

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	<i>SMART Key Business Objective 1 (required)</i> <i>Increase sales by 10% by the end of next quarter</i>
---	---

2	<i>SMART Key Business Objective 2 (required)</i> <i>Increase website traffic by 5% in 2 months</i>
---	---

3	<i>SMART Key Business Objective 3 (required)</i> <i>Increase customer retention by 5% in 3 months</i>
---	--

4	<i>SMART Key Business Objective 4 (optional)</i>
---	--

5	<i>SMART Key Business Objective 5 (optional)</i>
---	--

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 sales revenue

2 *Key Performance Indicator 2 for Key Business Objective 2 (required)*

Total number of website sessions

3 *Key Performance Indicator 3 for Key Business Objective 3 (required)*

Total number of returning purchasers

4 *Key Performance Indicator 4 for Key Business Objective 4 (optional)*

5 *Key Performance Indicator 5 for Key Business Objective 5 (optional)*



Part Two: A/B Testing Proposal



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

KPI used as basis for the A/B test

Total sales revenue

Variable that will have an impact on the KPI

Images of the apparel

Hypothesis for your A/B Test

Your hypothesis should include the variable you are testing and a reason why you chose the variable. Insert the hypothesis for the A/B test here.

Adding the images of people wearing the apparel might increase the sales revenue



A/B Testing Proposal: Details and results

Details of the A/B test

Variations being tested:	<i>Describe the current version of variable Images of the apparel.</i>
	<i>Describe the variation you test Images of the people wearing the apparel.</i>
User groups:	<i>Describe how the users are split into groups They are split randomly and evenly.</i>
Data collection tool:	<i>Name the tool you are using to collect the data Google Analytics 4 (GA4)</i>
Length of the test:	<i>Determine the length in time or number of users 80000 visitors</i>

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

I would look into the total sales revenue for both groups. We want the revenue higher for the variation group than the control group.



Part Three: Data Exploration

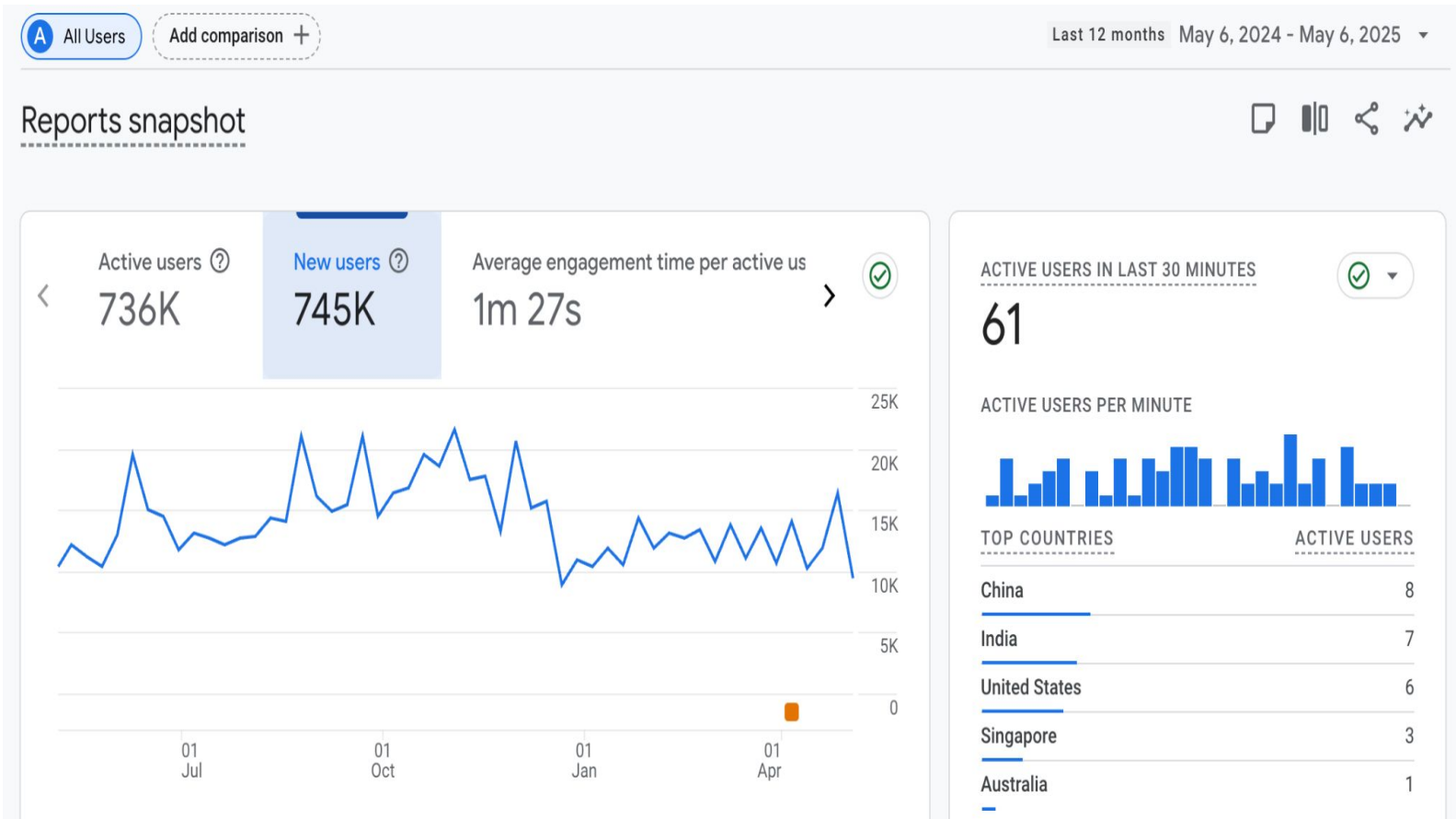
Reports Snapshot



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?

User acquisition cohorts: First user primary channel group (Default Channel Group) ✓ + Last 12 months May 6, 2024 - May 6, 2025

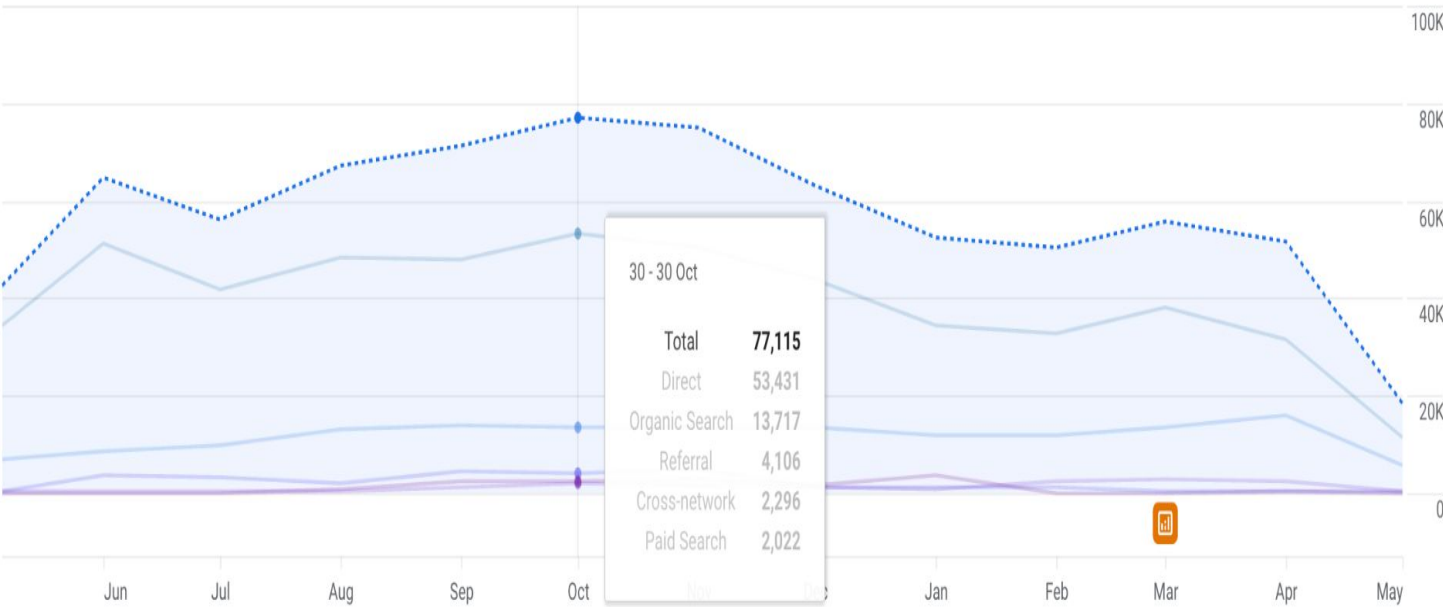
On April 5, 2025 new users from "Direct" did not increase as much as expected, increasing to 934, but falling short of the expected value of around 2.2k BETA X

This slowed growth is most salient among users from the United States, which decreased from 790 to 616 week over week.

View key drivers

New users by First user primary channel group (Default Channel Group) over time

Month ▼

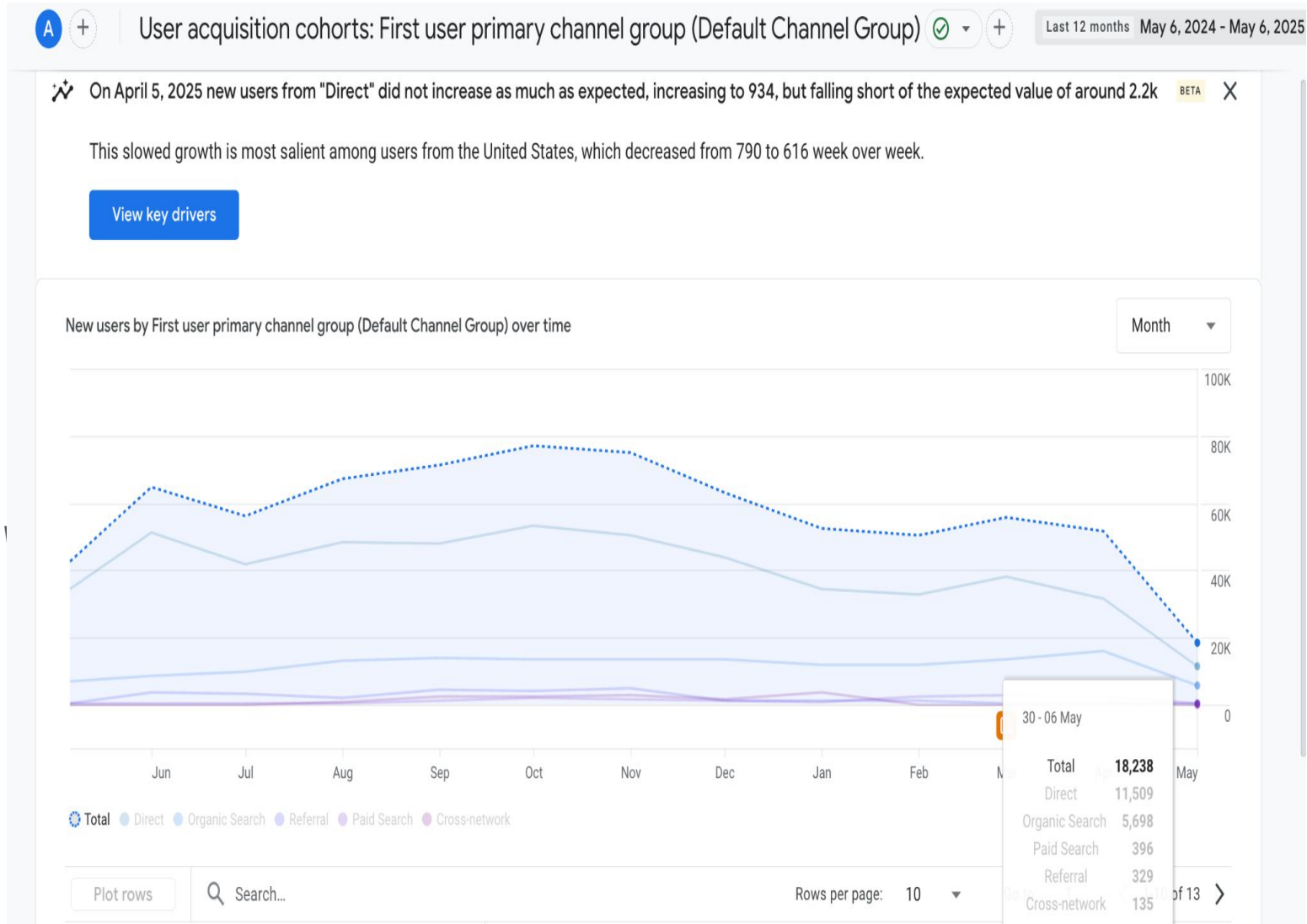


October had the most new users.



Reports Snapshot

Which month had the fewest new users?



We can see from the graph that the months of **May** in both 2024 and 2025 recorded the lowest number of new users; however, I excluded these months from the analysis as they had incomplete data. Each May only represented a partial time period unsuitable for monthly comparison. So, **February** had the fewest new users.



Reports Snapshot

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

Insert your idea(s) here about why these months have the lowest/highest amount of new users.

*The reason for most new users' visits in **October** is because they might want to make a wish list of products so that they can buy them on big events such as Black Friday and Cyber Monday, which usually happen in November and December, respectively. Additionally, we can also see the trends of the October sales campaign by the retailers and big brands.*

*The holiday season starts from late November until New Year. People spent a lot of money during this time by buying gifts and decorations, preparing festive meals, attending parties, etc. Once the season ends, people go back to work, and they have no more money to spend. Also, there could be a psychological effect that people automatically shift their mindset from spending to saving, at least for some months once the celebration ends. That's why **February** had the lowest new user visits.*

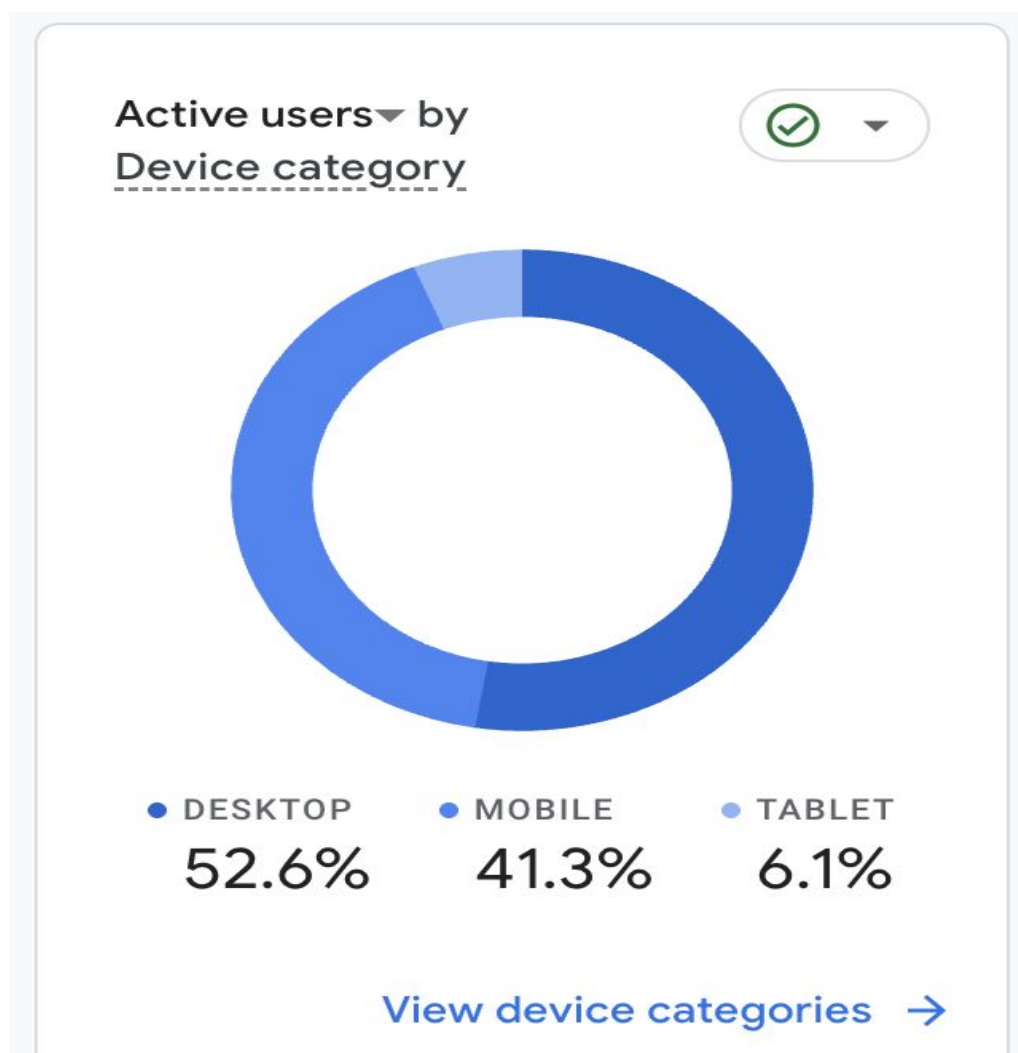
Please go into the User → Tech → Tech overview report for the following:

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 - Users



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.

First user prim...Channel Group) +		↓ Total users	New users	Returning users
<input checked="" type="checkbox"/>	Total	742,119 100% of total	747,070 100% of total	145,110 100% of total
<input checked="" type="checkbox"/>	1 Direct	519,893 (70.06%)	520,279 (69.64%)	104,758 (72.19%)
<input checked="" type="checkbox"/>	2 Organic Search	148,739 (20.04%)	152,500 (20.41%)	24,752 (17.06%)
<input checked="" type="checkbox"/>	3 Referral	28,187 (3.8%)	27,639 (3.7%)	6,178 (4.26%)
<input checked="" type="checkbox"/>	4 Paid Search	16,114 (2.17%)	15,995 (2.14%)	2,768 (1.91%)
<input checked="" type="checkbox"/>	5 Cross-network	14,372 (1.94%)	14,258 (1.91%)	2,954 (2.04%)
<input type="checkbox"/>	6 Email	5,806 (0.78%)	5,720 (0.77%)	2,676 (1.84%)
<input type="checkbox"/>	7 Unassigned	4,543 (0.61%)	3,520 (0.47%)	530 (0.37%)
<input type="checkbox"/>	8 Organic Social	3,760 (0.51%)	3,686 (0.49%)	720 (0.5%)
<input type="checkbox"/>	9 Organic Shopping	2,540 (0.34%)	2,514 (0.34%)	525 (0.36%)
<input type="checkbox"/>	10 Paid Other	694 (0.09%)	700 (0.09%)	72 (0.05%)
<input type="checkbox"/>	11 Organic Video	147 (0.02%)	145 (0.02%)	11 (<0.01%)
<input type="checkbox"/>	12 Display	113 (0.02%)	113 (0.02%)	4 (<0.01%)
<input type="checkbox"/>	13 Affiliates	1 (<0.01%)	1 (<0.01%)	0 (0%)

User Acquisition - Engagement Rate

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.

Plot rows		Search...		Rows per page: 50		1-13 of 13		
Session primary...Channel Group)		↓ Engagement rate	Average engagement time per session	Events per session	Event count All events	Key events All events	Session key event rate All events	Total revenue
Total		53.38% Avg 0%	53s Avg 0%	13.48 Avg 0%	16,302,869 100% of total	1,137,686.00 100% of total	23.73% Avg 0%	\$2,613,478.08 100% of total
<input type="checkbox"/>	1 Affiliates	↑ 100%	14s	6.00	6 (<0.01%)	0.00 (0%)	0%	↓ \$0.00 (0%)
<input checked="" type="checkbox"/>	2 Organic Shopping	84.85%	1m 14s	15.94	58,518 (0.36%)	6,472.00 (0.57%)	68.51%	\$7,570.32 (0.29%)
<input checked="" type="checkbox"/>	3 Email	78.13%	1m 47s	21.93	549,379 (3.37%)	63,002.00 (5.54%)	49.21%	\$132,085.60 (5.05%)
<input type="checkbox"/>	4 Cross-network	77.13%	1m 34s	20.92	419,058 (2.57%)	30,341.00 (2.67%)	41.06%	\$31,682.00 (1.21%)
<input checked="" type="checkbox"/>	5 Organic Social	72.58%	1m 26s	19.05	150,412 (0.92%)	15,245.00 (1.34%)	46.35%	\$32,312.13 (1.24%)
<input checked="" type="checkbox"/>	6 Referral	71.03%	1m 29s	19.66	1,143,852 (7.02%)	107,832.00 (9.48%)	39.35%	\$276,446.03 (10.58%)
<input type="checkbox"/>	7 Organic Video	70.1%	28s	9.37	1,911 (0.01%)	215.00 (0.02%)	59.31%	\$219.32 (<0.01%)
<input checked="" type="checkbox"/>	8 Organic Search	67.7%	58s	13.73	3,487,905 (21.39%)	276,457.00 (24.3%)	35.68%	\$625,267.80 (23.92%)
<input type="checkbox"/>	9 Paid Search	56.51%	1m 06s	15.56	464,850 (2.85%)	34,107.00 (3%)	26.65%	\$106,518.05 (4.08%)
<input type="checkbox"/>	10 Direct	48.74%	46s	11.66	8,837,041 (54.21%)	579,299.00 (50.92%)	17.41%	↑ \$1,359,449.06 (52.02%)
<input type="checkbox"/>	11 Paid Other	43.15%	30s	9.04	7,853 (0.05%)	301.00 (0.03%)	11.85%	↓ \$0.00 (0%)
<input type="checkbox"/>	12 Display	13.68%	0s	4.90	931 (<0.01%)	0.00 (0%)	0%	↓ \$0.00 (0%)
<input type="checkbox"/>	13 Unassigned	↓ 8.69%	51s	33.20	1,181,153 (7.25%)	24,415.00 (2.15%)	20.51%	\$41,927.77 (1.6%)



User Acquisition

Which channel groups had the highest and lowest engagement rates?

***Affiliates** had the highest engagement rate, while **Unassigned** had the lowest.*

Which channel groups had the highest and lowest total revenue?

***Direct** had the highest revenue, while three channels had zero revenue, i.e., **Affiliates**, **Paid Other**, and **Display**.*

What do these metrics mean, based on your experience?

***Affiliates** had the highest engagement rate but zero revenue, while **Unassigned** had the lowest engagement rate but much higher revenue than **Affiliates**, which means we shouldn't make decisions based on a single metric. This comparison makes sense once I look at the session report for both channels.*

*If we solely look at the revenue metrics, **Direct** had the highest revenue, whereas **Affiliates**, **Paid Other**, and **Display** have zero revenue, which shows that the company has good brand awareness and quality customers. It also reveals the need for optimizing the paid campaigns in order to reach relevant target customers.*

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:
The item name that contributed the highest number of unique purchases

- Item names
- Number of items purchased
- Item revenue

The Item name that contributed the highest number of unique purchases

Plot rows		Search...	Rows per page: 10		Go to: 1	< 1-10 of 465 >	
<input checked="" type="checkbox"/>	Item name		Items viewed	Items added to cart	Items purchased	Item revenue	
<input checked="" type="checkbox"/>	Total		48,683 100% of total	58,770 100% of total	18,379 100% of total	\$206,634.96 100% of total	
<input checked="" type="checkbox"/>	1 Google Sticker		150 (0.31%)	2,868 (4.88%)	934 (5.08%)	\$1,124.10 (0.54%)	
<input checked="" type="checkbox"/>	2 Google Ombre Purple Pen		102 (0.21%)	1,441 (2.45%)	907 (4.93%)	\$1,478.00 (0.72%)	
<input checked="" type="checkbox"/>	3 Google Bamboo Lid Recycled Bottle		120 (0.25%)	1,181 (2.01%)	712 (3.87%)	\$5,142.60 (2.49%)	
<input checked="" type="checkbox"/>	4 Google Cloud Sticker		141 (0.29%)	3,166 (5.39%)	586 (3.19%)	\$705.00 (0.34%)	
<input checked="" type="checkbox"/>	5 Google Ombre Lime Pen		74 (0.15%)	926 (1.58%)	502 (2.73%)	\$830.40 (0.4%)	
<input type="checkbox"/>	6 Super G Quilt Socks		75 (0.15%)	347 (0.59%)	476 (2.59%)	\$6,865.20 (3.32%)	
<input type="checkbox"/>	7 Google Black Wheat Pen		161 (0.33%)	1,642 (2.79%)	442 (2.4%)	\$713.20 (0.35%)	
<input type="checkbox"/>	8 Google Inspired Blue Notebook		81 (0.17%)	1,354 (2.3%)	425 (2.31%)	\$2,723.20 (1.32%)	
<input type="checkbox"/>	9 Google Inspired Green Notebook		77 (0.16%)	1,248 (2.12%)	414 (2.25%)	\$2,649.60 (1.28%)	
<input type="checkbox"/>	10 Google Ombre Yellow Pen		92 (0.19%)	1,549 (2.64%)	407 (2.21%)	\$685.20 (0.33%)	



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 was responsible for the largest percentage of revenue.

Plot rows

Q

Search...

Rows per page: 10

Go to: 1

< 1-10 of 465 >

<div><div><div></div></div></div>	<div>Item name</div>	<div>+</div>	<div>Items viewed</div>	<div>Items added to cart</div>	<div>Items purchased</div>	<div>↓ Item revenue</div>
<div><div><div></div></div></div>	Total		<div>48,683</div> <div>100% of total</div>	<div>58,770</div> <div>100% of total</div>	<div>18,379</div> <div>100% of total</div>	<div>\$206,634.96</div> <div>100% of total</div>
<div><div><div></div></div></div>	1 Super G Quilt Socks		<div>75 (0.15%)</div>	<div>347 (0.59%)</div>	<div>476 (2.59%)</div>	<div>\$6,865.20 (3.32%)</div>
<div><div><div></div></div></div>	2 Google Campus Bike		<div>330 (0.68%)</div>	<div>888 (1.51%)</div>	<div>133 (0.72%)</div>	<div>\$5,885.00 (2.85%)</div>
<div><div><div></div></div></div>	3 Google Bamboo Lid Recycled Bottle		<div>120 (0.25%)</div>	<div>1,181 (2.01%)</div>	<div>712 (3.87%)</div>	<div>\$5,142.60 (2.49%)</div>
<div><div><div></div></div></div>	4 Android Classic Plushie		<div>415 (0.85%)</div>	<div>425 (0.72%)</div>	<div>177 (0.96%)</div>	<div>\$5,133.60 (2.48%)</div>
<div><div><div></div></div></div>	5 Google Black Eco Zip Hoodie		<div>552 (1.13%)</div>	<div>189 (0.32%)</div>	<div>88 (0.48%)</div>	<div>\$5,092.20 (2.46%)</div>
<div><div><div></div></div></div>	6 Google Nomad Tech Bag		<div>123 (0.25%)</div>	<div>11 (0.02%)</div>	<div>102 (0.55%)</div>	<div>\$3,835.20 (1.86%)</div>
<div><div><div></div></div></div>	7 Super G Brick Puzzle Set		<div>232 (0.48%)</div>	<div>317 (0.54%)</div>	<div>119 (0.65%)</div>	<div>\$3,816.00 (1.85%)</div>
<div><div><div></div></div></div>	8 Google Igloo Recycled Cooler Tote		<div>70 (0.14%)</div>	<div>78 (0.13%)</div>	<div>78 (0.42%)</div>	<div>\$3,744.00 (1.81%)</div>
<div><div><div></div></div></div>	9 Google Recycled Everyday Black Tote		<div>99 (0.2%)</div>	<div>149 (0.25%)</div>	<div>150 (0.82%)</div>	<div>\$3,480.00 (1.68%)</div>
<div><div><div></div></div></div>	10 Google Vintage Cap Navy		<div>217 (0.45%)</div>	<div>264 (0.45%)</div>	<div>207 (1.13%)</div>	<div>\$3,150.20 (1.52%)</div>



Part Four: Segmentation



Audience Segment: Demographics

All Users X

☒ Gender exactly match... X

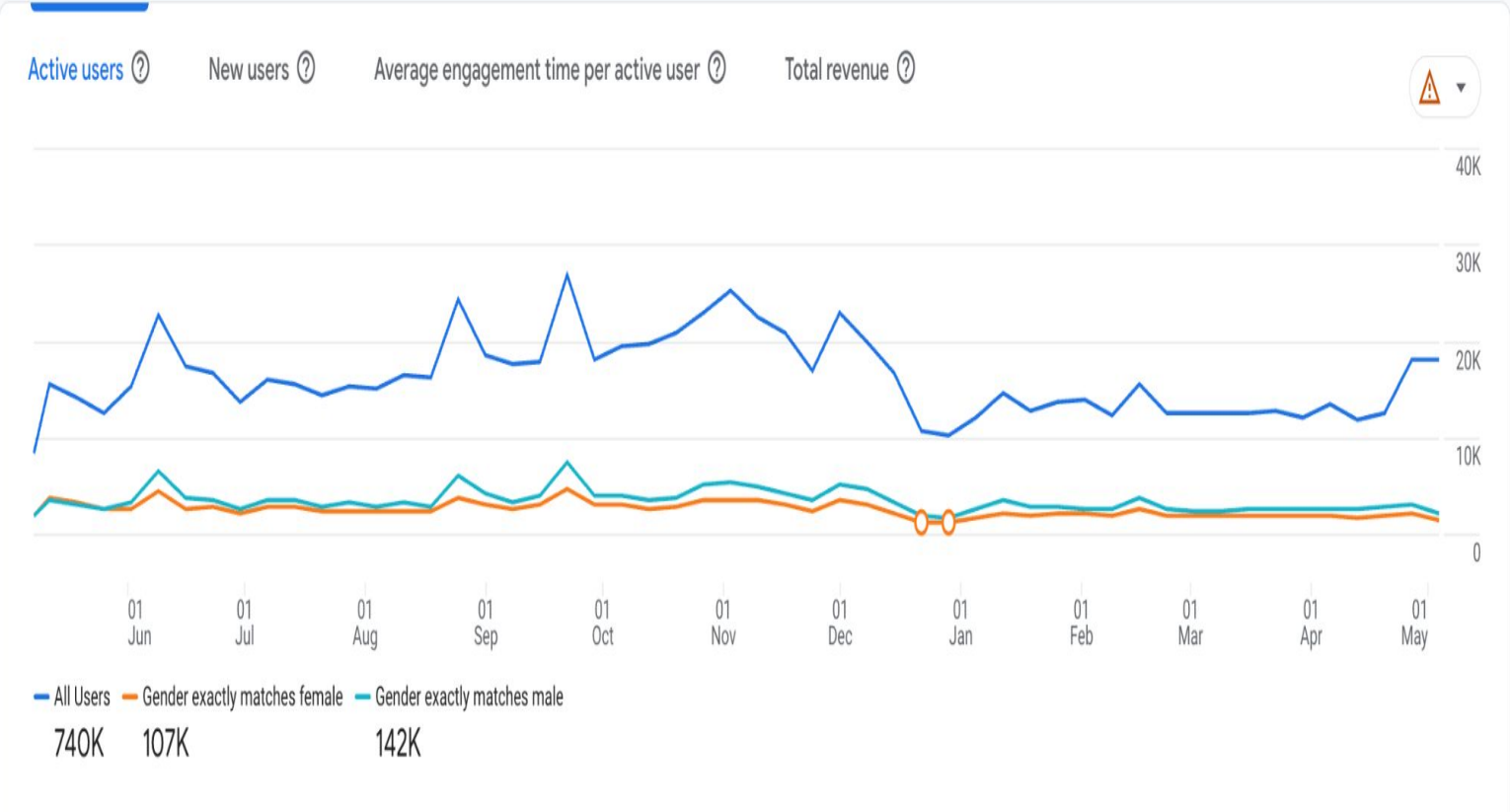
☒ Gender exactly match... X

Add comparison +

Last 12 months May 8, 2024 - May 8, 2025 ▾

Reports snapshot

📄 📊 🔗 🔄



Values used:	<div>I created two audience segments based on demographics to compare with “All Users”</div> <div>1. Gender exactly matches Male</div> <div>2. Gender exactly matches Female</div>
--------------	--

Audience Segment: Technology



A

All Users

✓

O

Operating system exactly matches Windows

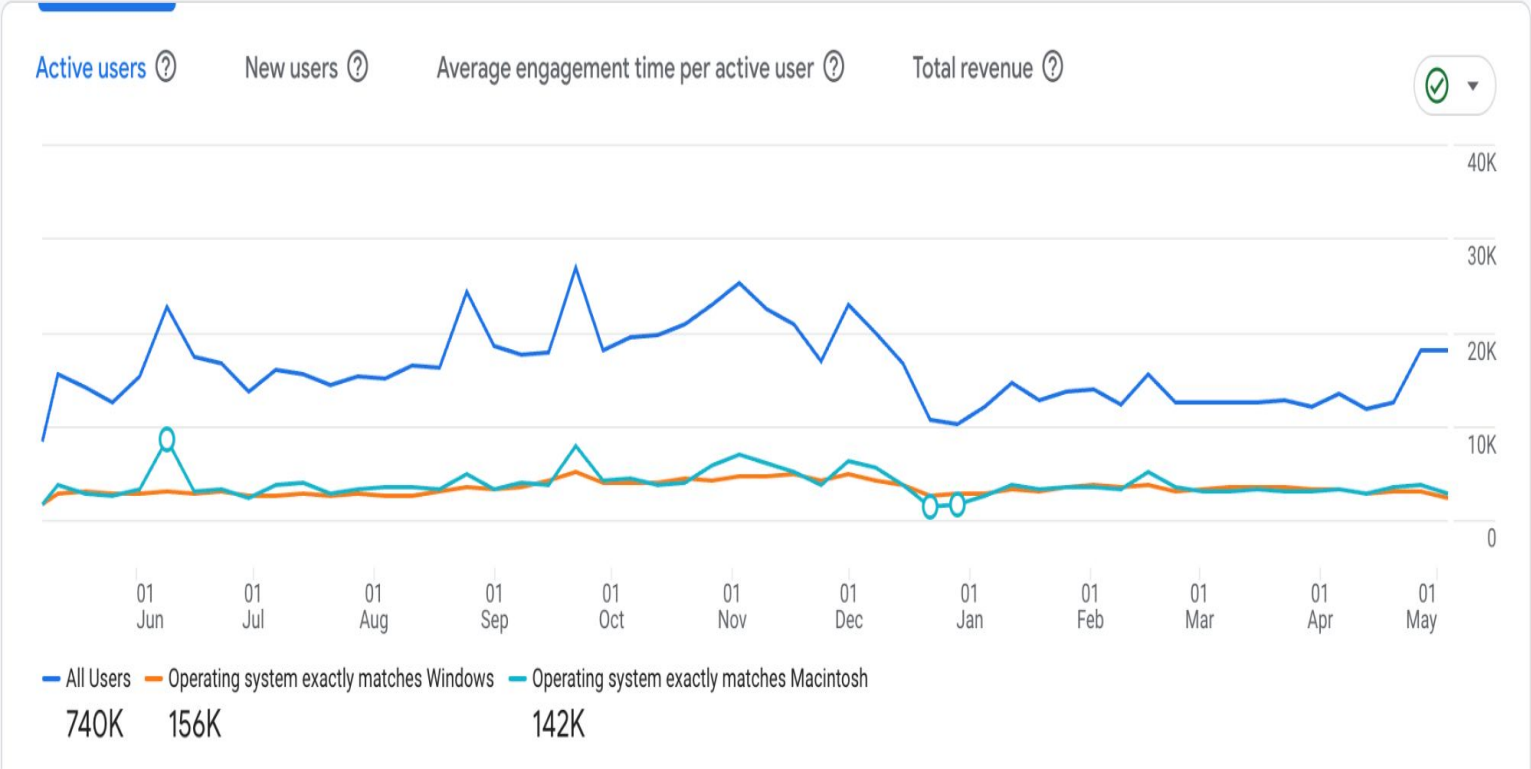
O

Operating system exactly matches Macintosh

Add comparison

Last 12 months May 8, 2024 - May 8, 2025

Reports snapshot



Values used:

I created two audience segments based on technology to compare with "All Users"

- Operating system exactly matches Windows
- Operating system exactly matches Macintosh



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?

As ROAS will be the same, I will eliminate all the campaigns operating at a loss and reinvest their costs into other remaining profitable campaigns in such a way that increases the revenue by 20% or more.



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: Currently, the store doesn't have any ratings and reviews on the items. I would recommend adding product ratings and reviews because they help to build trust and increase conversion by providing social proof.

Other eCommerce change or addition: Adding the guest checkout option to speed up purchases. This helps to reduce cart abandonment rate and friction in the checkout process. This is important, especially for first-time or infrequent buyers.



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	<i>AI driven Personalization</i>
1	<i>As the demand for personalization rises, it is very important to deliver the right message to the right audience at the right time. The AI-driven technologies help to personalize the message and deliver it to the right audience to meet their needs and expectations.</i>
	2
2	<i>First Party Data Solutions/Strategies</i>
2	<i>People are concerned about their personal data, and the privacy regulations are tightening. With these changes, we need to utilize this technology to collect first-party data for precision targeting and ensure trust.</i>