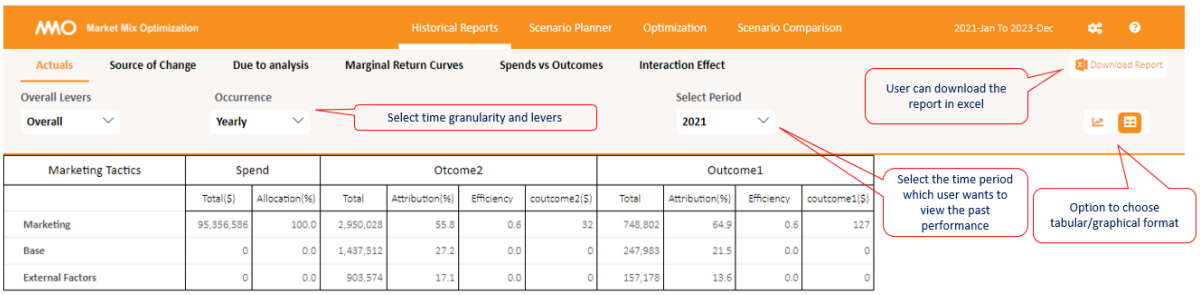
MMX Glossary

Historical Reporting

Historical Reporting module allows the user to view and analyse the past performance of marketing activities across various channels and tactics.

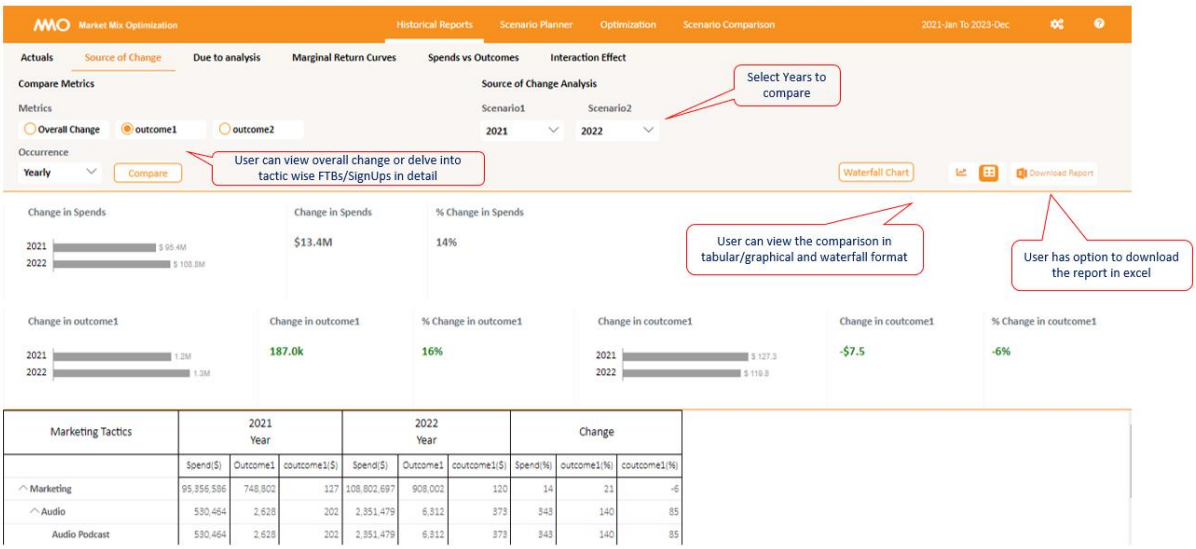
There are different sub-modules available under the Historical Reporting module to assist the marketing team to evaluate the historical performance of the spends across different marketing channels.

Actual: Gives an overall view of Spends and the outcomes – FTBs and Signups generated from different marketing activities.



Marketing Tactics	Spend		Otcome2				Outcome1			
	Total($)	Allocation(%)	Total	Attribution(%)	Efficiency	coutcome2($)	Total	Attribution(%)	Efficiency	coutcome1($)
Marketing	95,356,586	100.0	2,950,028	55.8	0.6	32	748,802	64.9	0.6	127
Base	0	0.0	1,437,512	27.2	0.0	0	247,983	21.5	0.0	0
External Factors	0	0.0	903,574	17.1	0.0	0	157,178	13.6	0.0	0

Source of Change: Helps users analyse marketing spend and contributions of Signups and FTBs over different periods across different channels. Users can perform periodical comparisons between two yearly data for spends, FTBs (First-Time Buyers), and cFTBs (Cumulative First-Time Buyers), Signups and cSignups through both graphical and tabular representations. Additionally, users can access a summarized report, which includes spending values and the percentage change in spending over time.



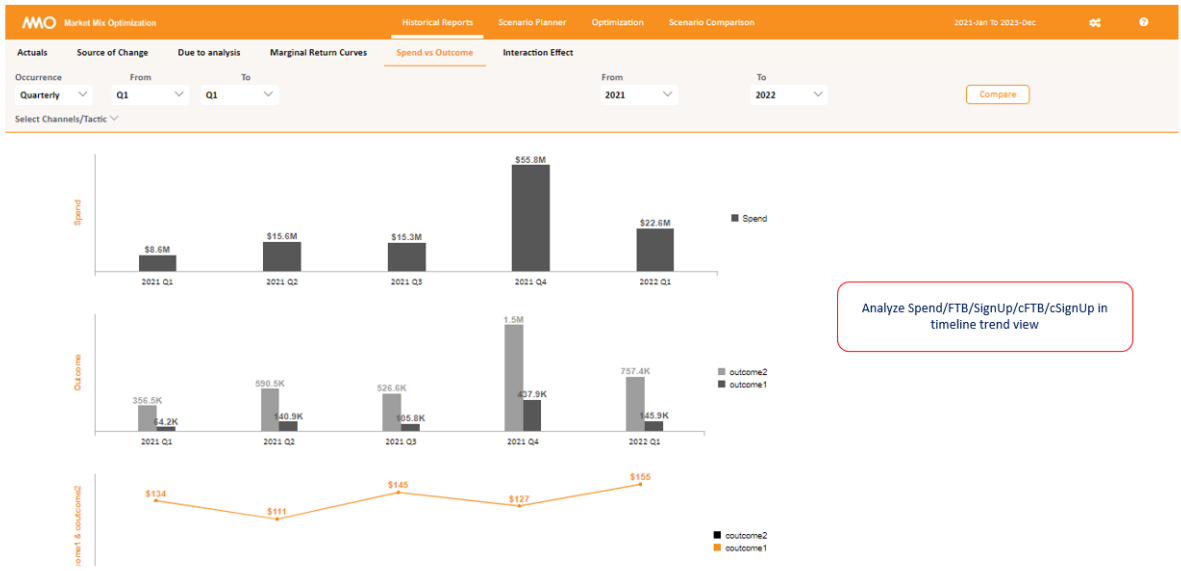
Due to Analysis: Analyse the effect of spend and efficiency of channels on the change in outcome of FTBs or SignUps among different periods.

Marginal Return Curves: Analyse the incremental return for change in spend for FTBs and SignUps across various channels and subchannels.

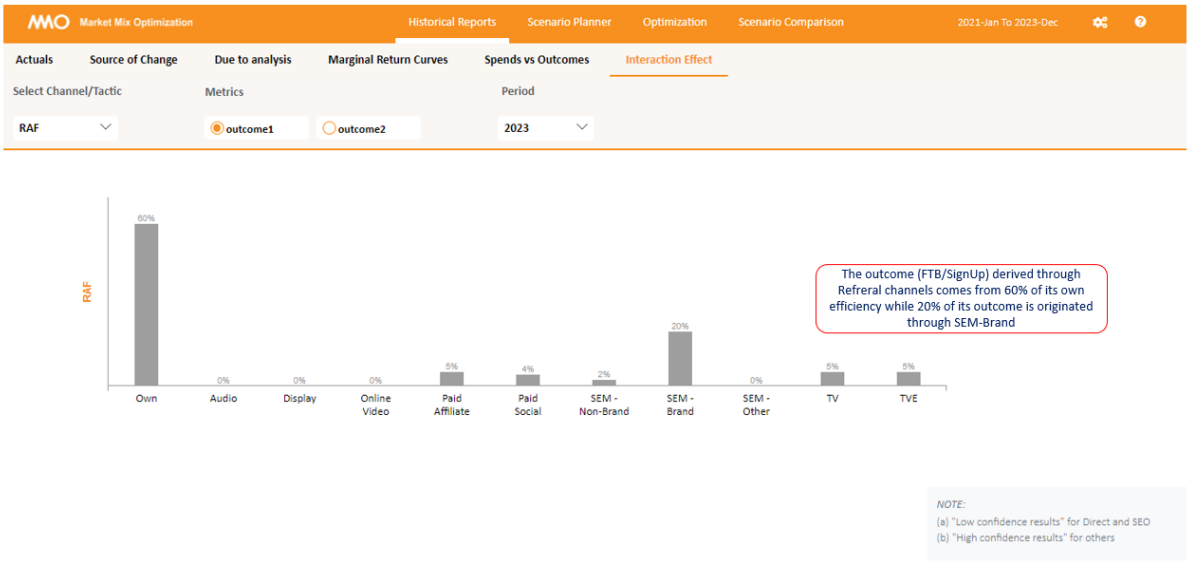
MR Curves are typically visualized as a graph, with the input - Spends on the horizontal axis and the outcome - FTBs or Signups on the vertical axis. Initially, as inputs increase, outputs increase at an accelerating rate, causing the curve to rise steeply. However, as the inputs continue to increase, the rate of output growth slows, causing the curve to level off and eventually plateau.

One of the most useful aspect of the curves in decision-making when the business has a budget and wants to decide which tactics they should bet on among a group of tactics. The best outcome is expected when a tactic- curve is more titlted vertically among other tactics indicating the incremental spend on a tactic realizes higher outcome than others.

Spend vs Outcome: Analyse the cost and FTBs and SignUps across different channels and subchannels.



Interaction effect : This tab shows the channels which have significant interaction with other channels in driving their outcomes.



Tactic: Marketing tactics are the activities users leverage to promote their brands, products, and services. Tactics aren't specific to a single type of content or marketing channel—rather, these are concepts that may unify campaigns.

For example, a marketing channel is a target audience member's email inbox. users may leverage this channel for pay-per-click (PPC) marketing tactics, referral marketing tactics, event marketing tactics, and more.

Channel: A marketing channel is an outlet or platform through which businesses connect and communicate with their target audience. Marketing channels include online and offline, as well as free and paid platforms.

Marketing Tactics: Marketing Tactics consists of - Marketing, Base & External Factors. Below is the description of

Marketing:

Channel	Tactic
Audio	Podcast
Display	Display
Mobile App	iOS
	Android
	Others
Online Video	Online Video
Paid Affiliate	Button
	Prospecting
	Retargeting
Paid Social	Prospecting
	Retargeting
	Button
	Influencer
Referral	Referral
SEM	Non-Brand

	Brand
	Button
	Travel
TV	Cable/Synd
	Broadcast
	Others
TVE	Hulu
	EyeQ
	Tubi
	Discovery
	Roku
	HTS
	Others

External Factors: Macroeconomic Factors

Non-Marketing Channel	Description
Monthly Seasonality Index	Seasonal activity of the target on monthly basis
CPI	Consumer Price Index - Inflation indicator
OECD Index	Economic Growth Indicator
Unemployment rate	Unemployment rate in US

Base: This is the natural demand for the product driven by economic factors like pricing, long-term trends, seasonality, and qualitative factors like brand awareness and brand loyalty.

Channel	Tactics
Base	Intercept
Seasonality	Monthly Seasonality Index
Mobile App	Organic
Mobile App	Owned
SEO	SEO

FTB: Customers who purchased for the First Time through Client ABC. With respect to MMX, spends on every marketing activity may or may not lead to FTBs. It is measured in terms of volume of FTBs per channel in a reporting period (yearly, quarterly or monthly).

Signups: Customers who have signed up with Client ABC. They can be non-buyers, FTB, or Repeat Buyers. With respect to MMX, spending on every marketing activity may or may not lead to Signups.

It is measured in terms of volume of Signups per channel in a reporting period (yearly, quarterly or monthly).

Spend: It is the marketing spend on channel/tactic. It is measured in USD.

cFTBs: It's calculated as Spends/ FTBs. It can be calculated at an Overall Marketing Activity / Channel/ Tactic level. It indicates the marketing Spend to generate 1 FTB. It's calculated in USD.

cSignups: It's calculated as Spends/ Signups. It can be calculated at an Overall Marketing Activity / Channel/ Tactic level. It indicates the marketing Spend to generate 1 Signup. It's calculated in USD.

Efficiency: It's calculated as percentage attribution/ percentage allocation. It can be calculated at an Overall Marketing Activity / Channel/ Tactic level.

Change in Spends: It measures the change marketing spend on channel/tactic between two different reporting periods.

Change in FTBs: It measures the change in FTBs generated from channel/tactic between two different reporting periods.

Change in Signups: It measures the marketing spend on channel/tactic between two different reporting periods.

Incremental Spends: It is the additional dollar spend on that channel/tactic to generate any incremental FTB or Signups.

Optimization

Optimizing budget involves identifying the optimal spend for each channel/tactic that will result in the maximum FTB/Signup or a combination of both while keeping the total budget fixed for a selected time.

Scenario: A scenario is a user's best estimate of what a brand is likely to invest on marketing activities across channels – advertising, consumer promotions, trade promotions, distribution, price,

and others. The mathematical model estimates the resultant FTB/Signups for each channel/tactic. The simulated output is used to determine how investments are to be distributed across channels/tactics to optimize marketing budget.

Base Scenario: It is the reference or laydown scenario or pattern to be considered for optimization. This laydown scenario is generally derived from the historical data and can be referenced as a base scenario for optimization. The MMX app. allows you to select a historical scenario as a base scenario.

Scenario Type: There are 3 different types of scenarios available in the MMX app.

Budget Reallocation: To simulate marketing scenarios for a 'What-if' analysis, the user can **reallocate an existing marketing spend** in different proportions and see the direct impact on FTBs/Signups. They can optimize the budget by allocating spend to those activities which give the highest return on investment.

New Budget Allocation: To simulate marketing scenarios for a 'What-if' analysis, the user can **allocate new marketing budgets** in different proportions and see the direct impact on FTBs/Signups. They can optimize the budget by allocating spend to those activities which give the highest return on investment.

Incremental Budget Allocation: To simulate marketing scenarios for a 'What-if' analysis, the user can **allocate incremental marketing budget** in different proportions and see the direct impact on FTBs/Signups. They can optimize the budget by allocating spend to those activities which give the highest return on investment.

Outcome to Maximize: For each of the above selected scenario types, the user needs to select the objective of the scenario analysis. This essentially gives the user the opportunity to arrive at the most optimal allocation to maximize the outcome. The outcome be from one of the following options:

- **max FTB**
- **max Signup**
- **50% FTB - 50% Signup**

Spend Constraints: Users can apply budget constraints across all channels/tactics. The optimizer then uses the budget per channel/tactic, which can fluctuate within predetermined minimum (Lower Bound) and maximum (Upper Bound) limits (boundaries), for constrained optimization.

There are 2 options available w.r.t to Spend Constraints:

- **Individual Spends Constraint:** Budget or Spend constraints applied at individual channel/tactic level.
- **Group Constraints:** Budget or Spend constraints applied to a group of channels/tactics.

Manage Groups: Allows the user to select/delete tactics to create groups for the optimized scenario.

Lower Bound: Predetermined minimum boundary for budgets at channel/tactic level.

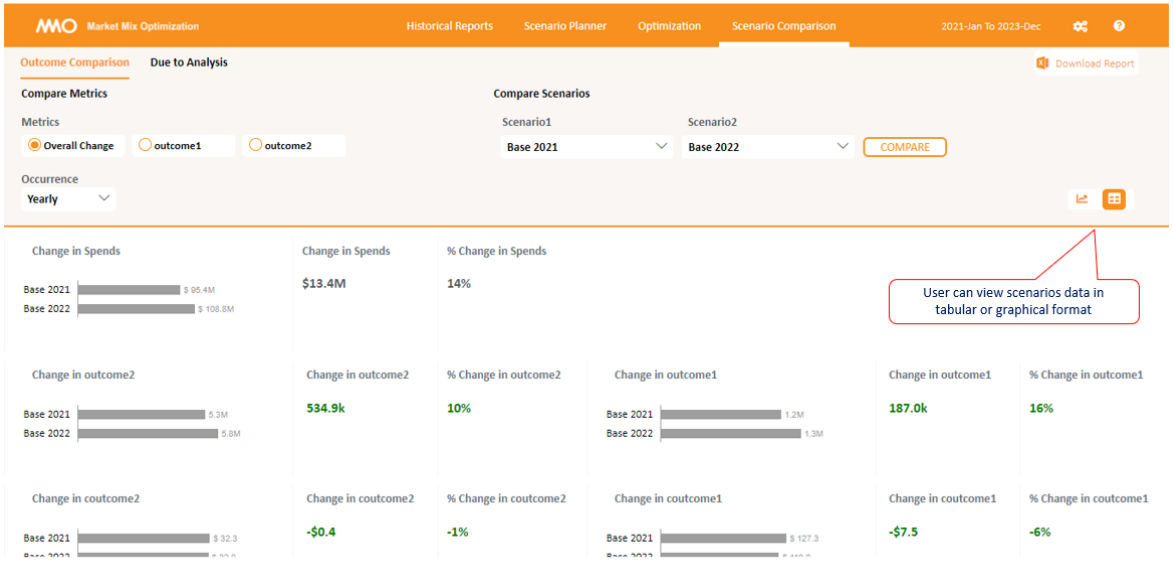
Upper Bound: Predetermined minimum boundary for budgets at channel/tactic level.

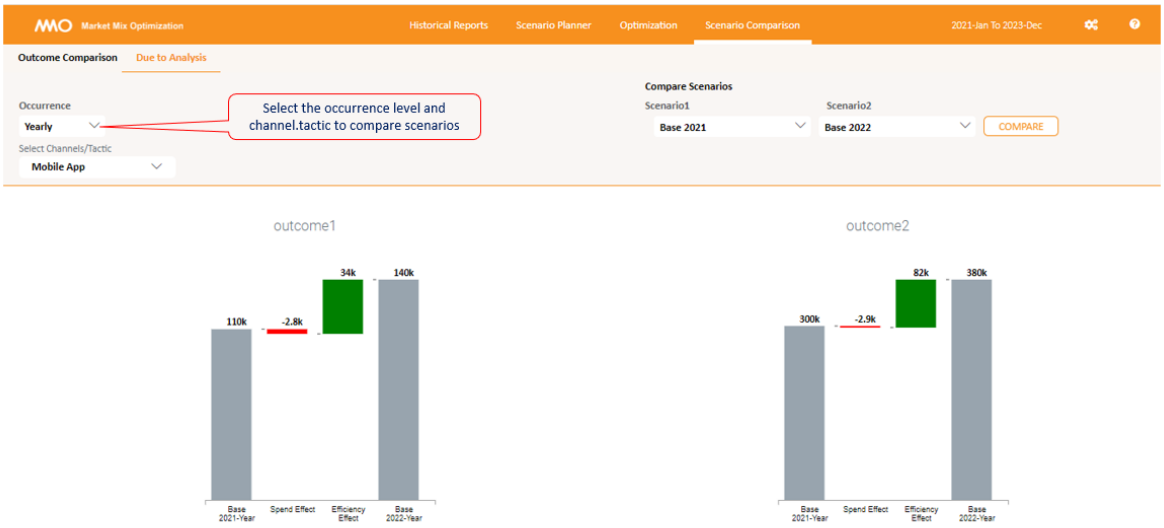
Scenario Comparison

This module is used to compare two different scenarios. Outcome Comparison breaks the overall into Base and Marketing Attribution, change in FTB/Signups can be observed here along with the change in overall spends.

Outcome Comparison: This functionality is to compare the changes between base scenario and Optimized scenario. Users can perform periodical comparisons between two scenario data for spends, FTBs and cFTBs, SignUps and cSignUps through both graphical and tabular representations. Additionally, users can access a summarized report, which includes spending values and the percentage change in spending over time.

Due to Analysis: Analyse the effect of spend and efficiency of channels on the change in outcome of FTBs or SignUps against two scenarios among different periods.



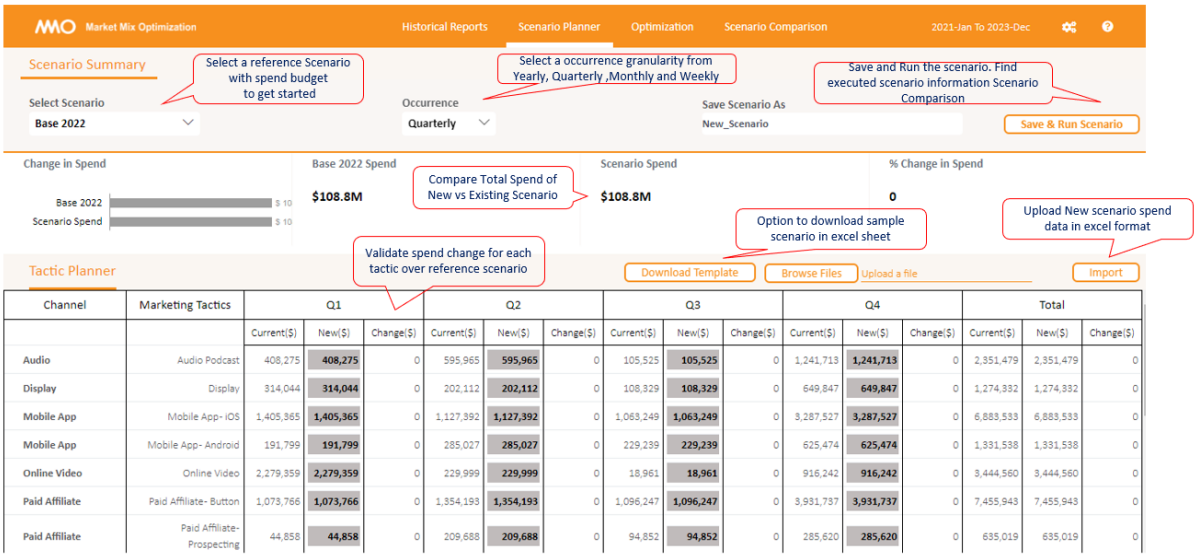


Scenario Planner

Scenario Planner is to simulate new spend scenarios wherein users can use a combination of spends to see and select the best scenarios with best outcomes. Instead of creating new scenarios from scratch, any of the previously created scenarios can be taken as reference and the values of the reference scenario can be edited to create a new scenario. The Scenario can also be created by uploading an excel sheet with the value of the spend.

Scenario Creation in Scenario Planner

Objective: User is expected to create new scenario by entering channel-tactic spends manually in scenario planner page and budget allocated by user for each tactic is taken to compute expected FTBs and Sign Ups for the corresponding Spend.



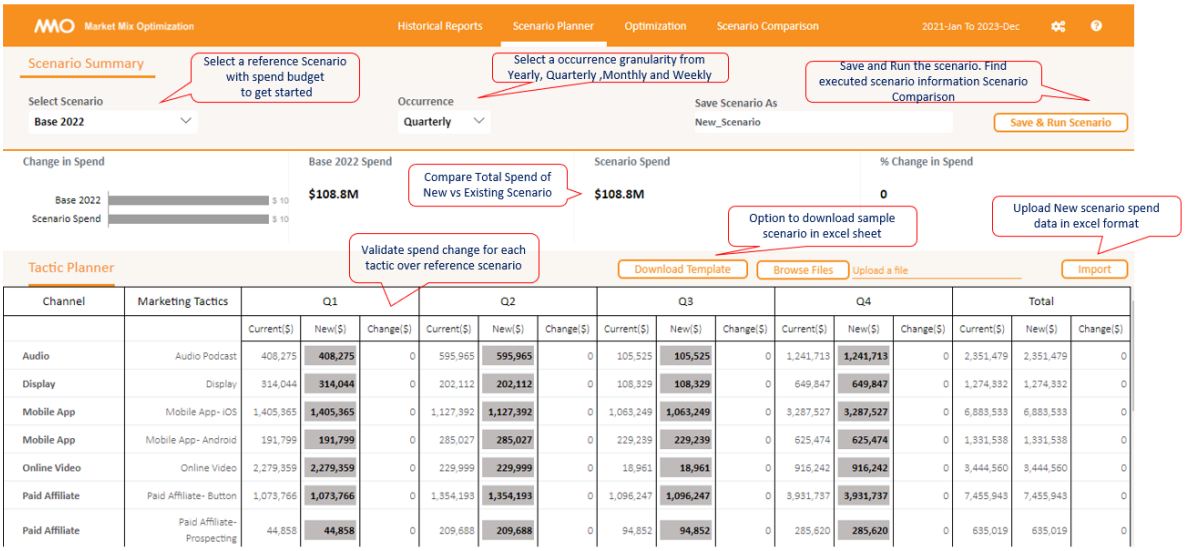
Channel	Marketing Tactics	Q1			Q2			Q3			Q4			Total		
		Current($)	New($)	Change($)	Current($)	New($)	Change($)	Current($)	New($)	Change($)	Current($)	New($)	Change($)	Current($)	New($)	Change($)
Audio	Audio Podcast	408,275	408,275	0	595,965	595,965	0	105,525	105,525	0	1,241,713	1,241,713	0	2,351,479	2,351,479	0
Display	Display	314,044	314,044	0	202,112	202,112	0	108,329	108,329	0	649,847	649,847	0	1,274,332	1,274,332	0
Mobile App	Mobile App- iOS	1,405,365	1,405,365	0	1,127,392	1,127,392	0	1,063,249	1,063,249	0	3,287,527	3,287,527	0	6,883,533	6,883,533	0
Mobile App	Mobile App- Android	191,799	191,799	0	285,027	285,027	0	229,239	229,239	0	625,474	625,474	0	1,331,538	1,331,538	0
Online Video	Online Video	2,279,359	2,279,359	0	229,999	229,999	0	18,961	18,961	0	916,242	916,242	0	3,444,560	3,444,560	0
Paid Affiliate	Paid Affiliate- Button	1,073,766	1,073,766	0	1,354,193	1,354,193	0	1,096,247	1,096,247	0	3,931,737	3,931,737	0	7,455,943	7,455,943	0
Paid Affiliate	Paid Affiliate- Prospecting	44,858	44,858	0	209,688	209,688	0	94,852	94,852	0	285,620	285,620	0	635,019	635,019	0

Steps to Execute:

1. Select pre-existing scenario to start with Scenario creation. (Please keep in mind, user is expected to create new scenario by entering channel-tactic spends manually in scenario planner page and budget allocated by user for each tactic is taken to compute expected FTBs and SignUps for the corresponding Spend)
2. By default, occurrence is at Yearly level. User can also dive into Quarterly and Monthly granular levels.
3. Spend data for existing scenario and corresponding editable columns for each channel-tactic in case of New Scenario can be seen on UI in the tabular format.
4. User can either modify channel-tactic spend budget on UI or has an option to download spend budget data in excel(“Download Template”) and upload the new spend data through “Import”
5. As the user modified modifies the spends across tactic (“New” column), the changes are reflected in Change column in the table.
6. User can also validate summary of total spend change in the UI.
7. Finally, user can save and run the scenario.
8. Executed scenario information can be found in Scenario comparison page.

Scenario Creation in Optimization

Objective: Optimize the manually created scenario with a specific outcome to achieve for the specified scenario type and occurrence level

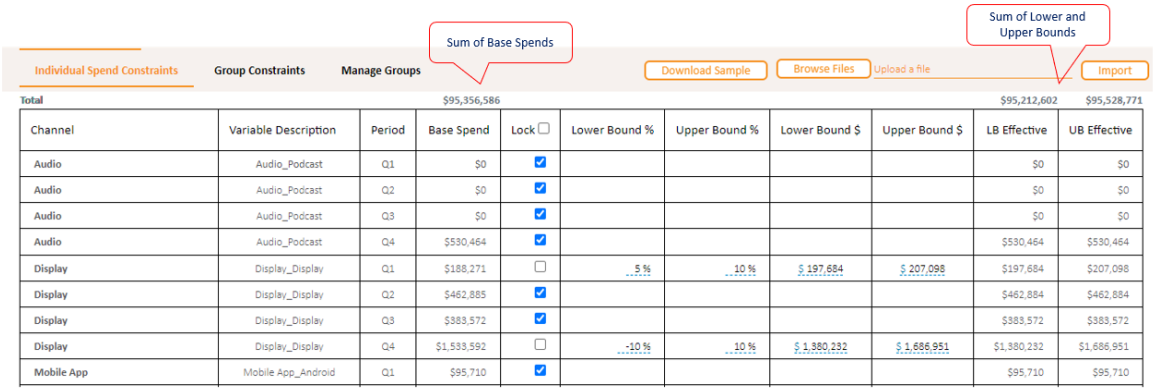


Channel	Marketing Tactics	Q1			Q2			Q3			Q4			Total		
		Current($)	New($)	Change($)	Current($)	New($)	Change($)	Current($)	New($)	Change($)	Current($)	New($)	Change($)	Current($)	New($)	Change($)
Audio	Audio Podcast	408,275	408,275	0	595,965	595,965	0	105,525	105,525	0	1,241,713	1,241,713	0	2,351,479	2,351,479	0
Display	Display	314,044	314,044	0	202,112	202,112	0	108,329	108,329	0	649,847	649,847	0	1,274,332	1,274,332	0
Mobile App	Mobile App- iOS	1,405,365	1,405,365	0	1,127,392	1,127,392	0	1,063,249	1,063,249	0	3,287,527	3,287,527	0	6,883,533	6,883,533	0
Mobile App	Mobile App- Android	191,799	191,799	0	285,027	285,027	0	229,239	229,239	0	625,474	625,474	0	1,331,538	1,331,538	0
Online Video	Online Video	2,279,359	2,279,359	0	229,999	229,999	0	18,961	18,961	0	916,242	916,242	0	3,444,560	3,444,560	0
Paid Affiliate	Paid Affiliate- Button	1,073,766	1,073,766	0	1,354,193	1,354,193	0	1,096,247	1,096,247	0	3,931,737	3,931,737	0	7,455,943	7,455,943	0
Paid Affiliate	Paid Affiliate- Prospecting	44,858	44,858	0	209,688	209,688	0	94,852	94,852	0	285,620	285,620	0	635,019	635,019	0

Steps to Execute:

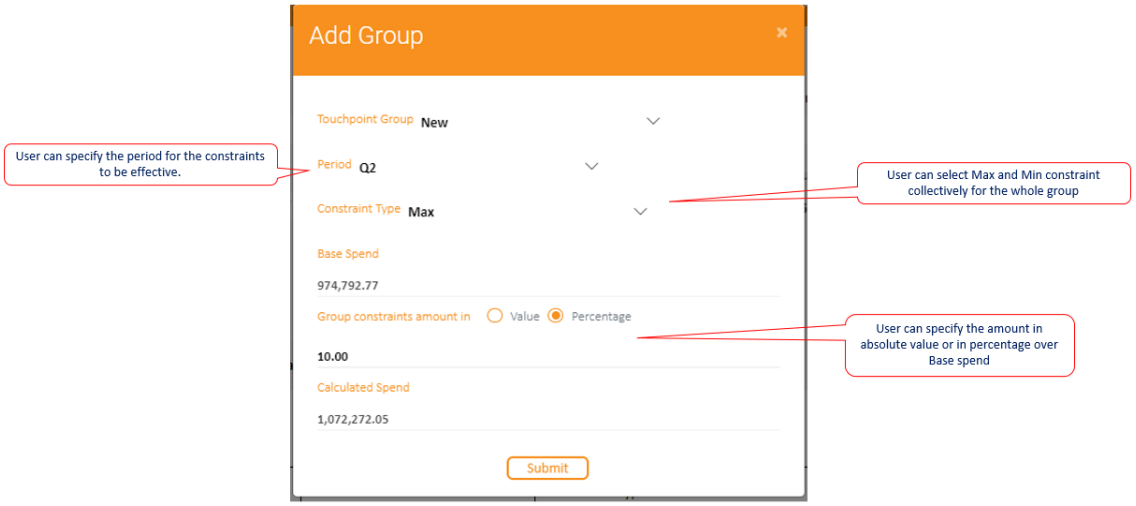
1. Select a base scenario from the existing scenarios to optimize.
2. User has ability to choose optimizer specifications to optimize the scenario
    a. Occurrence level
        i. Quarterly
        ii. Monthly
    b. Outcome to Maximize
        i. FTBs
        ii. SignUps
        iii. FTBs & SignUps
    c. Time Period
        i. 2024
    d. Scenario Type
        i. Budget Reallocation
        ii. Incremental Budget Allocation
        iii. New Budget Allocation/ Budget Reduction
3. User can provide spend constraints for each individual tactic or group of tactics through UI.
4. By default, all channel-tactics spends are locked. This means when you run an optimizer with a tactic spend locked, spend recommendation in the optimized scenario remains same as base spend.
5. User is expected to unlock tactic spends and specify lower & upper bounds. Basic validations for lower and upper bounds:
    a. Sum of all channel -tactic lower bounds is lower than or equal to total budget
    b. Sum of all channel -tactic upper bounds is greater than or equal to total budget
    c. For each tactic, Upper bound is greater than or equal to lower bound
    d. These validations can be verified through total sum of spend, lower bound and upper bound displayed at the top of constraints table.
6. UI limits to update spend constraints:
    a. By default, unlocking a tactic sets a bound of -10% and +10% in lower and upper bound

b. LB effective and UB effective are non-editable fields which display final Lower Bound and Upper Bounds in effect.
c. Lower bound % and Upper bound % columns take precedence over Lower bound $ and Upper bound$ in arriving at effective values.
d. User is able to edit Base spend only for New budget allocation type
e. User cannot add modify lower bound for Incremental Budget scenario as it is assumed that additional budget is allocated on top of existing budget for each tactic.



Total			$95,356,586						$95,212,602	$95,528,771
Channel	Variable Description	Period	Base Spend	Lock	Lower Bound %	Upper Bound %	Lower Bound $	Upper Bound $	LB Effective	UB Effective
Audio	Audio_Podcast	Q1	$0	☑					$0	$0
Audio	Audio_Podcast	Q2	$0	☑					$0	$0
Audio	Audio_Podcast	Q3	$0	☑					$0	$0
Audio	Audio_Podcast	Q4	$530,464	☑					$530,464	$530,464
Display	Display_Display	Q1	$188,271	☐	-5 %	10 %	$ 197,684	$ 207,098	$197,684	$207,098
Display	Display_Display	Q2	$462,885	☑					$462,884	$462,884
Display	Display_Display	Q3	$383,572	☑					$383,572	$383,572
Display	Display_Display	Q4	$1,533,592	☐	-10 %	10 %	$ 1,380,232	$ 1,686,951	$1,380,232	$1,686,951
Mobile App	Mobile App_Android	Q1	$95,710	☑					$95,710	$95,710

7. User can include Group constraints for group of tactics. To implement group constraint user has to follow below steps:
   a. Create a group in “Manage Group” section by selecting required tactic .
   b. Add constraints for the Group in the Group constraints.

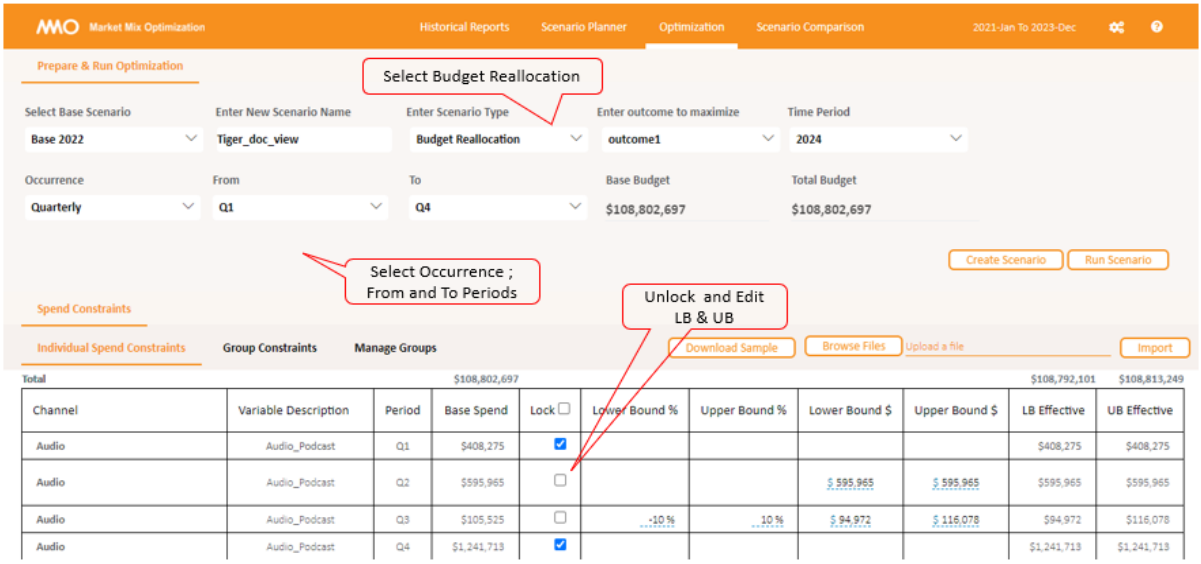


8. Once constraints are finalized, run the scenario.
9. Executed scenario details can be found in scenario comparison and Maintenance tab.

Budget Reallocation Flow:

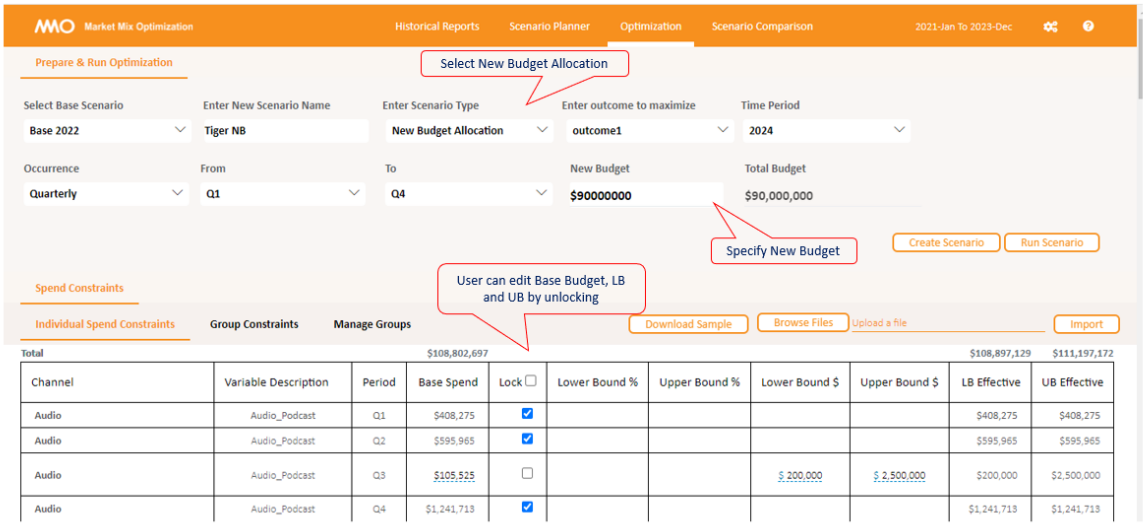
i. Select Base scenario and Budget Reallocation from Scenario type

ii. Provide optimization details . Keep in mind Base budget & Total Budget are same for Budget Reallocation and non-editable.
iii. Edit Individual and Group spend constraints as required.
iv. Run the scenario



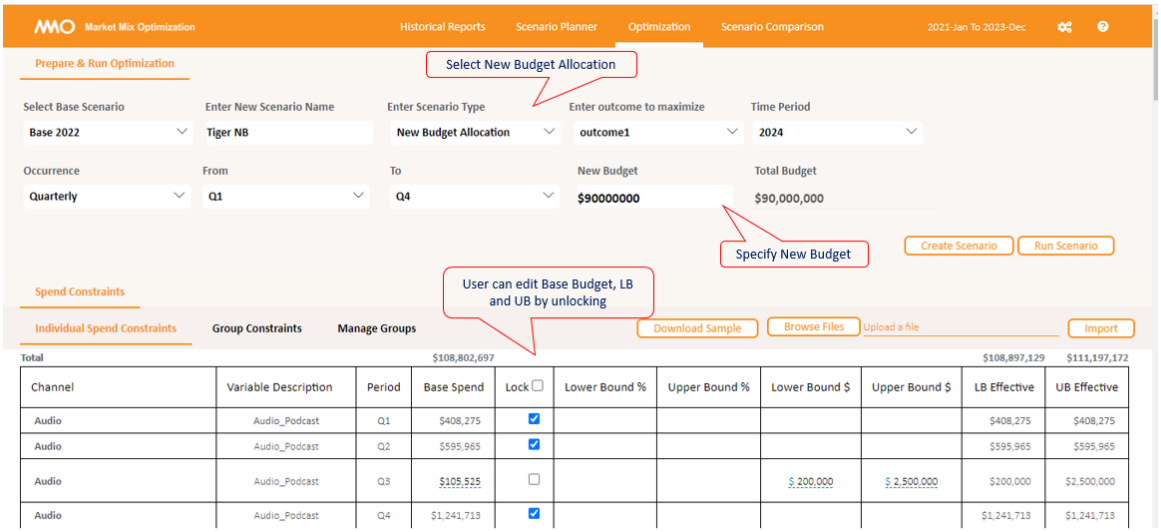
New Budget Allocation Flow:

i. Select Base scenario and New Budget Allocation from Scenario type
ii. Provide optimization details.
iii. User is expected to add new budget (includes reduced budget from Base scenario). This is in assumption that user is creating a new scenario which varies from original base budget.
iv. Edit Individual and Group spend constraints as required.
v. User can also edit Base spend along with lower bound and upper bound for new budget allocation
vi. Run the scenario



Incremental Budget Allocation Flow:

i. Select Base scenario and Incremental Budget Allocation from Scenario type
ii. Provide optimization details.
iii. User is expected to add additional budget. This is in assumption that user is optimizing over base scenario with additional budget.
iv. Edit Individual and Group spend constraints as required.
v. User cannot edit lower bound assuming additional budget is allocated on top of base budget
vi. Run the scenario



Maintenance Tab

This tab provides the user the ability to view the optimized scenario details. User can also perform Delete/Download scenario actions in this page.