PRODUCT SALES ANALYSIS

SALES ANALYSIS:

It's pretty simple: sales analysis is what happens when sales professionals monitor sales data, in order to evaluate sales team performance. Doing so can uncover insights about:

- Top-performing products/services
- Underperforming products/services
- Customer behavior and retention
- New sales and market opportunities
- The future outlook of your sales team.

How Often Should You Perform a Sales Analysis?

Worried you'll come off too strong? You definitely don't want to look desperate. How much is too much? Luckily, the quickest way to sales analysis' heart is to spend quality time with it. In other words, check in on a regular basis. How regular? It depends on the sales metrics you need to track, overall performance, and the type of sales reports you're analyzing. Your sales goals can also impact how often you should perform sales analysis. In general, expect to track overarching metrics like net sales and/or deal size **on a monthly basis**. More specific metrics, like calls or emails sent, should be tracked on a shorter-term basis. Whatever your cadence, remember to monitor seasonal changes and metrics,

What is Included in a Sales Analysis?

Better said: what *isn't* included in a sales analysis?

In the end, what you decide to include in your sales analysis report will depend on your goals. Here are some ideas:

- Sales activity volume
- Ratio of new leads to qualified leads
- Information about your pricing structure
- Data on your social media campaigns
- Current sales trends

- Revenue and costs for a specific period

Along with these things, a clear sales data analytics report will show you want to do with the information. Specific action steps are a key piece of sales analysis, meaning you can do more with the information you've gathered.

What is Sales Analysis Useful For?

i. Why should sales managers get serious about sales analysis? Two words: the benefits!
ii. Seriously, if you want to see how your team performs against its sales goals—throughout the entire sales cycle—you need to monitor the specific metrics that pertain to them.
iii. Once you do, you'll be able to make better decisions, understand market trends, boost company profits, and improve customer satisfaction.

Four Irresistible Benefits,

- **Make better decisions:** Sales analysis will reveal the real-time success of your sales plan. You can use this information to build a better, data-driven approach.
- **Understand market trends:** It doesn't matter what you're doing—launching a new product, planning inventory, etc. A sales analysis report will help you uncover hot market opportunities and must-know trends to make the most of your efforts.
- **Boost company profits:** Top sales reps spend more time talking to high-quality leads. Sales analysis will help you identify the best prospects so that your team can close more deals. It will also reveal information regarding your non-customers, which can be used to sharpen your sales pitch and personalize future marketing strategies.
- **Improve customer satisfaction:** Finally, sales analysis will help you understand what customers want and why they buy. These details can be used to forge deeper bonds with your target audience that lead to more upsell and cross-sell opportunities.

Does the idea of sales analysis have you hot and bothered? Great! Now I'll show you a proven, four-step process you can use to analyze the metrics and KPIs that matter to you.

How to Perform Sales Analysis:

You're ready to take the plunge and generate your sales analysis report—but how? Follow this four-step process, and you'll have sales analysis wrapped around your finger in no time!

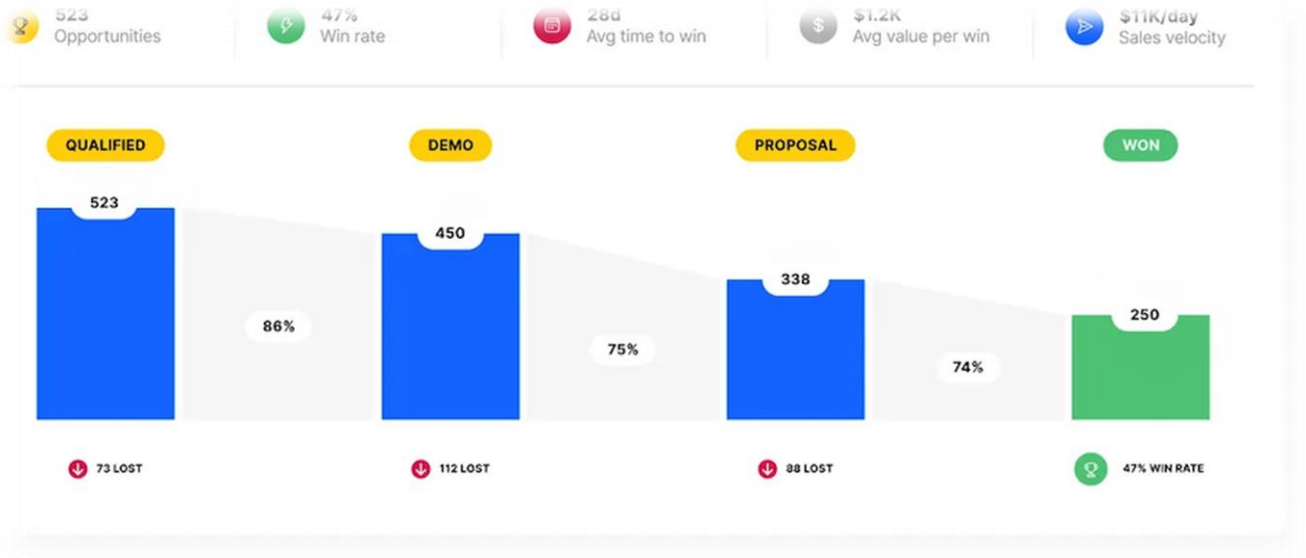
Process

Choose the Right Sales Analysis Method

Different sales analysis methods will allow you to generate different kinds of reports. So, before you do anything else, choose a method that aligns with your sales goals.

Here are seven specific sales analysis reports you need to know about:

- **Sales trend analysis:** This type of sales analysis looks for patterns in sales data. Use it to track your team's progress towards its sales goals, while simultaneously understanding sales patterns in specific products, customers, and/or geographies.
- **Sales performance analysis:** Sales performance analysis is crucial for effective sales performance management. This type of analysis will help you gauge your sales team's performance and evaluate the overall effectiveness of your sales strategy. Utilize it to compare actual results to expected outcomes, and then make necessary adjustments. Implementing these changes can lead to faster closing times, increased win rates, and a significant boost in revenue growth.*(Dive into the world of CRM and its pivotal role in driving revenue growth.)*
- **Predictive sales analysis:** This type of sales analysis is designed to help you predict future risks and opportunities. Use it to create accurate sales forecasts.
- **Sales pipeline analysis:** This type of sales analysis will help you discover common sales activities prospects go through before they convert. As such, it will give your sales team the context it needs to shorten sales cycles and close more deals.



- **Product sales analysis:** This type of sales analysis is perfect for large companies and/or companies with extensive product offerings. Why? Because it helps them determine which products actually affect their bottom lines. Use it to better understand your company's demographics, pinpoint popular products, and the like.
- **Prescriptive analysis:** This type of sales analysis will empower your sales reps with knowledge, helping them determine which opportunities to pursue and which to dump like radioactive waste. Use it to increase rep success and team-wide win rates.
- **Market research:** This type of sales analysis may seem old-fashioned, but it's never gone out of style. To use this technique, simply survey your customers, research your competitors through web scraping using curl proxy for greater efficiency and reliability, and read general sales statistics. Once you do, you'll have a much better understanding of your customer's needs, thereby improving your sales effectiveness.

SALES EXECUTION:

1. Monthly Sales Growth

This metric will give you the juicy deets on your overall sales revenue. Is it going up, going down, or holding steady? When you know, you can better optimize your sales processes.

How to calculate it: (Current month's performance - Previous month's performance) / 100

2. Sales Opportunities

This KPI will tell you about the opportunities your sales reps create. It can be used to determine good and bad-fit prospects, which makes it useful for sales prospecting.

How to calculate it: Count the total number of opportunities your sales team creates within a specified period, such as one month, one quarter, or one year.

3. Lead Conversion Rate

This metric will help you understand why and how leads are converted. This information can then be used to design a foolproof customer acquisition plan for your company.

How to calculate it: (Number of leads that converted into opportunity in a given period) / (Number of leads created in this period)

Stepwise Sales Data Analysis

Data Reading and Processing

The sample sales data used in this example for analysis has the following columns

- Order Number − Unique number for each placed order.
- Product_Type − Category of the product
- Quantity − quantity of the product ordered
- Price Each − Price per unit
- Order Date − Date and time when the order was placed
- Address − Address to which the product was delivered.

Example:

Output:

Output

	ORDER_NUMBER	QUANTITY	PRICE_EACH	ORDER_DATE	PRODUCT_TYPE	ADDRESS
578	10100	30	100.00	01-06-2003 00:00	Vintage Cars	2304 Long Airport Avenue
2024	10100	49	34.47	01-06-2003 00:00	Vintage Cars	2304 Long Airport Avenue
680	10100	50	67.80	01-06-2003 00:00	Vintage Cars	2304 Long Airport Avenue
1267	10100	22	86.51	01-06-2003 00:00	Vintage Cars	2304 Long Airport Avenue
728	10101	25	100.00	01-09-2003 00:00	Vintage Cars	Lyonerstr. 34
...	...	...	...	...	...	...
2405	10425	18	100.00	5/31/2005 0:00	Trucks and Buses	67, rue des Cinquante Otages
393	10425	33	100.00	5/31/2005 0:00	Trucks and Buses	67, rue des Cinquante Otages
160	10425	38	100.00	5/31/2005 0:00	Classic Cars	67, rue des Cinquante Otages
780	10425	19	49.22	5/31/2005 0:00	Trucks and Buses	67, rue des Cinquante Otages
727	10425	38	99.41	5/31/2005 0:00	Trucks and Buses	67, rue des Cinquante Otages

2823 rows × 6 columns

Once we have read the data, we have to do the processing of the data. The Order Date column needs to be converted to a DateTime object and we can extract month and year from the order date and add a new column for a month, year, and total sales. The code for data cleaning and processing is shown below –

Example:

```
In [4]: Sales_data['ORDER_DATE']=pd.to_datetime(Sales_data['ORDER_DATE'])
        Sales_data['MONTH']=Sales_data['ORDER_DATE'].dt.month
        Sales_data['YEAR']=Sales_data['ORDER_DATE'].dt.year
        Sales_data['TOTAL_SALES']=Sales_data['QUANTITY']=Sales_data['PRICE_EACH']
        Sales_data.sort_values(by['ORDER NUMBER'])
```

Output

	ORDER_NUMBER	QUANTITY	PRICE_EACH	ORDER_DATE	PRODUCT_TYPE	ADDRESS	MONTH	YEAR	TOTAL_SALES
578	10100	30	100.00	2003-01-06	Vintage Cars	2304 Long Airport Avenue	1	2003	3000.00
2024	10100	49	34.47	2003-01-06	Vintage Cars	2304 Long Airport Avenue	1	2003	1689.03
680	10100	50	67.80	2003-01-06	Vintage Cars	2304 Long Airport Avenue	1	2003	3390.00
1267	10100	22	86.51	2003-01-06	Vintage Cars	2304 Long Airport Avenue	1	2003	1903.22
728	10101	25	100.00	2003-01-09	Vintage Cars	Lyonerstr. 34	1	2003	2500.00
...	...	...	...	...	...	...	...	...	...
2405	10425	18	100.00	2005-05-31	Trucks and Buses	67, rue des Cinquante Otages	5	2005	1800.00
393	10425	33	100.00	2005-05-31	Trucks and Buses	67, rue des Cinquante Otages	5	2005	3300.00
160	10425	38	100.00	2005-05-31	Classic Cars	67, rue des Cinquante Otages	5	2005	3800.00
780	10425	19	49.22	2005-05-31	Trucks and Buses	67, rue des Cinquante Otages	5	2005	935.18
727	10425	38	99.41	2005-05-31	Trucks and Buses	67, rue des Cinquante Otages	5	2005	3777.58

2823 rows × 9 columns

The new column month, year, and toatal_sales will help us analyze the sales trend over time. Now we can use these columns to plot different plots using the matplotlib library to get some insights from the sample_sales_data.

Data Visualization

Till now we have read and processed our data to use it to plot different plots using the matplotlib library in Python. Matplotlib provides line, bar, and scatter plots to visualize the data.

Visualization of total sales over time

To visualize the total sales over time we can plot a line graph using matplotlib.To visualize that we have to –

- Group the data by year and month
- Create a line chart using matplotlib
- Set the title and axis labels
- Display the chart

Example:

```
In [5]: import matplotlib.pyplot as plt
sales_by_month=Sales_data.groupby(['YEAR','MONTH']).sum()['TOTAL_SALES'].reset_index()
plt.plot(sales_by_month.index,sales_by_month.values)
plt.title('Total sales by month')
plt.xlabel('Month')
plt.ylabel('Sales($)')
plt.show()
```

Output:

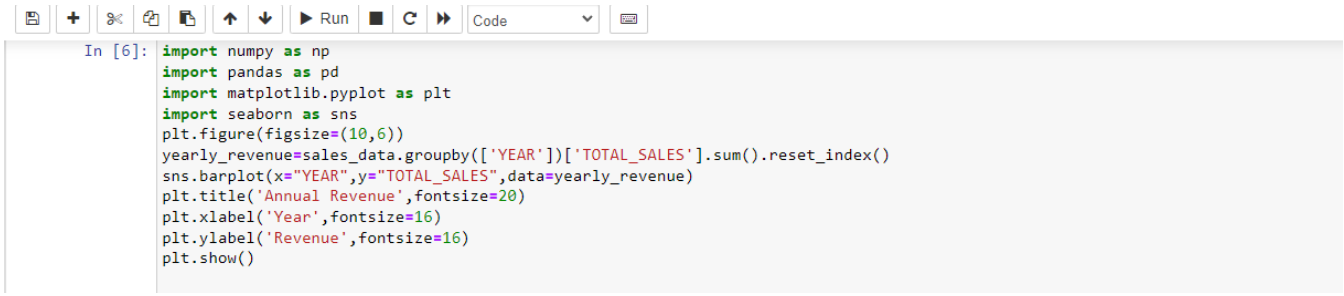
Visualization of annual revenue over time

We can visualize the annual revenue for every year and can see which year has the highest revenue and which year has the lowest revenue till now. To do so we have to–

- Group the sales data by year

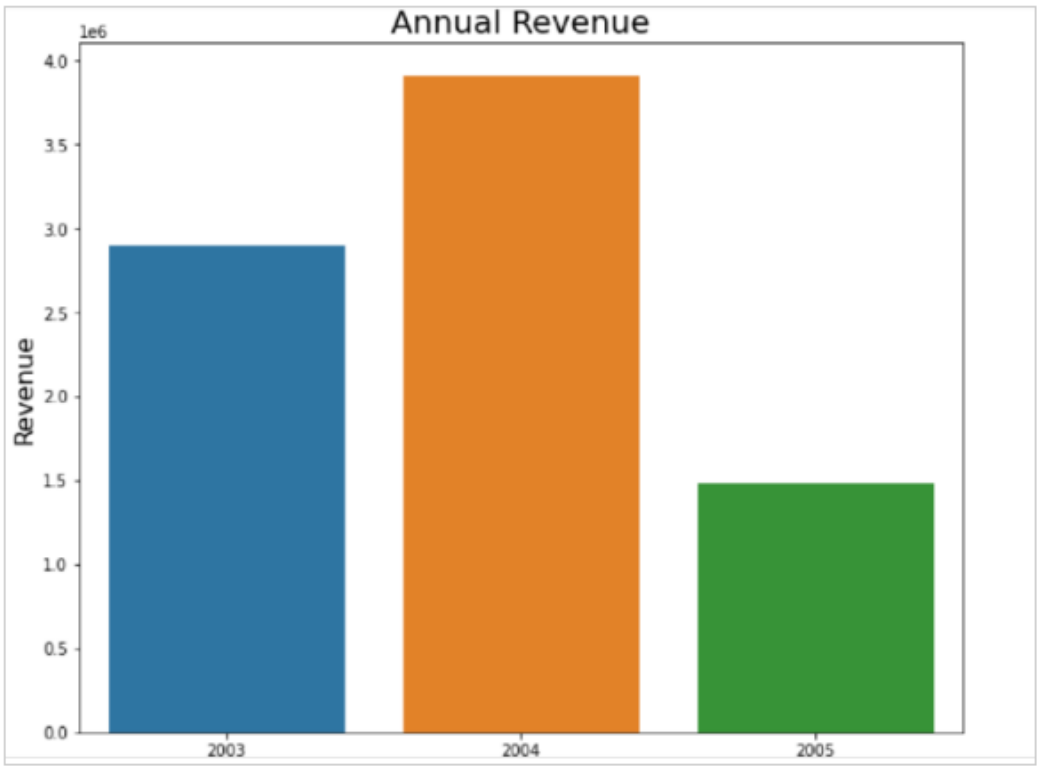
- Create a bar plot using Seaborn which uses matplotlib underneath
- Set the title and axis labels
- Display the chart

Example:



Output:

Output



Conclusion

We can analyze and visualize any type of product sales data using matplotlib in Python and get standard data insights that can be used by the company to increase sales. We analyzed the total sales over time and year-wise revenue in the above article using matplotlib, pandas, and numpy.