MMMトラッカー English User Guide

Notes on the use of materials

▼ Please read before using the materials and use them only if you agree to the terms of use.

- The instruction does not cover the specifications of this service. The contents of the instruction manual are subject to change without notice due to changes in the specifications of this service.

- No part of the instruction manual may be reproduced, modified, or disclosed to any third party without our permission, except for personal, non-commercial use or other use permitted by law. You may not use the manual for the purpose of developing a product that competes with the

service.You may not use the information for the purpose of developing a product that competes with the Service.

CM効果トラッカー

MMMトラッカー

How to use MMM トラッカー

▼ Overview.

- Upload the three CSVs to Google Cloud Storage to start the MMM.

- It takes approximately 10 minutes to complete the MMM and display the MMM results on the MMM トラッカー.

- 10 minutes is the result of dummy data (2 years 730 records 8 media).Reproduction is not guaranteed.The time required may vary depending on the content of the data.

▼ How to use

The language in which Google Cloud is displayed depends on your browser settings. Usually it is your native language.

- Access Google Cloud Storage; the URL will be the one you have been informed of separately.

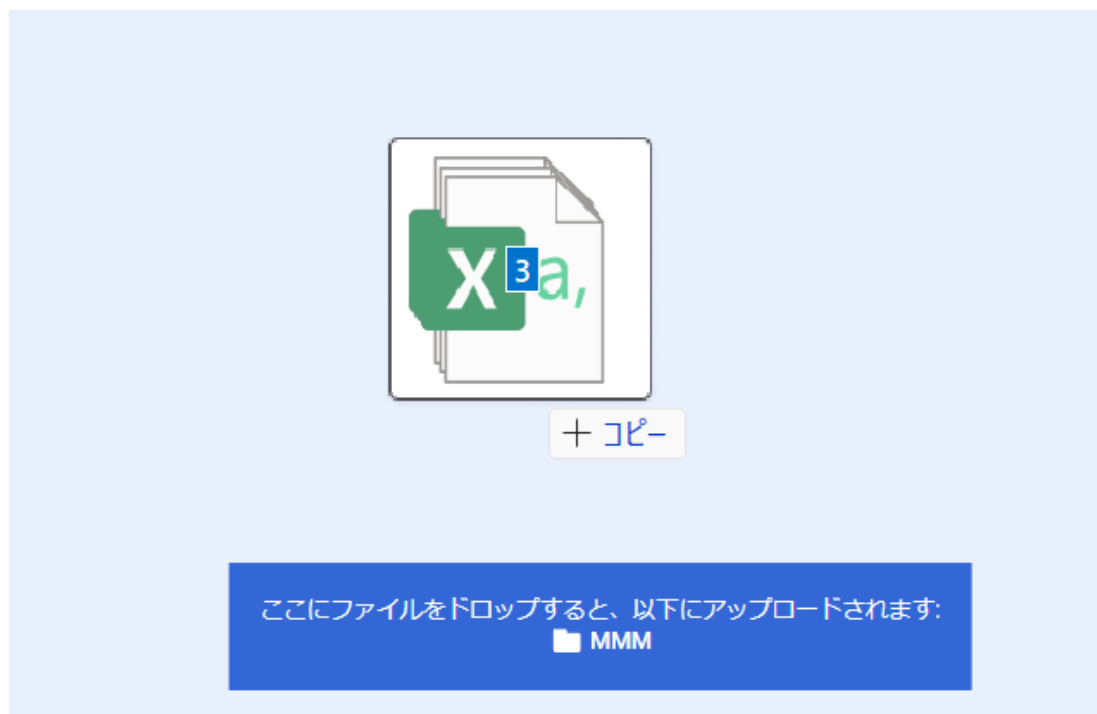- Click on Upload file or drag and drop to upload the CSVs.

フォルダの用意ができました。データを追加してください。
ここにファイルやフォルダをドロップするか、アップロード ボタンを使用します。別のバケットまたはクラウド ストレージ プロバイダから大量のデータを移動するには、転送ジョブを作成します。

ファイルをアップロード　　転送ジョブを作成

Drag-and-drop uploading.

＋ コピー

ここにファイルをドロップすると、以下にアップロードされます:
📁 MMM

- Once the upload is complete, the CSVs are placed in Google Cloud Storage.

- Google Cloud detects the CSV file and starts the MMM.
  Nothing changes on the screen, but the system runs on the back end.

- After a short time, you will receive an email from Google informing you of the start.

  - Email sender.

    - Google Cloud Alerting alerting-noreply@google.com

  - Email title.

    - [ALERT‐No severity] MMMトラッカー　CSV file detected (omitted below).

  - Text of the email.

   - CSV file detected (omitted below).
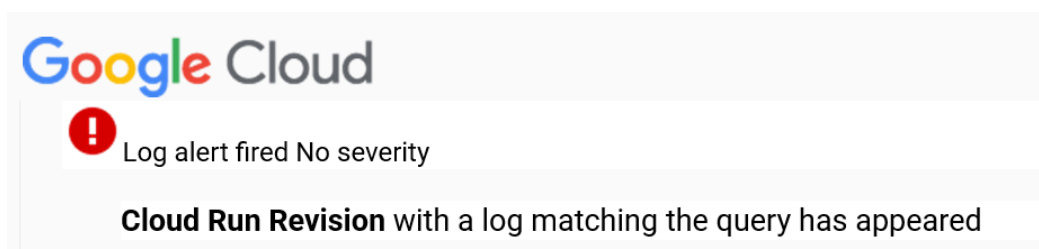
▼ Important: Uploading for the first time or after a certain amount of time has elapsed since the previous process.

Uploading for the first time or after a certain amount of time has elapsed since the previous process will result in an error.This is because the cloud is not always on standby.If you receive an email informing you of the error, the cloud will then go into a waiting state for a while so that the CSV can be

processed.Upload the CSV to the cloud again.If there are no problems with the CSV, the process begins.If the error persists after re-uploading the CSV, please check "Checkpoints for CSV Creation".CSV may not be appropriate.

- About Error Mail

  - Email Sender

    - Google Cloud Alerting <u>alerting-noreply@google.com</u>

  - Email Title

    - [ALERT - Error] MMMトラッカー　Error (omitted below)

  - Text of the email

    - Error MMM failed (omitted below)
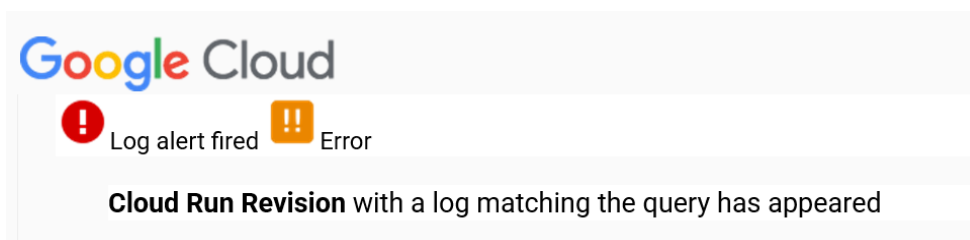
▼ Important] Email after uploading CSV

After submitting a CSV file, you will receive either (1) "CSV file detected" or (2) "Error" within approximately one minute.

(1) When you receive "CSV file detected
If the CSV is correct, you will receive a progress email afterwards; if you do not receive a completion email after 30 minutes, you may be stuck in Google Cloud.Please check the "Checkpoints for CSV creation" <u>section.In</u> particular, see "Is the number of IMP and COST media appropriate?"for more information.There may be too many records or <u>media.It</u> will be smoother if you try the following steps, starting with the smallest number of media.

(2) If you receive an "Error
Uploading for the first time or after a certain amount of time has elapsed since the previous process will result in an error.This is because the cloud is not always on standby.If you receive an email informing you of the error, the cloud will then go into a waiting state for a while so that the CSV can be processed.Upload the CSV to the cloud again.If there are no problems with

the CSV, the process begins.If the error persists after re-uploading the CSV, please check "Checkpoints for CSV Creation".CSV may not be appropriate.

   (i) ② If none of the above are received,Please <u>contact</u> us.We will check the system.

- About the 'CSV file detected' email

    - Sender of the email.

        - Google Cloud Alerting <u>alerting-noreply@google.com</u>

    - Title of the email.

        - [ALERT‐No severity] MMMトラッカー　CSV file detected(omitted below)

    - Text of the email.

        - CSV file detected (omitted below).
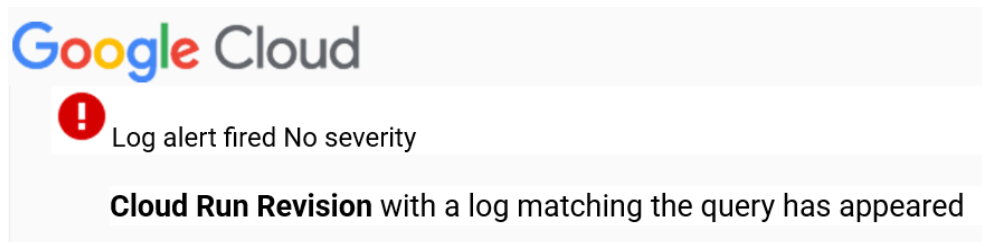
▼ About emails from Google

- You will receive multiple emails from Google until the MMM is completed.

- Each email contains information that you should be aware of.

- When you receive the email, check the text.

  ▼ If the MMM is proceeding properly, you will receive the following email

- Title of the email.

    - [ALERT‐No severity] MMMトラッカー　CSV file detected (omitted below).

- Title of the email.

- [ALERT - No severity] MMMトラッカー　1/3 of the MMM has been completed (omitted below).

- Title of the email.

  - [ALERT - No severity] MMMトラッカー　MMM is progressing well (omitted below).

- Title of the email.

  - [ALERT - No severity] MMMトラッカー　Final processing is underway (omitted below).

- Title of the email.

  - [ALERT - No severity] MMMトラッカー　MMM completed (omitted below).

▼ If the MMM is not proceeding properly, you will receive the following email

- Title of the email.

  - [ALERT - Error] MMMトラッカー　Error *** (omitted below)

- Title of the email.

  - [ALERT - Warning] MMMトラッカー　Abnormally terminated *** (omitted below)

**** parts depend on the situation.

Advice is provided in each email.

If you have any questions about the content of the emails you receive, please contact us.

▼ About CSV

▼ Please provide three CSVs.

Format available.Please contact us.

- IMP.csv

  - Media distribution count file.

- COST.csv

  - Media cost file.

- CV.csv

  - Target files, including CVs and number of requests for information.

▼ Checkpoints for CSV creation

- Are there any blanks or missing data?

- Is the data daily data?

- Are the file names in English capital letters?

▼ Are the column names in the file appropriate?

  - Only single-byte alphanumeric characters and single-byte underscores are allowed.

  - The first character of the column name cannot be a number.Below are tips for each file.

    - IMP: Column A is DATE in uppercase.

    - COST: Are the names of IMP and all columns the same?

    - CV: Column A is DATE in uppercase; column B is CV in uppercase.

▼ Is the type of column A DATE appropriate?

  - Is the column A DATE of the 2024/1/1 type?

  - 2024/01/01, 2024-1-1, 20240101, etc. are not acceptable.

▼ Is the number of IMP and COST media adequate?

  - Are there more than two media?At least three columns are required, including column A DATE.

  - Is there too much media?

    > For example, for two years (730 records) of data, up to nine media have been tested to work -

within ten columns, including column A DATE.

Consider integrating media with smaller budget ratios or similar advertising menus.If the VIF section of the MMMトラッカー contains media with a VIF value of more than 10,Its media are similar to other media.Priority consideration.Data that looks like it was generated by a random function should also be avoided.

It is possible that up to 13 media can be supported by customisation, such as adjusting parameters, but this cannot always be increased depending on the nature of the data.In principle, customisation is available for a fee.For more information, please contact us.

MMMトラッカー report items.

header

- Period
  - Data period.Displayed in the top right-hand corner of the screen.

Summary

MMM summary.

- COST
  - Advertising budget.
    - Before   The ad budget before optimisation.
    - After   The advertising budget after optimisation.
    - Depending on the results of optimisation, the same amount may be payable.

- CV
  - Business KPIs; these are marked as CVs, but intermediate KPIs etc. can also be set.

- Before　Business KPIs before optimisation.

- After　Business KPIs after optimisation.

- Depending on the results of optimisation, the same amount may be payable.

- CPA

  - This is the unit cost per acquisition of the business KPI: COST divided by the business KPI.

    - Before　The unit cost per acquisition before optimisation.

    - After　The unit cost per acquisition after optimisation.

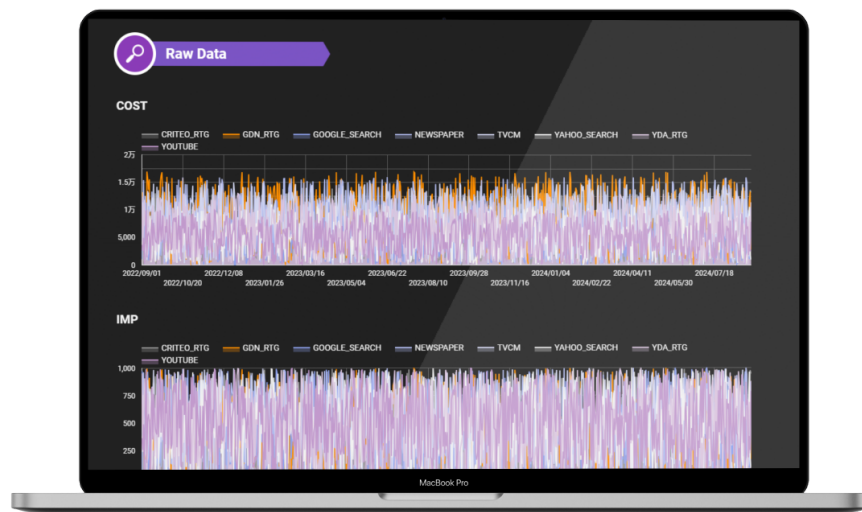   - Depending on the results of optimisation, the same amount may be payable.
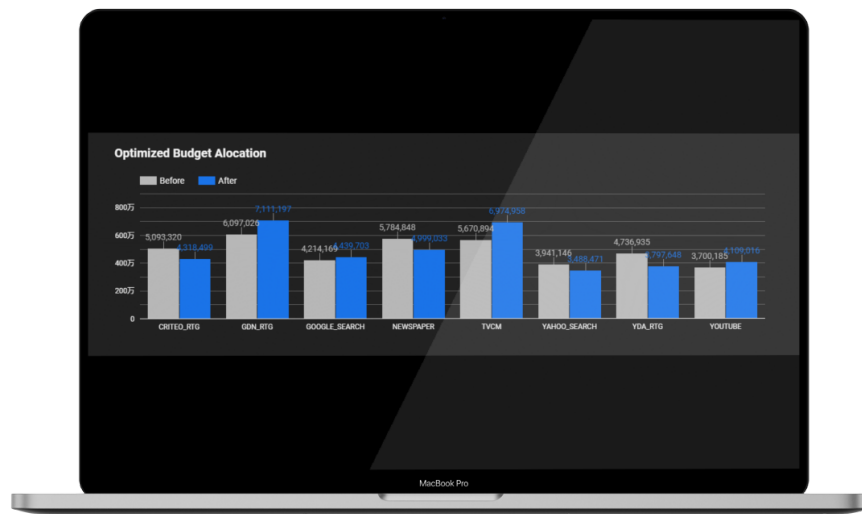
- **Optimized Budget Alocation　予算最適化**

  - Budget optimisation results.

- Before　The budget by media before optimisation.

- After　Budget by media after optimisation.

- Depending on the results of optimisation, the same amount may be payable.

Raw Data

Basic information on raw data.

- COST

  - COST trends by media.

- IMP

  - IMP trends by media.

- CV

  - Business KPI trends.

Data Check

Basic information on data converted for MMM.

- **Missing 0 check**　欠損・0チェック

  - Data incompleteness checklist.

  - If value is greater than 1, there is either missing data or 0 (zero).

  - If the vakue is large, the MMM may not be correct.Check the data.

- **Correlation　相関**

  - This is a checklist of relationships between media and between measures.

- The closer the value is to 1, the more positively correlated it is.The two media behave similarly.

- The closer the value is to -1, the more negatively correlated it is.Opposite movement.

- The closer the value is to zero, the weaker the relationship.

- For example, CRITEO_RTG and GDN_RTG are 0.12; the number of CRITEO_RTG deliveries and the number of GDN_RTG deliveries are hardly related.

- Correlation is a guide; only the relationship between two variables can be assessed.

- VIF　多重共線性

  - This is a checklist of relationships between media and between measures.

  - Unlike correlation, which assesses the relationship between two variables, it detects and measures the degree of multicollinearity

between explanatory variables.

- Generally, when the VIF exceeds 10, several explanatory variables may be strongly related to each other.

- Multicollinearity reduces the reliability of the model and may reduce the accuracy of coefficient estimation.

- **Normalization**　正規化

  - Scaling (normalisation) checklist.

  - Processes media and measure data in different units so that they can be handled in a consistent manner.

  - Divide_operation divided by average.

Model

MMM model information.

- Train　学習

    - Table the results of the model training.

    - The media name is the name entered in the CSV.

    ▼ **Indicator**

    - Model parameters.

    - The impact of each media on business KPIs and the characteristics of advertising effectiveness (e.g. ease of remaining).

    - It is a way to understand the current situation by media and to check that the models are converging properly.

    - In particular, model convergence is important.See **r_hat** after every output.

    ▼ ad_effect_retention_rate [media name].

        - This is an indicator of the persistence and residual effect of the advertising.

        - The higher the value, the more likely the media is to remain effective in advertising.

    ▼ coef_media[media name].

        - The impact of the media on business KPIs.

        - The higher the value, the greater the media impact on business KPIs.

    ▼ expo_trend

        - This relates to trends.

    ▼ exponent[media name]

        - This indicates the strength of the attenuation or amplification of the advertising effect.

        - The higher the value, the more likely the medium is to rapidly change (attenuate or amplify) its effects.

    ▼ gamma_seasonality[*,*]

        - This is an indication of the magnitude of seasonality.

    ▼ intercept[*]

- Constant terms.

▼ peak_effect_delay[media name]

- This indicates the ease of delay in the peak of advertising effectiveness.

- The higher the value, the later the media is likely to peak advertising effectiveness from delivery.

▼ sigma[*]

- Indicates variation in the data.

▼ mean~r_hat

- The numerical value of each Indicator.

- **mean**
  - Average.

- std
  - The size of the variation.

- median
  - Median.

- _5per
  - 5 percentile The value is around 5% from the nearest minimum value.

- _95per
  - 95th percentile The value is around 5% from the nearest maximum value.

- n_eff
  - Effective sample size.

- **r_hat**
  - It indicates the degree of convergence of the model.
  - The closer to 1, the more stable.
  - Above 1.1, the model is likely to have not converged and a recalculation of the model is recommended

- example

  - If the model is convergent
    r_hat is the default colour.Black background, white text.
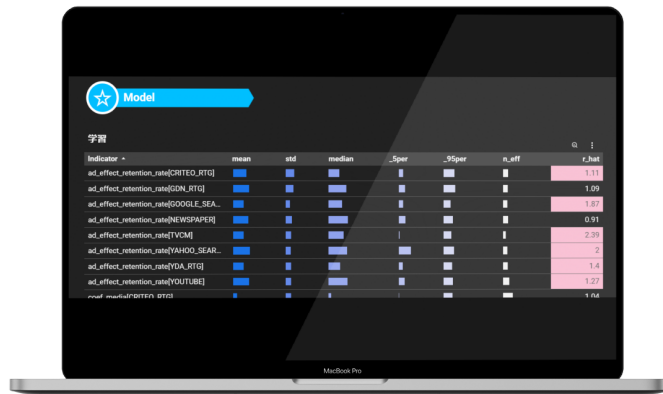

  - If the model is not converging
    R_HAT turns red.Recalculation required.

  - If the parameters of the model are set to extreme values
    Many of the r_hats are red and many parameters are not

converging.

- **Verification　TrainData**　検証　学習データ
  - Validate the accuracy of the model.
  - The line graph shows the business KPIs predicted by the model and the actual business KPIs.
  - The horizontal axis of the graph is the validation period: 4/5 (80%) of the CSV period.
  - The semi-circular graph is an indicator of model accuracy.

- line graph

  - Actual

    - Actual business KPIs

  - Predicted

    - Business KPIs predicted by the model.

  - The closer the two broken lines are, the higher the model accuracy.

- semi-circular graph

  - R2_Train

    - Indicator of model accuracy.The higher the value, the higher the model accuracy.

    - Indicates the extent to which the model explains the variation in business KPIs.

    - There is no absolute guideline, but generally 0.5 or more is desirable.

    - In this example, it is 0.79 (79%).

  - MAPE_Train

- Error indicator.The lower the value, the higher the model accuracy.

- The percentage deviation between actual and projected business KPIs.

- In this example it is 0.06 (6%).

- There are no absolute guidelines, but generally anything below 0.1 (10%) is considered to be highly accurate.

- **Verification　TestData　検証　テストデータ**

  - Validate the accuracy of the model with test data.

  - The aforementioned validation is accuracy on training data (the data on which the model was created).

  - Verify that the model can make adequate predictions on unknown data.

  - Test data is validated for 1/5 (20%) of the CSV period.

  - The meaning of the graphs and indicators is the same as in the aforementioned verification.See the aforementioned description.

- If both the aforementioned accuracy and the accuracy of the test data is high

  - The model is adequately predictive.

- If the aforementioned accuracy is high but the accuracy of the test data is low

  - The model is over-fitting the training data, a condition known as over-training.

  - Various factors are possible, but generally the smaller the data (number of records), the more likely it is to occur.

 - If the test data is not accurate, consider increasing the number of records, etc.

Media Contribution

The media's contribution to business KPIs.
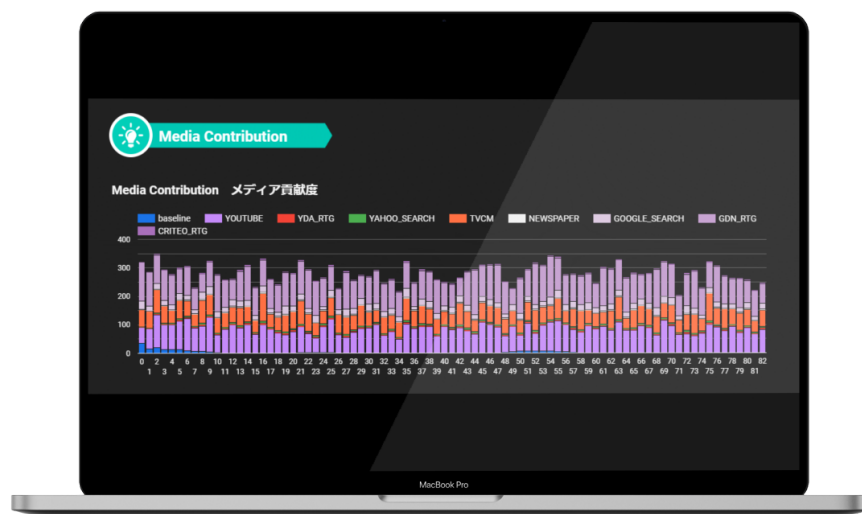
- **Media Contribution**　メディア貢献度

  - Graph the extent to which each media contributes to the business KPIs.

  - The larger the media contribution, the larger the area of the graph.

    - baseline

      - This is the non-media contribution to the business KPIs.

    - Other graphs.

      - The media's contribution to business KPIs.
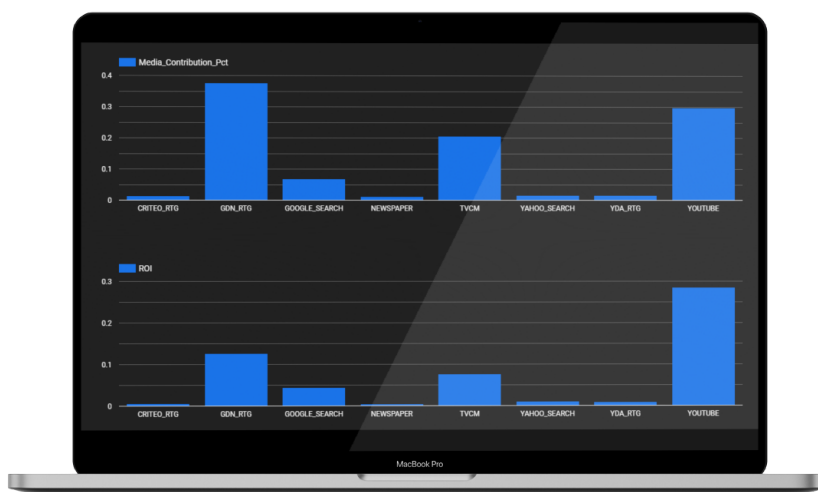
- Media_Contribution_Pct

  - The media's contribution to business KPIs.

  - The larger the bar graph, the greater the media contribution to the business KPI.

- ROI

  - Return on media investment.

  - The larger the bar graph, the higher the media return on investment.

Optimization

These are the results of budget optimisation and business KPI forecasting.

- Optimized Budget Alocation　予算最適化
    - Same graph as in the Summary section‐Optimised Budget Alocation and COST.。
    - The meaning of the graphs and indicators is the same as in the Summary.See the aforementioned description.

- **KPIs before and after optimization　最適化前後のKPI**

    - Business KPIs before and after optimisation.

    - The CV graph in the Summary is categorised into Baseline and Media Contribution.

- **CPA before and after optimization *including baseline　最適化前後のCPA ※baseline含む**

    - The unit cost per acquisition of business KPIs before and after optimisation.

    - Same as the CPA graph in Summary.

Note

- Screenshots are under development.Actual specifications may differ.Specifications are subject to change without notice.

- The figures on the screen are dummy data.They are not actual data or analysis results.

- Unless otherwise stated, parameter settings are default values for Google Lightweight MMM Models. number_chains is set to 1. This is an overall decision that also takes into account Google Cloud resources, etc.