

Company Overview

Beginning in 2016, justDice is now the market leader in rewarded apps and games. Its fun, exciting, and rewarding (literally) products are published in over 100+ countries 🤖

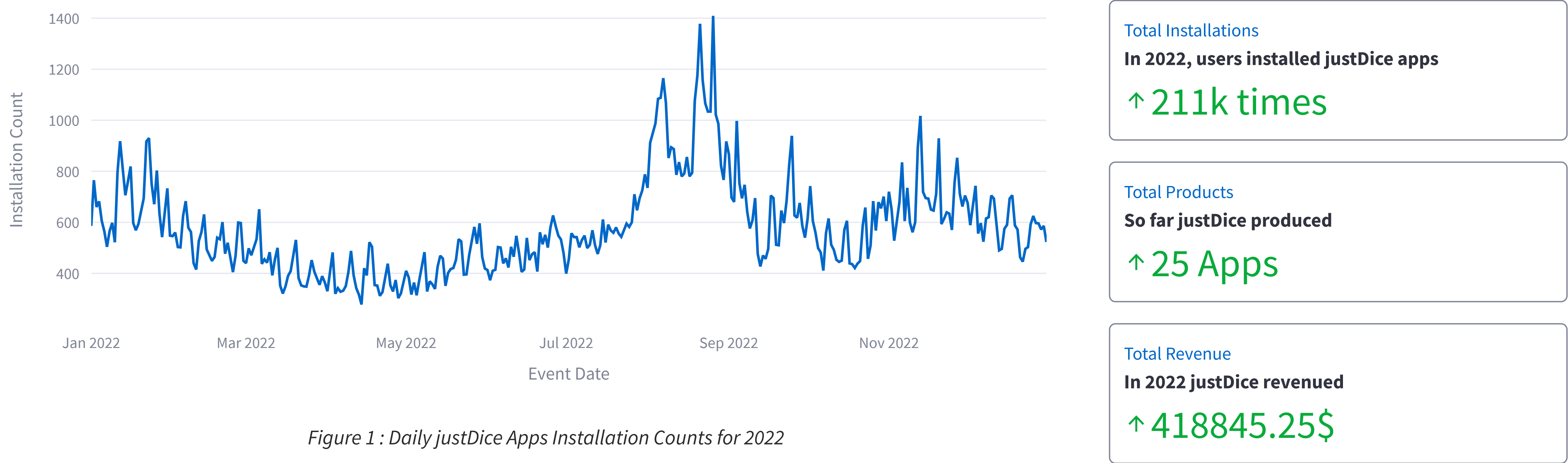
In 'Annual Report 2022', the main purpose is to share the company's data from last year with the newcomers through illustrative visuals, tables, and graphs. These data are coming from 4 main CSV files that are related to installation information, ad spending, payouts, and revenue.

This report has three main parts:

- **Company Overview** includes information about installation counts, produced apps, and the total revenue that the company made in 2022.
- **User Acquisition** includes information about mediums, relationships between mediums, and ad spending.
- **Financial Opportunities** includes actions for the future, opportunities, and predictions.

General Information

Everyday, justDice apps were installed to the user's devices between 200-1400 times in total (Figure 1).



Conclusion: When monthly total installations are compared to each, it can be seen that March-April-May has the lowest and August has the highest installation number.

Apps Details

Twenty-Seven apps produced by justDice. In this documentation, apps are represented by App IDs like 71,174,121, etc.

The popularity percentages of apps are represented in a pie chart (Figure 2). Also, a table that includes the total number of installations of each app (Figure 3).

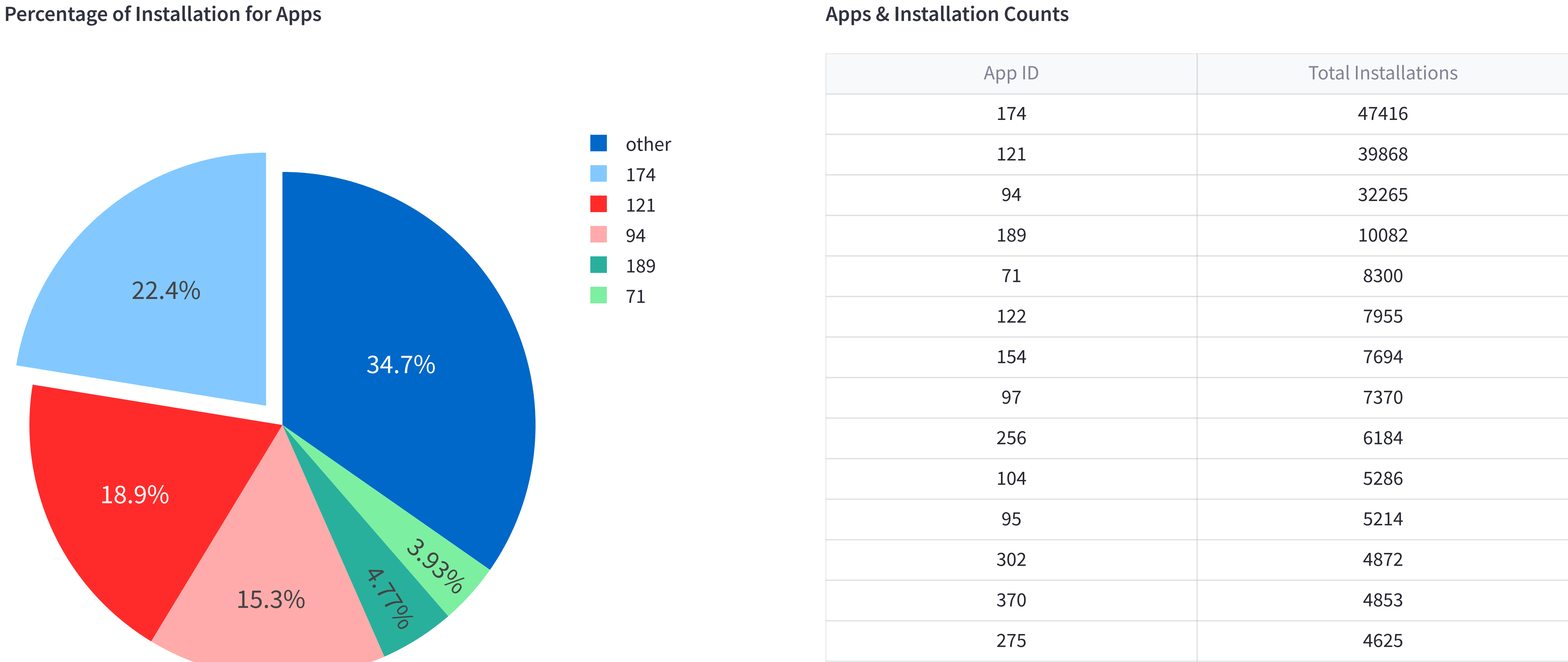


Figure 2 : Installation Counts for each App

Conclusion : App 174, App 121, and App 94 were the most trending apps in 2022. More than 55% of installations belong to these three apps.

User Acquisition

Mediums

Users Reached Our Apps Through 4 Mediums

There are four mediums: Medium 10, Medium 1111, Medium 26, and Medium 60, that justDice uses as channels to show the products to the users.

It is shown how many installations are made by these mediums (Figure 4).

Conclusion: Most of the installations were made through Medium 60 (around 50%) and then Medium 26 (around 34%).

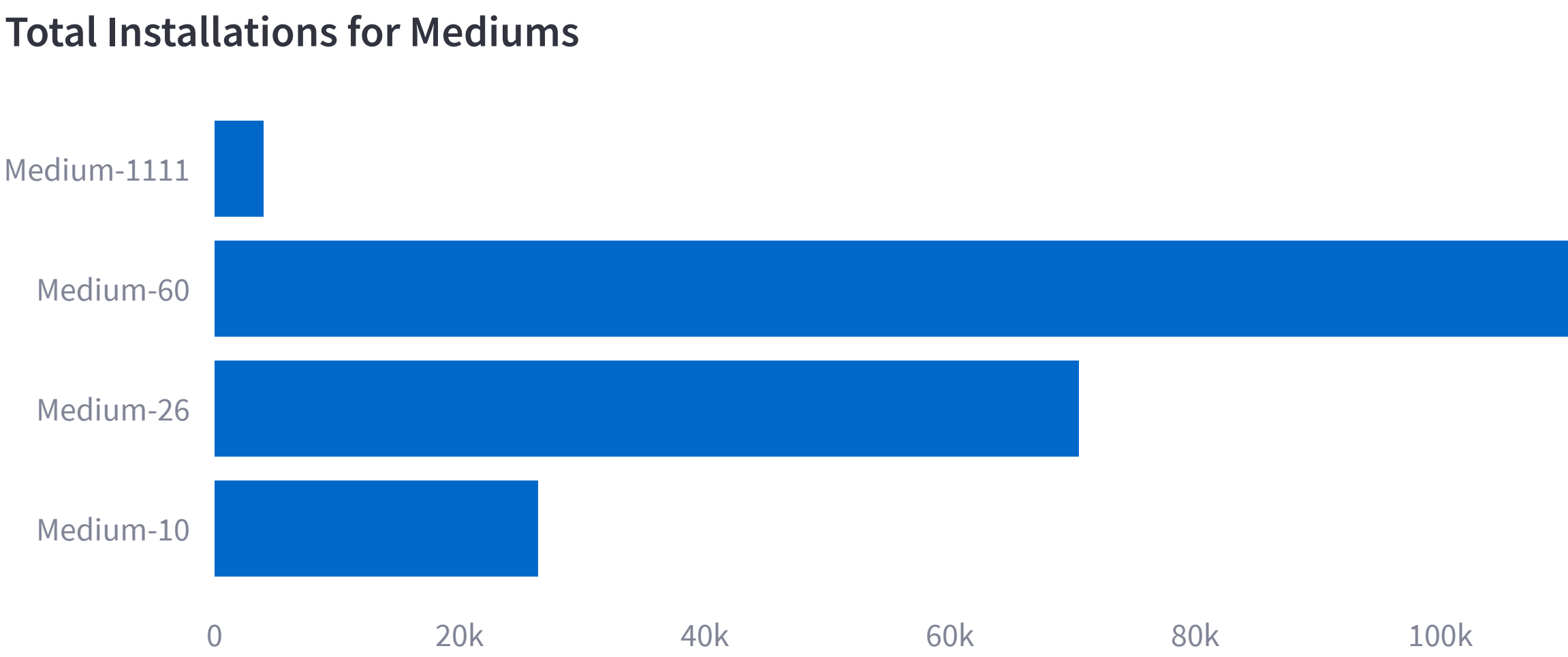


Figure 4 : Mediums & Installation Counts

Ad Spendings for Medium 10 and Medium 60

In 2022, Ad spending was made through Medium 10 and Medium 60. There is no Ad Spending data for Medium 26 and Medium 1111.

Ad spending is made for presenting justDice products to users. If the company reaches the customers through ads and makes them install the apps, that means products are successfully advertised.

To analyze the success of the advertising, the relationship between daily ad spending and daily installation should be considered.

In Figure 5 and Figure 6, daily ad spendings and total installation counts can be seen for each app by clicking the app_id labels double times.

Medium 10

Daily Ad Spendings(\$)

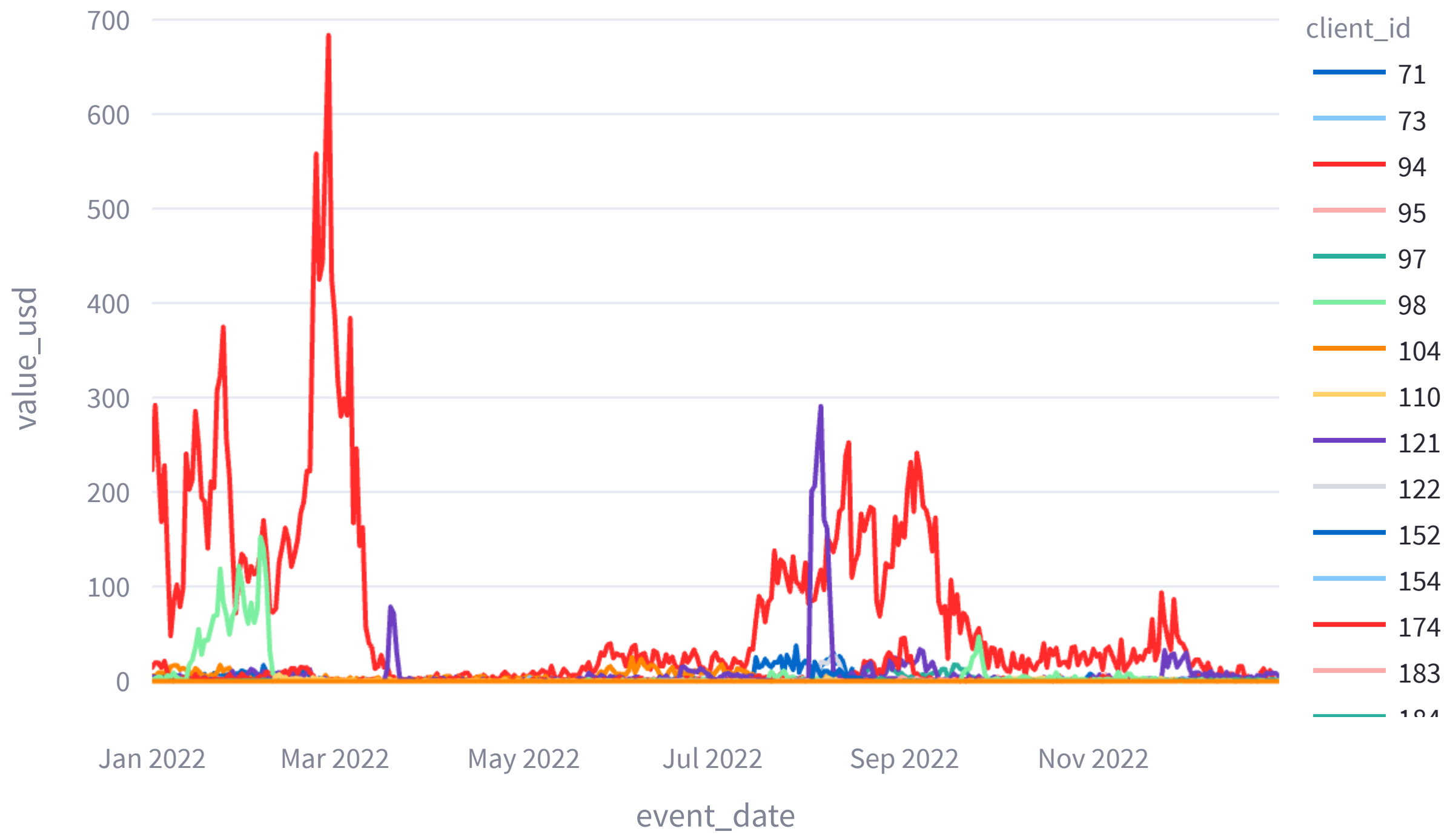


Figure 5 : Mediums 10 Daily Ad Spendings

Daily Total Installations

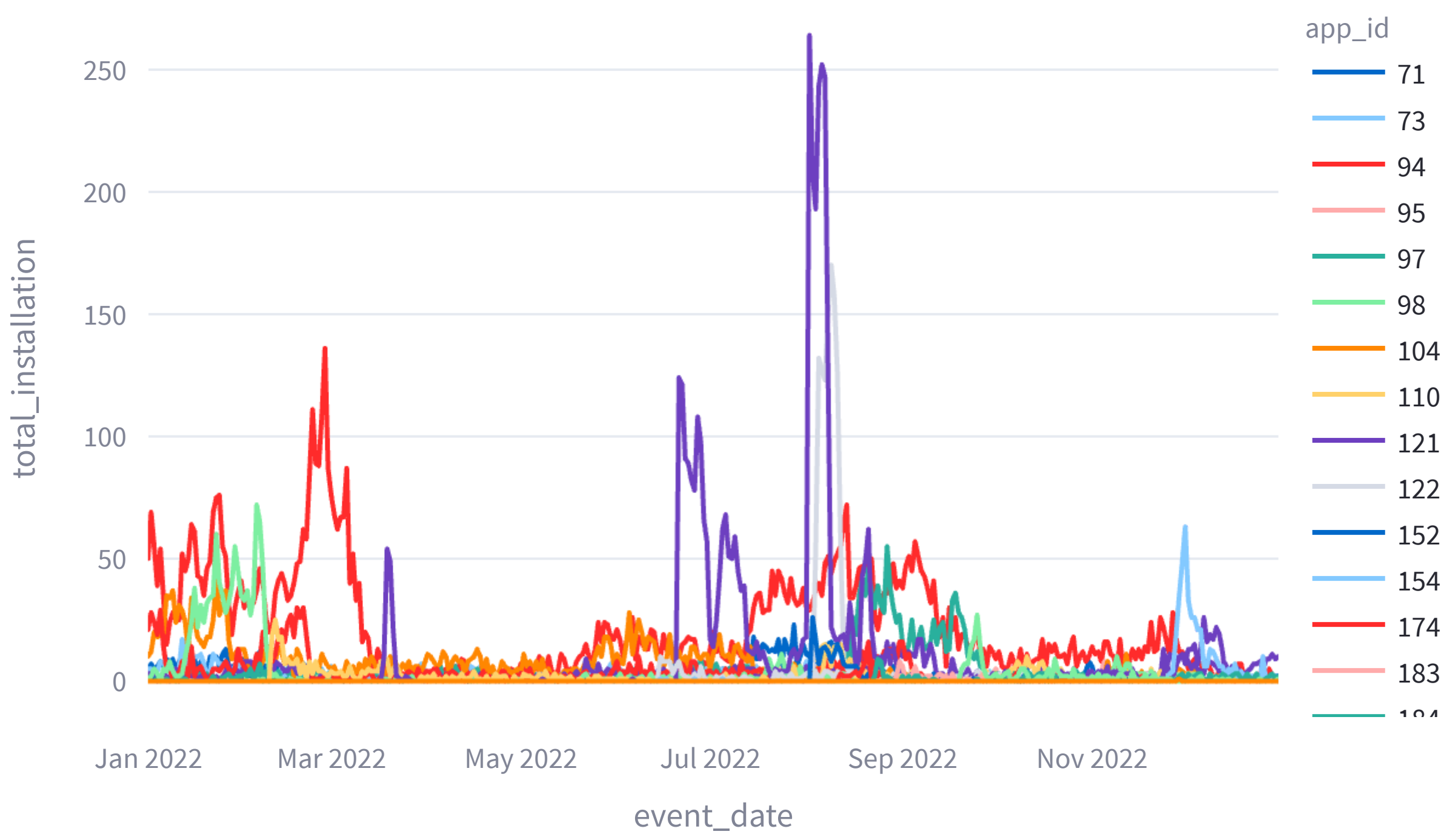


Figure 6 : Mediums 10 Daily Installations For Each App

With a cursory observation, it can be seen that for some apps, the Daily Total Installation chart has a similar shape to the Daily Ad Spending chart.

For example, App 94 has similar Daily Ad Spending and Daily Total Installation charts for Medium 10. However, for a more precise understanding, the similarity between Daily Ad Spending and Daily Total Installation charts should be calculated for each app.

One of the solutions can be squeezing charts into the value range of 0 to 1 for each day of 2022. The total difference between their values may show the differences between the two charts. Therefore, a similarity rate can be calculated based on how far these values are from each other (Figure 9).

After Squeezing the graphs, they become as Figure 7 and Figure 8: (Double-click to intended app_id in each graph to clearly see the similarities separately.)

Daily Ad Spendings(\$)

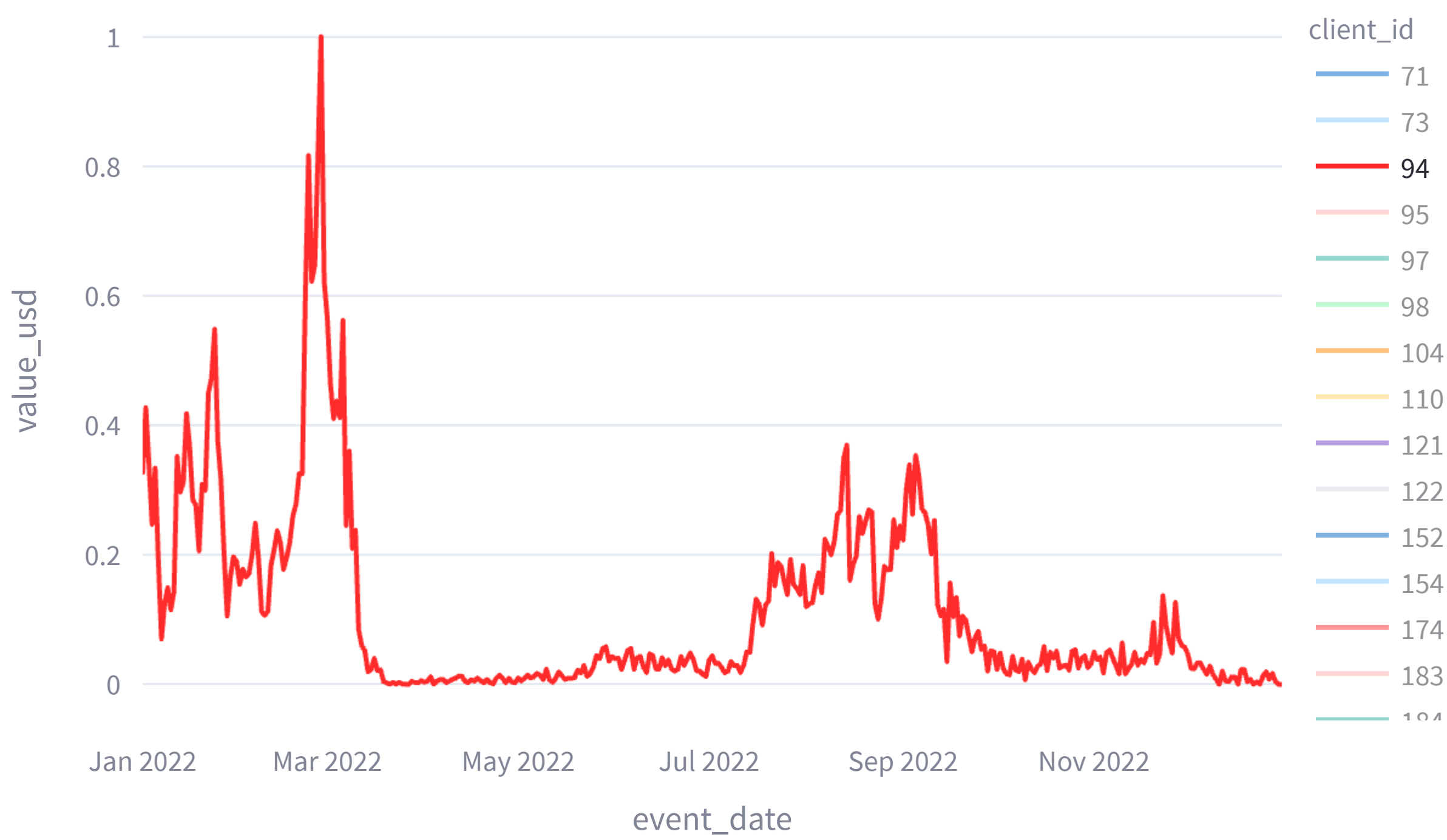


Figure 7 : Squeezed Mediums 10 Daily Ad Spendings

Daily Total Installations

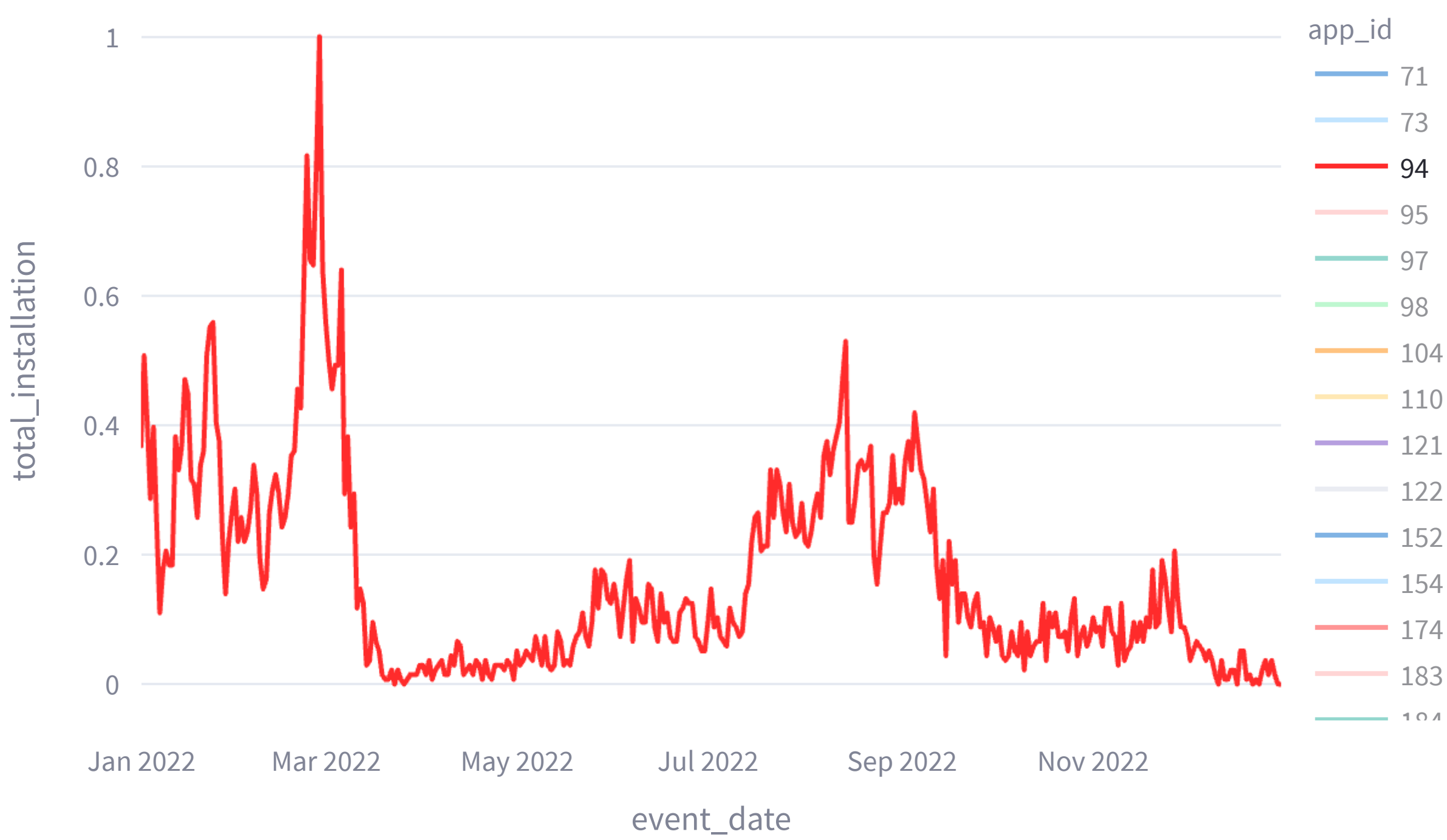


Figure 8 : Squeezed Mediums 10 Daily Installations For Each App

Similarity Rate Table For Medium 10

App ID	Similarity Rate (%)	Total Count
122	99.8	1249
390	99.42	218
110	99.38	263
189	98.82	1304
302	98.19	186
380	97.96	131
97	97.49	1669
275	97.42	4061
256	96.69	671
95	96.56	369
73	94.97	988
94	94.77	8157
71	94.15	1154
104	93.96	2408

Figure 9 : Similarity Rates Between Daily Ad Spending and Daily Total Installations for Medium 10

Conclusion : Applications with more than a 98% similarity rate can be regarded as chances for the next year to make more advertisements. App 122 has a 99.8% similarity between ad spending and total installation. Also, this app has been installed around 1.2k times (around 5% of total installation for Medium 10) in 2022. App 189 and App 97 are in similar situations. For the next year, the applications with high Similarity Rate and high Total Count on the table for Medium 10 should be advertised more.

Conclusion : App 94 was the most installed app through Medium 10 . It has quite a number of installations (around 30% of total installation for Medium 10). However, after some specific point, the effects of advertisement on installation number does not change enough as in App 122, App 189, App 97, and App 275. To have an optimum success rate, ad spending can be decreased for apps with a relatively low similarity rate and the ad budget can be allocated for apps with more similarity rate.

Similarity Rate Table - Medium 10

Similarity rates give an idea of how close these data points are. For this analysis, the default similarity rate is 85%. Similarity rates above 85% show advertisement success, and similarity rates below 85% show advertisements unsuccessful.

The Similarity Rate Table is created by taking differences between data points for each day and then summing them up, after that, it is divided by 365 and taking the percentage of it.

The result will show the distance rate between the two charts. To get the success rate result subtracted from 100.

To create a similarity table, this formula should be applied for each App ID:

$$100 - \sum_{n=0}^{365} |day_n^{adspending} - day_n^{totalinstall}| * 100/365$$

Advertisements were generally successful for medium 10. This success can be increased by analyzing the relationship between total installations and similarity rates. It can be useful to see the opportunities for the next year.

Medium 60

Daily Ad Spendings(\$)

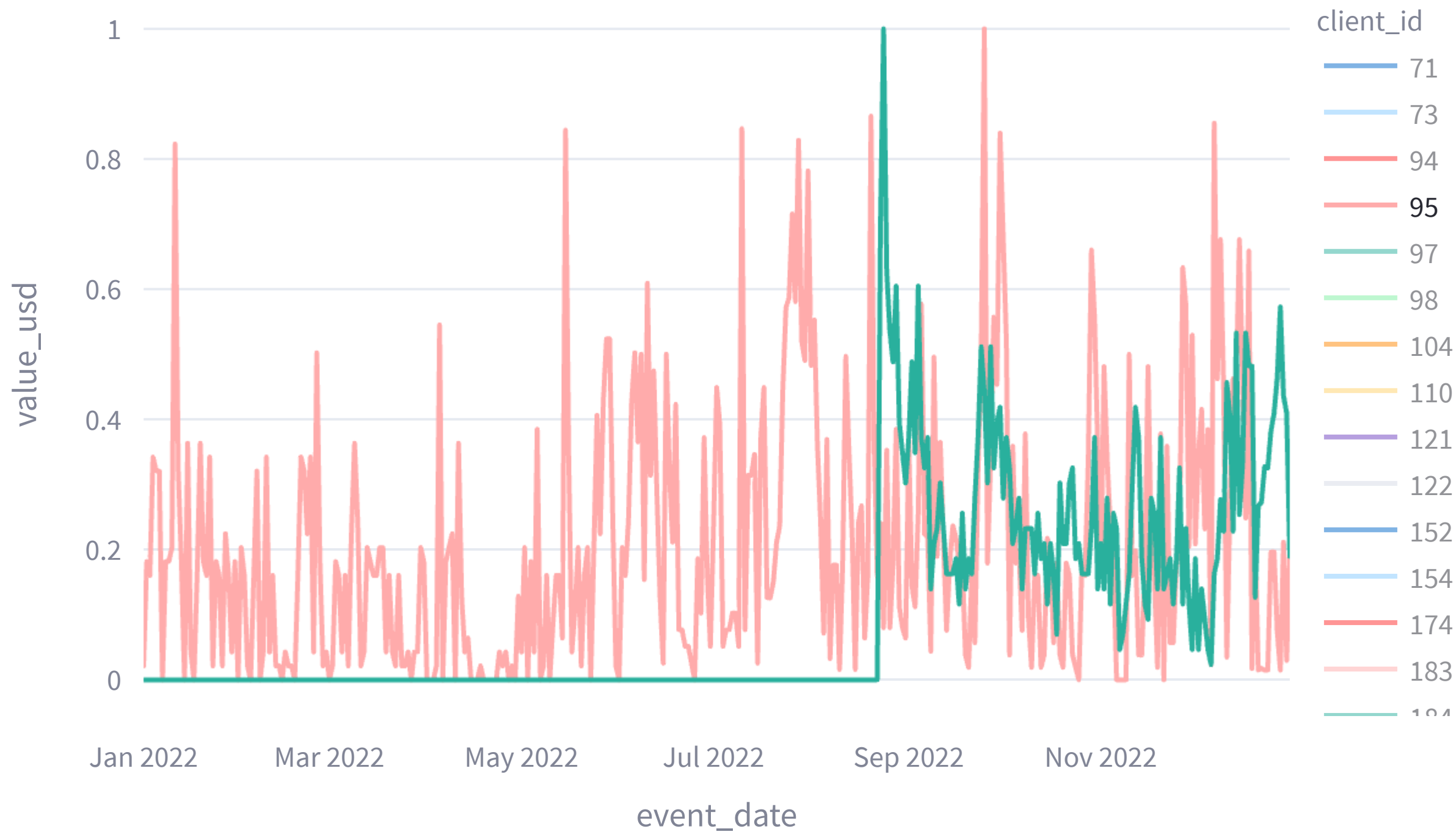


Figure 10 : Squeezed Mediums 60 Daily Ad Spendings

Daily Total Installations

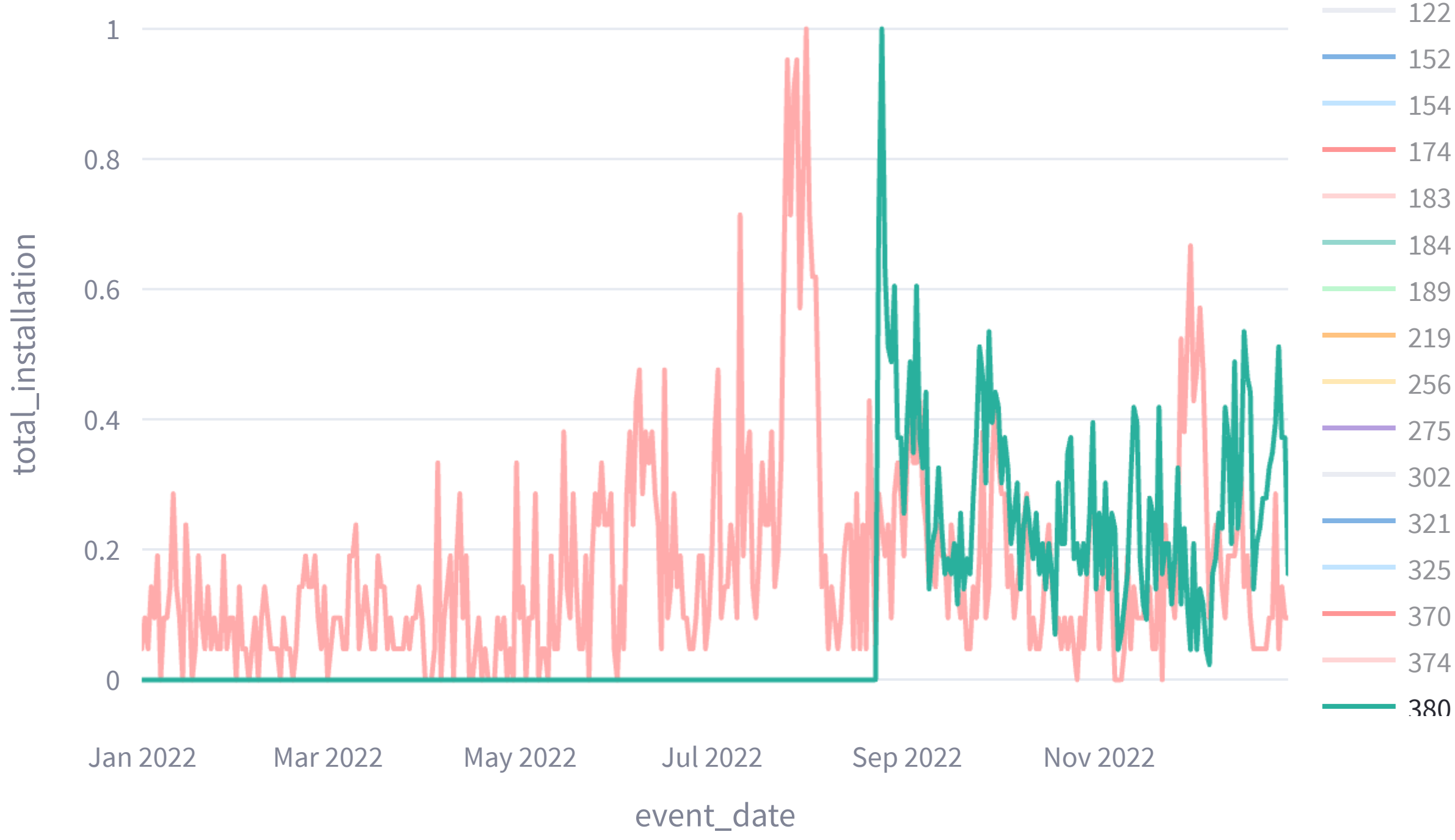


Figure 11 : Squeezed Mediums 60 Daily Installations For Each App

Just like Medium 10, Medium 60 has also similarity between data points on Daily Ad Spending and Dailty total insatllation tables . Here there are just squeezed versions of tables. Again, Similarity rate table can be created.

Total Installations for Medium 60

App ID	Similarity Rate (%)	Total Count
390	99.85	162
380	99.46	1554
370	99.44	521
374	99.11	1144
302	98.65	1876
154	97.99	3414
219	96.06	1586
97	95.84	1123
174	94.67	38214
104	94.49	1186
184	94.05	3039

Figure 12 : Similarity Rates Between Daily Ad Spending and Daily Total Installations for Medium 60

Similarity Rate Table - Medium 60

Conclusion : Except for App 71 and App 189, general advertising for Medium 60 was successful. App 71 and App 189 had opposite behavior in terms of ad spending amount.

Conclusion : More than 50% of installations were made under a 90% similarity rate. However, there is an opportunity for App 380, App 374, App 302, and App 154. These apps have high similarity rates and relatively high installation counts so, ad spending for App 189 and App 71 might be decreased and extra ad spending budget can be transferred to the apps with high similarity rates and high installation numbers.

Additional Conclusions for Medium 10 & Medium 60

There is no ad spending for Medium 1111 and Medium 26. However, some conclusions from Medium 10 and Medium 60 can be useful for further ad spending for these mediums :

- For App 71 and App 180, Medium 10 and Medium 60 had different behaviour on ad spending. Ad spending was successful for these apps on Medium 10 but not on the Medium 60.
- App 390 has quite a positive proportional relationship with the ad spending on Medium 10 and Medium 60 so, it can be suggested that App 390 can be presented to the users through other mediums.
- Users installed justDice products through Medium 26 more than Medium 10 (Figure 4) so, it might be an efficient channel to advertise justDice products.

Financial Opportunities

By taking the right decisions, a positive contribution is made to the financial resources of the company. In the previous section, user acquisition opportunities are shown. However, the country-wise ad spending opportunities, fees, incomes from partner apps, support costs for mobile devices, and revenue predictions should also be taken into account.

Country-Wise Ad Spending

In 2022, justDice advertised the products in four countries: Country 1, Country 17, Country 109, and Country 213 (Figure 12).

- Country 1: Over 95% of ad spending and around 60% of the total installation.
- Country 17: Around %0.1 of spending and around 5% of the total installation.
- Country 109: Around 3% of ad spending and around 28% of the total installation.
- Country 213: Around 0.2% of ad spending and around 4% of the total installation.

Conclusion: It seems the company paid a lot of ad spending for Country 1. For the next year, there should be more ad spending on Country 17, Country 109, and Country 213.

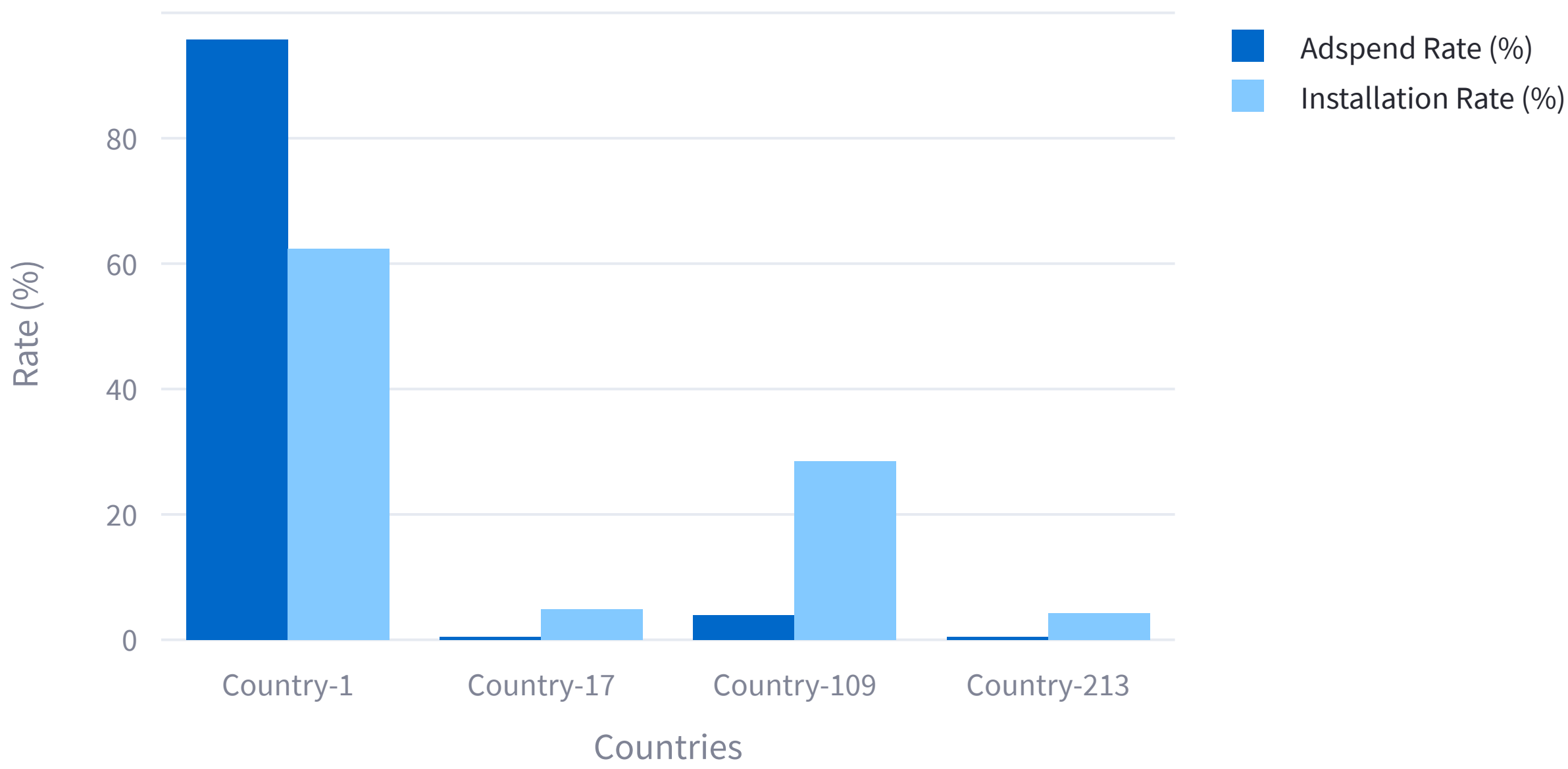


Figure 13 : Country-Wise Ad Spending Rate

Medium Fees

When a user installs one of justDice products through mediums that advertise the products, those mediums charge a fee to the company. The fee amount is determined by the company and it can be increased or decreased according to how much effect the medium has on installation numbers or the user acquisition process.

In 2022, justDice used Medium 10 and Medium 60 for advertising the products. There were different amounts of payouts for each app and each medium. For this analysis, the unit payouts for each app on Medium 10 and Medium 60 are shown (Figure 14 and Figure 15). It is fine to have more unit payout for some specific apps that bring users/ installation. On the other hand, some mediums might be underpaid for some specific apps and that might be an opportunity for the next year for acquiring more users.

App Id	Total Installation	Total Payout	Unit Payout
94	8157	4829.809	0.592
121	1206	199.97	0.166
95	369	61.117	0.166
174	1373	205.361	0.15
110	263	34.889	0.133
71	1154	148.523	0.129
104	2408	269.962	0.112
321	198	17.676	0.089
154	96	7.739	0.081
380	131	7.872	0.06
97	1669	99.613	0.06
390	218	11.613	0.053
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Figure 14 : App ID & Unit Payout Graph for Medium 10

Conclusion : On Medium 10, App 189, and App 275 have a low unit payout (0.003,0.004) but their installation counts are not low as most of the other products. Additionally, it can be seen that App 189 and App 275 are successfully advertised through Medium 10 (Figure 9). So, the amount of payout fee conditions for App 189 and App 275 should be reconsidered.

Conclusion : On Medium 60, App 154, and App 380 have a low unit payout (0.047,0.032) but their installation counts are not low as most of the other products and they are successfully advertised through Medium 60 with a high similarity rate (Figure 12).

Conclusion : App 94 has a high unit fee for Medium 10 and Medium 60. However, this fee amount become successful for Medium 10 with a high similarity rate between ad spending and total installation number. However, for Medium 60, the unit fee amount might be decreased.

Partner App Incomes

When users download justDice products to their mobile devices, they see an option to download partner apps on the screen. When users download the partner apps, the partner apps pay a certain amount of fee to JustDice.

Networks that show partner apps are Medium 26 and Medium 1111. Total installation counts and unit fees for Medium 26 and Medium 1111 are shown in Figure 16 and Figure 17 below:

Medium 26

App Id	Total Installation	Total Fee	Unit Fee
408	64	734.4	11.475
405	26	139.5	5.365
404	36	132.185	3.672
148	620	748.73	1.208

Figure 16 : App ID & Unit Fee Graph for Medium 26

Medium 1111

App Id	Total Installation	Total Fee	Unit Fee
277	2153	207.949	0.097

Figure 17 : App ID & Unit Fee Graph for Medium 1111

Conclusion: Although App 408 did not have the highest counts of installations, App 408 brought the highest fees for Medium 26. App 237 and App 277 have almost twice the amount installations of App148 but they are paid half price. As a result, promoting more App408 in justDice apps can generate higher incomes. App 404 and App 405 are in a similar situation.

Conclusion: Only App 217 was promoted on Medium 1111 and it does not have a high unit fee. Medium 1111 can be a good channel for the promotion of partner apps App 408, App 405, and App 404 with high unit fees for the next year.

OS Compatability

When users install an application to their mobile device, that application must be compatible with the device. Every year, with the developing technology, operating systems are updated and new versions are released like justDice products. Since some users use older operating systems, apps also need to be compatible with older systems. It is not an easy process for employees to make applications compatible with all operating systems and the company may stop its support on some older operating systems in order to make applications compatible with newly released operating systems.

For 2022, the graph of how many different apps were used on which operating systems can be seen (Figure 18). The revenue rate of justDice over operating systems can also be seen (Figure 19).

Device OS Verison	Number of Different Apps
10.x	27
11.x	27
12.x	27
13.x	24
5.x	20
6.x	22
7.x	23
-	--

Figure 18 : Device OS & Number of Different Apps Graph

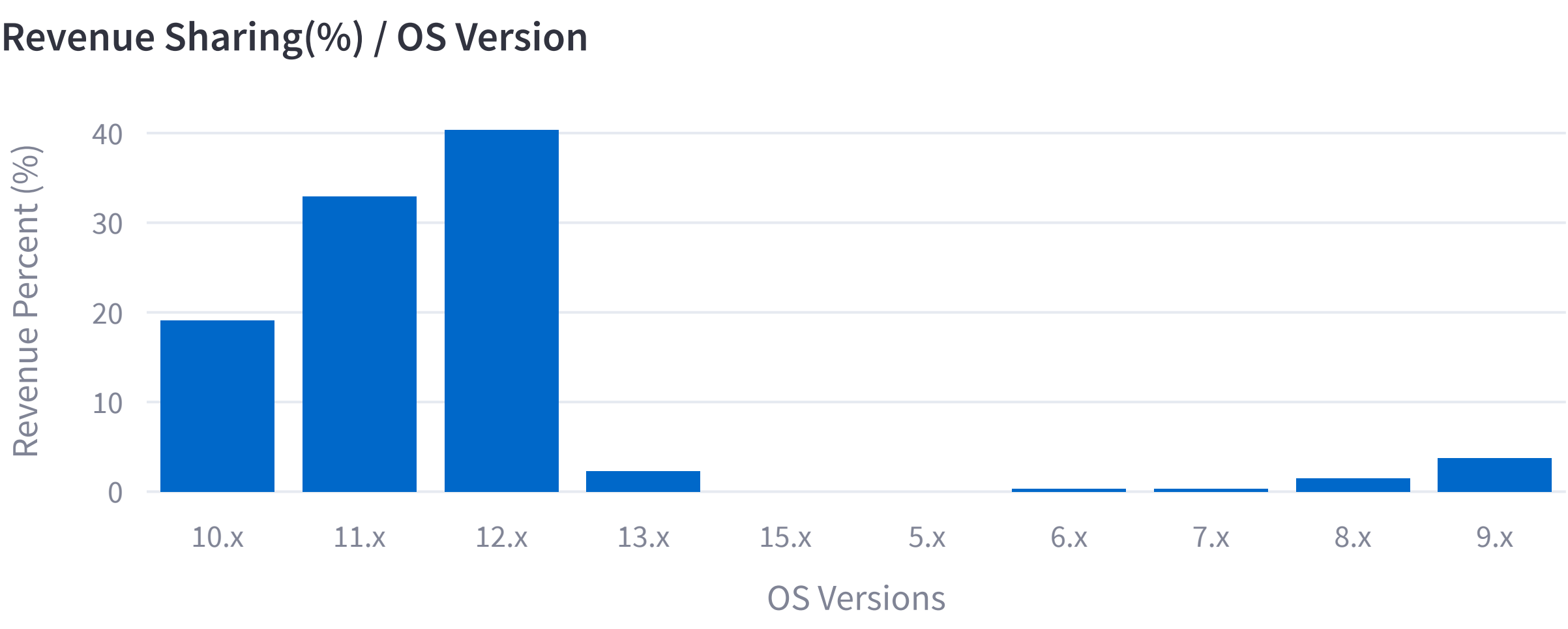


Figure 19 : Revenue Sharing & OS Grapgh

Conclusion: It takes some time for the latest operating system versions to become widespread. Therefore, the numbers for new operating system versions like 15.x and 16.x can be ignored. However, it can be seen that not all justDice apps were installed in the old OS versions such as 5.x and 6.x (Figure 18). That might mean that these apps are not compatible with 5.x and 6.x OS or the company stop supporting these apps for 5.x and 6.x OS.

Conclusion: The biggest part of justDice's profit comes from 12.x operating system. That means the contribution to the profit of the company increases as operating systems move from the old ones to the new ones (Figure 19).

In order to decide which operating systems' support should be reduced or stopped for which apps, it should be analyzed that how often the applications are used in the operating systems. In Figure 20, which applications are used and how often for each operating system can be examined.

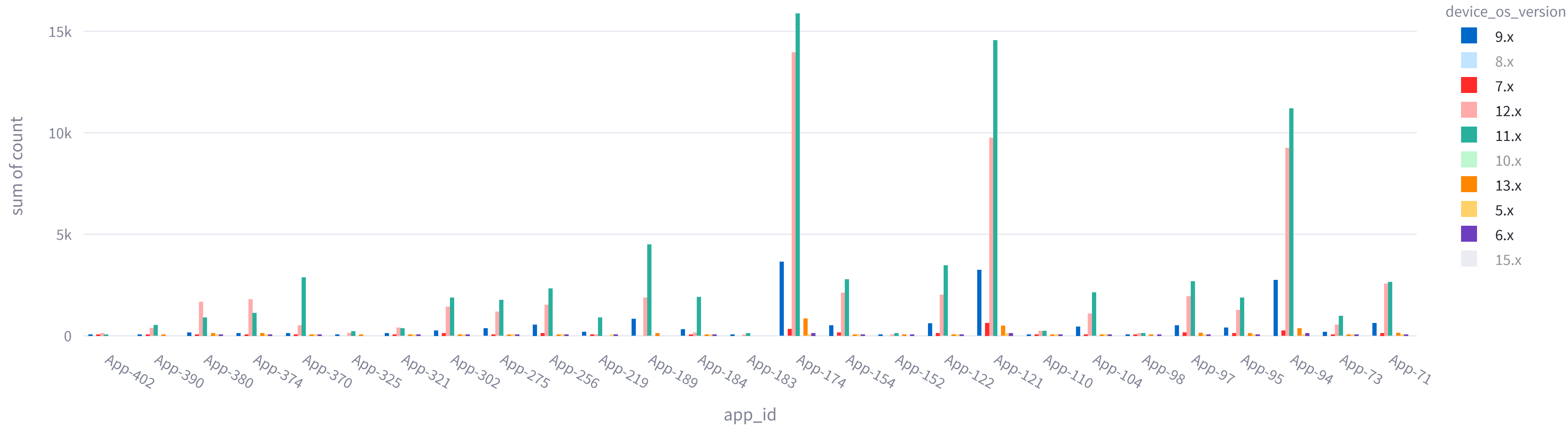


Figure 20: OS Versions & Installed Apps Graph

If the number of installations of the apps is not high enough for the old operating systems, justDice may stop the operating system support for these apps and focus on the compatibility of the apps with the new operating systems.

Operating system support may be withdrawn from some apps. Especially less-used apps that are installed in old operating systems.

Conclusion: In total, 5% of the company's revenu comes from the applications installed in the 5.x, 6.x, 7.x, 8.x, and 9.x operating systems. Especially for apps that are rarely used (less than 50 installations over 2022) in these operating systems, operating system support can be withdrawn and support for new operating systems can be given importance. For example :

- **For OS 5.x:** All apps except: App 121 and App 174
- **For OS 6.x:** All apps except: App 121, App 174, and App 95
- **For OS 7.x:** App 402, App 390, App 374, App 110 and App 98
- **For OS 8.x:** App 402, App 390, App 325, App 183, App 110 and App 98
- **For OS 9.x:** App 402, App 390, App 325, App 183, App 152, App 98, and App 110

Revenue Forecasting

It is possible to predict revenues for the beginning of 2023 based on the change in daily revenue in 2022. In Figure 21, information about the daily revenues for 2022 and a revenue prediction for the beginning of 2023 are shown:

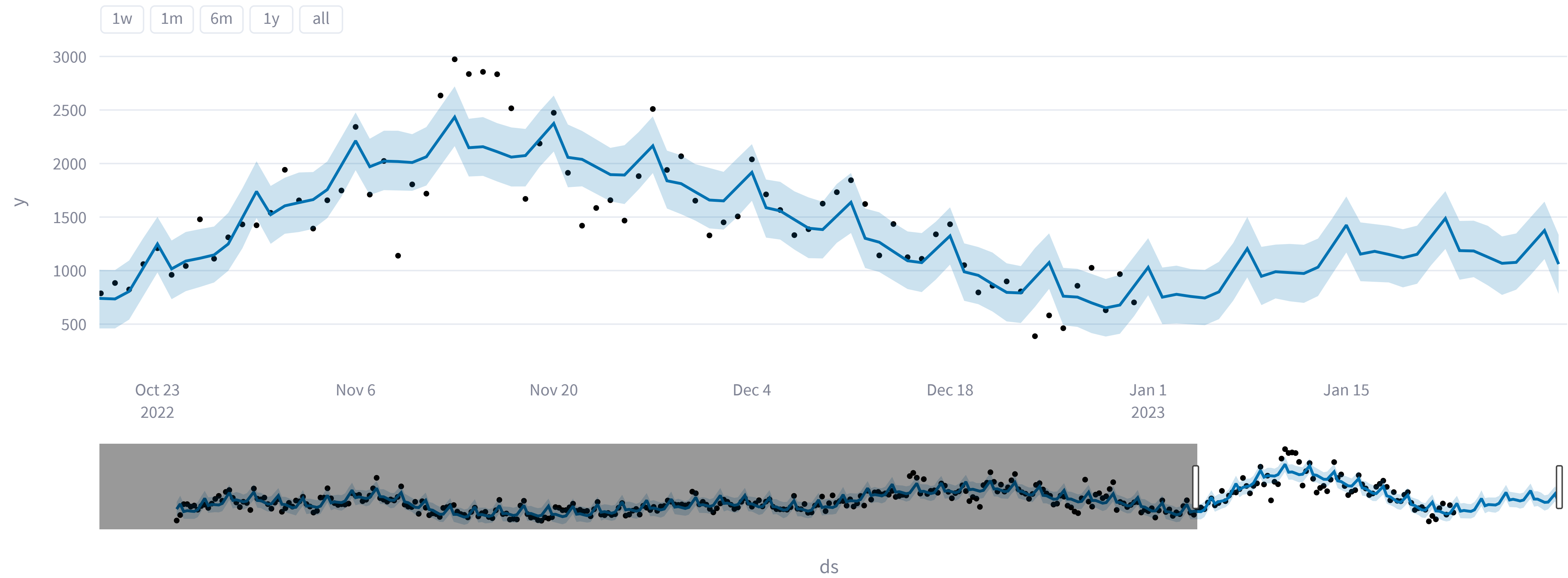


Figure 21: Revenue Prediction Graph

Conclusion: An increase in revenue can be expected at the beginning of 2023 compared to the last weeks of 2022. Especially at the end of 2022, while the daily average revenue is between 500 USD and 1000 USD , it can be predicted that the average daily profit will be between 1000 USD and 1500 USD for the first weeks of 2023.

For the revenue prediction, the financial opportunities mentioned before were not included.

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