BUSINESS INTELLIGENCE PROJECTS PORTFOLIO

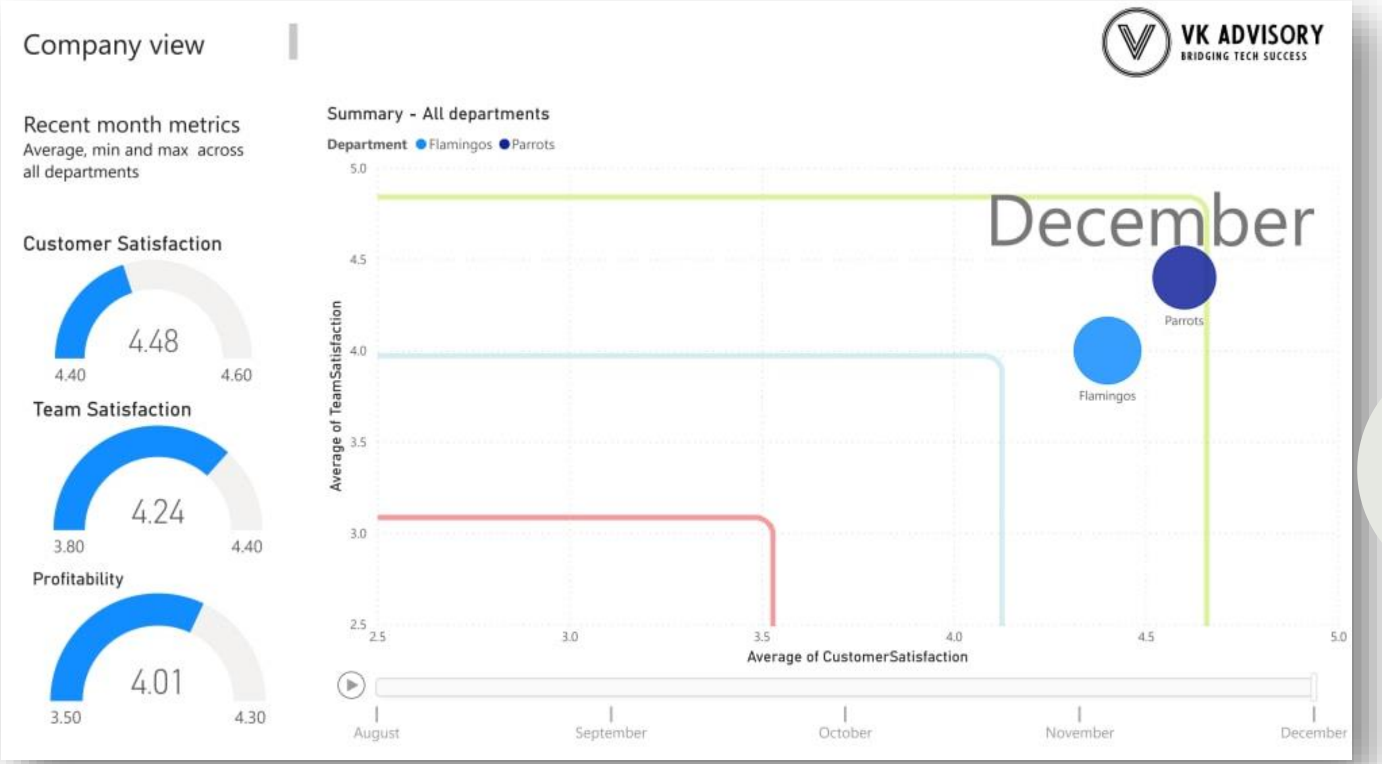
VALERII KOZLOV

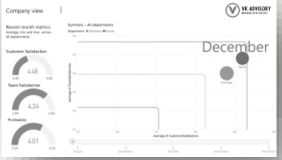
valeriy.kozlov@gmail.com

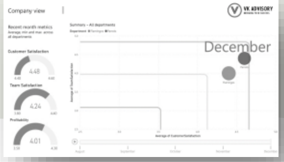
Contents

Business Intelligence Starter's Toolkit for B2B Service Company

- Aiming to empower small B2B service companies with data-driven decision-making, improving operational efficiency and driving growth.
- BI Starter's Toolkit was implemented, combines a customizable Power BI dashboard with department-specific Google Sheets for seamless data entry and aggregation.
- Tools: Power Query, Power BI, Google Sheets.



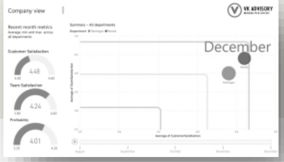




Challenge

Many SMEs operating in the B2B service model lack transparency and reporting in their teams and departments. Overloaded project managers and executives often struggle to initiate a transformation to a data-intelligent organization. When attempting to enable data-driven decision making, they encounter challenges such as:

- Building a system of relevant metrics
- Selecting the appropriate technical tools
- Difficulties in quantitative assessment and indicator quantification
- Organizational resistance to change



Solution

Starter's Toolkit: Business Intelligence for B2B Service Company

This Starter Toolkit equips B2B service companies with a Tree of Balance dashboard to empower data-driven decision-making.

Key benefits:

- Effortless metric monitoring: Gain a comprehensive overview of your service projects.
- Holistic project insights: Quickly understand your project's status for informed response
- Data-driven decision-making: Make data-backed decisions and foster a proactive & strategic approach to project success.

The Toolkit combines a customizable Power BI dashboards with department-specific Google Sheets for seamless data entry and aggregation.

Results

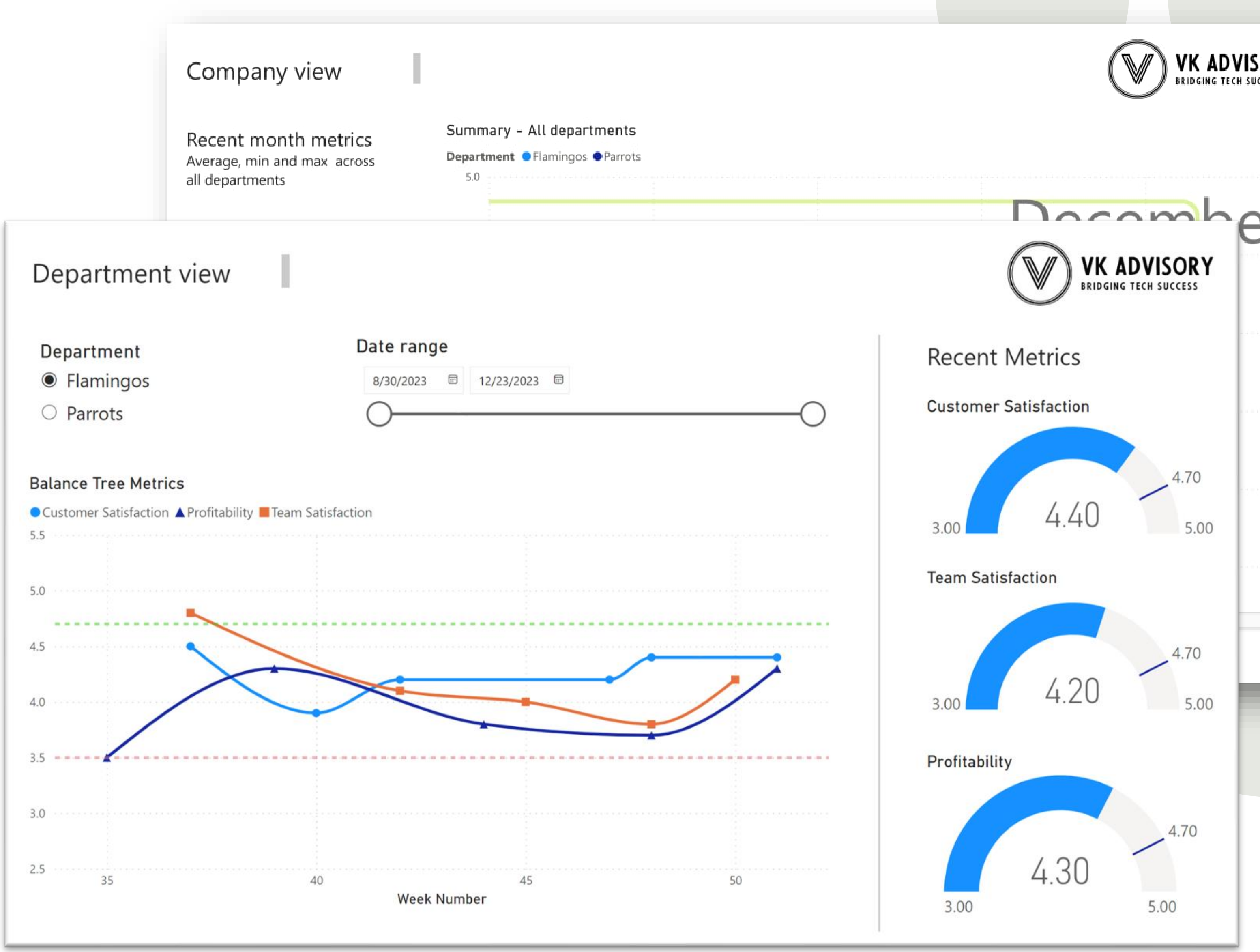
Tree of Balance dashboard: Monitoring of interrelated service metrics, such as Customer Satisfaction, Team Satisfaction, Profitability.

Easy data entry and aggregation: Secure Google Sheets for each department ensure data privacy and collaboration.

Interactive visualization: View the most recent data, analyze trends over time, and compare performance across departments with customizable filters and reference lines.

Intuitive interface: No technical expertise required, designed for easy adoption by all users.

Engaging visuals: Animated bubble chart provides a quick snapshot of overall company performance.



Interactive Demo:
https://app.powerbi.com/view?r=eyJrIjoiZWI1NjBhNDktMjg0Ni00NjYyLWJmZjgtMjdhNjZiMDg0YjVkIiwidCI6ImU3ZDIzMWY5LTgwYmYtNDExZi04OWYzLTEyYzU2NDQ5MWIxNSIsImMiOjl9

Embedded analytics in the healthcare domain

Request

A tech company in the healthcare domain developed an **embedded financial analytics** product to provide advanced financial metrics through visual dashboards.

Their **business goal** was to transition from current spreadsheet-based financial analysis practices to a visual, user-friendly, and intuitive embedded analytics product.

Additionally, they needed effective testing approaches for the analytics product and consistency in design and best practices among BI analysts. The client lacked deep expertise in data visualization and BI tools.

Solution

As the **lead BI analyst**, I addressed these challenges by developing various visuals and dashboards using **Amazon Quicksight**.

I closely collaborated with the **data engineering team** to ensure the data sets were prepared for visualization. Implementing **Lean BI** approaches such as quick prototyping, data mocking, and short feedback cycles helped accelerate development time.

I provided research and suggestions for **structuring data sets** to enhance the visualization of financial metrics. Collaborating with product owners ensured that the **requirements** were clearly understood and met, creating business value for customers.

I also consulted with the QA team on **testing approaches** and reviewed the work of other BI analysts, establishing design guidelines and sharing **best practices** for data visualization.

The Book-A-Table Call Centre Dashboards

Implementation of Management and Sales dashboards in Tableau and QuickSight for a UK-based call center handling restaurant bookings. This sample project is based on a hypothetical client request and synthetic dataset.

Challenge

A hypothetical client requested to create two Tableau dashboards for their UK-based call center handling restaurant bookings.

The first dashboard is designed for management to view overall sales team statistics, and the second for displaying and comparing team performance in the call room.

Both dashboards must include various data points such as total calls, covers booked, average time to answer, and performance metrics per team and agent.

Additionally, the design should align with the company's branding and colors.

The client also requested additional data points and visualizations to enhance performance monitoring.

Later, one of the dashboards was ported to the AWS QuickSight BI tool.

Solution

APPROACH

Two compact dashboards were implemented, utilizing the benefits of Tableau-specific features such as ranking functions, filters, customizable tooltip design, and charts' conditional formatting (including mark shapes and background colors). All requested metrics were visualized according to the request.

Later, management dashboard was ported to the AWS QuickSight BI tool, together with original data set.

DATA SOURCE

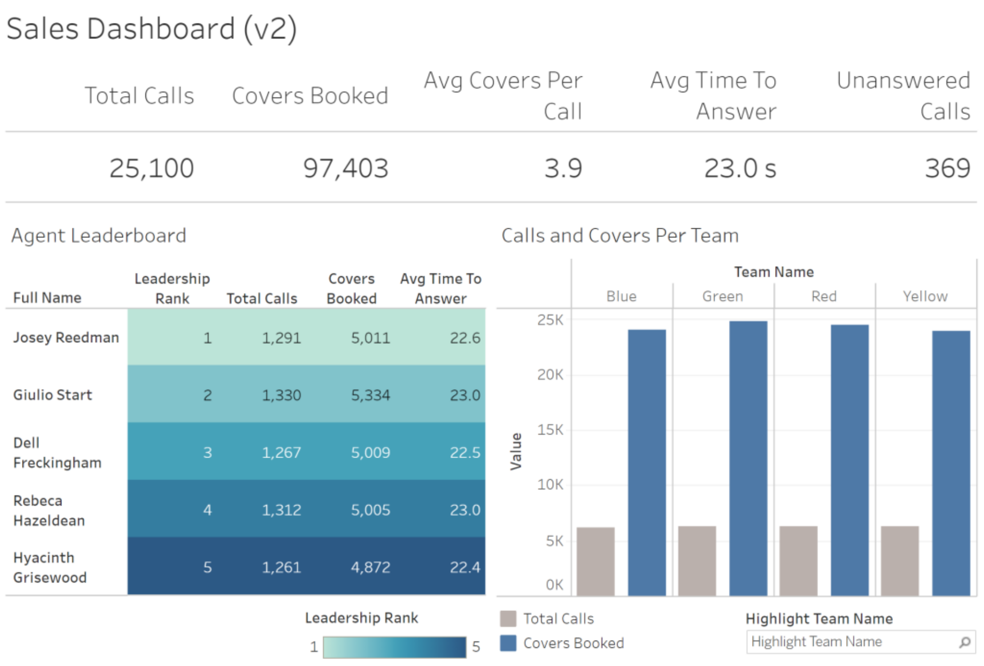
Joined table based on multiple CSV files (Google Drive).

DATA VISUALIZATION HIGHLIGHTS

Team performance is presented as a scatter plot chart with a trendline, facilitating easy identification of outperforming and underperforming teams based on the covers booked versus calls ratio.

- Bookings per restaurant are visualized on a map, with detailed information accessible via tooltips. The geo-mapping configuration was somewhat challenging but successfully implemented.

- Call outcome breakdown depicted as a single stacked column chart, offering a compact and comprehensive view. - The Agent Leaderboard, based on a 'global leadership rank' metric, combines each agent's total calls, covers booked, and average time to answer.

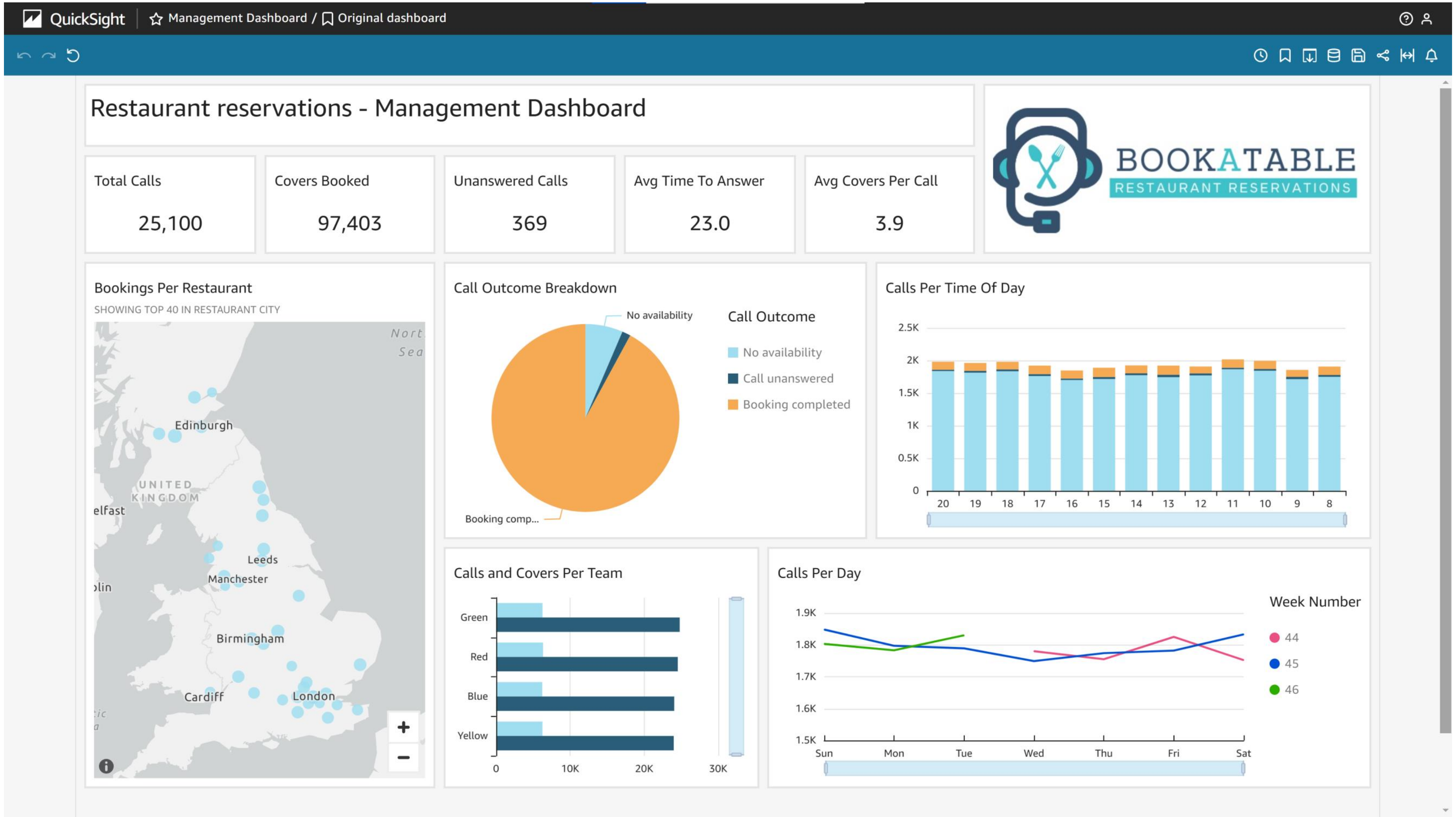


Results – Tableau dashboards

Interactive Demo – Management
https://public.tableau.com/app/profile/valeriy.kozlov/viz/CallCentre-Management_v1/Management

Interactive Demo – Sales
https://public.tableau.com/app/profile/valeriy.kozlov/viz/CallCentre-Sales_v2/Salesv2

More Tableau dashboards
https://public.tableau.com/app/profile/valeriy.kozlov/viz/returns_v2/ACMEReturns



Results – AWS QuickSight dashboard

SAAS-Specific Financial Reports for a Tech Company to Improve Business Performance

- By implementing a comprehensive report that tracks key SaaS metrics, the small tech company could gain insights into their financial performance, identify key drivers of subscription revenue, and identify areas for improvement.
- The report was particularly useful in updating product portfolio strategies and optimizing the subscription renewal process. By tracking user churn and CAC/CLTV metrics, the company could also assess the overall health of their SaaS business and set measurable business objectives. This case study is a good illustration of the importance of data-driven decision-making in the SaaS industry.

Challenge

- The management of a small tech company sought to establish a SAAS-specific financial report encompassing historical and current data.
- Given the diverse revenue streams, the company emphasized subscription revenue from SAAS products.
- However, the existing CRM needed a dedicated subscription revenue report, and historical sales data was marred by ambiguities and inconsistencies, stemming mainly from lax CRM procedures and incomplete customizations.

Solution

Tools	Given the constraints of time and resources, Excel and the existing CRM (Microsoft Dynamics) were chosen as tools.
Approach	The consultant inspected the CRM data for integrity and accuracy, subsequently refining it. Necessary views were crafted in the CRM by the consultant. The report was generated in Excel via a dynamic spreadsheet that interfaced directly with multiple CRM views, facilitating an instantaneous report update and amalgamating data from various tables. To safeguard data validity, tools for cross-validation were designed.
Metrics	The report yielded pivotal SAAS metrics for any historical or current duration, including: Annual Recurring Revenue • New subscription revenue; Subscription renewal revenue • Customer Acquisition Cost; Customer Lifetime Value • User churn; Upcoming subscription renewals
Data Presen-tation	Data was presented summarily and broken down by product or customer segment. A combination of pivot tables, regular tables, and graphical representations was employed for clarity. Further, several Dynamics CRM dashboards were established for real-time data analysis.

Results and outcome

The SAAS business metrics furnished in the report enabled insights into:

- Present financial performance
- Past financial performance
- Product and customer segment contributions to subscription revenue

In particular, the last one was used to update product portfolio strategies.

The report's data was pivotal in routinely analyzing the causes behind subscription cancellations and user churn. This analysis led to recommendations:

- To introduce and monitor new metrics related to product usage, downtime, and support requests
- To initiate a routine practice of monitoring customer satisfaction

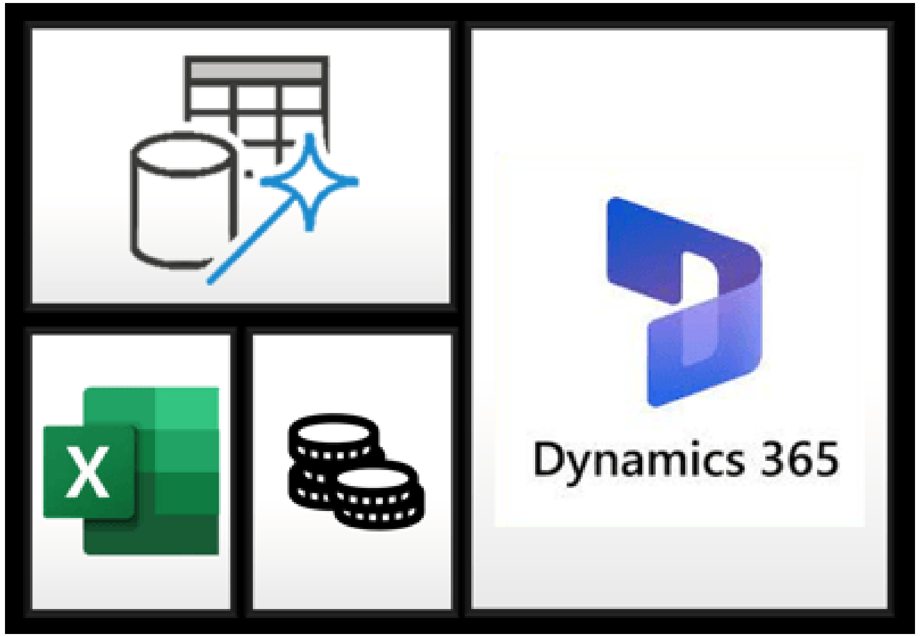
The "upcoming subscription renewals" data aided in:

- Refining efforts toward the subscription renewal process
- Stabilizing and forecasting renewal revenue

Consistent tracking of User churn and CAC/CLTV metrics was instrumental in assessing the overall health of the SAAS business and defining tangible business objectives.

Implementing reporting and analytics for a sales pipeline in a B2B tech company

- A B2B tech company requested the consultant to implemented reporting and analytics systems for its sales pipeline.
- The reports track key metrics such as the number of qualified leads, potential revenue amount, expected revenue, and actual revenue.
- The reports also provide a historical perspective and a current snapshot of the sales team's performance.
- The company uses insights from the reports to improve pipeline dynamics, understand customer behavior, make realistic revenue predictions, shape go-to-market strategy, and allocate resources.



Challenge

- A small tech company initiated the hiring of its first sales team. Monitoring the sales team's performance was critical during the responsibility transfer period, once the founder delegated the sales functions to the newly hired team. The company needed to establish usable reporting tools and systems.
- The management sought to establish a reporting and analytics system to facilitate historical analysis and daily monitoring of key metrics - evaluating the sales team performance and the overall health of the sales pipeline to focus on essential business development metrics.

Solution

Approach	Given the limited time and resources, implementing sales pipeline reports using Excel and the existing MS Dynamics CRM was suggested. The consultant exported, reviewed, and cleaned the existing CRM data. The consultant suggested improving sales procedures and operations, ensuring complete and accurate data entry in CRM. Necessary CRM views were created. The report was implemented in Excel using a dynamic spreadsheet directly connected to multiple CRM views. This setup allowed for a single-click instant report update and the integration of data from various tables into a unified report. The consultant also created a CRM dashboard to provide a more detailed view of pipeline opportunities.
Metrics	The following metrics were selected for sales pipeline performance evaluation: • Number of qualified leads • Potential revenue amount (based on the expected revenue of each opportunity; categorized by pipeline stage, customer segment, and product) • Expected revenue (adjusted by historical conversion rate) • Actual revenue To define benchmarks, the consultant used historical data of the following metrics: opportunity conversion rates and time to close opportunity. This set of metrics furnished clear and concise information regarding the performance of each phase of the sales pipeline.
Data Presentation	The data was presented in a compact tabular form within Excel, encompassing summary data for both previous and current periods. Several visual charts were also developed, facilitating easy detection of patterns and trends, thereby aiding better decision-making.

Results and outcome

- The implemented reports offered a historical perspective and a current snapshot of the sales team's performance. They helped in fostering a clear understanding of **pipeline dynamics**, **customer behavior** and realistic **revenue predictions** based on leading indicators.
- Insights were gleaned and utilized to shape a go-to-market strategy for new products, especially concerning selecting new marketing channels and allocating the Sales and Marketing (S&M) budget. The analytics enabled an understanding of past sales performance and the key influencing factors such as **market trends**, **seasonal demands**, and **marketing channel efficacy**.
- Furthermore, the consultant designed supplementary reports to perform retrospective analyses and extract insights about the pivotal client-specific factors influencing **opportunity conversion probability**. Leveraging this data, the consultant presented actionable suggestions to the sales team to enhance conversion rates.

B2B Tech Company Improves Lead Generation Practices Through Data Analysis and Segmentation

- This case study demonstrates the value of data analysis and segmentation in improving lead generation practices.
- By identifying key customer segments and developing customer personas, the B2B tech company was able to improve their targeting and increase the relevance of their value proposition and messages.
- This led to a more effective lead generation process and a better customer experience.

Challenge

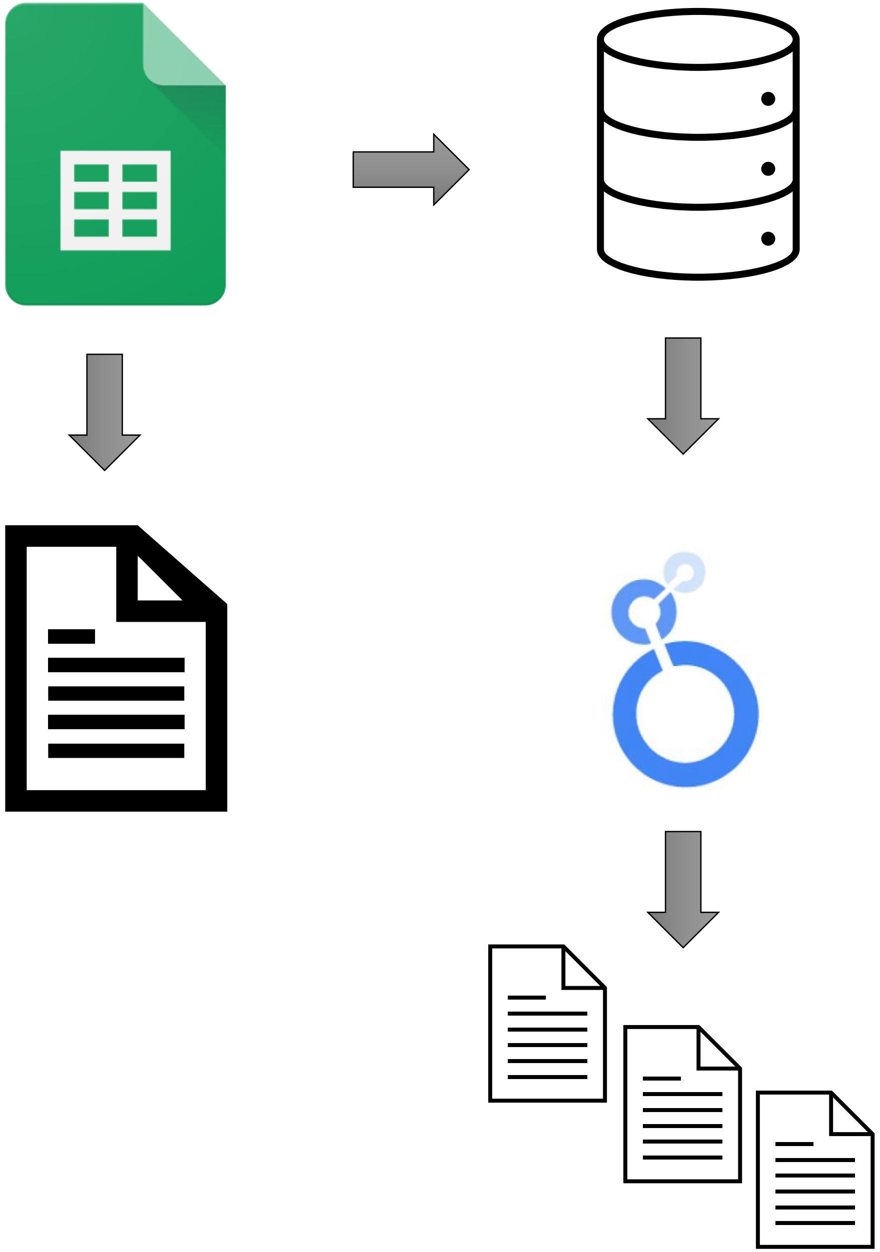
- A B2B tech company wanted to improve their lead generation practices to reach their business development objectives by improving targeting and increasing the relevance of their value proposition and messages.
- However, there were no prior segments or customer personas identified, so it was necessary to start by understanding their existing customer base.

Solution

- The consultant used Microsoft Excel and Dynamics CRM to extract and examine existing customer data. They then extended the data model with additional firmographic data researched from third-party online tools.
- Next, an initial set of criteria for segmentation was defined.
- Data analysis was performed as a team exercise focusing on data grouping and clustering.

Results and outcome

- As a result of data aggregation, the team led by the consultant was able to define three main B2B customer segments. Key segmentation characteristics for data grouping were identified, such as industry, geolocation, size, and maturity level of the client's organization.
- This discovery helped to identify insights about **customer-specific needs**, define **customer personas**, and develop a **unique selling proposition** for each key segment.
- Additionally, this information was used for deeper analysis of the segment-specific **customer journey**, resulting in specific suggestions for improvement to ease the process of product evaluation and purchase.



Transforming Client Insights into Tailored Business Solutions: A Lean BI Approach

A well-established startup running a B2B marketplace business model conducted deep **client-based research**, collecting data and analytics on their clients' needs and product usage.

They aimed to create **customized, interactive reports** in Looker Studio, providing **tailored suggestions** for product subscription plans based on each client's consumption patterns and number of employees.

Challenge

- The startup faced challenges with data preparation for visualization and uncertainty about how to clearly demonstrate the benefits of their subscription suggestions, including potential savings.
- As this was a proof of concept (POC) that needed quick evaluation by the sales team, there was time pressure and limited ability to set up a full ETL pipeline.

Solution

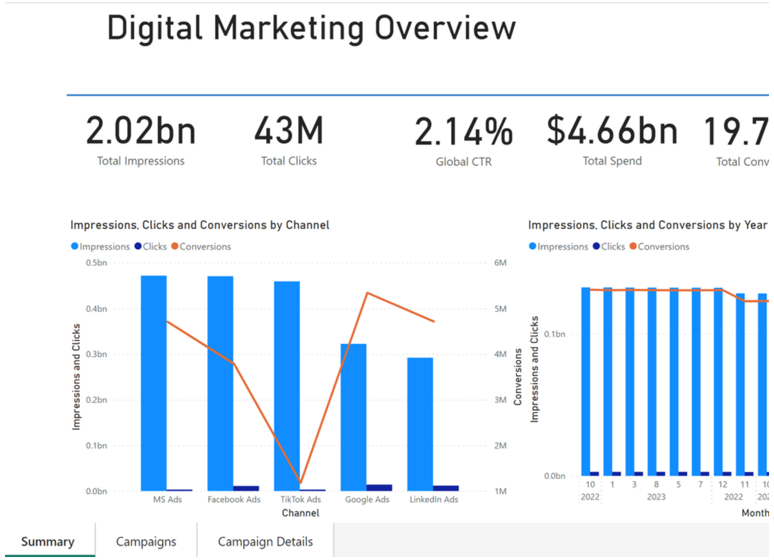
- The consultant applied their technical expertise and Lean BI approaches to address these challenges. They created data transformations in Google Sheets, using advanced functions to convert the data to a normalized form suitable for use as a Looker Studio data source.
- The consultant developed a multi-page dashboard with specific visuals and filters that clearly highlighted the benefits of the startup's offerings to their clients. They also suggested an easy-to-implement, lean method to automatically generate tailored reports for each client.

Results and outcome

- The requested data transformations and dashboards were delivered to the client through several **short iterations**, incorporating client feedback. The ETL approach utilized **advanced data transformation** functions in Google Sheets, ensuring flexibility for future data source modifications.
- The dashboard included clear and explanatory **data storytelling** for end-users. Documentation was provided to ensure the data transformations were explainable, easy to support, and modify. The project was completed within a short timeframe, meeting the customer's deadlines.

Multichannel Performance Marketing Analytics

A marketing reporting solution that allows to measure and track ad campaign performance across multiple platforms in a single report. This sample project is based on a hypothetical yet relevant client request and synthetic dataset.



CHALLENGE

It is a common request from marketing agencies to develop a unified interactive report for tracking ad campaign performance across multiple platforms, highlighting inefficiencies in the current Excel-based process.

The report requires daily updates of key metrics such as impressions, clicks, CTR, spend, conversions, and conversion value, aligning with the company's branding. Crucially, the customer needs the functionality to drill down into the data, allowing detailed analysis of individual campaigns within the dashboard

Solution

ETL PIPELINE

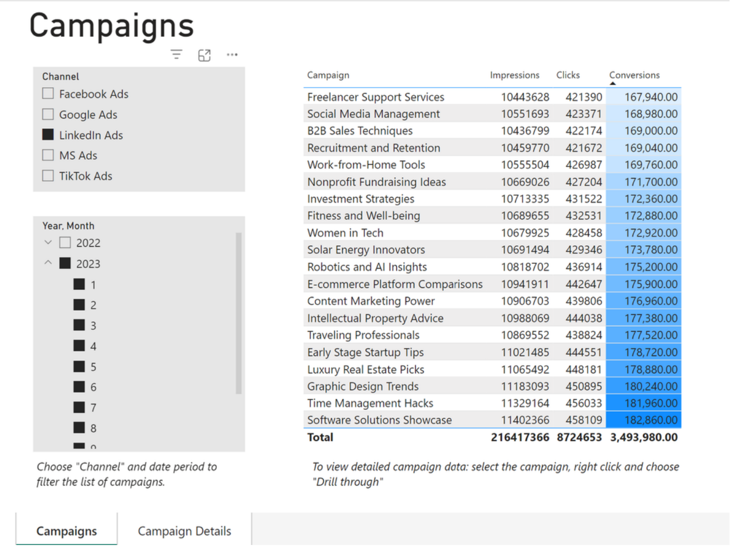
The challenge was to combine a significant amount of data from various sources into a single dataset and enable a regular and reliable data update procedure. For data extraction, a 3rd party tool, PowerMyAnalytics, was used. PMA connectors were configured for five different ad platforms: LinkedIn (LI), Facebook (FB), TikTok, Microsoft Ads, and Google. The data model is unified across all these platforms. Data exports in PMA are configured to transport data into BigQuery on a daily basis. In BigQuery, data from various ad platforms is combined into a single dataset. PowerBI accesses this data via the BigQuery connector.

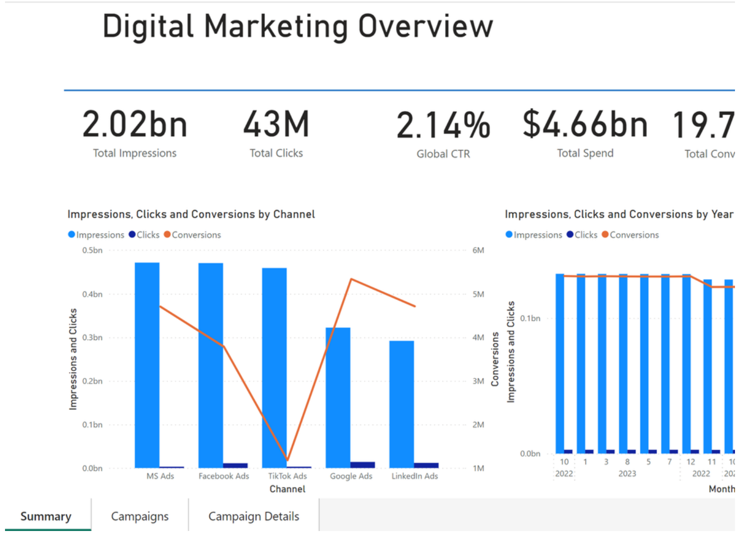
DATA VISUALIZATION

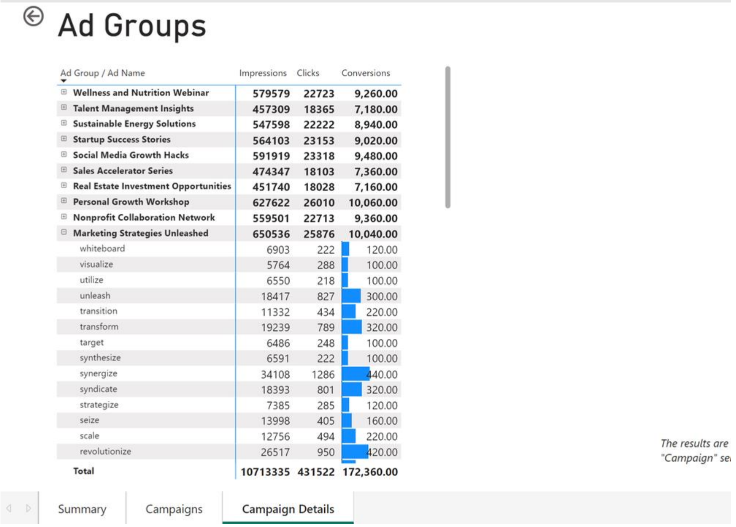
The report is implemented in PowerBI, utilizing its features for visualization, interactivity, and drilling through the data. The PowerBI report presents:

- A summary view with headlines of top-level indicators as well as key performance metrics (Impressions, Clicks, and Conversions per channel and per month).
- A more detailed Campaigns view with the ability to filter particular campaigns by channel and by Year/Month, and the ability to drill through to Campaign details.
- A Campaign details view showing specific Ad group/Ad name hierarchies along with their corresponding performance metrics (Impressions, Clicks, and Conversions)

Results





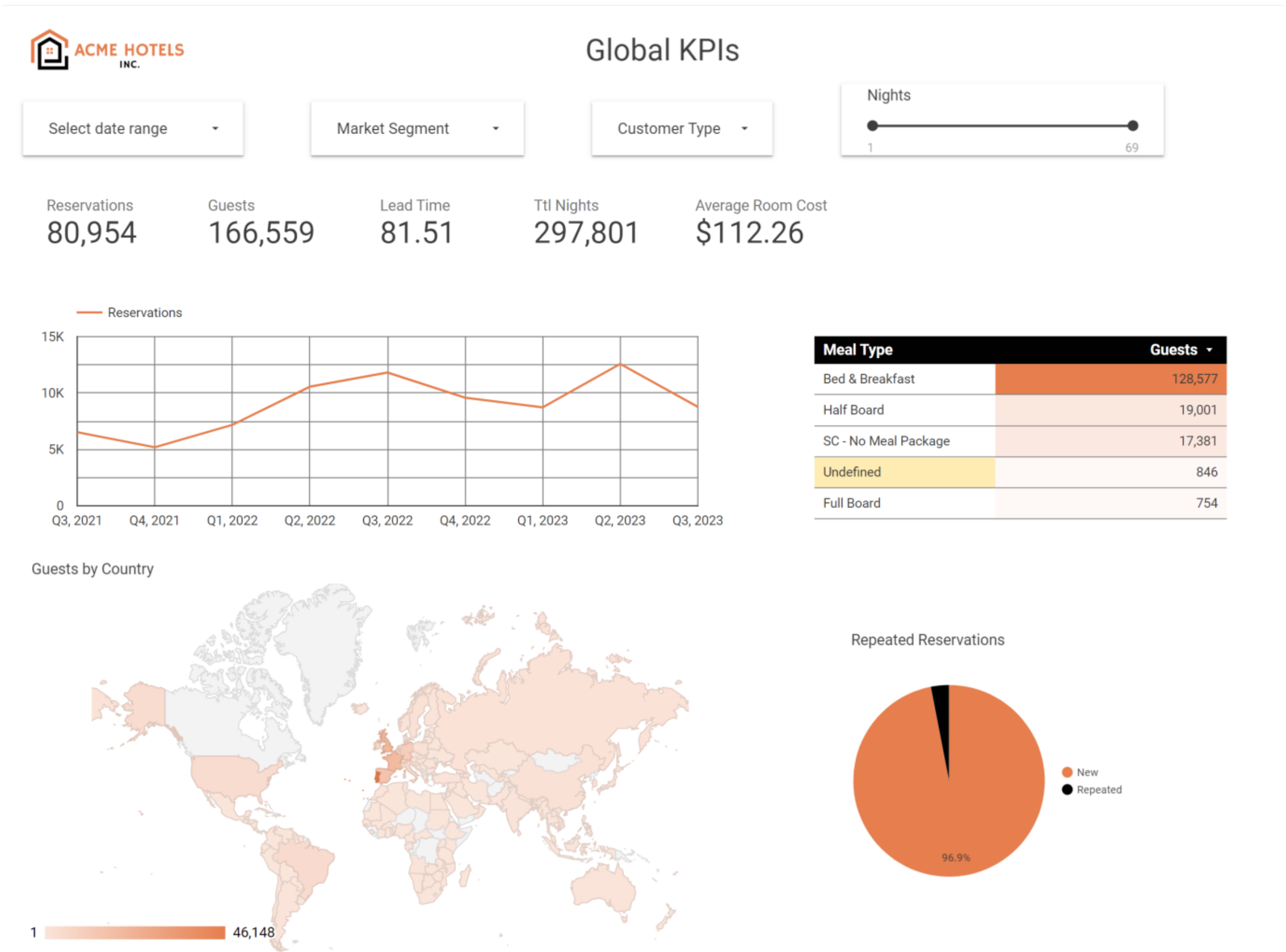


Interactive Demo:
https://app.powerbi.com/view?r=eyJrIjoiYmU4MzM3YTYtYWZmYy00OTE3LTliOTAtZDJiMDNkNzFkMjkyIiwidCI6ImU3ZDIzMWY5LTgwYmYtNDExZi04OWYzLTEyYzU2NDQ5MWIxNSIsImMiOjl9&pageName=ReportSection

The Hotel Reservations Analytics

The project aims to modernize data infrastructure and reporting for hotel reservations by developing three interactive dashboards with data accessed via live database connection. This sample project is based on a hypothetical client request and synthetic dataset.

MySQL, Google Looker Studio

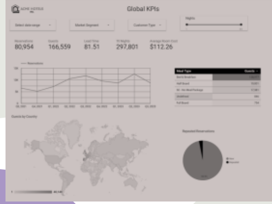


Challenge

A hypothetical client from hospitality industry requested to modernize data infrastructure and reporting for hotel reservations. It involves replacing an inefficient Excel-based system with a robust, flexible solution, and automating report generation with live database connection.

The project requires developing three interactive dashboards for Global KPIs, Reservation Acquisition, and Guests, with features like total reservations, guest demographics, and performance trends.

Interactivity with filters for arrival date, market segment, and customer type is emphasized, alongside adherence to the company's branding and design aesthetics.



Solution

APPROACH

Existing data was transferred from Excel spreadsheets to a newly designed cloud-based relational database, ensuring structured and centralized data storage, data integrity, scalability, and security. The data model was normalized to the third normal form for optimal structure and efficient data retrieval. A 3-page dashboard was implemented in Google Looker Studio, chosen for its availability as a free tool, ease of use, and maintenance, making it suitable for a non-technical client.

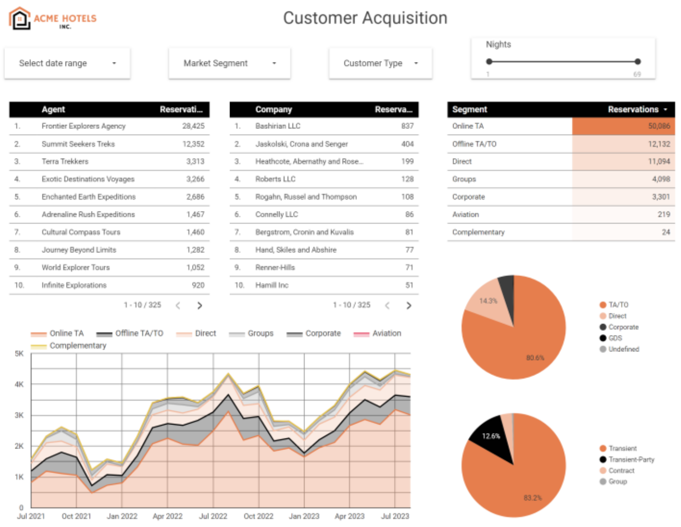
DATA VISUALIZATION HIGHLIGHTS

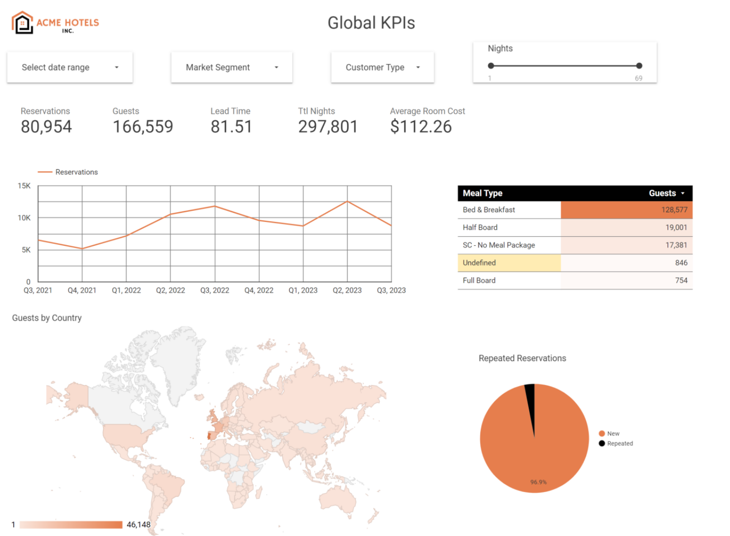
The 'Global KPIs' page includes multiple scorecards and various charts for a quick, at-a-glance assessment of the business situation. Key metrics covered include reservations by quarter and country, guest demographics by meal type, and new vs. repeat reservations. The 'Customer Acquisition' page focuses on agent performance, top B2B clients, and reservations per channel and segment over time. The 'Guests' page provides key summary metrics about guests, visualizing trends over time, guest breakdowns, and room type changes. Global filters enable easy and intuitive data slicing in any report page by parameters like date range, market segment, customer type, and duration of stay.

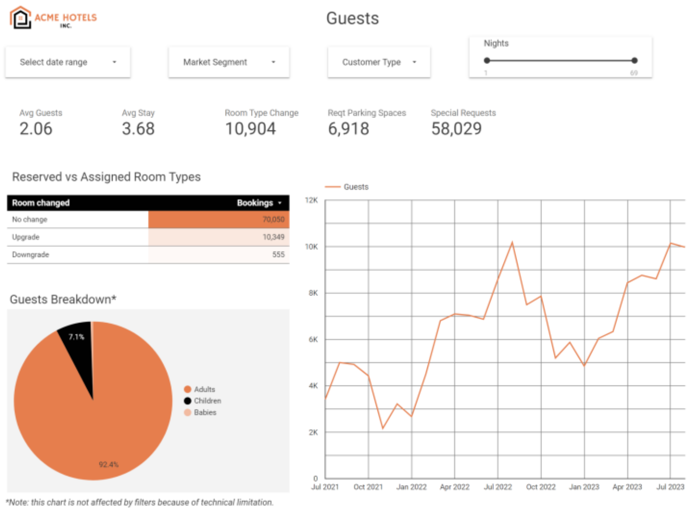
TECH CHALLENGE

Implementing the 'Guests breakdown' visualization posed a challenge due to data structure limitations dictated by data granularity. This was resolved by creating an additional data source using a custom SQL query.

Results







Interactive Demo:

https://lookerstudio.google.com/s/jKnvg_5kh_M