



UNIVERSITY OF
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6MARK027C.2 Digital Marketing and Web Analytics

Coursework 2 - Individual

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Task 1

Universal Analytics

A web analytics service that was launched in 2012 to track and analyze website user engagement. It tracks user interactions across multiple platforms and devices using a unique ID. It primarily provides useful information on page views, bounce rate, and average time spent on-site by users. User ID tracking, cross-domain tracking, and customized metrics are the advanced features. Despite being replaced by Google Analytics 4 (GA4), it is still widely used to make decisions about website performance and marketing strategies (Ledford, Teixeira and Tyler, 2011).

Google Analytics 4

A tool used to track and analyze user behavior on websites. Its advanced tracking features provide insights into user engagement, allowing for making better decisions regarding website and marketing strategies. GA4 does not just focus on the session and page views of the users, it uses machine learning to cluster the users based on their behavior patterns and offers improved data privacy controls. It is also designed to make website analysis more flexible and informative to get a better understanding of the users and to improve the overall online presence of a website (Pittman, 2022).

Key Differences

Table 1: Comparison of Key Features

Key Differences	Universal Analytics	Google Analytics 4
Data Measurement Model	Captured in many different types such as, page views, sessions, transaction, and social interactions.	Uses a parameter named “Event”, and one event can take up to 25 parameters.
Account Structure	Contains three elements, <ul style="list-style-type: none">- Account- Property- View	Instead of Views data streams are introduced
Session Calculations	The period that a user actively engages in a site. A session will end after 30 minutes of inactivity or if the clock passes midnight which results in a new session.	“session_start” event will generate a session ID with all subsequent events during the session are associated.

		Similar to UA session will end after 30 minutes of inactivity but midnight session can be carried over and will not be affected by encountering new campaign parameters.
Exports to Big Query	Limited to Analytics 360 properties	Available to all properties and can be queried using SQL. Free as long as usage is within the sandbox limits for BigQuery.
Changes in metrics	Bounce Rate measures the percentage of visitors leaving the website without any further interaction. This is commonly used to measure a website's performance and engagement (Lower the better).	Engaged sessions, is where the users actively engage with the website's content. Calculated based on a combination of time and interaction level. It gives accurate measure on how users engage and helps to identify on elements that need to focus more to retain visitor attention.

In conclusion, because of its use of advanced data analytics and machine learning models, GA4 surpasses Universal Analytics. The emphasis on user-centric data measurement models, predictive metrics, and improved privacy controls, combined with the ability to collect data from both web and app properties, provides website owners a more comprehensive and accurate view of user behavior and engagement. Website owners can utilize GA4 to gain deeper insights into user behavior, make better decisions, and ultimately improve their online presence.

Task 2

Steps to connect Microsite with Google Analytics 4

- **Step 01:** Sign into Google Analytics using a Google account. If it's your first-time using GA, go to the landing page and click the 'Start Measuring' button to get started.
- **Step 02:** After completing account setup, click the "Next" option and fill out the "Property Setup" and "Business Information" sections before clicking the "Create" button and agreeing to the terms and conditions.
- **Step 03:** After completing the property setup, it navigates to GA's admin page. Select "Data streams" under "Account Access Management."
- **Step 04:** To view the details of the linked website, choose web stream. Under the Tagging Instruction option, the "google site tag (gtag.js)" option will generate the source code shown below it.
- **Step 05:** After duplicating the source code, log in to the Weebly editor and access to the website's settings option.
- **Step 06:** Then, in the settings, select "SEO" and paste the copied source code in the header code section before tapping the save button to successfully link.

Screenshot of code added

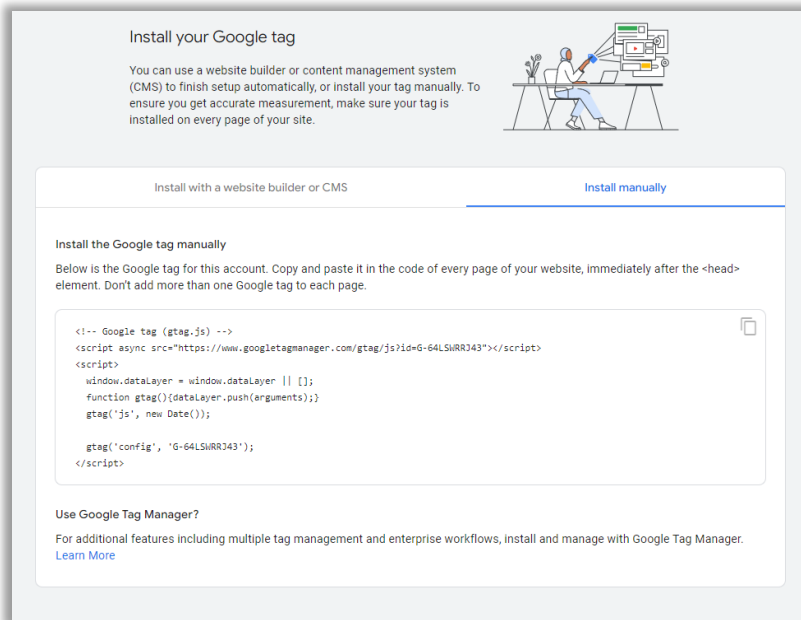


Figure 1: Code from Google Analytics

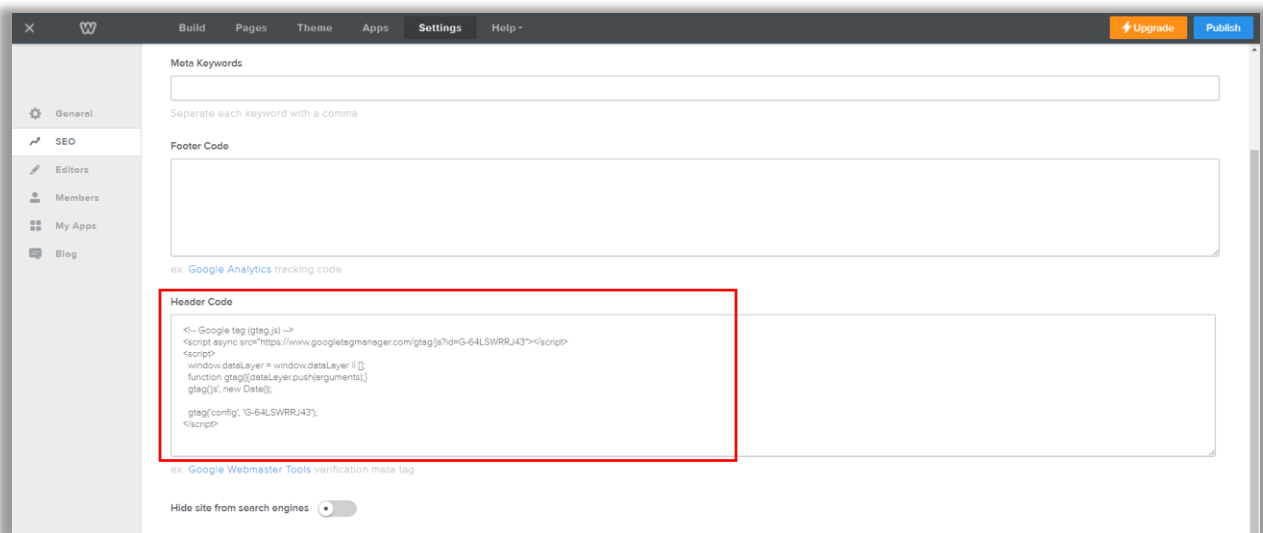


Figure 2: Code added in the Header section

Task 3

HTTP Cookies

These are small text files that are stored on a user's device by a website. These are also known as web cookies or browser cookies. These files contain data about the user's engagement and preferences on the website, which the website can utilize to personalize the user experience, track user behavior, and maintain user session state between page loads. Cookies are sent between the web client and server with HTTP requests and responses, and they play a major role in enabling modern web analytics tools to function effectively (McNab, 2007).

HTTP Cookies solving the problem of stateless web.

HTTPS is a stateless protocol used for client-server communication on the web. Stateless nature of the web meaning each HTTP request is independent and does not carry any data or information about the user's activity. Where each request is treated as a completely new request since the web server does not retrieve any data related to the previous sessions (Arvindpdmn, 2020)

However, there are scenarios that require the server to store and maintain data about the client. This is where the HTTP cookies take over and enable stateful communication on top of stateless HTTP, by authenticating the users only once and exchange information in subsequent requests using the "Session_ID", which involves sending and receiving cookies. This eliminates the need of authenticating the user unnecessarily with each request. Cookies are more suitable and useful for online banking, Q&A forums, multilingual sites and search engines (Pujolle, Serhrouchni and Ayadi, 2009).

Limitations

- **Privacy concerns** : Cookies' main role is to track user's interaction with any website, which raises privacy issues for them. This information is stored in the user's hard drive and many lack awareness of this, which makes third parties access personal browsing data (Government agencies, businesses etc.) (Strycharz et al., 2021).
- **Storage issues** : Most cookies store only up to 4kb and browsers impose restrictions on the number of cookies. Browsers except Internet Explorer allow only up to 20 cookies per website. This limitation could be a problem when trying to store cookies pertaining to larger data (Mishal, 2021).
- **Vulnerability to attacks** : Cookies are stored as text files in the hard drive, which can lead any intruder to open and view information. Also, not all sites collect cookie information legitimately, some can be malicious for the purpose of hacking. Additionally, cookies are vulnerable to attacks

such as cross-site scripting (XSS) and cross-site request forgery (CSRF) (Pujolle, Serhrouchni and Ayadi, 2009)

- **Dependent on user setting** : Users who are conscious about security risk disable cookies using the option given in the browsers. Which affects the functionality of the website. Some browsers also disable cookies automatically if the risk level is high (Miyazaki, 2008).
- **Encoding information is hard** : Process of encrypting and decrypting cookies is difficult and needs additional coding. Since it takes time, it affects the performance of the application (Mishal, 2021).

Data flow between web and client servers

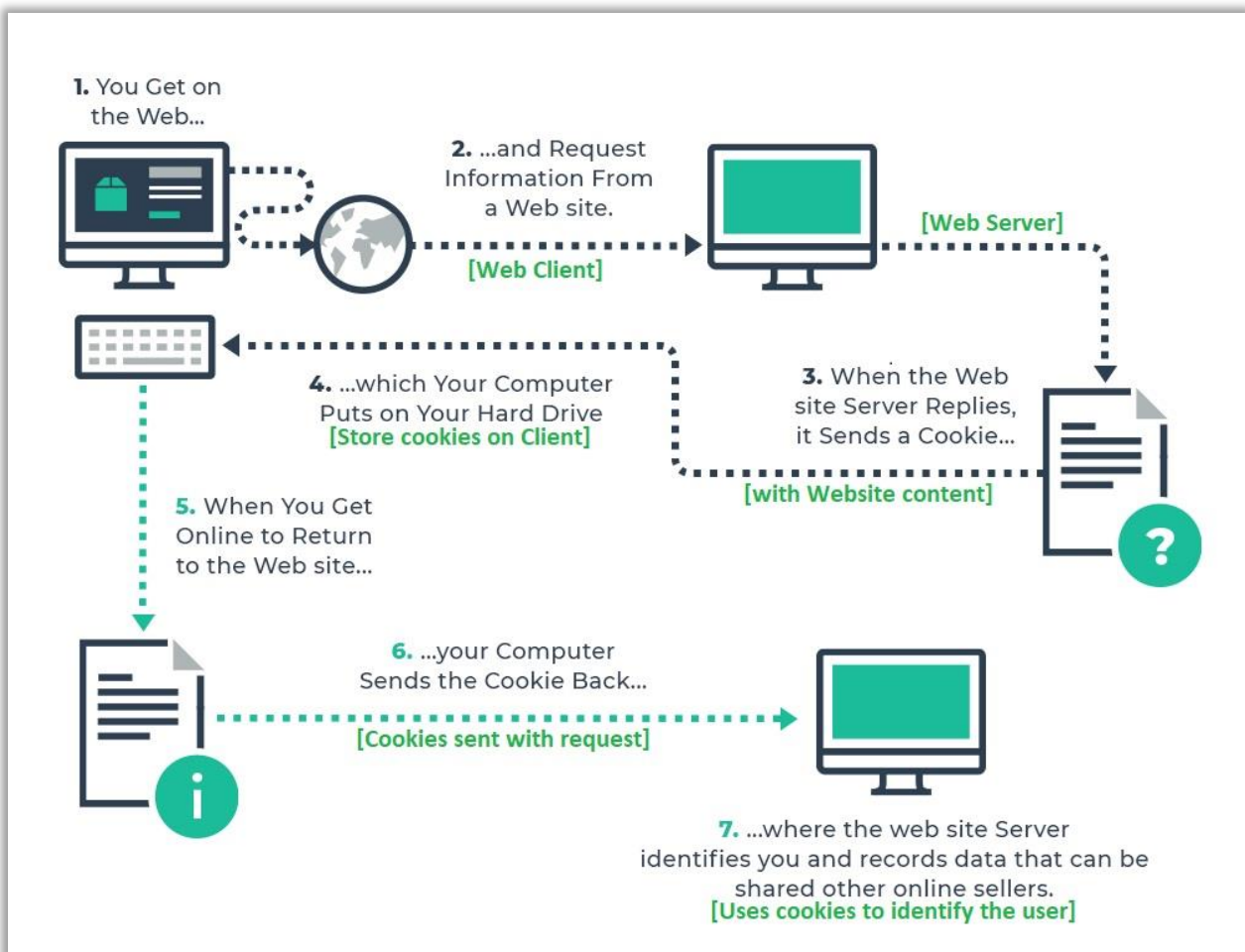


Figure 3: Data flow between Client and Web servers

Table 2: Data flow between Client and Web server

Web Client	Web Server
1. Client uses Web to browse	
2. Requests website content →	3. Replies with a Cookie, pertaining relevant website content
4. Receives the cookie and stores it in the client's Hard Drive	
5. Client requests for more content or comes back on a different occasion	
6. Cookie stored in 4. Will be sent back with the request →	7. The server identifies the user with the session ID and fulfills the request.

In conclusion, HTTP cookies help websites to maintain user session state and personalize the user experience, by using them as an essential tool for web analytics.

Task 4

The microsite was shared and monitored for five consecutive days (30th March 2023 to 3rd April 2023) and the results obtained from the reports are listed below.

GA Report 1 - User by Browser Over time

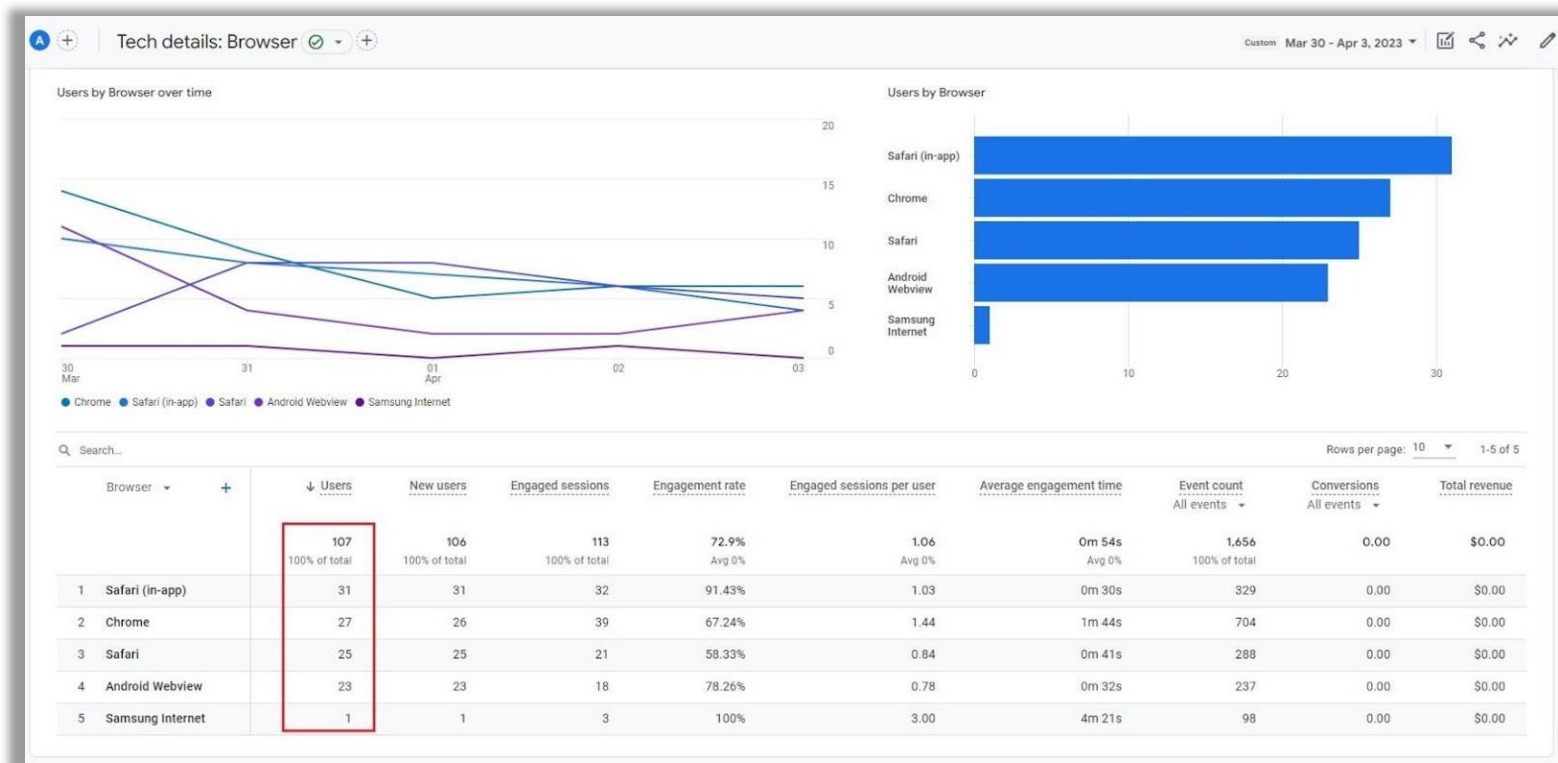


Figure 4: User by Browser Over time Report

Purpose: Information on the volume of users who used various web browsers to access the website, as well as information on how this usage varies over time. This data will help to evaluate whether the website is optimized for the most widely used browsers, which browsers the website users are using, and how their usage patterns are changes (Giordano, 2017).

Findings: Out of the 107 people who visited the website, it seems that most of them were iPhone users who used the Safari on their phone to access the site. Specifically, 31 of the visitors used Safari, while the second most used browser was Chrome.

GA Report 2 - Views by “Page Title and Screen Class” over time

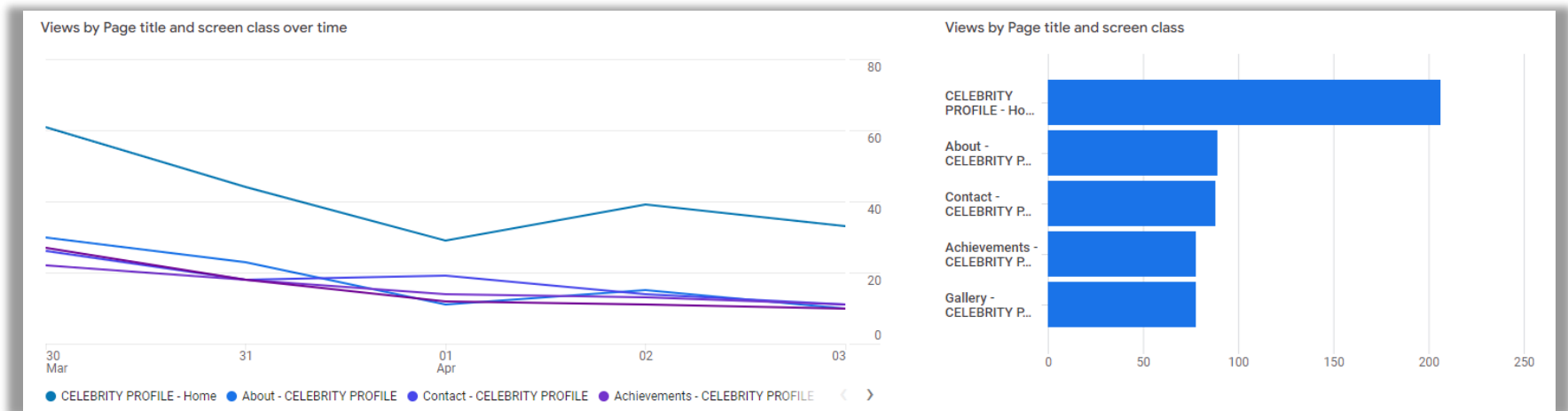


Figure 5:Page title and screen class over time

Page title and screen class ▾ +		↓ Views	Users	Views per user	Average engagement time	Event count All events ▾	Conversions All events ▾	Total revenue
		539 100% of total	107 100% of total	5.04 Avg 0%	0m 54s Avg 0%	1,656 100% of total	0.00	\$0.00
1	CELEBRITY PROFILE - Home	206	106	1.94	0m 16s	715	0.00	\$0.00
2	About - CELEBRITY PROFILE	89	52	1.71	0m 26s	247	0.00	\$0.00
3	Contact - CELEBRITY PROFILE	88	45	1.96	0m 14s	230	0.00	\$0.00
4	Achievements - CELEBRITY PROFILE	78	41	1.90	0m 19s	213	0.00	\$0.00
5	Gallery - CELEBRITY PROFILE	78	48	1.63	0m 25s	251	0.00	\$0.00

Figure 6: Page title and screen class over time - 2

Purpose: This report displays how many users have viewed each page of the website over time and across multiple screen classes (desktop, tablet, and mobile). The responsiveness of the website's content on various devices and screen sizes, as well as the evolution of users' interactions with your site, can be evaluated using this information (Burton, 2021).

Findings: As per the findings reported above, the home page displayed as "CELEBRITY PROFILE - Home," has the highest number of visitors. It has 206 views out of 539 followed by the about page with 89 views.

GA Report 3 - Sessions by “Session default channel grouping”

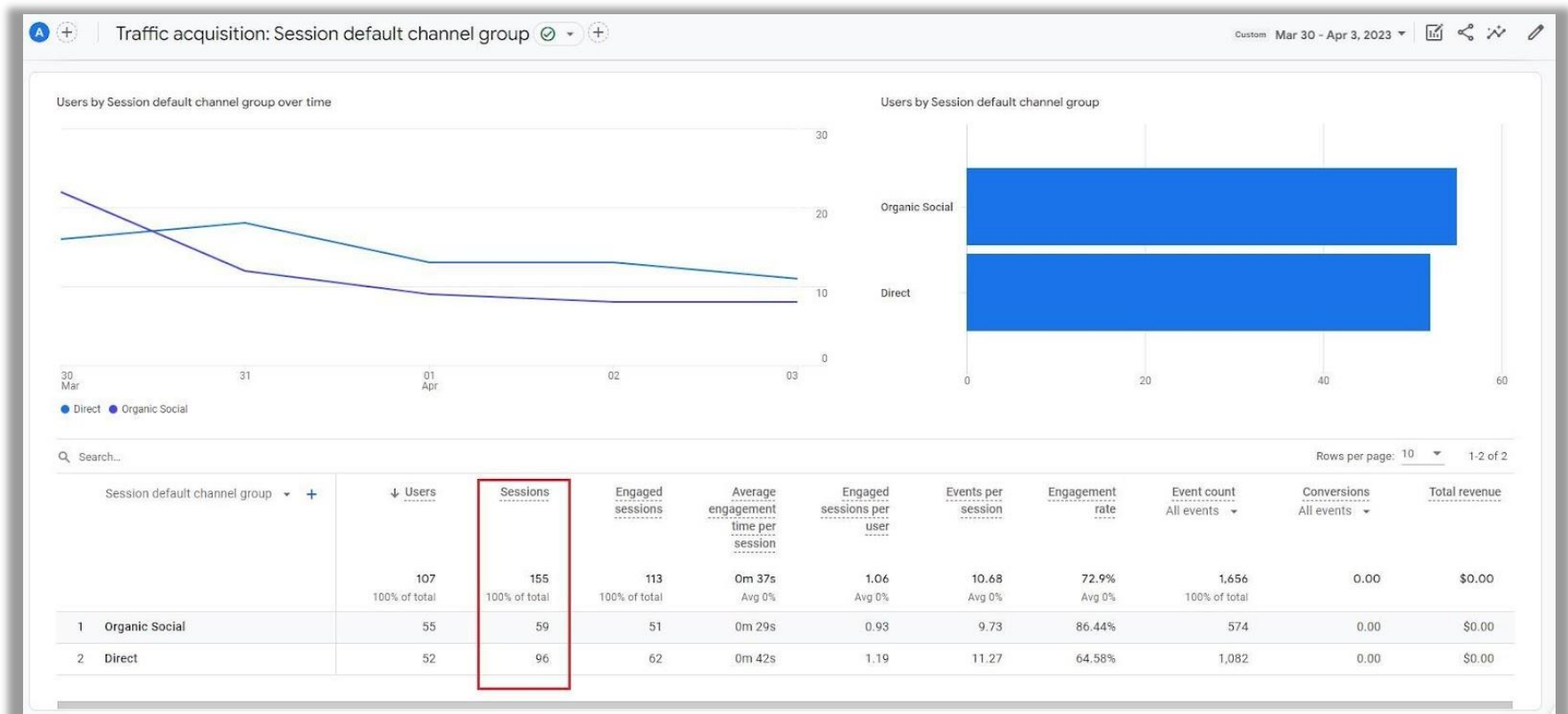


Figure 7: Session default channel grouping Report

Purpose : This report provides information on the number of sessions (or visits) a website receives and have broken it down by the standard channel groupings that Google Analytics uses for identifying the traffic sources to your website. This incorporates platforms like social media, direct traffic, organic and sponsored search, and others. This analysis helps to understand how different sources generate traffic to a website and which channels generate more traffic. This report can be utilized to evaluate the performance of various channels over time and identify trends in the rise of website traffic (Qureshi, 2022).

Findings: Direct and organic social are the only two channels identified in the above graph. 96 sessions out of 155 sessions were captured as user visits via hyperlinks. Most of the people with whom I shared my website's URL immediately clicked the link to visit it once I shared it with them. The individuals who immediately viewed my site determined that this activity was the easiest option. In all, a total of 23 users have been reached using organic social media channels like Instagram, LinkedIn, and email. According to the findings, it is easier for users to browse our website when the links are sent directly to them.

GA Report 4 - New users by “First user default channel grouping”

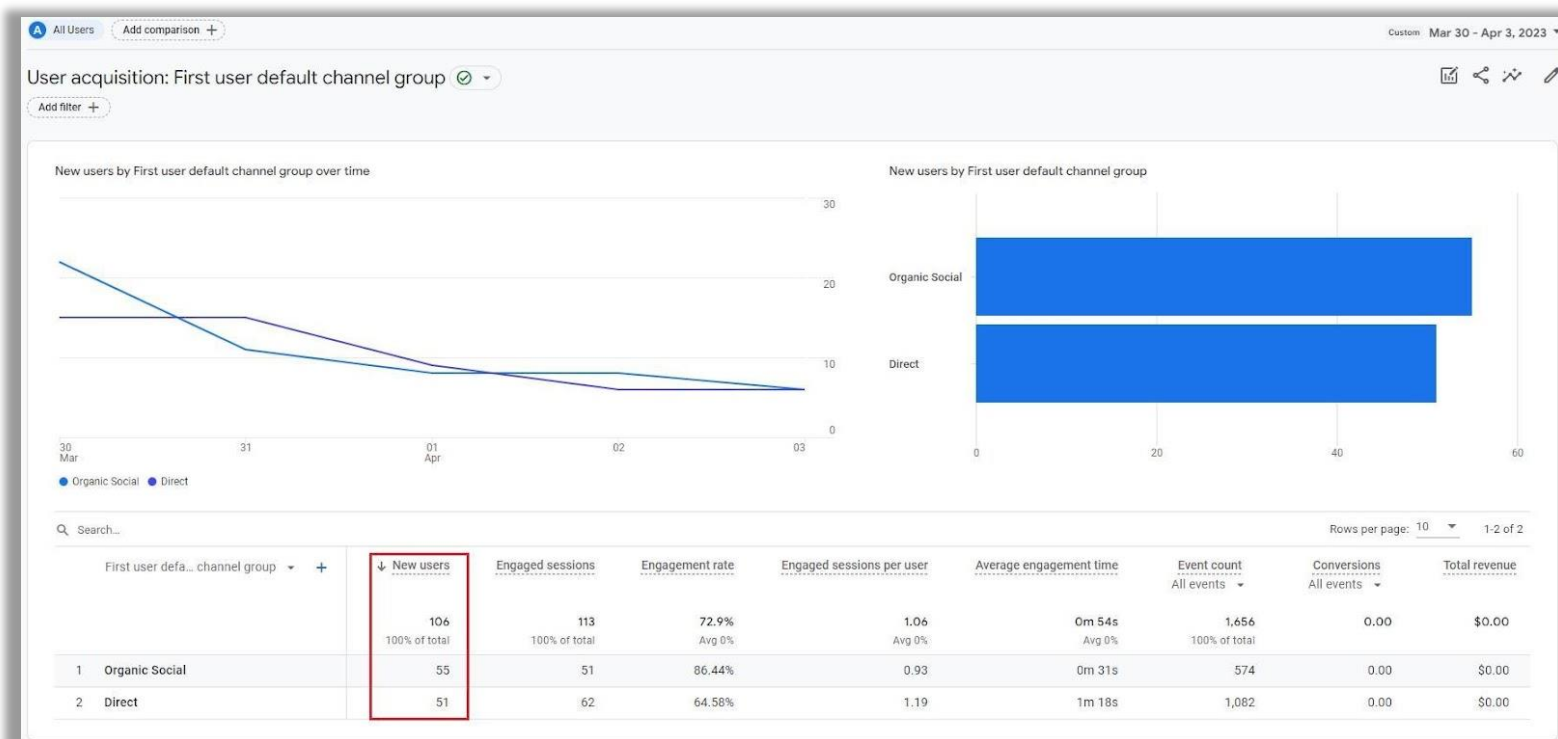


Figure 8: First user default channel grouping Report

- **Purpose:** The "New users by "First user default channel grouping"" report provides information on the number of new users who browse your website, divided into by the default channel groupings that Google Analytics applies to categorize the sources of your website traffic for a user's first session. The objective of this report is to explain how different channels help with bringing in new users to your website and to discover trends in user acquisition over a period of time. For individuals with websites who would like to optimize user acquisition and increase the return on investment from their marketing initiatives, this research might be very helpful. They can learn more about the origins of the traffic to your website and use this knowledge to generate data-driven decisions that will enhance the functionality of your website ([GA4] Default channel group - Analytics Help, 2023).
- **Findings:** The bulk of new users arrived at the website directly via organic social, as seen in above figure. This occurs as a result of spammy social media postings that include links to the website and the use of social media applications to increase online traffic. However, it has been found that the engagement session's direct link hits also had the highest count. It is clear that direct link visits are very engaging, and social media spam brings in more new users to my microsite.

GA Report 5 - User Engagement

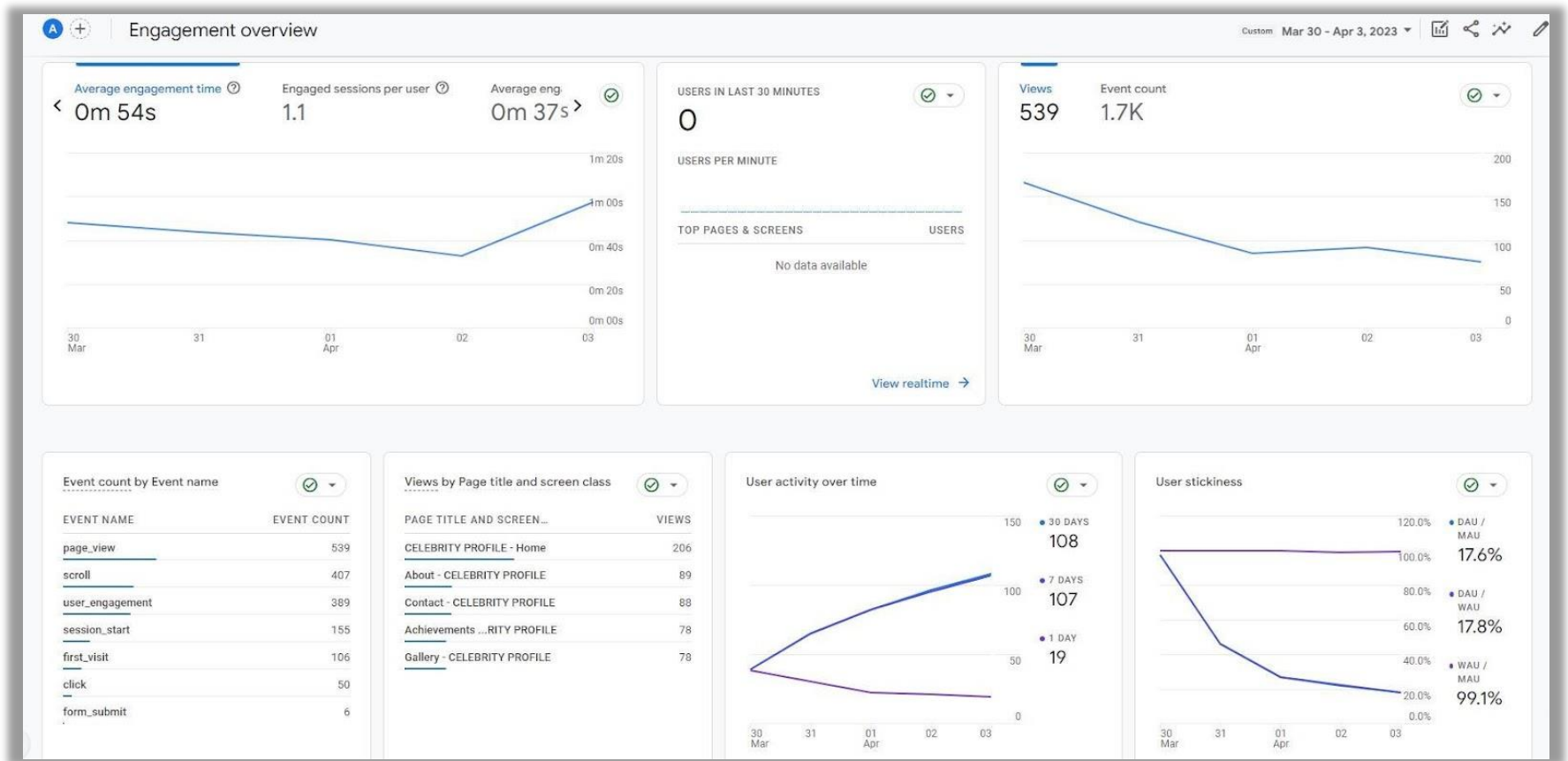


Figure 9: User Engagement

- Purpose:** Metrics for measuring user engagement can reveal information about how frequently users visit pages on a website and how extensively they interact with the content. Information like average session duration, pages per session, bounce rate, and percentages of new sessions are frequently included in this report (Optizent, 2021).

- **Findings:** The trendlines in the above graph illustrate the website's engagement rate, views, and event count. According to the above chart average time spent on the website has been identified as 54 seconds and 539 views have been recorded. event count by event name and views according to page titles and screen classes have been illustrated below with respective percentages. user activity over time and user stickiness have been illustrated with trendlines in the chart below the engagement trendlines. this shows how the user interaction with the shared website.

GA Report 06 – User Retention

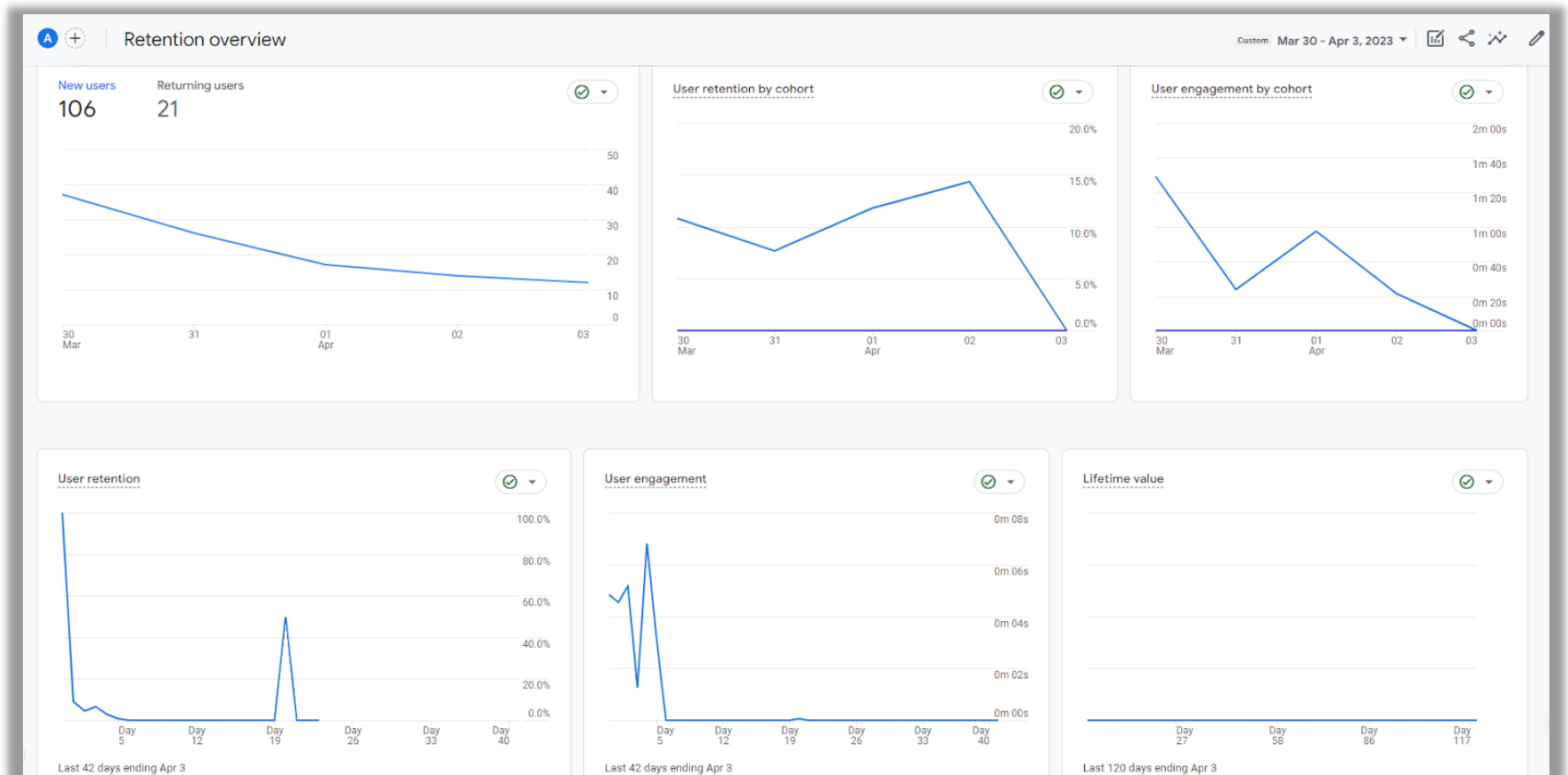


Figure 10: User Retention Report

- **Purpose:** The "User Retention" report in Google Analytics is intended for providing you information on the number of people who return to your website over time. This analysis will help you determine how well your website's user experience retains users and may indicate to you where improvements can be made. You can use this information to enhance the user experience on your website, increase engagement, and boost conversions (Vemmanna, 2022).
- **Findings:** according to the above trendlines, 106 new users have been identified with 21 returning users. The user engagement measures the length of time on average users that come back within the initial 40 days stay engaged. We have access to a user engagement by cohort chart and user retention reports under the user engagement by cohort section. This graph shows the typical amount of time new users spent on your site each day.

GA Report 7 – Users by city

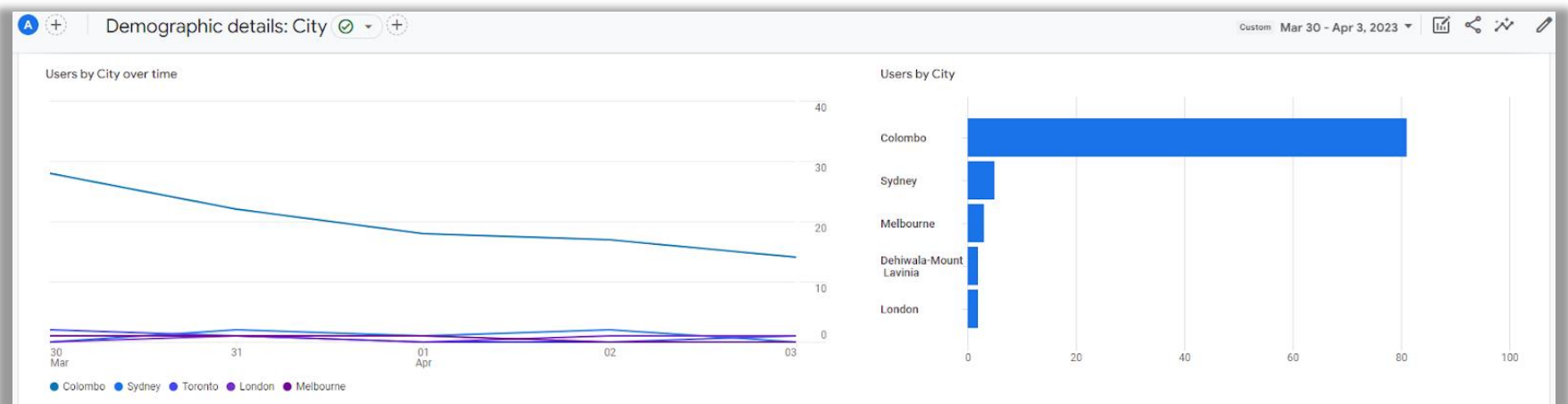


Figure 11: Users by city Report

City	↓ Users	New users	Engaged sessions	Engagement rate	Engaged sessions per user	Average engagement time	Event count All events	Conversions All events	Total revenue
	107 100% of total	106 100% of total	113 100% of total	72.9% Avg 0%	1.06 Avg 0%	0m 54s Avg 0%	1,656 100% of total	0.00	\$0.00
1 Colombo	81	80	85	71.43%	1.05	0m 54s	1,305	0.00	\$0.00
2 (not set)	6	6	4	57.14%	0.67	0m 20s	44	0.00	\$0.00
3 Sydney	5	4	3	60%	0.60	0m 22s	39	0.00	\$0.00
4 Melbourne	3	3	3	100%	1.00	0m 05s	23	0.00	\$0.00
5 Dehiwala-Mount Lavinia	2	2	2	100%	1.00	0m 19s	17	0.00	\$0.00
6 London	2	2	3	75%	1.50	0m 38s	52	0.00	\$0.00
7 Toronto	2	2	4	57.14%	2.00	4m 07s	40	0.00	\$0.00
8 Bengaluru	1	1	1	100%	1.00	0m 00s	4	0.00	\$0.00
9 Doha	1	1	1	100%	1.00	0m 54s	18	0.00	\$0.00
10 Dubai	1	1	1	100%	1.00	0m 29s	4	0.00	\$0.00

Figure 12: Users by city Report 2

- Purpose:** Basic geographical information about your audience's location, especially cities can be obtained by Google Analytics 4 "Users by city" reports. The main objective of the report is to analyze traffic, user behavior, and conversion statistics by location of users in order to enhance sales in the identified relevant places (Maggio, 2016).
- Findings:** Figures provided above indicate that it's quite clear that a significant amount of website visitors were from Colombo city. However, certain interactions from outside the city were also tracked. Colombo links made up the majority of the shared connections. This survey has revealed that a lot of Colombo visitors expressed an interest in viewing my website. The locations and the quantity of users who visited each location are shown in the above table.

GA Report 8 - Returning users by device category

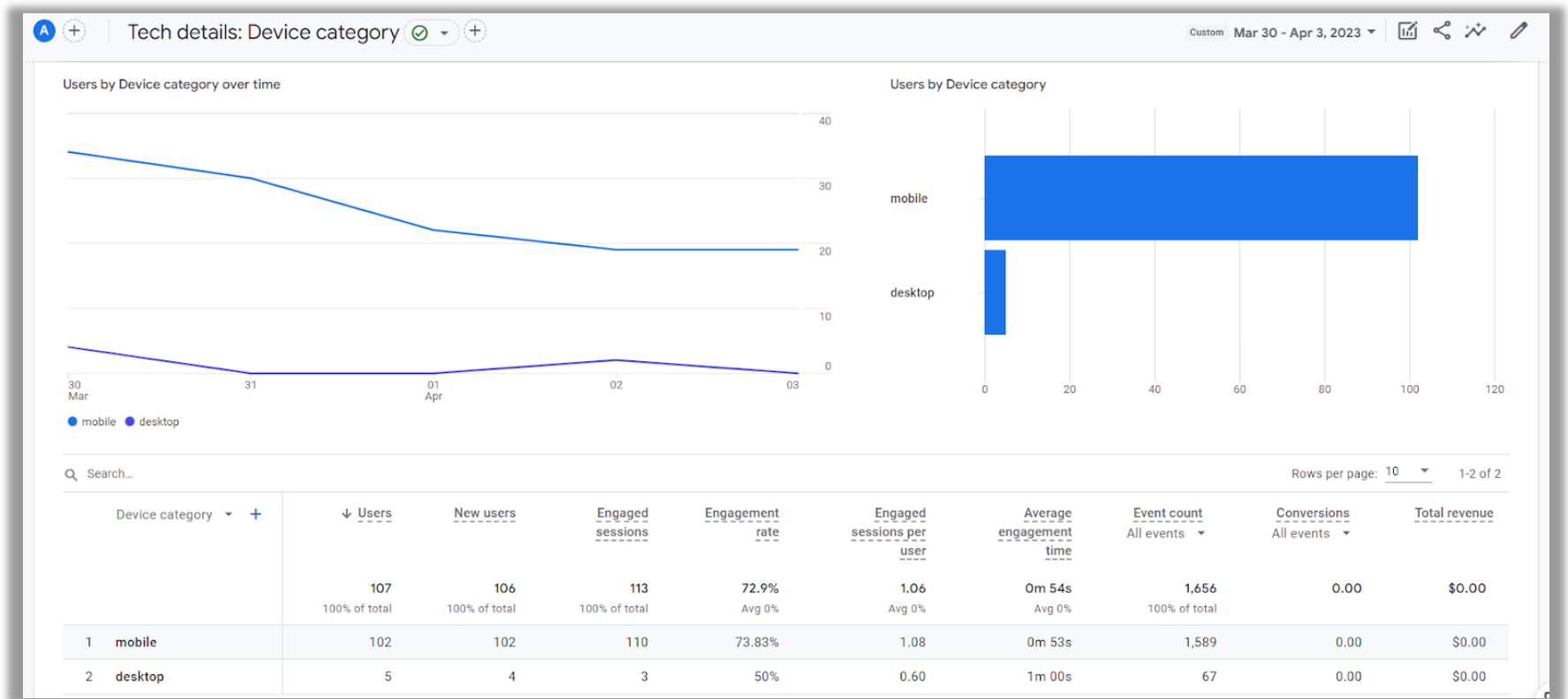


Figure 13: Returning users by device category

Purpose: Google Analytics' "Returning users by device category" report shows the number of users, who have previously visited your website, split down by different kinds of devices such as desktop, mobile, and tablet. With the aid of this study, you will be more capable to figure out how returning users engage across a variety of devices and identify usage trends. You may discover a lot from returning users' behavior by examining the "Returning users by device category" report. You can use this knowledge to enhance the user experience on your website across all device types.

- Findings:** The graphs mentioned above indicate that both mobile and desktop devices have been identified. 102 out of the 107 users entered the website using their mobile devices. According to the above figures, the high rate of mobile users is caused by the way that links are shared via mobile contacts and social media applications. Additionally, the duration of time your website was active was shown by the engaged time and engagement rate that was recorded. Our website's traffic and user engagement may rise as a result of adding new features or designs to the most popular devices we identify from this data.

GA Report 9 - New Users by Screen resolution

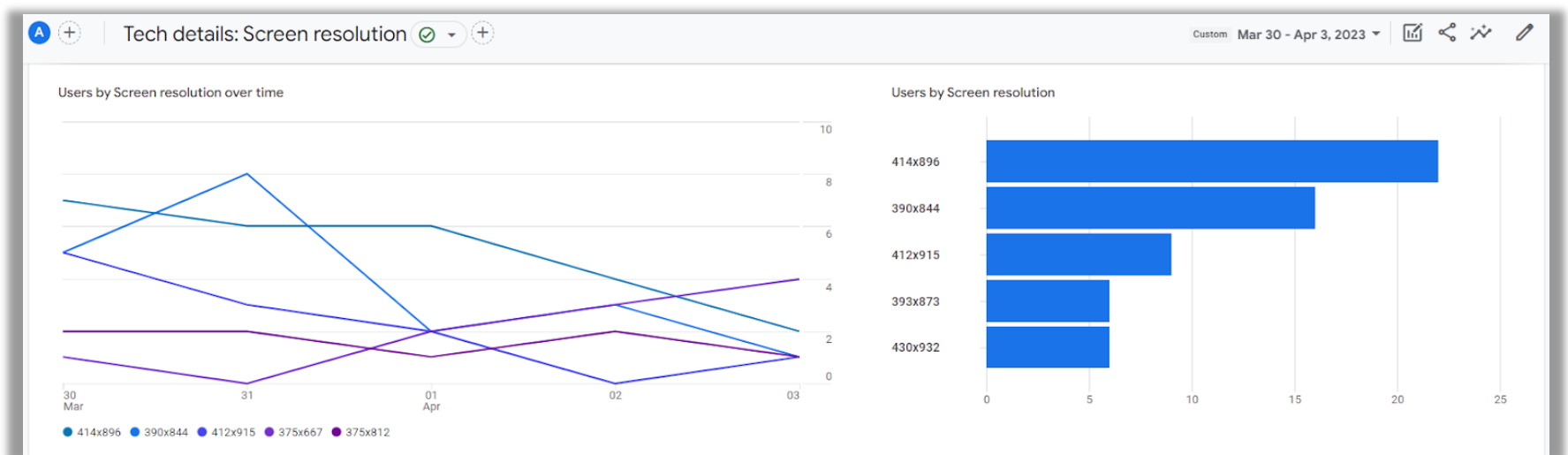


Figure 14: New users by screen resolution report

Screen resolution ▾ +	↓ Users -----	New users -----	Engaged sessions -----	Engagement rate -----	Engaged sessions per user -----	Average engagement time -----	Event count All events ▾	Conversions All events ▾	Total revenue -----
	107 100% of total	106 100% of total	113 100% of total	72.9% Avg 0%	1.06 Avg 0%	0m 54s Avg 0%	1,656 100% of total	0.00	\$0.00
1 414x896	22	22	20	71.43%	0.91	0m 29s	193	0.00	\$0.00
2 390x844	16	16	19	76%	1.19	0m 52s	168	0.00	\$0.00
3 412x915	9	9	9	81.82%	1.00	0m 57s	177	0.00	\$0.00
4 393x873	6	6	6	66.67%	1.00	0m 27s	95	0.00	\$0.00
5 430x932	6	6	4	66.67%	0.67	1m 01s	93	0.00	\$0.00
6 375x667	5	5	11	84.62%	2.20	1m 55s	172	0.00	\$0.00
7 375x812	5	5	6	54.55%	1.20	1m 56s	102	0.00	\$0.00
8 393x852	5	5	2	40%	0.40	0m 03s	20	0.00	\$0.00
9 360x800	4	4	7	87.5%	1.75	1m 50s	143	0.00	\$0.00
10 428x926	4	4	4	100%	1.00	0m 32s	43	0.00	\$0.00

Figure 15: New users by screen resolution report 2

Purpose: You can learn more about the devices and screen resolutions your new users are using to access your website by looking at the "New Users by Screen resolution" report in Google Analytics. You can utilize the information throughout this report to enhance the user experience on your website for the most popular screen resolutions across your new users (Vanhee, 2023).

Findings: The majority of new users visited the website with the standard mobile resolution of 414x896 as can be seen in the above figure. 22 out of the 107 users of the website have used this resolution to access it. A high percentage of people are using mobile devices with standard resolution sizes to view the website, according to this finding. Since the majority of users utilize mobile phones, we can offer a more user-friendly experience to engage more traffic.

Task 5

The following report is derived through the **Explore** feature of Google Analytics 4. The report depicts how the users accessed the website via different devices (mobile and Desktop).

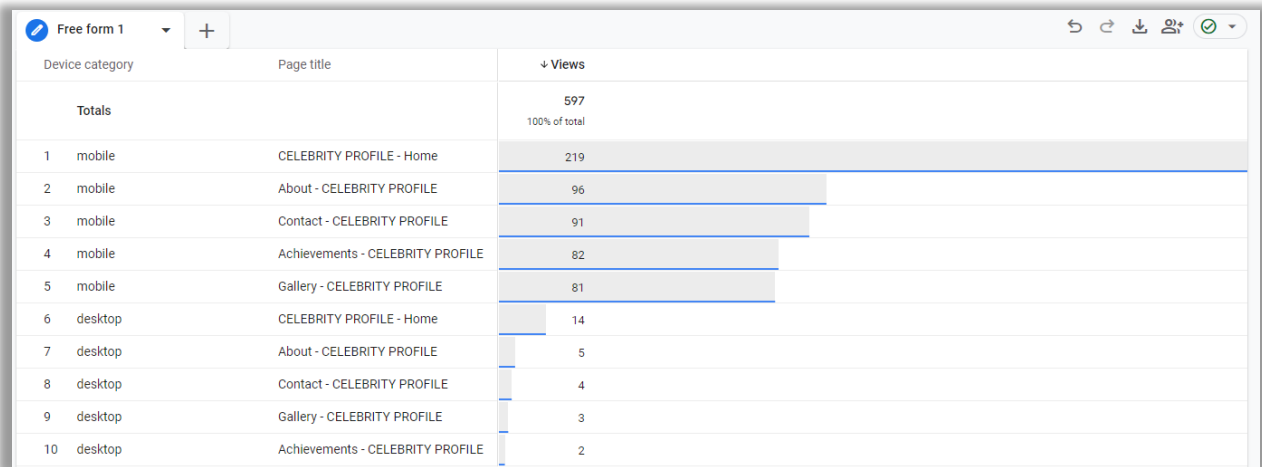


Figure 16: Page Title segmented by device category

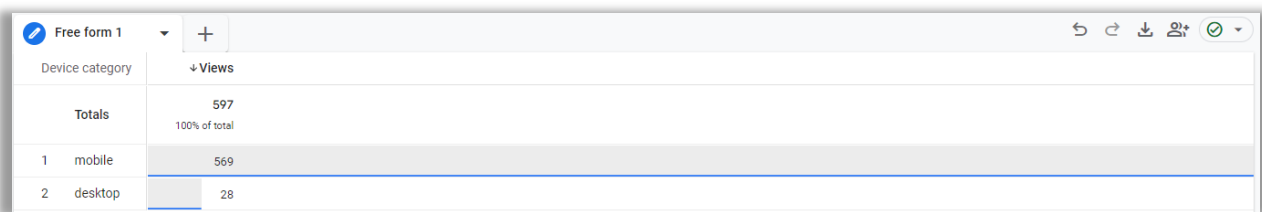


Figure 17: Device Category by views

The report reveals that the microsite received most of its views through mobile devices, with the highest number of views directed towards the landing page (Home). The About page title garnered the second highest number of views on mobile devices, closely followed by the Contact page and Achievements Page.

The difference between mobile and desktop is due to the link being circulated in social media platforms to generate traffic, specifically targeting close friends, family, and colleagues. And the recipients could have accessed the link while on the go via their mobile device. However, it is worth noting that the number of desktop users was significantly lower than that of mobile users. This could be due to a poor email marketing campaign that focused more on social platforms.

Variables	Tab Settings
Exploration Name: Untitled exploration	SEGMENT COMPARISONS Drop or select segment
Custom Mar 19 - Apr 17, 2023	ROWS Device category Page title Drop or select dimension Start row 1 Show rows 10 Nested rows No
SEGMENTS None	
DIMENSIONS Device category Page title	
METRICS Views	COLUMNS Drop or select dimension Start column group 1 Show column groups 5
	VALUES Views Drop or select metric Cell type Bar chart

Figure 18: Setting variables for Number of views for Page titles segmented by device type

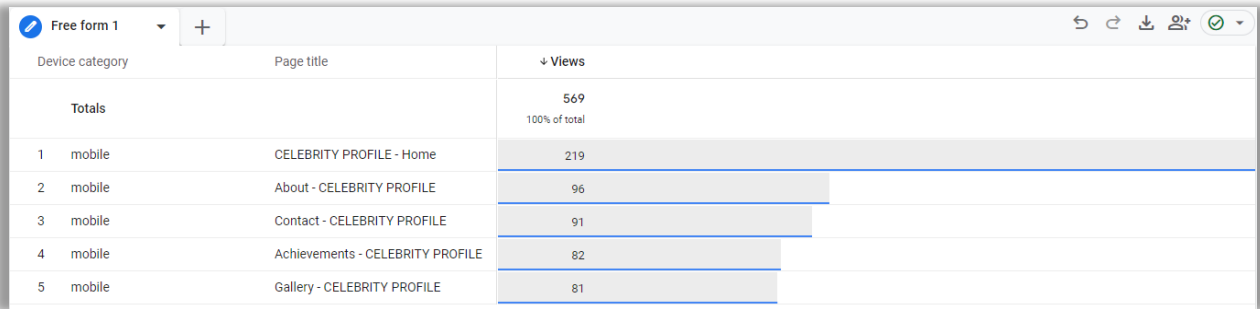


Figure 19: Page title segmentation - Device Type - Mobile

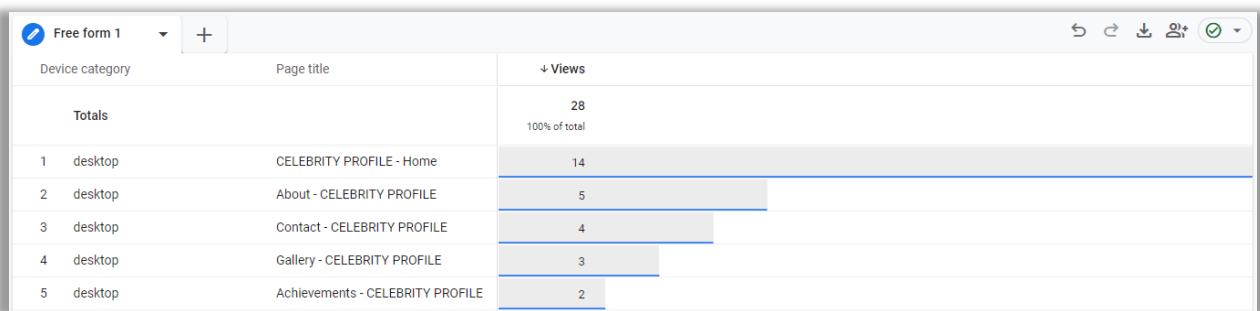


Figure 20: Page title segmentation - Device Type - Desktop

Task 6

Key Performance Indicators (KPI)

KPIs are quantifiable goals that help to measure and track the success of a business objective. It also helps teams to set expectations and prove the effectiveness of the work by using various strategies. KPIs in digital era are used to evaluate the success and performance of an organization through its digital channels. It can include social media marketing using all networking channels, mobile marketing (auto calling, SMS, WhatsApp etc.), Search Engine Marketing using SEO, Google Advertising, E-mail marketing or any other relevant content on digital form. In simple terms, KPI in digital marketing will measure and evaluate the performance of digital marketing goals (Singh and Kumari, 2019).

Table 3: Key Components of KPI

Key Component	Brief Description
Brief Description	A simple description of the KPI, including the purpose, scope and how it is relevant to the organization's goals and objectives.
Exact Change	A quantifiable metric or target that can be tracked and monitored.
Time	Allocation of specified deadline or time period to achieve the goal.
Changes	Any desired changes in the KPI overtime, such as changes in strategies or initiatives, to increase, decrease or to maintain performance in various factors affecting the KPI.
Monitoring Period	KPIs can be monitored and evaluated at different intervals based on the organization's needs (Annually, monthly, or quarterly).

Purpose and function of KPIs

KPIs are essential for measuring the success of marketing campaigns and strategies. They are quantifiable metrics that show progress towards predefined goals and objectives. For a KPI to be effective, it needs to have certain properties that make it clear, feasible, relevant, and trackable. These properties include specificity, measurability, achievability, relevance, and time-boundness. By incorporating these properties into KPIs, organizations can ensure that they are meaningful and realistic, and can be monitored over time to gauge progress (Flores, 2013).

Use of KPIs in Digital Marketing

KPIs are used in digital marketing to measure success and provide insight into the marketing strategy's effectiveness. KPIs can monitor various metrics, including website traffic, conversion rates, cost per acquisition, and return on investment. Digital marketers can evaluate the performance of their campaigns, make data-driven decisions, and optimize their strategies for greater outcomes by monitoring KPIs (Chaffey and Smith, 2017).

Table 4: Discussion on Advantages and Disadvantages of KPI

Advantages	Disadvantages
Quantifiable measurable results help to track and evaluate the success overtime.	Overemphasis on certain KPIs neglects the other important KPIs of a business, resulting in suboptimal results.
Data driven decision making helps to optimize marketing strategies to achieve better results.	Digital KPIs can be manipulated in a way which can misrepresent the performance of marketing campaigns.
By providing a clear focus helps marketers to prioritize activities and achieve goals.	It can be difficult to define and measure KPIs accurately if the metrics are subjective or hard to quantify.
Helps to justify and incur Return on Investment (ROI), which is essential to spend and secure budgets.	View of marketing success is limited, if the KPI is too narrow and might miss other important factors.

Task 7

Area 1 : Average Engagement Time and Traffic Acquisition

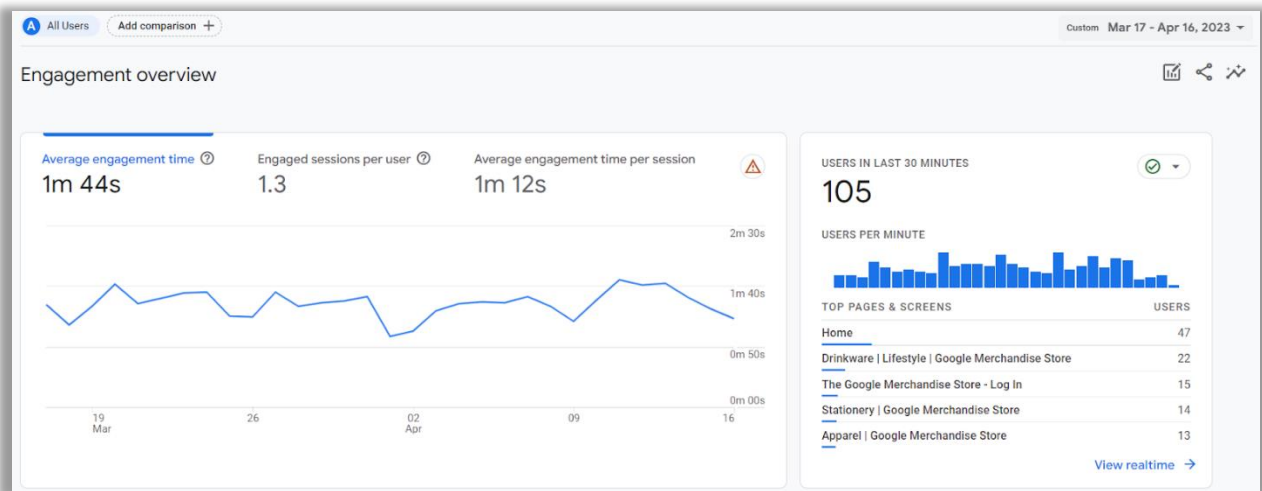


Figure 21: Area 1 - Current Report

The average engagement time metric in Google Analytics is essential since it indicates the amount of time visitors are spending on a website. This information can be used to evaluate how effectively a website engages users. The average engagement time should be between two and three minutes, according to world average standards engagement time.

According to the above-mentioned figure, the average user interaction time in Google Merchant Store is 1 minute and 44 seconds, which is less than the global average. Average engagement time of Google Merchant must be improved.

Comparison on the Historic Performance

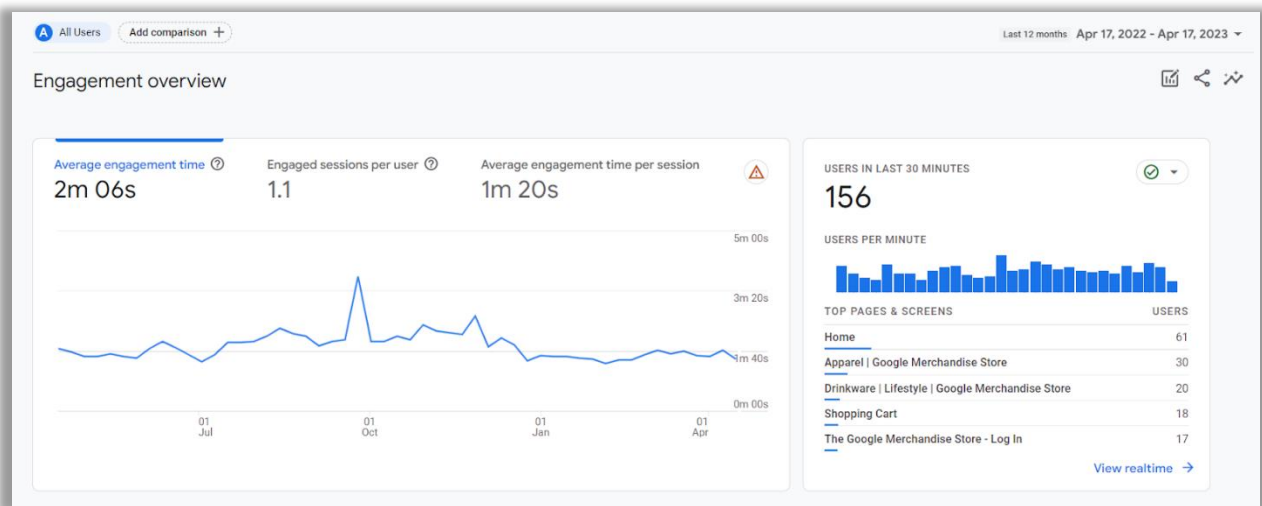


Figure 22: Area 1 - Historic Report

To compare the previous analytical results, I chose the last 12 months period (April 17th, 2022 - April 17th, 2023). As stated in the above figure, the Average engagement time was 2 minutes and 6 seconds. Which is a good average according to the global standards. This year after 12 months, the engagement time has dropped to 1 minute and 44 seconds.

The below KPI has been derived to improve the above disparity.

KPI 1 - Average engagement time per session

To **increase the average engagement time per session to 2 minutes** within **12 months** by **increasing the interactivity and engagement of the pages, concentrating on navigation and better user experience** to encourage viewers to explore and spend more time during a session and **monitor every month** to track progress towards the goal.

Area 2 : Traffic acquisition: Users by Session default channel group over time

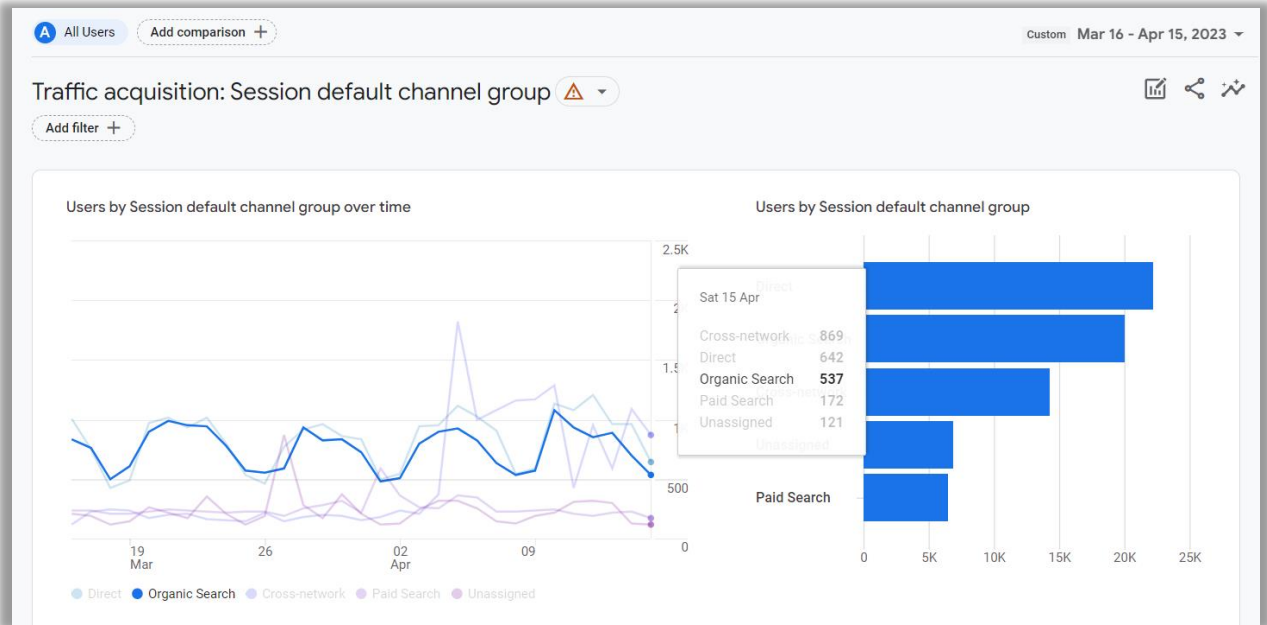


Figure 23: Area 2 - Current Report

A website needs strong organic search traffic because it is free and originates from search engine results pages (SERPs). Organic search traffic is considered to be of very good quality because the users are consistently looking for various types of products or content that a website provides.

A fall of organic search has been observed, illustrated by the "user by session default channel grouping over time" trendline. In order to provide the best online service, the business must enhance and raise the level of organic search more than the other search alternatives. This indicates that the business is not actively engaging with the users in an appropriate way.

Comparison on the Historic Performance

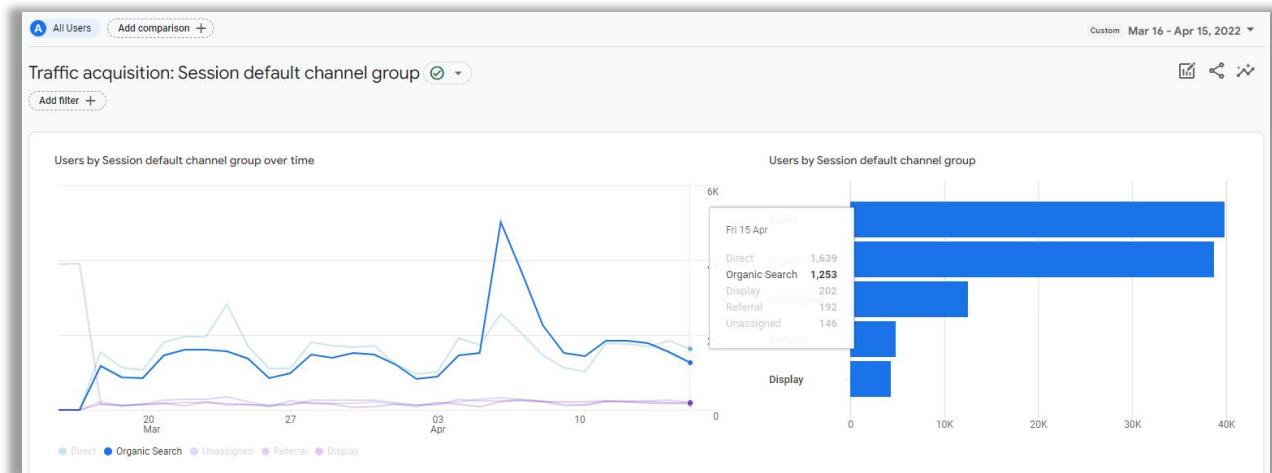


Figure 24: Area 2 - Historic Report

To compare the previous analytical results, I chose analytics a year back (March 16th, 2022 - April 15th, 2022). As stated in the above figure, 1,253 users have visited websites by doing organic searches. Which has reduced to 537 this year on the same timeframe (March 16th, 2023 - April 15th, 2023).

The below KPI has been derived to improve the above disparity.

KPI 2 - Traffic acquisition: Users by Session default channel group over time

To **increase click-through rate to increase the number of organic searches to 800 within 12 months by optimizing proper keywords, improving meta tags and descriptions and by ensuring to add relevant content to the search query** to encourage the users to click the website's link after searching for a specific keyword and **monitor every quarter** and make necessary changes to improve.

References

- arvindpdmn. (2020). HTTP Cookie. *Devopedia*. Available from <https://devopedia.org/http-cookie> [Accessed 18 April 2023].
- Burton. (2021). How to Use The Pages and Screens Report in Google Analytics 4 - Data Driven U. Available from <https://www.datadrivenu.com/pages-screens-report-google-analytics-4/> [Accessed 18 April 2023].
- Chaffey, D. and Smith, P.R. (2017). *Digital Marketing Excellence: Planning, Optimizing and Integrating Online Marketing*. Taylor & Francis.
- Cutroni, J. (2010). *Google Analytics: Understanding Visitor Behavior*. O'Reilly Media, Inc.
- Flores, L. (2013). *How to Measure Digital Marketing: Metrics for Assessing Impact and Designing Success*. Springer.
- [GA4] Default channel group - Analytics Help. (no date). Available from <https://support.google.com/analytics/answer/9756891?hl=en> [Accessed 18 April 2023].
- Giordano. (2017). How To Use Google Analytics To Find Out What Devices Your Customers Use. *SmartBear.com*. Available from <https://smartbear.com/blog/use-google-analytics-find-devices-customers-use/> [Accessed 18 April 2023].
- How to Track User Location in Google Analytics - Web Analytics*. (2016). Directed by Rick Maggio. Available from <https://learndigitaladvertising.com/track-user-location-google-analytics/> [Accessed 18 April 2023].
- John. (2022). Engagement Overview | Databox KPI Dashboard. Available from <https://databox.com/dashboard-examples/google-analytics-4-engagement-overview-dashboard-template> [Accessed 18 April 2023].
- Ledford, J.L., Teixeira, J. and Tyler, M.E. (2011). *Google Analytics*. John Wiley and Sons.
- McNab, C. (2007). *Network Security Assessment: Know Your Network*. O'Reilly Media, Inc.
- Miyazaki, A.D. (2008). Online Privacy and the Disclosure of Cookie Use: Effects on Consumer Trust and Anticipated Patronage. *Journal of Public Policy & Marketing*, 27 (1), 19–33.
- Optizent. (2021). User Engagement in Google Analytics 4 (GA4) - Everything You Need to Know - Optizent. Available from <https://www.optizent.com/blog/user-engagement-in-google-analytics-4-ga4-everything-you-need-to-know/> [Accessed 18 April 2023].
- (PDF) Survey on Cross Site Request Forgery (An Overview of CSRF). (no date). Available from https://www.researchgate.net/publication/281583832_Survey_on_Cross_Site_Request_Forgery_An_Overview_of_CSRF [Accessed 18 April 2023].

- Pittman, C. (2022). *Advanced Guide to Google Analytics 4*. SMP Publishing.
- Pujolle, G., Serhrouchni, A. and Ayadi, I. (2009). Secure session management with cookies. *2009 7th International Conference on Information, Communications and Signal Processing (ICICS)*. December 2009. 1–6. Available from <https://doi.org/10.1109/ICICS.2009.5397550>.
- Qureshi. (2022). How to Use GA4 Default Channel Grouping. Available from <https://measureschool.com/ga4-default-channel-grouping/> [Accessed 18 April 2023].
- Roomi, M. (2021). 6 Advantages and Disadvantages of Cookies | Limitations & Benefits of Cookies on Website. Available from <https://www.hitechwhizz.com/2021/02/6-advantages-and-disadvantages-drawbacks-benefits-of-cookies.html> [Accessed 18 April 2023].
- Singh, D. and Kumari, Dr.M. (2019). The Role of KPIs and Metrics in Digital Marketing. 04, 1053–1058.
- Strycharz, J. et al. (2021). No to cookies: Empowering impact of technical and legal knowledge on rejecting tracking cookies. *Computers in Human Behavior*, 120, 106750. Available from <https://doi.org/10.1016/j.chb.2021.106750>.
- Vanhee. (2023). GA4 Browser Size & Screen Resolution Report - UX Metrics. Available from <https://www.datadrivenu.com/screen-resolution-browser-size-in-google-analytics-4/> [Accessed 18 April 2023].
- Vemmanna. (2022). How to Analyze Retention Reports in Google Analytics 4 - Optizent. Available from <https://www.optizent.com/blog/how-to-analyze-retention-reports-in-google-analytics-4/> [Accessed 18 April 2023].
- What Are Cookies? And How They Work | Explained for Beginners!* (2019). Directed by Create a Pro Website. Available from <https://www.youtube.com/watch?v=rdVPfIECed8> [Accessed 18 April 2023].