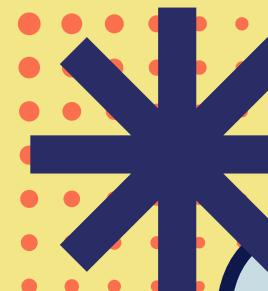


aws * **SaaS Sales**

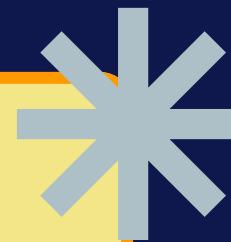


By Az Zahra Syahida





INTRODUCTION



- Amazon Web Services (AWS), founded in 2006, offers cloud computing services, including Software as a Service (SaaS). SaaS, exemplified by Amazon WorkDocs, delivers applications to customers via the internet, focusing on user accessibility and subscription-based pricing.
- The stakeholder for this project is identified as the product development team. The project centers around overcoming obstacles and achieving goals related to product innovation, including insights into sales patterns, product enhancement opportunities, and effective product strategies.

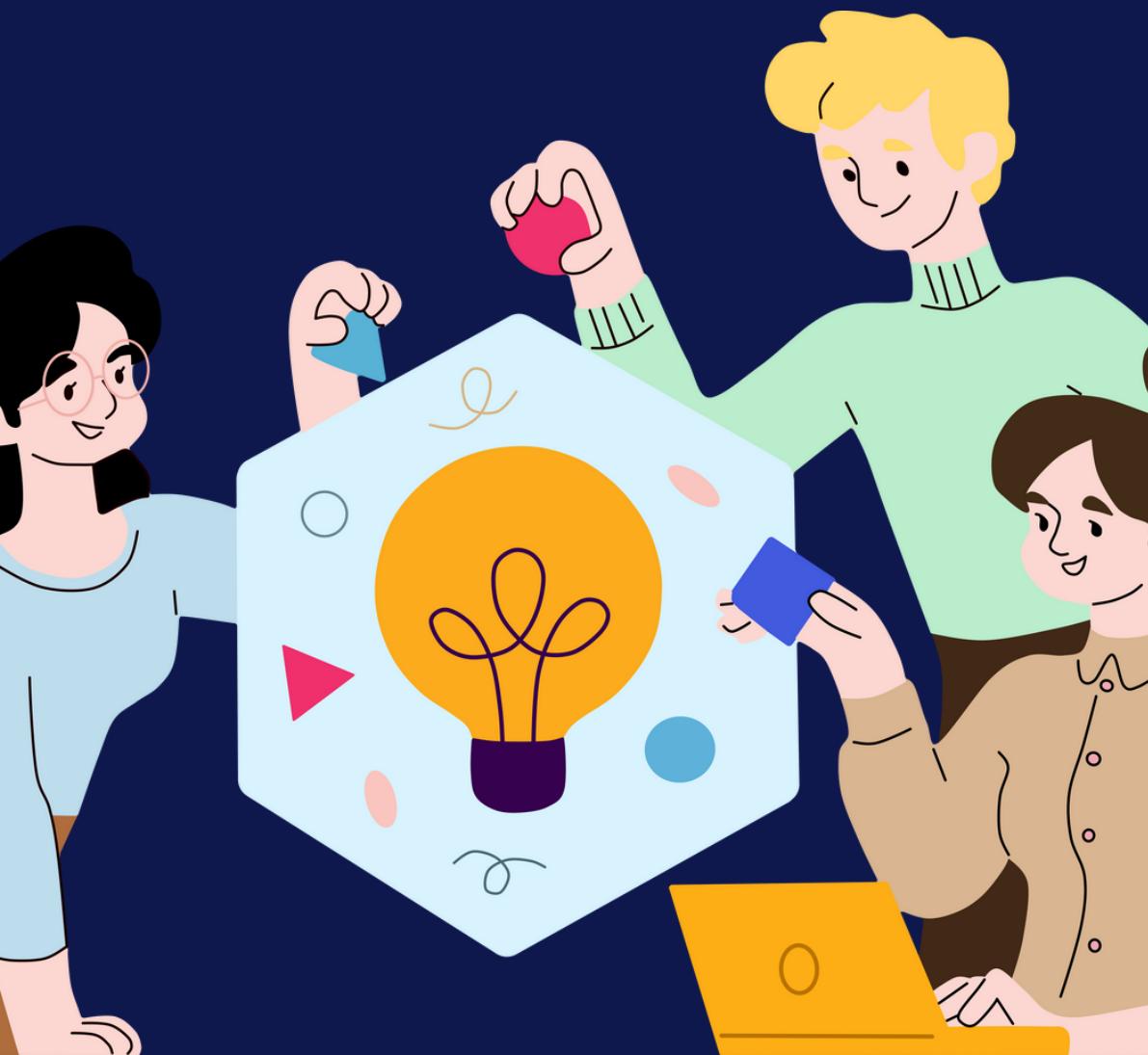
PROBLEMS

- How customer preferences and understanding sales patterns contribute to the optimization of development products?
- In what way does addressing customer needs and purchasing decisions guide the development team in improving products?
- How does industry-specific demands effectively?



GOALS

- Optimize Development Cycles and Prioritize Features.
Align product development with peak demand by identifying customer preferences and understanding sales patterns.
- Enhance Product Value Based on Customer Needs.
Guide the development team in creating value-added features by identifying and addressing customer needs and purchasing decisions.
- Tailor Solutions to Industry Demands Effectively.
Utilize industry background and customer segments data to customize solutions, allowing the team to efficiently meet industry-specific demands.





DATA



Data Understanding

1. There are 9994 SaaS Sales Transaction Data in the Dataset.
2. Overview of essential fields in the dataset, including unique identifiers, order details, customer information, product specifics, and financial aspects such as sales, quantity, discounts, and profits.

Data Checking

1. All columns have appropriate data types, and key fields like 'City,' 'Country,' and 'Region' have unique values, providing reliable information for the product development team.
2. No missing data or duplicates were found, ensuring the dataset's integrity and reliability for thorough analysis by the product development team.

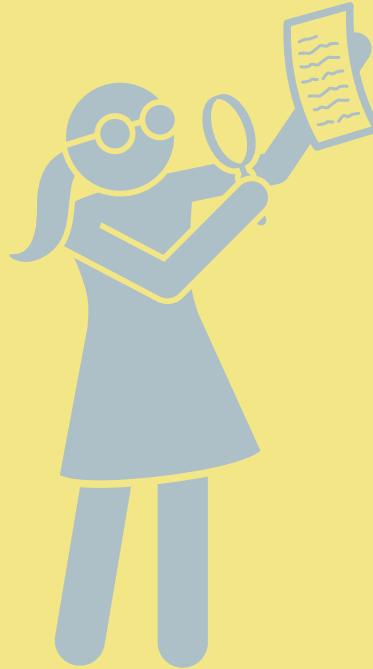




Outlier Checking

Evaluated outliers in key numerical columns at dataset, categorizing them as 'Positive Outliers,' 'Negative Outliers,' or 'No Outlier' using the interquartile range (IQR) rule.

Product	Negative Outlier	No Outlier	Positive Outlier
Alchemy	0.00	4.41	95.59
Big Ol Database	29.57	15.65	54.78
ChatBot Plugin	0.00	97.86	2.14
ContactMatcher	13.19	47.56	39.25
Data Smasher	0.39	77.55	22.06
FinanceHub	7.44	68.20	24.36
Marketing Suite	25.88	49.56	24.56
Marketing Suite - Gold	6.15	74.70	19.15
OneView	9.01	63.52	27.47
SaaS Connector Pack	3.87	77.12	19.02
SaaS Connector Pack - Gold	0.00	88.98	11.02
Site Analytics	5.85	64.45	29.70
Storage	0.00	97.24	2.76
Support	0.58	90.26	9.17





Data Distribution Checking

- Conducted a Shapiro-Wilk test for normality on numerical columns to assess the distribution patterns.
- Results indicate that the distributions for Sales, Quantity, Discount, and Profit are likely not normal, suggesting potential skewness or non-uniformity in the data.

Data Type Conversion

- The 'Order Date' column in the original dataset (df) was initially in a string format, representing dates as 'mm/dd/yyyy'.
- Utilizing the `pd.to_datetime` function with the specified format '%m/%d/%Y', the column has been successfully converted to a datetime format, allowing for easier handling and analysis.



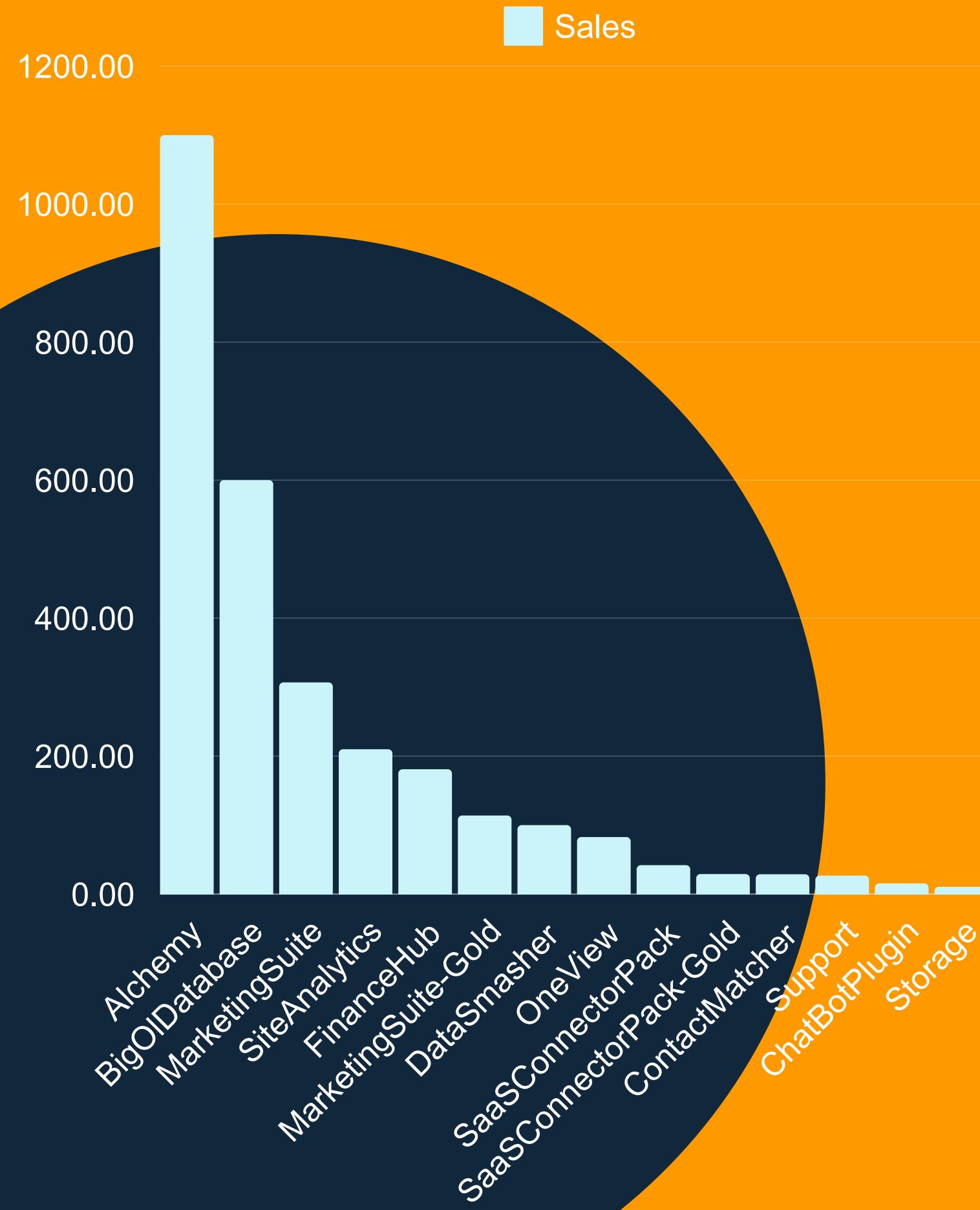
DATA ANALYSIS





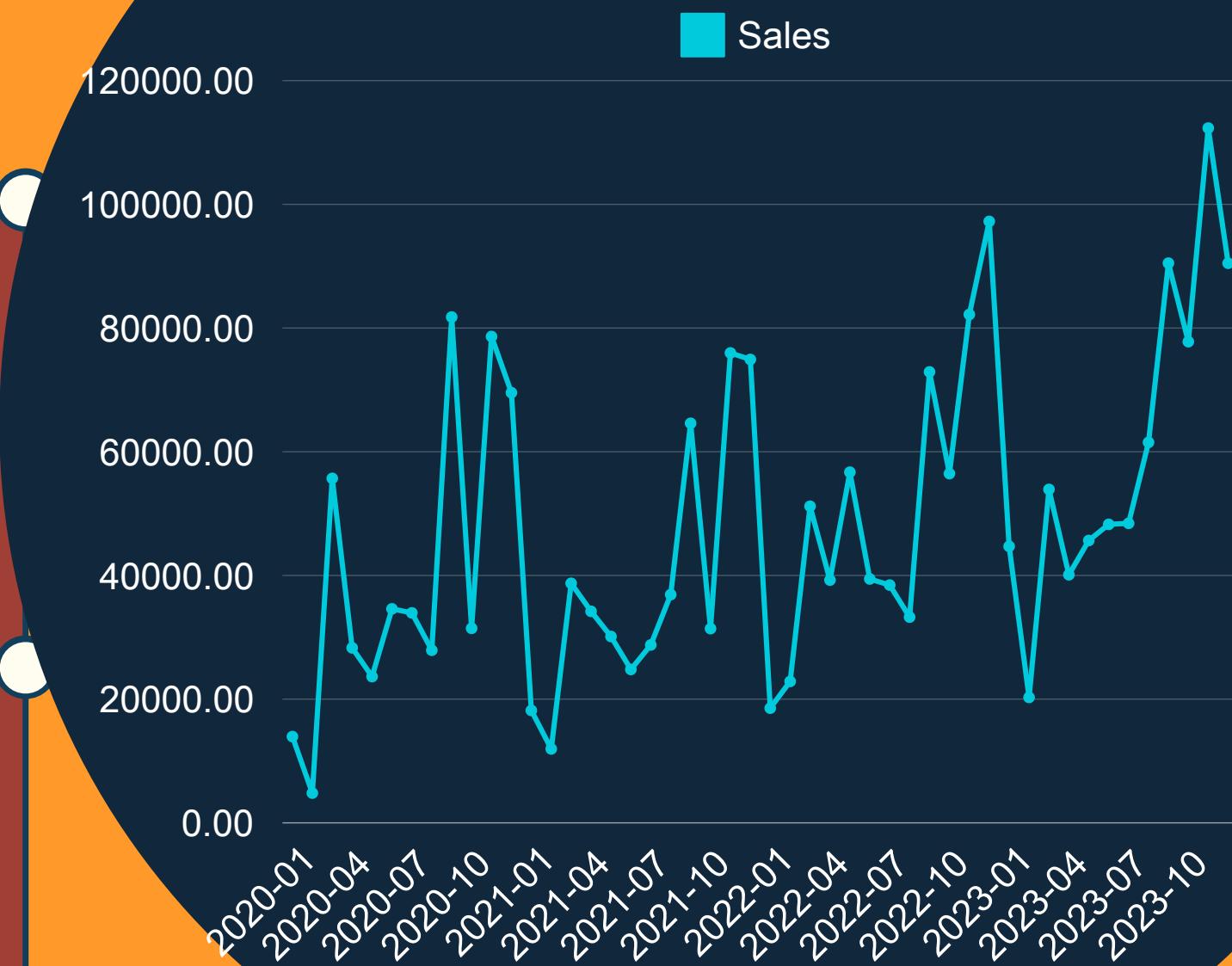
PRODUCTS PERFORMANCE ANALYSIS

- High-performing products like Alchemy, Big OL Database, and Marketing Suite demonstrate strong market success and popularity due to their robust sales.
- Products such as SaaS Connector Pack - Gold, ChatBot Plugin, and Storage, with lower average sales, indicate potential areas for improvement or strategic adjustments to enhance their performance.



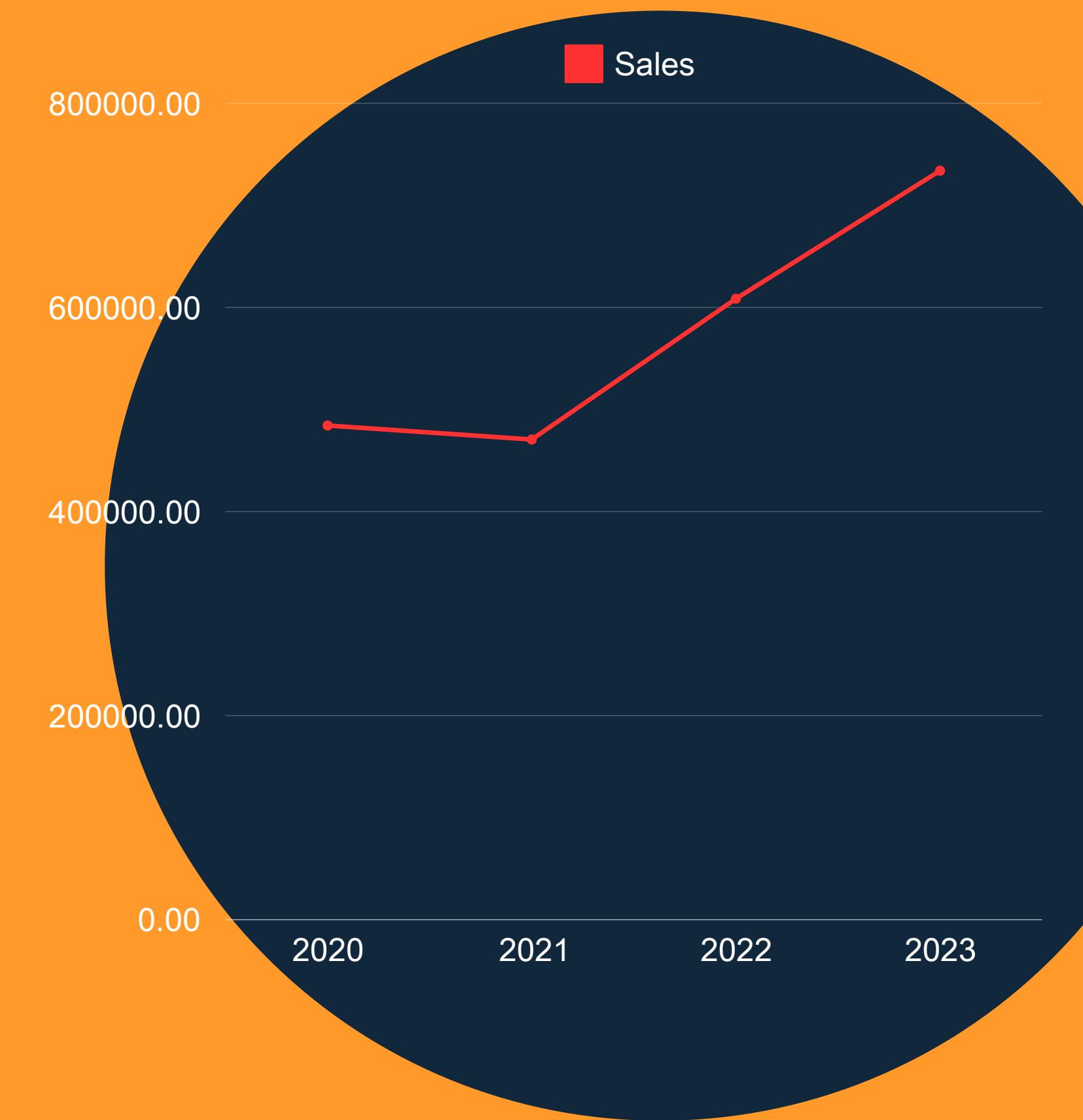
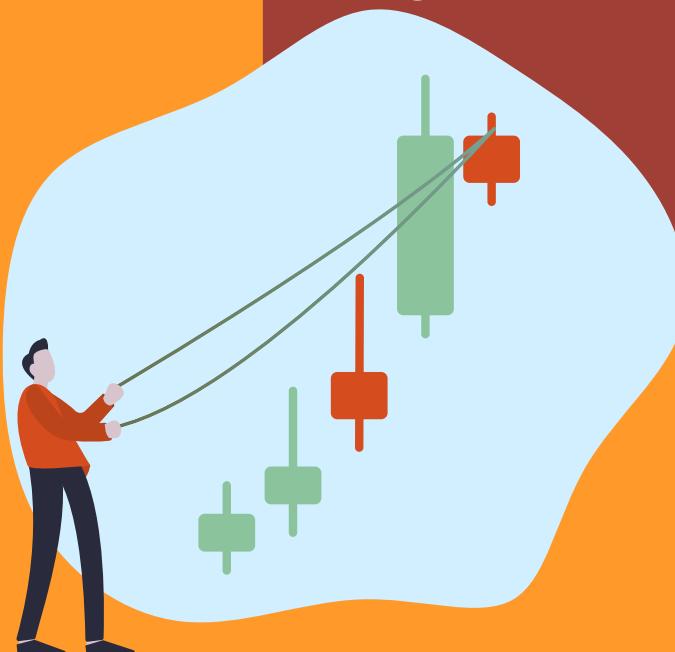
MONTHLY SALES TRENDS

- There is a noticeable increase in sales in some months, such as September 2020, December 2020, December 2021, and especially December 2022, indicating possible seasonal peaks or special events/promotions during those periods.
- The end-of-year months (December) show particularly high sales, which could be due to holiday shopping seasons.
- The sales in January and February tend to be lower after the December peak, possibly indicating a post-holiday slump.



YEARLY SALES TRENDS

- The business is showing signs of robust health with a clear positive trajectory in sales. It would be important to understand what actions were taken or what market conditions existed in 2021 that reversed the slight dip from 2020 and then drove significant growth in the following years.



TOP 3 VALUED CUSTOMER

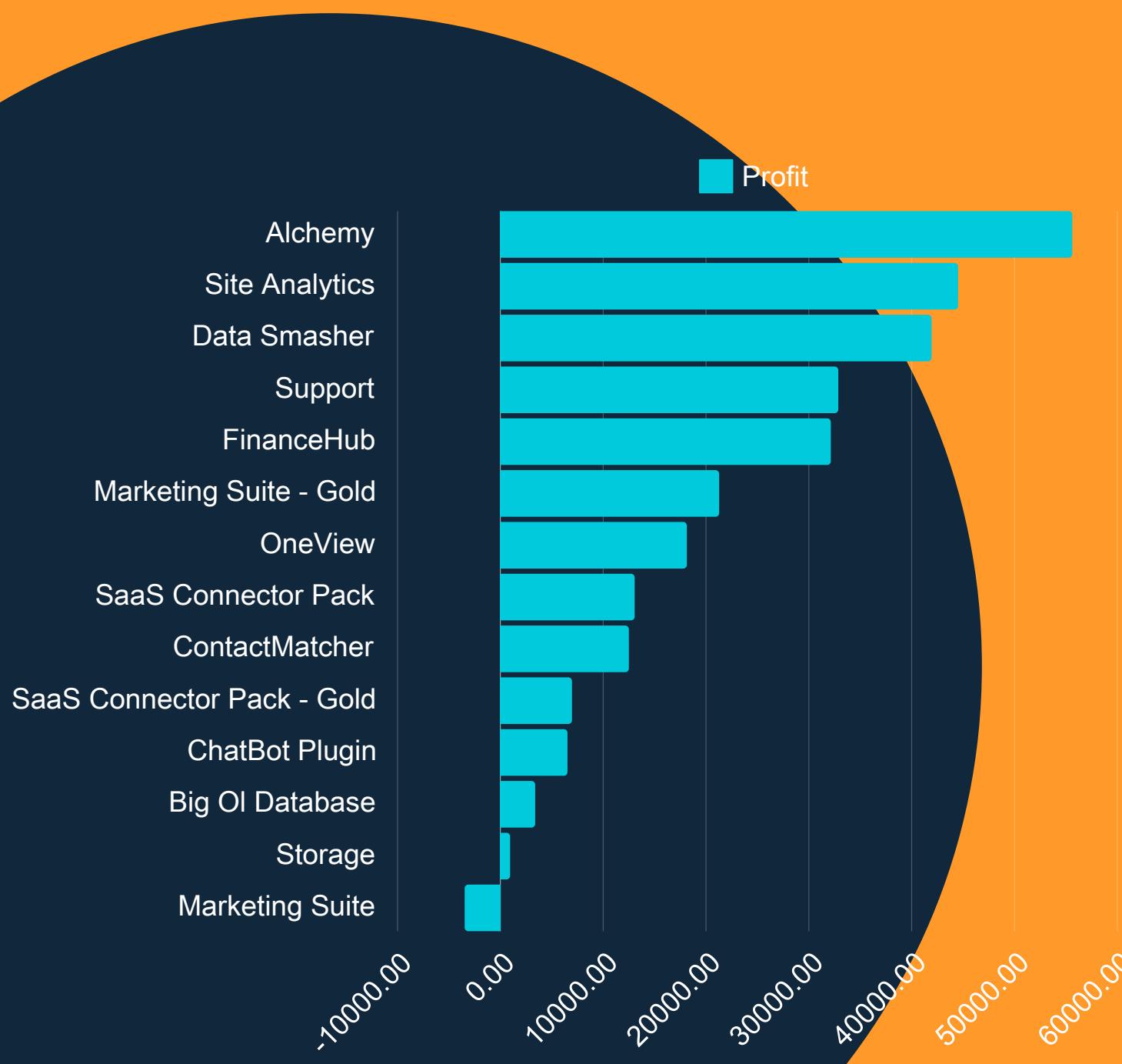


Customer	Sales	Country	Segment	Industry
1029	55719.21	United States	SMB	Healthcare
1009	43893.0424	United States	SMB	Manufacturing
1080	42904.167	United States	SMB	Finance

- Location:
All three customers are based in the United States.
- Segment:
They belong to the SMB (Small and Medium-sized Business) segment.
- Industry:
Diverse industries Healthcare, Manufacturing, and Finance.



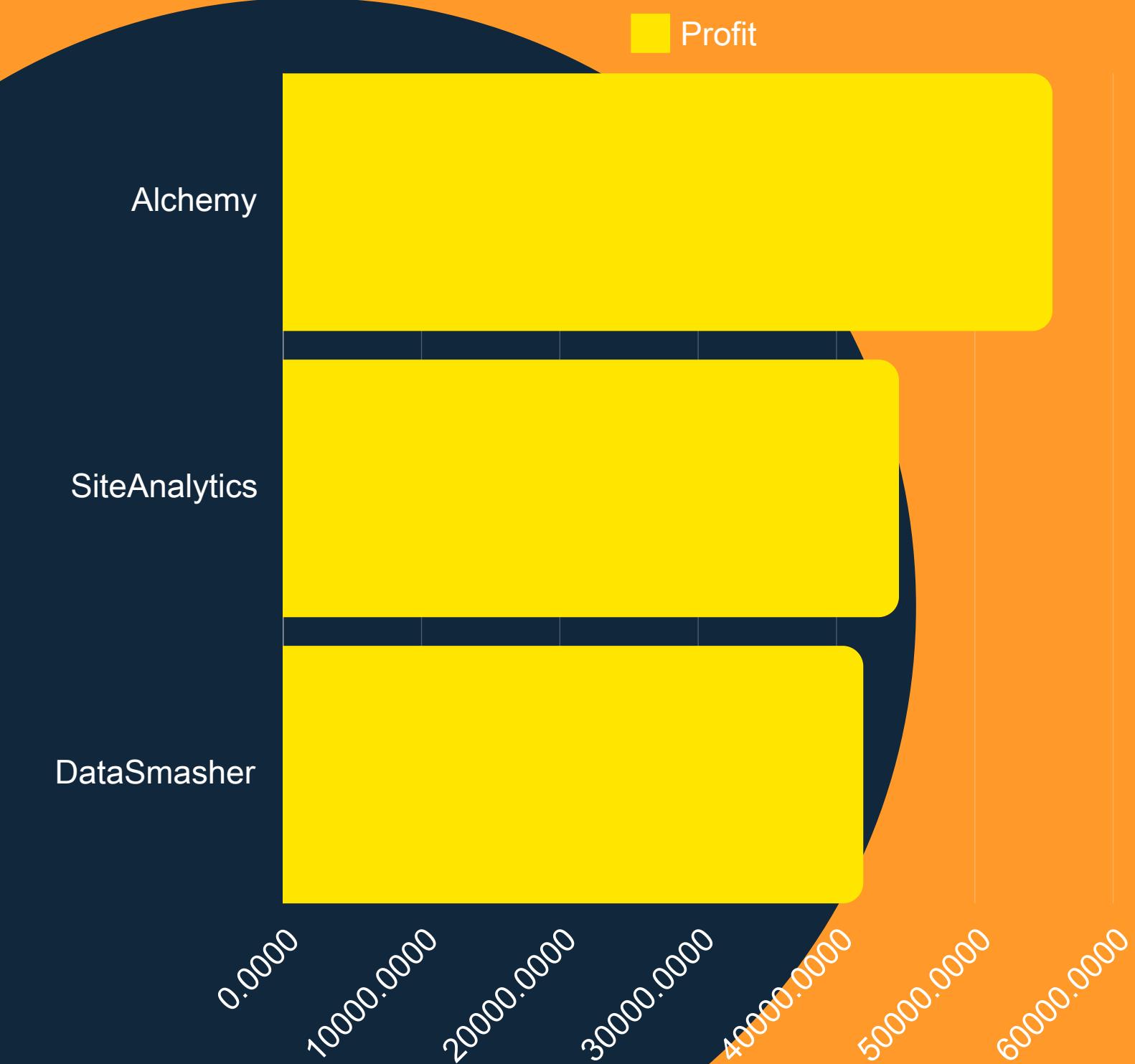
PROFIT TRENDSPOTTING



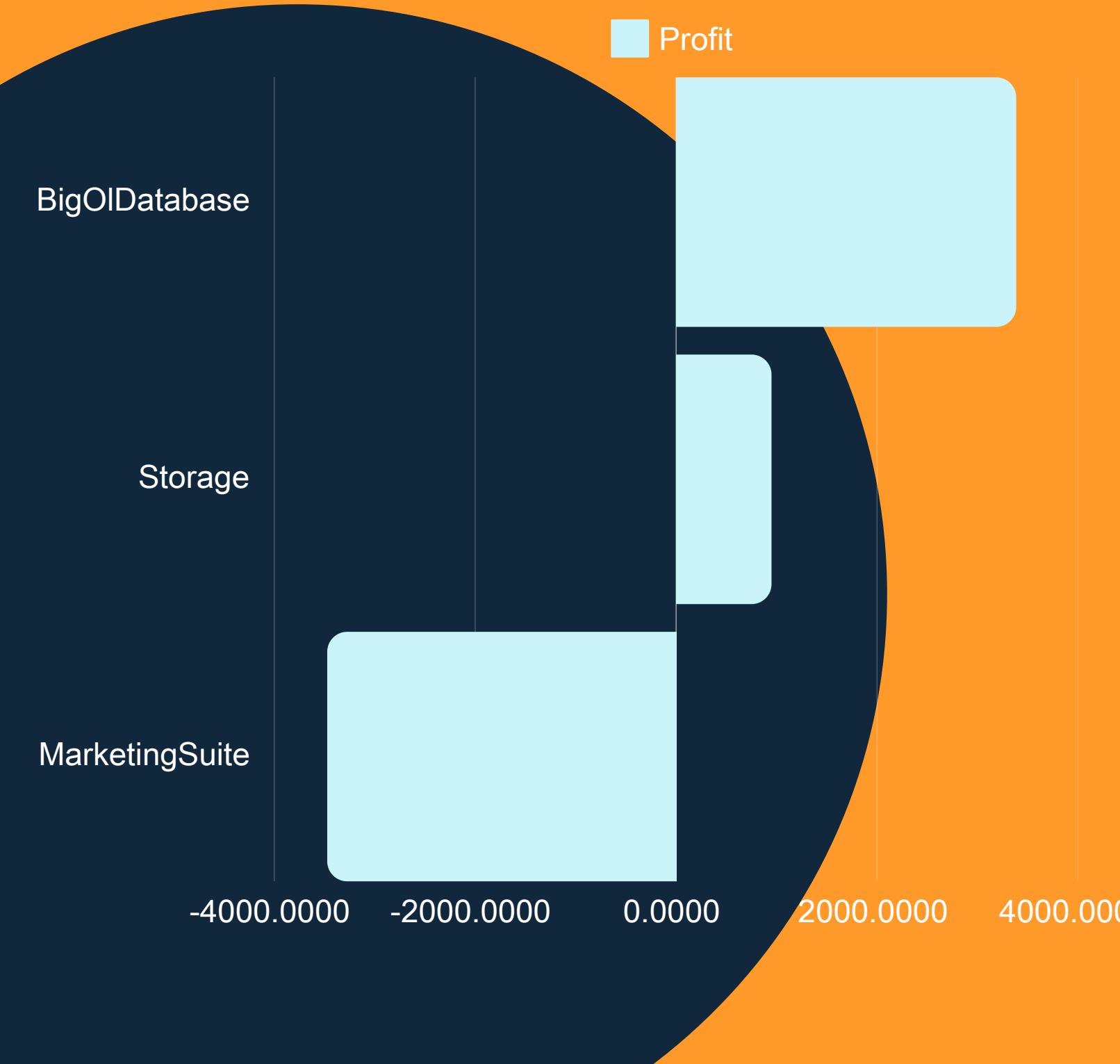
1. The product named "Alchemy" dominates in terms of profit, reaching a total of \$55,617.82.
2. "Site Analytics" and "Data Smasher" also demonstrate strong performance, generating profits of \$44,515.73 and \$41,936.64, respectively.
3. On the other hand, some products such as "Marketing Suite" and "Storage" incurred losses, with profits amounting to -\$3,472.56 and \$949.52, respectively.
4. Products "FinanceHub," "Marketing Suite - Gold," and "OneView" also contribute positively to profits significantly.

TOP 3 PROFITABLE PRODUCTS

1. Alchemy stands out as the most profitable product, generating a substantial profit of \$55,617.82.
2. SiteAnalytics and DataSmasher also contribute significantly to the overall profitability, with profits of \$44,515.73 and \$41,936.64, respectively.



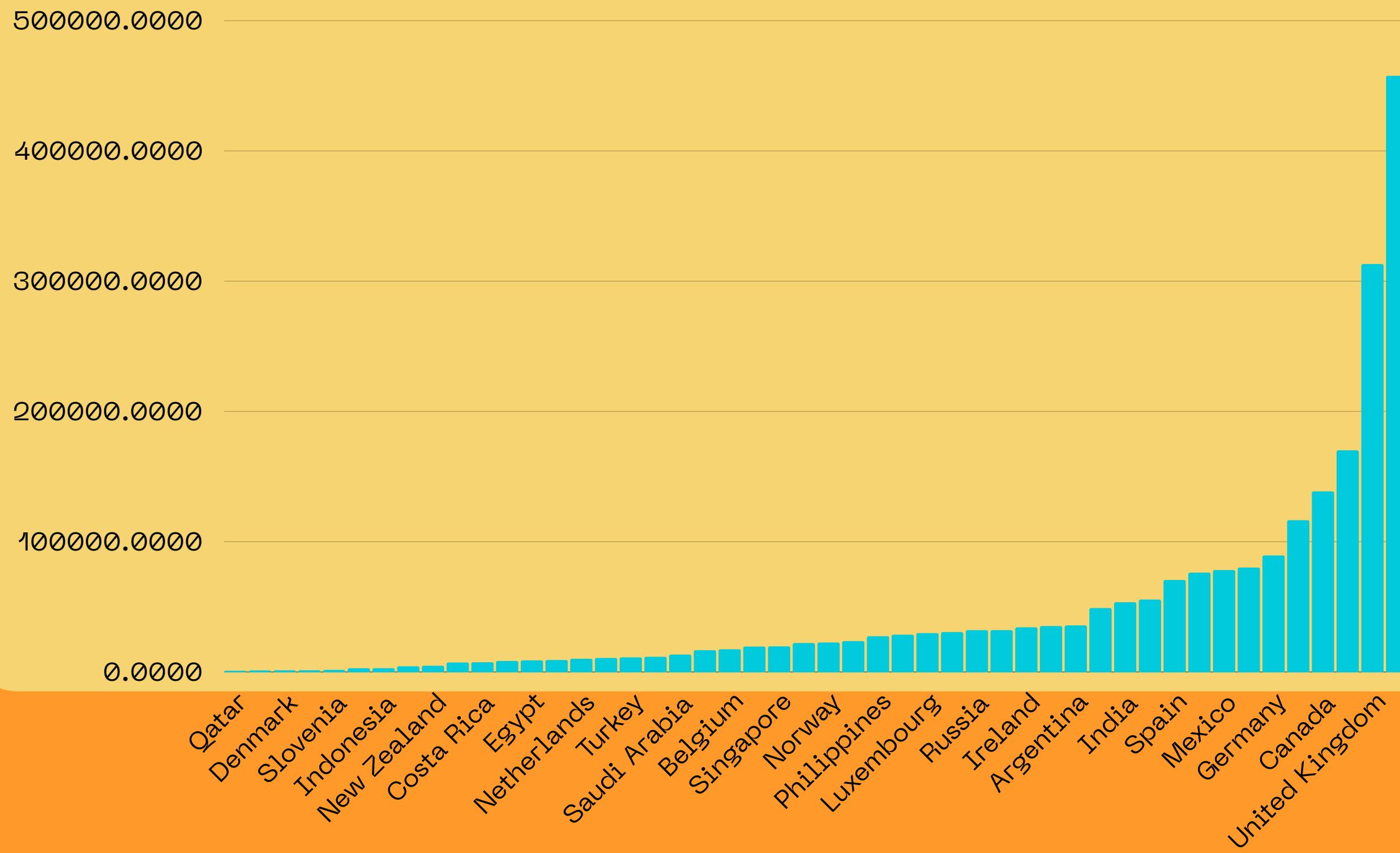
3 LOWER PROFITABILITY PRODUCTS



- BigOldDatabase and Storage contribute positively to the overall profit, with profits of \$3384.76 and \$949.52, respectively.
- MarketingSuite incurs a loss, indicating a negative impact on profits, with a deficit of \$3472.56.

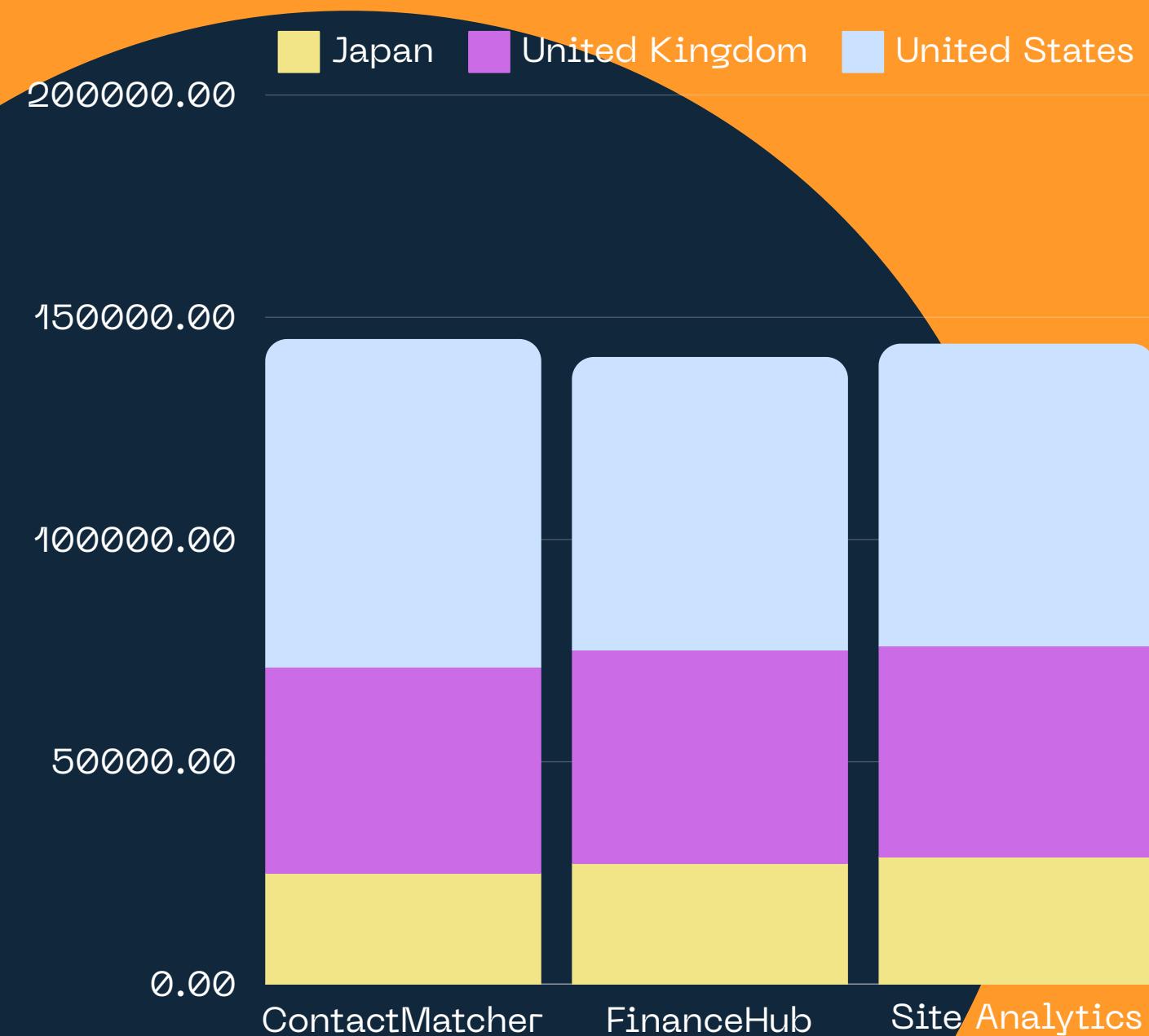


GEOGRAPHIC SALES ANALYSIS



While larger economies like United States, United Kingdom, and Japan demonstrate significant sales figures, smaller markets like Qatar, Iceland, and Denmark also contribute to the global sales landscape, albeit to a lesser extent.

TOP 3 COUNTRY SALES

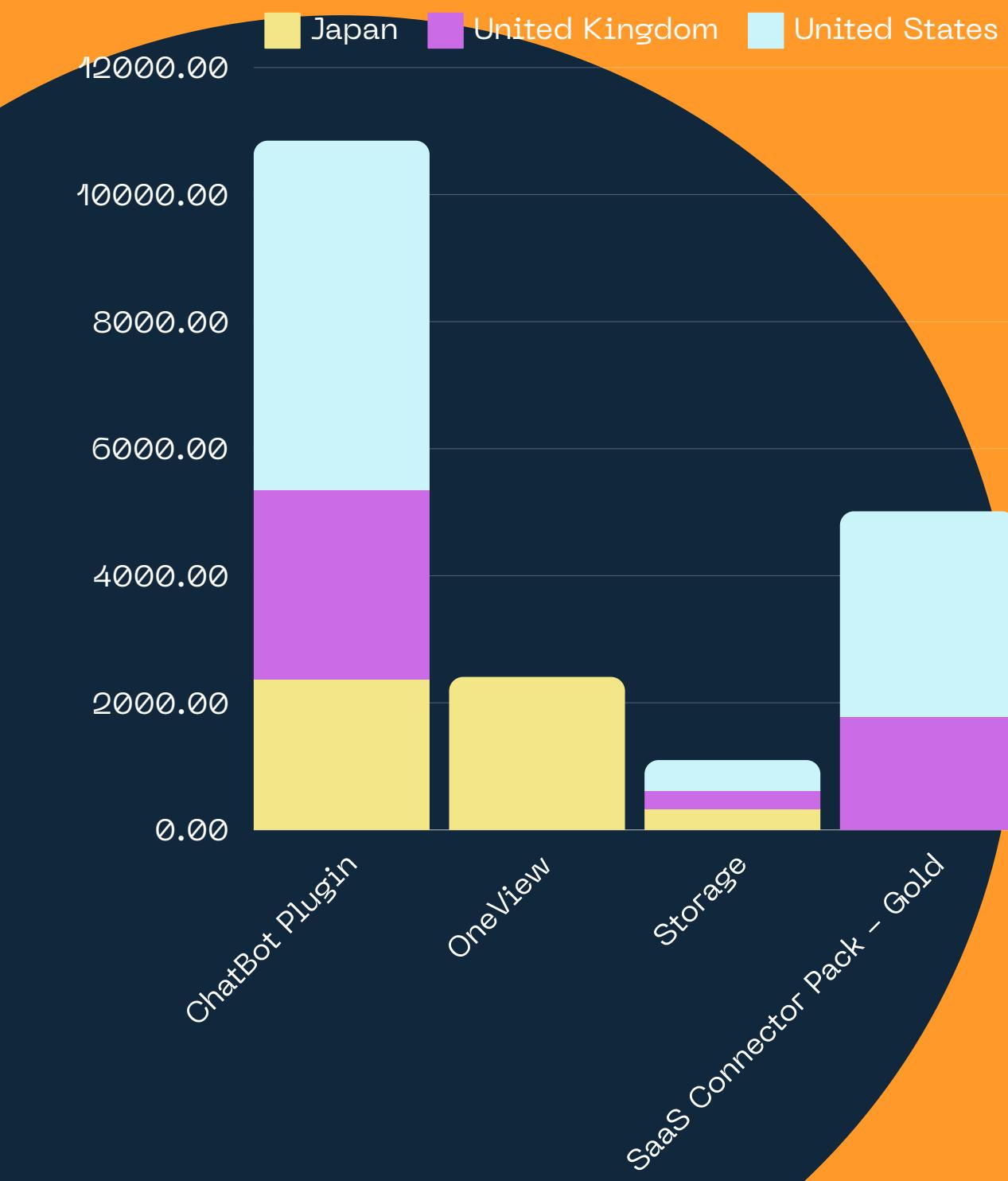


TOP 3 PRODUCTS

- The top-performing products in Japan, the United Kingdom, and the United States are ContactMatcher, FinanceHub, and Site Analytics.
- These products exhibit high sales figures in their respective countries, with ContactMatcher leading in the United States, FinanceHub in the United Kingdom, and Site Analytics in Japan.



TOP 3 COUNTRY SALES

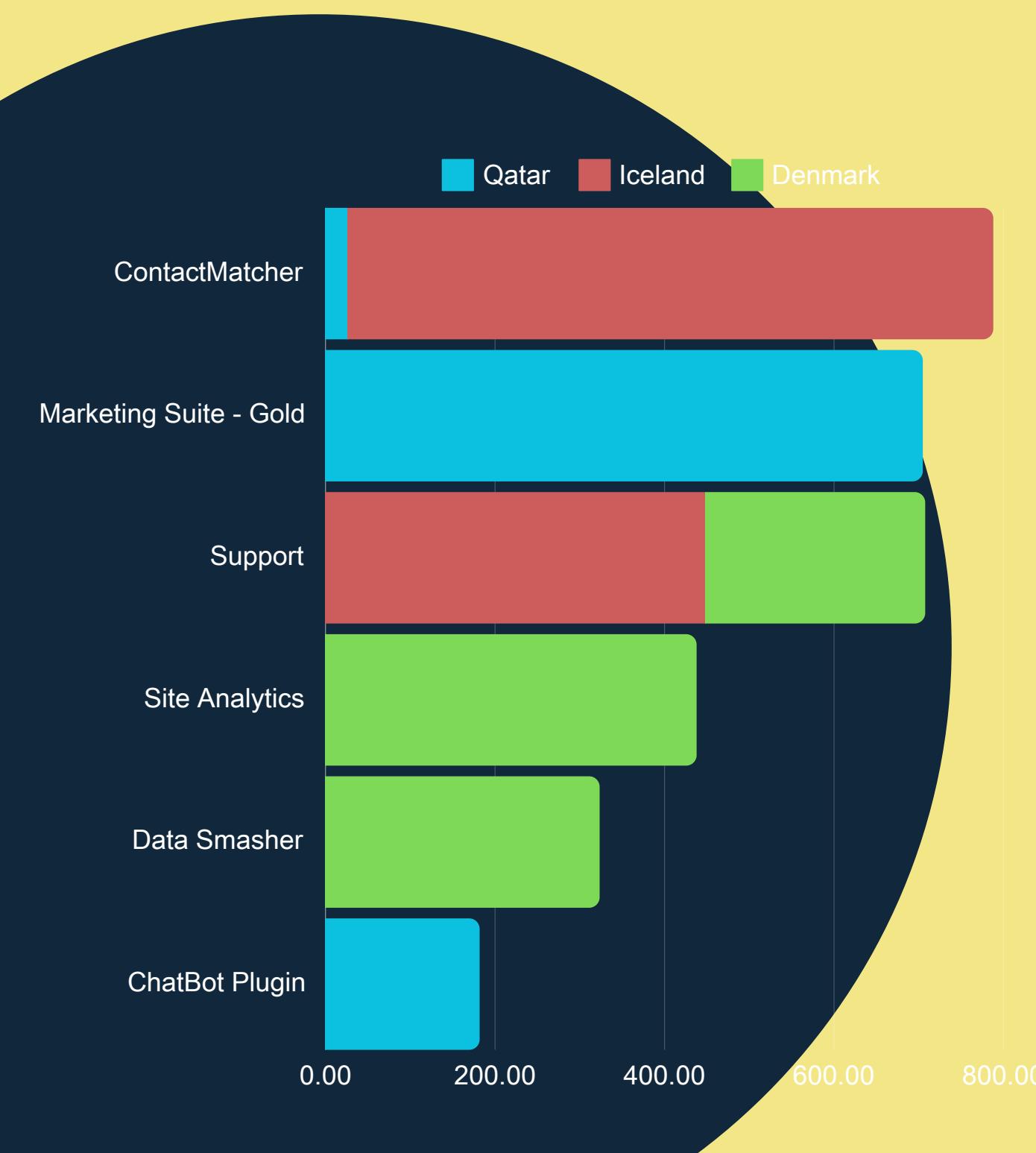


3 DIVERSE PRODUCTS

1. The "ChatBot Plugin" achieved the highest sales across all three regions, with the United States leading at \$5495.66, followed by the United Kingdom at \$2983.60, and Japan at \$2369.53.
2. "OneView" had sales only in Japan, totaling \$2407.81, while it recorded no sales in the United Kingdom or the United States.

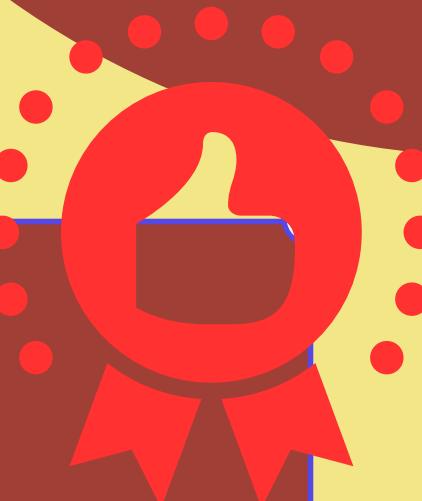


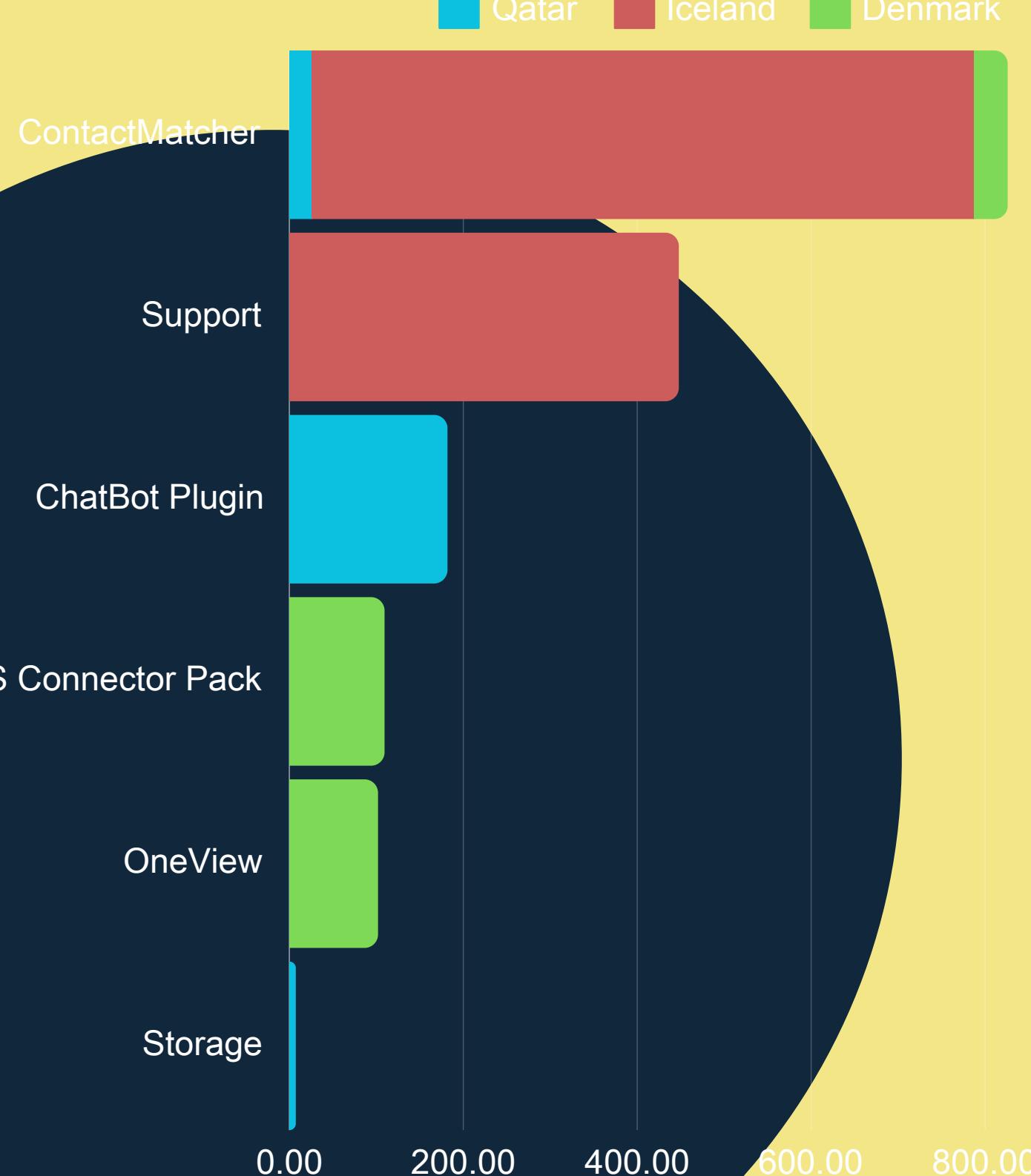
3 LOWER COUNTRY SALES



TOP 3 PRODUCTS

1. "Iceland" had the highest sales for the "ContactMatcher" product, totaling 761.984, while both Qatar and Denmark recorded lower sales for this product.
2. The "Marketing Suite - Gold" product had significant sales of 704.76 in Qatar, but it recorded no sales in Iceland or Denmark.



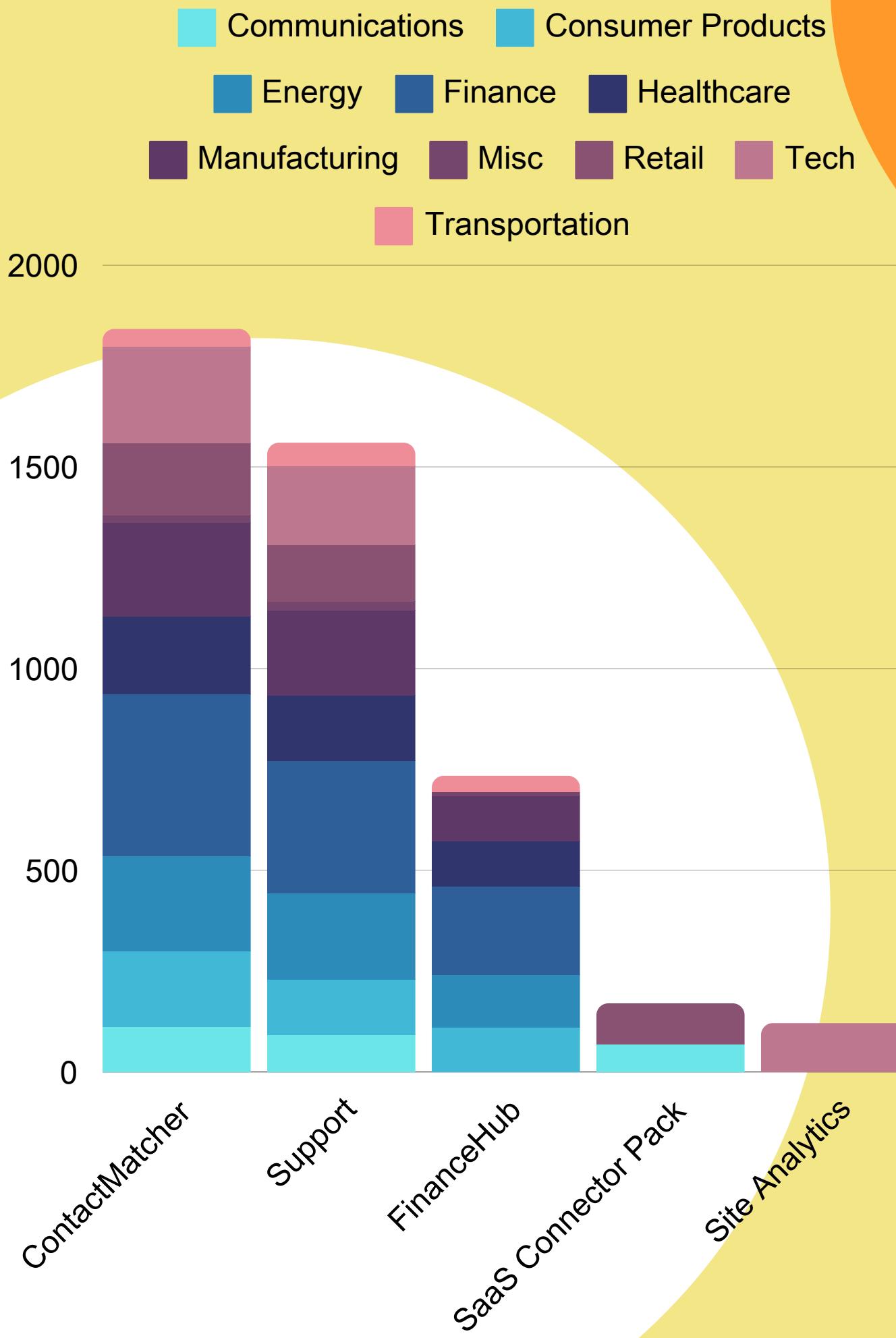


3 LOWER COUNTRY SALES

3 DIVERSE PRODUCTS

1. The "ChatBot Plugin" recorded the highest sales in Qatar with a value of 181.84, while it had no sales in Iceland or Denmark.
2. Among the bottom three products, "Storage" had the lowest sales, with sales of 7.41 in Qatar and no recorded sales in Iceland or Denmark.

MOST ORDERED PRODUCTS ACROSS INDUSTRIES



- The finance industry has the highest demand for various products, especially ContactMatcher (402 orders), Support (328 orders), and FinanceHub (219 orders).
- The "Finance" industry shows significant interest, with substantial orders in ContactMatcher (402), Support (328), and Finance (219), indicating a broad application in Finance.

Correlation Analysis

The correlation between **Sales and Discount** is -0.06. This indicates a very weak and negative relationship between sales and discounts.

The correlation between **Sales and Profit** is 0.52. This figure indicates a fairly strong positive relationship between sales and profit.

The correlation between **Discount and Profit** is -0.54.

It suggests that when discounts are offered in higher amounts, profits tend to decrease



Several Issues

There are products with negative profit values, such as "Marketing Suite" and "Marketing Suite - Gold". It may be necessary to review the sales strategy and pricing.

There is a strong negative correlation between discount and profit (-0.54). This suggests that offering high discounts may have a negative impact on product profitability. It should be considered whether the current discount strategy is effective or requires adjustment.

ISSUED



Several Issues

The correlation between sales and discount is only -0.06, indicating a very weak relationship between the two variables. This may suggest that the discount policy has little significant influence on increasing sales.

Although there is a significant positive correlation between sales and profit, some products with high sales, such as "Alchemy" and "Big Oil Database", have relatively low profits. This may indicate efficiency issues in operations or high production costs.

ISSUED

Conclusion



Sales Patterns

- Strong sales performance observed in high-performing products like Alchemy, Big OI Database, and Marketing Suite.
- Seasonal peaks noted in December 2020, 2021, and 2022, indicating potential holiday shopping influences.
- Overall upward trend in sales with fluctuations, indicating sustained growth.

Product Performance

- Alchemy, Big OI Database, and Marketing Suite are doing well in the market.
- SaaS Connector Pack - Gold, ChatBot Plugin, and Storage need improvement.
- Despite the overall positive trend, certain products like "Marketing Suite" incurred losses, signaling areas for improvement or strategic adjustments to enhance profitability.

Conclusion



Regional Sales

- Despite being smaller markets, countries like Qatar, Iceland, and Denmark contribute to the global sales landscape.
- Top-performing products vary across regions, with ContactMatcher leading in the United States, FinanceHub in the United Kingdom, and Site Analytics in Japan, highlighting regional preferences and market dynamics.

Industry Demand Analysis

- The finance industry exhibits notable demand for multiple products, particularly ContactMatcher, Support, and FinanceHub, indicating a significant market interest and broad application within the finance sector.

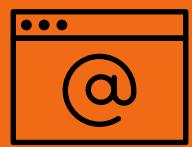
Correlation Analysis

- Sales and Profit have a moderately strong positive relationship, indicating that higher sales tend to result in increased profits.

Recomendation

- Evaluate and potentially adjust the pricing strategy for products with negative profit margins, such as "Marketing Suite" and "Marketing Suite - Gold."
- Considering the strong negative correlation between discount and profit, review the discount strategy to ensure it positively impacts profitability.
- Focus on improving operational efficiency and reducing production costs for high-sales products like "Alchemy" and "Big OI Database" to increase profitability.
- Allocate resources towards product development and marketing efforts for underperforming products like Saas Connector Pack - Gold, ChatBot Plugin, and Storage to enhance their competitiveness and drive revenue growth.





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