

Marketing Analytics

Sample Project

MVAM: Marketing Vehicle Allocation Model

Students: Name 1, Name 2, Name 3

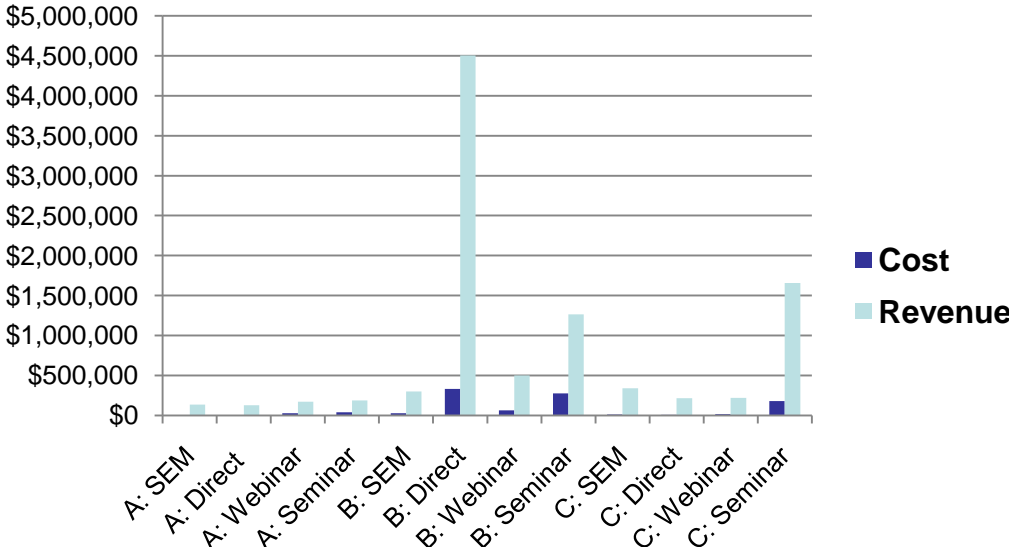
Date: XX/XX/XXXX

Allocating Budget

Topic	Description
Allocation	How to assign money to different activities?
Target Revenue	How to achieve target with existing budget?
Leads	How many leads to reach target revenue?
Mix	What is most efficient mix of marketing vehicles?

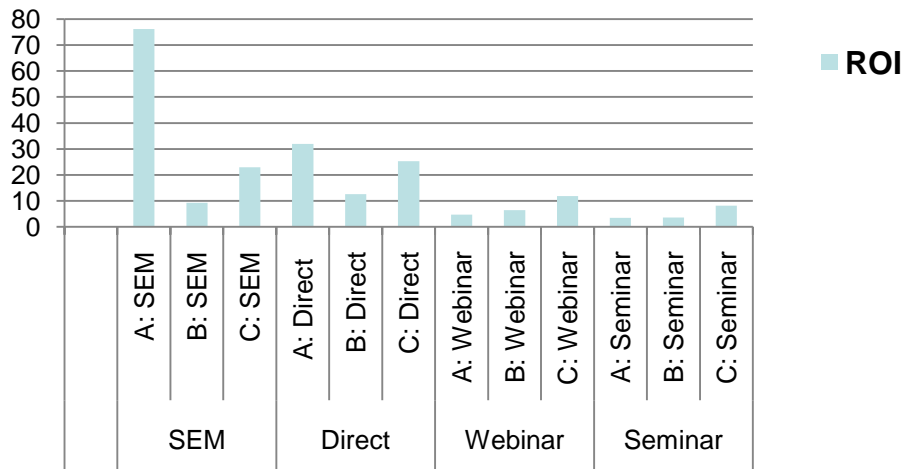
Simple Ratios Can Be Misleading

Suggests answer is spend budget on Direct Mail for Product B



Suggests answer is only get leads for Product A from SEM

Return on Investment - Annual

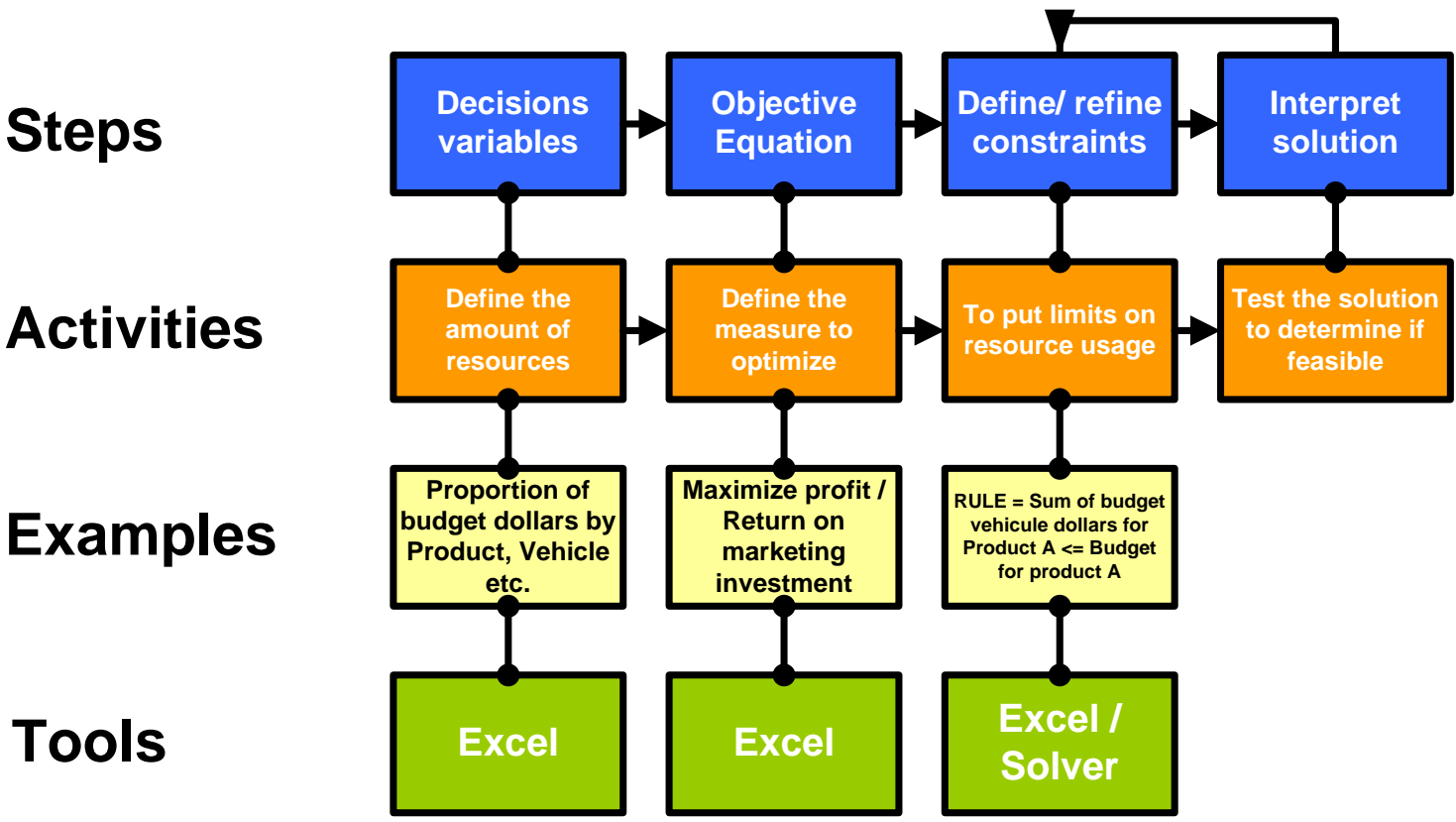


SEO: Search Engine Optimization
SEM: Search Engine Marketing

MVAM Model

Topic	Description
MVAM Model	Mechanism to allocate budget to meet revenue target
Optimization	Classic optimization problem
Ratios	Solution considers multiple ratios: <ul style="list-style-type: none">- Not all lead sources have same cost/lead- Not all lead sources have same revenue/lead
Tools	Excel and Solver

MVAM Process



MVAM Model Elements

	Budget \$	Budget %	Allocation				R Previous Period	Revenue Target	Model Results	Results %
			SEM	Direct Email	Webinar	Seminar				
Product A	\$5,000	2%	5%	5%	5%	85%	\$ 165,000	\$ 200,000	\$349,617	2%
Product B	\$215,000	74%	85%	5%	5%	5%	\$ 1,388,311	\$ 1,500,000	\$2,121,847	12%
Product C	\$75,000	26%	5%	5%	85%	5%	\$ 2,434,251	\$ 3,000,000	\$14,898,040	86%
Total	\$290,000		CPL				\$ 3,987,562	\$ 4,500,000	\$17,369,503	
			25	10	15	50				

Inputs: (Decision Variables)

- Allocation of budget
 - (By Vehicle: SEM, E-mail, etc.)
 - (By Product: A, B, C)
- Cost/ Lead by Vehicle
- Average Deal Size
- Historical Data: Conversion Rates

Objective Equation:

- Maximize Revenue
- Maximize ROI
- Given Marketing Budget
- Uses Excel Solver Tool

Initiative	MKTG ACTIVITY TYPE	HP Quarter	Total Leads	Oppty Total	% Conv Total	Total Closed Won	%Conv Closed	Revenue	Revenue %	Deal Size	Cost	Cost %
Product B	SEM	Q4	420	92	7.6%	1	0.2%	111,200	8%	111,200	\$ 10,500.00	5%
		Q1	367	14	3.8%	1	0.3%	23,201	2%	23,201	\$ 9,175.00	5%
		Q2	255	24	9.4%	3	1.2%	115,628	3%	38,543	\$ 6,375.00	3%
		Q3	123	12	9.8%	1	0.8%	50,000	18%	50,000	\$ 3,075.00	3%
	SEM Total:		1,165	82	7%	6	0.6%	300,029	5%	50,006	\$ 29,125.00	4%
	Direct Email	Q4	12,519	288	2.3%	5	0.3%	1,018,966	73%	113,218	\$ 125,190.00	59%
		Q1	8,534	170	2.0%	5	0.3%	1,138,964	74%	142,371	\$ 85,340.00	43%
		Q2	8,584	362	4.2%	17	0.2%	2,257,841	67%	182,814	\$ 85,840.00	43%
		Q3	3,676	120	3.3%	1	0.0%	88,002	32%	88,002	\$ 36,760.00	38%
	Direct Email Total:		33,313	940	3%	35	0.4%	4,603,773	69%	128,678	\$ 333,130.00	47%
	Webinar	Q4	777	24	3.1%	2	0.3%	75,000	5%	37,500	\$ 11,655.00	5%
		Q1	350	24	6.9%	4	1.1%	16,000	1%	4,000	\$ 5,250.00	3%
Q2		2,286	125	5.5%	4	0.2%	318,362	9%	79,591	\$ 34,290.00	17%	
Q3		1,104	21	1.9%	2	0.2%	90,001	33%	45,001	\$ 16,560.00	17%	
Webinar Total:		4,517	194	4%	12	0.3%	499,363	8%	41,614	\$ 67,755.00	10%	
Seminar	Q4	1,323	59	4.5%	5	0.4%	183,145	13%	36,629	\$ 66,150.00	31%	
	Q1	1,992	70	3.5%	3	0.2%	368,527	24%	122,842	\$ 99,600.00	50%	
	Q2	1,428	91	6.4%	3	0.2%	687,603	20%	222,534	\$ 71,400.00	36%	
	Q3	820	23	2.8%	8	1.0%	45,000	16%	5,625	\$ 41,000.00	42%	
Seminar Total:		5,563	243	4%	19	0.3%	1,264,275	19%	66,541	\$ 278,150.00	39%	
Product B TOTAL			44,558	1,459	3%	72	0.2%	6,567,440	68%	91,214	\$ 708,160.00	

Constraints:

- Allocated Budget <= Available Budget
- Sum of Allocations = 100%
- Allocations: 5% Min, 100% Max
- Predicted Revenue >= Target Revenue

Case Example: ABC Software Company

Topic	Description
3 Products	3 Products in different life cycle stages <ul style="list-style-type: none">- Product A: Introduction phase- Product B: Growth- Product C: Maturity
4 Vehicles	4 Marketing vehicles (channels): <ul style="list-style-type: none">- SEM: Search Engine Marketing- Seminars- Webinar- E-mail
Minimum	5% minimum investment in each vehicle
Sales Cycles	Quarter-based sales cycles
Resources	Resources (Marketing budget) fixed at \$295K Revenue target increased 5% to \$4.7M

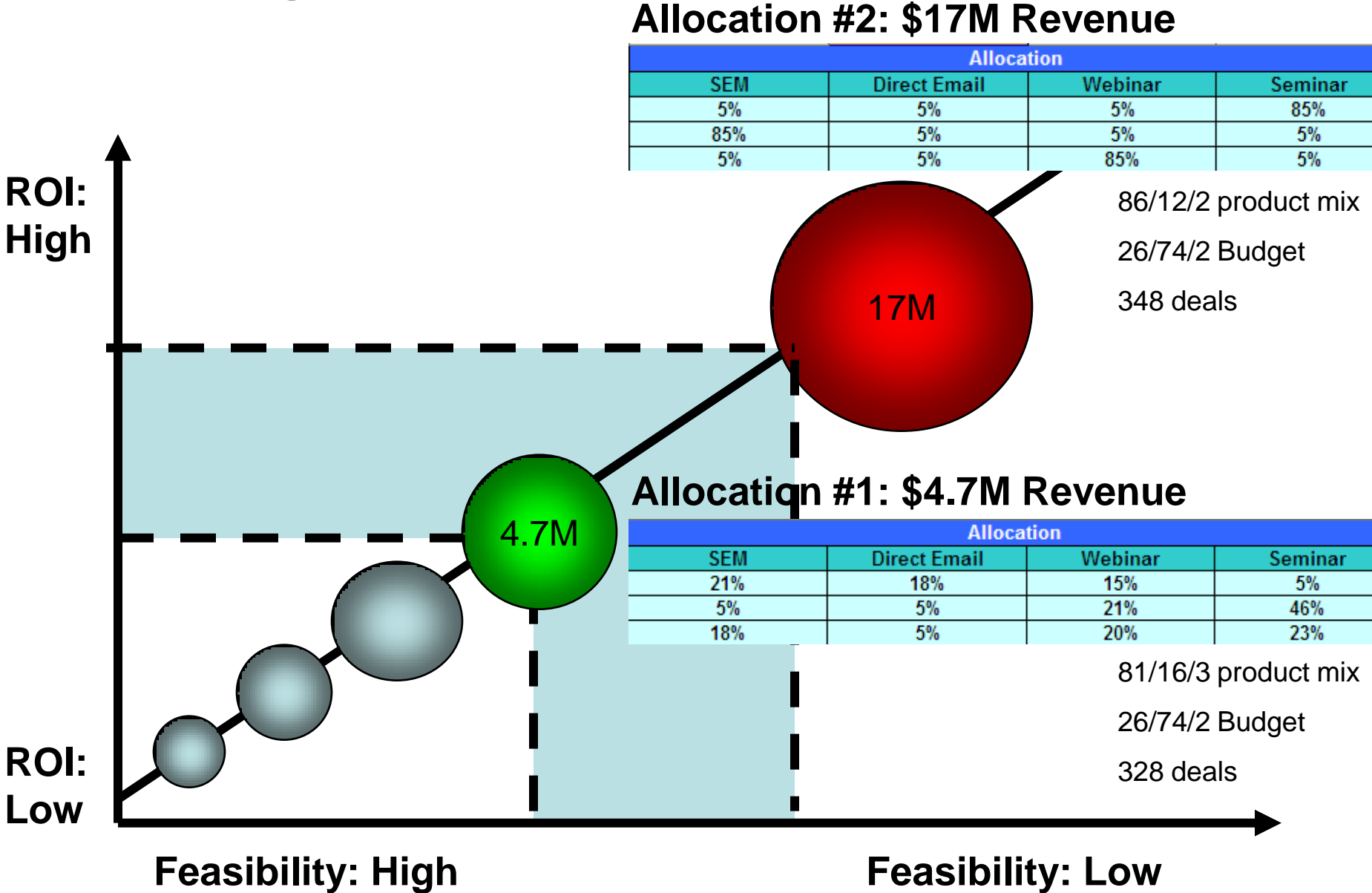
Case Example: Screenshot: Model

	A	B	C	D	E	F	G	H	I	J
1	Q1			Allocation						
2	Product	Budget \$	Budget %	SEM	Direct Email	Webinar	Seminar	R Previous Period	Revenue Target	Model Results
3	Product A	\$5,000	2%	29%	29%	36%	5%	\$ 165,000	\$ 200,000	\$220,435
4	Product B	\$215,000	73%	68%	5%	5%	5%	\$ 1,388,311	\$ 1,500,000	\$1,730,052
5	Product C	\$75,000	25%	29%	5%	22%	29%	\$ 2,434,251	\$ 3,000,000	\$4,049,512
6	Total	\$295,000		CPL (\$)				\$ 3,987,562	\$ 4,700,000	\$6,000,000
7				25	10	15	50			
8										
9	Utilization			Legend						
10	Product	Budget utilized	Budget %	Decision Variables		999				
11	Product A	\$5,000	100%	Inputs		99,999				
12	Product B	\$178,005	83%	Objective equation		99,999				
13	Product C	\$63,972	85%	Variables		99,999				
14	Total	\$246,977	84%							
15										
16										
17	Product A	Vehicle	Expense	Number of leads	L-C Conversion	Number of deals	Average deal size	Revenue	ROI	
18		SEM	\$1,464	59	1.6%	0.9	35,000	\$32,804	2140%	
19		Direct	\$1,467	147	5.3%	8	8,000	\$62,218	4140%	
20		Web	\$1,818	121	2.2%	3	40,000	\$106,663	5767%	
21		Seminar	\$250	5	25%	1	15,000	\$18,750	7400%	
22										
23		\$5,000		332		13		\$220,435	4309%	
24										
25	Product B	Vehicle	Expense	Number of leads	L-C Conversion	Number of deals	Average deal size	Revenue	ROI	
26		SEM	\$145,755	5,830	0.2%	14	111,200	\$1,543,615	959%	
27		Direct	\$10,750	1,075	0.1%	1	113,218	\$87,498	714%	
28		Web	\$10,750	717	0.3%	2	37,500	\$69,176	544%	
29		Seminar	\$10,750	215	0.4%	1	36,629	\$29,763	177%	
30										
31		\$178,005		7,837		17		\$1,730,052	872%	
32										
33										
34	Product C	Vehicle	Expense	Number of leads	L-C Conversion	Number of deals	Average deal size	Revenue	ROI	
35		SEM	\$21,644	866	0.2%	2	35,000	\$56,958	163%	
36		Direct	\$3,750	375	3.4%	13	8,000	\$103,448	2659%	
37		Web	\$16,719	1,115	8.7%	97	40,000	\$3,876,779	23088%	
38		Seminar	\$21,859	437	0.2%	1	15,000	\$12,327	-44%	
39										
40		\$63,972		2,793		112		\$4,049,512	6230%	

Case Example: Screenshot: Historical Data

	A	B	C	D	E	F	W	X	Y	Z	AA	AB	
1	Historical conversion rate by Product Lines by MAT												
2	Initiative	MKTG ACTIVITY TYPE	HP Quarter	Total Leads	Opty Total	% Conv Opty	Total Closed Won	%Conv Closed	Revenue	Revenue %	Deal Size	Cost	
3	Product A	Seminar	Q4	4.	3.	75.0 %	1.	25.0%	15,000.	9%	15,000.	\$ 200.00	
4			Q1	19.	5.	26.3 %	2.	10.5%	20,000.	15%	10,000.	\$ 950.00	
5			Q2	8.	5.	62.5 %	7.	87.5%	70,000.	36%	10,000.	\$ 400.00	
6			Q3	4.	2.	50.0 %	2.	50.0%	30,000.	21%	15,000.	\$ 200.00	
7		Seminar Total:			35.	15.	43%	12.	34.3%	135,000.	21%	11,250.	\$ 1,750.00
8		Direct Email	Q4	94.	7.	7.4 %	5.	5.3%	40,000.	24%	8,000.	\$ 940.00	
9			Q1	116.	8.	6.9 %	6.	5.2%	30,000.	23%	5,000.	\$ 1,160.00	
10			Q2	145.	5.	3.4 %	4.	2.8%	10,000.	5%	2,500.	\$ 1,450.00	
11			Q3	40.	5.	12.5 %	3.	7.5%	50,000.	36%	16,667.	\$ 400.00	
12		Direct Email Total:			395.	25.	6%	18.	4.6%	130,000.	21%	7,222.	\$ 3,950.00
13		Webinar	Q4	46.	3.	6.5 %	1.	2.2%	40,000.	24%	40,000.	\$ 690.00	
14			Q1	397.	4.	1.0 %	1.	0.3%	20,000.	15%	20,000.	\$ 5,955.00	
15			Q2	1,442.	15.	1.0 %	7.	0.5%	82,945.	43%	11,849.	\$ 21,630.00	
16			Q3	143.	6.	4.2 %	3.	2.1%	30,000.	21%	10,000.	\$ 2,145.00	
17		Webinar Total:			2,028.	28.	1%	12.	0.6%	172,945.	28%	14,412.	\$ 30,420.00
18		SEM	Q4	123.	3.	2.4 %	2.	1.6%	70,000.	42%	35,000.	\$ 3,075.00	
19			Q1	175.	4.	2.3 %	3.	1.7%	60,000.	46%	20,000.	\$ 4,375.00	
20			Q2	1,261.	16.	1.3 %	12.	1.0%	30,000.	16%	2,500.	\$ 31,525.00	
21			Q3	162.	2.	1.2 %	1.	0.6%	30,000.	21%	30,000.	\$ 4,050.00	
22		SEM Total:			1,721.	25.	1%	18.	1.0%	190,000.	30%	10,556.	\$ 43,025.00
23		Product A TOTAL			4,179.	93.	2%	60.	1.4%	627,945.	7%	10,466.	\$ 79,145.00

Interpreting the Model



Allocation #2: \$17M Revenue

Allocation			
SEM	Direct Email	Webinar	Seminar
5%	5%	5%	85%
85%	5%	5%	5%
5%	5%	85%	5%

86/12/2 product mix
 26/74/2 Budget
 348 deals

Allocation #1: \$4.7M Revenue

Allocation			
SEM	Direct Email	Webinar	Seminar
21%	18%	15%	5%
5%	5%	21%	46%
18%	5%	20%	23%

81/16/3 product mix
 26/74/2 Budget
 328 deals

Case Example: Findings

Topic	Description
Increase	ABC could increase revenue with same budget
Decrease	Or, ABC could meet revenue with reduced budget
Insight	ABC now has improved insight into potential of budget

Case Example: Conclusions

Topic	Description
Calibration	Post-run calibration necessary for feasible solution
Data	Historical data useful for additional applications <ul style="list-style-type: none">- Account segmentation- Marketing campaign types- Go to market approaches- Geographical markets
Insight	Changing inputs and constraints can add to insight <ul style="list-style-type: none">- Min & max allowable cost/lead- Minimum deal size requirements
Judgment	Complements, does not replace, marketing judgment Still need mental models to validate business decisions