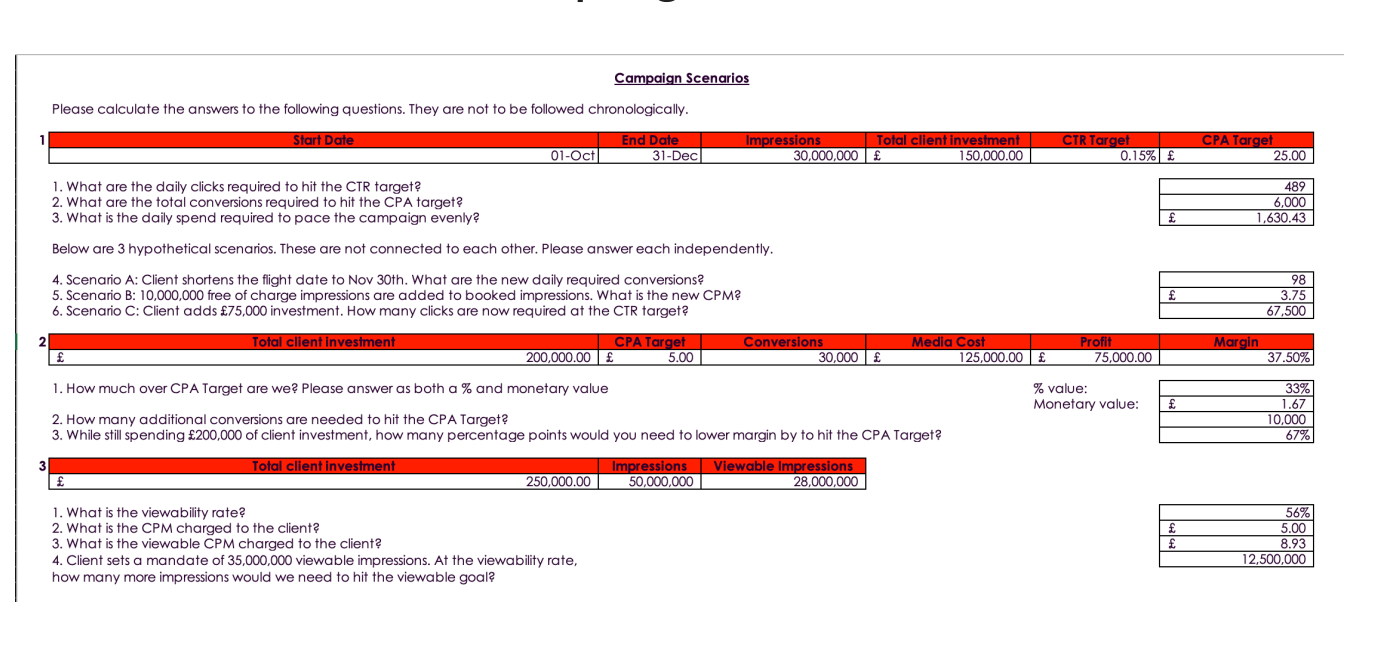
None

Trading data task by Ehsan Ghani:

Section 1: Campaign Scenarios.



Section 2 and 3: Display and Video data set task.

This analysis covers two distinct datasets for the Video and Display advertising campaigns. The data was imported from separate Excel files into pandas DataFrames to facilitate respective evaluations.

The decision to use Python for this task was driven by a desire to showcase and further develop my skills in data analysis and programming.

My checklist with respect to the briefs in both data sets is as follows:

1. **Checking and cleaning the data.**
2. **Feature Engineering with respect to the brief.**
3. **Creating the Pivot Table for exploratory analysis.**
4. **Summarising my findings and suggesting areas for optimisation.**

Display data set:

Data inspection:

Before conducting analysis, my process begins with the importation and cleansing of data. From experience, .xlsx files have typically been the most consistent of data sets, through either efficient data handling and built-in methods such as autofill. Nevertheless, this inspection will give me insight into the dataset's structure, confirm data types, and identify any potential inconsistencies or errors before analysis begins.

```
--- Data Types and Non-Null Counts ---
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 223139 entries, 0 to 223138
Data columns (total 12 columns):
 #   Column                              Non-Null Count   Dtype
---  ------                              --------------   -----
 0   Site Domain                         223139 non-null  object
 1   Strategy                            223139 non-null  object
 2   Strategy Type                       223139 non-null  object
 3   Size                                223139 non-null  object
 4   Seller Name                         223139 non-null  object
 5   Impressions                         223139 non-null  int64
 6   Clicks                              223139 non-null  int64
 7   PV Conversions                      223139 non-null  int64
 8   PC Conversions                      223139 non-null  int64
 9   Media Cost                          223139 non-null  float64
 10  Total Conversions                   223139 non-null  int64
 11  Total Revenue Generated from Sales  223139 non-null  float64
dtypes: float64(2), int64(5), object(5)
memory usage: 20.4+ MB

--- Summary of Missing Values ---
Site Domain                           0
Strategy                              0
Strategy Type                         0
Size                                  0
Seller Name                           0
Impressions                           0
Clicks                                0
PV Conversions                        0
PC Conversions                        0
Media Cost                            0
Total Conversions                     0
Total Revenue Generated from Sales    0
dtype: int64
--- Head (first few rows) of data ---
```

	Site Domain	Strategy	Strategy Type	Size	Seller Name	Impressions	Clicks	PV Conversions
0	transfermarkt.co.uk	Top Performing Domains	Prospecting	300x250	PubMatic	124895	12	41
1	healthline.com	Top Performing Domains	Prospecting	300x250	Healthline Networks, Inc.	49566	13	12
2	transfermarkt.co.uk	Top Performing Domains	Prospecting	970x250	PubMatic	41784	17	14
3	transfermarkt.co.uk	Top Performing Domains	Prospecting	160x600	PubMatic	40597	28	4
4	transfermarkt.co.uk	Top Performing Domains	Prospecting	300x250	OpenX	30920	0	13

Across the 12 features of advertisement performance the data tracks, the data is clean and complete for analysis of the campaign performance. That being said, I have noticed an increasingly large number of 0s across columns, which from past experience can affect averging and summarising key data points. I will account for this in creation of other features.

Feature Engineering:

As requested, I have created features reflecting ROAS (return on ad spend), CPA (cost per purchase) and CPM (Cost Per Thousand/Mille).

	Site Domain	Strategy	Strategy Type	Size	Seller Name	Impressions	Clicks	PV Conversions
0	transfermarkt.co.uk	Top Performing Domains	Prospecting	300x250	PubMatic	124895	12	41
1	healthline.com	Top Performing Domains	Prospecting	300x250	Healthline Networks, Inc.	49566	13	12
2	transfermarkt.co.uk	Top Performing Domains	Prospecting	970x250	PubMatic	41784	17	14
3	transfermarkt.co.uk	Top Performing Domains	Prospecting	160x600	PubMatic	40597	28	4
4	transfermarkt.co.uk	Top Performing Domains	Prospecting	300x250	OpenX	30920	0	13

Creating pivot tables:

The tables I have created will reflect the following points of the brief:

1. A ROAS rank of each creative split by strategy.
2. Ranking Strategy Types by efficiency (High ROAS & Low CPA)

I've also included a combination of ranking strategy types with Sellers to understand which seller and strategy pairings deliver the most efficient performance.

ROAS Rank of Creative Splits by Strategy:

This analysis identifies the top-performing ad creatives for each marketing strategy by ranking them based on their Return On Ad Spend (ROAS).

For this report, I defined the 'creative split' by the ad's Size, as different dimensions represent the primary creative variations being tested.

To achieve this, the pivot table is indexed by Size and uses Strategy as the columns. This structure effectively displays key performance indicators including Impressions, Clicks, CPA, and ROAS—for each ad size within each strategy. Finally, the table's output is ranked by ROAS to determine the most profitable ad sizes for each campaign.

Across all my pivot tables the aggregation logic for metrics is split: total counts like Impressions and Clicks are calculated using sum to get a complete picture of volume. In contrast, efficiency ratios like ROAS and CPA are calculated using mean to provide a fair, normalised comparison of performance between different creative sizes and so on.

Strategy	Big City - Geo Targeting	Health, Fitness & Nutrition Content	Keywords	Premium Sites	Retargeting - All Pages	Retargeting - Basket Page	Retargeting - Product Pages	Top Performing Domains
Size								
120x600	0.094062	0.214833	0.007192	0.220647	0.020641	0.004137	0.022675	0.084967
160x600	0.157764	0.150793	0.126741	4.782763	0.049935	0.004778	0.022454	3.694758
300x250	0.111111	1.179525	0.060747	0.860354	0.055472	0.005401	0.048691	2.184508
300x50	0.033056	0.529384	0.015296	0.110155	0.021158	0.001981	0.020303	1.059153
300x600	0.133158	0.462204	0.067229	0.218576	0.044609	0.001893	0.024789	1.430966
320x50	0.032216	0.104129	0.005369	0.061768	0.027485	0.000139	0.034063	0.277270
728x90	0.066100	0.418551	0.050208	0.407479	0.031024	0.002255	0.021550	0.656867
970x250	0.204966	0.920203	0.032747	1.072658	0.067026	0.001768	0.021392	1.731598
All	0.093380	0.574637	0.040584	0.577950	0.037613	0.003460	0.031754	1.512044

9 rows × 54 columns

```
--- Analysis by ROAS Rank ---
Most Efficient Strategy: '320x50'

Combined Rank Scores (Lower is Better):
         ROAS_Rank
Strategy
Size
320x50         1.0
300x50         2.0
728x90         3.0
160x600        4.0
300x250        5.0
120x600        6.0
300x600        7.0
970x250        8.0
```

From the analysis, the 320x50 ad size is identified as the most efficient and top-performing creative with a rank of 1.0, while the 970x250 size is the least effective. It is my recomendation that 320x50 is average size across advertisements.

Ranking Strategy Types by Efficiency (High ROAS & Low CPA)

This analysis ranks each strategy type (areas) on its ability to simultaneously maximize Return On Ad Spend (ROAS) and minimize Cost Per Acquisition (CPA).

Here I chose to index via strategy with strategy types (prospecting and retargeting) as columns, this layout with performance indicators provides the most concise answer into the most efficient performers across the entire digital advertising portfolio.

Once again, splitting respective metrics by relative needs for sum (total counts) and average (rates, returns and ratios etc.).

	CPA			CPM			
Strategy Type	Prospecting	Retargeting	All	Prospecting	Retargeting	All	Prospecting
Strategy							
Big City - Geo Targeting	0.093380	0.000000	0.093380	2.469040	0.000000	2.469040	1366
Health, Fitness & Nutrition Content	0.574637	0.000000	0.574637	15.276788	0.000000	15.276788	45
Keywords	0.040584	0.000000	0.040584	8.917661	0.000000	8.917661	568
Premium Sites	0.577950	0.000000	0.577950	6.810366	0.000000	6.810366	172
Retargeting - All Pages	0.000000	0.037613	0.037613	0.000000	7.492108	7.492108	0
Retargeting - Basket Page	0.000000	0.003460	0.003460	0.000000	3.457486	3.457486	0
Retargeting - Product Pages	0.000000	0.031754	0.031754	0.000000	10.410328	10.410328	0
Top Performing Domains	1.512044	0.000000	1.512044	11.829179	0.000000	11.829179	144
All	0.077586	0.034001	0.051061	8.006341	8.656388	8.401941	2295

```
--- Analysis by Average Rank ---
Most Efficient Strategy: 'Keywords'

Combined Rank Scores (Lower is Better):
                                     ROAS_Rank  CPA_Rank  Average_Rank
Strategy Type
Strategy
Keywords                                   1.0       4.0           2.5
Retargeting - All Pages                    2.0       3.0           2.5
Retargeting - Product Pages                3.0       2.0           2.5
Big City - Geo Targeting                   4.0       5.0           4.5
Retargeting - Basket Page                  8.0       1.0           4.5
Health, Fitness & Nutrition Content        6.0       6.0           6.0
Top Performing Domains                     5.0       8.0           6.5
Premium Sites                              7.0       7.0           7.0
```

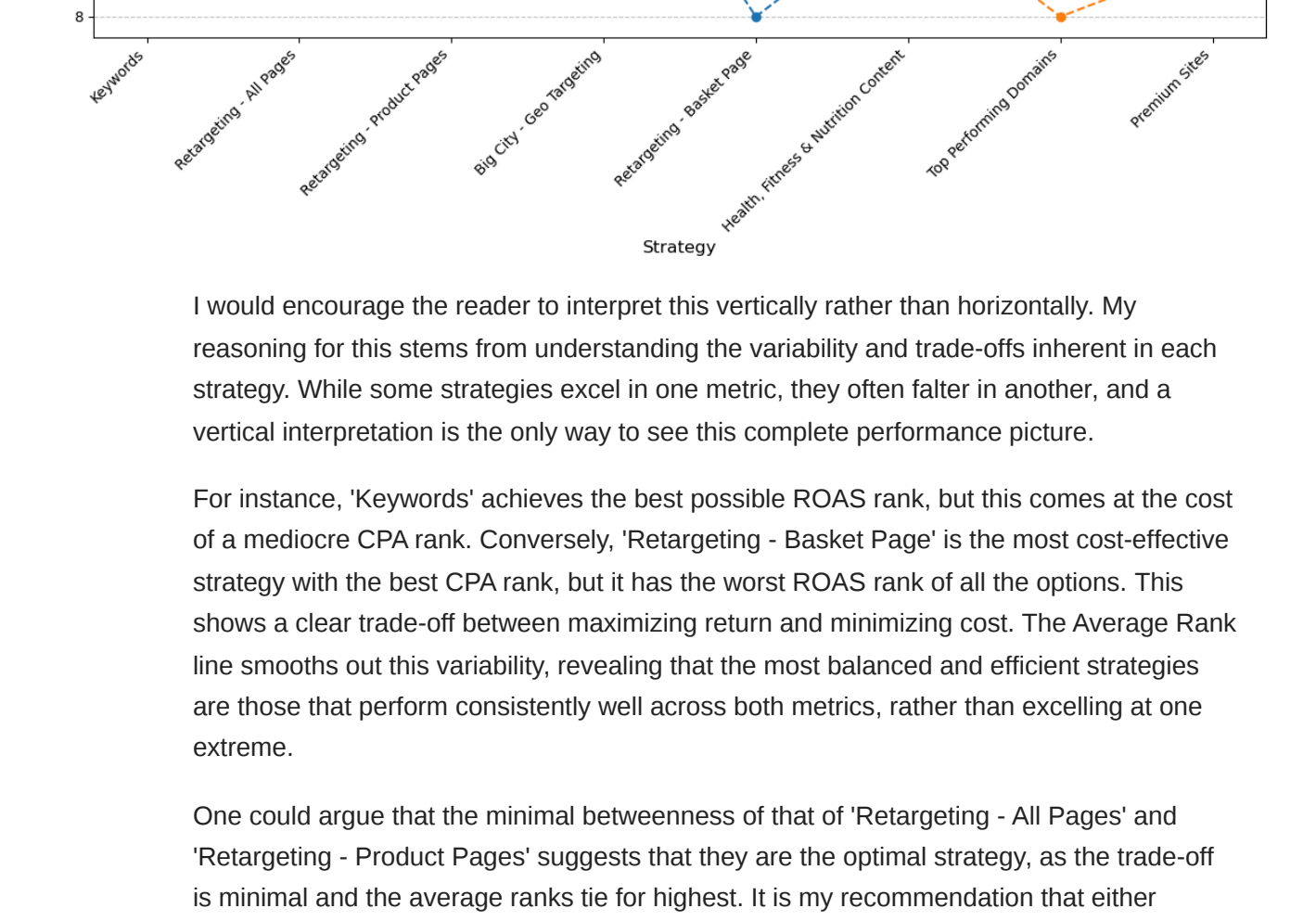
Key findings:

The updated rankings suggest that the 'Keywords','Retargeting - All Pages' and 'Retargeting - Product Pages' strategies are the most efficient overall, tying for the average rank of 2.5. The top performances are driven by a varying advantages between ROAS and CPA rankings.

This highlights a key trade-off in performance. For instance, the 'Retargeting - Basket Page' strategy achieved the best possible CPA Rank (1.0), but its extremely poor ROAS Rank (8.0) resulted in a less competitive average rank of 4.5.

From this, I can add that a balanced approach is the most effective path to overall efficiency. While specialization in one area (like the low CPA of 'Retargeting - Basket Page'), is effective, the top strategies like 'Keywords' and 'Retargeting - All Pages' perform well because they achieve a strong balance between generating a high return (ROAS) and maintaining a reasonable acquisition cost (CPA).

Visualisation with further findings:



I would encourage the reader to interpret this vertically rather than horizontally. My reasoning for this stems from understanding the variability and trade-offs inherent in each strategy. While some strategies excel in one metric, they often falter in another, and a vertical interpretation is the only way to see this complete performance picture.

For instance, 'Keywords' achieves the best possible ROAS rank, but this comes at the cost of a mediocre CPA rank. Conversely, 'Retargeting - Basket Page' is the most cost-effective strategy with the best CPA rank, but it has the worst ROAS rank of all the options. This shows a clear trade-off between maximizing return and minimizing cost. The Average Rank line smooths out this variability, revealing that the most balanced and efficient strategies are those that perform consistently well across both metrics, rather than excelling at one extreme.

One could argue that the mixed effectiveness of that of 'Retargeting - All Pages' and 'Retargeting - Product Pages' suggests that these are the optimal strategy, as the trade-off is minimal and the average ranks tie for higher. It is my recommendation that either should be considered as optimal, depending on whether the primary goal of chosen campaign is maximising return or minimising cost.

This graph is also the optimal example for displaying my ranking system. The strategy set is large enough for a clear interpretation of the differences between strategies in their trade-offs. It visually demonstrates how some strategies excel at maximizing return (a low ROAS Rank) while others are better at minimizing cost (a low CPA Rank), and how the 'Average Rank' identifies the most balanced performer overall. Other Ranking systems assignment are just as efficient, but do not offer as much as clear visual interpretation. Hence my decision to include the graph here, but not anywhere else.

Ranking Strategy Types with Sellers by efficiency (High ROAS & Low CPA)

:

This analysis will help identify optimal partnerships, showing which sellers are best suited for specific strategic goals like prospecting or retargeting.

				CPA			CPM
	Strategy Type	Prospecting	Retargeting	All	Prospecting	Retargeting	All
Strategy	**Seller Name**						
Big City - Geo Targeting	33Across Real Impact	0.000000	0.000000	0.000000	1.585768	0.000000	1.585768
	Bauer Media UK	0.000000	0.000000	0.000000	2.697101	0.000000	2.697101
	Business Insider Inc.	0.067900	0.000000	0.067900	2.233905	0.000000	2.233905
	BuzzFeed Media Enterprises, Inc.	0.009639	0.000000	0.009639	2.075601	0.000000	2.075601
	Conde Nast	0.066874	0.000000	0.066874	2.052162	0.000000	2.052162
...	...	...	...	...	...	...	...
Top Performing Domains	Microsoft Advertising Exchange	0.110548	0.000000	0.110548	15.792635	0.000000	15.792635
	OpenX	0.647142	0.000000	0.647142	11.582583	0.000000	11.582583
	PubMatic	4.682597	0.000000	4.682597	12.336142	0.000000	12.336142
	Trusted Media Brands Inc	0.000000	0.000000	0.000000	10.004387	0.000000	10.004387
All		0.077586	0.034001	0.051061	8.006341	8.656388	8.401941

495 rows × 18 columns

```
--- Analysis by Combined Rank ---
Most Efficient Strategy: '('Retargeting - All Pages', 'Warner Media LLC')'

Combined Rank Scores (Lower is Better):
```

		ROAS_Rank	CPA_Rank	Average_Rank
	Strategy Type			
Strategy	**Seller Name**			
Retargeting - All Pages	Warner Media LLC	1.0	128.5	64.75
Keywords	theGuardian.com	2.0	128.5	65.25
	Gumtree.com Ltd	3.0	128.5	65.75
Retargeting - Product Pages	Internet Brands Inc.	4.0	128.5	66.25
Retargeting - All Pages	Figaromedias	6.0	128.5	67.25

Here it is shown that the combination of the 'Retargeting - All Pages' strategy run with the seller 'Warner Media LLC' is the most efficient partnership, achieving the lowest Average Rank of 64.75. Interestingly, all of the top five partnerships share the exact same CPA Rank (128.5). This indicates that ROAS was the sole deciding factor in this particular ranking, making the 'Warner Media LLC' partnership the top performer. Therefore, my suggestion is to prioritize and allocate more budget to the 'Warner Media LLC' seller, 'Retargeting - All Pages' combination, as it is proven to be the most profitable pairing.

Summary of Display data set task:

. **Top Creative split**: The 320x50 ad size is the most effective creative split, outperforming all other dimensions.

. **Top Strategy**: The 'Retargeting - Basket Page' strategy and 'Retargeting - Product Pages' are the most efficient overall. Their success is driven by an exceptional ability to balance a decrease Cost Per Acquisition (CPA) and maximise Return On Ad Spend (ROAS).

. **Top Combination of strategy and sell-side partner**: The most profitable specific combination is the 'Retargeting - All Pages' strategy when run with the seller 'Warner Media LLC', as this pairing generates the highest ROAS among top-performing partners.

I will now continue with the video data set in a similar manner.

Video data set task:

As the brief states, the goal of this campaign in three-fold:

. Maximise viewability

. Maximise video completion rate

. Minimise the cost of running the campaign.

```
--- Data Types and Non-Null Counts ---
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 61387 entries, 0 to 61386
Data columns (total 12 columns):
 #   Column                                 Non-Null Count  Dtype
---  ------                                 --------------  -----
 0   Strategy                               61387 non-null  object
 1   App/URL                                61387 non-null  object
 2   Environment                            61387 non-null  object
 3   Inventory Source                       61387 non-null  object
 4   Browser                                61387 non-null  object
 5   Impressions                            61387 non-null  int64
 6   Clicks                                 61387 non-null  int64
 7   Media Cost                             61387 non-null  float64
 8   Completions (Video)                    61387 non-null  int64
 9   Active View: Viewable Impressions      61387 non-null  int64
 10  Active View: Measurable Impressions    61387 non-null  int64
 11  Starts (Video)                         61387 non-null  int64
dtypes: float64(1), int64(6), object(5)
memory usage: 5.6+ MB

--- Summary of Missing Values ---
Strategy                               0
App/URL                                0
Environment                            0
Inventory Source                       0
Browser                                0
Impressions                            0
Clicks                                 0
Media Cost                             0
Completions (Video)                    0
Active View: Viewable Impressions      0
Active View: Measurable Impressions    0
Starts (Video)                         0
dtype: int64
--- Head (first few rows) of data ---
```

	Strategy	App/URL	Environment	Inventory Source	Browser	Impressions	Clicks	Media Cost	Completions (Video)
0	Category	akhbarona.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Firefox	2	0	0.016173	1
1	Category	al.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Other	5	0	0.086283	2
2	Category	al.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Safari 11	1	0	0.017256	0
3	Category	albawaba.com	Video Desktop In-Read	FreeWheel SSP Unclassified Inventory Source	Chrome	7	0	0.041046	4
4	Category	alcula.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Chrome	19	0	0.336444	6

Data Inspection:

As expected, the behaviour of the DataFrame is the same, efficient data handling across the board.

Feature engineering with respect to Video data set:

Following the data inspection, this section focuses on feature engineering with respect to specific key performance indicators required by the brief. New columns such as Viewability, Video Completion Rate, CPM, CPCV, and CTR are calculated from the base metrics.

	Strategy	App/URL	Environment	Inventory Source	Browser	Impressions	Clicks	Media Cost	Completions (Video)
0	Category	akhbarona.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Firefox	2	0	0.016173	1
1	Category	al.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Other	5	0	0.086283	2
2	Category	al.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Safari 11	1	0	0.017256	0
3	Category	albawaba.com	Video Desktop In-Read	FreeWheel SSP Unclassified Inventory Source	Chrome	7	0	0.041046	4
4	Category	alcula.com	Video Desktop In-Read	DoubleClick Ad Exchange Unclassified Inventory...	Chrome	19	0	0.336444	6

Pivot tables of Video data set:

Here, I will provide two different pivot tables with respect to the brief:

. The first table reflecting rankings for strategy based on video completion rate and viewability

. The second table reflecting which areas of Browser and Environment maximimise video completion rate and viewability, but minimise cost related attributes like CPM, CPCV.

Table reflecting rankings for strategy based on video completion rate and viewability:

In the construction of this table, I had to adjust the aggregation logic to reflect the performance metrics of the Video data set, which meant including viewability, video completion rate, CPCV and CTR as metrics were to be averaged due to their categorisation as rates, ratios and returns. Also in configuration I had to remove App/URL from columns, with the vast set of URLs the computation was too much to summarise even categorically, so rather than include a potential computational error I decided to remove it entirely, however the table does include 'Environment', 'Browser', 'Inventory Source' as columns to reflect a macro view of the micro aspect of URLs.

Environment							
Browser	Chrome	Firefox	Internet Explorer 10	Internet Explorer 11	Microsoft Edge	Other	Safari 10
Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source	DoubleClick Ad Exchange Unclassified Inventory Source
Strategy							
Behavioural	0.029485	0.032288	0.033374	0.034677	0.030079	0.033204	0.038356
Category	0.032786	0.033458	0.028939	0.033251	0.033269	0.031410	0.031054
Keyword	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Prospecting	0.043014	0.039234	0.082674	0.031915	0.034565	0.050106	0.021547
All	0.033535	0.034275	0.035402	0.033425	0.032333	0.032534	0.031484

5 rows × 3598 columns

```
--- Analysis by Combined Rank ---
Most Efficient Strategy: 'Prospecting'

Combined Rank Scores (Lower is Better):
                   Viewability_Rank  VCR_Rank  Average_Rank
Environment
Browser
Inventory Source
Strategy
Prospecting                     1.0       1.0           1.0
Behavioural                     2.0       2.0           2.0
Category                        4.0       3.0           3.5
Keyword                         3.0       4.0           3.5
```

Key findings:

The Prospecting strategy is unequivocally the top performer, excelling in both key campaign goals. This suggests that for this video campaign, broad targeting (Prospecting, Behavioural) is significantly more effective than more specific targeting methods.

Ranking strategy with respect to additional cost factors:

In construction of this table I thought it would be best include functions of media cost, such as CPM (Cost Per Mille) and CPCV (Cost Per Completed View). This provides a more holistic view of performance, allowing for an efficiency analysis that balances engagement metrics like viewability with their associated costs.

	Strategy							
	Inventory Source	AO - High AVOC - £12	AO - High Viewability 70% - £5	AO - O&O News and Entertainment Medium - Large Player - £12	AO - UK VOD - Teads - Male - £19	Adform Unclassified Inventory Source	Adman	AppNexus Unclassified Inventory Source
Browser	**Environment**							
Android Webkit	Desktop Web Video (Video RTB)	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
	Mobile Web	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
	Video Mobile App Interstitial (Video RTB)	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
Chrome	Desktop Web Game (Video RTB)	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
	Desktop Web Video (Video RTB)	0.022205	0.019659	0.00000	0.000000	0.012228	0.018118	0.012926
...	...	...	...	...	...	...	...	...
Safari 8	Video Desktop In-Read	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
Safari 9	Desktop Web Game (Video RTB)	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
	Desktop Web Video (Video RTB)	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
	Video Desktop In-Read	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000
All		0.022205	0.024616	0.00793	0.072603	0.012584	0.014829	0.019832

63 rows × 1092 columns

```
--- Analysis by Combined Rank ---
Most Efficient Strategy: '('Microsoft Edge', 'Mobile Web')'

Combined Rank Scores (Lower is Better):
```

		Viewability_Rank	VCR_Rank	CPCV_Rank	CPM_Rank	Average_Rank
	Strategy					
	Inventory Source					
Browser	**Environment**					
Microsoft Edge	Mobile Web	3.5	1.5	12.0	2.0	4.750
Internet Explorer 9	Desktop Web Video (Video RTB)	34.0	10.0	9.0	1.0	13.500
Safari 9	Video Desktop In-Read	33.0	30.0	18.0	11.0	23.000
Microsoft Edge	Video Desktop In-Feed	3.5	60.0	3.0	26.0	23.125
Safari 10	Video Desktop In-Read	32.0	26.0	20.0	15.0	23.250
...	...	...	...	...	...	...
Other	Mobile Web	26.0	38.0	61.0	54.0	44.750
Safari 7	Desktop Web Game (Video RTB)	53.0	56.0	28.0	52.0	47.250
Safari 12	Desktop Web Game (Video RTB)	57.0	49.0	37.0	48.0	47.750
Safari 11	Desktop Web Game (Video RTB)	56.0	47.0	62.0	45.0	52.500
Safari 7	Desktop Web Video (Video RTB)	54.0	41.0	60.0	62.0	54.250

62 rows × 5 columns

Findings:

The combination of using the Microsoft Edge browser on Mobile Web stands out as the top-performing segment, achieving the lowest (best) Average Rank of 4.750. This success is due to its strong all-around performance, particularly its excellent ranks for Video Completion Rate (1.5) and CPM (2.0). This indicates that this segment not only keeps viewers engaged but does so at a very low relative cost. Intuitively this is my recommended avenue in future video campaigns.

Interestingly, while other combinations like Internet Explorer 9 on Desktop Web Video perform well, they show different strengths. For example, that combination has the best CPM Rank (1.0) but a weaker Viewability Rank (34.0), highlighting the trade-offs between different environments and browsers.

Summary of video data set findings:

Here is a summary of the findings:

.Top Strategy: Prospecting is the most effective strategy overall, indicating that broad targeting performs better than specific targeting for this video campaign.

.Top Browser and Environment with respect to cost factors: The most efficient technical segment is running ads on the Microsoft Edge browser within a Mobile Web environment, as this combination delivers a low CPM and a high video completion rate.