



2016 Performance Plan for Senthil Murugan

Employee Information

First Name	Senthil	Location	UPPER GWYNEDD, PA OFFICE
Last Name	Murugan	Country	USA
Job Title	Assoc. Dir, Quant. Sciences-(56153131)	Manager	Jane Cynthia Folske
Personnel Sub Area	GHH-Z005	Job Code	56153131

Year End Review

Relative Performance Category

Upper 10-20%

Year-End Review Comments

Managers Comments

In 2016, Senthil consistently delivered quality analytical results accompanied by clear and actionable recommendations to his clients/stakeholders. Senthil is broadly recognized by his stakeholders as a highly collaborative partner who produces timely output that is incredibly detailed, brings an impressive analytical mindset and toolkit to the table, is consistently enthusiastic about bringing maximum value to his projects, is upfront with his point of view and recommendations, is flexible in the face of changing circumstances, and is viewed as a trusted, talented partner. Senthil consistently inspires confidence in his output from his stakeholders, and according to one stakeholder has refined the balance between technical specifics and summarization to better tailor his content to this particular stakeholder's preferences. This illustrates Senthil's willingness and ability to adapt his communication approach to different audiences. Specific comments below expand upon these themes for each category of project that he owned.

Senthil undertook extensive responsibility for evaluation of the Relay Health pilot, including influencing the design, coordinating the broad evaluation plan, and managing and delivering a comprehensive performance tracking decision support suite (Spotfire, Excel and PowerPoint). This project is ongoing.

Senthil is poised to manage evaluation of the First Take Program. In 2016, he vetted external capabilities and laid the groundwork for successful collaboration with the Strategic Sampling Operations colleagues who are the program owners.

Senthil seamlessly stepped into the inaugural deep-dive assessment of the impact of the JANUVIA co-pay program on abandonment (of first fill and of ongoing therapy), vetting and fully leveraging the IMS/Amundsen output to inform the decision not to redesign the program. This work was highly complex, requiring collaboration with multiple teams to achieve the goal of fully evaluating the implications of changing the program design. Senthil worked tirelessly to integrate the pertinent results from the study of longitudinal patient claims data in to the decision support process. He displayed exemplary attention to detail while maintaining pragmatic business acumen, communicated complex ideas clearly to disparate audiences, managed a complex/multi-player environment and delivered credible and impactful results.

Senthil had the opportunity to present at a Commercial Operations & Strategy Realization department wide town hall meeting and in so doing confidently delivered a very clear and engaging presentation to the audience of 200+.

Senthil developed an innovative and comprehensive approach to analyzing sample and voucher effects for BELSOMRA, delivering recommendations that have the potential to be highly impactful for the business, re-setting previously held beliefs about the relative effects of these expensive resources. This required a great deal of perseverance as Senthil investigated voucher costs which required significant follow up through a labyrinth of colleagues to formulate a complete picture. Senthil incorporated group practice dynamics after deep exploration of alternative approaches, and also provided an understanding of the total effect of vouchers whereas prior models considered redemptions only. His insights were appreciated by brand leaders and the Chief Marketing Officer of the business unit.

Above are some highlights of Senthil's accomplishments in 2016. Other major milestones include environment setup and data integration including preparation for efficient use of massive longitudinal patient data, external capabilities reviews, coaching and managing Genpact consultant, and hiring and on boarding DataZymes consultant. Senthil is highly effective at training new staff and quickly raising their level of productivity.

Senthil's contributions in 2016 illustrate his unique mix of technical acuity and business acumen. He was able to influence major decisions using this blend coupled with highly effective communication across multiple levels of the organization in the context of a complex environment with many individuals and groups in the mix. I am looking forward to working with Senthil in 2017.

Performance Objectives

Customer

IADS: Evaluate Customer program design and performance

Completed

Support brand and operations team towards design, execution and measurement of pilots and programs such as Relay Health and firstRx

Individual Objective Category

Delivered On Objective

Additional Ratings and Comments

Individual Objective Category

Delivered On Objective

Priority Details

Objective Name	IADS: Evaluate Customer program design and performance	Objective Description	Support brand and operations team towards design, execution and measurement of pilots and programs such as Relay Health and firstRx
Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	i. Belsomra Copay card programs and Relay Health eVoucher pilot programs (~\$20MM to \$40MM investment): <ul style="list-style-type: none">• Developed alternate financial models for co-pay card structure evaluations to study impact of changing current two-	Completion Date	12/20/2016
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tier \$30/\$90 program to a single tier \$30 coupons as well as eVoucher pilot rollout.

- This work provided additional directions for Marketing to not change the current two tier coupon structure and to be cautiously optimistic about outcomes from eVoucher pilot.
- Guided the development of appropriate RelayHealth program measurement plan for 2017.

ii. Participated in the discussions with SSO team / IMS / Symphony and provided inputs regarding data needs to conduct a successful firstRx pilot evaluation. Yet to start the work.

Financial Performance

EICC: Advance towards a best-in-class Business Analytics Practice to measurably improve decision-making in order for the practice to achieve 60MM (P&L) & \$100M (Working Cap) to Merck during 2016

Completed

o Co-Lead the Team in marketing our services and capabilities through demonstrations and project outcome reviews with our internal customers to create awareness and understanding of analytics solutions available at Merck.

o Manage the tracking and documenting the value realized for every project assignment and ensuring alignment with the finance organization on hard benefits.

o Develop analytical processes and solutions for various business initiatives that provide revenue/ productivity improvements across the enterprise Sales Operations & Execution, Integrated customer and marketing strategies, Market access agreements & execution, Manufacturing etc.

o Create business pull by Achieving positive feedback from at least two business stakeholders on the value created for their business based on the analytics.

Individual Objective Category

Unrated

Priority Details

Objective Name	Objective Description	
EICC: Advance towards a best-in-class Business Analytics Practice to measurably improve decision-making in order for the practice to achieve 60MM (P&L) & \$100M (Working Cap) to Merck during 2016		<p>o Co-Lead the Team in marketing our services and capabilities through demonstrations and project outcome reviews with our internal customers to create awareness and understanding of analytics solutions available at Merck.</p> <p>o Manage the tracking and documenting the value realized for every project assignment and ensuring alignment with the finance organization on hard benefits.</p>

- o Develop analytical processes and solutions for various business initiatives that provide revenue/ productivity improvements across the enterprise Sales Operations & Execution, Integrated customer and marketing strategies, Market access agreements & execution, Manufacturing etc.
- o Create business pull by Achieving positive feedback from at least two business stakeholders on the value created for their business based on the analytics.

Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	<p>i. Japan – Januvia Sales Force Promotion Effectiveness and Marketing Mix</p> <ul style="list-style-type: none"> • Completed thorough evaluation of effectiveness of various sales force channels by looking into several hundreds of statistical models and choosing most appropriate ones that meets the business context and practice. This was continuation of work that started during late 2015. • Determined optimal investment mix through Operations Research methods for four different sales force promotional programs for GPs and Specialists. Analysis procedure was new to Japan Promotional Analytics team and the team's intention was to incorporate these in their practice. 	Completion Date	12/20/2016
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Financial Performance

IADS: Inform Coupon and/or Voucher Effectiveness and Strategy - Brands

Completed

- a) Collaborate with Consumer COE, brand teams and vendors to develop optimal coupon strategy for brands such as Januvia and Belsomra.
- i. Study coupon / voucher effectiveness for patients and/or physicians.
 - ii. Enhance financial models with the patient level effectiveness findings
- b) Evaluate vendor capabilities and relevance on a continuing basis.

Individual Objective Category

Delivered Significantly Above Objective

Additional Ratings and Comments

Individual Objective Category

Delivered Significantly Above
Objective

Priority Details

Objective Name	IADS: Inform Coupon and/or Voucher Effectiveness and Strategy - Brands	Objective Description	a) Collaborate with Consumer COE, brand teams and vendors to develop optimal coupon strategy for brands such as Januvia and Belsomra. i. Study coupon / voucher effectiveness for patients and/or physicians. ii. Enhance financial models with the patient level effectiveness findings b) Evaluate vendor capabilities and relevance on a continuing basis.
Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	a) i. Januvia Coupon Strategy (\$70MM yearly spend): <ul style="list-style-type: none">• Collaborated extensively with IMS, Consumer COE, Finance and Januvia Marketing teams to provide decision support for optimal Januvia co-pay card design that has an annual spend of about \$70MM.• This analysis was instrumental for marketing and senior management to decisively move forward with current Januvia copay structure.• Worked with IMS to gain a deeper understanding of the Coupon's impact on co-pay, abandonment, adherence and evaluation of various designs of coupon target copay and payment limits in terms of above metrics.• Enhanced the analysis by integrating IMS abandonment/adherence results, McKesson coupon redemptions and financial models.• Informed co-pay strategy for Januvia Marketing team through developing key enhancements to financial models and generating various what-if scenarios. ii. Belsomra Sample and Voucher program responsiveness (\$5MM to \$8MM yearly spend): <ul style="list-style-type: none">• Analyzed and Presented strategies for one of the most cost effective and influential ways to meet the senior management's goal of 50% growth target for next year• Designed, developed and executed an in-depth segment level analysis of performance of sample and voucher programs and provided key guidance towards optimal investments and possible operational tactics for 2017.• Innovations include first-time estimation of reminder effects of vouchers disbursed, a thorough look at individual program costs, inclusion of appropriate group practice dynamics and deeper volume & exposure segment level insights.• Collaborated with Commercial Legal and presented channel level results to Marketing by meeting various compliance goals. Deeper result sharing possibility to be revisited next year with commercial legal.	Completion Date	12/20/2016
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b)

- Evaluated the co-pay card design and impact analysis capabilities of IMS, ZS and Alpha1C so as to understand the work being done in the industry in general and each of their niche areas of expertise.

Innovation

EICC: Actively support the EICC Commercial Analytics organization in driving innovation at Merck. Given the pressures put upon Merck by the changing global health care market, embracing innovation in our everyday work is critical to the success of our business.

Completed

- Recognizing that risk-taking is vital to successful innovation will pursue opportunities to apply innovative solutions in all projects.
- Look for opportunities to implement solutions that will simplify business processes or increase revenue.
- Leverage IT and business networks to discover potential new opportunities for applying simulation across the enterprise.

Individual Objective Category

Unrated

Priority Details

Objective Name	EICC: Actively support the EICC Commercial Analytics organization in driving innovation at Merck. Given the pressures put upon Merck by the changing global health care market, embracing innovation in our everyday work is critical to the success of our business.	Objective Description	<ul style="list-style-type: none"> • Recognizing that risk-taking is vital to successful innovation will pursue opportunities to apply innovative solutions in all projects. • Look for opportunities to implement solutions that will simplify business processes or increase revenue. • Leverage IT and business networks to discover potential new opportunities for applying simulation across the enterprise.
Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	i. Japan / IBM collaboration <ul style="list-style-type: none"> • Worked with IBM team to provide some details about Japan market and studied the methods used by IBM to address challenges in Japan market. • Improved collaborative effectiveness and trust with IBM team through deeper technical conversations, providing pragmatic guidance, acknowledging our short comings and appropriate questioning. • Developed internal Merck capabilities by studying the innovative methods 	Completion Date	12/20/2016
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used by IBM analysts and developing initial workable Hidden Markov Models capability. This was a time consuming process as the learning curve was steep for Merck.

Innovation

IADS: Introduce Patient Journey Simulation and its Capabilities to Consumer COE

Postponed

Experiment with Agent Based Simulation to understand patient journeys and evaluate value of such techniques to the organization.

Individual Objective Category

Unrated

Priority Details

Objective Name	IADS: Introduce Patient Journey Simulation and its Capabilities to Consumer COE	Objective Description	Experiment with Agent Based Simulation to understand patient journeys and evaluate value of such techniques to the organization.
Start Date	01/01/2016	Due Date	12/31/2016
Status	Postponed		

Other Details

Accomplishments

Progress Notes	• Started preliminary discussions regarding advantage of such analysis with Consumer COE team. Yet to start planning on this work stream.	Completion Date	12/20/2016
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Operational Excellence

IADS: Inform Coupon and/or Voucher Effectiveness and Strategy - Analysis and Platform development

Completed

- a) Setup an environment and develop a functional application with following capabilities:
- Explore opportunities to obtain and integrate various data sources such as LAAD / FIA, IMS Exponent, McKesson Coupon and Voucher transactions etc.
 - Visualize important patient metrics that are relevant for coupon and voucher programs
 - Model relationships between co-pay exposure amounts, patient abandonment, adherence and other source of business metrics for copay card users and non-users.

Individual Objective Category

Delivered Significantly Above Objective

Additional Ratings and Comments

Individual Objective Category

Delivered Significantly Above Objective

Priority Details

Objective Name	IADS: Inform Coupon and/or Voucher Effectiveness and Strategy - Analysis and Platform development	Objective Description	a) Setup an environment and develop a functional application with following capabilities: i. Explore opportunities to obtain and integrate various data sources such as LAAD / FIA, IMS Exponent, McKesson Coupon and Voucher transactions etc. ii. Visualize important patient metrics that are relevant for coupon and voucher programs iii. Model relationships between co-pay exposure amounts, patient abandonment, adherence and other source of business metrics for copay card users and non-users.
Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	<p>i. a) Capability Presentation at Town-Hall</p> <ul style="list-style-type: none">• Shared the Capabilities, Plans and Achievements of Co-Pay card practice area in the US Marketing Operations & Strategy Realization town-hall meeting with couple of hundred team members tuned to the presentation in the auditorium (and subsequent video feed). <p>i. b) Environment Setup and Data Integration:</p> <ul style="list-style-type: none">• Have setup a local environment, obtained IMS LAAD/FIA data through Amazon Web Server (Belsomra) and FTP (Januvia) and loaded them to local environment.• Expanded memory and storage in both local and virtual desktop to handle large data volumes.• Worked towards procuring Januvia/Belsomra LAAD data for 2017 by collaborating with multiple internal teams and IMS.• Proposed SAS / AWS environment initially to facilitate the improvement of FIA / LAAD data analysis operational efficiency (multi-person access, reuse SAS infrastructure, large data handling etc.).• Worked with SAS, Merck IT, IA&DS and Procurement towards installing a SAS server in AWS environment. At this point, budgets are being looked at for this capability. <p>-----</p> <p>ii. and iii. Postponed & Not applicable at this point.</p> <p>-----</p>	Completion Date	12/20/2016
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People

IADS / EICC: Coach and Develop Talent

Completed

Coach and manage consultant(s) and other team members to execute various promotional optimization projects.

Individual Objective Category

Delivered Significantly Above
Objective

Additional Ratings and Comments

Individual Objective Category

Delivered Significantly Above
Objective

Priority Details

Objective Name	IADS / EICC: Coach and Develop Talent	Objective Description	Coach and manage consultant(s) and other team members to execute various promotional optimization projects.
Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	IA&DS: =====	Completion Date	12/20/2016
	<ul style="list-style-type: none">• Initiated and setup infrastructures to work with a new Merck vendor DataZymes (one consultant). This initiative provides more contractual flexibilities and saves engagement costs by about 15% year over year.• Started a consulting engagement with Genpact to meet team's work load.• Coached and managed a Genpact consultant design a fuzzy based address matching algorithm that uses SAS GIS capabilities. This analysis was a research initiative with several potential applications (ex: identifying locations of sample drops, various targeting initiatives etc.).		
Progress Notes	EICC: =====	Completion Date	12/20/2016
	<p>Sales Effectiveness - Israel, Spain, Saudi Arabia etc.</p> <ul style="list-style-type: none">• Guided, worked alongside and developed team members (Amir) to undertake and complete the sales force effectiveness analysis by providing constant feedback on shaping the methodologies, analysis scenarios, practical aspects to handle, data visualization, presentation etc.		

Quality/Compliance

Awareness of/Conformity to Policies

Completed

- Complete all relevant compliance trainings.
- Review updated policies to ensure firm working knowledge of them.
- Encourage team members to raise any compliance issues or concerns.

Individual Objective Category

Delivered On Objective

Additional Ratings and Comments

Individual Objective Category

Delivered On Objective

Priority Details

Objective Name	Awareness of/Conformity to Policies	Objective Description	<ul style="list-style-type: none">• Complete all relevant compliance trainings.• Review updated policies to ensure firm working knowledge of them.• Encourage team members to raise any compliance issues or concerns.
Start Date	01/01/2016	Due Date	12/31/2016
Status	Completed		

Other Details

Accomplishments

Progress Notes	<ul style="list-style-type: none">• Compliant with all required trainings and guidance on various promotional analysis.	Completion Date	12/20/2016
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Signature

Manager: Jane Cynthia Folske 03/14/2018

Employee: Senthil Murugan 03/19/2018