Sales Domain In an Analysis Perspective

What is Sales?

The exchange of a product or service for money.

What Are Sales Terminologies ?

Let's look at sales from the money aspect then from the customer that will make this money aspect.

1) About money
   - **Revenue:** Total money made from sales.
   - **Cost:** Money spent to produce a product or service.
   - **Profit:** Revenue - cost.
   - **Sales Volume:** Number of units sold.
   - **Sales Growth:** Change in revenue or profit over time.
2) About customers
   - **Leads:** People who show interest (e.g., click an ad).
   - **Conversions:** Leads who become paying customers.
   - **Conversion Rate:** % of leads that convert.
   - **Customer Retention Rate:** % of customers who keep buying over time.
   - **Churn Rate:** % of customers who stop buying.
   - **AOV (Average Order Value):** Average amount spent per purchase.
   - **CLV (Customer Lifetime Value):** AOV × Purchase Frequency × Lifespan.

What Constraints or Context Do I Need to Keep in Mind?

- **Inventory limits:** Can't sell more than you have.
- **Seasonality:** Products sell better at certain times.
- **Target Markets:** Products may be designed for specific groups.
- **Budget constraints:** Total spend must be under budget.
- **Sales Channels:** Online, in-store, third-party, etc.
- **Customer Behavior:** Changes due to trends, competitors, economy.
- **Data Reliability:** Online data is more automated; offline may include manual errors.

How Do I Predict or Measure Business Performance?

- **Leading KPIs (predict future) :** Website traffic, new leads and conversion rate.
- **Lagging KPIs (reflect the past):** Revenue, profit and churn rate.

Understanding The dataset

Column	Meaning	Values / Range	Interpretation & Notes
DateTime	The timestamp of the recorded ad event	Exact date + hour in 24h format	The first time, last time, or most recent time the ad was shown to that customer on that setup.
CustomerID	Unique identifier of the viewer	90–95% unique	Some customers appear in multiple rows (viewed ads across different platforms or times). Indicates cross-platform/customer journey.
AgeGroup	Age range of the viewer	5 values: 18–24, 25–34, 35–44, 45–54, 55+	Likely sourced from the user's profile or account data. Useful for demographic targeting.
Gender	Gender identity of the viewer	Female, Male, Other	May be self-declared or inferred by the platform. Can inform inclusive or segmented marketing.
Country	Country of the viewer	Australia, Canada, France, Germany, UK, USA	Helps analyze performance by region. May reveal trends by geography.
ProductCategory	Type of product being advertised	Accessories, Home Entertainment, Laptops, Smartphones, Wearables	Helps evaluate product interest by audience segment and campaign.
CampaignID	Identifier for each ad campaign	100 unique IDs	Used to compare campaign performance (clicks, conversions, value). Can identify top-performing and underperforming

			campaigns.
AdPlatform	Platform where the ad was shown	Facebook, Twitter, Google, Instagram	Tells where the ad appeared. Enables cross-platform performance comparison.
Impressions	Number of times the ad appeared to that customer	Range: 1–9	Indicates ad visibility and exposure. Can analyze trends in overexposure or underexposure.
Clicks	Whether the customer clicked the ad	Binary: 0 (no), 1 (yes)	Signifies interest. Useful for calculating CTR (click-through rate = clicks ÷ impressions).
Conversions	Whether the ad resulted in a purchase	Binary: 0 (no), 1 (yes)	Measures success. Key metric to calculate conversion rate (conversions ÷ clicks).
ConversionValue	Revenue earned from that conversion	Range: 0–497	Shows actual monetary outcome. Given the dataset's Western Europe origin, likely in EUR or GBP.

Data Cleaning

1. Changed the region to UK since the data format was day/month/year and it will error out when converting to date data type
2. Convert the first column to DatTime data type → date / time
3. Covert impression data type of impressions from text → whole numbers
4. Created a new column only for the hours and converted them from 24 to 12am-12pm

Telling A Story

We're looking at data from an **online marketing company** that sells **electronics** ,laptops, smartphones, accessories, wearables. And just like any other business in sales the end goal is to get people to bye so they can make more money.

In this dataset it came to my awareness that it is focused on getting more conversions by tracking their online campaigns results, such as the impressions, clicks and more. Now we can see that our **main targets would be :**

1. Total campaigns held
2. Total impressions
3. Total clicks
4. Total conversion's value
5. Conversion Rate : % of people who **clicked** and then **converted (bought)**
   Conversion Rate = Conversions / Clicks
6. Click-Through Rate (CTR) : % of people who clicked the ad after seeing it
   CTR = Clicks / Impressions

CHAPTER 1: The Hook → Digital campaigns.

A campaign is launched. It shows up as an ad on a platform like Facebook, Twitter, or Google. It gets **impressions**, people see it. Some people **click**. A few of them **convert** meaning, they make a purchase.

So, we want the campaign to be successful in order to get more conversions, how can we achieve that ? Montering what follows :

1. When it's posted ?
2. Where is it posted ?
3. Who it targets?
   i. Age group
   ii. Gender
   iii. Region

CHAPTER 2: The Funnel

Once the hook works, people see the ad and click ,the next test begins:

Can we turn that click into a customer? This is where the **sales funnel** begins.
It looks like this:

Impressions → Clicks → Conversions

This funnel tells us **where we're winning and where we're losing.**

CHAPTER 3: The Business View

We don't have direct answers in the data ,no product prices, no feedback forms ,but we **can infer** problems. For example : If the hook works but they don't buy, It's not a hook issue , it's a **product or experience** issue.

- How many campaigns were run?
- Which campaigns brought in the most revenue?
- Which platforms got us the most conversions?
- Which audiences convert better?
- Where are we losing people?

- Is the product too expensive?
- Is the website too slow or confusing?
- Is the delivery time frustrating?
- Is the service not meeting expectations?

Analysis Plan

Phase 1: Mastering the Hook

Goal: Identify what time, platform, and audience bring the most engagement and conversions.

Focus	Purpose
Posting Time	Identify peak hours for engagement.
Platform	Discover which platform converts best
Audience	Understand audience behavior
Country	Locate geographic strengths

Phase 2: Funnel Efficiency

Goal: Ensure that clicks lead to actual purchases.

Important KPI :

- Number of campaigns
- Number of impressions
- Number of clicks

KPI	Metric	Purpose
Conversion Rate	Conversions / Clicks	Measure how well interest turns into action
Conversion Value	Sum of ConversionValue	Track total revenue from conversions.

Insights

- Running a total of 100 campaigns lead to :
    - 48,000 impressions
    - 4,830 clicks
    - 1,496 conversions
    - 10% of the people who saw the add clicked on it
    - 31% of the people who clicked the add converted
- Best Posting Time (by impressions): 4 AM – 7 AM
- Top Platform: Google – with ~20K impressions and over 600 conversions
- Top Countries (by conversion value): Canada (€76K), Germany (€73K)
- Top Age Group (clicks): 25–34, with performance decreasing with age
- Top Product Category (by revenue): Smartphones (€128K)
- Best Campaign (by revenue): Campaign 120 (€8.6K)

Recommendations

- Post campaigns on **Google** between **4 AM – 7 AM** to maximize impressions.
- Optimize creatives for **age 25–34,** and explore ways to **engage older groups** with tailored messaging.
- **Study Campaign 120** to replicate successful tactics.
- Though the 31% conversion rate is solid, explore potential **friction points post-click** — pricing, page design, or customer service could affect final conversions.