



# 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

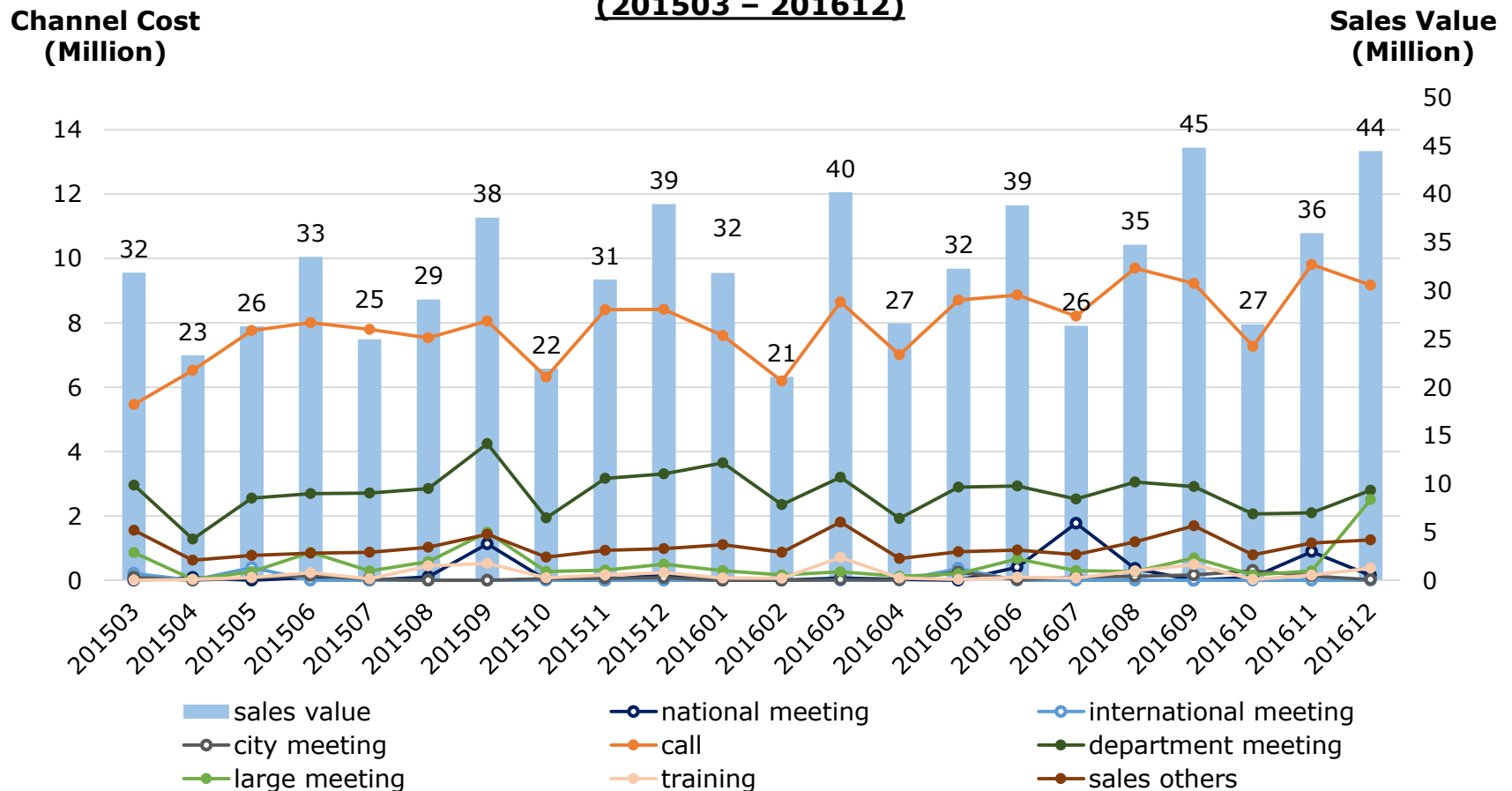
# Key terminology for promotion effectiveness analysis

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 - Harnal

**Harnal monthly channel cost and sales value data**  
**(201503 – 201612)**

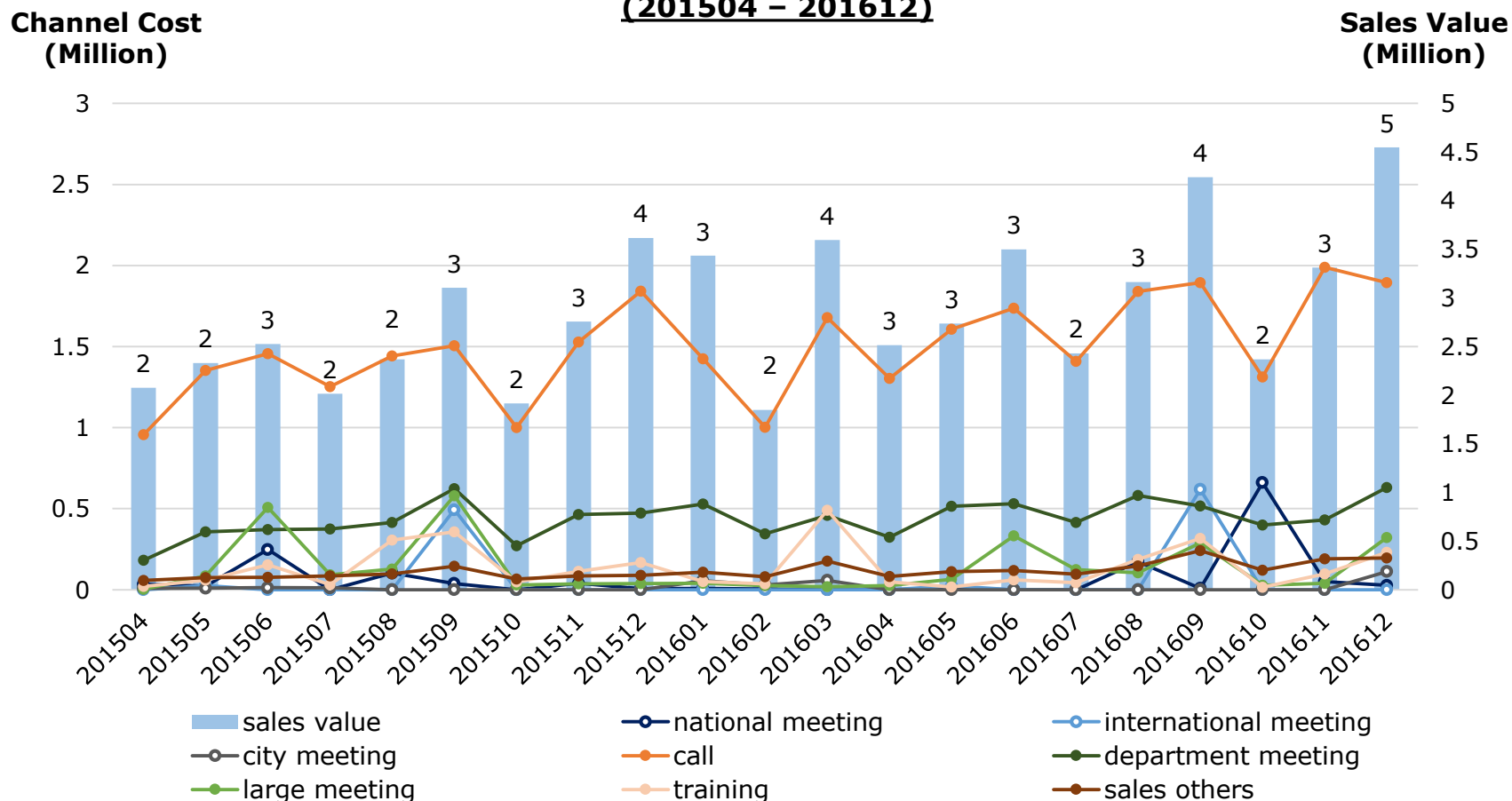


Data from all sources were processed and checked before fitting into model for KPI calculation



# Data from different sources were processed and analyzed - Vesicare

**Vesicare monthly channel cost and sales value data**  
**(201504 – 201612)**



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

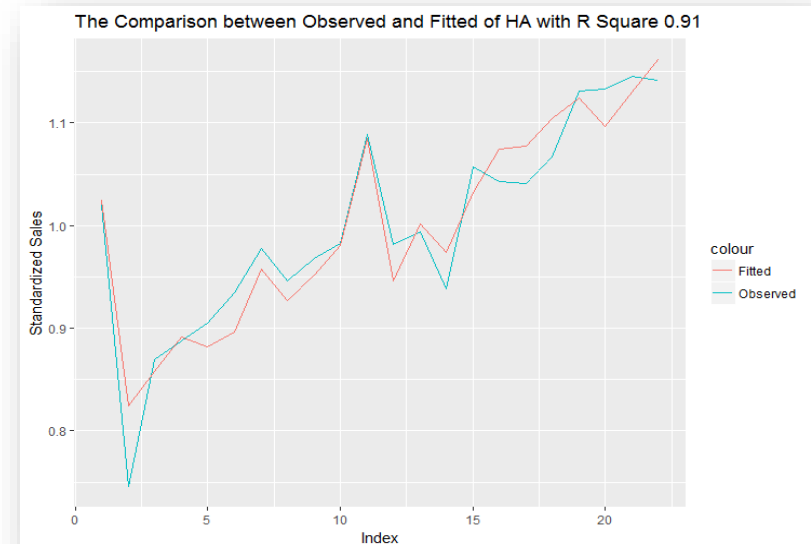


# Model fit for the two models are around 90%

- 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

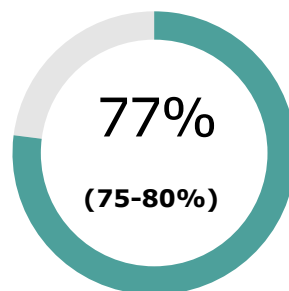
Product	Model R square
Harnal	0.91
Vesicare	0.90



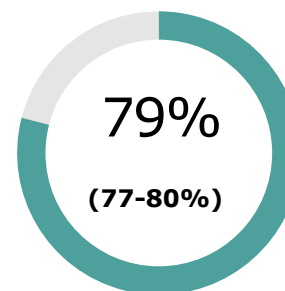
# Carryover rates for the two products are close to industry benchmark

## Carryover Rate

**Harnal**



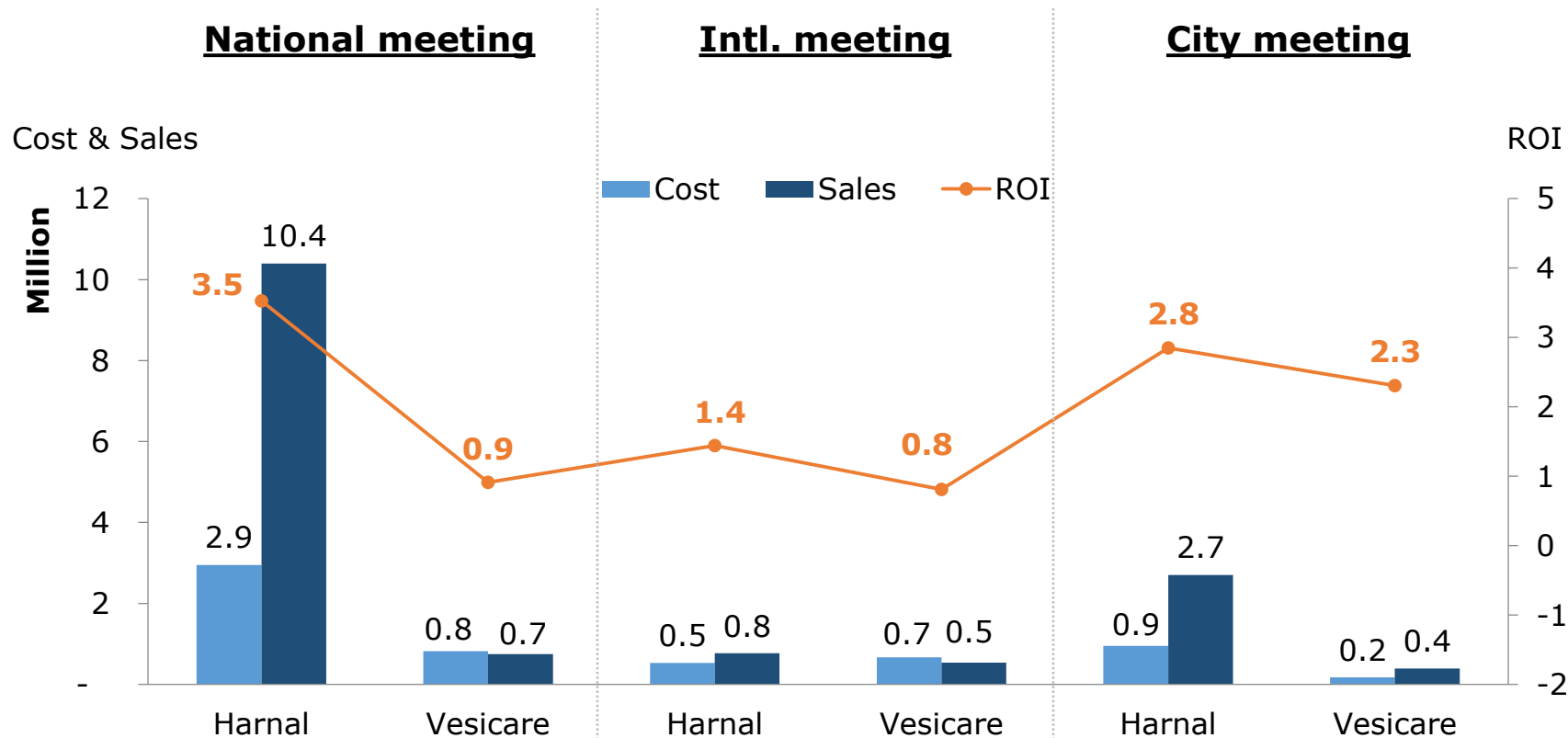
**Vesicare**



	Industry Benchmark	Regression Method	Actual Hosp. Analysis	Hospital Ranking
Harnal	75-80%	79%	71%	82%
Vesicare	80-85%	76%	77%	85%

- Carryover rate for Harnal is in line with industry benchmark, means that Harnal has promotions as effective as those for similar product in the market.
- Carryover rate for Vesicare is a little lower than industry benchmark

# All marketing channels for Harnal have ROI greater than 1



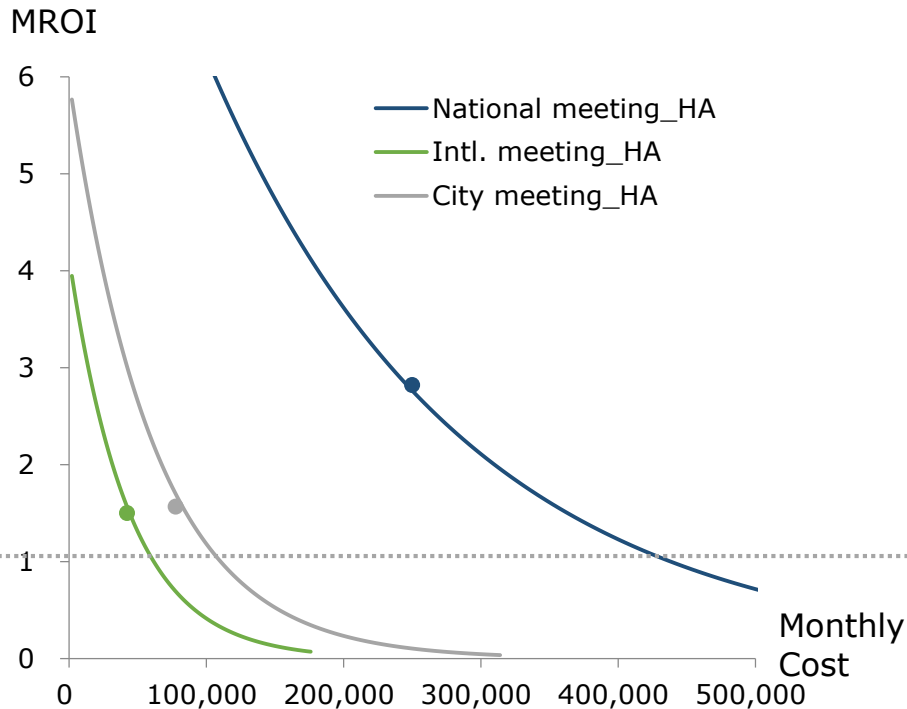
- City meeting is more effective for both two products
- National meeting is most effective for Harnal
- National and international meeting for Vesicare need to be more effective



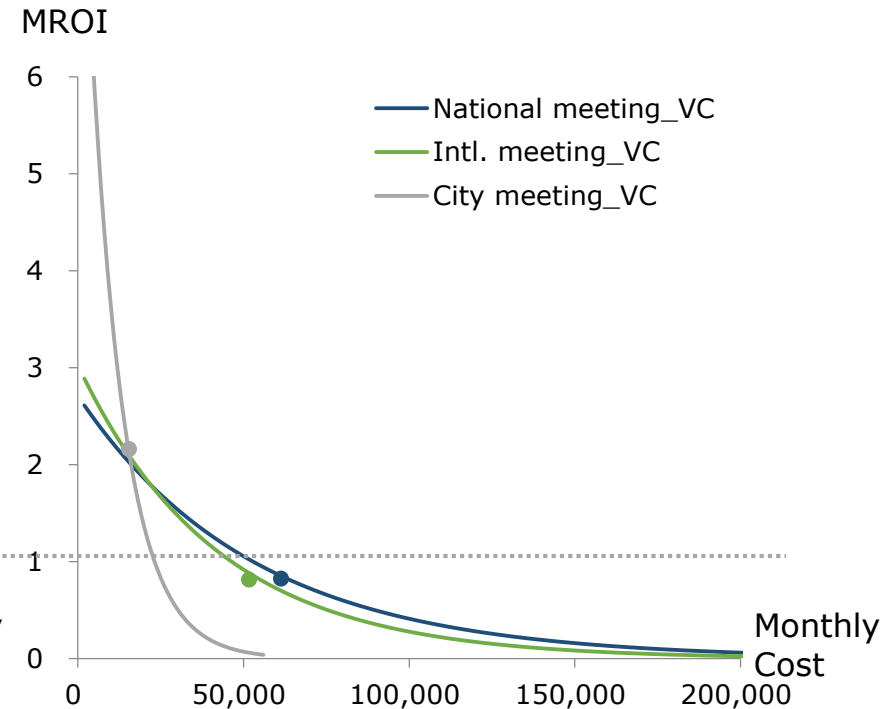


# Expense on marketing promotions for the two products needs to be optimized

**MROI for Harnal**



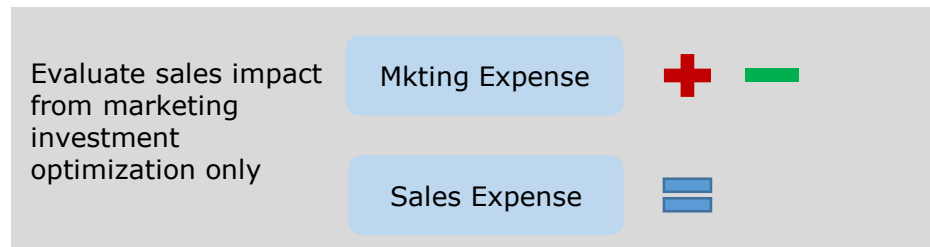
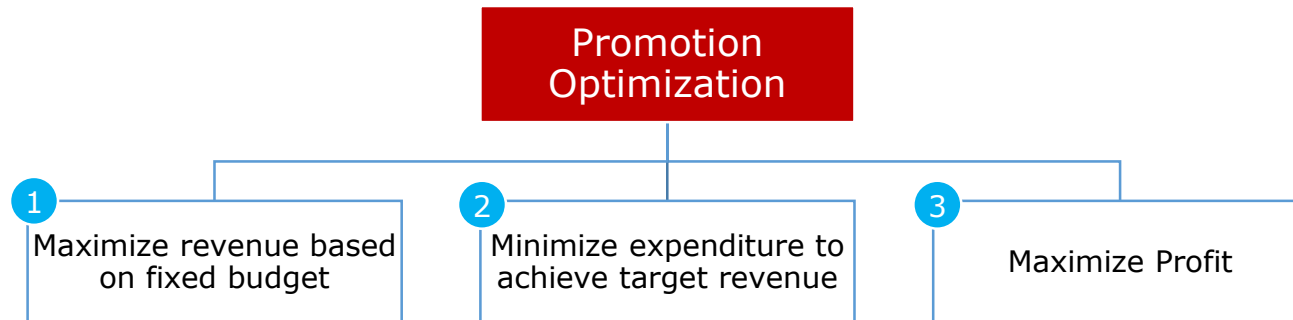
**MROI for Vesicare**



	National meeting		International meeting		City meeting	
	Harnal	Vesicare	Harnal	Vesicare	Harnal	Vesicare
Current monthly cost	245,684	68,497	44,320	55,385	78,974	14,237
Current MROI	2.8	0.7	1.5	0.8	1.6	2.2



# 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

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