



Trade Promotion Optimization (TPO) Challenge

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The “Predictive” Path to Promotion Optimization Summit

The POI Trade Promotion Optimization (TPO) Challenge

During the Fall 2011 POI Predictive Path to Promotion Optimization Summit, a Trade Promotion Optimization (TPO) Challenge was designed by the Promotion Optimization Institute with Gartner and four vendors accepted the challenge and participated. The goal of the “TPO Challenge” was to demonstrate and showcase to the 182 consumer packaged goods and retail attendees how the power of predictive accuracy combined with insights into a promotion scenario is helping to usher in a new way of engaging and collaborating. The TPO Challenge was designed to help realign the focus of trading partners across sales, marketing, merchandising, finance, and supply chain to analyze promotional outcomes.

The participating vendors in the TPO Challenge were Accenture CAS, AFS Synectics, G4 Analytics, and TABS Group. The judging panel consisted of Dale Hagemeyer, Managing Vice President, Industries Research Manufacturing, Gartner; Mike Kantor, CEO of the Promotion Optimization Institute; and John L. Stanton, PhD, Professor of Food Marketing, Saint Josephs University. In addition to the judging panel, POI summit attendees -- consumer packaged goods and retailer sales, marketing, and merchandising executives --also provided judging input.

Trade Promotion Management and Trade Promotion Optimization Defined

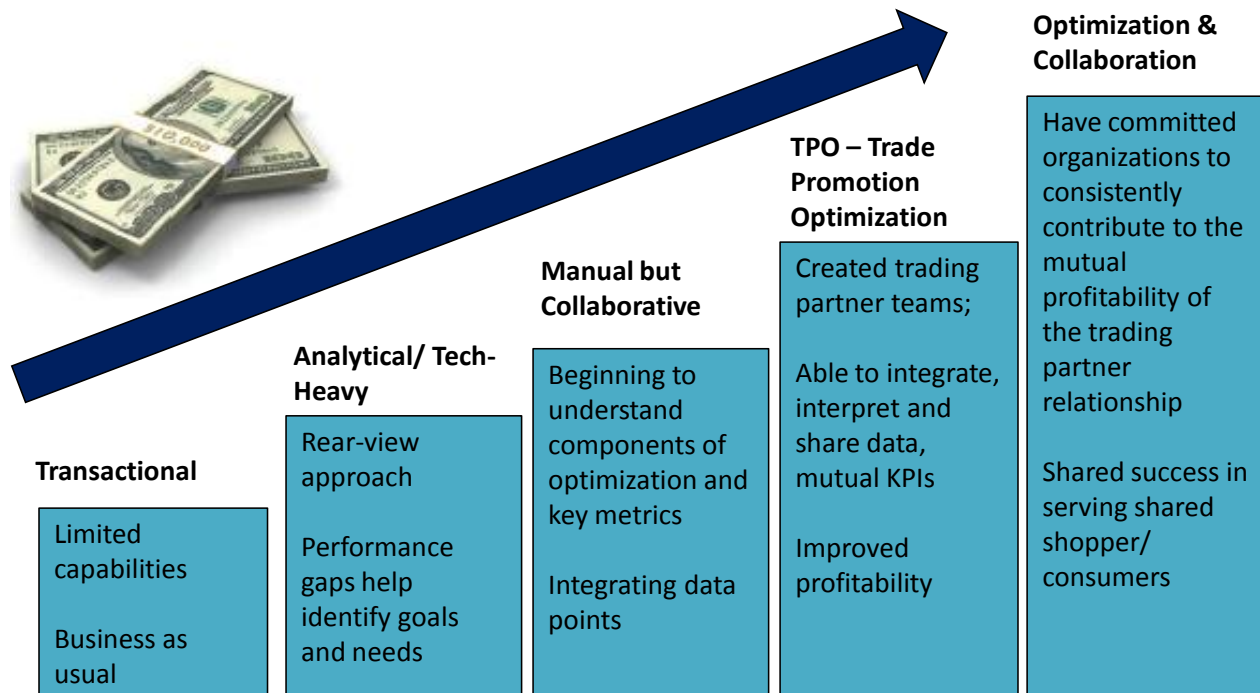
Before diving into the TPO Challenge itself, we will examine exactly the POI definitions of Trade Promotion Management and Trade Promotion Optimization.

Trade Promotion Management (TPM) is the process of planning and accounting for the funding of events and activities at retail including brand management, budgeting, account management, demand planning, integrated sales and marketing, retail execution, and back-end processes (including settlement), and analytics.

Trade Promotion Optimization (TPO) is the process of utilizing integrated goals, factoring in promotion (e.g. price, duration) and supply constraints, and predictive analytics to create continuously improving trade promotion strategies and results. TPO requirements include:

- Aggregate volume planning and predictive modeling (V, S, P)
- Fund allocation predictive modeling and optimization
- Account team event and calendar predictive modeling and optimization
- Post-event causal decomposition and performance reporting
- Applied learnings, course correction, and continuous improvement

Getting There One Step at a Time



Source: Joint POI and Gartner research

The Challenge

The TPO Challenge presented the four technology providers with two years of sales history for three products across 40 retail accounts. The sales history included both POS and shipments along with the promotional programs run throughout this period. Technology providers were given the opportunity to run this data through their application, analyze the historical activity and build a promotional model for future performance. In addition, a set of future promotions was provided to give the technology providers the opportunity to predict future performance and to give POI a means of comparing technology providers.

The data set consisted of:

- 2 product groups
- 3 products (pricing/spend details, etc.)
- 2 years of historical data (tactic, duration, etc.)
- 1 current promotion at retail
- Weekly shipments
- Weekly consumption
- Historical calendar
- Syndicated ACV

Metrics of Success (for the one forecasted promotion):

- Forecast Accuracy
- Volume
- Incremental Lift
- ROI (Incremental Profit/Promotional Spend)

Other measures of Success (Approach, Optimization, Plan):

- Optimization Strategy
- Optimized Promotion Capabilities
- Recommendations
- Collaborative Approach to Optimization
- Other, Creative Approach

The TPO Challenge Results

First, we would like to congratulate all of the participants for demonstrating they all possessed the necessary capabilities around Trade Promotion Optimization and Predictive Analytics. Each participant has a viable solution. The judges and the voting CPG/Retailer attendees at the POI Summit recognized the value and viability of all the solutions. The results were very close.

Both the panel judges and the CPG/Retailer attendees' voter results were consistent across the measures of success (via live audience response): optimization strategy, optimized promotion capabilities and recommendations, collaborative approach to optimization, alternative approach, and overall TPO Challenge experience.

Optimization Strategy – Accenture CAS was voted the best optimization strategy within the exercise with AFS/Synectics Group coming in as a close second. G4 Analytics and TABS both offered unique approaches to overall strategy.

Optimized Promotion Capabilities – AFS/Synectics Group and Accenture CAS came out tied for the top spot as voters recognized the two approaches as strongest. In addition, judges made many positive comments on the AFS/Synectics live simulation examples and working through the scenarios.

Recommendations – When it came to building a plan, calendar, and working through the given variables, and constraints, Accenture CAS and AFS/Synectics Group were judged the most complete, and tied back to the given data set/scenario.

Collaborative Approach to Optimization – All participants demonstrated the necessary focus on category effects plus the benefits of an accurate forecast.

Alternative Approach – TABS Group was recognized for their alternative approach to the data, and the challenge with a focus on achieving accurate baselines, and developing models for specific retailer profiles.

Overall POI TPO Challenge Experience – When accounting for all components of the Challenge/ Showcase, Accenture CAS edged out AFS/Synectics Group for the top spot. Each had completed the necessary components of the exercise, and demonstrated the solutions around the given requirements. This report on the POI TPO Challenge summarizes the results along with the approach by each of these capable solutions providers follow. Again, all participants should be congratulated for their thought leadership and execution.

Accenture - Predictive Analytics and Trade Promotion Optimization

Trade promotion optimization is the next critical step in delivering behavior-changing capabilities to account teams that have traditionally made trade promotion funding and spending decisions with no more than minor adjustments to year over year programming. This no longer has to be the case.

With the increased availability of scan and electronic point-of-sale data (coupled with syndicated / census data), there is real opportunity to develop a foundation for predictive planning. Predictive analytical models and algorithms can be applied to determine projected outcomes; i.e., baseline forecasts, promotion lift, plan optimization, category impact and more. Solutions that can harness this information, turn it into insights and place it at the fingertips of planners and account teams will win the TPO Challenge.

Promotion Effectiveness Analysis and Forecasting

The TPO Challenge was designed by the Promotion Optimization Institute to identify the best solutions for predictive analytics, and awards were presented to the solutions demonstrating optimization strategy/ capabilities around a promotion, and were closest on average to the actual results when compared to plan. Participants were asked to examine two years of historical data including shipment and syndicated data from a consumer goods company, and – with a small data set on two product groups – effectively demonstrate a strategic promotion plan that could be optimized for volume, profit, and revenue for the total corporate product portfolio as well as Incremental Lift, Forecast Accuracy, and Promotion ROI.

To deliver the best results for the TPO Challenge, Accenture insights were delivered from the Accenture CAS trade promotion optimization team and the Accenture Interactive Marketing Analytics team.

Winning the TPO Challenge

Accenture approached the TPO Challenge with a ‘single-screen planning and optimization’ solution to provide powerful analytics and choice, coupled with ease of use and visualization of the promotions calendar. Four key steps drove the TPO process:

1. **Load the data** – Import scan and syndicated consumption data.
2. **Analyze the data** – Sophisticated algorithms examine the data to extract key information used to create the three analytical scenarios.
3. **Create optimization scenarios** – Three scenarios created: baseline prediction, promotion optimization and plan optimization.
4. **Select optimized plan** – Based on the scenario’s results, baselines or promotions are created.

The initial data assessment provided several key insights which we then used to determine the best course of action to deliver the required outputs. The assessment confirmed that there were enough data points to enable us to make some assumptions and complete the objectives of the challenge, providing presentable results.

Results and Lessons Learned

Making minimal assumptions about the data, the Accenture team was able to derive accurate outputs, but only as to volume. These outputs allowed us to establish alternative promotions that clearly provided greater volumetric results. Data issues prevented going deeper into financial performance.

Additionally, by making some aggressive assumptions on promotion ACV and costs, the team was able to produce promotion plan options that provided results showcasing the levers between cost, timing and depth of promotion activities.

The combination of results, coupled with the overall Accenture approach delivered a compelling understanding of trade promotion optimization backed by a sophisticated solution that won over the judges of the TPO Challenge.

“In the emergent trade promotion optimization space Accenture has proven they clearly understand the opportunity as well as demonstrating a strong offering to Promotion Optimization Institute members and the industry as to what is possible today for those who want trade promotion optimization capabilities and analytics to drive their decision making and collaborative planning with their retailer partners.”

Michael Kantor

Chief Executive Officer

Promotion Optimization Institute (POI)

Accenture was selected as the **Winner of the Overall POI TPO Challenge Experience** with a first place position in four of the five TPO Challenge categories including Optimization Strategy, Optimization Promotion Capabilities, Recommendations and Collaborative Approach to Optimization. Comments from the judges on the Accenture response included ‘best optimization strategy’ and ‘most complete plan’.

About Accenture CAS and Accenture Interactive Marketing Analytics

Accenture CAS trade promotion optimization software provides greater understanding of consumption data to illustrate the true net effect of promotions using baseline simulation with historical data, promotion plan optimization based on user controlled constraints and promotion optimization: to determine the promotion types and price based on the constraints. Accenture CAS leverages neural network learning models to understand a promotion's past ability to drive incremental volume and statistical / mathematical modeling to derive a forecast baseline upon which a promotion plan can be built.

Accenture Interactive Marketing Analytics helps companies harness raw data to drive real-time, insightful decision making into marketing investments. Through these services, clients are able to better measure, manage and analyze their marketing performance. That leads to optimization that drives higher levels of business performance. The end result: the greatest return on marketing investment possible.

For more information on Accenture, visit www.accenture.com or contact: Gary Singer, Partner, Accenture, Customer Relationship Management at gary.e.singer@accenture.com



AFS Technologies/Synecotics Group TPO Challenge Approach

The POI TPO Challenge recently conducted at the November 2011 POI Summit in Chicago provided the opportunity to showcase the functional capabilities that exist today regarding predictive analytics and enterprise optimization. AFS Technologies/Synecotics Group was proud to be a part of this ground breaking approach to advance the collaborative use of optimization in the CPG sector.

AFS approached the case study by not only solving for the one off predictive result of numerous promotion scenarios, but utilized the power of the TPO Planner and its constraint based modeling capabilities, to deliver an optimal annual planning calendar. AFS utilized its Trade Promotion Predictive Analytics (TPPA) application to develop historical baselines and lift coefficients from the data provided from the POI. The TPPA application then came up with the predicted results from the promotion scenarios supplied to us by the POI. TPPA also fed the baselines and lift coefficients into the TPO Planner where numerous annual planning scenarios could be developed utilizing various corporate strategies and constraints.

TPO Leads to Collaborative Marketing

Optimization in the next 3-5 year period is not going to be a “nice to have”, it will be a “must have”. The combination of the ability to manage massive amounts of data, coupled with significant advancements in modeling capability and accuracy, will provide the catalyst for optimization adoption by both retailers and manufacturers. Once this adoption becomes broader (based on “one view of the truth”) it will exist to foster the catalyst for true collaboration of the (POI estimated) nearly \$200 billion trade promotion spend annually in CPG. To attain this “one view of the truth” regarding trade promotion optimization, expertise in 3 key analytical layers must be achieved to attain best in class status;

- 1) Trade promotion software solution that provides closed-loop capabilities regarding, budgeting, planning, settlements/deductions and pre/post promotion reporting;
- 2) Sophisticated predictive analytics capabilities that provide the user with accurate baselines and lift coefficients and the ability to deliver one off promotion predictions on numerous merchandising/pricing scenarios;
- 3) The last analytical layer is the most powerful. It is the ability to develop a strategic annual calendar optimized by a blend of corporate strategies revolving around profit, volume and revenue. This optimization engine needs to incorporate various constraints, e.g., seasonality, pre/post promotion timing gaps, promotional frequency, block out dates and always promote together/do not promote together.

These 3 analytical layers need to be tightly integrated to work concurrently at anytime during the annual promotional timeframe. An example being that the optimal annual strategic plan selected by corporate headquarters needs to be automatically fed the various planning levels in the TPM solution. Once fed to the TPM solution the integration link must exist between the TPM solution and the TPPA solution to develop one off promotion scenario planned events, which eventually could be electronically submitted to corporate for final approval. Another tightly integrated phase of the 3 layered system must be the ability to automatically feed updated baselines and lift coefficients to the TPO Planner.

The technology is here, the need is clear and the early adopters will reap the benefits of enjoying true collaboration with their trade partners. The “one view of the truth” provided by this sophisticated and accurate modeling, will foster greater trust that on both sides of the trading partner relationship, and will result in mutually maximizing the benefit. With the advent of digital media exploding, and the ability for both the retailer and manufacturer to deliver a branding message along with a promotion incentive...the time has arrived to optimize intelligently.

The POI continues to provided a rich forum for sharing and developing new approaches towards trade promotion optimization. We are at a critical and exciting crossroad in the CPG sector and the POI is providing critical leadership at an important time for both the retailer and the manufacturer to discuss, design, develop and most importantly execute a standard approach to Trade Promotion Optimization. This important work being conducted at POI will result in true collaboration and more importantly a maximum return on the nearly \$200 billion CPG trade promotion investment.

For more information regarding the AFS Technologies integrated approach to true trade promotion optimization visit www.afsi.com or call; Wayne Spencer SVP Business development, AFS Technologies, Inc.; 484-241-0883; waynes@afsi.com



G4 Analytics TPO Challenge Approach

The Promotion Optimization Institute POI is the leading industry body helping consumer goods manufacturers and their retailer partners build improved promotional programs. Together with Gartner, Inc., POI has invited technology providers to demonstrate their capabilities in optimizing a masked data set of manufacturer promotions.

Summary of Findings

The initial data set provided some challenges. The promotional file included both merchandising promotions with noticeable consumer response, long term discounts reflecting retailer EDLP strategies, and other non-consumer financial transactions. In addition pricing, costing and promotional attributes were inconsistent in the data.

The first step was to cleanse the data to build a data set which could be appropriately modeled. Data cleansing included:

- Selecting a sub-set of consumer impacting promotions
- Calculating an average non-promoted price for each account
- Assigning an average cost of goods number across each product.
- Assigning non-pricing attributes to each promotion (Feature, Display, General Merchandising etc.)

Once the data was cleansed the selected promotions were mapped to the sales data and full impact for each promotion was calculated. The calculations for each promotion included:

- Discount Level driving the promotion
- Non-promoted Baseline Sales (sales volume without promotions)
- Promotional Lift (above base sales)
- Promotional ROI – for both Manufacturer and Retailer for each promotion

The primary impact that could be measured in the data was the level of discount assigned to a promotion. This is typically the strongest driver of promotional performance, and it was the most important factor in the POI challenge data.

Modeled Promotions

The filtered data was loaded into the G4 Analytics application, and a basic predictive model was established. This model was then applied to the test data.

The model used the historical data set to predict performance for the baseline sales, promotional lift, along with a full financial analysis for each promotion.

Key Promotional Calculation

Incremental Gross Profit (Promotional Contribution) = Incremental Gross Sales – Incremental Total Promo Spend – Incremental COGS.

The promotions are modeled using the same set of techniques.

- Historical sales (syndicated in this case) are broken into Base, Incremental and Total Sales.
- Incremental Sales are mapped to the cleansed set of individual promotions.
- EDLP promotions are treated as part of baseline, and non-consumer financial events with the retailer are excluded.
- Using baseline and incremental sales a lift factor ($\text{Lift} * \text{Base} = \text{Total}$) is calculated for each event.
- Costs are assigned to the event both using the funding rate and by calculating an incremental COGS – $\text{incremental COGS Rate} * \text{Incremental Volume}$.

Summary

In both cases the promotions are modest affairs that generate small additional returns for both manufacturer and retailer. While actual results tend to vary show the greatest variance from predictions at the low end of the model, these results are in line with the historical results for the account.

As discount is the primary determinant this exercise just scratches the surface. The effects across the category and on competitors are not known. Substantially more needs to be understood about secondary promotional support. Frequency and cross account impacts also need further analysis. An entire set of analysis on incremental return per dollar should also be completed looking at the detailed cost of the promotional discounts and secondary activity. None of this can be done with this data set without making many more assumptions.

However, it does appear that modest promotions can be profitable for both manufacturer and retailer. It is also clear that large discounts will have very large effects on consumption and very high multiples of sales can be generated. The effects of those promotions on the parties are largely dependent on how the cost of the discount is shared.

Armed with advanced analytics, the best-in-class consumer goods companies are generating improvements in the effectiveness of programs which go directly to the bottom line. These improvements come from:

- Focusing resources on programs which deliver higher sales for the same investment
- Identifying and eliminating programs whose costs exceed their return to the business
- Optimization of trade spending across all possible promotional activity
- Reducing supply disruptions by improving forecast accuracy through the use of predictive analytics

G4 Analytics helps companies capture these improvements, measuring the effects of promotional programs

and their attributes, understanding profit and loss for both manufacturers and retailers, capturing total category and other consumer effects, and building this analysis into the business process where programs are designed and executed.

This improvement comes from embedding historical analysis in the budgeting and planning process, predictive models during pre-evaluation and retailer negotiation, and in-flight tracking to increase visibility and improve supply chain reactions.

G4 Analytics Solution

G4 Analytics is a software company focused on providing solutions to the analysis needs of the consumer products industry. Our solutions support an integrated selling process as described by Eric Sorenson, founder of The Center for Retail Management at The Kellogg School of Business. This process incorporates information from internal and external sources into targeted analysis used in all phases of selling.

For more information on G4 Analytics, visit www.g4analytics.com or contact: Richard Hall, CEO, G4 Analytics at (301) 641-2112.



TABS Group TPO Challenge Approach

The TABS Group approach to the POI TPO Challenge centered on data integrity. The models the TABS Group built around were:

- Units, not dollars, cases, equivalent volume or any other measurement
- Product hierarchy: brand-size structure
- Handling of promotional packs
- Retailer profile
- Calendar alignment: TPM vs. Syndicated Data Retail sales, not shipments
- Used CFS metric for dollar sales: consumed factory shipments (retail units x factory price)
- Create a baseline estimate - TABS AccuBase™ (Jetta and Rengifo, 2010)
- Minimal time on what has been, maximum time on what should be
- The Theory of Retailer Price Promotion (Jetta, 2008)

Arbitrage Opportunity Condition: Jetta (2008)

Intriguing for retailers and manufacturers participating in evaluating the TPO Challenge was Dr. Jetta's derivation of Arbitrage Opportunity Conditions (AOC) where both parties can make riskless profits.

Will the expected lift exceed a hurdle rate that is a function of ad costs, margins in the value chain, baseline sales and the manufacturer subsidy to the retailer?

According to Dr. Jetta, "In a narrow, but meaningful, set of circumstances the conditions are ripe for riskless profits, assuming that retailers and manufacturers are willing to collaborate on areas where they have typically been unable to in the past. These areas would include sharing of margin information, flexibility on Advertising costs, and promotional structure. If both parties can transcend these traditional barriers to collaboration, then the potential profitability benefits are huge."

Lift Model Creations and Recommendations

- Utilize QRF (Quadratic Response Function) to create the model, assuming sufficient observations.
- Create a model for specific retailer profiles for projections to non-tracked accounts. E.g. Northeast Food, EDLP Food, National Drug
- Incorporate qualitative metrics, as available
 - Consumer Offer (e.g. 50% Off vs. BOGO)
 - Ad Size and Location
 - Best Vehicle and Key Dates
 - Shared vs. Solo Space
 - The basis of predictive promotional planning

The Theory of Retailer Price Promotion (Jetta, 2008)

Dr. Jetta also explained during the TPO Challenge that more trade spending need not be sourced from consumer marketing dollars. Traditionally, manufacturers have viewed consumer marketing and promotional dollars as a fixed pot. He once again called on everyone to get past the paradigms because profitable trade spending actually generates more dollars to invest in to consumer spending, which helps the baseline. A higher baseline will make promotional spending even more efficient and profitable. Each spending strategy can be self-supporting for the other.

Specifically, Dr. Jetta provided both empirical and theoretical proof that the temporary sales lift from retailer promotions is truly incremental at the brand, category and retailer level. According to Dr. Jetta, “It does not source from future weeks, other brands or other retailers. Sales exhibit a Complete Category Expansion Effect, and this effect is consistent with the fundamentals of microeconomic theory.”

About the TABS Group, Inc.

TABS Group, Inc. was founded by [Dr. Kurt Jetta](#) in 1998 as a service with a better way to conduct Sales and Marketing analytics in the Consumer Products Industry. Back then – and still to this day – there is an inordinate amount of time and expense dedicated to the analytics process with little concern for the return on that analytics investment. TABS has developed unique and affordable processes to strip out time and cost from the analytical process. The commitment TABS shows towards Analytical Innovation is a testament to the value gained by our clients. Our methodologies are robust, proven, and put to work daily for dozens of clients across a variety of Food, Drug, and General Merchandise categories. For more information on TABS Group, Inc. visit www.TABSGroup.com or write kurtjetta@tabsgroup.com



About the Promotion Optimization Institute (POI)

POI brings together manufacturers, retailers, solution providers, analysts, academics and other industry leaders. Members of POI share cross-functional best practices in both structured and informal settings. Additionally, members benefit through our industry alliances, the Certified Collaborative Marketer (CCM)™ curriculum and certification, industry leadership events, and the Promotional Collaboration Capability Matrix (PCCM). POI aims to instill a financial and metrics-based discipline not typically found with other trade groups. The goal of our innovative approach is collaborative promotion optimization. The focus is on the customer/shopper through sales, marketing, and merchandising strategies. POI is based in West Nyack, New York. To learn more about the POI including how to participate in research, how to register to attend events, and how to engage with leaders on the CCM, visit www@p-o-i.org, or email mkantor@p-o-i.org.

