

Data Vista Project Report

Title: Data Vista: Sales Data Analysis and Visualization

Project Statement

We aim to develop a comprehensive data analysis and visualization platform for sales data. This platform will provide actionable insights into sales performance, trends, and patterns through interactive and user-friendly visualizations. It will support detailed comparisons across products, regions, and time periods while also analyzing customer purchasing patterns based on their location. The ultimate goal is to empower businesses with deep insights and data-driven recommendations to enhance decision-making and drive growth.

Expected Outcomes:

- **Enhanced Sales Insights:** Comprehensive understanding of sales performance and trends.
- **Improved Decision-Making:** Data-driven recommendations for strategic business decisions.
- **Optimized Sales Strategies:** Identification of high-performing products and regions.
- **Customer-Centric Approach:** In-depth analysis of customer behavior and preferences.
- **Increased Efficiency:** Streamlined reporting and visualization of complex sales data.
- **Predictive Analytics:** Forecasting future sales and identifying potential growth areas.
- **Scalability:** A platform capable of growing with the business and handling increasing data complexity.

Project Undertaken under: Infosys Springboard Summer Internship Program 4.0

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ABSTRACT

The Infosys Springboard Summer Internship Program's Data Vista project is centered on the thorough analysis and visualisation of sales data. The principal aim is to utilise sophisticated data analytics methodologies to extract practical insights, hence augmenting strategic decision-making procedures. In order to present findings in an understandable and accessible manner, the project entails gathering and processing sales data, carrying out in-depth exploratory data analysis (EDA), and using visualization tools like Tableau and Power BI. The study finds significant sales trends, patterns, and anomalies by utilizing a variety of statistical and machine learning techniques. Stressing the significance of pre-processing and data cleaning guarantees the correctness and dependability of the outcomes.

Complex datasets are turned into understandable, interactive dashboards and reports by using visualization tools like Tableau and Power BI. The translation of complex data sets into understandable insights is facilitated by these visual aids. With a focus on customer behaviour and variables impacting sales success, the project's findings seek to give stakeholders a greater knowledge of sales dynamics. This data is essential for increasing revenue growth, refining client targeting, and optimizing sales techniques. The Data Vista project highlights the importance of using data-driven strategies in company operations and demonstrates the big effects of efficient data visualization and analysis. Finally, the study demonstrates how thorough analysis and visualization may result in significant gains in comprehending and controlling sales, underscoring the need of using data to make educated business decisions.

Keywords: Infosys Springboard, Tableau, Power BI, Sales Data Analysis, Data Visualization, Exploratory Data Analysis, and Machine Learning.

Project Timeline and their descriptions:

Week 1: Project Initialization and Planning

Understand project requirements and objectives.

Conduct a competency gap analysis.

Create a competency plan and define necessary actions.

Understand the sequence of tasks.

Set up the development environment with required tools.

Week 2: System Design and Initial Implementation

Design database tables (schema) for storing sales data.

Implement database tables and test data entries.

Implement basic frontend modules (e.g., basic data display).

Implemented Data segmentation

Dataset Link:

<https://www.kaggle.com/datasets/abhisinha8531/sales-and-customer-dataset>

Total number of rows in dataset = 1000000

Total number of columns in dataset = 28

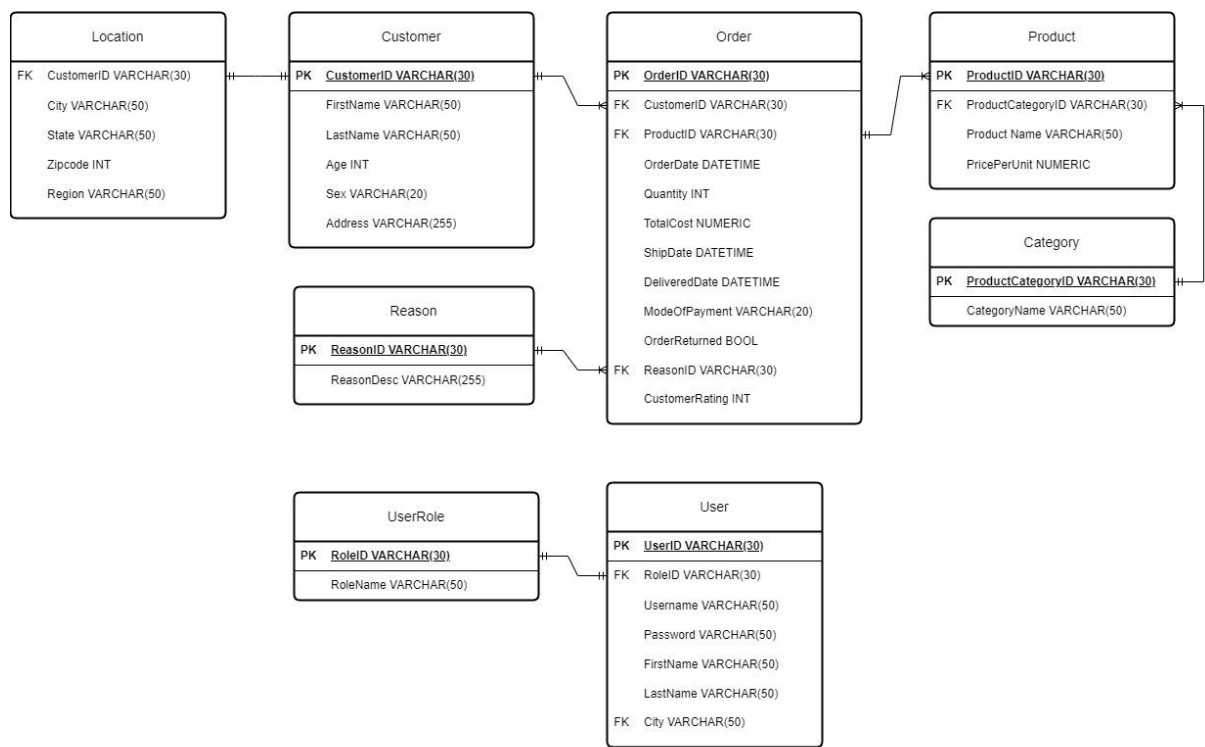
List of columns in the dataset:

'Order ID', 'Order Date', 'Product Name', 'Product Category', 'Quantity', 'Price per Unit', 'Total Cost', 'City', 'State', 'Zip Code', 'Ship Date', 'Delivered Date', 'Mode of Payment', 'Order Returned', 'Customer Rating (out of 5)', 'Customer ID', 'Category ID', 'Return Reason', 'Reason ID', 'Product ID', 'Customer ID', 'First Name', 'Last Name', 'Age', 'Sex', 'Address', 'City', 'State', 'Zip Code'

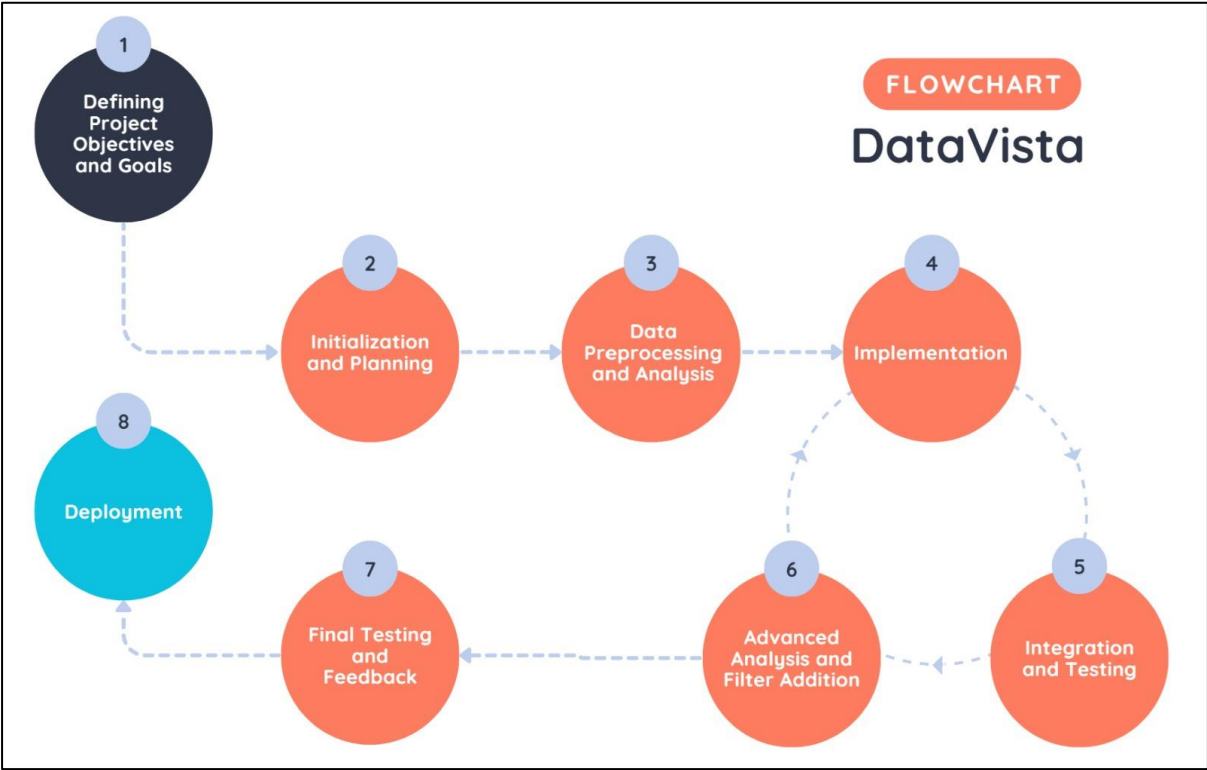
Data Preprocessing

- **Data Cleaning:**
 - **Handling Missing Values:** In this project, we have handled missing values by imputing them with statistical measures such as the mean, median, or mode, and by removing rows or columns with excessive missing.
 - **Removing Duplicates:** We have efficiently detected and eliminated duplicate records using Python to ensure accurate analysis results.
 - **Data Type Conversion:** We have ensured that all columns have the correct data type, such as dates and numerical values, using Python libraries to convert data types as needed for accurate analysis.
- **Data Transformation:**
 - **Date and Time Manipulation:** In this project, we have utilized Python to parse and manipulate date and time data, extracting useful features such as month, year, day of the week, and fiscal quarters, which are crucial for sales analysis.
 - **Normalization and Scaling:** We have prepared the data for machine learning models by normalizing or scaling numerical features using Python, ensuring comparable ranges and improved model performance and convergence.
 - **Feature Engineering:** Python has been employed to create new features that provide additional insights, such as calculating total sales from quantity and price per unit or generating categorical features from numerical data.
- **Outlier Detection and Handling:**
 - We have used Python to detect and handle outliers through statistical methods and visualization techniques, ensuring that the dataset accurately represents typical sales patterns and does not skew analysis or machine learning models.
- **Data Integration:**
 - We have used Python to merge and integrate sales data from multiple sources, such as CRM systems, e-commerce platforms, and inventory databases, ensuring consistency and completeness of the dataset.
- **Data Aggregation and Summarization:**
 - We have utilized Python to aggregate and summarize data, enabling calculations such as total sales. This approach has been pivotal in generating high-level insights and identifying trends and patterns within the dataset
- **Data Validation and Quality Assurance:**
 - We have automated the validation of data against business rules and consistency checks using Python, guaranteeing that the dataset adheres to predefined quality standards. This involves checking for logical inconsistencies, such as negative sales amounts or invalid dates, to maintain data integrity and reliability.

ER Diagram:



Flow Chart:



Week 3: Data Analysis Design and Implementation

Designed Dashboards for additional data analysis features (e.g., aggregations, filters).

Design additional database tables for specific data analysis requirements.

Implement database tables and test data entries.

Enhance frontend modules for better data representation and visualization

Technologies Used

- **Amazon RDS:** We used Amazon Relational Database Service (RDS) to host our project's database. This provided a scalable and reliable database solution that allowed us to store and manage large volumes of sales data efficiently. Amazon RDS ensured high availability and automatic backups, which were crucial for maintaining data integrity and availability throughout the project.
- **Power BI:** Power BI was the primary tool for data analysis and visualization in our project. We utilized Power BI's robust features to clean, filter, and pre-process data, and to create interactive dashboards and reports. These dashboards provided comprehensive insights and allowed users to drill down into detailed data, enhancing our ability to make informed decisions based on real-time data analysis.
- **Flask:** We used Flask, a lightweight web framework for Python, to develop the backend of our application. Flask served as the intermediary between our data sources and the front-end user interfaces, handling data requests, processing them, and delivering the necessary information to Power BI and other components. This facilitated seamless integration and communication between different parts of our project.
- **Amazon EC2:** Amazon Elastic Compute Cloud (EC2) provided the computational power needed to run our applications and services. We deployed our Flask application on EC2 instances, ensuring that it could handle concurrent requests and deliver high performance. EC2's scalability allowed us to adjust resources based on demand, ensuring optimal performance and cost efficiency.

By integrating these technologies, we built a robust and scalable data analysis platform. Amazon RDS ensured reliable data storage, Flask facilitated smooth backend operations, Power BI enabled powerful data visualization, and Amazon EC2 provided the necessary computational resources. This combination allowed us to deliver a comprehensive solution that met our project's requirements and objectives.

Week 4: Integration and Testing Phase I

Integrate data retrieval and basic analysis modules.

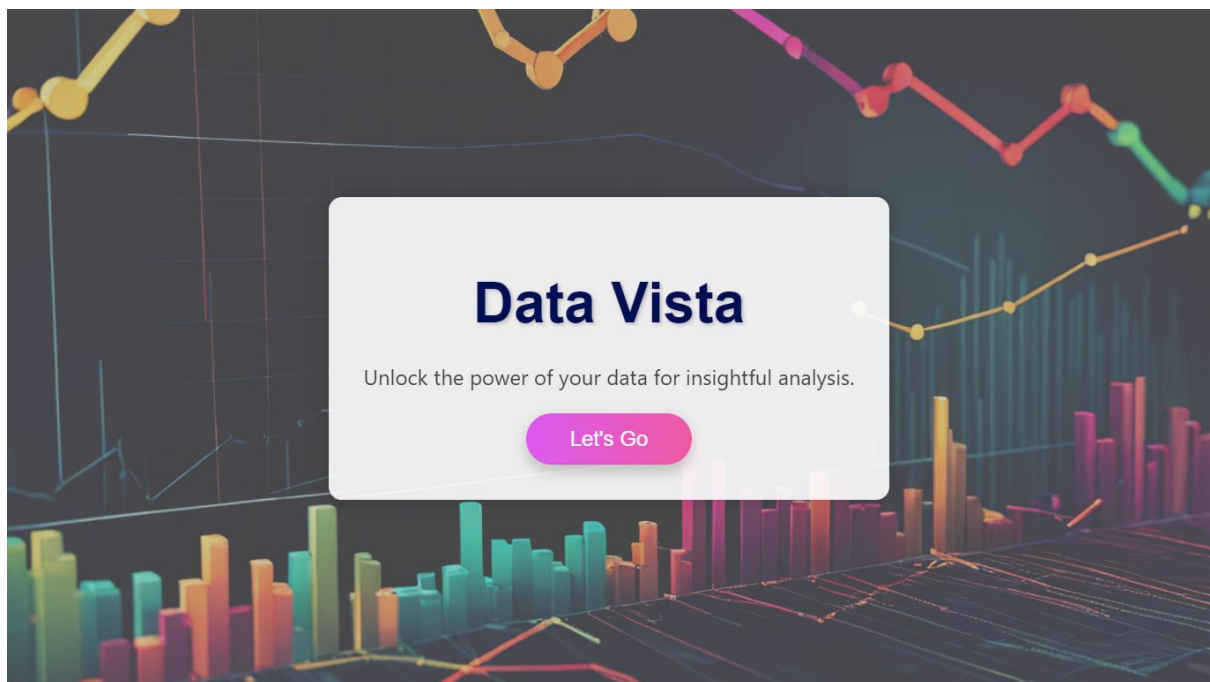
Test integration and ensure smooth data flow.

Implement frontend modules for displaying basic analysis results.

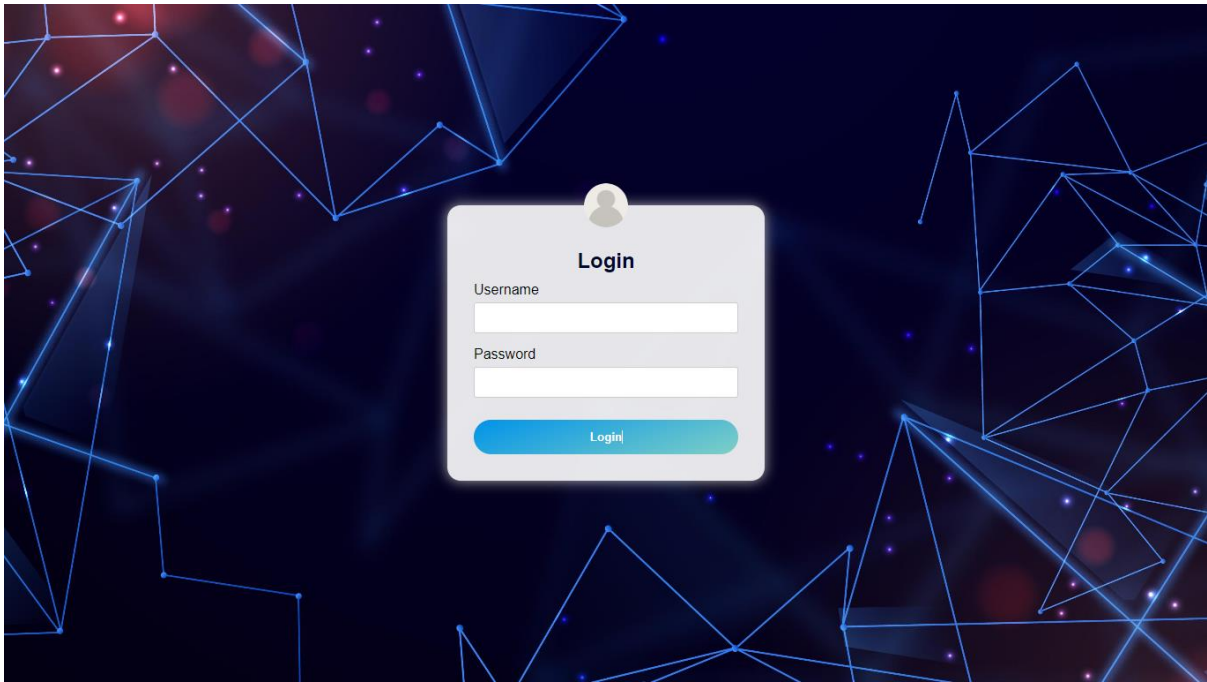
Execute test cases for data retrieval, basic analysis, and frontend functionalities.

Project Implementation Screenshots

- **Welcome Page**



- Login Page



- Dashboards



DATA VISTA

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No. Of Orders By States

| Product Category | ProductName | Region | State | City | Total Orders | Total Quantity Sold |
|------------------|------------------------|--------|---------|-----------------|--------------|---------------------|
| Accessories | Adjustable Phone Stand | EAST | Alabama | Aaronfurt | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Alejandroboroug | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Alvarezberg | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Andrechester | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Annafurt | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Annamouth | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Arnoldberg | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Barnettmouth | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Belchester | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Blakeland | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Brendaport | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Brentburgh | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Briggsside | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Brownmouth | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Burtonhaven | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Cameronberg | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Chadland | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Chambersville | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Charlesshire | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Cindyborough | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Codybury | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Crystalview | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Daisymouth | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Davishaven | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Davismouth | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Donaldton | 1 | 1 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | Donberg | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | East Amyhaven | 1 | 2 |
| Accessories | Adjustable Phone Stand | EAST | Alabama | East | 1 | 1 |
| Total | | | | | 999143 | 1498540 |

1M

Total Quantity Sold

999K

Total Orders

Product Category, ProductName

- ☐ Accessories
- ☐ Apparel
- ☐ Beauty
- ☐ Camping Gear
- ☐ Clothing
- ☐ Electronics

City, Region, State

- ☐ Aaronberg
- ☐ Aaronborough
- ☐ Aaronburgh
- ☐ Aaronbury
- ☐ Aaronchester
- ☐ Aaronfort
- ☐ Aaronfurt
- ☐ Aaronhaven

Microsoft Power BI

DATA VISTA

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Sum Of Quantity Sold By Product Category

| Product Category | ProductName | State | Region | Sum of Quantity Sold | Sum of Profit |
|------------------|-----------------------------|---------------|---------|----------------------|---------------|
| Beauty | Wooden Hairbrush | Delaware | EAST | 369 | 427.50K |
| Beauty | Hand Cream with Shea Butter | Delaware | EAST | 360 | 428.00K |
| Beauty | Manicure Kit | Idaho | WEST | 357 | 444.50K |
| Beauty | Hand Cream with Shea Butter | Mississippi | EAST | 352 | 421.50K |
| Beauty | Hand Cream with Shea Butter | Virginia | EAST | 352 | 386.00K |
| Beauty | Manicure Kit | North Dakota | MIDWEST | 348 | 403.50K |
| Beauty | Hand Cream with Shea Butter | Idaho | WEST | 346 | 414.50K |
| Beauty | Lip Balm Trio | Montana | WEST | 343 | 365.50K |
| Beauty | Hand Cream with Shea Butter | Pennsylvania | EAST | 341 | 387.00K |
| Beauty | Hand Cream with Shea Butter | Rhode Island | EAST | 340 | 375.50K |
| Beauty | Manicure Kit | Arizona | WEST | 339 | 414.00K |
| Beauty | Wooden Hairbrush | Tennessee | EAST | 336 | 379.50K |
| Beauty | Lip Balm Trio | Pennsylvania | EAST | 335 | 358.00K |
| Beauty | Lip Balm Trio | Connecticut | EAST | 333 | 382.00K |
| Beauty | Lip Balm Trio | Minnesota | MIDWEST | 330 | 399.50K |
| Beauty | Lip Balm Trio | Mississippi | EAST | 329 | 361.00K |
| Beauty | Manicure Kit | Minnesota | MIDWEST | 329 | 361.50K |
| Beauty | Hand Cream with Shea Butter | Arkansas | EAST | 328 | 387.50K |
| Beauty | Lip Balm Trio | Illinois | SOUTH | 328 | 379.00K |
| Beauty | Wooden Hairbrush | Nevada | WEST | 328 | 377.50K |
| Beauty | Lip Balm Trio | Oregon | WEST | 327 | 377.00K |
| Beauty | Manicure Kit | New Mexico | WEST | 326 | 366.50K |
| Beauty | Hand Cream with Shea Butter | New Hampshire | EAST | 325 | 378.50K |
| Beauty | Lip Balm Trio | Texas | SOUTH | 325 | 372.50K |
| Beauty | Wooden Hairbrush | Georgia | EAST | 325 | 396.00K |
| Beauty | Wooden Hairbrush | Massachusetts | EAST | 325 | 388.00K |
| Beauty | Hand Cream with Shea Butter | Tennessee | EAST | 324 | 368.50K |
| Beauty | Lip Balm Trio | Nebraska | SOUTH | 324 | 383.00K |
| Beauty | Wooden Hairbrush | Maryland | EAST | 324 | 367.50K |
| Total | | | | 59984 | 69,002.50K |

60K

Sum of Quantity Sold

69M

Total Profit per Category

Region, State, City

- ☐ EAST
- ☐ MIDWEST
- ☐ SOUTH
- ☐ WEST

Product Category, ProductName

- ☐ Accessories
- ☐ Apparel
- ☒ Beauty
- ☐ Camping Gear
- ☐ Clothing
- ☐ Electronics
- ☐ Emergency Supplies
- ☐ Fishing Gear

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Total sale & Avg. Price By Product Category

| Product Category | ProductName | Region | State | Total Sales | Total Cost | Average Price per Unit |
|------------------|------------------------|---------|----------------|---------------|-------------|------------------------|
| Accessories | Adjustable Phone Stand | EAST | Alabama | 862.21K | 490.71K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Arkansas | 665.38K | 374.88K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Connecticut | 867.47K | 487.97K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Delaware | 833.51K | 484.01K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Florida | 780.78K | 441.28K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Georgia | 851.23K | 498.23K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Kentucky | 849.23K | 478.23K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Louisiana | 746.82K | 437.32K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Maine | 961.85K | 564.85K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Maryland | 895.41K | 515.41K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Massachusetts | 768.07K | 445.07K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Mississippi | 821.26K | 459.76K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | New Hampshire | 800.15K | 470.15K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | New Jersey | 747.68K | 447.68K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | New York | 828.76K | 486.76K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | North Carolina | 957.81K | 556.31K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Pennsylvania | 726.98K | 416.98K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Rhode Island | 915.98K | 548.48K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | South Carolina | 799.80K | 451.30K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Tennessee | 778.37K | 444.87K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Vermont | 723.91K | 426.91K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | Virginia | 761.07K | 441.57K | 4,737.21 |
| Accessories | Adjustable Phone Stand | EAST | West Virginia | 792.51K | 454.51K | 4,737.21 |
| Accessories | Adjustable Phone Stand | MIDWEST | Michigan | 769.94K | 467.44K | 4,737.21 |
| Accessories | Adjustable Phone Stand | MIDWEST | Minnesota | 849.76K | 493.76K | 4,737.21 |
| Accessories | Adjustable Phone Stand | MIDWEST | North Dakota | 884.06K | 511.06K | 4,737.21 |
| Accessories | Adjustable Phone Stand | MIDWEST | South Dakota | 720.27K | 413.27K | 4,737.21 |
| Accessories | Adjustable Phone Stand | MIDWEST | Wisconsin | 834.43K | 496.43K | 4,737.21 |
| Accessories | Adjustable Phone Stand | SOUTH | Illinois | 798.61K | 443.61K | 4,737.21 |
| Accessories | Adjustable Phone Stand | SOUTH | Indiana | 816.63K | 464.63K | 4,737.21 |
| Total | | | | 1,126,471.88K | 656,408.38K | 3,233.21 |

1.13bn

Total Sales

3.23K

Average Price per ...

Region, State, City

- ☐ EAST
- ☐ MIDWEST
- ☐ SOUTH
- ☐ WEST

Product Category, ProductName

- ☒ Accessories
- ☐ Apparel
- ☐ Beauty
- ☐ Camping Gear
- ☐ Clothing
- ☐ Electronics
- ☐ Emergency Supplies
- ☐ Fishing Gear
- ☐ Fitness
- ☐ Footwear
- ☐ Health
- ☐ Home Decor
- ☐ Kitchenware
- ☐ Lifestyle
- ☐ Pet Supplies
- ☐ Sports & Outdoors
- ☐ Tools
- ☐ Travel
- ☐ Toys & Games
- ☐ Wellness
- ☐ Work & Office

90%

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No. Of Orders Returned By Region

| Product Category | ProductName | ReasonDesc | Total Orders | OrdersReturned | Total Quantity Sold |
|--------------------|---------------------------|-----------------------|--------------|----------------|---------------------|
| Accessories | Adjustable Phone Stand | Cancellation of plans | 482 | 482 | 712 |
| Health | Antibacterial Hand Gel | Cancellation of plans | 516 | 516 | 771 |
| Home Decor | Aromatherapy Candle Set | Cancellation of plans | 450 | 450 | 682 |
| Accessories | Athletic Shoelaces | Cancellation of plans | 540 | 540 | 820 |
| Accessories | Aviator Sunglasses | Cancellation of plans | 471 | 471 | 717 |
| Kitchenware | Bamboo Cutting Board | Cancellation of plans | 494 | 494 | 731 |
| Apparel | Beanie Hat | Cancellation of plans | 474 | 474 | 690 |
| Camping Gear | Camping Hammock | Cancellation of plans | 499 | 499 | 777 |
| Camping Gear | Camping Lantern | Cancellation of plans | 525 | 525 | 773 |
| Accessories | Canvas Backpack | Cancellation of plans | 482 | 482 | 736 |
| Kitchenware | Ceramic Coffee Mug | Cancellation of plans | 535 | 535 | 779 |
| Camping Gear | Collapsible Camping Chair | Cancellation of plans | 515 | 515 | 772 |
| Accessories | Collapsible Water Bottle | Cancellation of plans | 477 | 477 | 720 |
| Accessories | Compact Handheld Mirror | Cancellation of plans | 525 | 525 | 800 |
| Accessories | Compact Pocket Mirror | Cancellation of plans | 496 | 496 | 743 |
| Tools | Compact Sewing Kit | Cancellation of plans | 492 | 492 | 749 |
| Accessories | Compact Travel Umbrella | Cancellation of plans | 535 | 535 | 813 |
| Apparel | Compression Socks | Cancellation of plans | 493 | 493 | 731 |
| Health & Wellness | Contact Lens Storage Case | Cancellation of plans | 492 | 492 | 742 |
| Accessories | Cotton Bandana | Cancellation of plans | 530 | 530 | 797 |
| Apparel | Cozy Slipper Socks | Cancellation of plans | 499 | 499 | 747 |
| Toys & Games | Deck of Playing Cards | Cancellation of plans | 509 | 509 | 775 |
| Clothing | Denim Jeans | Cancellation of plans | 485 | 485 | 734 |
| Home Decor | Desk Lamp | Cancellation of plans | 515 | 515 | 790 |
| Stationery | Desk Organizer | Cancellation of plans | 489 | 489 | 723 |
| Accessories | Elastic Hair Ties Set | Cancellation of plans | 478 | 478 | 718 |
| Emergency Supplies | Emergency Survival Kit | Cancellation of plans | 477 | 477 | 717 |
| Home Decor | Essential Oil Diffuser | Cancellation of plans | 478 | 478 | 720 |
| Electronics | External Hard Drive | Cancellation of plans | 504 | 504 | 750 |
| Total | | | 999143 | 500213 | 1498540 |

500K

Sum of OrderReturned

999K

Total Orders

Region

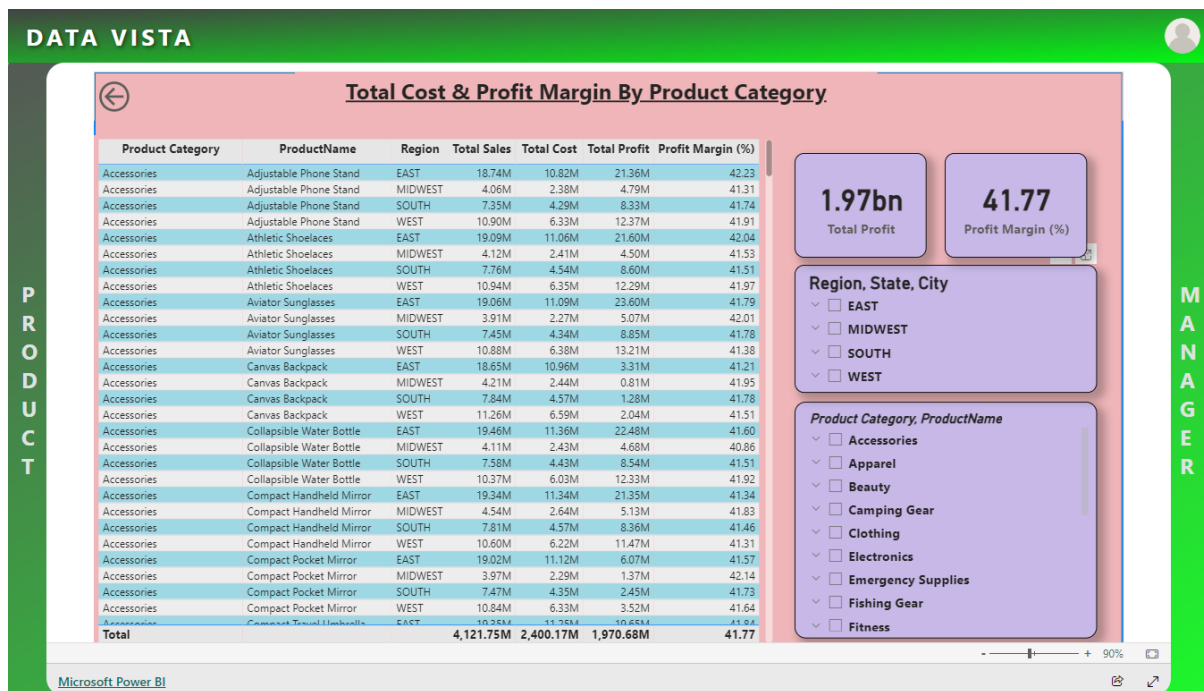
- ☐ EAST
- ☐ MIDWEST
- ☐ SOUTH
- ☐ WEST

Product Category, ProductName

- ☐ Accessories
- ☐ Apparel
- ☐ Beauty
- ☐ Camping Gear
- ☐ Clothing
- ☐ Electronics
- ☐ Emergency Supplies
- ☐ Fishing Gear
- ☐ Fitness
- ☐ Footwear
- ☐ Health
- ☐ Home Decor
- ☐ Kitchenware
- ☐ Lifestyle
- ☐ Pet Supplies
- ☐ Sports & Outdoors
- ☐ Tools
- ☐ Travel
- ☐ Toys & Games
- ☐ Wellness
- ☐ Work & Office

90%

Microsoft Power BI



Week 5: Advanced Analysis Features

Designed dashboards for advanced analysis features (e.g., trend analysis, forecasting).

Test endpoints and used filters on the dashboards.

Implement additional database tables for advanced analysis requirements.

Implement advanced analysis features in the backend.

Enhance frontend modules to incorporate advanced analysis results.

Week 6: Integration and Testing Phase II

Integrate advanced analysis modules.

Test integration and ensure accurate results.

Implement frontend modules for displaying advanced analysis results.

Execute test cases for advanced analysis features.

Approach Towards Adding Filters in Power BI

In this project, we have achieved the functionality of filtering and providing detailed tabular data using slicers and drill-through functionality in Power BI. Here's how we implemented it:

1. Creating a Slicer:

- In Power BI Desktop, we navigated to the "Visualizations" pane.
- We selected the slicer visualization and added it to the report canvas.
- Relevant fields (e.g., "Sale Date", "Product") were dragged into the slicer to create the filter.

2. Connecting Slicer to Data:

- Ensured the slicer was connected to the dataset by selecting the slicer and dragging the appropriate field from the data model into the "Fields" well of the slicer.

3. Adding Tabular Data Visualization:

- Added a table visualization to the report canvas to display initial tabular data.
- Dragged necessary fields (e.g., sales amount, customer names) into the table to show relevant information.

4. Implementing Drill-Through:

- Right-clicked on a data point within the table visualization and selected "Drill Through" > "New Drill Through".
- Selected fields in the "Fields" pane to include in the detailed tabular view.
- Created a new page in the report, adding a table visualization to display detailed data.
- Ensured the new table visualization was filtered based on the slicer selection from the previous page.

5. Adding "See More" Functionality:

- Added a button or link to the initial tabular data visualization to enable users to navigate to the detailed tabular view.

- Configured an action for the button or link to navigate to the page with the detailed tabular data.

6. Testing and Publishing:

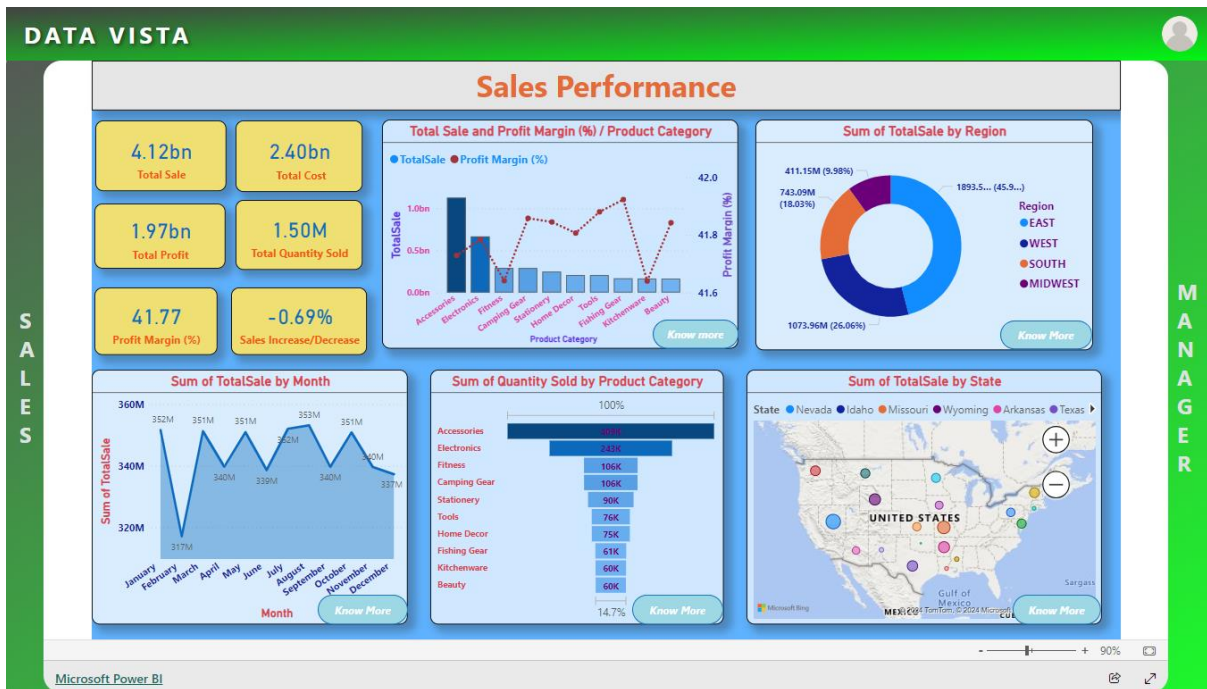
- Tested the Power BI report to ensure the slicer filtering and drill-through functionality worked as expected.
- Published the report to Power BI Service or shared it with the intended audience.

Role-Wise Dashboards

- Product Manager Dashboard**



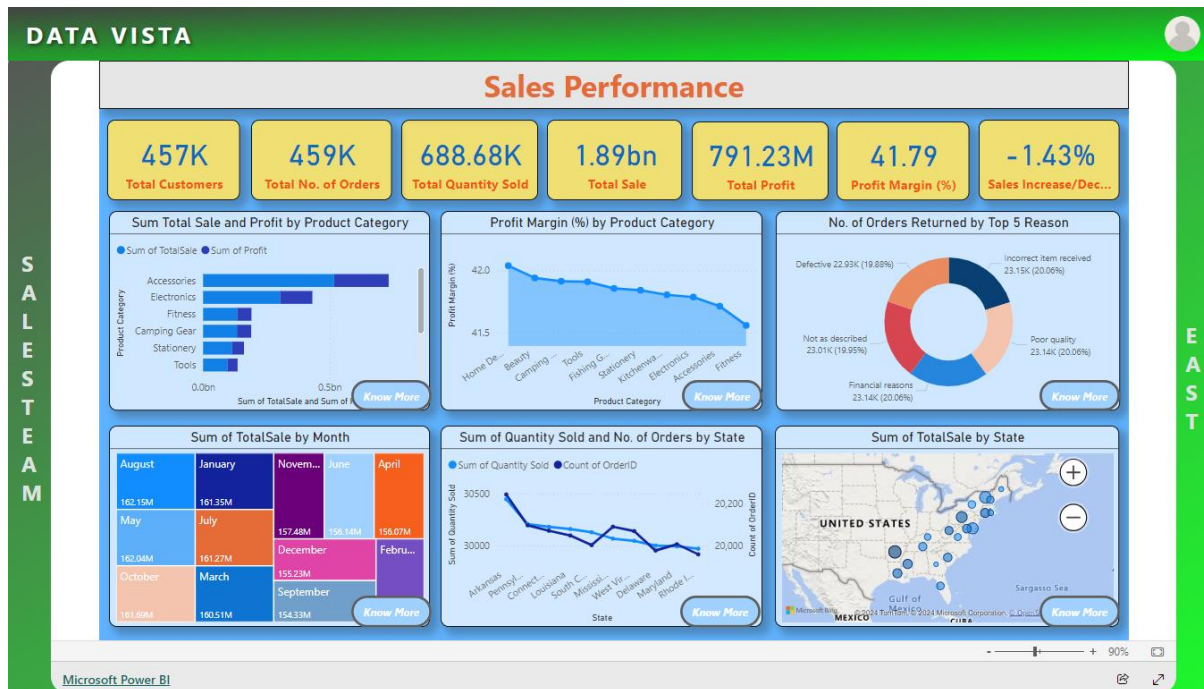
- Sales Manager Dashboard



- Product team Member Dashboard



- **Sales team Member Dashboard**



Week 7: Visualization Design and Implementation

Designed dashboards for visualization features.

Test endpoints.

Implement additional database tables for visualization requirements.

Implement backend functionalities for data visualization.

Enhance frontend modules for interactive and meaningful visualizations.

Week 8: Final Testing and Deployment

Conduct integration testing for the entire system.

Execute system tests and fix any defects.

Create acceptance test cases.

Perform acceptance testing and address any issues.

Finalize the code in the version control system.

Prepare a deployment package.

Deploy the finalized code to production.

Deliverables:

Hosted Power BI Dashboards

Test cases Report with execution results.

Codebase with peer and external reviews.

Demo video showcasing the data analysis and visualization features.

Final Project Report.

Deployed Application Details

- **Link:** <http://ec2-3-7-55-154.ap-south-1.compute.amazonaws.com:8080>

Login Details:

| Sl.No | Username | Password | Role |
|-------|------------------------------------|--------------|------------------------------|
| 1 | KuhuPatil@DSU0136.onmicrosoft.com | Kuhu@1234 | Product Manager |
| 2 | Abhishek@DSU0136.onmicrosoft.com | Appu@123 | Sales Manager |
| 3 | Sahiti@DSU0136.onmicrosoft.com | Infosys@1234 | Product Team member |
| 4 | Sravani@DSU0136.onmicrosoft.com | Infosys@1234 | Product Team member |
| 5 | Shrutika@DSU0136.onmicrosoft.com | Infosys@1234 | Sales team member EAST |
| 6 | Shravanthi@DSU0136.onmicrosoft.com | Infosys@1234 | Sales Team member MIDWEST |
| 7 | Aayushi@DSU0136.onmicrosoft.com | Infosys@1234 | Sales Team member SOUTH |
| 8 | Gayatri@DSU0136.onmicrosoft.com | Infosys@1234 | Sales Team member WEST |

| | | | |
|----|-------------------------------|--------------|---------------------|
| 9 | Vigna@DSU0136.onmicrosoft.com | Infosys@1234 | Product Team member |
| 10 | Asha@DSU0136.onmicrosoft.com | Infosys@1234 | Product Team member |

Project Outcomes

The Data Vista Project, as part of the Infosys Springboard Summer Internship Program, offered an exceptional opportunity to explore advanced data analytics with Power BI. This initiative has greatly improved our technical skills and practical knowledge in data visualization and business intelligence. Here's a summary of our achievements:

Key Achievements Using Power BI:

1. Data Filtering and Transformation:

- We leveraged Power BI's powerful data transformation tools to clean, filter, and pre-process extensive datasets.
- Advanced filtering techniques were applied to refine data views, ensuring displayed information was both relevant and accurate.

2. Dashboard Creation:

- We crafted interactive and user-friendly dashboards that deliver comprehensive insights at a glance.
- By using Power BI's drag-and-drop interface, we integrated multiple data sources for seamless connectivity.
- Custom visuals and Power BI's extensive visual library were utilized to enhance the interactivity and appeal of the dashboards.

3. Data Plotting and Visualization:

- We utilized a variety of plotting options, such as bar charts, line graphs, scatter plots, and heat maps, to effectively illustrate data trends and patterns.
- Power BI's built-in AI capabilities were used to generate predictive analytics and trend forecasts, supporting proactive decision-making.

4. Advanced Analytics:

- We used DAX (Data Analysis Expressions) to conduct complex calculations and extract meaningful insights from the data.
- Real-time data updates and live dashboards were implemented to ensure the data remained current and actionable.

5. Collaboration and Sharing:

- Secure sharing of dashboards and reports within the organization facilitated team collaboration.

- Role-based access controls were established to ensure data privacy and compliance with organizational policies.

Outcomes from the Successful Application of Power BI in the Data Vista Project:

- **Enhanced Decision-Making:** We provided clear, data-driven insights that improved decision-making processes.
- **Increased Efficiency:** We streamlined data analysis workflows, reducing the time needed to generate reports and insights.
- **Cultivated a Data-Centric Culture:** We promoted the importance of data accuracy and integrity, fostering a data-centric culture within the team.

Conclusion

The **Data Vista Project** has demonstrated the transformative power of Power BI in advancing data analytics and business intelligence capabilities. Through meticulous implementation of data filtering, transformation, dashboard creation, visualization, advanced analytics, and secure collaboration, we have significantly enhanced our technical proficiency and practical understanding.

The project has not only improved decision-making processes with clear, data-driven insights but also increased the efficiency of our data analysis workflows, reducing the time required to generate reports. Additionally, by fostering a data-centric culture, we have emphasized the importance of data accuracy and integrity within our team.

Overall, the successful application of Power BI in this project has equipped us with invaluable skills and insights, reinforcing the critical role of advanced data analytics in driving informed decision-making and operational efficiency. The outcomes of this project underscore the importance of leveraging robust data visualization tools to meet organizational goals and maintain a competitive edge in the industry.