I) Investment Prioritization Framework

1. In-Flight Optimization

Exceeds: Major components of objective demonstrably used to inform expense allocation decisions within and/or between product families.

***i) Diabetes Deep Dive and Promotional Budget Optimization***

* Helped inform the optimal allocation of 2013 Diabetes franchise in-scope promotional budget of $80 MM. Identified most effective (samples, HCC Media) promotion types to least effective (MMF) promotion types.
* Evaluated optimal budget allocation scenarios with *increase* in 3-year incremental revenues ranging from $93MM to $140 MM. Helped the brand team to reconfigure the 2013 spending and inform 2014 spending levels for various promotion types with the limited budget.
* Helped to create team’s first ever comprehensive and objective approach for promotional budget optimization by combining all available data and ROI results to build a wide range of statistical and mathematical models (Regressions including linear, semi-parametric and non-parametric models, Logistic growth curves, Cubic splines etc.) that best represents the business problem at hand.
* Saved a high level of investment by doing the analysis in-house instead of contracting with outside consulting firms.
* Other innovations include the use of appropriate non-linear constrained optimization solution procedures and a careful construction of sensitivity analysis to anticipate the unknowns and clearly differentiate the promotional effectiveness and spend allocations for various promotion types.
* Conducted a comprehensive adhoc analysis of patient level LRx metrics and competitor promotion investment analysis to understand our brand promotions in the larger context.
* Consulted and presented the results to various stakeholders including the Senior Leadership (Rick Hartz – Chief Marketing Officer, Graeme Bell – US Finance VP etc.,), Diabetes Brand team, Global Marketing Communications team and MCM team. Analysis was very well received by the stakeholders and helped them in their budget decision process.
* Helped in the integration of marketing budget allocation with sales force and market access investment allocation works from other Investment analytics teams.

***ii) Athero Franchise Promotional Budget Optimization***

* Conducted a very similar analysis like the one above for Cardiovascular Franchise (Zetia and Vytorin). Informed the optimal allocation of $42 MM in-scope CV marketing promotional budget by identifying most effective to least effective promotion types.
* Evaluated optimal budget allocation scenarios with *increase* in 3-year incremental revenues ranging from $50 MM to $116 MM. Consulted with and helped the CV brand team and senior leadership to inform 2014 spending levels for various promotion types with the limited budget.

***iii) Respiratory Franchise Promotional Budget Optimization***

* Carried out similar analysis for Respiratory Franchise (Nasonex and Dulera). Informed the optimal allocation of $94 MM (Nasonex - $39 MM and Dulera - $55 MM) in-scope Respiratory marketing promotional budget by identifying most effective to least effective promotion types.
* Evaluated optimal budget allocation scenarios with *increase* in 3-year incremental revenues ranging from $7 MM to $21 MM for Nasonex and $6 MM to $18 MM for Dulera. Consulted with and helped the Respiratory brand team and senior leadership to inform 2014 spending levels for various promotion types with the highly reduced budget.

b) Consult on agent-based simulation model for Suvorexant

Exceeds: Major components of objective demonstrably used to inform expense allocation decisions within and/or between product families.

* Collaborated with ZS and Learned the basics of cutting edge agent-based dynamic simulation model for the launch brand Suvorexant. This simulation model predicts the influence of wide-ranging market events and impact of various promotions (detailing, DTC, samples, vouchers, copay cards etc.,) so as to determine right investment levels for various promotions.
* Processed and provided necessary promotion response curves for Lunesta and Ambien CR (from previous works) and evaluated ZS’s calibrated promotional response curves for Suvorexant.
* A promotional annual investment of about $300 MM was informed by this project.

II) Customer Engagement Initiatives, Core Services & Operational Transformation

1. TV DTC

Exceeds: Major components of objective demonstrably used to inform expense allocation decisions within and/or between product families.

***i) Zostavax TV DTC – Phase 1 analysis for continued 2013 Investment Decisions***

* Consulted and analyzed the impact of TV and print programs for Zostavax Phase 1 ROI analysis under tight deadlines. A 2013 investment level of $50 MM was informed by this analysis.
* Presented to Zostavax brand team a high initial TV ROI of about 4:1 and helped to increase the planned 2013 DTC spend.
* Analysis innovations include the optimal decision to analyze retail Rx data and project to shipped doses to compute TV ROI. A great deal of tenacity in the face of some analysis obstacles led to the timely conclusion of the project.

***ii) Nasonex / Dulera / Zostavax – Consulting and Analysis***

* Collaborated with IMS Health team to provide end-to-end support and guidance under tight deadlines and heavy workloads in carrying out TV ROI analysis for three major brands: Nasonex ($22MM), Dulera ($17MM) and Zostavax ($50MM).
* Detailed evaluation of methods and results and timely intervention led to the execution of improved and revised analysis by IMS.
* Provided consultative support, several ad-hoc analyses supports and presented the results to respective brand teams to help inform optimal allocation of DTC budgets under the reduced 2014 budget levels.

1. Integrated Multi-Channel Marketing Program Analysis (Customer Engagement Initiatives)

Exceeds: Major components of objective demonstrably used to inform expense allocation decisions within and/or between product families.

***i) PL5 Closeout***

* Helped design and setup the analysis process to study the impact of integrated MCM (PL5) program ($10MM investment) using de-identified data by working with multiple vendors (Genpact and Merkle). MCM programs for Januvia, Janumet, Zetia, Vytorin and Dulera were included in the pilot.
* Proposed innovative analysis methods like “random grouping” to study the de-identified data and use existing procedures and linear regression models to measure the impact.
* Final analysis was not carried out due to the reduced priority and work load issues; however, we helped setup a platform and execute relevant processes with Genpact to conduct such future analysis with de-identified data.

***ii) Consulting for PEI program***

* Provided continuous consultative support to Customer Engagement team and Specialty Analytics team and evaluated Merkle processes for the Integrated MCM program for Isentress (PEI).

III) Information Sciences – Global Commercial Analytics Projects

1. Russia - Sales Force Analytics and Resource Optimization.

* Collaborated with our team and Helped to inform the sales force investment levels for all franchises (12 franchises and about 40 products) in Russia for 2013 and 2014. Total yearly sales and impactable revenues were $357MM and $202MM respectively.
* Evaluated optimal sales force representative allocation scenarios with *increase* in incremental revenues ranging from $17MM to $32MM. Helped the commercial operations and brand directors to reassure proposed increase in 2013 field force reps and inform 2014 profit planning process. A very positive and encouraging feedback from stakeholders to our team led to the extension of the analysis to future phases.
* Coached, guided and worked with Genpact resource to shape and complete the analysis overcoming various data hurdles with most appropriate modeling and optimization techniques (Generalized Additive Spline Regressions, Non-linear regressions, Logistic Growth curves and generalized quadratic optimization routines) that answers the business questions.
* Led the project along with working hands-on and developed the Genpact resource to be more independent in handling the project than when the project started.
* Through Phase II ongoing analysis, helped inform the effectiveness and impact of the Pharmacy field force (the first time for the client). This analysis helped to rethink their investment strategy and positioning of pharmacy field force for 2014.
* Enhanced the Phase II analysis with an elaborate set of monthly level models and setup guiding principles and processes to choose the statistically valid promotional response models.

1. China – Field force sizing analysis for Singulair AR

* Proposed and carried out an elaborate physician sales attribution and segmentation through innovative statistical methods to inform the sales force size needed for Singulair AR indication for China. Results reconfirmed the local team’s recommendations. Possible incremental sales of $20 MM USD was expected by the China local team through the expansion over next 3 years.
* Collaborated with internal teams to complete the analysis. Due to complex local conditions and new thought process involved in the analysis, the local commercial team did not feel comfortable with the analysis. However, this work has led to further research on this method to see its potential in applying to other countries.

1. Consulting for Global Contact Center Projects

* Provided ongoing consultative and advisory services to global and local call center teams on impact measurement possibilities. Evaluated the call center telesales program design (power analysis) to see if there are enough targets to detect telesales impact for Mexico and Saudi Arabia.
* Evaluated vendor capabilities in terms of impact measurements for various countries (Mexico, Saudi Arabia, Italy, India, Egypt).
* For each country, program costs about $250K with the vendor measurement component ranging from $50K to $100K. Provided guidance on the investment of about $150K to $250K for impact measurements.

1. Patient level data analysis

* Genpact Diabetes Patient Level Data Analysis – Identified appropriate business questions and guided the analysis to inform those questions. Collaborated with various team members to review and expand the analysis.
* JADE Patient portal data analysis – Identified key business questions that could be answered from JADE data and relevant methods to answer those questions (ex: initially suggested that we should do the patient attrition analysis through logistic regressions and/or decision trees and identify parameters that helps to minimize attrition). Collaborated with Antonio and evaluated the results produced by the IMS consultant to refine the analysis and answer the business questions. JADE project was chosen as one of the best IT projects in Asia Pacific region.

1. Singapore – Physician sales attribution research

* Involved in the research of various statistical methods to identify the physician’s contributions to sales using hospital (or account) level data. Such methods do not appear to be there in the market place. If successful, this research would offer a distinct targeting advantage to the brand teams in countries where physician level data is not available.
* Helped conceive and carryout different simulation based approaches using the US data to identify modeling techniques that would help in the research of physician sales attributions.

1. Promotion Budget Optimization – Tool Development

* Defined requirements, core solution methods and provided operational guidance to implement the optimization part of the Promotion Budget Optimization tool. Evaluated and provided inputs for the implementation process on an ongoing basis.
* When operational, the tool will be reducing the analysis time for the IA&DS team (and possibly our internal team) to inform marketing budgeting decisions for multiple US brands. US Marketing teams have an annual budget of couple of million dollars.

IV) Personal Development

Expand knowledge to implement projects effectively and efficiently by attending trainings and/or conferences. Example: courses like Propensity Score, Introduction to SEM etc.,

* Learned advanced statistical modeling methods by attending deep-dive courses like Propensity Scores (2-day) and Introduction to Structural Equation Models (2-day). Ongoing continuous self- learning to meet and/or exceed the project needs.