TATA CONSULTANCY SERVICES

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Spend Scenario Planning
Revolutionizing the Media Industry
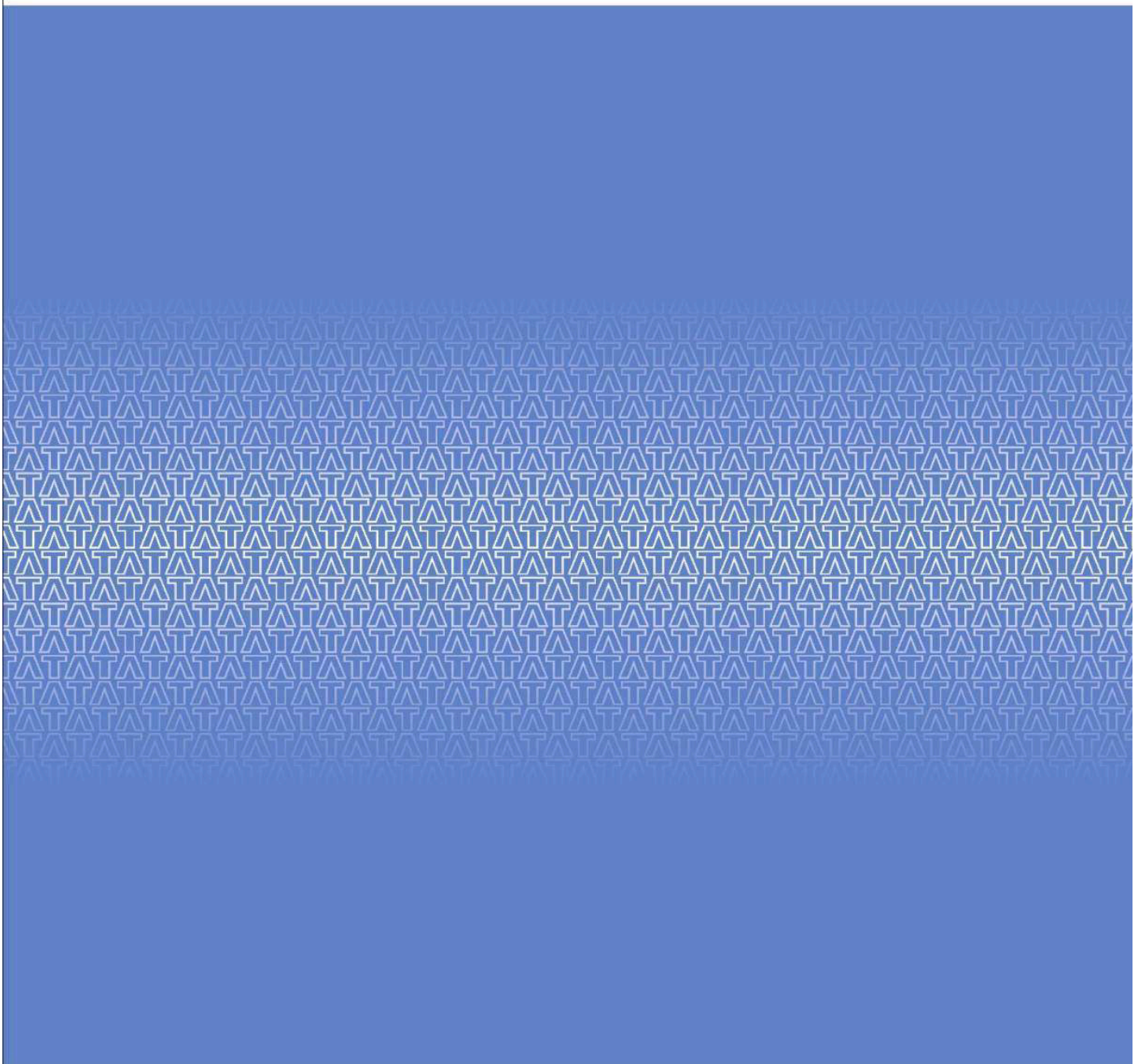A TCS White Paper for Advertising

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Abstract

A Major Media agency embarked on a project to create a centralized systems platform facilitating a more efficient way to execute the functions of the media business. Those primary functions consist of a Global Planning Application (GPA), Media Demand Forecaster (MDF), Spend Scenario Planning (SSP) and Cross Channel Reporting (CCR).

The overall project basically exists as a portal with links to all the tools mentioned above.

This paper examines one aspect of that project, specific to Spend Scenario Planning. This is a means to most effectively buy advertising across multiple media channels, such as television, print, mobile, digital, radio, etc. Many other agencies perform this function, but in a very manual way mainly because every client is different and the data used for them is made up of many different elements from a multitude of sources.

We will examine the elements of SSP, and how this consolidated tool has automated what is considered a complex mathematical and highly analytical exercise in determining how a client allocates their advertising budget.

About the Author

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Russ Stanton is a media veteran with more than 30 years in advertising, television, radio, and publishing. He is currently a senior media consultant in these verticals within the Global Consulting Practice (GCP) of Tata Consultancy Services (TCS). For his video production work, he has received 13 Addy awards, four Tellys, and a Gabriel award. He spent almost a decade at the ad agency BBDO (Omnicom), developing state-of-the-art digital asset management (DAM) systems and integrating/optimizing workflows across 9 agencies in North America. He also directed operations within JWTwo, the internal post-production facility at J. Walter Thompson (WPP). For TCS he led an effort in advanced analytics for the third largest media agency building practical spend scenario-planning applications. He has also worked in strategic IT operations for companies such as Simon & Schuster and Golden Books. Russ brings all this experience to consult with TCS clients.

Overview

The nature of the media business in general revolves around the fact that every client has different requirements based on their industry, customer demands, consumer demographics and many other factors. In other words, the media business is complex, and gyrates to a multitude of variations based on the specific needs of all the clients within the media agency portfolio.

The nuances within a variety of clientele have resulted in a disparity in terms for servicing these clients in a consolidated way with regard to process and systems.

As the media landscape has changed dramatically over the last few years, the need to make decisions and move quickly has increased along with multiple emerging channels, thus the need to plan a campaign more efficiently has also become a major requirement of media agencies as well as their clients.

Currently, devising scenario plans for clients is a meticulous manual process, and this project set out to automate that process, which includes quite complex calculations, algorithms and subsequent results based on a variety of criteria. In creating this tool to facilitate scenario planning, great care was taken to make sure the input and output data was accurate and not something that was considered "perceived" truth.

This is considered somewhat revolutionary since the data provided by certain third parties is typically taken at face value as being the accurate source for that so-called "truth".

Also, this SSP tool involved revolutionary analytics, which are required in order to create these scenarios, and thus strongly compete in the market place. This particular area of SSP was addressed in developing the tools discussed within this paper, engaging the media agency's advanced analytics groups in order to formulate an intuitive and accurate tool. In other words, it was built by the media agency's business along with the TCS technical knowhow.

What is SSP?

In a very basic explanation, Spend Scenario Planning is a way of taking a client's total budget and developing a plan upfront that allocates that budget across the variety of advertising channels in the most effective way. By effective we mean, what ad-spend scenario would gain the best benefit and help reach over the duration of the campaign and the goals of the client.

The goals of the client could be whether to increase sales of the client product, or simply increase the public's awareness of the client's brand. It is almost a crystal ball into the future of how an advertising campaign might perform. But it gets more precise than that and requires careful consideration in a variety of factors and calculations based on past history in terms of Gross Rating Points (GRP), reach factors, competitive analysis, target audience, seasonality, environment, events and many other variables and expanding criteria.

Spend scenario analysis offers the opportunity to test how to increase or decrease spending within a channel or how media spending would impact the campaign objectives.

SSP helps in performing a "what-if" analysis looking at what might happen in the future rather than forecasting what should happen given 10-15% variability.

For this media agency, TCS took a more accurate approach and tried to hone that variable.

SSP at a high level included the functions of budget calculation, allocation of that budget across channels and the ability to model a plan either prior to or after allocation. It can be a somewhat non-linear process depending on the requirements of the client or the planner.

The best way to understand an advertiser's options for a campaign is to understand the trade-offs of different media spend levels, combinations of media use, and what the media metrics and costs are to reach the target audience; ultimately attaining the best effectiveness of a campaign.

At a very basic level SSP considers the following criteria within the functions of allocation and modeling.

These are represented in numerical form, and used within calculations or algorithms to achieve the output:

Advertisers' objectives & KPIs: What does the advertiser want to achieve from the campaign and what key performance indicators would determine the effectiveness of the campaign. KPI definition is included in a hierarchical table within the Appendix of this document.

Time period: What is the recommended start and end dates of the campaign. This can come from evaluation of the most effective timing based on modeling, or by a client recommendation.

Historical Data: What has the client done in the past, typically 3 years, matching the same time period proposed for this campaign? This can also evaluate historical data for the client's competition as well.

Media Mix: Combinations of media (vehicles/channels) for running the ad campaign. Examples of media include television, radio, out of home (Kiosk, transit, billboards, etc), mobile, digital and many others as the landscape evolves.

Share of Voice: Advertising spending of a particular brand or company in media versus advertising spends of the competitors in the same media.

Scheduling: Determining when the advertisement will run throughout the time period.

Continuous: Spreads of media spending evenly across every month. This method ensures steady brand exposure and takes advantage of volume discounts in media buying. Since it can get expensive, this may not be practical for small advertisers or wise for advertisers who sell products only during peak seasons

Flighting: Concentrates advertising in certain months and running no advertising in other months.

Pulsing: Maintains a low level of advertising across all months but spends more in selected months.

Reach: The size of the audience exposed at least once to an ad over a given period of time. This usually provides a peak at the initial launch, but trails off after a certain period of time. This usually tells the advertiser they need to change the ad or try a different campaign. But the timing of the decay can predict when a campaign loses its effectiveness.

Frequency: Number of times a person has the opportunity to see the ad.

GRP (Gross Rating Point): Expressed mathematically as Reach X Frequency. GRP can also be expressed as TRP (Target Rating Point).

Target Audience: Demographic breakdown of what particular audience the campaign is attempting to reach, expressed in gender and age range, such as Females (18-29). Other criteria as might be needed based on the specifics of the client's objectives, or specialties in terms of events or time of year, can often get voluminous considering the complexity of the campaign and/or the planner's experience. More targeted targets are considered and combines behaviors of an audience, and can be derived from a combination of Telecom, credit bureau data, geographic or ethnicity. Some real-time applications are drilling down as low a level as Zip Code, but that is in another whitepaper of mine on Real-Time Advertising

An SSP tool created to do this kind of evaluation for the planner/analyst performs the media calculations based on the above criteria. This objectively evaluates different advertising media scenarios (different types of media, combinations of media, media weights and spend levels). Otherwise, the analyst has to do these calculations manually leading to an excessive amount time in getting results in this very fast-paced media climate.

The Elements of SSP

Overview

Spend scenario planning can be performed by setting the budget for a campaign; performing predictive modeling based on sales or awareness data or both; and then allocating the budget across the media channels and deciding the best media mix. These processes can be completed independently or collectively, depending on the needs of the campaign or discretion of the planner.

Also, all of the tools, within this application developed by TCS, are capable of creating PowerPoint presentation materials on the fly so that meeting collateral is available for in-person client briefings

However, one of the basic elements that need to be created before anything else is the campaign brief.
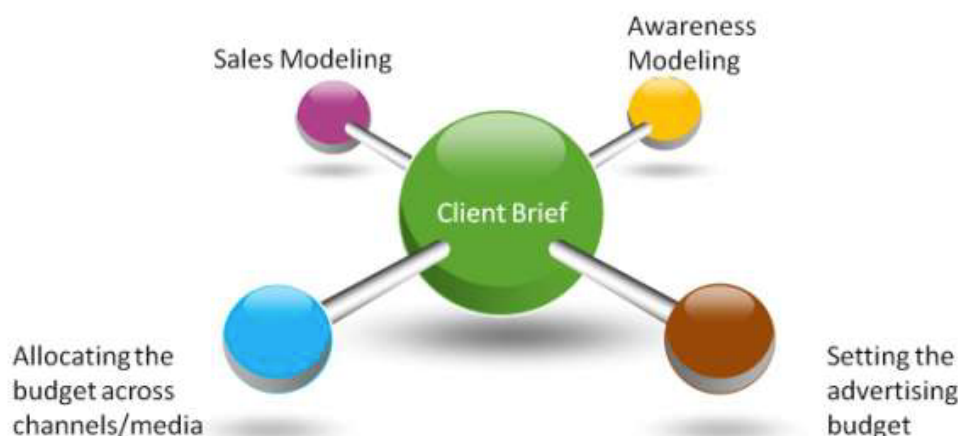
Campaign Brief

The campaign brief, also called the client brief, is basically documentation that reiterates the objectives, budget, KPIs and overall desire of the client for the proposed campaign. Client approval of the campaign brief is actually the official kickoff of the planning stage of the campaign.

In the case of this media agency's SSP tool, the campaign brief moved from being a Word document transmitted by email, to an online form, and the key to all plans, allocations and models that roll up to the campaign ID.

The Campaign ID is the key identifier within SSP and something that gets generated when a campaign brief is approved.

The campaign brief is constantly referred to throughout the life of the campaign to double check that all is going according the client's objectives, KPIs and budget.

One new aspect of the campaign brief created for this media agency's platform is that it is integrated with Budget Setting, a function used to calculate the overall budget for the campaign.

Budget Setting

Within this SSP platform, planners have the capability to determine what the overall budget for a campaign should be by using the integrated tool within the campaign brief. This is an optional capability, as sometimes the client will specify the budget, so calculating the budget is not necessary.

However, even if the client does specify the budget, it is sometimes a good sanity check to determine if the supplied budget is adequate for the objectives and required allocation split of the plan.

The budget figure is at the heart of SSP since allocation and modeling use the divided portions of that budget to determine the cost of each allocation. The budget figure that is determined follows the entire SSP process within the system.

The steps required in budget setting are as follows:

Step 1

- Identify business objectives
- Determine most relevant viewpoints
- Review available data which can be under the following categories/bearings:
  - Inertia (Based on usual practices, i.e. what was spent last year adjusted for inflation)
  - Business (Based on sensible ratios within the business plan, such as advertising as a % of sales)
  - Communication (Cost of an appropriate media plan for the task)
  - Competitive (Matching the relative/absolute spend of key competitors)
  - Dynamic (Based on observing effects of previous advertising activity, i.e.. modeling results)

Step 2

- Create budget calculations

Step 3

- Input calculations & weight
- Determine the Relevance to the task & Robustness of the calculation

Step 4

- Enter minimum & maximum risk tolerance level

Step 5

- Review results & make any adjustments

Step 6

- Use that total budget figure within the other tools within SSP

Budget Allocation

Once the budget is established, the SSP tool allows a planner to allocate that budget to various channels of the advertising campaign.

This allocation is based on a number of factors (hard data, experience, intuition) that are enterable and can be weighted in the SSP tool. The tool provides the ability to create, change and manage a client's scenario plan using factors and algorithms built into the tool.

First of all the type of allocation plan will need to be determined. Those include:

- Brand Allocation: Allocation of budgets across various client brands
- Geography Allocation: Allocation across markets
- Target Allocation: Allocation across various target groups
- Vehicle Allocation: Allocation across different media types, or specific vehicles

The data required to determine the allocation is acquired from various third party data providers surrounding client competition in the same media space, historical ad spend, GRP/TRP, reach, frequency and many other criteria in analyzing channel discretion effectiveness.

This analysis data acquired from various queries to third parties is compiled into spreadsheets for entry into the SSP system. *Note, it would preferable to house all the data in a DMP (Data Management Platform), however getting the source data from all the providers can be problematic and costly, so this media agency determined they would prefer to handle that as a separate project and TCS would come back to structure all this Big Data and provide the hooks into SSP.*

Data models may vary greatly depending on the third party and queries required by data analysts as well. No two queries are exactly the same, and this operation is currently performed outside of the SSP tool directly to these third parties.

The basic premise behind the function of allocation within SSP is to provide a decision support planning system that allows planner/analysts to strategically allocate marketing investments through the use of historical data (quantitative and qualitative measures), statistical facts and impact models based on communication goals. This data is almost 100% acquired through third party data providers, but also the experience and expertise of the planner/analysts.
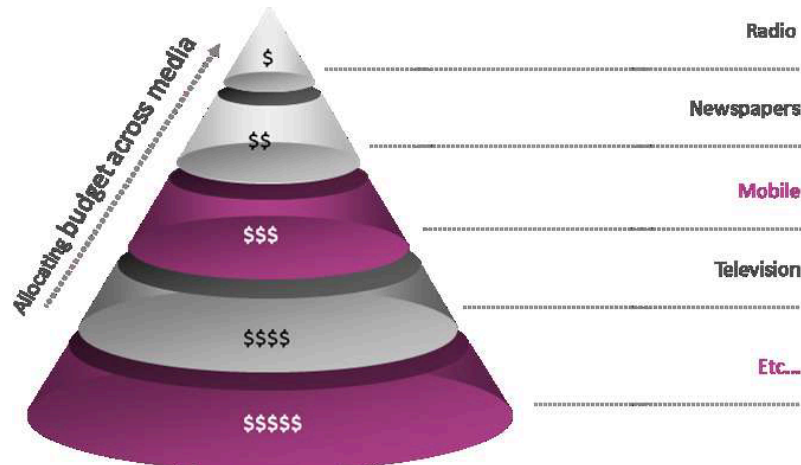
Predictive Modeling

The idea behind this element of SSP is to be able to construct the potential effectiveness of various campaign scenarios; in other words, the "what-if" analysis we mentioned earlier, almost bordering on what could be considered artificial intelligence.

For this media agency, this required that we validate the integrity of the input data that came from various third party data providers. We'll discuss this a little further in a note on algorithms.

The results of the tool constructed for the agency are in graphical format and provide the effectiveness compared across a couple of scenarios to determine which one would be the best for the client's campaign.

This kind of modeling is called econometric and can be done prior to allocation to determine how the allocation might be performed, or after allocation to validate the correct split of the budget.

Modeling can be performed by considering the following

- Weekly sales for the past three years (converted into an average weekly sales index).
- Cost per points within considered media types for the future (i.e. the year planner is planning for).
- Dates of specific marketing events in the future (i.e. Super Bowl, World Cup, Oscar Awards, etc.).
- Impact and Decay figures
- Weekly advertising awareness tracking, by medium, for the brand for some reasonable period (8+ weeks) in the recent past.
- Weekly GRPs, by medium, for that same period.
- GRP and Reach

Econometric Modelling

This is based on mathematical analysis where-in planners perform various modelling on historical data available from various syndicate sources.

Survey Based

Advertisers or agencies can perform surveys by asking questions to target audience and can devise scenario based on respondents responses.

Experience

Advertisers or planners experience is used to devise the media spend scenario.

Following the campaign launch, scenario plan effectiveness, based on required modeling data, projecting the shifts in a plan's allocation over time, geographic effectiveness, etc., will be included in the cross channel reporting function of SSP.

This may require remodeling efforts of the analysts and planners who function within SSP, thus their need to have access to this effectiveness reporting.

Requests for remodeling will come from the Global Planning Group.

SSP Process

The SSP process involves the following functional areas depicted pictorially as follows:
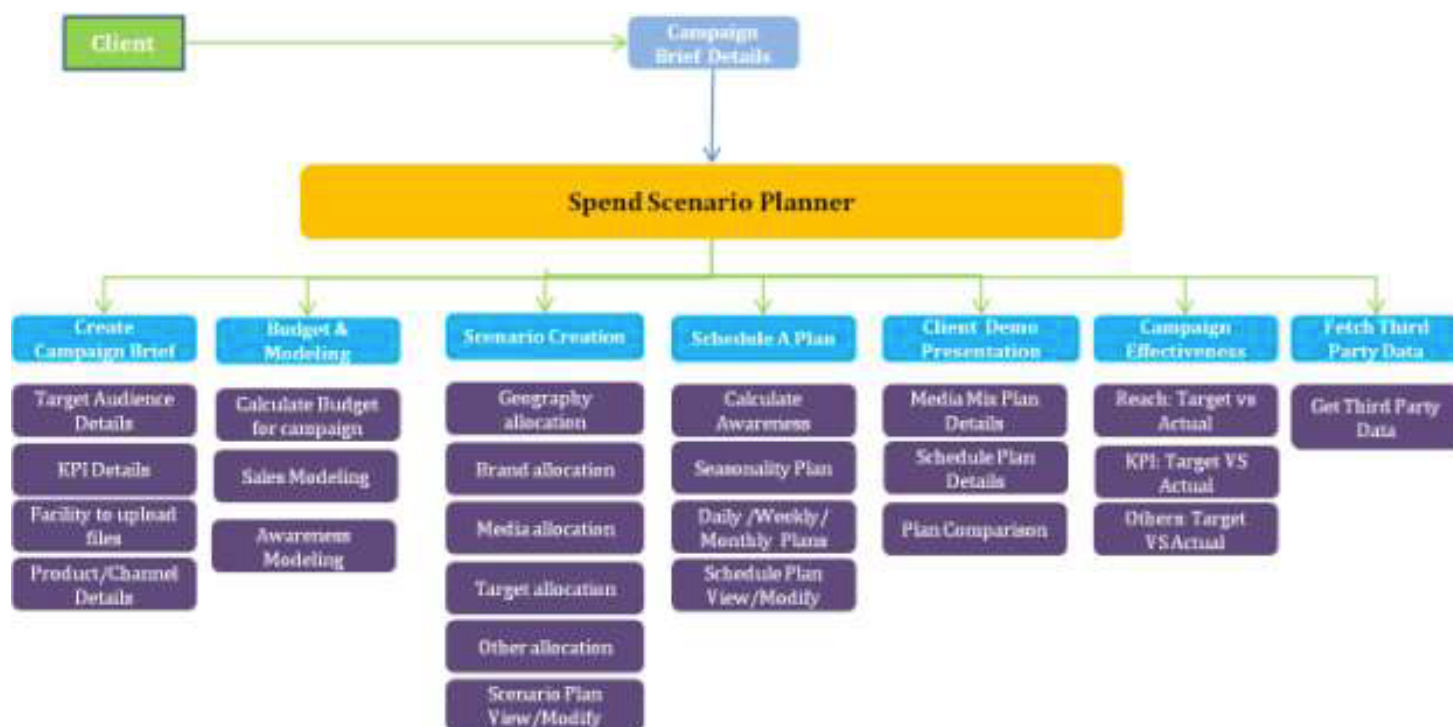
Benefits of SSP to Media Advertising Spend

The complexity of the media business has become even more so over the last 4 to 5 years due to the changing landscape of merging media channels, introduction of new channels and the necessity to quickly react to shifts in consumer behavior.

There is a need to take advantage of changing effectiveness, awareness, reach and other factors that occur within the time frame of a launched campaign; a window that is always shrinking. Also, the global reach of certain clients requires a cohesive approach to creating a scenario plan, and integration to the overall campaign.

The benefit of this tool allows for an agile ability to shift media plans based on effectiveness, reported through an integrated tool of the SSP application, model and allocates a clients plan to shifting audience behavior all on the fly. This is an incredible benefit to the clients in terms of being able to maneuver adroitly.

By evaluating and developing a common spend scenario-planning application, all conditions mentioned above can be centralized and standardized for client media objectives on a regional or global scale in a more time efficient manner. In this media climate, it is imperative that this kind of agility be created to stay ahead of the competition, both for this agency and their clients.

A Note about Algorithms

Traditional calculations take the numbers generated by third party data providers at face value, assuming their accuracy. The fact is that those numbers are merely a mean or average of the actual numbers calls into question the effectiveness of a media plan and bears some scrutiny over those numbers

In developing the SSP tool for the Media Agency, TCS took a new approach, based on input from some of the best analytical minds within the Agency's Advanced Analytics group, most of which are made up of PhDs in mathematics, with an understanding of Advertising. Combined with the TCS Advanced Analytics group, this made one powerful team in terms of creating over 55 custom algorithms.

That approach involved taking those third party numbers around GRP, TRP, Reach, Frequency, etc., and applying probabilities modeling prior to entering them into the tool. In other words, what is the probability that the original numbers are accurate given various factors that could influence their accuracy?

The result was a "black box" to apply that probability model and assure that the numbers that created the models and allocations were closer to the truth than the raw data coming directly from the third parties.

This is a new approach to creating the calculations for allocation and modeling in the media business, and could well form a new foundation within the industry as a whole. But I digress

Conclusion – A Revolution for the Media Industry

In this millennium, a media agency using disparate tools, or manual calculations to administer their client's budget toward the best possible way to reach and influence the largest number of people, should be considered something from the 20th century, and thus antiquated, considering all that has to be considered.

The fact is that with telecom companies adding broadcasting to their repertoire and broadcasters becoming telecom companies and both becoming Internet providers, the landscape is changing every day.

Then there is the element of social media in which a tweet can turn an advertising campaign around on a dime, either positively or negatively. Just ask President Trump. Media companies have to be able to navigate all of the landscape effortlessly for their clients toward the positive and change a campaign around quickly
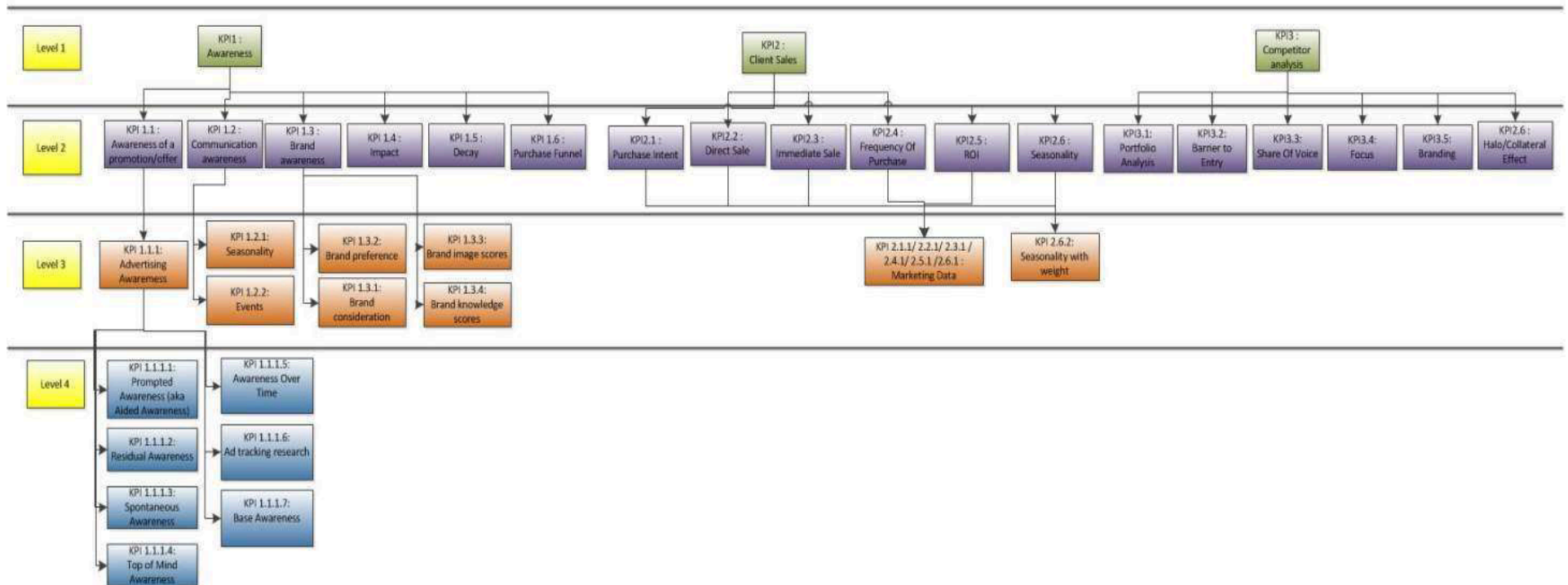
With SSP, This Media Agency will be able to become that agile media beast in the marketplace.

Appendix

Key Performance Indicators

Advertiser/Client Objectives-Related KPI Diagram

Advertiser/ Client Objectives Related KPI

Media/Channel-Related KPI Diagram

Media/Channel Related KPI

Media/Channel Related KPI