Promotional Effective Analysis
Final Report
2017

Key Benefits

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
Carryover Rate	Proportion of sales that would be achieved in the following year if all promotion is to stop
Incremental Sales	Sales contribution from different promotions
Response Curve	Response curve is the relationship between channel investment and sales
ROI	ROI measures return relative to expenditure
mROI	mROI measures marginal return per additional unit of spend: • mROI <1 means overspending • mROI >1 means increasing spend will increase profits • mROI =1 means profits are maximized

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Data from different sources were processed and analyzed - Prograf

Prograf monthly channel cost and sales value data
(201501 – 201612)
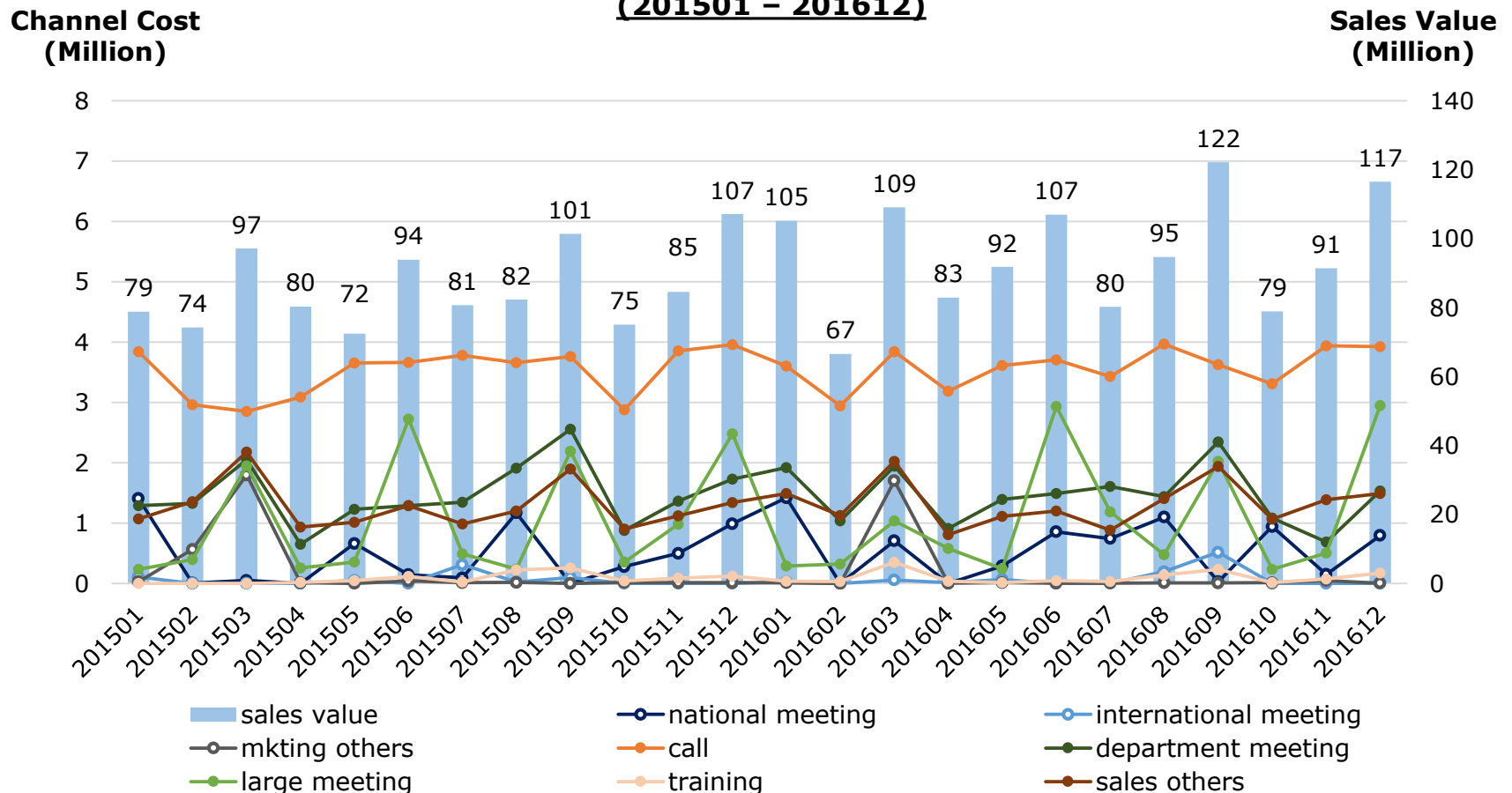
Channel Cost (Million)

Sales Value (Million)

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

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Data from different sources were processed and analyzed - Harnal

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

Channel Cost
(Million)

Sales Value
(Million)

Legend:
- sales value
- national meeting
- international meeting
- mkting others
- call
- department meeting
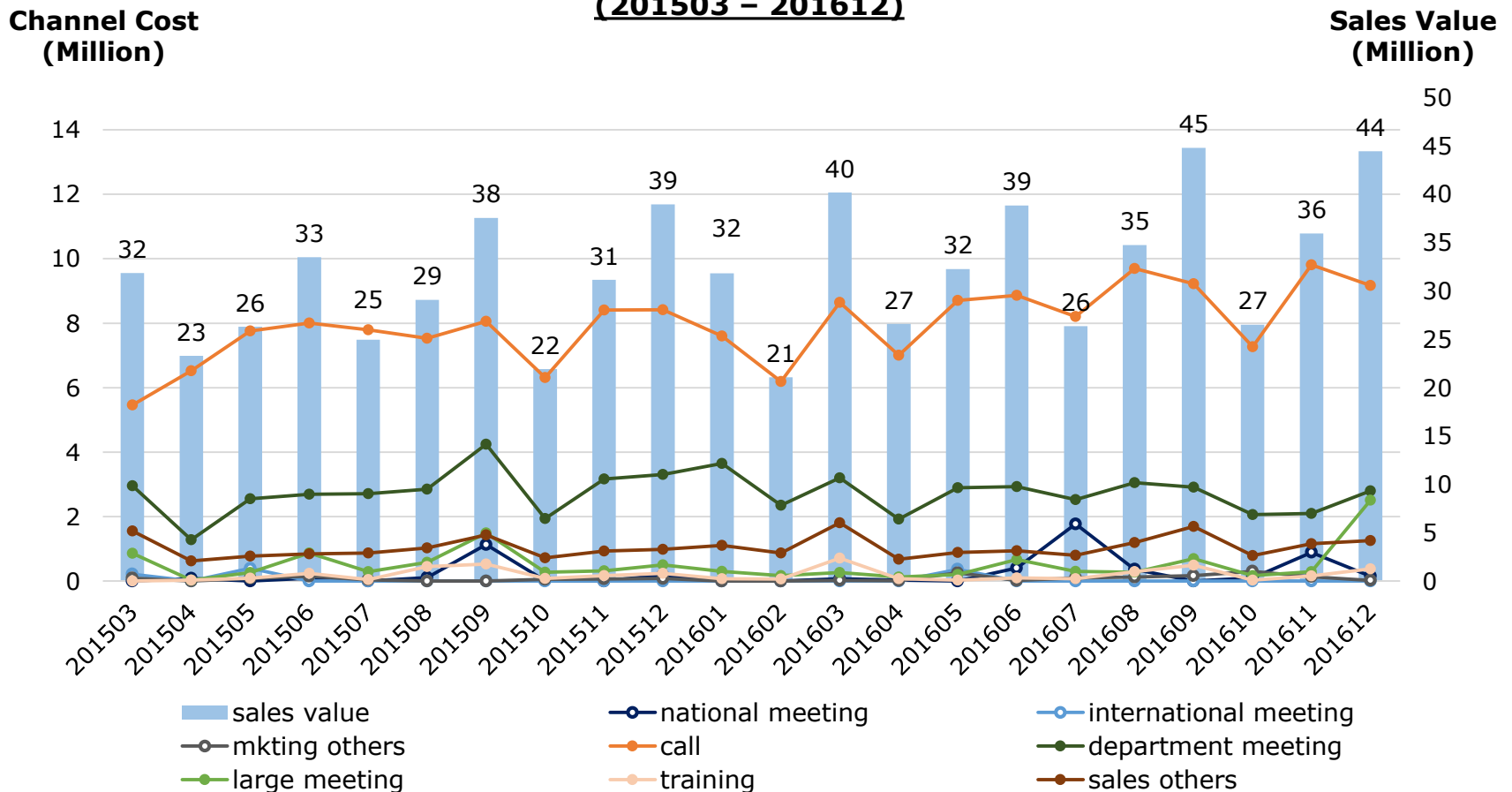- large meeting
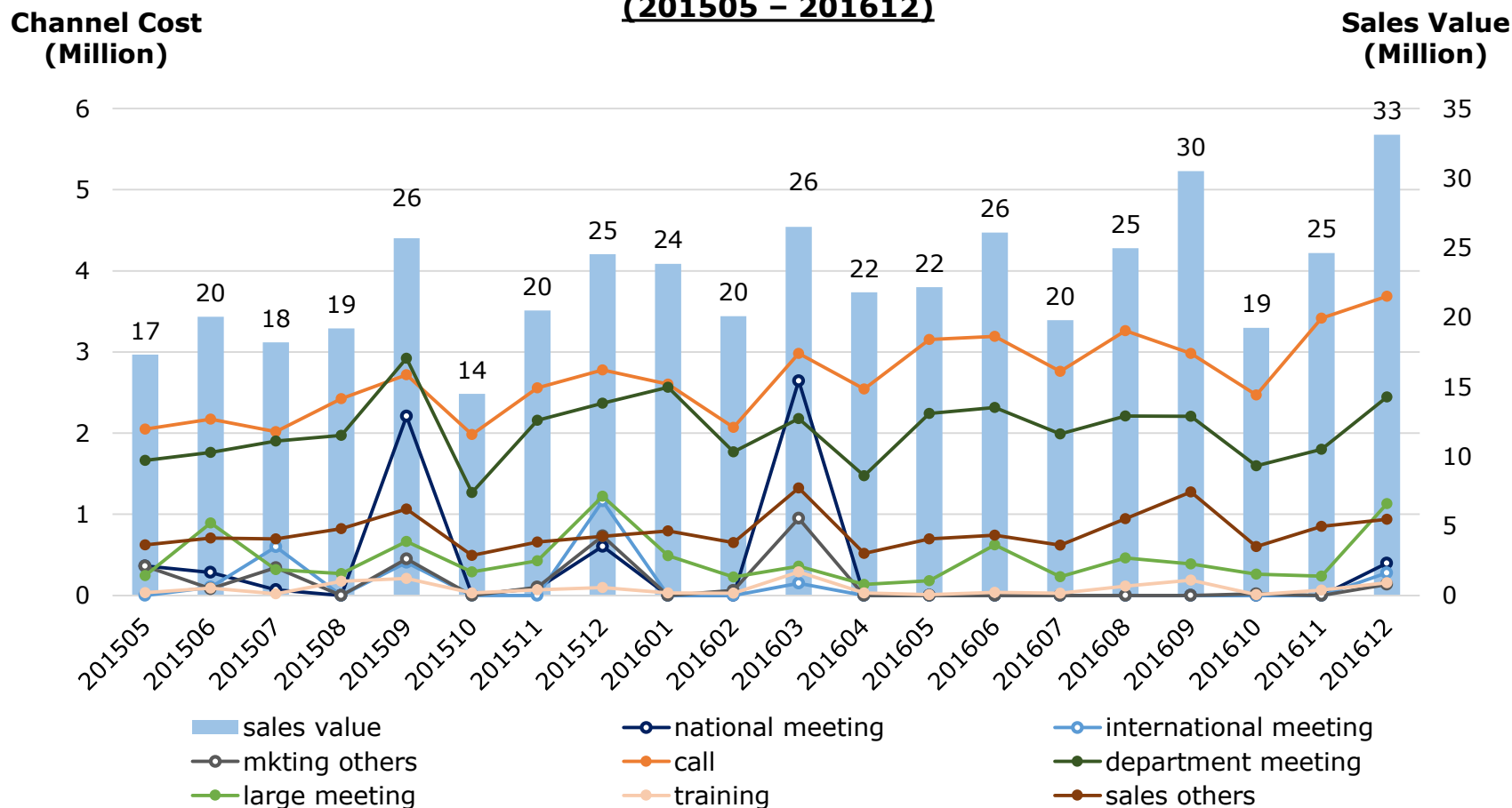- training
- sales others

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

Data from different sources were processed and analyzed - Mycamine

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

Channel Cost
(Million)

Sales Value
(Million)

Legend:
- sales value
- national meeting
- international meeting
- mkting others
- call
- department meeting
- large meeting
- training
- sales others

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

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Data from different sources were processed and analyzed - Grafalon

Grafalon monthly channel cost and sales value data
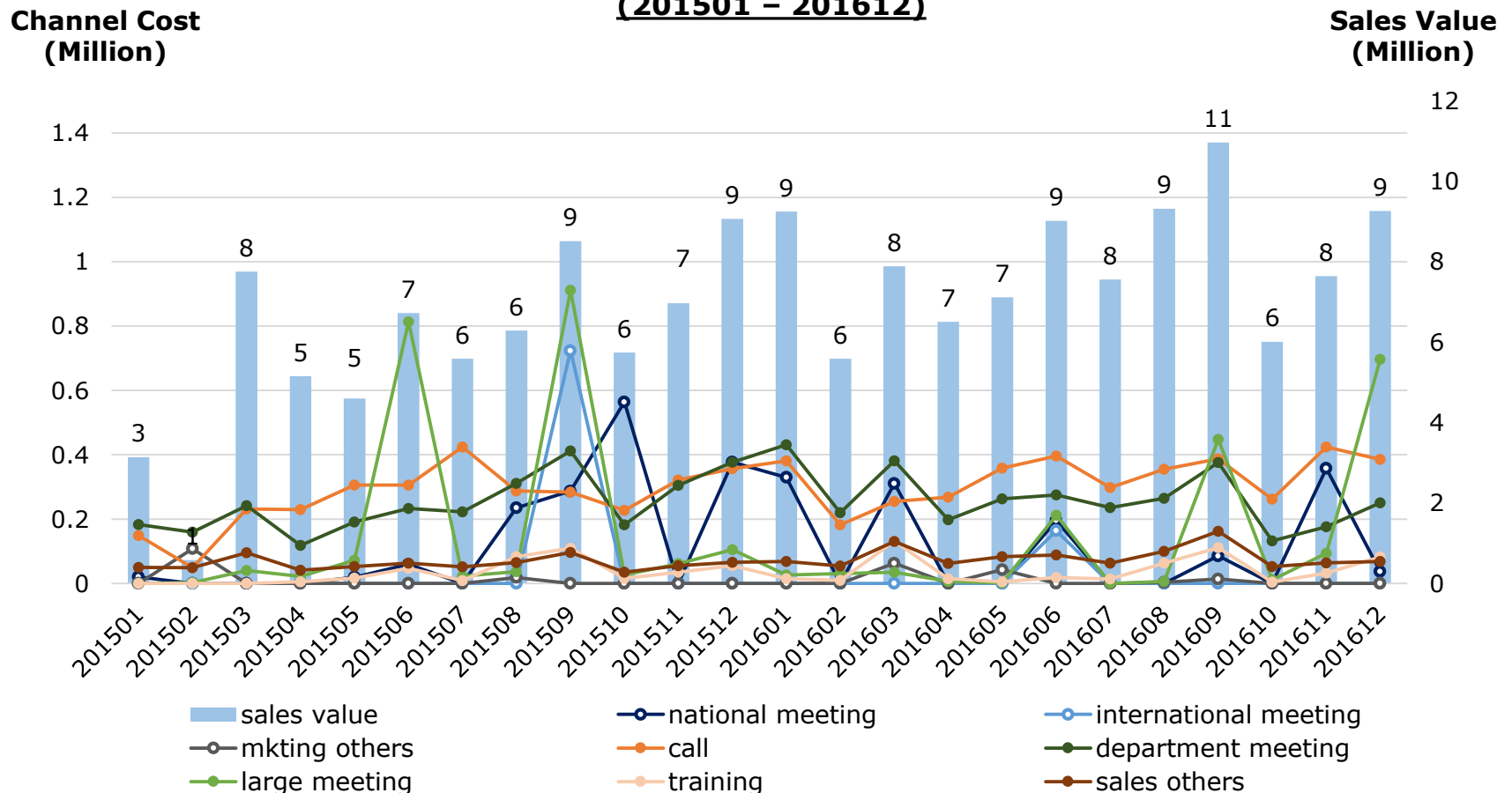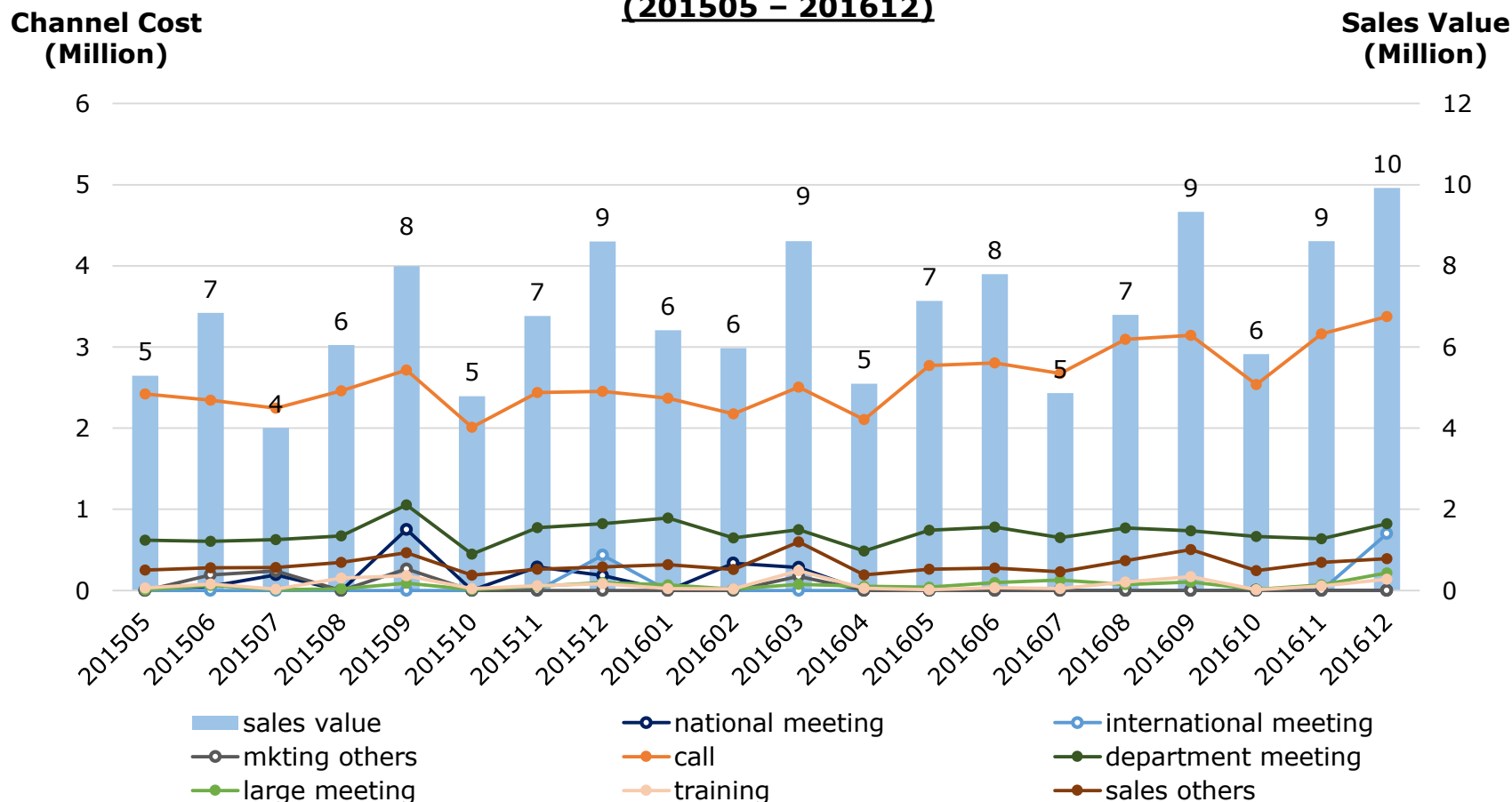**(201501 – 201612)**

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

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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

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Data from different sources were processed and analyzed - Vesicare

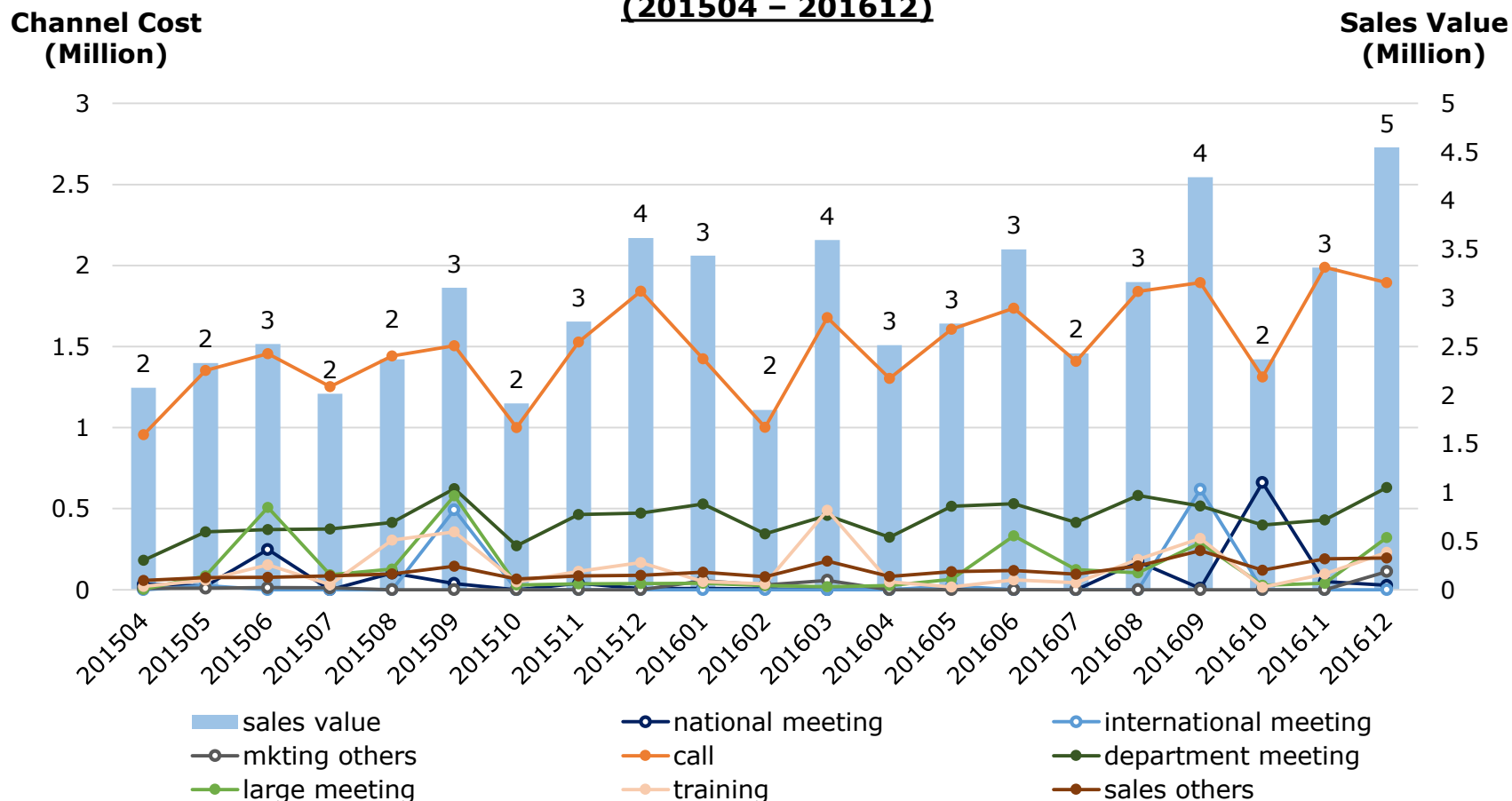**Vesicare monthly channel cost and sales value data**
(201504 – 201612)

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

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Data from different sources were processed and analyzed - Allelock

Allelock quarterly channel cost and sales value data
(2014Q2 – 2016Q4)
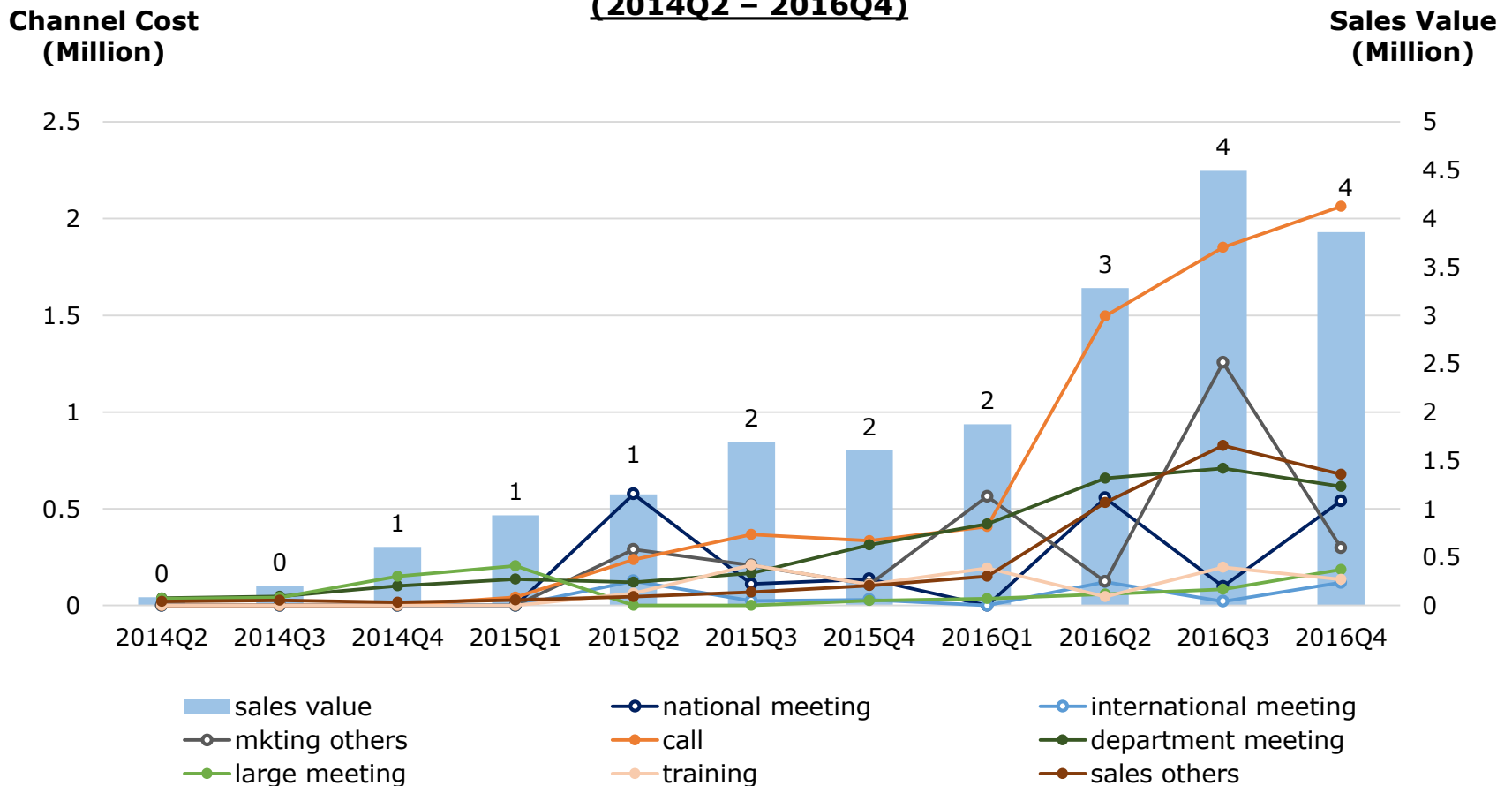
Channel Cost (Million) — left axis
Sales Value (Million) — right axis

Legend: sales value, national meeting, international meeting, mkting others, call, department meeting, large meeting, training, sales others

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

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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

Product	Model R square
Prograf	0.89
Harnal	0.91
Mycamine	0.90
Grafalon	0.88
Perdipine	0.81
Vesicare	0.90
Allelock	0.92

Example for Model Fit

The Comparison between Observed and Fitted of HA with R Square 0.91

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Majority of ACN products have carryover rate inline with industry benchmark

Carryover Rate for Different Product

Carryover rates for **Grafalon** and **Vesicare** are lower than industry benchmark

(104-115%) Allelock
(77-80%) Prograf — 79%
(75-80%) Harnal — 77%
(62-70%) Mycamine — 66%
(73-80%) Grafalon — 68%
(68-72%) Perdipine — 71%
(77-80%) Vesicare — 79%
Allelock — 104%

|	Prograf	Harnal	Mycamine	Grafalon	Perdipine	Vesicare	Allelock
Industry Benchmark	75-80%	75-80%	65-70%	80-85%	60-70%	80-85%	105-115%
Regression Method	77%	79%	60%	73%	73%	76%	104%
Actual Hosp. Analysis	82%	71%	78%	53%[1]	72%	77%	139%[2]
Hospital Ranking	78%	82%	62%	62%	68%	85%	103%

- Majority of ACN products have promotions as effective as those for similar product in the market. Grafalon is a newly acquired product and its promotion effectiveness needs improvement
- 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
- Allelock is a new launch product still in growth stage and its carryover rate is over 100%

1. 5 hospitals with call activities dropped 30% in 2016 were used. This method is not included in final carryover calculation
2. 5 hospitals with call activities dropped 20% in 2016 were used. This method is not included in final carryover calculation

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ROI for calls tend to be lower compare to other sales activities
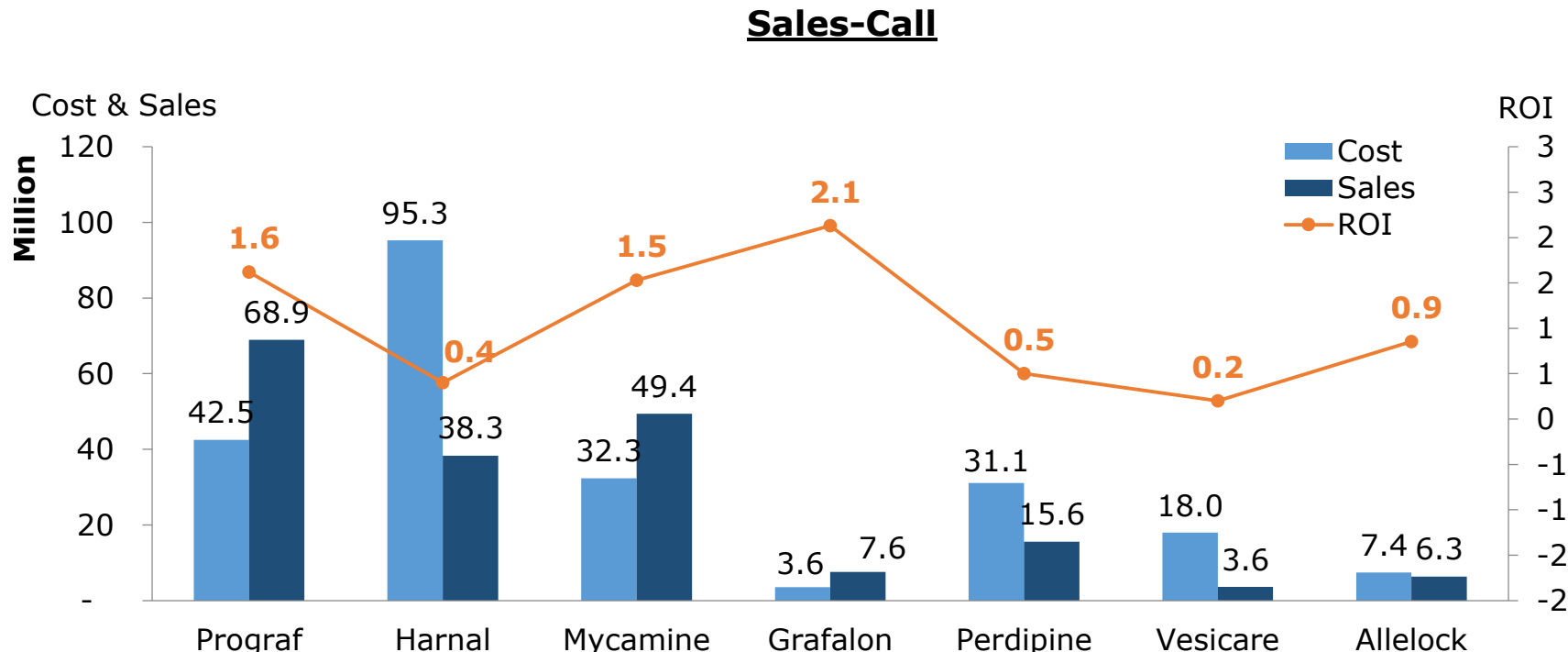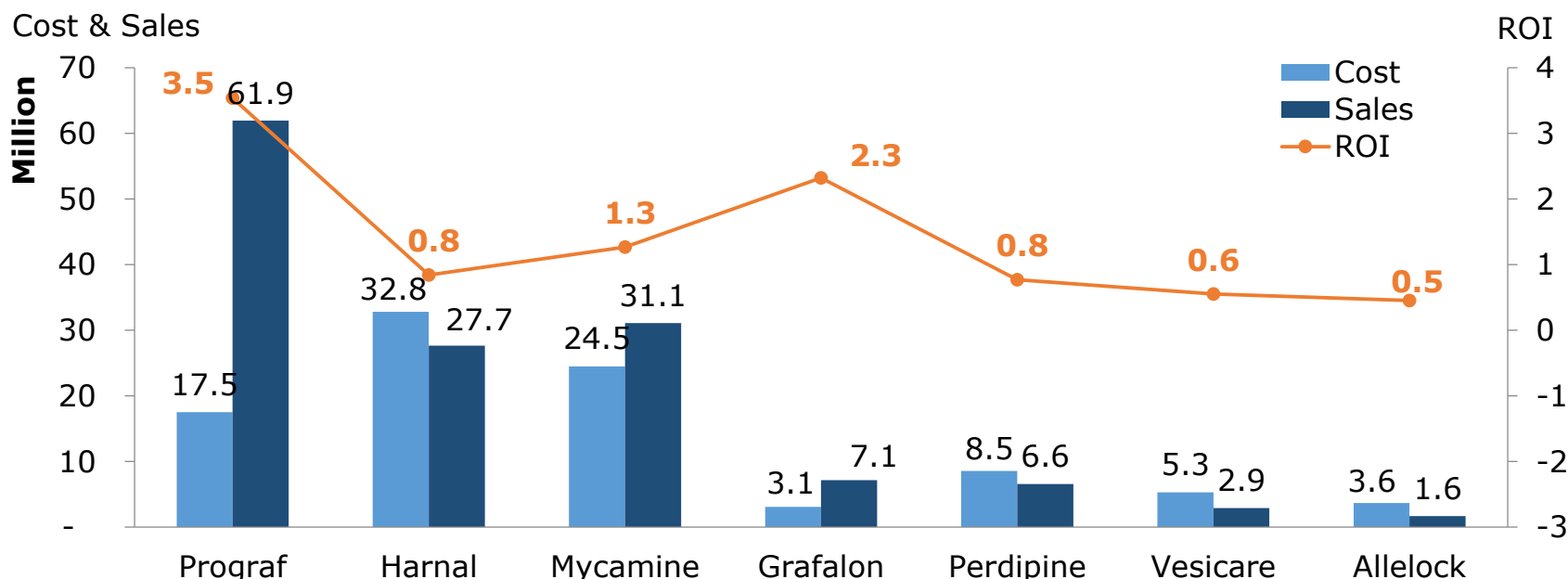

Sales-Call

- Calls for Harnal, Perdipine and Vesicare need to be more effective. Innovate promotion method can be utilized as an alternative to cut down cost, e.g. digital method
- Sales coverage need to be competitive where key competitors have strong field presence.

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Department meeting is more effective for products like Prograf and Grafalon where departments are more concentrated

Sales-department meeting

Cost & Sales

ROI

Million

- **3.5** 61.9
- 17.5
- 32.8 27.7 **0.8**
- 24.5 31.1 **1.3**
- 3.1 7.1 **2.3**
- 8.5 6.6 **0.8**
- 5.3 2.9 **0.6**
- 3.6 1.6 **0.5**

Legend: Cost, Sales, ROI

X-axis: Prograf, Harnal, Mycamine, Grafalon, Perdipine, Vesicare, Allelock

- ROI of department meeting for products other than Prograf and Grafalon tend to be lower than 1

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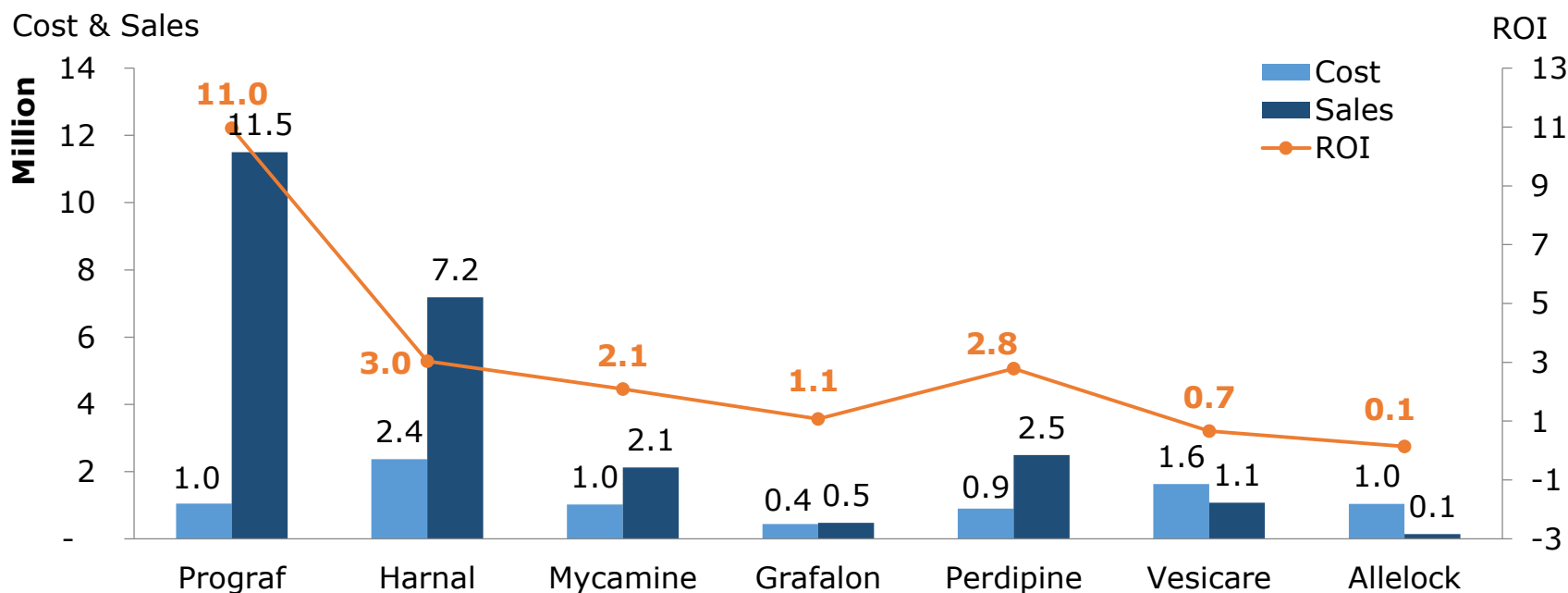# Large meeting is an effective way to communicate with physicians which in return drive sales

Sales-large meeting

Cost & Sales

ROI

- Cost
- Sales
- ROI
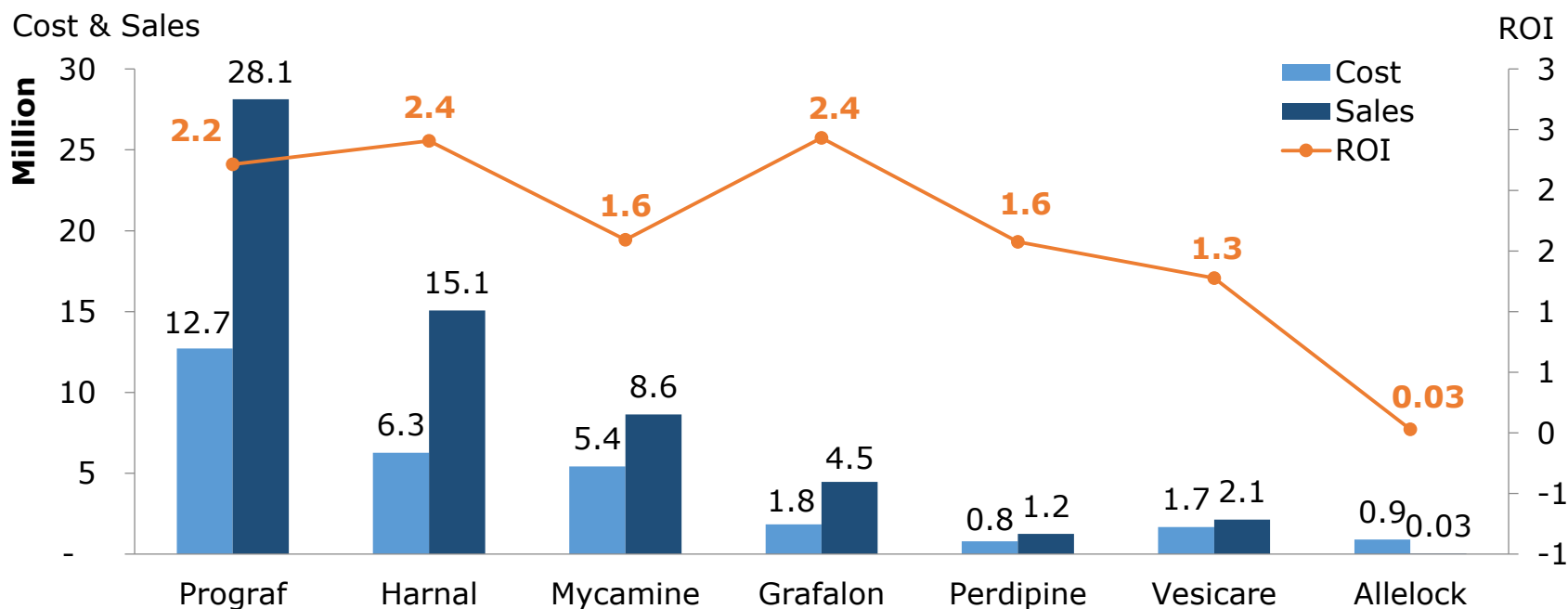
- Large meeting is effective for majority of ACN products

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Training is extremely effective for Prograf

Sales-training

Cost & Sales

Million

ROI

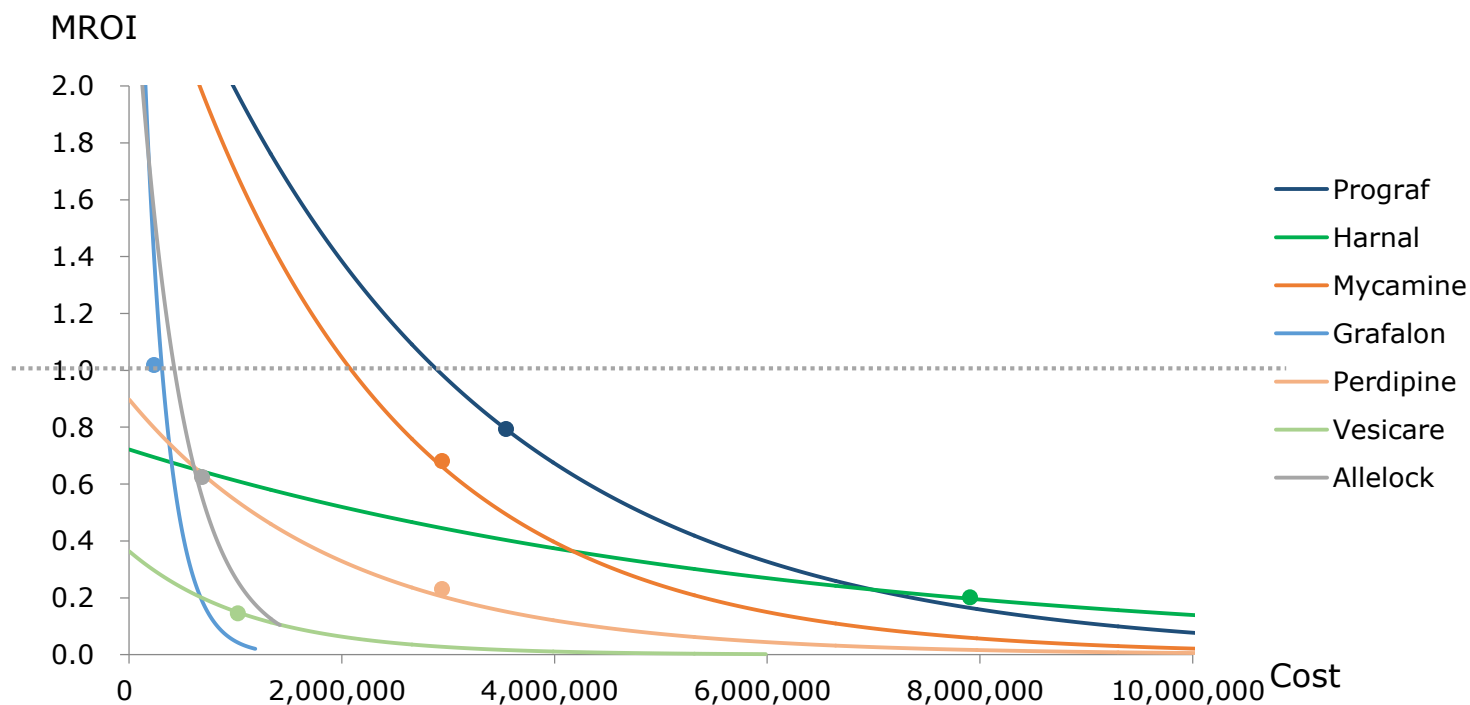|	Cost	Sales	ROI

- Prograf's nature of product may require sales person to have more specialized knowledge. Sales team training is an very effective way to boost Prograf sales

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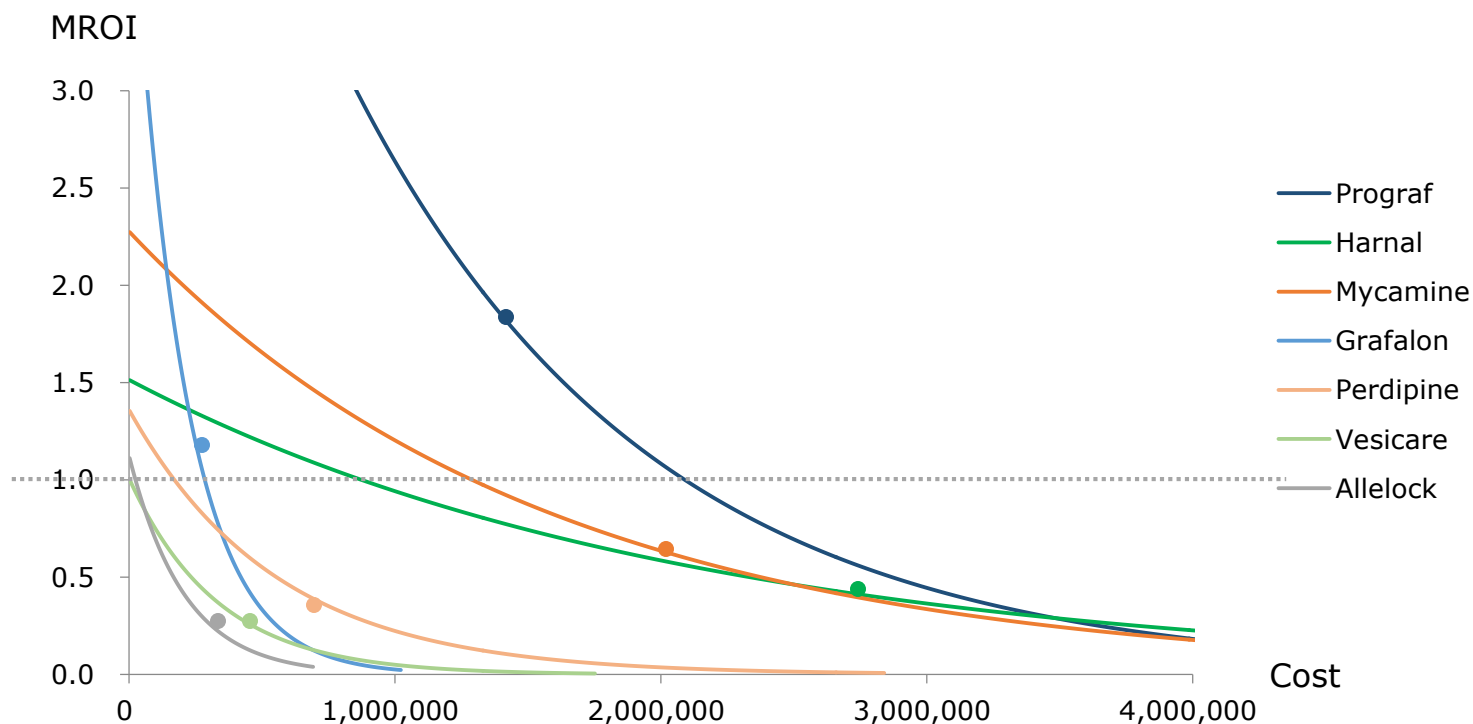
Most products are over spending on calls

MROI for call (Monthly mean)

	Prograf	Harnal	Mycamine	Grafalon	Perdipine	Vesicare	Allelock
Current monthly cost	3,543,292	7,940,209	2,691,320	296,692	2,590,570	1,496,657	618,382
Current MROI	0.8	0.2	0.7	1.1	0.2	0.1	0.6

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Most products needs to decrease spending on department meeting for promotion optimization

MROI for department meeting (Monthly mean)

	Prograf	Harnal	Mycamine	Grafalon	Perdipine	Vesicare	Allelock
Current monthly cost	1,458,203	2,732,837	2,040,724	255,649	710,268	438,330	302,717
Current MROI	1.8	0.4	0.6	1.2	0.4	0.3	0.3

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MROI for large meeting is higher than most of the other sales promotion activities

MROI for large Meeting (Monthly mean)
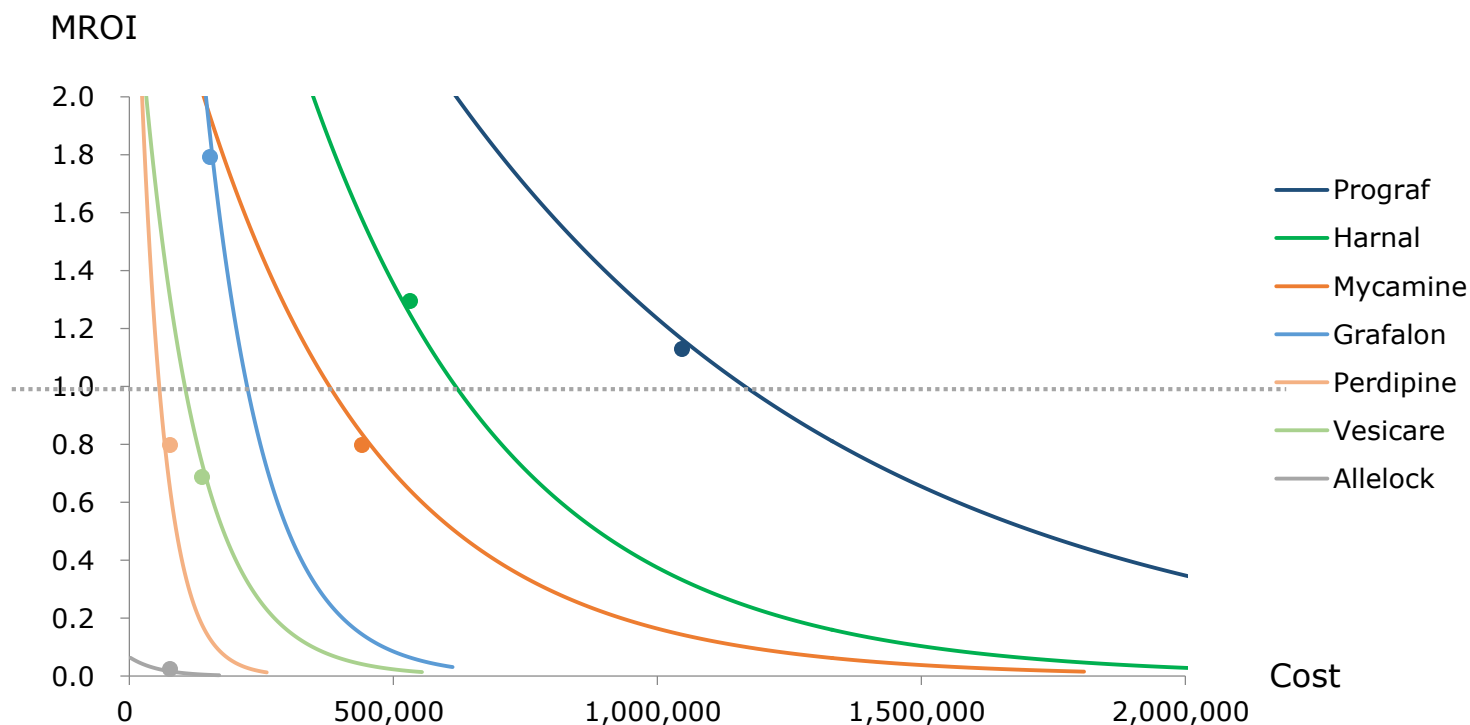
	Prograf	Harnal	Mycamine	Grafalon	Perdipine	Vesicare	Allelock
Current monthly cost	1,059,154	521,571	452,070	153,201	65,424	138,688	74,828
Current MROI	1.1	1.3	0.8	1.8	0.8	0.7	0.02

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MROI for Prograf is extremely high, but it will drop rapidly with additional spending as it's curve is steep

MROI for training (Monthly mean)
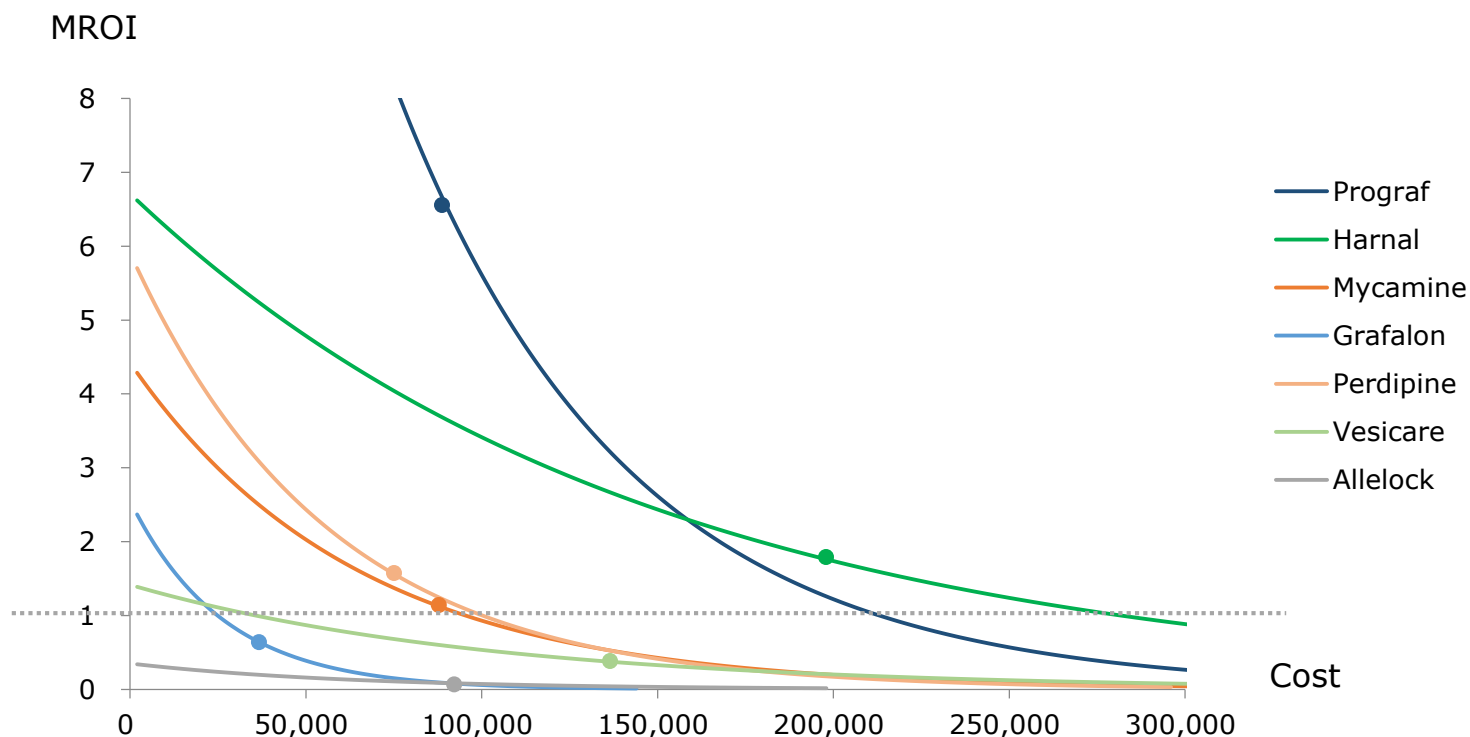
	Prograf	Harnal	Mycamine	Grafalon	Perdipine	Vesicare	Allelock
Current monthly cost	87,450	197,166	84,750	36,497	74,492	135,709	86,674
Current MROI	6.7	1.8	1.2	0.6	1.5	0.3	0.1

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Three types of optimization can be achieved to guide resource allocation

Promotion Optimization

1 Maximize revenue based on fixed budget

2 Minimize expenditure to achieve target revenue

3 Maximize Profit

Evaluate sales impact from sales investment optimization only
- Mkting Expense
- Sales Expense

Optimize sales investment other than calls
- Mkting Expense
- Call
- Sales Expense other than call
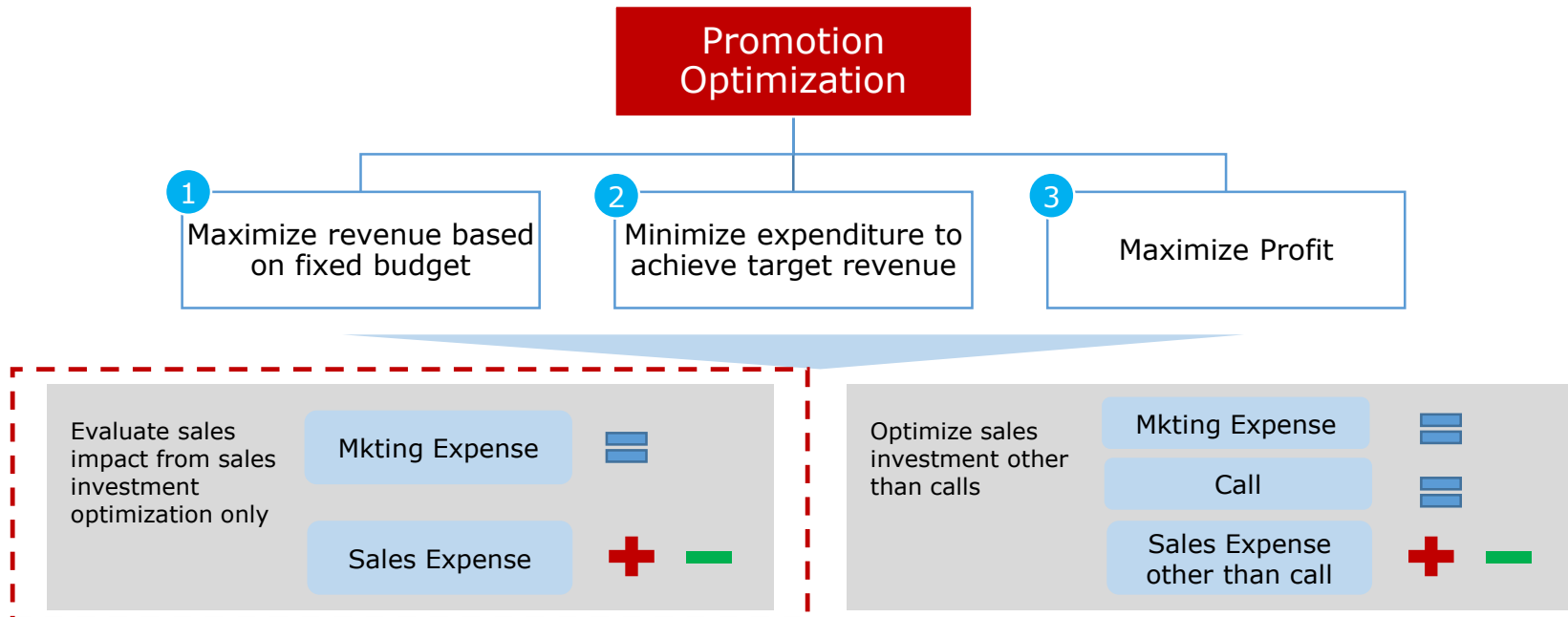
Channel	Sales Cost % before opt	Fixed Budget Scenario		Fixed Revenue Scenario		Max Profit Scenario	
		Sales Cost % after opt	Budget Change	Sales Cost % after opt	Budget Change	Sales Cost % after opt	Budget Change
National meeting		Marketing Cost Keeps Constant					
Intl. meeting							
Mkting Others							
Call	47.6%	35.8%	-25%	35.4%	-30%	37.3%	-18%
Dept. meeting	19.6%	25.5%	30%	26.5%	28%	24.4%	30%
Large meeting	14.2%	14.7%	4%	14.3%	-5%	15.0%	10%
Training	1.2%	1.5%	30%	1.6%	30%	1.5%	30%
Sales others	17.5%	22.5%	29%	22.2%	20%	21.8%	30%
Opt results		**Total Revenue +3.1%**		**Sales Cost -5.8%**		**Total Profit +3.4% Sales Cost +4.2%**	

1   **2**   **3**

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