



# Promotional Effective Analysis

## Final Report

### 2017



# Key Benefits

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## OPTIMIZATION AND FORECASTING

Customers can evaluate the promotional activities and gain much more insights for future investment plan.

And design the best promotional mix and resource allocation to improve ROI.

01

### **Better Promotional mix**

Optimize [promotional mix](#) for each product with maximal ROI

02

### **Better budget allocation**

[Allocate the budget](#) in different products, region and promotion channel based on the best promotional mix.

03

### **Understand business with accurate forecast**

Fully understand business by different [forecast scenarios](#) to align with fitted strategy plan

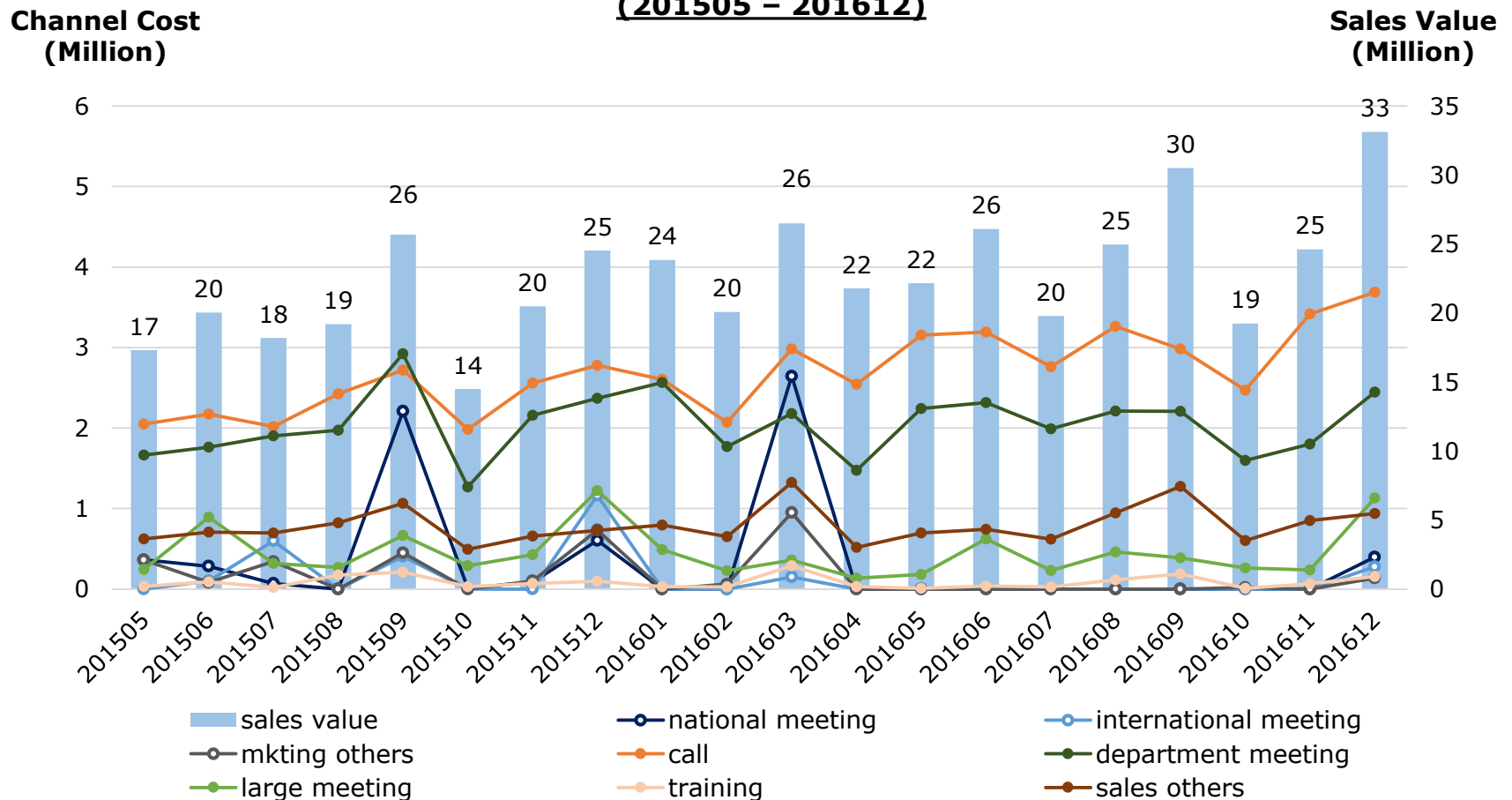
# Key terminology for promotion effectiveness analysis

Terminology	Definition
<b>Carryover Rate</b>	Proportion of sales that would be achieved in the following year if all promotion is to stop
<b>Incremental Sales</b>	Sales contribution from different promotions
<b>Response Curve</b>	Response curve is the relationship between channel investment and sales
<b>ROI</b>	ROI measures return relative to expenditure
<b>mROI</b>	<p>mROI measures marginal return per additional unit of spend:</p> <ul style="list-style-type: none"><li>• mROI &lt; 1 means overspending</li><li>• mROI &gt; 1 means increasing spend will increase profits</li><li>• mROI = 1 means profits are maximized</li></ul>



# Data from different sources were processed and analyzed - Mycamine

## Mycamine monthly channel cost and sales value data (201505 – 201612)

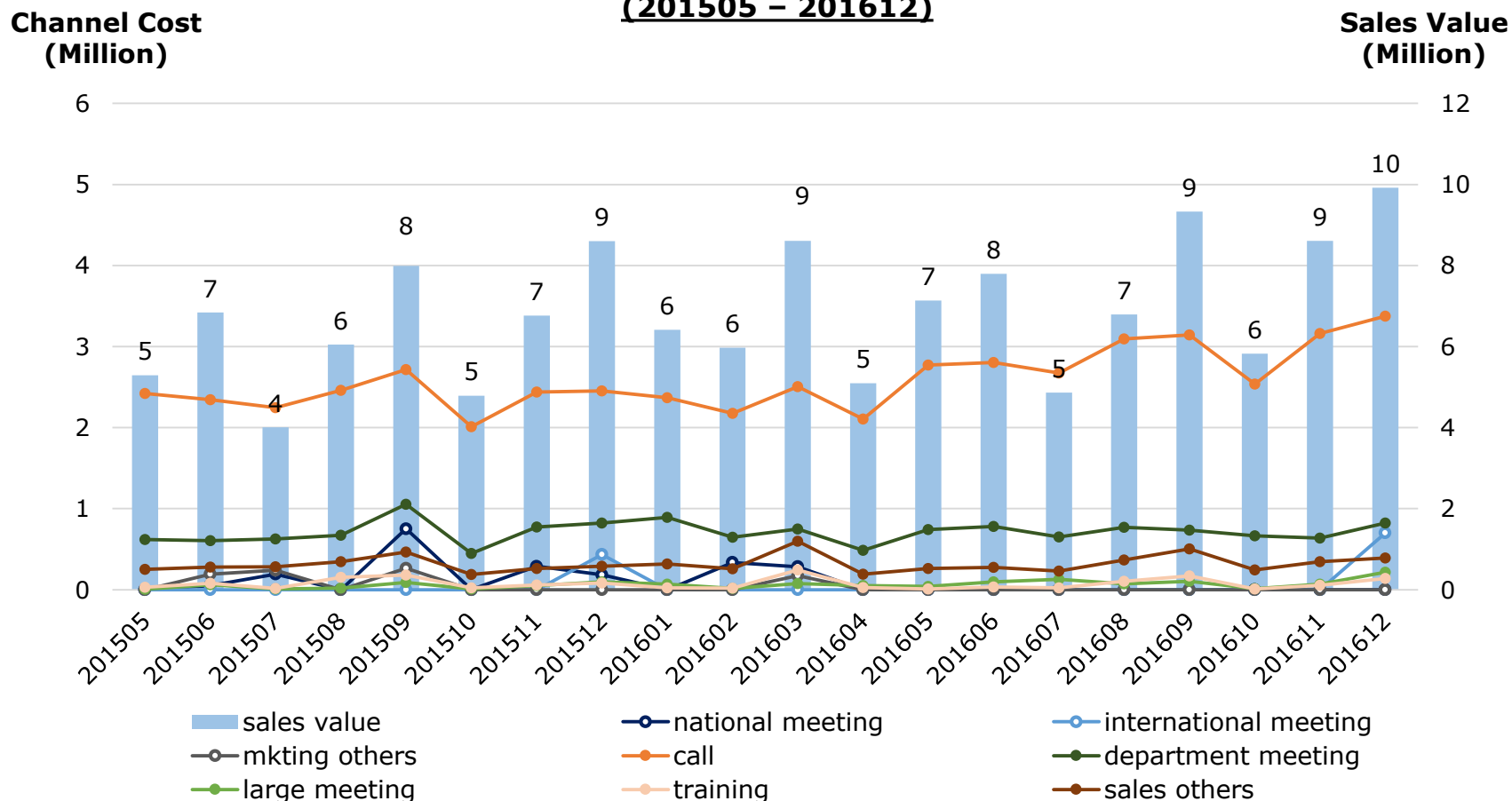


Data from all sources were processed and checked before fitting into model for KPI calculation



# Data from different sources were processed and analyzed - Perdipine

**Perdipine monthly channel cost and sales value data**  
**(201505 – 201612)**



Data from all sources were processed and checked before fitting into model for KPI calculation



# Model fit for all models are around 80%-90%

- Hundreds of models with different combination of response curve with retention rate will be fitted to check which one is best fit and best align with business objectives
- Final Modeling result is picked from top fitted model and best business application

## Example for Model Fit

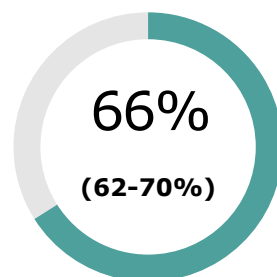
The Comparison between Observed and Fitted of MYC with R Square 0.90



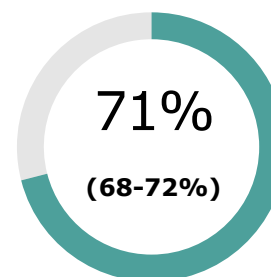
# Mycamine and Perdipine have carryover rate inline with industry benchmark

## Carryover Rate

**Mycamine**



**Peridipine**

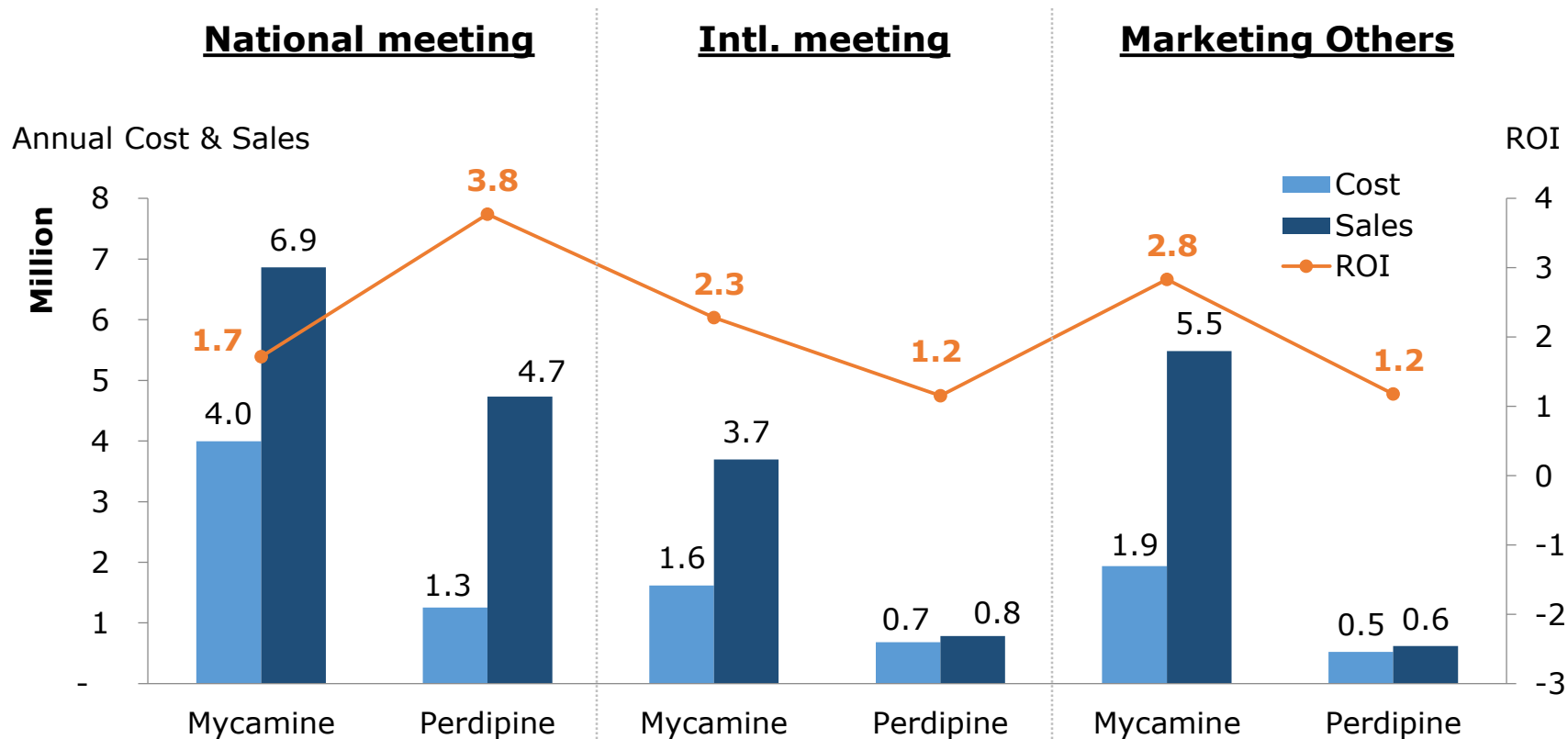


	Industry Benchmark	Regression Method	Actual Hosp. Analysis	Hospital Ranking
Mycamine	65-70%	60%	78%	62%
Perdipine	60-70%	73%	72%	68%

- Mycamine and Perdipine have promotions as effective as those for similar product in the market
- Carryover for acute disease product tend to be lower due to one-off effect for promotion of such kind. Physicians need persistent visit from sales to keep up the prescription



# All marketing channels for Mycamine and Perdipine have ROI greater than 1



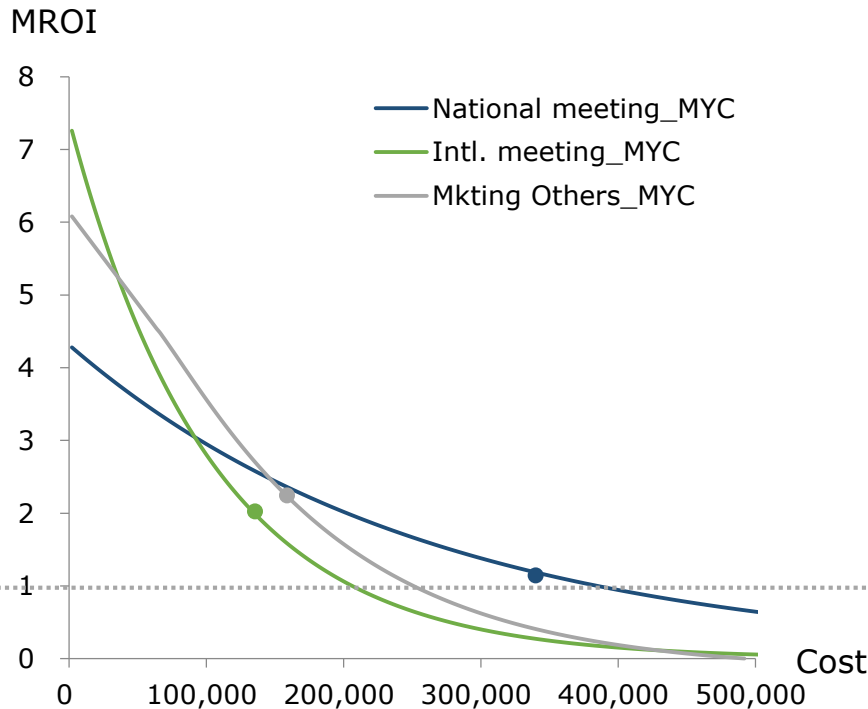
- ROI for international meeting is higher for Mycamine than national meeting. It's the other way around for Perdipine where national meeting has higher ROI



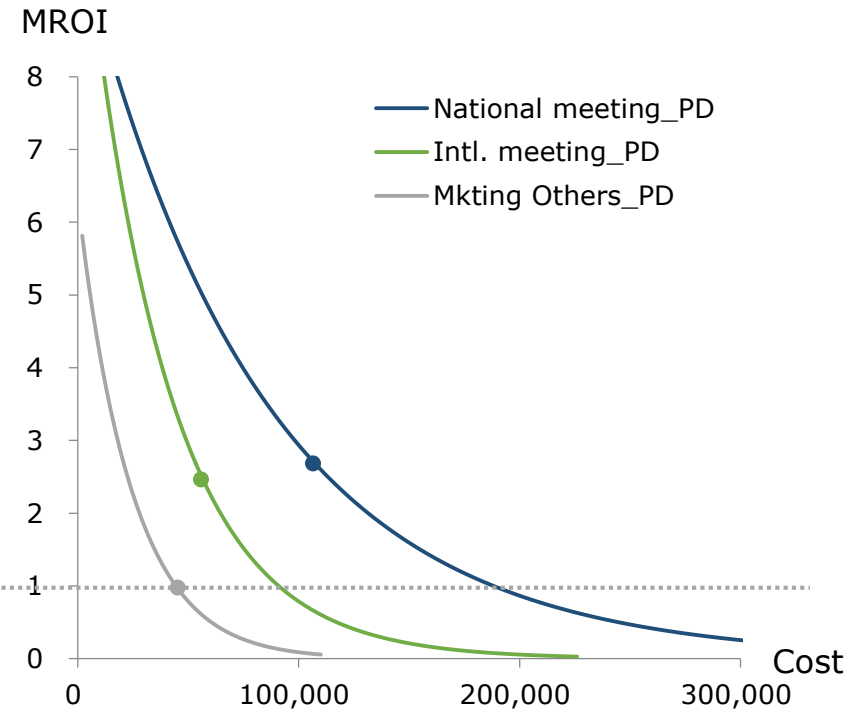


Two products still have room to increase spending on marketing channels to reach optimization

### MROI for Mycamine

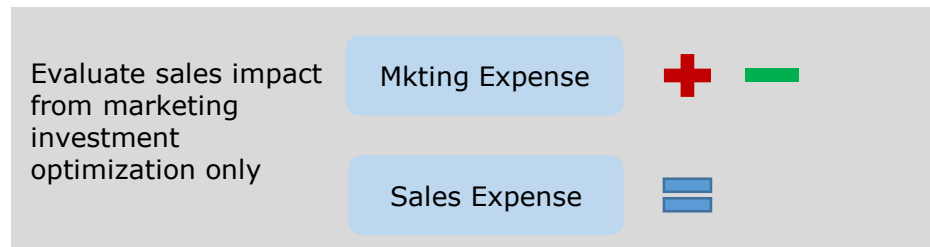
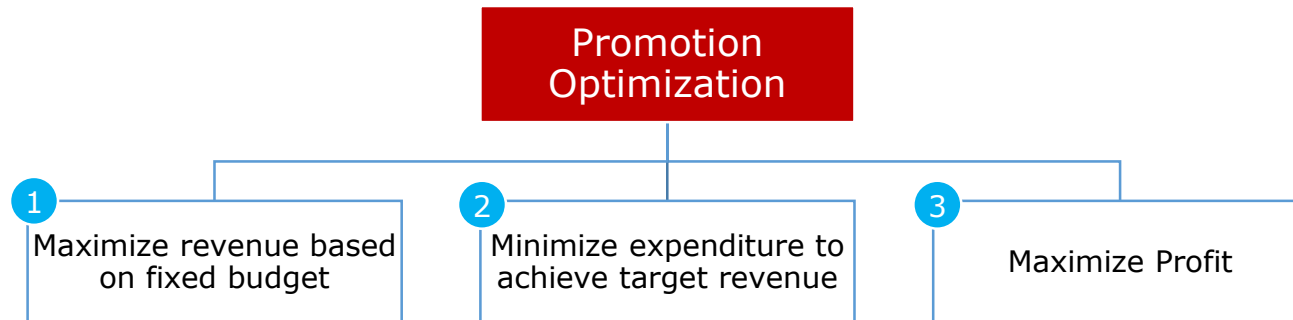


### MROI for Perdipine



	National meeting		International meeting		Marketing others	
	Mycamine	Perdipine	Mycamine	Perdipine	Mycamine	Perdipine
Current monthly cost	333,082	104,544	134,866	56,792	161,424	43,622
Current MROI	1.2	2.7	2.0	2.4	2.3	1.0

# Three types of optimization can be achieved to guide resource allocation



Channel	Mkting Cost % before opt	Fixed Budget Scenario		Fixed Revenue Scenario		Max Profit Scenario	
		Mkting Cost % after opt	Budget Change	Mkting Cost % after opt	Budget Change	Mkting Cost % after opt	Budget Change
National meeting	52.9%	42.9%	-19%	42.6%	-22%	49.9%	15%
Intl. meeting	21.4%	25.5%	19%	25.6%	17%	22.8%	30%
Mkting Others	25.6%	31.6%	23%	31.8%	21%	27.3%	30%
Call		Sales Operation Cost Keeps Constant					
Dept. meeting							
Large meeting							
Training							
Sales others							
<b>Opt results</b>		<b>Total Revenue +3.4%</b>		<b>Mkting Cost -2.6%</b>		<b>Total Profit +5.0%</b> <b>Mkting Cost +22.2%</b>	

1

2

3

