UDACITY

Marketing Data and Technology

Draw Insights from Marketing Data

Part One: Setting Goals

Identify Key Business Objectives

Key Business Objective: A defined goal or outcome used to plan the desired direction of your company.
Write at least 3 but no more than 5 business objectives that support your business model. Each objective should be SMART.

1	*SMART Key Business Objective 1 (required)* **Within the next 12 months, increase total website revenue by 15% by optimizing high-performing marketing campaigns.**
2	*SMART Key Business Objective 2 (required)* **Over the next two quarters, improve website user engagement on key product pages by reducing the average bounce rate by 5%.**
3	*SMART Key Business Objective 3 (required)* **By the end of the next fiscal year, expand the customer base by acquiring 10% more new users compared to the previous year.**
4	*SMART Key Business Objective 4 (optional)* **Increase the repeat customer rate by 10% in the next six months through targeted email campaigns and loyalty program enhancements.**
5	*SMART Key Business Objective 5 (optional)* **Grow our social media engagement rate on our primary channels (Instagram, Facebook) by 15% in the next quarter by creating more interactive and user-generated content.**

Identify Key Performance Indicators

Key Performance Indicator (KPI): A quantifiable metric used to determine how effectively your key business objectives are being met. Ensure that the specific metric is clearly identified.

1	*Key Performance Indicator 1 for Key Business Objective 1 (required)* **Total Revenue from all marketing campaigns and website sales.**
2	*Key Performance Indicator 2 for Key Business Objective 2 (required)* **Bounce Rate on key product pages.**
3	*Key Performance Indicator 3 for Key Business Objective 3 (required)* **New Users metric in Google Analytics.**
4	*Key Performance Indicator 4 for Key Business Objective 4 (optional)* **Repeat Customer Rate, which measures the percentage of customers who have made more than one purchase.**
5	*Key Performance Indicator 5 for Key Business Objective 5 (optional)* **Social Media Engagement Rate, which measures the percentage of likes, shares, comments, and other interactions relative to the total number of followers.**

Part Two:
A/B Testing Proposal

A/B Testing Proposal: KPI, Variable, and Hypothesis

KPI used as basis for the A/B test
Bounce rate on key product page
Variable that will have an impact on the KPI
Placement of a product video on the "Google T-Shirt" product page
Hypothesis for your A/B Test
Adding a video to the product page should decrease the bounce rate by at least 5% because a video will provide a more comprehensive view of the product, and that typically means the viewer/user stayed on the page just a little bit longer.

A/B Testing Proposal: Details and results

Details of the A/B test	
Variations being tested:	Current version will be the standard product page without the video.
	Version B (testing) will be the same page with a video above the product description
User groups:	Random equal groups split 50/50 between current version and Version B
Data collection tool:	Google Optimize
Length of the test:	Either 2 weeks minimum, or 1,000 users in each group, whichever comes first

Describe how you would determine the results of the A/B test

Results would be determined by comparing the bounce rate between versions. The *lower* bounce rate for Version B would be considered the better value. If bounce rate is lower than current version, then it is confirmed and the change should be implemented.

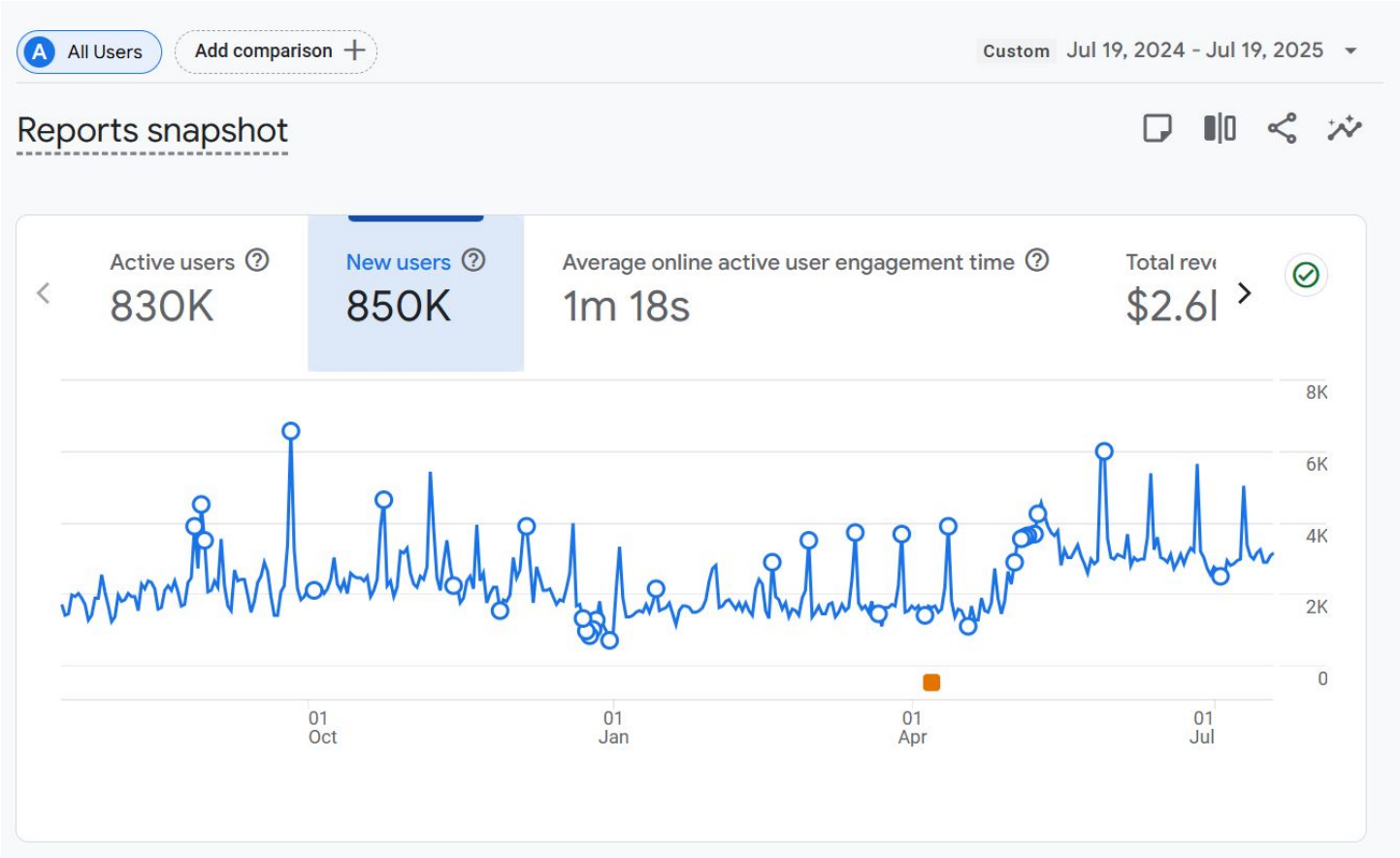
Part Three:
Data Exploration

Reports Snapshot

From the Reports Snapshot, select a twelve month time period you would like to explore.

Ensure that the following are visible in the screenshot:

- Timeframe
- New users
- Axis values



Reports Snapshot

Which month had the most new users?

September

Which month had the fewest new users?

December

Write some ideas why certain trends are associated with these specific months?

My theory is that with September, it's the start of the autumn season, leading into Halloween, Thanksgiving, and Christmas, but also the start of most school terms, and so people are inclined to buy merchandise to wear at school, new jobs, or as gifts for others. Then in December, the drop was right after Christmas, so people were financially tapped out, and feeling the effects of holiday spending.

User Tech

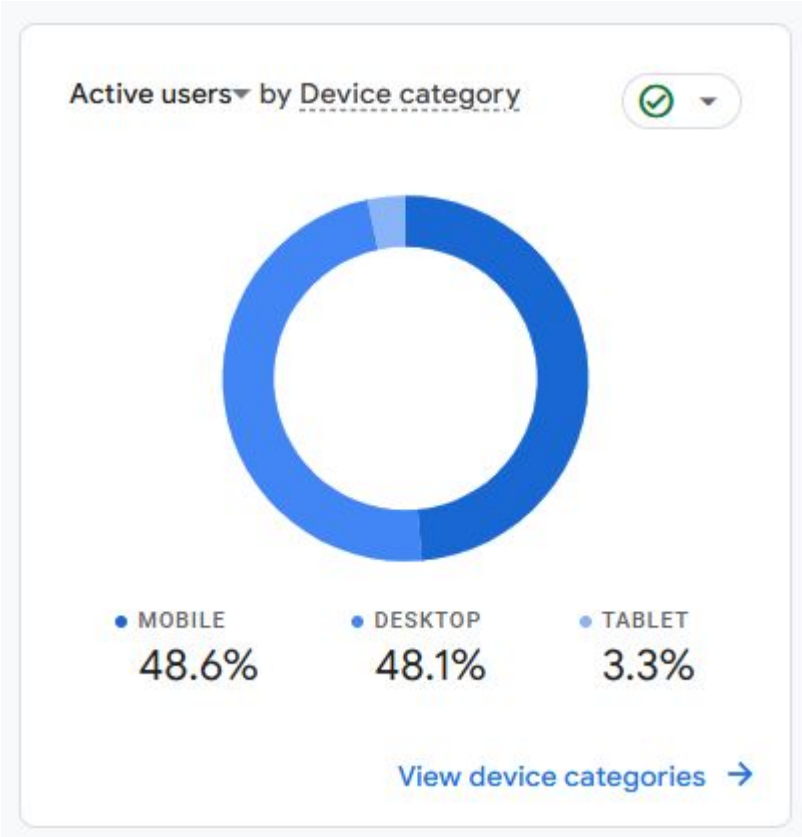
Please go into the User → Tech → Tech overview report for the following:

For the twelve month period you've chosen, provide a screenshot showing percentage chart (donut charts) of All Users that came from mobile, desktop, and tablet devices.

Ensure that the following are visible in the screenshot:

- Device Category
- Donut chart showing % breakdown by device

Note that the time frame selected does not need to be visible in the screenshot..



User Acquisition

For this section, if you are using your own business's Google Analytics data but do not have eCommerce capabilities established, please use the Google Analytics demo data provided from the Google Merchandise store.

Take a screenshot that shows the Engagement rate of the different acquisition channels over a 12 month period.

Ensure that the following are visible in the screenshot:

- Channel group
- Users
- Engagement Rate

Note that the time frame selected does not need to be visible in the screenshot, but will be reflected by the number of users.

User acquisition cohorts: First user primary channel group (Default Channel Group)

Custom Jul

Plot rows | Search... | Rows per page: 10 | Go to: 1 | 1-10 of 13

	First user prim...Channel Group)	New users	Total revenue	Transactions	Average 120d value
	Total	849,845 100% of total	$2,599,055.23 100% of total	16,527 100% of total	$3.06 Avg 0%
1	Direct	595,741 (70.1%)	$1,876,207.41 (72.19%)	11,704 (70.82%)	$3.15
2	Organic Search	174,030 (20.48%)	$334,103.05 (12.85%)	1,906 (11.53%)	$1.92
3	Referral	23,778 (2.8%)	$167,802.89 (6.46%)	1,286 (7.78%)	$7.06
4	Paid Search	21,386 (2.52%)	$36,234.36 (1.39%)	282 (1.71%)	$1.69
5	Cross-network	17,718 (2.08%)	$66,014.23 (2.54%)	444 (2.69%)	$3.73
6	Email	6,031 (0.71%)	$83,103.26 (3.2%)	650 (3.93%)	$13.78
7	Unassigned	4,530 (0.53%)	$1,773.47 (0.07%)	28 (0.17%)	$0.39
8	Organic Social	3,393 (0.4%)	$15,655.16 (0.6%)	114 (0.69%)	$4.61
9	Organic Shopping	2,447 (0.29%)	$18,161.40 (0.7%)	113 (0.68%)	$7.42
10	Paid Other	540 (0.06%)	$0.00 (0%)	0 (0%)	$0.00

User Acquisition

Life cycle

- Acquisition
  - Overview
  - User acquisition
  - Traffic acquisition
  - User acquisition cohorts
  - Lead acquisition
  - Non Google cost
- Engagement
  - Overview
  - Events
  - Pages and screens
  - Landing page
- Monetization
  - Overview
  - Ecommerce purchases

Plot rows | Search... | Rows per page: 10 | Go to: 1 | 1-10 of 13

	First user prim...Channel Group)	Total users	New users	Returning users	Average online active user engagement time	Engaged online sessions per active user
	Total	836,027 100% of total	849,845 100% of total	139,316 100% of total	1m 18s Avg 0%	0.76 Avg 0%
1	Direct	588,657 (70.41%)	595,741 (70.1%)	93,889 (67.39%)	1m 10s	0.67
2	Organic Search	168,499 (20.15%)	174,030 (20.48%)	26,752 (19.2%)	1m 17s	0.93
3	Referral	24,849 (2.97%)	23,778 (2.8%)	6,181 (4.44%)	2m 33s	1.22
4	Paid Search	21,391 (2.56%)	21,386 (2.52%)	3,915 (2.81%)	1m 38s	0.83
5	Cross-network	17,753 (2.12%)	17,718 (2.08%)	3,988 (2.86%)	2m 18s	1.10
6	Email	6,159 (0.74%)	6,031 (0.71%)	2,855 (2.05%)	4m 21s	1.95
7	Unassigned	4,576 (0.55%)	4,530 (0.53%)	685 (0.49%)	55s	0.70
8	Organic Social	3,459 (0.41%)	3,393 (0.4%)	769 (0.55%)	2m 11s	1.09
9	Organic Shopping	2,492 (0.3%)	2,447 (0.29%)	547 (0.39%)	2m 01s	1.19
10	Paid Other	540 (0.06%)	540 (0.06%)	58 (0.04%)	35s	0.54

A | Traffic acquisition: Session primary channel group (Default Channel Group) | Custom | Jul 19, 2024 - Ju

Plot rows | Search... | Rows per page: 10 | Go to: 1 | 1-10 of 13

	Session primary...Channel Group)	Sessions	Engaged sessions	Engagement rate	Average online session engagement	Online session events
	Total	1,265,642 100% of total	628,894 100% of total	49.69% Avg 0%	51s Avg 0%	13.25 Avg 0%
1	Direct	786,470 (62.14%)	335,788 (53.39%)	42.7%	41s	11.02
2	Organic Search	275,167 (21.74%)	182,442 (29.01%)	66.3%	56s	13.47
3	Referral	55,278 (4.37%)	38,435 (6.11%)	69.53%	1m 30s	19.73
4	Unassigned	38,464 (3.04%)	3,869 (0.62%)	10.06%	51s	32.67
5	Paid Search	38,254 (3.02%)	23,248 (3.7%)	60.77%	1m 16s	17.46
6	Email	27,182 (2.15%)	21,064 (3.35%)	77.49%	1m 47s	22.05
7	Cross-network	24,748 (1.96%)	19,288 (3.07%)	77.94%	1m 40s	22.16
8	Organic Social	8,164 (0.65%)	5,810 (0.92%)	71.17%	1m 33s	20.38
9	Organic Shopping	3,793 (0.3%)	3,017 (0.48%)	79.54%	1m 16s	15.88
10	Paid Other	687 (0.05%)	305 (0.05%)	44.4%	31s	9.22

User Acquisition

Which channel groups had the highest and lowest engagement rates?

Organic Shopping had the highest at 79.54% and Unassigned had the lowest at 10.06%

Which channel groups had the highest and lowest total revenue?

Direct had the highest at $1,876,207.41 and the Paid Other had the lowest at $0, followed by Unassigned at $1,773.47

What do these metrics mean, based on your experience?

In my experience, the engagement rate being high means more users are staying longer and being more active. Low engagement rate (like Paid Other and Unassigned) means that either traffic is not well-targeted or ads aren't resonating. When it comes to revenue, while paid search channels generate sales, they may not be the most cost-effective. These metrics together indicate that a channel with a high total revenue but a low average value per user may be inefficient, while a channel with a lower total revenue but a high average value per user is bringing in higher quality customers.

Monetization

For this section, if you are using your own business's Google Analytics data but do not have eCommerce capabilities established, please use the Google Analytics demo data provided from the Google Merchandise store.

During the twelve month period you've selected, provide a screenshot that shows the Item name that contributed the highest number of unique purchases and the item name that was responsible for the largest percentage of revenue? (Screenshot(s) only; no annotation required.)

Ensure that the following are visible in the screenshot:

- Item names
- Number of items purchased
- Item revenue

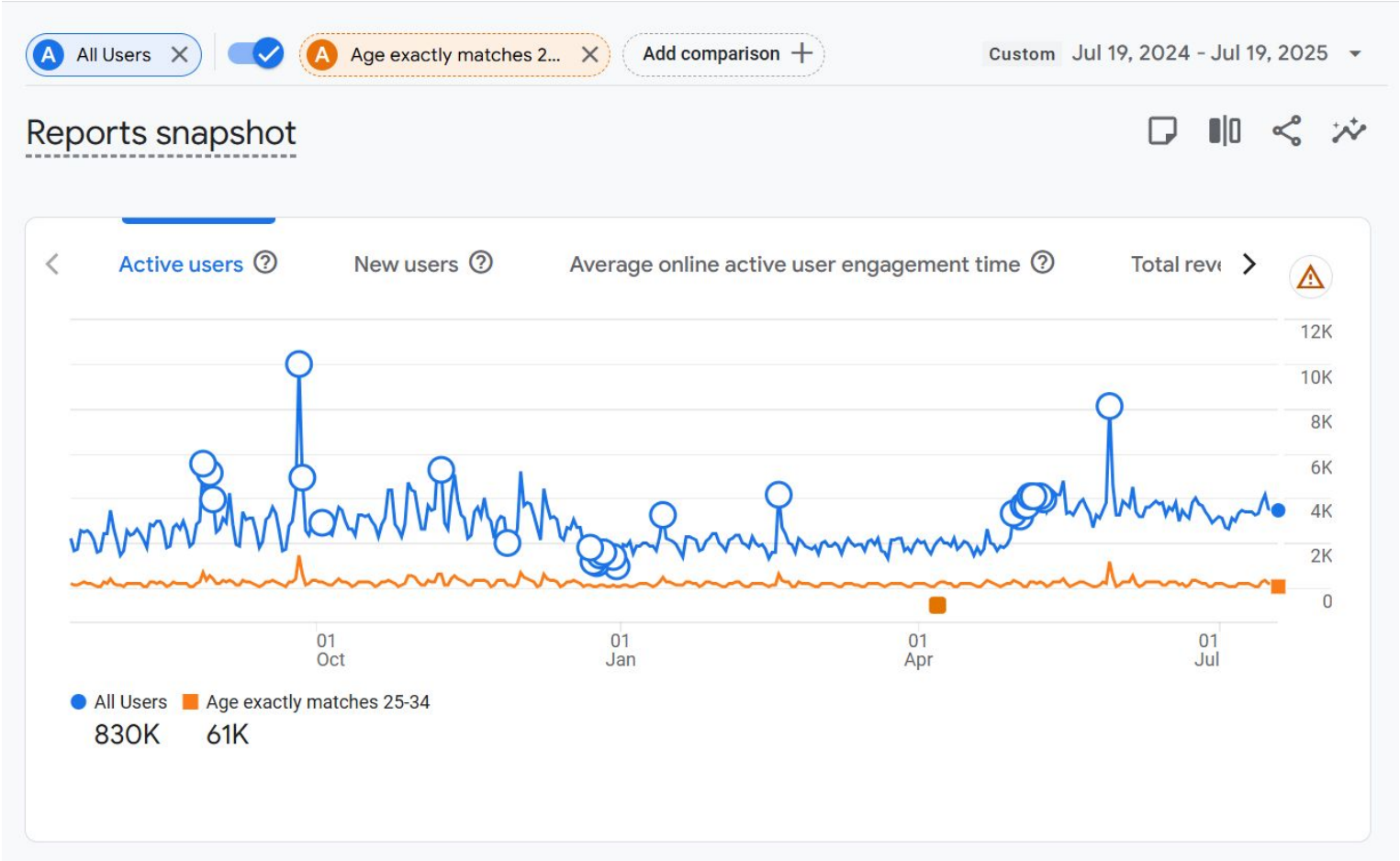
Ecommerce purchases: Item name

Custom Jul 19, 2024 - Jul 19, 2025

	Item name	Items viewed	Items added to cart	Items purchased	Item revenue
	Total	720,887 100% of total	583,524 100% of total	203,001 100% of total	$2,700,526.70 100% of total
1	Chrome Dino Holiday Lodge Sweater	10,713 (1.49%)	2,990 (0.51%)	566 (0.28%)	$36,292.60 (1.34%)
2	Super G Camp Fleece Black Pullover	9,195 (1.28%)	1,070 (0.18%)	583 (0.29%)	$44,859.00 (1.66%)
3	Super G Unisex 1/4 Sporty Zip	8,681 (1.2%)	1,115 (0.19%)	269 (0.13%)	$15,497.40 (0.57%)
4	Android Glow-in-the-Dark Collectible	8,441 (1.17%)	4,211 (0.72%)	809 (0.4%)	$14,616.00 (0.54%)
5	Google Black Eco Zip Hoodie	8,134 (1.13%)	1,688 (0.29%)	580 (0.29%)	$33,037.20 (1.22%)
6	Super G Timbuk2 Spire Jet Backpack	7,721 (1.07%)	1,657 (0.28%)	237 (0.12%)	$21,102.40 (0.78%)
7	Super G Marine Layer Banks Hoodie	7,584 (1.05%)	1,823 (0.31%)	158 (0.08%)	$15,950.00 (0.59%)
8	Super G Quilt Unisex Tee	7,402 (1.03%)	1,768 (0.3%)	0 (0%)	$0.00 (0%)

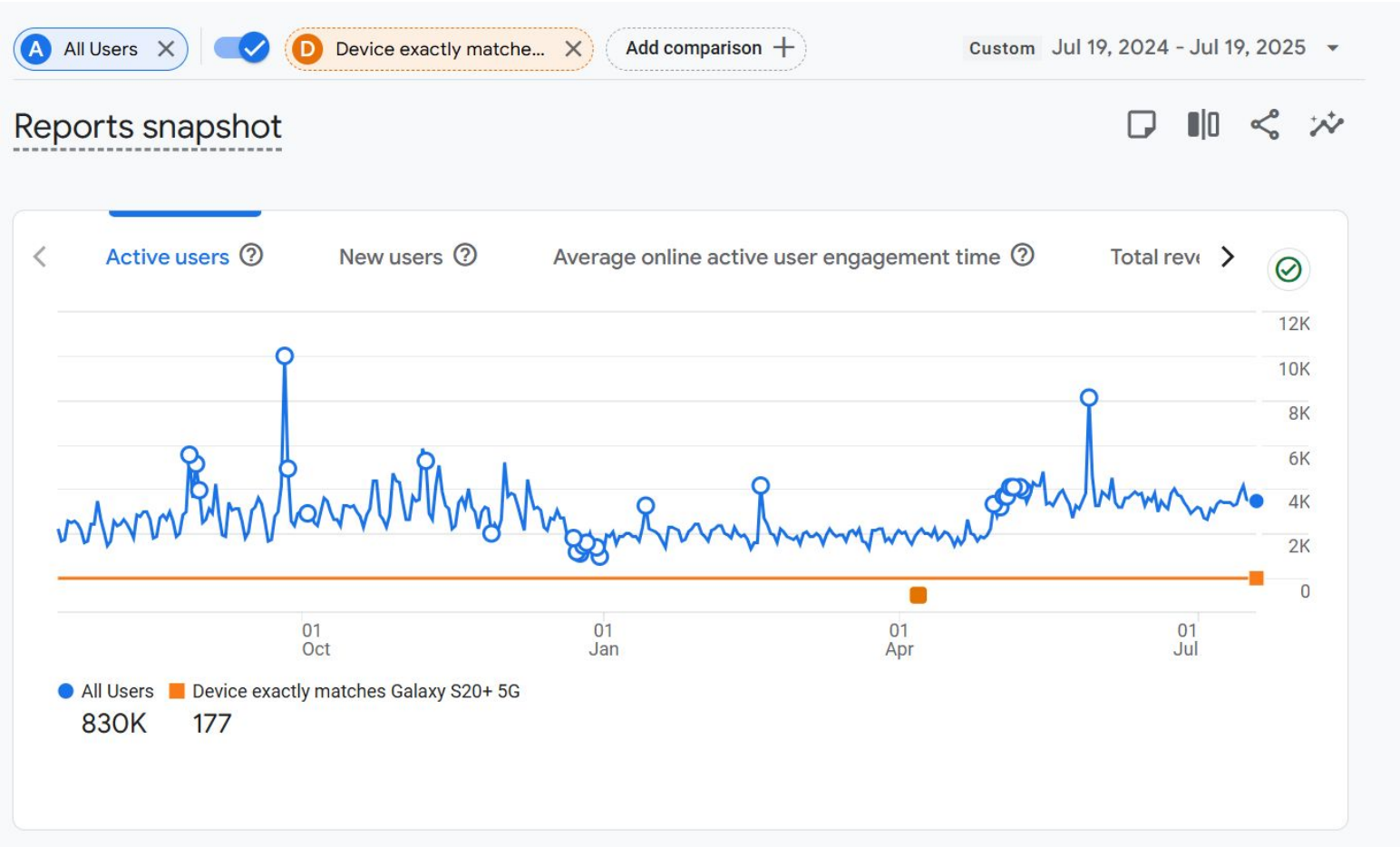
Part Four: Segmentation

Audience Segment: Demographics



Values used:	Age exactly matches 25-34

Audience Segment: Technology



Values used:	Device exactly matches 'Galaxy S20+ 5G'

Part Five:
Analysis and Suggestions

Google Merchandise Store data

You can find the results of the Google Merchandise Store campaigns below.

Campaign Name	Cost	Revenue	ROAS
Tech Trends: Discover the Latest Google Gear	$5,000	$3,000	0.6
Shop with Google: Unleash Your Digital Lifestyle	$5,000	$8,000	1.6
Google Gadgets Galore: Elevate Your Tech Game	$5,000	$8,000	1.6
Gear Up with Google: Your One-Stop Tech Shop	$8,000	$13,000	1.625
Google Merch Madness: Score Big on Tech Essentials	$5,000	$2,000	0.4
Unlock the Power of Google: Shop the Best in Tech	$2,000	$3,500	1.75
Totals	$30,000	$37,500	

Business Sales Growth

Based on the data provided, how might the campaigns be realigned and improved to potentially achieve a 20% YOY sales growth **without additional cost**? You can assume that the data will remain consistent over the projected time frame. Please reference specific data to support your answer, such as metrics and campaigns.

You could get the answer by asking yourself: Which campaign would I spend less, and which would I spend more?

Answer:
Given that the current total revenue is $37,500, and the target is 20% more, equalling $45,000. So that would raise it by $7,500. This can be done by allocating the funds from the underperforming ROAS into the campaigns that are performing well. In this example, *Tech Trends* and *Google Merch Madness* are the lowest at 0.6 and 0.4 respectively. By reallocating those funds, that's $10,000 combined that could be put towards a campaign with the highest ROAS, which in this case is the *Unlock the Power of Google* with an ROAS of 1.75. That $10k can be turned into $17.5k, which will more than cover the 20% target.

eCommerce improvements

Looking at your website pages or the Google Merchandise Store website and current eCommerce experience, identify one change to the eCommerce UX and one additional eCommerce option you would recommend implementing.

Example: One way to improve eCommerce capabilities would be to add the option of a digital wallet with the option to securely store and manage cards that have been used for payment, along with the option of using PayPal or Apple Pay.

UX change:

Fix the search feature. Many online retailers have a search bar in the header already displayed (granted many of them use Shopify, but Shopify actually learned this and implemented it long ago), so it was easier for users to find and start typing what they wanted. Right now, GMS has an icon you have to click, which is not ideal for most users.

Other eCommerce change or addition:

Virtual wallets need to be included, like PayPal, Apple Pay, and/or Google Pay. Most users want a secure checkout experience, and a blanket credit card information form could lead others to believe their information is not being protected.

Technology

It is time for some exploration! You need to find 2 emerging marketing technologies that you could use in a technology stack. For each one, you need to describe why you would use that tool.	
1	***A.I.-powered Personalization Engine***
	Uses ML to analyze real-time user behavior and generate custom homepages for users based on their search and/or purchase history, like recommended products and custom email campaigns for products they're most likely to buy.
2	***A.I. Customer Support Chatbot***
	The chatbot could answer common questions about product features, shipping times, or order status without the need for human intervention, including guiding them through the purchase process.