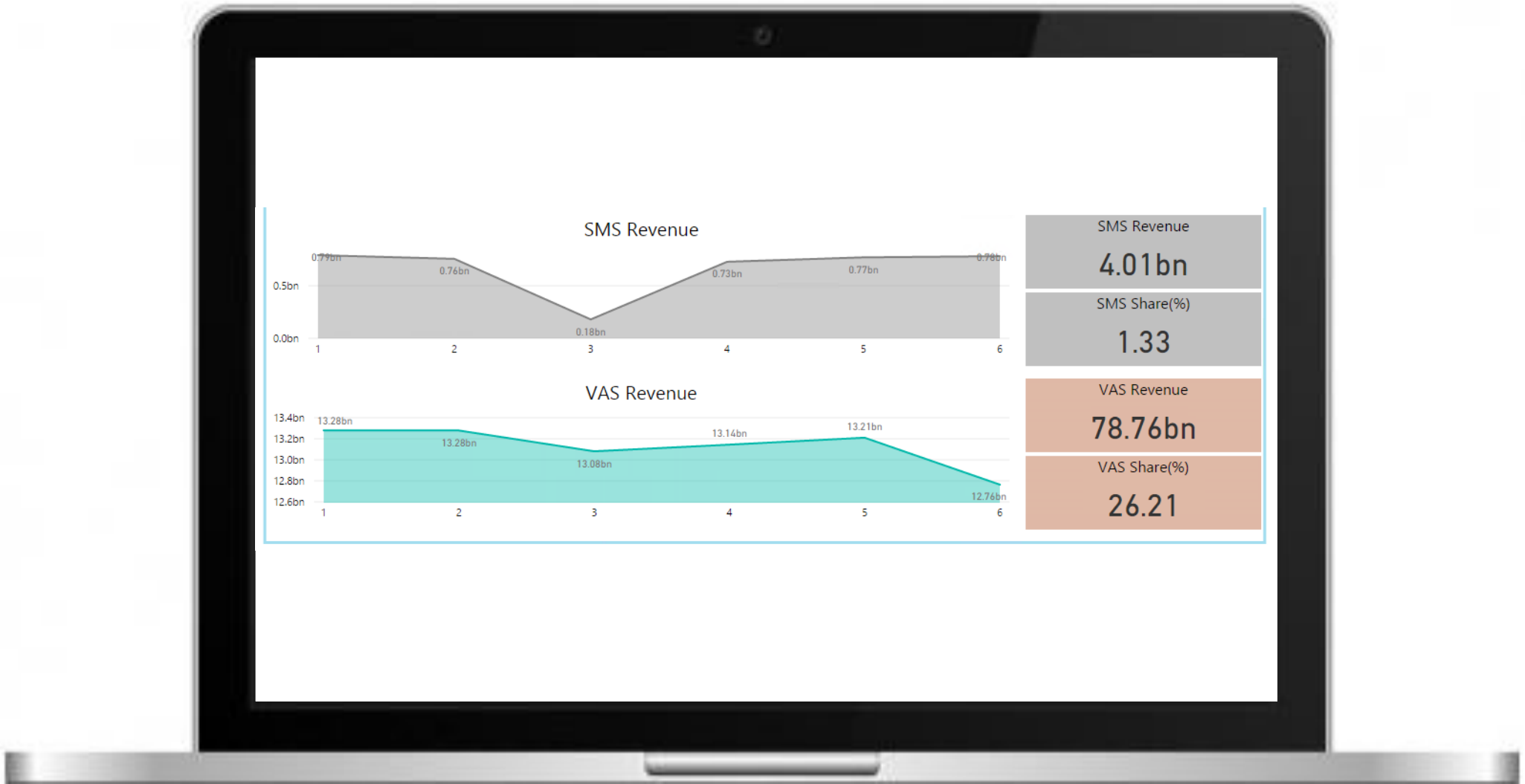
Data Visualization Screenshots - Revenue

Data Visualization Screenshots - Revenue

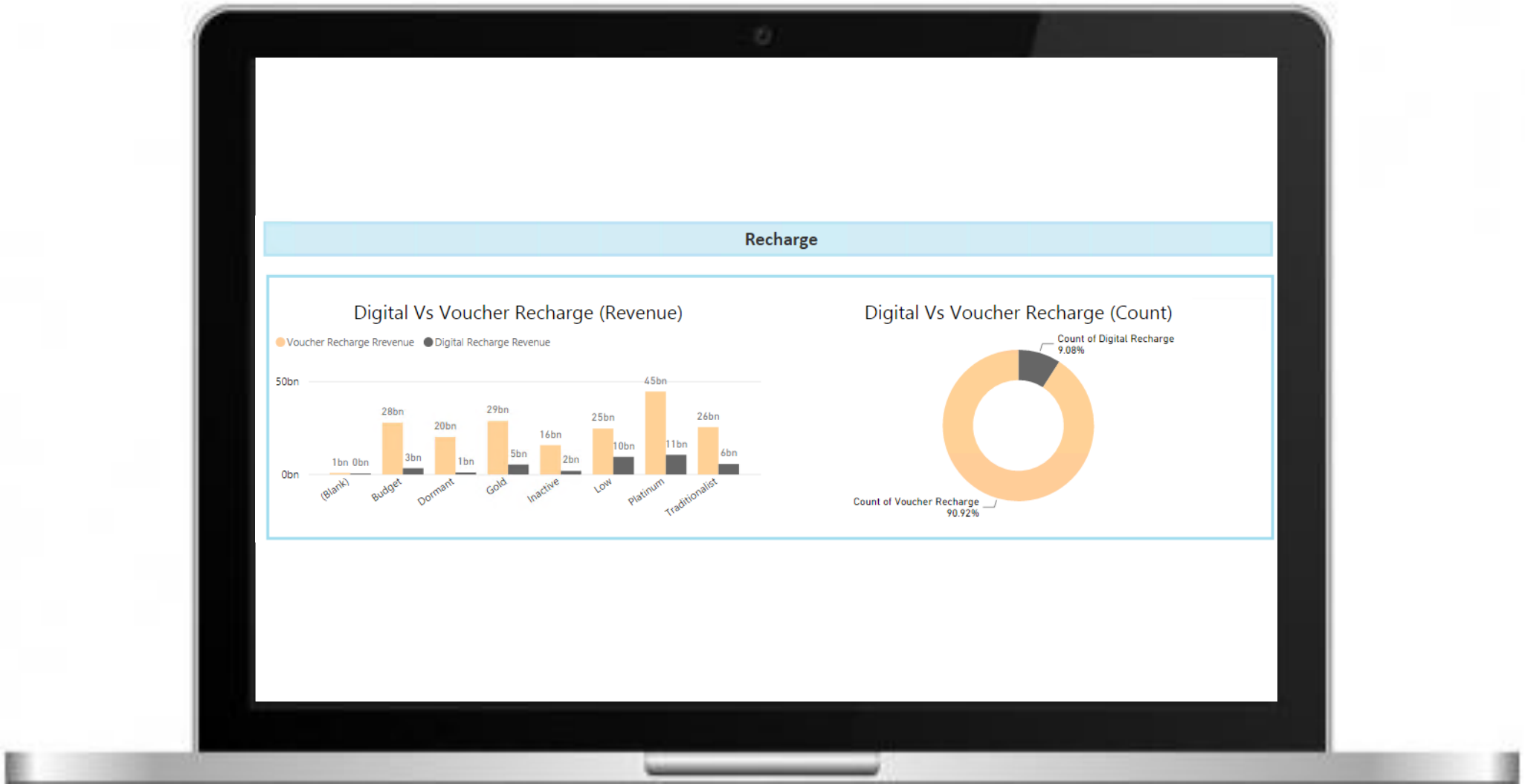


What takeaways can you draw from this dashboard?

Data Visualization Screenshots - Revenue



Data Visualization Screenshots - Revenue



Data Visualization Screenshots – Voice Usage

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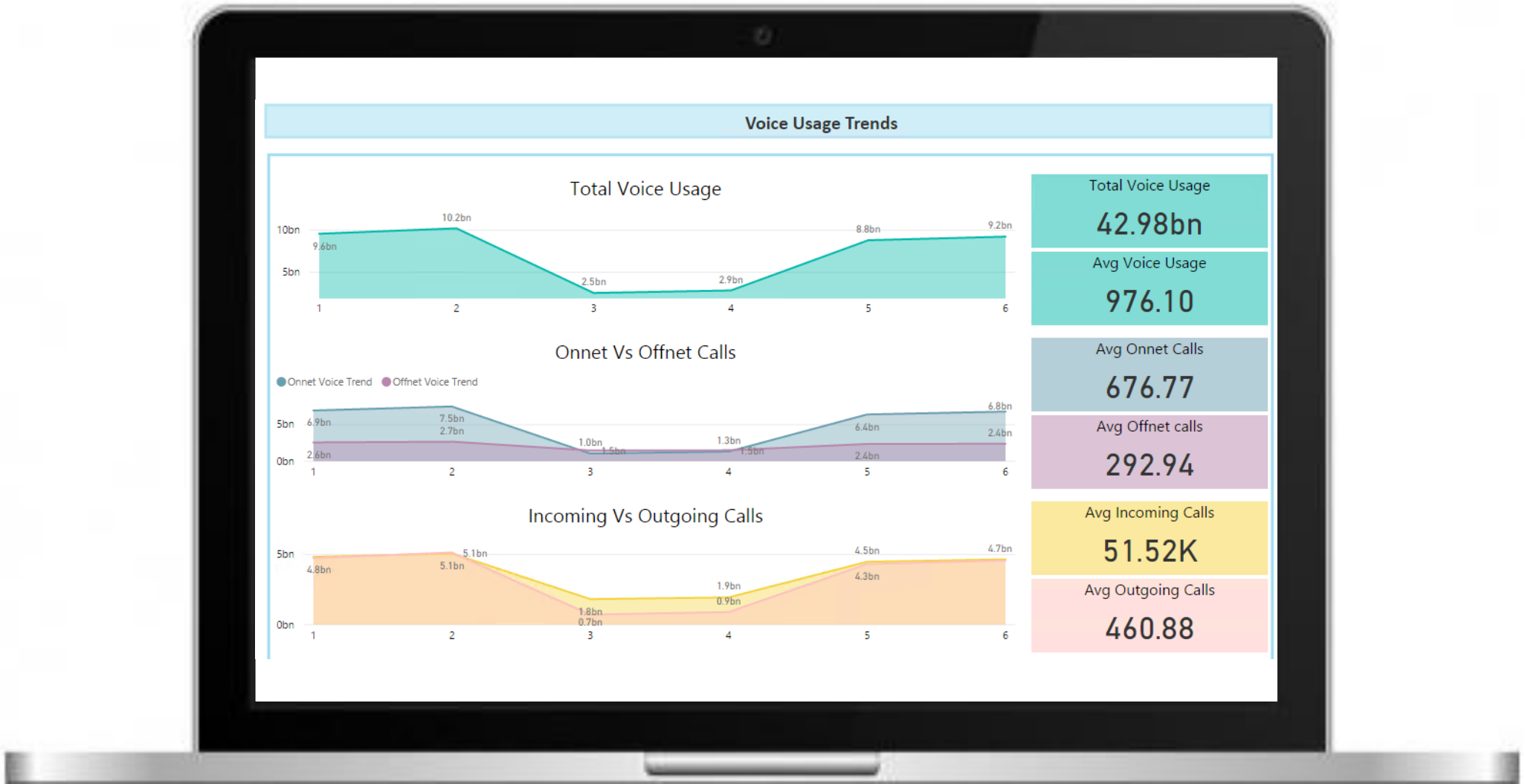

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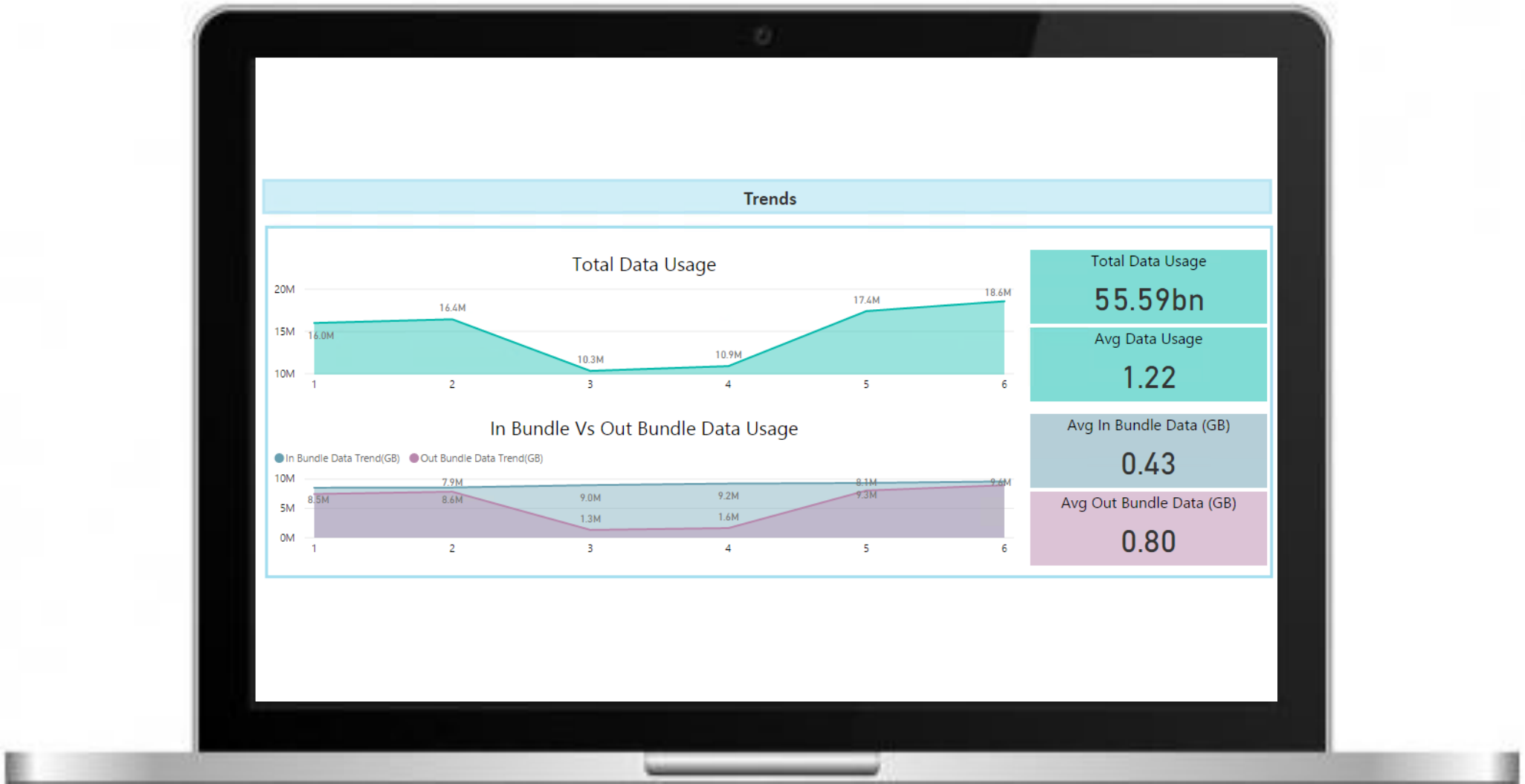
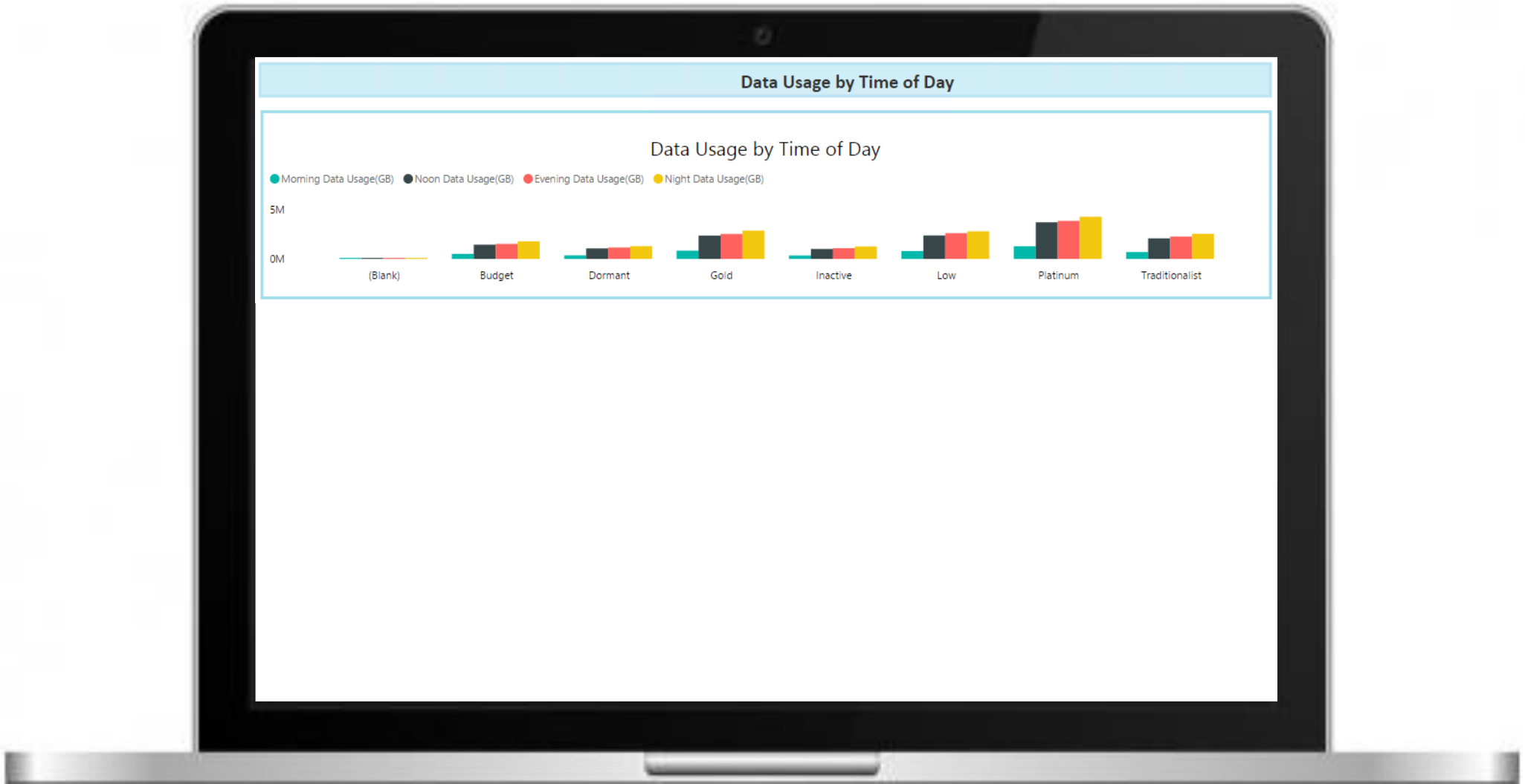


Data Visualization Screenshots – Data Usage



Data Visualization Screenshots – SMS Usage

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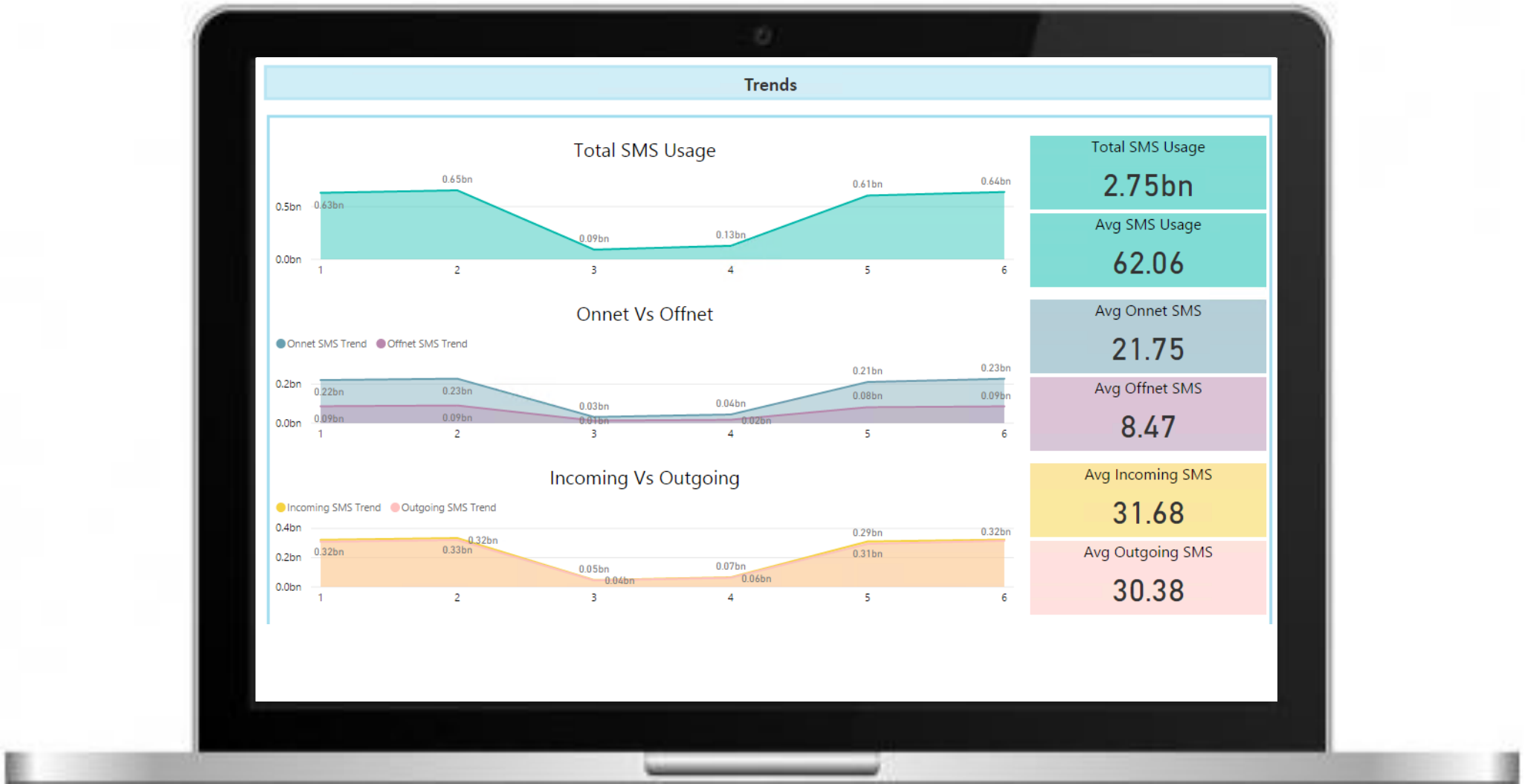
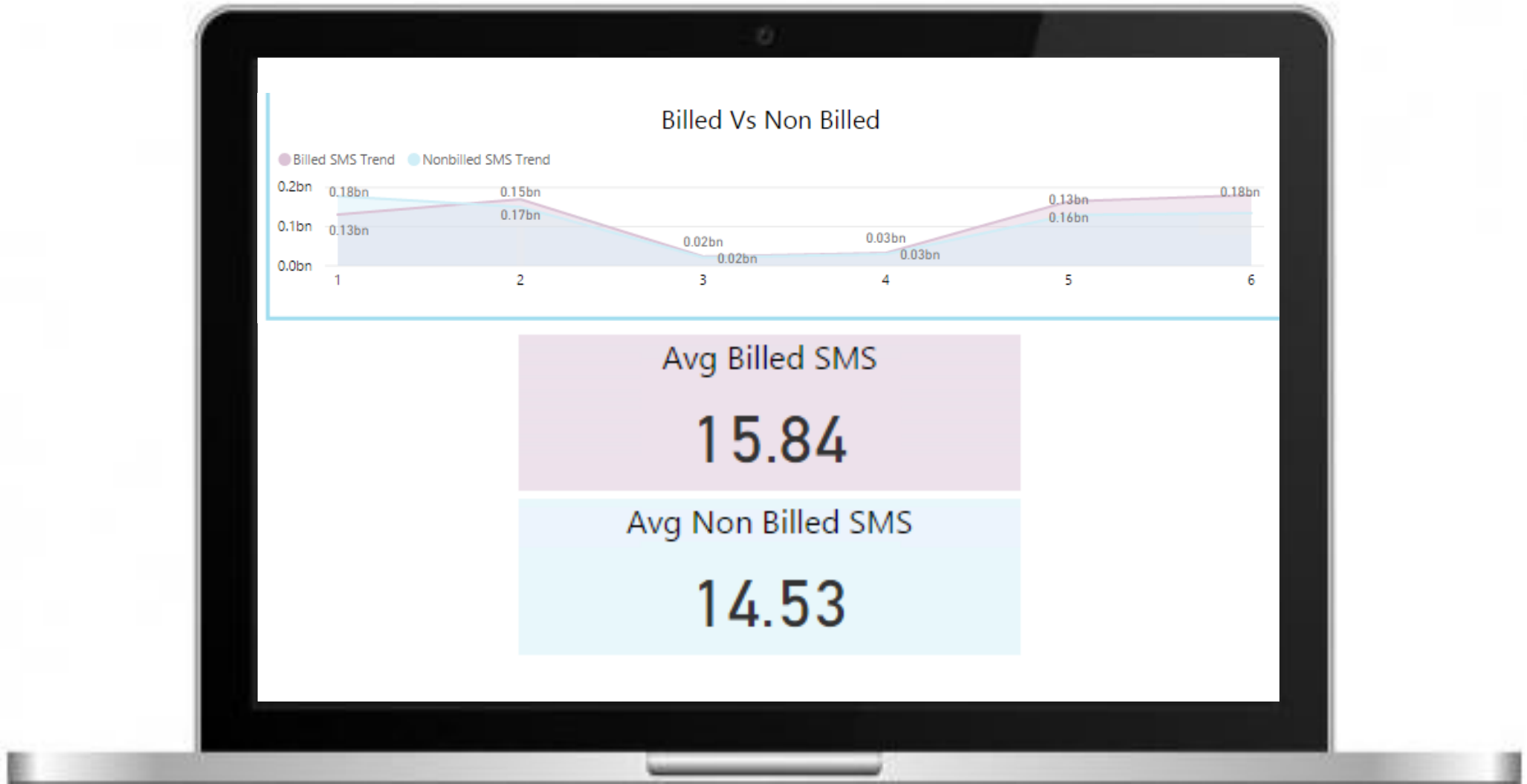


Data Visualization Screenshots – SMS Usage



Data Visualization Screenshot

Power BI for data visualization

Power BI

- Power BI is a Data Visualization and Business Intelligence tool that **converts data from different data sources to interactive dashboards and BI reports.**
- Although there are several tools available to help users efficiently and easily create pivot tables or cross-tabulations, Power BI allows a user to take it one step further: **visualize the cross-tabulations in real time**. With Power BI, a user can **drill-down database tables, visually**.
- Power BI Software is based on the idea that data analysis and subsequent reports should not be isolated activities but should be **integrated into a single visual analysis process**.
- Power BI combines data exploration and data visualization in an **easy-to-use** application that anyone can **learn quickly**.

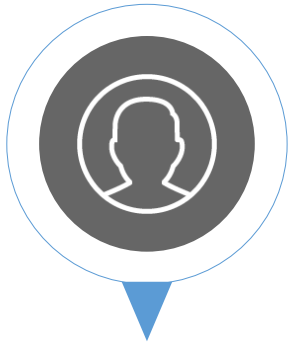
Features of Power BI

Hybrid Deployment Support

Quick Insights

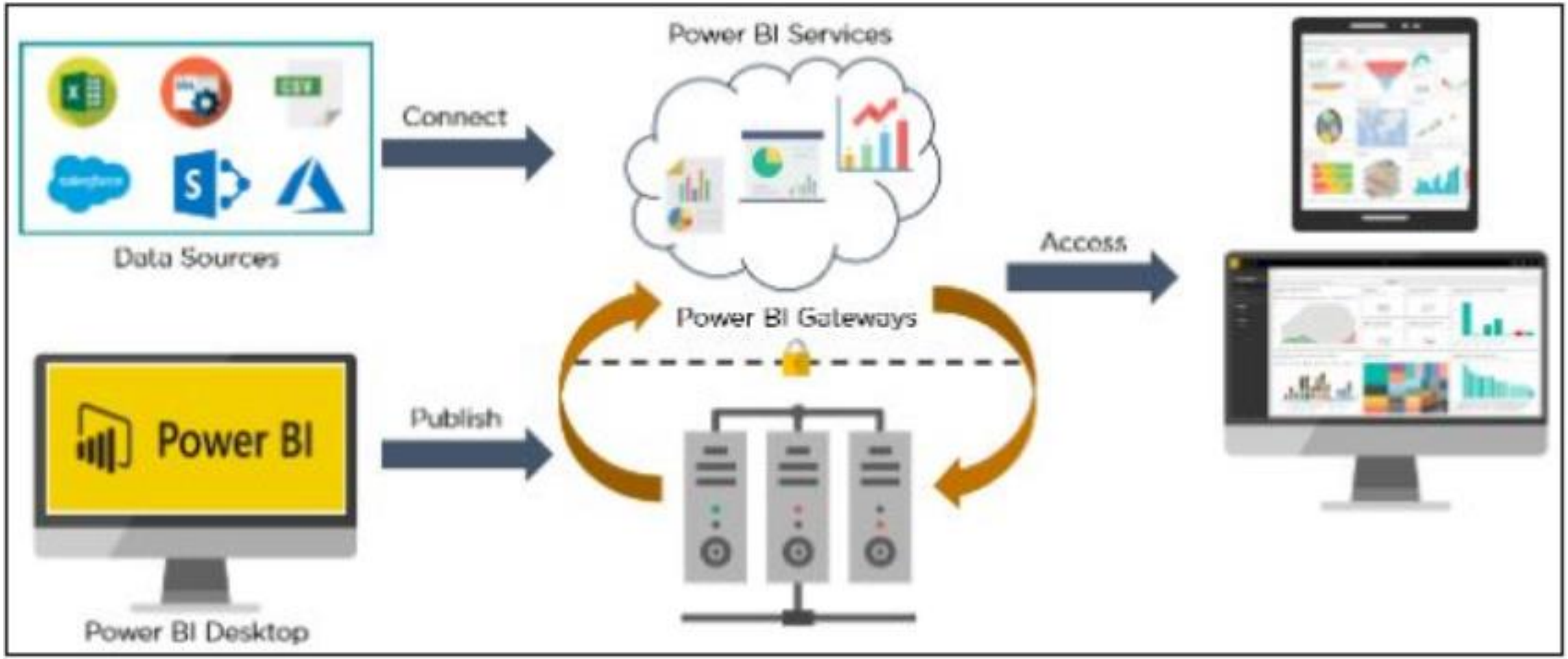
Visual Discovery

Customization



API Integration

Power BI Architecture



Using power BI Desktop on the cloud

https://app.powerbi.com/