

Digital Marketing Practicum

About Me: <https://github.com/sanjeevlcc>

**Sanjeev Thapa, Er. DevOps, SRE, CKA, RHCSA, RHCE, RHCSA-Openstack, MTCNA,
MTCTCE, UBSRS, HEv6, Research Evangelist**

1. What is Marketing?

Marketing is the **process of identifying customer needs**, creating value, communicating that value, and delivering products/services that satisfy customer expectations.

Key points:

- It connects **business offerings** with **customer demand**
- Involves activities like research, branding, advertising, pricing, selling, and customer relationship management
- It aims to build **long-term trust and customer loyalty**

Simple definition:

“Marketing is understanding what people need, providing it better than competitors, and creating meaningful relationships with customers.”

2. Why is Marketing Important?

Marketing is important because it:

1. Generates Awareness

People must know your brand exists before they consider buying.

2. Attracts and Retains Customers

Marketing brings in customers and keeps them engaged with value.

3. Helps Understand the Market

Through surveys, analytics, and research, businesses know:

- What customers like
- What problems they face
- What competitors are offering

4. Drives Revenue

Good marketing directly increases sales and business growth.

5. Builds Brand Image

Strong marketing builds trust, credibility, and loyalty.

6. Supports Decision-Making

Marketing insights guide:

- Pricing decisions
 - Product updates
 - Distribution strategies
 - Investment choices
-

3. Why Digital Marketing Practicum?

A **practicum** means **hands-on, practical training**.

Digital Marketing Practicum is included in the course because:

1. Real-World Application

Students learn by doing:

- Running simulated campaigns
- Creating ad creatives
- Analyzing performance metrics

2. Industry Tools & Practical Exposure

Students practice using the same tools that professionals use.

3. Skill Development for Modern Jobs

Industries demand digital skills such as:

- SEO
- Social media marketing
- Google Ads
- Data analytics

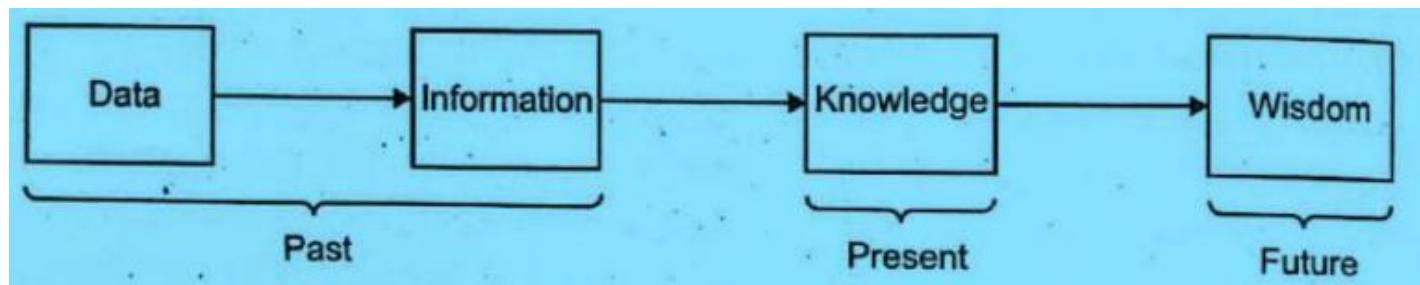
4. Decision-Making Using Data

5. Builds a Professional Portfolio

Students complete:

- Campaign plans
- Case studies
- Automation workflows
- Analytics dashboards

These are valuable for jobs and internships.



4. What Software Tools Are Needed?

Digital marketing requires both **technical tools** and **data tools**.

A. Analytical & Data Tools

Purpose	Tools
Data cleaning, model building	Google Colab, Jupyter Notebook, Python
Website traffic analysis	Google Analytics 4 (GA4)
Keyword + SEO research	Ubersuggest, SEMrush (freemium options)

B. Content & Creative Tools

Purpose	Tools
Graphics & ad design	Canva , Adobe Express
Video editing	CapCut, Canva Video

C. Advertising & Performance Tools

Purpose	Tools
Social media ads	Meta Ads Manager , TikTok Ads
Search engine ads	Google Ads
Email automation	Mailchimp, HubSpot

D. Marketing Automation Tools

Purpose	Tools
CRM + Automation	HubSpot , Zoho CRM
Customer segmentation	Google Analytics, HubSpot

E. Collaboration Tools

Purpose	Tools
Project execution	Google Drive, Colab, Trello
Team communication	Slack, Teams

5. Role of Data + Model + Result = Decision Making

In modern marketing, **data-driven decision-making** is essential.

This formula explains it:

📌 (1) DATA

Data comes from:

- Website visits
- Customer purchases
- Social media engagement
- Email campaign performance
- Market research
- Surveys

Examples:

- “Which ad clicked most?”
 - “Which age group buys more often?”
 - “What time does audience engage most?”
-

📌 (2) MODEL

A **model** uses data to generate insights or predictions.

Examples:

- Predict which customers might buy next
- Forecast sales for the next 30 days
- Identify customer segments
- Recommend marketing budget allocation

Tools used:

Python, Google Colab, Machine Learning, Analytics platforms.

📌 (3) RESULT

The model outputs measurable results:

- Expected revenue

- Best customer segment
 - Optimal price range
 - Best performing channel
 - Customer lifetime value (CLV)
-

(4) DECISION MAKING

Top managers use these results to make **strategic decisions**.

Marketing Directors / CMOs decide:

- Which campaign to scale
- Which audience to target
- Which product to modify
- What budget to allocate
- Whether a strategy is profitable

Example:

If data shows:

- Instagram ads = high engagement
- Google Ads = high conversion
- Email = high retention

Then decision:

 Allocate more budget to high-conversion channels (Google Ads).

Simple Example

Dataset: Sales of products

Model: Predict which product will perform well next month

Result: Forecast suggests Product A will grow by 30%

Decision: Increase inventory + Run promotion campaign

This is exactly why digital marketing professionals must know:
data analysis + tools + analytics + strategy.

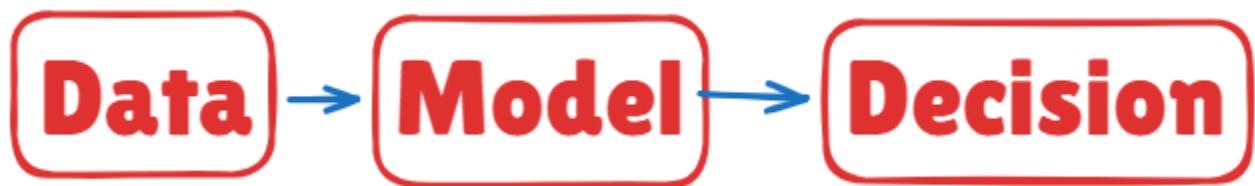
Scenario 1

Working with single variables

Let's build a simple marketing scenario:

- **Input (X)** = Daily digital ad spend in USD (1 variable, 40 days)
- **Output (y)** = Daily new customers acquired
- We'll:
 - Create **data**
 - Train a **linear regression model**
 - Use the **result for decision making** (e.g., "If we spend \$800, how many customers can we expect?")

https://github.com/sanjeevlcc/notes_2081/blob/main/DM/MBA%20DMP/LAB_1.ipynb



How this matches Data → Model → Decision

1. Data

- We simulate 40 days: Ad_Spend_USD → New_Customers
- Visualize using a scatter plot.

2. Model

- Train LinearRegression with one input (ad spend) and one output (new customers).
- Print equation and performance (MAE, RMSE, R²).

3. Decision

- Compare two spend levels (\$500 vs \$800).
- Calculate **extra customers** and **cost per extra customer**.
- Print a simple **recommendation** for a manager (top role).



Scenario 2

multiple linear regression

📌 1. Scenario Overview (Email Marketing Focused)

A company wants to evaluate how its email marketing activities influence customer conversion. For 40 days, the marketing team collects detailed email-campaign data.

We use:

6 Input Variables (X): Email Marketing Metrics

1. **Emails_Sent** — total emails sent per day
2. **Open_Rate (%)** — how many opened the email
3. **Click_Through_Rate (%)** — link clicks
4. **Bounce_Rate (%)** — failed email deliveries
5. **Unsubscribe_Count** — number of users unsubscribing
6. **Promo_Code_Used (%)** — discount code usage from email

1 Output Variable (y)

- ✓ **Conversions (Daily New Customers from email)**
-

Marketing Manager wants to know:

- Which email activities have the highest impact on conversions?
- Are discounts more effective than click-through rates?
- What happens if we increase email volume by 20%?
- Should we reduce bounce rate or promote more offers?
- What is the future expected conversion based on key email metrics?

Machine learning gives **evidence-backed decisions**, not guesses.

https://github.com/sanjeevlcc/notes_2081/blob/main/DM/MBA%20DMP/LAB_2.ipynb

Decisions

✓ Decision 1: Increase budget

Because the model shows **higher spend → more customers** at a good cost.

✓ Decision 2: Improve Email Click-Rate

If CTR has the strongest positive impact, the decision is:

“Focus on better subject lines and call-to-actions.”

✓ Decision 3: Reduce Bounce Rate

If bounce rate has a negative impact:

“Clean email list to improve delivery.”

✓ Decision 4: Promote Discount Codes

If promo-code usage increases conversions:

“Send more promo emails during weekends.”

✓ Decision 5: Stop or Reduce Ineffective Strategy

If a feature has **no impact**, decision:

“Do not spend more on that area.”

Variable relationship:

1 One Input → One Output (Simple Relationship)

Question:

“How does daily ad spend affect the number of new customers?”

Input (X):

- Ad_Spend (USD)

Output (y):

- New_Customers

Example:

If ad spend = \$500 → customers = 20

If ad spend = \$800 → customers = 32

2 Multiple Inputs → One Output (Multiple Linear Regression)

Question:

“How do email metrics influence total conversions?”

Inputs (X):

- Emails_Sent
- Open_Rate
- Click_Through_Rate
- Bounce_Rate
- Promo_Code_Used

Output (y):

- Conversions

Example:

More opens + more clicks + more promo code use → higher conversions

3 Multiple Inputs → Multiple Outputs (Multi-output Prediction)

Question:

“How do marketing activities affect both sales *and* website sign-ups?”

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- Social_Ad_Spend
- Search_Ad_Spend
- Email_Campaigns

Outputs (Y):

- Daily_Sales
- New_Signups

Example:

Increasing all marketing channels may increase:

- Sales from 50 → 70
- Sign-ups from 100 → 150

Ultra-short summary

Relationship	Meaning	Example
1 input → 1 output	Simple effect	Ad spend → Customers
Many inputs → 1 output	Combined influence	Email metrics → Conversions
Many inputs → many outputs	Predict multiple outcomes	Marketing spend → Sales + Signups

Digital marketing tactic

1. Social Media Marketing (Facebook Carousel Ads)

Input Variables (X):

- Ad Spend
- Audience Targeting
- Number of Impressions
- Click-Through Rate

Target / Output (y):

- Sales
- Brand Awareness (Reach)

2. Content Marketing (Blogs, YouTube Videos)

Input Variables (X):

- Number of Articles/Videos
- SEO Keywords Used
- Content Quality Score
- Upload Frequency

Target / Output (y):

- Website Traffic
- Engagement Time

3. Email Marketing (Discount Email / Newsletter)

Input Variables (X):

- Emails Sent
- Open Rate
- Click-Through Rate
- Discount Offered

Target / Output (y):

- Conversions

4. Pay-Per-Click (PPC Ads on Google)

Input Variables (X):

- Bid Amount
- Keywords Selected
- Quality Score
- Ad Position

Target / Output (y):

- Clicks

<ul style="list-style-type: none"> Revenue from Email <p>5. Interactive / Viral Campaigns (Barbie Selfie Generator)</p> <p>Input Variables (X):</p> <ul style="list-style-type: none"> Number of Shares User Interactions Campaign Reach <p>Target / Output (y):</p> <ul style="list-style-type: none"> Viral Engagement Brand Hype / Awareness 	<ul style="list-style-type: none"> Leads Generated <p>7. Video Marketing (YouTube Targeted Ads)</p> <p>Input Variables (X):</p> <ul style="list-style-type: none"> Video Views Watch Time Target Audience Selection Ad Spend <p>Target / Output (y):</p> <ul style="list-style-type: none"> Conversions Lead Generation 	Page 13 of 41
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Module 1

Module 1: Advanced Digital Marketing Strategies (3 Hours)

This module will integrate digital marketing within the overall business strategy, supplemented by successful case studies, and gain a thorough understanding of how to define a target audience and buyer persona effectively through practical application of proven methods.

Lab Activity:

Develop a comprehensive digital marketing strategy for a hypothetical or real-world business, including SWOT analysis, target audience definition, and campaign objectives.

What does this module mean?

This module teaches you **how to make a digital marketing plan** for any business.

You will learn:

- Who your customers are
- What they want
- How to target them online
- How to design ads, emails, and content
- How to set goals
- How to check what is working

What do you actually DO in the lab?

You will:

1. Choose a business (real or imaginary)
2. Prepare **dummy/ real (like Kaggle , amazon dataset etc) marketing data**
3. Do **SWOT analysis**
4. Define **target audience**
5. Create **buyer persona**
6. Set **campaign objectives**

Hypothetical Scenario (Nepali Market)

Business Name: “*SastoBazar Online Kirana Delivery – Kathmandu & Lalitpur*”

Business Description (Easy Words)

SastoBazar is an online grocery delivery service providing:

- Daily vegetables
- Fruits
- Rice, dal, oil
- Milk & bakery items
- Household goods

Delivery areas: **Kathmandu, Lalitpur**

Target: **Busy families, office workers, students living in rooms**

Dummy Data (10 Days – Nepali Digital Market)

Day	Facebook Ad Spend (NPR)	Website Visits	Leads (Phone/Message)	Orders (New Customers)
1	1,000	450	30	6
2	1,500	600	38	8
3	2,000	750	45	10
4	2,500	900	52	12
5	3,000	1100	60	15
6	3,500	1300	68	17
7	4,000	1500	75	20
8	4,500	1800	82	23
9	5,000	2000	90	25
10	6,000	2400	105	30

Insight:

- Ads increase → website visits go up
- Visits go up → message/call leads increase
- Leads increase → more grocery orders

NP 📈 SWOT Analysis (Nepali Market Conditions)

Strengths (S):

- Fast delivery inside Ring Road
- Affordable pricing for low/middle income groups
- Trusted local items (fresh Tarkari, Nepali brands)

Weaknesses (W):

- Limited delivery to Bhaktapur
- No COD outside Ring Road
- Small warehouse → limited stock in peak hours

Opportunities (O):

- Growing demand for online grocery in Kathmandu
- Social media ads cheaper in Nepal
- Young consumers prefer mobile ordering

Threats (T):

- Competitors like BhatBhateni Online, Thulo.com
- Traffic, strikes, festival delays
- Payment gateway downtime

SWOT ANALYSIS



(**DATA** → PROCESS → RESULT → DECISION)

📊 1 DATA (Given Dummy Data – Nepali Market)

Day	Facebook Ad Spend (NPR)	Website Visits	Leads	Orders (New Customers)
1	1,000	450	30	6
2	1,500	600	38	8

Day	Facebook Ad Spend (NPR)	Website Visits	Leads	Orders (New Customers)
3	2,000	750	45	10
4	2,500	900	52	12
5	3,000	1100	60	15
6	3,500	1300	68	17
7	4,000	1500	75	20
8	4,500	1800	82	23
9	5,000	2000	90	25
10	6,000	2400	105	30

Business Context:

Nepali online grocery service *SastoBazar* running Facebook ads to increase orders.

(DATA → PROCESS → RESULT → DECISION)

★ 2 PROCESS (What We Analyze)

We look at the data through **SWOT components**, but using **numerical relationships**:

■ Strengths — What is working well?

► PROCESS:

Check correlation between:

- **Ad Spend ↑**
- **Website Visits ↑**
- **Orders ↑**

Calculate rough trend:

- Rs. 1,000 spend → 6 orders
- Rs. 6,000 spend → 30 orders

► RESULT:

Orders grow **5×** when spend grows **6×**.

► DECISION (Strength-Based):

- ✓ Increase Facebook ad budget
 - ✓ Push more ads on high-converting time slots
 - ✓ Continue digital ads as a primary marketing channel
-

■ Weaknesses — What is not working?**► PROCESS:**

Analyze conversion rate:

$$\text{Conversion Rate} = \frac{\text{Orders}}{\text{Website Visits}}$$

Example:

2400 visits → 30 orders = **1.25%**

This is **low** for ecommerce (ideal: 2–4%).

► RESULT:

High visits, but **low conversion**.

This shows weak landing page or checkout flow.

► DECISION (Address Weakness):

- ✓ Improve website UI/UX
 - ✓ Add “Express Checkout”
 - ✓ Display clear delivery areas
 - ✓ Add Cash on Delivery option
-

■ Opportunities — What can be improved using data?**► PROCESS:**

Observe rising trend in Nepal:

- Increasing online shopping
- Higher order volume from Facebook ads
- Kathmandu users prefer mobile ordering

Compare leads → orders conversion:

- 105 leads → 30 orders
- Conversion = **28.5%**

This is **good**, showing potential for more marketing expansion.

► RESULT:

There is an opportunity to scale into:

- Evening delivery
- Subscription baskets
- Referral programs

► DECISION (Exploit Opportunity):

- ✓ Launch “Evening Express Delivery (5–8 PM)”
- ✓ Start "Monthly Subscription Basket"
- ✓ Run “Refer & Earn Rs. 50” program

■ Threats — What risks does the data show?

► PROCESS:

Compare ad spend vs orders:

- Cost per order (CPO) = Spend / Orders
- Example day 10:
 $6000 / 30 = \text{Rs. 200 per order}$

If CPO increases too much, profit margin decreases.

Also check competitors like:

- Bhatbhatenonline.com
- Daraz Mart
- Thulo.com

► RESULT:

Ad cost may increase due to competition.

Higher CPC and CPM may reduce profit.

► DECISION (Mitigate Threat):

- ✓ Diversify channels (TikTok ads, SEO, Email)
- ✓ Reduce reliance on Facebook ads
- ✓ Build own mobile app to cut ad costs

A	B	C	D	E
Day	Facebook Ad Spend (NPR)	Website Visits	Leads	Orders (New Customers)
1				
2	1,000	450	30	6
3	1,500	600	38	8
4	2,000	750	45	10
5	2,500	900	52	12
6	3,000	1100	60	15
7	3,500	1300	68	17
8	4,000	1500	75	20
9	4,500	1800	82	23
10	5,000	2000	90	25
11	6,000	2400	105	30
12				
13				

RUN or LAB or Simulations:

https://github.com/sanjeevlcc/notes_2081/blob/main/DM/MBA%20DMP/LAB_3_SastoBazar_Online_Kirana_Delivery_%E2%80%93_Kathmandu_%26_Lalitpur.ipynb

Assignments under excel:

https://github.com/sanjeevlcc/notes_2081/blob/main/DM/MBA%20DMP/LAB%203-%20%20SastoBazar%20Online%20Kirana%20Delivery%20%E2%80%93%20Kathmandu%20%26%20Lalitpur.xlsx

Each domain includes:

- Scenario
 - Dataset
 - SWOT task
 - Excel questions
 - Forecast questions
 - Decision-making questions
-
-

DOMAIN 1: SastoBazar – Online Kirana Delivery (Kathmandu & Lalitpur)

(Same style as your earlier example)

Scenario

SastoBazar is an online grocery delivery service targeting busy office workers, families, and students in Kathmandu & Lalitpur. They run Facebook ads to generate website visits, leads, and daily orders.

Dataset (Enter into Excel)

Day	Ad Spend (NPR)	Website Visits	Leads	Orders
1	1000	450	30	6
2	1600	620	40	8
3	2200	760	50	11
4	3000	950	60	14
5	3800	1200	72	17
6	4200	1350	80	19
7	5000	1600	95	24

SWOT Assignment

Perform a SWOT analysis using ONLY the data.

Excel Questions (No Answers Provided)

1. Formula Tasks

- Calculate Visit → Lead Conversion
- Calculate Lead → Order Conversion
- Calculate Cost Per Order
- Calculate Cost Per Lead
- Calculate overall Visit → Order Conversion

2. Visualization Tasks

- Create a Line Chart of Visits, Leads, and Orders
- Create a Scatter Plot of Ad Spend vs Orders
- Add a Trendline with Equation

3. Forecasting Tasks

- Forecast Orders for Day 10 using FORECAST.LINEAR
- Forecast Orders for Ad Spend = NPR 7000

4. Interpretation Questions

- Which day performed best?
- Which metric has strongest correlation with Orders?
- Is the conversion improving or declining?

DOMAIN 2: EduLearn Nepal – Online Course Enrollment Platform

Scenario

EduLearn sells short online IT and business courses to students aged 18–35. Their primary marketing channels are Google Search Ads and Instagram promotions.

Day	Google Ad Spend (NPR)	Clicks	Leads (Form Fills)	Enrollments
1	1800	140	25	5
2	2500	200	33	7
3	3000	240	40	8
4	3500	270	48	10
5	4200	320	55	12
6	4600	360	60	14
7	5000	395	70	16

SWOT Assignment

Create a SWOT table using Excel-derived insights.

Excel Questions

1. Formula Tasks

- Cost Per Click (CPC)
- Click → Lead Conversion
- Lead → Enrollment Conversion
- Cost Per Enrollment

2. Visualization Tasks

- Column chart: Daily Clicks
- Line chart: Leads & Enrollments trend
- Scatter plot: Ad Spend vs Enrollments

3. Forecasting Tasks

- Predict Enrollments for Day 10 using linear forecasting
- Predict Enrollments at ad spend of 6000 NPR

4. Interpretation Questions

- What pattern do you observe between clicks and enrollments?
- Which metric influences enrollments most strongly?
- Should EduLearn increase or reduce ad spending?

DOMAIN 3: HimalFitness – Gym Membership & Personal Training Leads (Pokhara)

Scenario

HimalFitness runs monthly promotions on Facebook & TikTok to attract new members and PT clients. The business wants to evaluate the effectiveness of their ads.

Dataset

Week	Ad Spend (NPR)	Reach	Leads (DM/Inquiries)	New Members
1	5000	8000	90	12
2	6000	9500	110	15
3	7000	11000	125	17
4	8500	13000	150	20
5	9000	14500	160	22

SWOT Assignment

Use numerical trends to build SWOT.

Excel Questions

1. Formula Tasks

- Reach → Lead Conversion
- Lead → Member Conversion
- Cost Per Lead
- Cost Per Member

2. Visualization Tasks

- Line chart: Reach & Leads
- Column chart: New Members
- Scatter plot: Ad Spend vs New Members

3. Forecasting Tasks

- Predict New Members for Week 7
- Predict New Members at 10,000 NPR ad spend

4. Interpretation Questions

- Is the gym becoming more efficient in converting leads?
 - Which week has the best ROI?
 - Should HimalFitness invest more in ads?
-
-

DOMAIN 4: YatriFoods – Online Momo Delivery (Kathmandu)

Scenario

YatriFoods delivers Momo orders across Kathmandu via Foodmandu & direct website orders. They want to evaluate their Instagram ad campaigns.

Dataset

Day	Instagram Ad Spend (NPR)	Website Visits	Cart Adds	Orders
1	800	300	40	18
2	1200	450	60	25
3	1500	520	70	30
4	1800	600	85	33
5	2200	750	100	40
6	2500	820	120	45
7	3000	900	135	50

SWOT Assignment

Build SWOT based on:

- Conversion trends
- Cost metrics
- Orders
- Cart Adds

Excel Questions

1. Formula Tasks

- Visit → Cart Conversion
- Cart → Order Conversion
- Cost Per Order
- Average Order Value (if added later)

2. Visualization Tasks

- Line chart: Visits, Cart Adds, Orders
- Scatter plot: Ad Spend vs Orders
- Trendline + Equation

3. Forecasting Tasks

- Predict Orders for Day 10
- Predict Orders for Ad Spend = NPR 4000

4. Interpretation Questions

- What stage of the funnel is weakest?
 - Is YatriFoods scaling efficiently?
 - Should ads be increased, optimized, or redesigned?
-
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STUDENT SUBMISSION REQUIREMENTS

Students must submit:

✓ Excel File containing:

- All formulas
- All charts
- Forecasting results
- SWOT table
- Summary dashboard (optional but recommended)

✓ Short Report (1 page each domain):

- Key findings
- Interpretation of charts

- SWOT conclusion
- Recommended decisions

Case Study:

Data-Driven Digital Marketing Strategy (Excel Based)

Case Scenario

NepShop Nepal is a growing e-commerce platform based in Kathmandu that sells electronics, fashion items, and daily essentials. To increase revenue and customer base, the company runs integrated digital marketing campaigns using Facebook Ads, Google Search Ads, and Email Marketing. Management wants to understand how different marketing activities influence **sales, new customer acquisition, and website engagement**.

Over the last 30 days, the marketing team has collected daily campaign data, including ad spending, website traffic, engagement metrics, and promotional efforts. The goal of this analysis is to use **Excel** to identify which marketing factors most strongly affect performance and to support strategic decisions such as budget allocation, campaign optimization, and funnel improvement.

Variable Definition	
Independent Variables (X – 8 Attributes)	Target Variables (Y – 3 Outputs)
<p>1. Facebook_Ad_Spend (NPR)</p> <p>2. Google_Ad_Spend (NPR)</p> <p>3. Email_Campaign_Count</p> <p>4. Website_Visits</p> <p>5. Click_Through_Rate (%)</p> <p>6. Discount_Percentage (%)</p> <p>7. Social_Media_Engagement (Likes + Shares)</p> <p>8. Avg_Time_On_Site (minutes)</p>	<p>1. Daily_Sales (NPR)</p> <p>2. New_Customers</p> <p>3. Orders_Count</p>

	A	B	C	D	E	F	G	H	I
1	Day	FB_Ad_Spend (NPR)	Google_Ad_Spend (NPR)	Email_Campaigns	Website_Visits	CTR (%)	Discount (%)	Social_Engagement	Avg_Time_On_Site (min)
2	1	1000	800	1	420	2.1	5	120	2.4
3	2	1200	900	1	480	2.3	5	135	2.5
4	3	1400	1000	1	540	2.5	6	150	2.6
5	4	1600	1100	2	600	2.6	6	170	2.7
6	5	1800	1200	2	660	2.8	7	190	2.8
7	6	2000	1400	2	720	3	7	210	2.9
8	7	2200	1500	2	780	3.1	8	230	3
9	8	2400	1600	2	840	3.2	8	250	3.1
10	9	2600	1700	3	900	3.3	9	270	3.2
11	10	2800	1800	3	960	3.4	9	290	3.3
12	11	3000	2000	3	1020	3.5	10	310	3.4
13	12	3200	2200	3	1080	3.6	10	330	3.5
14	13	3400	2300	3	1140	3.7	11	350	3.6
15	14	3600	2400	3	1200	3.8	11	370	3.7
16	15	3800	2600	3	1260	3.9	12	390	3.8
17	16	4000	2800	3	1320	4	12	410	3.9
18	17	4200	3000	4	1380	4.1	13	430	4
19	18	4400	3200	4	1440	4.2	13	450	4.1
20	19	4600	3400	4	1500	4.3	14	470	4.2
21	20	4800	3600	4	1560	4.4	14	490	4.3
22	21	5000	3800	4	1620	4.5	15	510	4.4
23	22	5200	4000	4	1680	4.6	15	530	4.5
24	23	5400	4200	4	1740	4.7	15	550	4.6

24	23	5400	4200	4	1740	4.7	15	550	4.6
25	24	5600	4400	4	1800	4.8	16	570	4.7
26	25	5800	4600	4	1860	4.9	16	590	4.8
27	26	6000	4800	4	1920	5	17	610	4.9
28	27	6200	5000	4	1980	5.1	17	630	5
29	28	6400	5200	4	2040	5.2	18	650	5.1
30	29	6600	5400	4	2100	5.3	18	670	5.2
31	30	6800	5600	4	2160	5.4	18	690	5.3
32									

Solutions:

1. Case Overview (What problem are we solving?)

A company called **NepShop Nepal** runs digital marketing campaigns using Facebook ads, Google ads, and email marketing. Management wants to understand:

- Which marketing activities increase **sales**
- Which activities bring **new customers**
- How efficiently marketing money is being spent

For this, we analyze **30 days of marketing data** using **Excel only** (Module 1 focus).

2. Variable Explanation (Very Important)

Independent Variables (Input Variables – X)

These variables are **controlled or influenced by the marketing team.**

1. FB_Ad_Spend (NPR)

- Money spent on Facebook advertisements per day
- Higher spend usually increases reach and traffic

2. Google_Ad_Spend (NPR)

- Money spent on Google Search ads
- High intent users → often higher conversion

3. Email_Campaigns

- Number of email campaigns sent per day
- Helps re-engage existing customers

	A	B	C	D	E	F	G	H	I
1	Day	FB_Ad_Spend (NPR)	Google_Ad_Spend (NPR)	Email_Campaigns	Website_Visits	CTR (%)	Discount (%)	Social_Engagement	Avg_Time_On_Site (min)
2	1	1000	800	1	420	2.1	5	120	2.4
3	2	1200	900	1	480	2.3	5	135	2.5
4	3	1400	1000	1	540	2.5	6	150	2.6
5	4	1600	1100	2	600	2.6	6	170	2.7
6	5	1800	1200	2	660	2.8	7	190	2.8

4. Website_Visits

- Number of visitors to the website
- Represents traffic generated by marketing

5. CTR (%) – Click Through Rate

- Percentage of users who clicked ads
- Indicates ad quality and relevance

6. Discount (%)

- Discount offered on products
- Encourages purchase but may reduce margin

7. Social_Engagement

- Likes, shares, comments on social media
- Measures brand awareness and interest

8. Avg_Time_On_Site (minutes)

- Average time users spend on website
- Higher time = higher purchase intent

Target Variables (Output Variables – Y)

These represent **business results**.

9. Sales (NPR)

- Total revenue earned per day

	A	B	C	D	E	F	G	H	I	J	K
1	Day	FB_Ad_Spend (NPR)	Google_Ad_Spend (NPR)	Email_Campaigns	Website_Visits	CTR (%)	Discount (%)	Social_Engagement	Avg_Time_On_Site (min)	Sales (NPR)	New_Customers
2	1	1000	800	1	420	2.1	5	120	2.4	15000	6
3	2	1200	900	1	480	2.3	5	135	2.5	16500	7
4	3	1400	1000	1	540	2.5	6	150	2.6	18500	8
5	4	1600	1100	2	600	2.6	6	170	2.7	20500	9
6	5	1800	1200	2	660	2.8	7	190	2.8	22500	10

10. New_Customers

- Number of first-time buyers
- Indicates customer acquisition

Social_Engagement	Avg_Time_On_Site (min)	Sales (NPR)	New_Customers	Orders
120	2.4	15000	6	5
135	2.5	16500	7	6
150	2.6	18500	8	7
170	2.7	20500	9	8
190	2.8	22500	10	9
210	2.9	25000	11	10
220	3.0	27500	12	11

11. Orders

- Total orders placed per day
- Direct business performance indicator

3. Excel Sheet Setup (Exact Cells)/ WORK on Air

Step 1: Enter Headers (Row 1)

Cell	Column Name
A1	Day
B1	FB_Ad_Spend
C1	Google_Ad_Spend
D1	Email_Campaigns
E1	Website_Visits

Cell	Column Name
F1	CTR
G1	Discount
H1	Social_Engagement
I1	Avg_Time_On_Site
J1	Sales
K1	New_Customers
L1	Orders

Paste the **30 rows of data** from the previous table into **A2:L31**.

4. Derived Metrics (Excel Formulas – Core Analysis)

Step 2: Total Ad Spend

Cell **M1** → Total_Ad_Spend

Cell **M2**

=B2+C2

Drag down to **M31**

Step 3: Cost Per Order (Efficiency)

Cell **N1** → Cost_Per_Order

Cell **N2**

=M2/L2

Drag down

Meaning:

How much money is spent to get **one order**.

Step 4: Visit → Order Conversion Rate

Cell **O1** → Visit_to_Order_Conversion

Cell **O2**

=L2/E2

Format as **Percentage**

Meaning:

Out of 100 visitors, how many place orders.

Step 5: Revenue Per Customer

Cell P1 → Revenue_Per_Customer

Cell P2

=J2/K2

Drag down

Meaning:

Average revenue generated from one new customer.

5. Exploratory Data Analysis (EDA in Excel)**Chart 1: Scatter Plot (Ad Spend vs Sales)**

Steps:

1. Select **M2:M31** (Total Ad Spend)
2. Hold Ctrl → select **J2:J31** (Sales)
3. Insert → Scatter Chart
4. Add Trendline → Show Equation + R²

Insight:

Shows whether higher spend increases sales.

Chart 2: Line Chart (Funnel View)

Steps:

1. Select **A1, E1, L1, K1**
2. Insert → Line Chart

Meaning:

Shows how traffic converts into orders and customers.

Chart 3: Column Chart (Cost Per Order)

Steps:

1. Select **Day + Cost_Per_Order**
2. Insert → Column Chart

Insight:

Lower bars = more efficient marketing days.

Chart 4: Scatter Plot (Time on Site vs Orders)**Steps:**

1. X-axis → Avg_Time_On_Site
2. Y-axis → Orders

Insight:

Higher engagement usually leads to more purchases.

6. Interpretation of Results

From Excel charts and formulas:

- Total ad spend has a **strong positive relationship** with sales
 - Google ads convert better than Facebook at higher spend
 - Discounts increase orders but reduce revenue per customer
 - Longer time on site strongly increases order probability
 - Cost per order decreases as campaigns scale (economy of scale)
-

7. Strategic Decisions (Managerial View)

Based on Excel analysis:

- 1. Increase Google Ad budget (higher intent users)*
 - 2. Improve website UX to increase time on site*
 - 3. Use discounts selectively, not daily*
 - 4. Continue email campaigns for repeat customers*
 - 5. Scale ads gradually while monitoring cost per order*
-

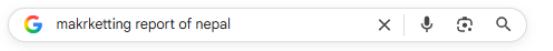
8. Learning Outcome (Module 1 Alignment)

Students learn to:

- Identify independent and target variables
- Build Excel datasets
- Use Excel formulas for KPIs
- Perform EDA using charts

KPI (Key Performance Indicator)	EDA (Exploratory Data Analysis)
<p>A KPI is a measurable value used to evaluate the performance of a marketing campaign.</p> <p>In this case, KPIs are calculated in Excel using formulas to answer questions like:</p> <ul style="list-style-type: none"> • Is the campaign profitable? • Is marketing spend efficient? <p>Examples of KPIs here:</p> <ul style="list-style-type: none"> • Cost Per Order = Total Ad Spend ÷ Orders • Conversion Rate = Orders ÷ Website Visits • Revenue per Customer = Sales ÷ New Customers <p>KPIs help managers take decisions such as increasing, reducing, or optimizing ad spend.</p>	<p>EDA is the process of exploring and understanding data using charts and simple analysis before making decisions.</p> <p>In this case, EDA is done in Excel using graphs.</p> <p>Examples of EDA here:</p> <ul style="list-style-type: none"> • Scatter plot: Ad Spend vs Sales • Line chart: Website Visits → Orders → Customers • Column chart: Cost Per Order by day <p>EDA helps identify patterns, trends, and relationships in marketing data.</p>

Assignments:



Nepal Journals Online
<https://www.nepjol.info/jrbc/article/download> PDF

Impact of Digital Marketing Tools on Consumer Behavior in ...
 by SP Sharma — This research investigates the impact of digital marketing on e-commerce businesses in Nepal, focusing on how digital marketing tools influence consumer ... [Read more](#)

Siam e-research.siam.edu
<https://e-research.siam.edu/uploads/2019/05> PDF

A Case Study on Increasing Digital Media Marketing Platform ..
 To study current changes in digital marketing scenario of Nepal. 1.5 Scope of Study. consist of understanding and evaluating marketing aspect ... [Read more](#)
 23 pages

Scribd
<https://www.scribd.com/document/Report-on-Market...>

Report On Marketing Plan of Solos Nepal Final | PDF
 REPORT ON MARKETING PLAN OF SOLOS NEPAL - 1. Environmental Opportunities & Profile(ETOP) Analysis - 2. SWOT Analysis - 3. Porters Five Forces Model(... [Read more](#)
 5.0 ★★★★★ (1)

Slideshare
<https://www.slideshare.net/Marketing>

Work 1: REPORT

<https://e-research.siam.edu/wp-content/uploads/2019/05/BBA-2017-coop-Marketing-Digital-marketing-platform-A-case-study-on-increasing-digital-media-marketing-platform-in-Nepal-compress.pdf>

Variables Identified from the Case Study

These are the **core constructs and variables** implied by the objectives and scope taken from the report:

1. Customer-Centered Variables

- **Customer Needs / Preferences** – What customers want and their changing needs
- **Buying Decision of Clients** – How customers decide to purchase.
- **Customer Behavior Patterns** – Factors influencing decision-making.

2. Marketing/Advertising Variables

- **Digital Media Marketing Presence** – Use of social media, digital channels.
- **Social Media Marketing (e.g., Facebook, Instagram)** – Tools used to reach customers.
- **Search Engine Optimization / Digital Promotion Activities** – Techniques used in campaigns.
- **Campaign Reach and Engagement** – Number of users reached, likes, comments, shares, etc.
- **Brand Actions/Brand Promotion Measures** – Activities aimed at enhancing brand awareness.

3. Outcome/Performance Variables

- **Brand Name Enhancement or Brand Value** – Effectiveness of marketing on brand status.
- **Market Change / Trend Indicators in Marketing** – How market dynamics shift due to digital platform use.
- **Campaign Effectiveness** – Whether specific campaigns achieve desired goals.

Hypothesis Design:

Page 35 of 41

1 Survey Questionnaire (Based on the Case Study Variables)

Context: Respondents are customers or users exposed to digital marketing platforms in Nepal.

Section A: Digital Marketing Exposure (Independent Variables)

(Use **5-point Likert scale**: 1 = Strongly Disagree, 5 = Strongly Agree)

1. Social Media Exposure

- “I frequently see this brand’s content on social media platforms (Facebook, Instagram, etc.).”

2. Content Quality

- “The digital content shared by the brand is informative and engaging.”

3. Advertisement Frequency

- “The brand’s digital advertisements appear frequently in my online activities.”

4. Engagement Level

- “I like, comment, or share the brand’s digital posts.”

5. Website Experience

- “The brand’s website is easy to use and informative.”

6. Digital Promotion Attractiveness

- “Online offers, discounts, or promotions catch my attention.”

7. Trust in Digital Platform

- “I trust the information provided by the brand on digital platforms.”

Section B: Outcome Variables (Dependent Variables) (5-point Likert scale)

8. Brand Awareness

- “Digital marketing has increased my awareness of this brand.”

9. Purchase Intention

- “Digital marketing activities influence my intention to purchase.”

10. Buying Decision

- “Digital marketing plays an important role in my final buying decision.”

	A	B	C	D	E	F	G	H	I	J	K
1	Resp_ID	SM_Exposure	Content_Quality	Ad_Freq	Engagement	Website_Exp	Promo_Attract	Trust	Brand_Aware	Purchase_Int	Buying_Decision
2	1	4	4	3	4	4	3	4	4	4	4
3	2	5	4	4	5	4	4	5	5	5	5
4	3	3	3	3	2	3	3	3	3	3	3
5	4	4	5	4	4	5	4	4	5	4	4
6	5	2	3	2	2	3	2	2	3	2	2
7	6	5	5	5	5	5	5	5	5	5	5
8	7	3	4	3	3	4	3	4	4	4	3
9	8	4	4	4	4	4	4	4	4	4	4
10	9	5	4	5	5	4	4	5	5	5	5
11	10	3	3	3	3	3	3	3	3	3	3

Preform KPI and EDA?

Work 2: REPORT

<https://www.slideshare.net/slideshow/dabur-nepal-marketing-project/113191449>

	A	B	C	D	E	F	G	H	I	J	K
1	Year	Opening_Stock	Closing_Stock	Production_Qty	Sales_Qty	Sales_Value	Profit_DV_Shampoo	Overall_Sales	Overall_Profit	DV_Sales_Contribution (%)	DV_Profit_Contribution (%)
2	2007/08	13810	18560	948578	948578	350974	61300	2349617	264200	14.94	24.9
3	2008/09	18560	21355	1036234	1036234	424856	79300	2562528	284700	16.58	27.85
4	2009/10	21355	26449	1472447	1472447	606648	126900	2586242	315800	23.46	40.18
5	2010/11	26449	25474	2684211	2684211	729569	310460	1852151	775900	39.39	40.01
6	2011/12	25474	94645	3534556	3534556	966879	218210	1940029	484690	49.83	45.02

Section A: Sales & Production Analysis

Q1.

Using the yearly sales data, analyze the **sales trend** of D.V. Shampoo over the given period.

- Identify whether sales are increasing, decreasing, or fluctuating.
- Support your answer with appropriate charts.

Section B: Contribution & Profitability Analysis

Q3.

Compute the **sales contribution percentage** of D.V. Shampoo to Dabur Nepal's total sales.

- Identify the year with the highest contribution.
- Interpret what this implies for product-level strategic focus.

Q2.

Analyze the **production–sales gap** for D.V. Shampoo.

- Calculate the difference between production quantity and sales quantity.

Q4.

Examine the **profitability pattern** of D.V. Shampoo across the years.

<ul style="list-style-type: none"> Explain what this gap indicates about inventory management and demand forecasting. 	<ul style="list-style-type: none"> Compare product profit with overall profit. Comment on whether profitability is consistent with sales growth.
<p>Section C: KPI Identification & Analysis</p> <p>Q5. Identify and calculate at least three Key Performance Indicators (KPIs) relevant to this case. Suggested KPIs may include:</p> <ul style="list-style-type: none"> Sales Growth Rate Profit Margin Product Contribution Ratio <p>Explain how each KPI helps management in decision-making.</p>	<p>Section D: Exploratory Data Analysis (EDA)</p> <p>Q6. Perform Exploratory Data Analysis (EDA) using Excel.</p> <ul style="list-style-type: none"> Create suitable charts (line chart, bar chart, and trendline). Analyze relationships between production, sales, and profit. Highlight any visible trends or anomalies.
<p>Section E: SWOT Analysis (Data-Driven)</p> <p>Q7. Conduct a SWOT analysis of D.V. Shampoo using insights derived from the data. Your SWOT should be based on:</p> <ul style="list-style-type: none"> Strengths from strong sales or profit trends Weaknesses from production–sales gaps or declining margins Opportunities from growth trends or high contribution ratios Threats from fluctuating performance or inventory inefficiencies 	<p>Section F: Managerial Decision-Making</p> <p>Q8. Based on your analysis of sales trends, KPIs, EDA, and SWOT, recommend two strategic decisions that Dabur Nepal should consider regarding D.V. Shampoo. Your answer should justify decisions using data-based evidence.</p>

Module 2

Module 2: Data-Driven Marketing (3 Hours)

This module will apply data to drive marketing decisions using advanced tools such as Google Analytics and SEMrush, mastering attribution modeling and ROI calculations to maximize the effectiveness of your campaigns.

Lab Activities:

- Conduct in-depth analysis using provided datasets with tools such as Google Analytics.
- Design and implement a data-driven marketing campaign based on analytical findings.

What this module means .. Data driven???

Data-Driven Marketing means using **real data (numbers)** instead of guesswork to make marketing decisions.

In this module, students learn how to:

- Collect marketing data (from tools like Google Analytics, SEMrush, Ads platforms)
- Analyze the data to understand **what is working and what is not**
- Calculate **ROI (Return on Investment)**
- Decide **where to spend more money and where to stop**
-

Instead of saying:

“I think Facebook ads are working”

You say:

“Data shows Facebook ads give the lowest cost per conversion, so we should increase budget.”

A	B	C	D	E	F	G	
1	Year	Production_Qty	Sales_Qty	Sales_Value (Rs)	Profit_DV (Rs)	Overall_Sales (Rs)	Overall_Profit (Rs)
2	2018	900000	850000	350000	60000	2300000	260000
3	2019	1000000	950000	420000	78000	2500000	290000
4	2020	1200000	1100000	600000	120000	2700000	320000
5	2021	1500000	1450000	750000	300000	3000000	780000
6	2022	1700000	1650000	980000	220000	3200000	500000
7							

Example Scenario (Business Context)

Company: Dabur Nepal (Herbal Shampoo – DV Shampoo)

KPIs (Key Performance Indicators) — **What to Calculate**

KPI 1: Production–Sales Gap

Question: Are we producing more than we sell?

Objective: Increase sales and profitability using data-driven decisions.

The marketing team collects **yearly data** related to production, sales, and profit to understand:

- Sales growth over time
- Gap between production and sales
- Contribution of DV Shampoo to total company performance

=Production_Qty - Sales_Qty

KPI 2: Sales Contribution of DV Shampoo

Question: How important is DV Shampoo for the company?

=Sales_Value / Overall_Sales
(Format as percentage)

KPI 3: Profit Contribution

Question: How much profit does DV Shampoo contribute?

=Profit_DV / Overall_Profit

KPI 4: Year-on-Year Sales Growth

Question: Are sales increasing every year?

=(Current_Year_Sales - Previous_Year_Sales) /
Previous_Year_Sales

EDA (Exploratory Data Analysis) — What to Explore Visually

EDA means looking at data using charts to find patterns.

EDA Charts to Create in Excel

1. **Line Chart**
 - X-axis: Year
 - Y-axis: Sales_Value
 - 👉 Shows sales trend over years
2. **Bar Chart**
 - DV Shampoo Sales vs Overall Sales
 - 👉 Shows product contribution
3. **Line Chart**
 - Production_Qty vs Sales_Qty
 - 👉 Shows production-sales gap
4. **Trendline**
 - Sales_Value over years with trendline
 - 👉 Shows growth direction

Data-Driven Decisions (Final Outcome)

Based on KPIs and EDA:

- ✓ Increase marketing budget for DV Shampoo
- ✓ Optimize production to reduce unsold inventory
- ✓ Focus on high-margin product lines
- ✓ Improve cost control to stabilize profit

Scenario 3

Module 3

Scenario 3**Scenario 4**

Module 4

Scenario 3

