Data Collection:

Dataset source: https://mavenanalytics.io/data-playground

(Source: data.world)

(License: Public Domain)

CRM Sales Opportunities :

Objective: To evaluate the performance of sales teams and individual agents by analyzing key metrics, The insights derived will inform targeted training programs and provide actionable feedback to improve overall sales effectiveness.

B2B sales pipeline data from a fictitious company that sells computer hardware. Information of accounts, products, sales teams, and sales pipeline was included in separate tables. (Source: data_dictionary.csv)

Datamodel: data_model.png

Key Components to Consider:

We need to create dashboards to help the management to interactive with data(using tableau) and also provide Reports (using sql)

1. Team Performance Analysis: How is each sales team performing compared to the rest? Evaluation metrics as follows(group by team)
    a. **Total deals completed**: Provides insight into the volume of work each team is managing.
    b. **Conversion Rate/Win Rate(in %)**: A critical metric that shows the effectiveness of the sales team in turning leads into customers. High conversion rates are indicative of good sales techniques and lead qualification.
    c. **Average Sale Cycle Duration(in days)**: Helps in understanding the efficiency of the sales process. Shorter sales cycles often indicate a streamlined process and effective sales techniques.
    d. **Positive Sale Variance Rate(%)**: Highlights the percentage of sales that meet the target or above target
2. Are any sales agents lagging behind?: Evaluation metrics as follows(group by sales agent)
    a. **Total deals completed**
    b. **Lost rate(%):** High lost rates are indicative of underperformance, and more training is required
    c. **Average Sales Variance**
    d. **Negative Sale Variance Rate(%):** Highlights the percentage of sales below the target, which is important for identifying underperformance.

3. Quarter-over-quarter trends of closed deals and total close value?
4. Do any products have better win rates?

Glossary:

- A sales pipeline is a visual representation of a sales process, showing where potential customers are in the purchasing process and how close a sales team is to reaching their quota.
  This can be also be used to track the performance of sales staff: The sales pipeline is not just a tool for tracking your potential customers, but also the ones responsible for them – the sales representatives themselves. Like this, you can easily find out which members of your sales team need more training, or which are simply not a good fit for the job.
- Sales pipeline stages(from the given data dictionary): Prospecting > Engaging (contacting opportunities) > Won / Lost (conversion)
- Sales prospecting is the activity of identifying and contacting potential customers/leads to generate new revenue.

- Leads/deals represent any potential marketable individual or business inside your CRM that is not currently qualified. Opportunities represent leads that are qualified and have the potential to complete a purchase/sale.
- A sales opportunity is a potential customer who has shown interest in buying a product or service., we were given opportunity_id for each customer

Metrics to measure sales representative performance:Along with deal stage we can use additional metrics to measure the performance of sales_rep or team

- **sales cycle duration**: The difference between the engage date (when a salesperson first contacts a prospect or starts engaging with them) and the close date (when the deal is finalized and closed) in a sales pipeline is commonly referred to as the **sales cycle duration**. We can use this in measuring Salesperson Performance**.**

  - **Shorter Sales Cycles**: Generally indicate that a salesperson is effective at moving prospects through the sales process quickly. This can be a sign of good communication, strong persuasion skills, and effective time management.
  - **Longer Sales Cycles**: May suggest that a salesperson is encountering difficulties, which could be due to a variety of factors such as not addressing customer objections effectively, targeting less qualified leads, or inefficiencies in the sales process.

- **Sales Variance:** The difference between the closed value and the actual value of a product is called sales variance:

  - Positive variance: When the closed value is higher than the actual value, indicating exceeding sales targets.

  - Negative variance:When the closed value is lower than the actual value, signifying a shortfall in meeting targets.

Data Cleaning:
- Each row in the sales_pipeline tracks the progress of specific deals with companies listed in the accounts table.
- As the data was available in different CSV files, I exported these files to the SQL database 'crm_sales' and created different tables using Python SQLAlchemy and mysql.connector
  Source code: Export_files_to_sql.ipynb
- As there are some deals still on prospecting and engaging stages, we will include only qualified deals, means deals that have completed the sales process, providing a clearer picture of the efficiency of the sales efforts.
- Converted engage and close date columns to Date types
- Performed text cleaning in the columns
- Created additional features(1. sales_cycle_duration, 2. Sales Variance, 3. sales_variance_status,4.quarter(from close_date) as required for analysis
- Joined all the tables as required for the analysis.

Data Analysis:

Note on Color Context in Visualization: *When interpreting the performance of employees in this visualization, please note that darker colors indicate the best performance, while lighter colors represent dull or lower performance.*

1. **How is each sales team performing compared to the rest?: We have created KPIs to asses the each team performance:**

KPI/team_id	1	2	3	4	5	6
total_completed_deals	745	962	1186	1418	1113	1287
won_deals_proportion	64.43%	63.41%	62.98%	62.20%	62.08%	64.34%
average_sale_cycle_duration	49.04	47.45	49.44	47.82	45.84	48.47
positive_var_proportion	32.48%	32.02%	30.44%	32.09%	31.00%	30.61%

Observation/Recommendation: All the teams are having low positive variance rate(30%) which indicatesthat almost 70% of products are being sold less than their actual prices, further reasearch is required on this matter.

2. **Are any sales agents lagging behind?:**

sales_agent	total_completed_deals	lost_deals_proportion	average_sale_cycle_duration	negative_var_proportion
Donn Cantrell	275	42.55%	48.93	72.36%
GladysColclough	232	41.81%	48.15	71.55%
Lajuana Vencill	231	45.02%	52.80	76.62%
Markita Hansen	227	42.73%	48.33	73.57%
Niesha Huffines	175	40.00%	52.57	65.14%

3. **Quarter-over-quarter trends of closed deals and total close value?**

quarter	closed_deals_growth(%)	revenue_from_closed_deals(%)
1		
2	214.06%	171.98%
3	0.74%	-3.37%
4	-3.03%	-6.03%

- There was a significant increase in closed deals (214.06%) and revenue from closed deals (171.98%) in Q2.
- There was a slight increase in closed deals (0.74%) but a decrease in revenue from closed deals (-3.37%) in Q3.
- In Q4, there was a decrease in both closed deals (-3.03%) and revenue from closed deals (-6.03%)
- Overall, it is observed that there was a strong start to the year in terms of deals, but that growth slowed down in Q3 and Q4.

4. Product with High win rate: MG Special and GTX have high winning rate

product	won_deals_proportion
MG Special	64.84%
GTX Plus Pro	64.30%
GTX Basic	63.72%
GTX Pro	63.56%
GTX Plus Basic	62.13%
MG Advanced	60.33%
GTK 500	60.00%

Data Visualization:

Tableau Dashboard Link:

https://public.tableau.com/app/profile/swarna.ch4206/viz/CRMSalesPerformance/Dashboard1?publish=yes

Recommendations:

Focus on areas needing improvement:

- **Training:** Provide targeted training for individuals or teams with high lost sales rates, high deal variance rates, and lower than expected sales achievement. Analyze the reasons behind these metrics and tailor the training to address those specific weaknesses. This could involve sales methodology, product knowledge or negotiation skills.
- **Root Cause Analysis (RCA):** Investigate cases where the average sales cycle duration is high for a particular product, agent, or team. Conduct an RCA to identify the underlying reasons for the delay.

Continuously improve and motivate:

- Implement a system of regular coaching and feedback for all team members. This will help individuals identify areas for improvement and stay motivated.
- Encourage a culture of continuous improvement. Regularly review your sales process and identify areas for streamlining or optimization.
- Recognize and reward high performers to maintain momentum and motivate the entire team.