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| Photo displaying partial image of two pie charts on a canvas-textured page |
| Data Visualisation  Online Digital Marketing Dashboard |
| |  |  |  | | --- | --- | --- | | Mohammadreza Habibinejad Kochesfehani | 9/20/23 | ICT 702 Data Visualisation | |

# Executive Summary:

The American corporation, which focuses on furniture, office supplies, and technology, entered the online retail industry in 2019 and has effectively used digital marketing methods to enhance sales and maintain a competitive advantage in the digital world. To obtain customer data and make strategic choices, the corporation has used a variety of internet platforms, including YouTube, Facebook, WhatsApp, Google Ads, and television commercials. To improve its online presence, the organization has effectively used platform-specific marketing, data-driven choices, and content initiatives. Customers can simply locate things and make purchases thanks to the integration of the Company's website and social media networks.

The research highlights the Company's strategy path from 2019 to 2022, combining data and consumer feedback to forge a strong online retail presence. The Company's commitment to digital marketing has resulted in increased brand awareness, consumer engagement, and revenue across all product categories.

The CEO has requested data visualization for sales and digital marketing to better understand the Company’s strategic approach.

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1.Dashboard Purpose/Objective Statement**: (approx. 200 words)**

Create a statement defining the goal and aim of your dashboard, as well as its role in assisting decision-making processes. (approx. 200 words)

This dynamic dashboard's purpose is to present the CEO of an American firm an extremely thorough and data-driven assessment of the business's internet sales and digital marketing success. The technology used in is going to monitor crucial data across several channels, including as website traffic, lead generation, conversion rates, social media engagement, and income. These indications will be presented in an easy-to-understand and visually appealing format, allowing the CEO to immediately detect trends, capitalize on opportunities, and identify areas for development. This visualization has been painstakingly built to aid decision-making at the highest levels of the Company. It enables the CEO to make well-informed choices on the Company's overall strategy by providing real-time insights about its performance.

Finally, the dashboard offers the CEO with a thorough overview of Company’s online sales and digital marketing performance, allowing them to spot trends, capitalize on growth possibilities, and identify areas for improvement in a simple and aesthetically attractive style.

## **How the Dashboard Supports Decision-Making**

The dynamic dashboard stands as an asset for the CEO, affording them a high-level overview of the Company's sales performance and empowering them to craft well-informed decisions that underpin the Company's overarching strategy.

Several practical applications of the dashboard for the CEO include:

* **Effectiveness of Site-Sales Marketing**: Identifying the Most Efficient Marketing Site-Sales by identifying which ones generate the most traffic, leads, and sales. This data guides the best use of marketing resources and the creation of more precisely focused advertisements.
* **Sales Performance:** Individual digital marketing sales success may be tracked using important measures such as visit amount, profit, and margin of profit. Year over Year growth (YOY) is made possible by these insights in how to optimize campaigns.
* **Enhancement Opportunities:** The dashboard highlights areas where online sales and digital marketing performance may be unsatisfactory. For example, it may show significant website traffic but a poor conversion rate. This data informs conversion techniques such as simplifying the checkout process and improving product descriptions**.**
* **Goal Setting and Tracking:** Setting and monitoring performance targets for online sales and digital marketing initiatives. This tracking assists the CEO in overseeing the Company's progress toward its goals.
* **Informed Strategy Decisions:** The dashboard, which provides a comprehensive, data-driven view of corporate performance, enables the CEO to make better informed strategic decisions. This includes resource allocation for investment, product and service development, and market expansion.

In summation, this dynamic dashboard constitutes a potent tool that aids the CEO of an American enterprise in crafting more judicious decisions concerning the Company's online sales and digital marketing strategy. By supplying a holistic, data-driven portrayal of Company performance, the dashboard does more than identify trends—it serves as a compass for seizing opportunities, refining strategies, and achieving the Company's aspirational goals and objectives.

# 2. The statement of the process for development (approx. 400 words)

The process of developing visualisations utilizing ideas and concepts, including all steps from preparation to the finished output

## **All steps of dashboard construction from A-Z output**

To design an Excel dashboard, I would first define the target audience and their individual demands. As a CEO, I can begin to gather relevant data for analysis after I have a clear grasp of the audience.

After gathering the dataset, I would need to clean and prepare it for usage in an Excel dataset. This might entail deleting duplicate rows, fixing any mistakes, and formatting the data consistently.

Once the dataset is ready, I can start working on the dashboard's various visualisations. I kept the following theories and principles in mind while creating the visualisations for this dashboard:

* **Pre-attentive attributes:** I employed color, size, and shape to assist the CEO in swiftly identifying the most critical information. For the most significant labels and titles, for example, I utilized a higher font size. I also used various colors to symbolize different types of data.
* **Simplicity:** I utilized straightforward visuals that are simple to comprehend and interpret. For example, rather of a more sophisticated visualisation such as a candlestick chart, I utilized a line chart to represent the trend in total sales over the last year.
* **correctness**: Before putting any visualisations in the dashboard, I double-checked their correctness. For example, I used Excel's SUM function to compute total sales for each product category.

When deciding which visualisations to employ, I also examined the CEO's unique demands as well as the type of data that I was attempting to depict. For example, because pie charts are a typical method to visualize this sort of data, I used one to display the percentage of sales that originate from each marketing channel.

There are three rows on the dashboard. The top row displays the Company's overall performance, including total sales, total earnings, profit margin, sales revenue, and total orders. The second row provides a more in-depth analysis of sales by product category and site. The third row displays sales by location and area.

The dashboard is intended to assist the CEO in making sound decisions regarding the Company's online sales and digital marketing strategy. The dashboard may assist the CEO in identifying trends, opportunities, and areas for development by giving a complete and data-driven perspective of the Company's performance.

Here is an additional extensive overview of each dashboard section:

**Row 1**

* **TOTAL SALES**: This line chart shows the trend in total sales over the past year. The CEO can use this chart to identify trends in sales and to track the Company's progress towards its sales goals.
* **TOTAL PROFIT**: This line chart shows the trend in total profits over the past year. The CEO can use this chart to track the Company's profitability and to identify areas where costs can be reduced.
* **PROFIT MARGIN**: This line chart shows the trend in profit margin over the past year. The profit of margin is a measure of the Company's profitability and is calculated by dividing total profits by total sales.
* **SALES REVENUE**: This column chart shows the sales revenue for each product category. The CEO can use this chart to identify the top-selling product categories and to allocate marketing resources accordingly.

**Row 2**

* **TOP 5 SALE PRODUCTS %:** This bar chart shows the sales for the top 5 products over the past year. The CEO can use this chart to identify the Company's best-selling products and to develop marketing strategies to promote these products.
* **CATEGORY WISE SALES:** This pie chart shows the percentage of sales that comes from each product category. The CEO can use this chart to identify the most important product categories and to allocate marketing resources accordingly.
* **CATEGORY WISE PROFIT:** This funnel chart shows the profit for each product category. The CEO can use this chart to identify the most profitable product categories and to develop marketing strategies to promote these products and investment for more Company’s income.
* **SALES BY ORDERS**: This line chart shows the total number of orders placed over the past year. The CEO can use this chart to track the Company's order volume and to identify trends in customer demand.

**Row 3**

* **SALES by SiteSales:** This bar chart demonstrates the sales for each Company website and all other digital marketing websites. The CEO can use this chart to identify the best-performing websites and to develop marketing strategies to promote these websites.
* **MAP OF Sales WIDE IN US:** This map shows the sales for each Company website. The CEO can use this map to identify the regions where the Company is performing well and the regions where there is room for improvement. Also, map chart shows the sales for all other digital marketing websites. The CEO can use this map to identify the digital marketing channels that are driving the most sales.

I might also think about including other charts on the dashboard in addition to these recommendations. You might include a graphic that displays the conversion rate for each marketing channel or the customer lifetime value for each product category, for instance.

There are countless options! It mostly relies on the CEO's individual demands and the facts at hand.

## **Missing data in the dashboard:**

The dataset used to construct the dashboard is missing certain information. This is a typical issue with real-world data, and there are several approaches to dealing with missing data.

One method is to simply eliminate the rows with incomplete data. This, however, reduces the size of the dataset and may skew the results. Another option is to substitute missing data. This entails substituting missing values with estimates. There are several different imputation methods available.

The discount column in the dataset used to build the dashboard has some missing data. I used a random imputation technique to impute the missing data in order to fix this. This indicates that random values within a particular range were used to replace the missing data. 15% of the data for each year and 3.5 percent for each product category were imputed. This makes sure that no year or product category is favorably affected by the missing data. (CEO can find a Line chart in Data Analysis Excel Sheet)

It should be noted that replacing missing data might inject bias into the results. However, it is frequently the best option when there is a large quantity of missing data.

In the dashboard, I've also included a feature that indicates the percentage of missing data for each year and product category. This enables the user to determine how much missing data has been imputed and to examine the possible impact of missing data on the findings.

# 3. The statement detailed of the dashboard's contents. (approx. 400 words)

Provide a statement detailing the information that can be obtained using your dashboard and how this will help the target audience to achieve their objectives. Recommendations should be provided.

## **Offering suggestions and assisting the target audience in reaching their goals**.

The implementation of this dynamic dashboard provides our American enterprise's CEO with a lot of information, allowing them to make strategic decisions that match with the Company's broad goals. The online sales and digital marketing analysis dashboard was created to give a complete and data-driven perspective of the Company's online sales and digital marketing performance. Here, we highlight the dashboard's important findings and their possible influence on the CEO's decision-making process:

* **Sales performance Overview:** The dashboard gives an executive-level overview of a Company's sales performance, including total sales, earnings, profit margin, sales revenue, and orders. This data assists the CEO in assessing the health of the Company and identifying top-selling goods. The CEO can ensure the Company's success by regularly evaluating these data and making appropriate modifications to sales strategy and resource allocation.
* **Profitability:** The dashboard highlights the Company's profit patterns and margins over time, allowing the CEO to evaluate profitability and find cost-cutting options. The funnel chart reveals profitable product categories, allowing for more informed selection of resources and creation initiatives.
* **Marketing effectiveness:** This dynamic dashboard gives a thorough analysis of sales and earnings from numerous marketing sites, allowing the CEO to identify the most productive ones and spend resources appropriately, as well as develop tailored campaigns, boosting year-over-year growth. This data may be utilized to improve marketing strategy and the overall profitability of the Company.
* **Customer behavior:** The dashboard displays statistics on orders, sales, and region/site sales, allowing the organization to watch client demand patterns and identify areas for customer service improvement. This data assists the CEO in prioritizing customer acquisition methods and customizing marketing efforts to retain high-value clients.
* **Product Performance:** By evaluating sales by product category and site-sales channels, the CEO may evaluate product performance. This information highlights best-sellers as well as prospective areas for improvement. By concentrating on these areas, the CEO may better deploy marketing resources, optimize income streams, and promote top-performing items. This in-depth examination of product performance is critical for strategic decision-making.
* **Geographic Perspectives:** Geographic insights give useful sales data by location, allowing CEOs to make educated decisions regarding market expansion and resource allocation, as well as detect regional performance gaps and growth potential.

In a variety of ways, the dynamic dashboard's features may assist the target audience in achieving their goals. The dashboard, for example, can assist the CEO in:

* The CEO's plan entails assessing opportunities and challenges and developing initiatives using a complete dashboard. This dashboard converts data into meaningful information, allowing the CEO to improve marketing efforts and generate online sales for the firm. Through data-driven initiatives, key goals include improving resource allocation, discovering growth possibilities, increasing profitability, and increasing client retention. This all-encompassing strategy secures the Company's prosperity.
* Applying an interface that promotes decision-making at the highest level of the Company, the CEO may optimize resource allocation by identifying profitable product categories and successful marketing channels. The pattern analysis, sales breakdowns, profit margin monitoring, and location-based insights are among the features.
* Improve customer service. The dashboard may assist the CEO in improving the customer experience by analyzing consumer demand patterns and finding areas where the firm can enhance its customer care.

## Recommendations and Suggestions

Here are some more specific suggestions on how the CEO might utilize the dashboard to achieve their goals:

• **Increase sales:** The dashboard may be used by the CEO to discover the Company's best-selling goods and focus marketing efforts on them. The dashboard may also be used by the CEO to find new opportunities and establish strategies for entering such industries.

• **Increase profitability:** The CEO may utilize the dashboard to find cost-cutting opportunities. The dashboard may also be used by the CEO to determine the most lucrative product categories and direct marketing efforts toward those goods.

• **Increase marketing effectiveness:** Using the dashboard, the CEO may determine the most effective marketing channels and spend marketing resources appropriately. The dashboard may also be used by the CEO to track the success of marketing efforts and make modifications as needed.

• **Improve customer service:** The dashboard may be used by the CEO to monitor consumer demand patterns and identify areas where the firm can improve customer service. For example, if the dashboard reveals a large amount of consumer complaints about a certain product, the CEO may examine the problem and take appropriate action.

## Conclusion

The dynamic dashboard gives an executive-level overview of a Company's online sales and digital marketing performance, enabling strategic decisions that match with the Company's goals. The dashboard provides a thorough examination of sales performance, profitability, marketing effectiveness, customer behavior, product performance, and geographic perspectives. It assists the CEO in assessing opportunities and problems, developing initiatives, optimizing resource allocation, and improving customer service. Recommendations include boosting revenue, identifying best-selling items, discovering cost-cutting options, improving marketing effectiveness, and improving customer service. The dashboard may also assist in identifying new prospects, identifying profitable product categories, tracking marketing success, and addressing consumer concerns.

# Reference

Download dataset from www.Kaggle.com //[E-Commerce Sales Dataset | Kaggle](https://www.kaggle.com/datasets/thedevastator/unlock-profits-with-e-commerce-sales-data)

I changed a lot in dataset to build the dynamic dashboard.