

Dashboard Analysis Report

Who will use the dashboard?

Financial Analysts: They would use the dashboard to assess financial performance and identify trends.

Sales Managers: They would be interested in the performance of different branches and products.

Marketing Team: They would analyze monthly profits to plan campaigns and promotions.

Product Managers: They would focus on the cost and profit contributions of their products.

Regional Directors: They would be keen on understanding the profit distribution by region.

Executive Leadership (e.g., CFO, CEO): They would use the dashboard for high-level strategic decisions and company direction.

Available Information from Client:

Monthly Profit Data: The data includes monthly profit figures, enabling analysis of profitability trends over time.

Branch Financials: The dataset encompasses cost, profit, and revenue information for individual branches, allowing for a comparative financial performance analysis of different branches.

Product-wise Financials:

Profit by Product: A detailed breakdown of profits attributed to each product.

Cost of Each Product: Cost analysis for each product, highlighting the cost structure associated with the product portfolio.

Annual Revenue by Product: The data provides a year-over-year comparison of revenue for each product, giving insight into product performance and market trends.

Profit per Region: A geographical breakdown of profits, illustrating which regions are the most profitable.

The information provided by the client for report inclusion should cover the following aspects:

Profit: Profit data is available both monthly and by product, offering a dual perspective on profitability.

Branch Names: Branch-specific financial data is provided, enabling branch-level performance analysis.

Product Names: Each product is identified, allowing for product-specific revenue and cost analysis.

Regions: Regional profit data is included, which can be used to assess market penetration and regional performance.

Required Questions to Answer in the Dashboard:

1. Which months are best and worst for profit?
2. Is there a pattern to how profit changes month to month?
3. Which branch is doing the best in terms of money made and spent?
4. Which product brings in the most money and which costs the most to make?
5. Are certain products becoming more popular over time?
6. Which region contributes more to the company's profit?
7. Are there any products that aren't making as much money as before?
8. Is there a time of year when sales are consistently higher?
9. Which new products might be worth introducing based on current sales trends?
10. Do some branches spend more than they should compared to others?

1. Profit by Month (Bar Chart)

Chart Type: Vertical bar chart.

Title: "Profit by Month".

Colors: Varying shades of blues and purples, possibly to differentiate months.

Axis Titles: X-axis labeled with months, Y-axis labeled with profit values.

Legend: None, as each bar represents a different month.

Questions Answered: Which month had the highest and lowest profits? How does profit fluctuate throughout the year?

Display Trigger: Always shows up for immediate access to temporal profit trends.

Chart Selection Reason: Bar charts are not only ideal for comparing the magnitude of categories, but they also make it easy to spot trends and outliers at a glance. The use of different colors for each month adds a visual distinction that can help to quickly identify specific time periods. This is particularly useful for financial data where seasonality and monthly performance are key factors in strategic decision-making.

2. Cost, Profit, and Revenue for Every Branch (Clustered Column Chart)

Chart Type: Clustered column chart.

Title: "Cost, Profit, Revenue for Every Branch".

Colors: Different colors for cost, profit, and revenue to distinguish between them.

Axis Titles: X-axis labeled with branch names, Y-axis labeled with financial figures.

Legend: Provided for cost, profit, and revenue differentiation.

Questions Answered: How do cost, profit, and revenue compare across branches?

Which branch is most profitable or has the highest revenue?

Display Trigger: Always visible to provide a comprehensive overview of financial health across branches.

Chart Selection Reason: The clustered column chart is selected because it enables a comparison of multiple metrics across a single dimension, in this case, the company's branches. It highlights the relationship between cost, profit, and revenue, which are critical for assessing the efficiency and profitability of each branch. By clustering these three financial metrics together for each branch, the chart provides a comprehensive picture of financial health and can point to areas where cost management or revenue enhancement is needed.
It will always show up.

3. Profit and Cost by Product (Donut Charts)

Chart Type: Two donut charts side by side.

Titles: "Profit by Product" and "Cost of each Product".

Colors: Distinct colors for each product segment.

Axis Titles: None required, as it's a part-to-whole comparison.

Legend: Included to indicate which colors represent which products.

Questions Answered: What are the profit and cost contributions of each product?

Which product has the highest cost or profit?

Display Trigger: Visible upon selecting a specific product category.

Chart Selection Reason: Donut charts provide a clear visualization of part-to-whole relationships, making them suitable for displaying the profit and cost distribution of each product. They emphasize the contribution of each product to the overall financial picture of the company. The choice of a donut chart over a traditional pie chart is due to its modern look and the ability to center other information within the chart, such as total profit or cost figures, for added context.
It will always show up.

4. Annual Product Performance (Stacked Bar Chart)

Chart Type: Stacked bar chart.

Title: "Revenue by Year & Product".

Colors: Individual colors for each product.

Axis Titles: X-axis labeled with years, Y-axis with financial figures.

Legend: Provided to differentiate products.

Questions Answered: How did each product contribute to the total income each year? What is the trend of product sales over the years?

Display Trigger: Always visible to show long-term trends.

Chart Selection Reason: Stacked bars are useful for showing how different segments contribute to a whole over time, in this case, the annual performance of product divisions. The stacked bar chart is a strategic choice for visualizing how different product segments contribute to the overall performance of the company year over year. It facilitates comparison between different products while also showing the combined totals, which can reveal trends in sales,

highlight the growth or decline of certain product lines, and assist in forecasting future performance based on historical data.
It will always show up.

5. Profit per Region (Pie Chart)

Chart Type: Pie chart.

Title: "Profit per Region".

Colors: Each region has a unique color.

Axis Titles: None, as it's a proportion of the whole.

Legend: None visible, but each segment has a percentage label.

Questions Answered: What is the relative profit contribution by region?

Display Trigger: Always visible to highlight the geographical distribution of profit.

Chart Selection Reason: A pie chart is an intuitive tool for representing the profit distribution across different regions as it clearly shows each region's share of the total profit. It is particularly effective for stakeholders to understand the market dynamics at a glance and can influence decisions on where to focus marketing efforts or expand the business. The simplicity of a pie chart also ensures that it is accessible to all users, regardless of their familiarity with data analysis.

It will always show up.

Positions: Charts are arranged logically with temporal and financial overviews at the top, followed by product and regional details below. This top-to-bottom flow guides the user from general to specific information.

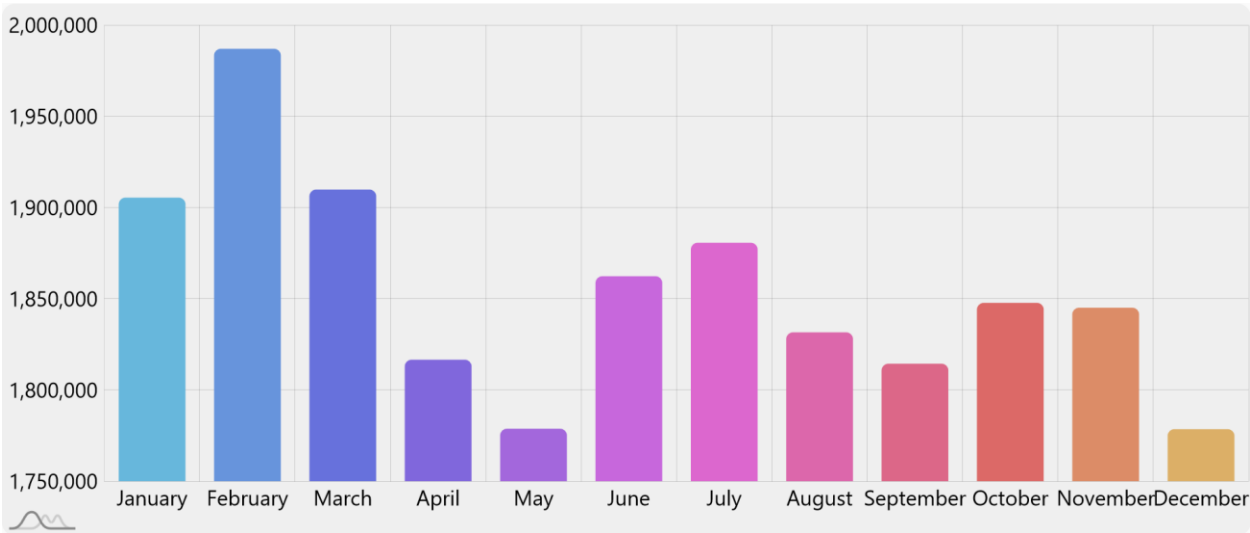
Titles: Clearly labeled titles and presumably interactive elements are placed for easy navigation and interpretation of data.

Consistency: The color schemes are generally harmonious

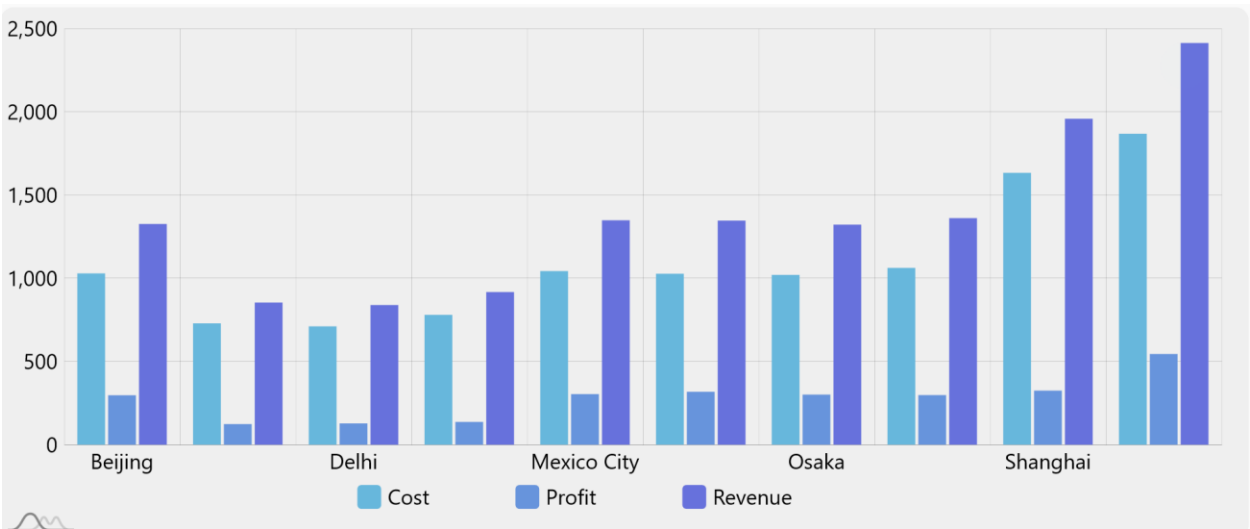
Dashboard Layout Explanation

The dashboard layout was strategically designed to optimize user experience and data comprehension. Charts are positioned to ensure a logical flow of information, facilitating an intuitive understanding of complex data sets. The top section of the dashboard provides a high-level overview, allowing for immediate visual capture of key metrics, while the detailed breakdowns are placed below, inviting users to explore deeper insights. The choice of colors and chart styles was made to enhance readability and to provide a consistent visual language across the dashboard. Interactive elements such as buttons and filters are conveniently placed to offer users control over the data they view, enhancing the interactive experience.

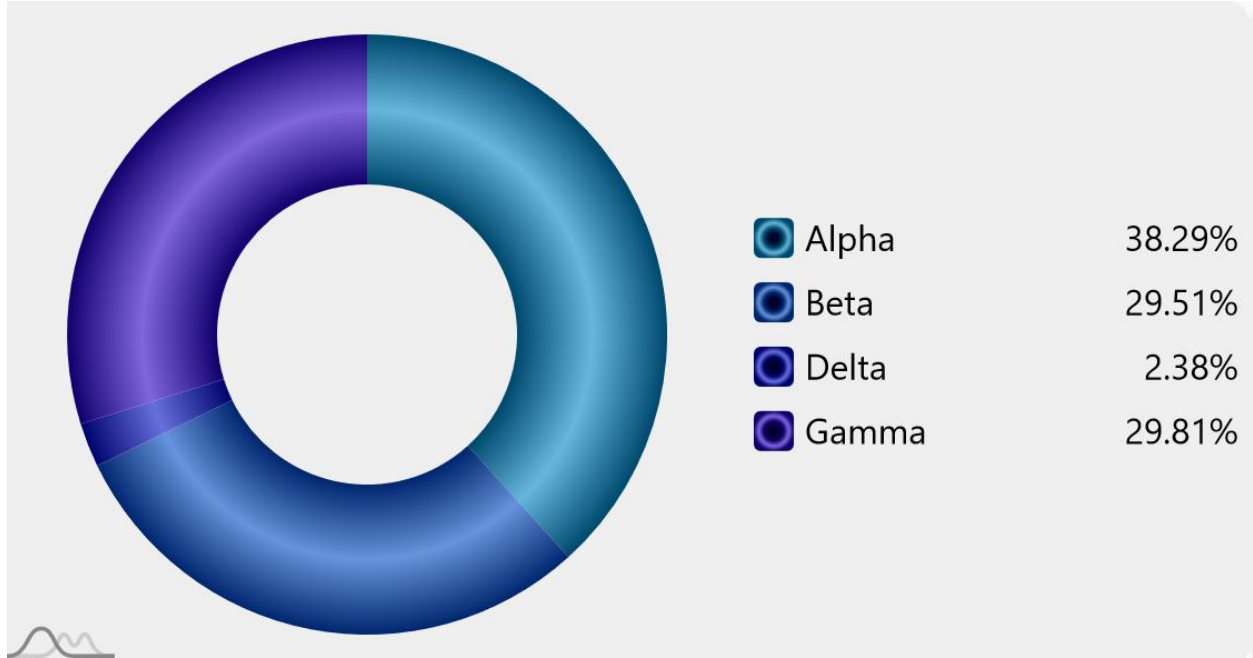
Snapshot of Profit by Month Chart



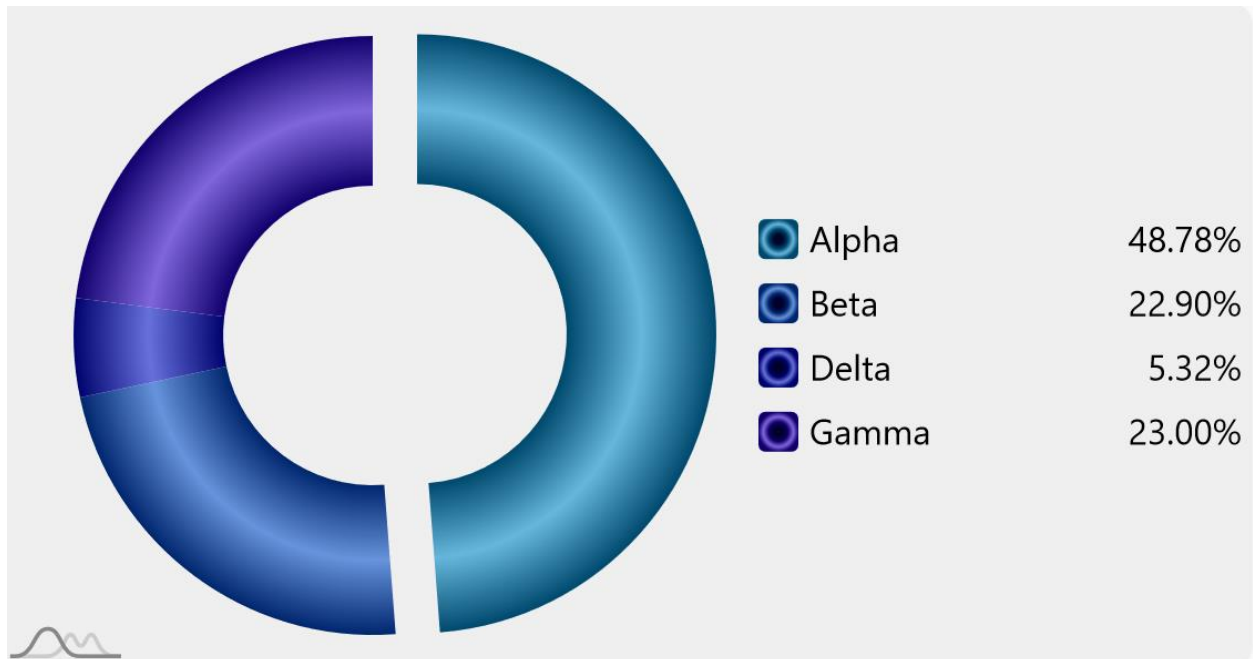
Snapshot of Cost, Profit, Revenue for Every Branch Chart



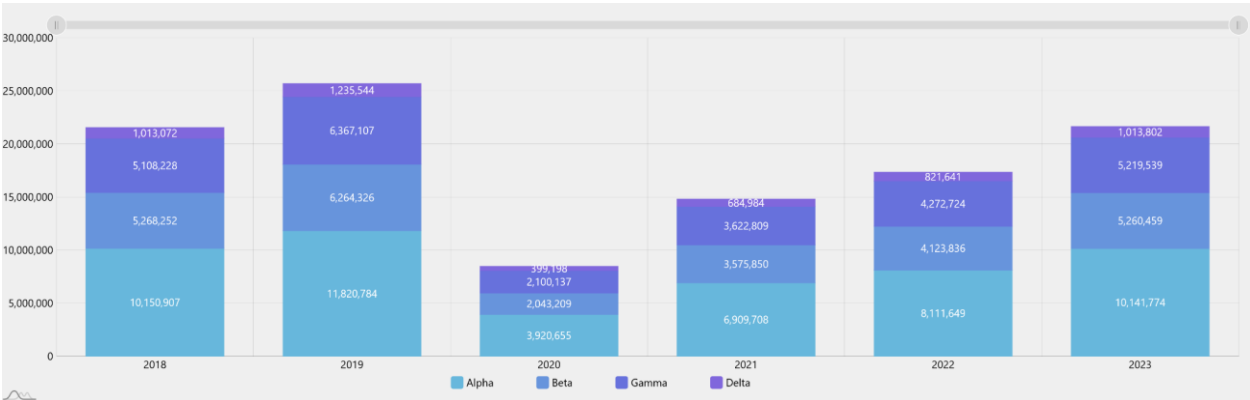
Snapshot of Profit by Product Chart



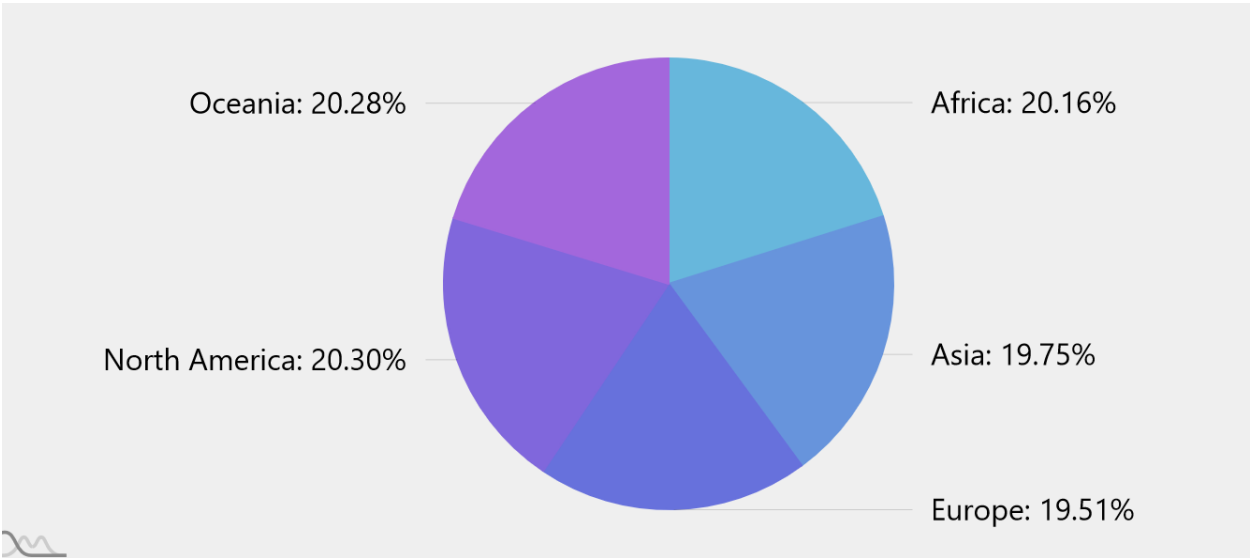
Snapshot of Cost of each Product Chart



Snapshot of Annual Product Performance Chart



Snapshot of Profit per Region Chart



Snapshot of the Complete Dashboard Layout

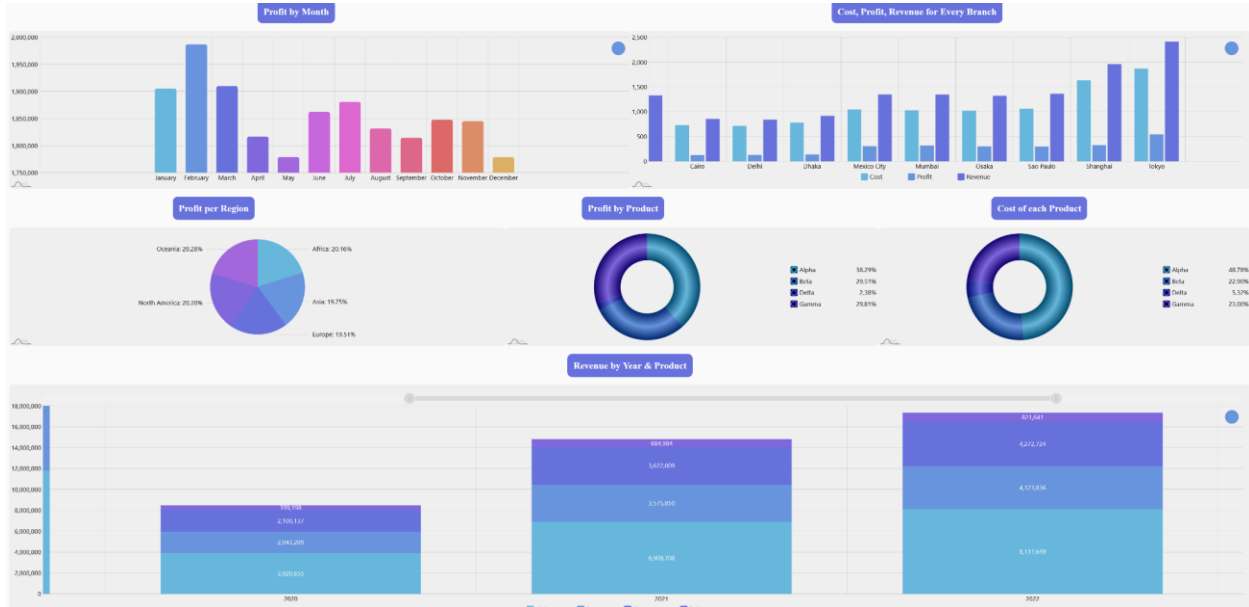


Table Company in The Database

	Index	Product	Branch	Region	Quantity	Price	Revenue	Cost	Profit	Margin	Category	Rating	Month	Year
1	377	Beta	Delhi	Oceania	332	98	134.46692646620846	75.92292766555851	58.54489483864995	0.435	Basic		1 August	2020
2	453	Delta	Cairo	Oceania	766	261	188.66804651812088	84.87833814819575	23.78222303616566	0.219	Standard		3.6 September	2020
3	453	Delta	Cairo	Europe	864	81	133.83883231878697	86.45826298788949	47.378629338891226	0.354	Basic		1.4 August	2020
4	317	Beta	Delhi	Asia	882	47	154.17874245433102	87.41880154335697	66.76874991897404	0.433	Standard		1.6 June	2020
5	452	Delta	Cairo	Africa	119	252	95.788158923512	88.48899344813666	7.38714574214531	0.077	Standard		2.1 January	2020
6	39	Delta	Mumbai	Asia	584	87	107.72569945436266	88.79987579102551	18.93583376333696	0.176	Basic		2.3 May	2020
7	32	Delta	Sao Paulo	Europe	31	236	81.94684715488236	94.95682988483756	-12.98988276785218	-0.158	Standard		1.2 July	2020
8	131	Delta	Cairo	Africa	206	298	94.67767474366664	97.62365646494383	-0.349889257656729	-0.004	Basic		1.5 January	2020
9	428	Delta	Shanghai	Africa	848	83	94.827831564798169	97.8834647888314	-3.157614918974727	-0.033	Standard		1.8 January	2020
10	127	Delta	Tokyo	Oceania	316	215	138.8254423789992	107.932129137739	30.89311303564892	0.218	Basic		4.8 March	2020
11	483	Delta	Mumbai	Africa	422	295	158.47478984886634	111.64185689914796	46.81365375471858	0.295	Standard		2.3 December	2020
12	182	Delta	Shanghai	Europe	556	212	128.88681888865652	112.4485848895881	8.246397883864484	0.068	Standard		2 June	2020
13	119	Delta	Shanghai	North America	968	78	96.756496894418482	113.16896783855356	-16.41998594644953	-0.17	Premium		1.5 December	2020
14	438	Delta	Cairo	Europe	799	274	151.28798438805377	116.68849471282282	36.487487947533176	0.239	Basic		1.4 March	2020
15	385	Gamma	Cairo	North America	447	163	139.76926246833284	121.75134849295974	9.817981947373115	0.049	Basic		3.6 December	2020
16	167	Delta	Tokyo	North America	976	185	122.1722973118986	122.83493277942728	0.135364851623386	0.001	Basic		1.8 February	2020
17	444	Delta	Dhaka	North America	748	191	143.1158916422283	122.593197864095894	20.522684601279366	0.143	Basic		2.2 August	2020
18	491	Beta	Delhi	Africa	656	113	81.29237721493487	129.1929994885558	-48.90862219362894	-0.591	Premium		1.1 October	2020
19	70	Delta	Dhaka	Asia	973	197	172.32732478993876	138.755117922814	41.57228721771739	0.243	Standard		2 February	2021
20	133	Delta	Delhi	Europe	887	117	114.8365128229015	131.28111472775287	-16.444682144462717	-0.143	Basic		1.5 September	2020
21	486	Delta	Mumbai	Oceania	815	65	138.48867798141434	133.8885729715638	4.6881049298588178	0.034	Standard		3.2 November	2020
22	168	Delta	Delhi	Asia	921	298	149.9549243130767	135.3283412848815	5.63387581819585	0.04	Standard		1.3 July	2020
23	65	Gamma	Beijing	Asia	175	98	578.4944807839991	136.749284828783	441.7451918757288	0.764	Basic		2.1 October	2020
24	372	Delta	Mexico City	North America	322	107	138.9256338898888	137.885413819298	1.848179276488078	0.013	Basic		4.4 August	2020
25	468	Delta	Mumbai	Oceania	925	141	158.75951658357084	139.5991418636128	11.16837589728959	0.074	Premium		5 January	2020
26	188	Beta	Delhi	Europe	715	278	144.7786853331687	139.8187856272871	4.9598977061297775	0.034	Premium		3.4 September	2020
27	152	Gamma	Osaka	Europe	381	278	234.83852448350305	148.1411599422796	94.68936454822344	0.483	Standard		4.9 September	2020

Dashboard Layout:

Hierarchical Placement: Charts are arranged to mirror the organization's hierarchy of needs. High-level metrics like monthly profits are at the top, while more detailed information is placed lower. This helps users to quickly grasp the big picture before diving into specifics.

Cognitive Load Management: Critical metrics are placed at the forefront to minimize cognitive load. The 'Profit by Month' chart is the first element the user sees, which aligns with the typical priority of business stakeholders.

Comparative Analysis: Related charts are grouped together to facilitate comparative analysis without the need to scroll or switch views, such as the profit and cost by product donut charts.

Strategic Positioning: The 'Revenue by Year & Product' chart is positioned at the bottom as it supports strategic, long-term decision-making, which usually follows an assessment of current conditions displayed in the upper charts.

Points for Criticism and Solutions:

User-Specific Customization: The one-size-fits-all approach may not cater to the specific needs of different user roles.

Solution: Allow users to personalize the dashboard, saving their preferred views and frequently accessed data points.

Performance Issues: With high data volume, the dashboard might experience slow loading times.

Solution: Optimize backend queries and consider data caching strategies for faster load times.

Accessibility: The dashboard might not be fully accessible to users with disabilities.

Solution: Follow web accessibility guidelines (WCAG) to ensure the dashboard is usable by everyone, including those with visual impairments.

Data Refresh Rate: The dashboard might not reflect the most up-to-date information if the data refresh rate is low.

Solution: Implement a real-time data pipeline or a more frequent data refresh schedule.

Suggested Future Work

1. **Real-time Data Integration:** Implement functionality for real-time data updates, which will provide the most current insights for rapid decision-making.
2. **Mobile Responsiveness:** Optimize the dashboard for mobile devices, ensuring access to data on-the-go with a design suitable for various screen sizes.
3. **User Customization:** Allow users to create and save custom views of the dashboard that align with their specific interests or responsibilities.
4. **Predictive Analytics:** Integrate predictive modeling to forecast trends and provide foresight into potential future scenarios based on historical data.
5. **Expanded Data Sources:** Include additional data sources for a more holistic view of the company's operations, such as social media sentiment analysis or market trends.

6. Training and Support: Develop comprehensive training materials and in-app support to maximize the dashboard's utility for all users.

7. Accessibility Features: Ensure the dashboard is accessible, with features such as screen reader support, to accommodate all users.

8. Enhanced Security: Implement robust security measures to protect sensitive data, especially if the dashboard is accessible via the internet.

9. Localization: Add multi-language support to cater to international users, which is particularly important for multinational companies.