



Harnessing the Revolution in Marketing Analytics

Abstract: A look at eight areas where analytics can help make better decisions in marketing and product management with case studies and links to spreadsheet applications that the reader can use.

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The Analytics Revolution

The growth of quantitative analysis has been the second-biggest revolution in management in the past two decades. Of course, the biggest revolution in marketing has been introduction of the internet.

As companies grow, the skills required of senior managers change. At some point, senior managers can no longer afford to develop first-hand knowledge of details throughout the business. Two new organizational skills become crucial to success.

- 1. Delegation** Senior managers must gather information through peers and subordinates, and they must execute through peers and subordinates. A senior manager can no longer succeed by being a bigger version of a first-line manager.
- 2. Use of indirect information** Quantitative analysis and inputs from peers and subordinates replace much of the first-hand knowledge of segment details that senior managers rely on to run smaller companies.
- 3.** This paper focuses on the second key skill – using indirect information to help run a business, with an emphasis on data-backed information in marketing and product management.

Designing and using quantitative information wisely is an art in itself. Managers must balance quantitative information with conceptual inputs and subjective opinions.

For example, in evaluating a proposed investment project, a manager must balance strategic concepts like “market attractiveness” and “competitive strength” (the focus of our first example in this paper) with product profitability metrics (the focus of our second example), and subjective opinions of trusted peers and subordinates.

Designers and users of quantitative information must know what approximations to accept.

For example, marketing program contribution margins (the focus of our third example) are computed using some pretty heroic assumptions – which marketing touches are connected to purchase decisions inside a customer organization, the relative impact of different kinds of marketing touches (e.g. live seminars, sales visits, web visits), the relative weight of marketing touches that generate interest and those that help close an order, the rate at which a marketing touch loses its effectiveness over time. These assumptions don’t have to be right in every case to yield very useful decision metrics, especially when quantitative information is combined with first-hand field knowledge.

The Roles of Analytics in Marketing

Marketing manages information that helps well-targeted products to satisfy customers and generate orders. Many kinds of information are needed, and an increasing share of this information is backed by hard data.

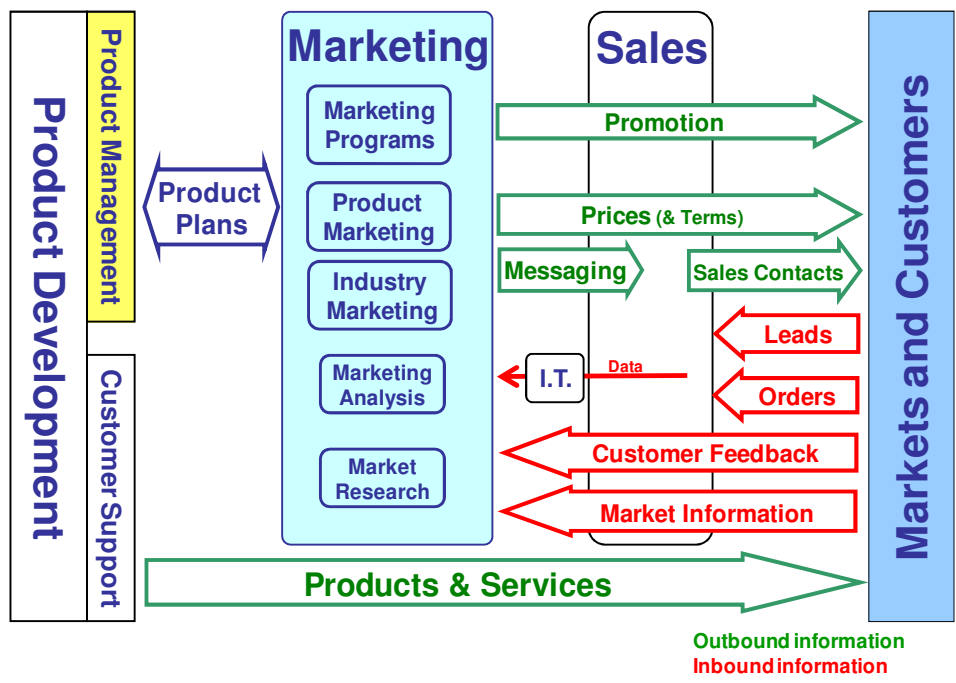


Figure 1: Information is the life blood of a business and marketing is a key crossroads of Information

The Role of Spreadsheets in Marketing Analysis

Spreadsheets led the “desktop revolution” that freed business experts to experiment and self-serve with less dependence on IT professionals at low cost. These are still the main advantages of spreadsheets.

TDWI published an excellent summary of the use of spreadsheets in enterprises in *Strategies for Managing Spreadmarts: Migrating to a Managed BI Environment*.¹ Eckerson and Sherman defined a “spreadmart” as:

“a reporting or analysis system running on a desktop database (e.g., spreadsheet, Access database, or dashboard) that is created and maintained by an individual or group that performs all the tasks normally done by a data mart or data warehouse, such as extracting, transforming, and formatting data as well as defining metrics, submitting queries, and formatting and publishing reports to others”

The report provides a summary of benefits and problems of spreadmarts.

A Customizable Spreadsheet Solution is a spreadsheet model that you can adapt to your situation by filling in a simple form, without editing a spreadsheet or its formulas.

For example, you can specify time range and time grain; number and names of items in a dimension (such as your products and product families); and include or exclude major features.

You get a customized spreadsheet that matches your needs better than any conventional template. In small to medium-sized companies, Customized Spreadsheet Solutions, and the necessary input data, are often all you need to get valuable results.

Examples of Marketing Analytics

This paper discusses 8 kinds of analytics that are useful in marketing management. For each application, we provide a quick sketch and provide links to a white paper and a website where you can access customizable spreadsheets that perform the analysis:

1. Product Profitability

Product profitability information helps you make better decisions in several areas. For example:

- Should you raise or lower prices for specific products?
- Which products should get more investment funding or manpower for marketing or development? Product profitability should be used to rate investment candidates only when combined with a strategic assessment.

¹ Wayne W. Eckerson and Richard P. Sherman, *Strategies for Managing SpreadMarts: Migrating to a Managed BI Environment*, First Quarter 2008 TDWI Best Practices Report, January 2008. URL: <http://www.tdwi.org/research/display.aspx?ID=8874>.

	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
Revenue								
Product A	\$9,880,000	\$10,868,000	\$11,954,800	\$13,149,900	\$14,464,700	\$15,910,600	\$17,500,900	\$19,250,800
Product B	\$4,271,000	\$4,912,000	\$5,649,000	\$6,496,000	\$7,470,000	\$8,591,000	\$9,880,000	\$11,362,000
Product C	\$1,725,000	\$1,812,000	\$1,902,000	\$1,996,500	\$2,097,000	\$2,202,000	\$2,311,500	\$2,427,000
Total	\$15,876,000	\$17,592,000	\$19,505,800	\$21,642,400	\$24,031,700	\$26,703,600	\$29,692,400	\$33,039,800
Cost of Goods								
Product A	\$2,121,600	\$2,333,760	\$2,567,136	\$2,823,768	\$3,106,104	\$3,416,592	\$3,758,088	\$4,133,856
Product B	\$1,624,048	\$1,867,788	\$2,148,032	\$2,470,104	\$2,840,468	\$3,266,728	\$3,756,870	\$4,320,401
Product C	\$437,000	\$459,040	\$481,840	\$505,780	\$531,240	\$557,840	\$585,580	\$614,840
Total	\$4,182,648	\$4,660,588	\$5,197,008	\$5,799,652	\$6,477,812	\$7,241,160	\$8,100,538	\$9,069,097
Gross Margin								
Product A	\$7,758,400	\$8,534,240	\$9,387,664	\$10,326,132	\$11,358,596	\$12,494,008	\$13,742,812	\$15,116,944
Product B	\$2,646,952	\$3,044,212	\$3,500,968	\$4,025,896	\$4,629,533	\$5,324,272	\$6,123,130	\$7,041,600
Product C	\$1,288,000	\$1,352,960	\$1,420,160	\$1,490,720	\$1,565,760	\$1,644,160	\$1,725,920	\$1,812,160
Total	\$11,693,352	\$12,931,412	\$14,308,792	\$15,842,748	\$17,553,889	\$19,462,440	\$21,591,862	\$23,970,704
Gross Margin %								
Product A	79%	79%	79%	79%	79%	79%	79%	79%
Product B	62%	62%	62%	62%	62%	62%	62%	62%
Product C	75%	75%	75%	75%	75%	75%	75%	75%
Total	72%	72%	72%	72%	72%	72%	72%	72%
Engineering Expense								
Product A	\$2,510,750	\$2,581,153	\$2,653,667	\$2,728,357	\$2,805,288	\$2,884,526	\$2,966,142	\$3,050,206
Product B	\$1,326,750	\$1,363,973	\$1,402,312	\$1,441,801	\$1,482,475	\$1,524,369	\$1,567,520	\$1,611,966
Product C	\$471,000	\$484,230	\$497,857	\$511,893	\$526,349	\$541,240	\$556,577	\$572,374
Total	\$4,308,500	\$4,429,355	\$4,553,836	\$4,682,051	\$4,814,112	\$4,950,136	\$5,090,240	\$5,234,547
Marketing Expense								
Product A	\$684,000	\$741,900	\$805,328	\$874,808	\$950,971	\$1,034,446	\$1,125,969	\$1,226,379
Product B	\$2,030,000	\$2,088,800	\$2,112,540	\$2,173,893	\$2,198,404	\$2,222,825	\$2,287,728	\$2,354,533
Product C	\$161,000	\$162,750	\$164,544	\$166,382	\$168,267	\$170,199	\$172,179	\$174,208
Total	\$2,875,000	\$2,993,450	\$3,082,411	\$3,215,083	\$3,317,641	\$3,427,470	\$3,585,876	\$3,755,120
Support Expense								
Product A	829,847	829,847	829,847	829,847	829,847	829,847	829,847	829,847
Product B	347,570	347,570	347,570	347,570	347,570	347,570	347,570	347,570
Product C	1,002,583	1,002,583	1,002,583	1,002,583	1,002,583	1,002,583	1,002,583	1,002,583
Total	2,180,000	2,180,000	2,180,000	2,180,000	2,180,000	2,180,000	2,180,000	2,180,000
Contribution Margin								
Product A	\$3,733,803	\$4,381,340	\$5,098,822	\$5,893,120	\$6,772,490	\$7,745,188	\$8,820,853	\$10,010,511
Product B	(\$1,057,367)	(\$756,130)	(\$361,453)	\$62,632	\$601,084	\$1,229,509	\$1,920,312	\$2,727,531
Product C	(\$346,583)	(\$296,603)	(\$244,824)	(\$190,138)	(\$131,440)	(\$69,862)	(\$5,419)	\$62,994
Total	\$2,329,852	\$3,328,607	\$4,492,545	\$5,765,614	\$7,242,135	\$8,904,835	\$10,735,747	\$12,801,037
Contribution Margin %								
Product A	38%	40%	43%	45%	47%	49%	50%	52%
Product B	-25%	-15%	-6%	1%	8%	14%	19%	24%
Product C	-20%	-16%	-13%	-10%	-6%	-3%	0%	3%
Total	15%	19%	23%	27%	30%	33%	36%	39%

Figure 2: Sample Output of Product Contribution Margin Analysis (See charts below for overview.)

Product C has a very low contribution margin %, in spite of a healthy gross margin %, because its support costs are too high. Also, Product B started with a low contribution margin % and recovered, because its expenses stayed relatively constant as its revenues more than doubled.

Download a white paper with more information and a case study at <http://templates.modelsheetsoft.com/my/getfile.aspx?name1=whitepaper-product-profitability>
 Customize and download spreadsheets for product profitability analysis at <http://templates.modelsheetsoft.com/modelsheettemplates/product-profitability-templates.aspx>

2. Customer Profitability

Many companies have marginal or unprofitable customers and don't know it. For example,

- Some customers may buy unprofitable mixes and quantities of products.
- Some customers may generate unexpectedly high costs of support service or other operating expense.
- Some customers may consume more sales force resources or generate more sales commissions than their revenues can support.

These problems are more common in companies that have customer segments with widely varying economics, so that management cannot keep track of the differences without a formal analysis. The profitable customers mask the others and everything looks fine on the surface.

ModelSheet provides a spreadsheet model that estimates customer profitability from product mix, price discounting, commissions, support contract revenues, and operating expenses. It also compares plan versus actual profitability to help identify the sources of problems.

			Plan Data	
Customer Rep	(All)			
			Time	
Customers1	Prod1	Data	1/1/2012	2/1/2012
Customer 1	Products 1	Revenue	\$93,750.00	\$93,750.00
		Average of Price Discount %	0.0%	0.0%
		Gross Margin	\$65,625.00	\$65,625.00
		Average of Gross Margin %	70.0%	70.0%
		Operating Margin	\$116,750.00	\$116,750.00
		Average of Operating Margin %	31.1%	31.1%
		Commission	\$7,687.50	\$7,687.50
	Products 2	Revenue	\$93,750.00	\$93,750.00
		Average of Price Discount %	0.0%	0.0%
		Gross Margin	\$65,625.00	\$65,625.00
		Average of Gross Margin %	70.0%	70.0%
		Operating Margin	\$116,750.00	\$116,750.00
		Average of Operating Margin %	31.1%	31.1%
		Commission	\$7,687.50	\$7,687.50

Figure 3: Pivot table showing the constituents of customer profitability

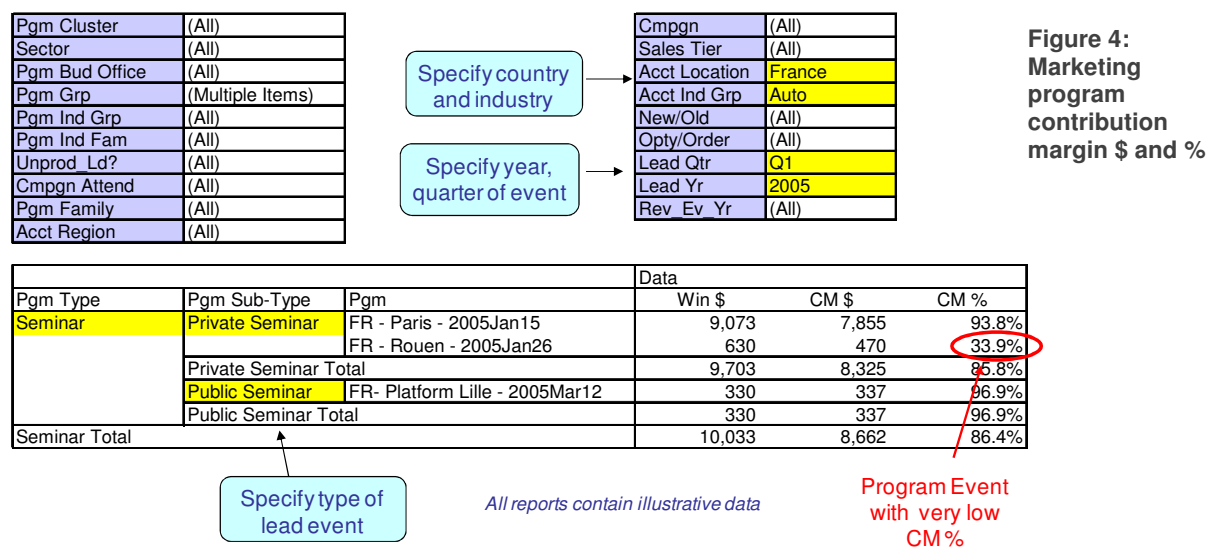
Customize and download spreadsheets for customer profitability analysis at <http://templates.modelsheetsoft.com/modelsheettemplates/customer-profitability-templates.aspx>

3. Marketing Programs Effectiveness

One of the most important and thorniest problems in market analytics is to determine the effectiveness of different marketing programs. Counting leads generated by each program is of limited value, because conversion rates to orders can be very different across programs.

ModelSheet has developed an algorithm that evaluates program effectiveness by allocating revenues from each order to one or more marketing programs, then subtracting program expenses to get a contribution margin (a profit margin). This method must solve some difficult problems, such as that many marketing and sales programs typically touch a customer at varying times before he places an order.

This method can estimate program effectiveness by market segment – by industry, geography, sales channel, product application area, and age of customer relationship.



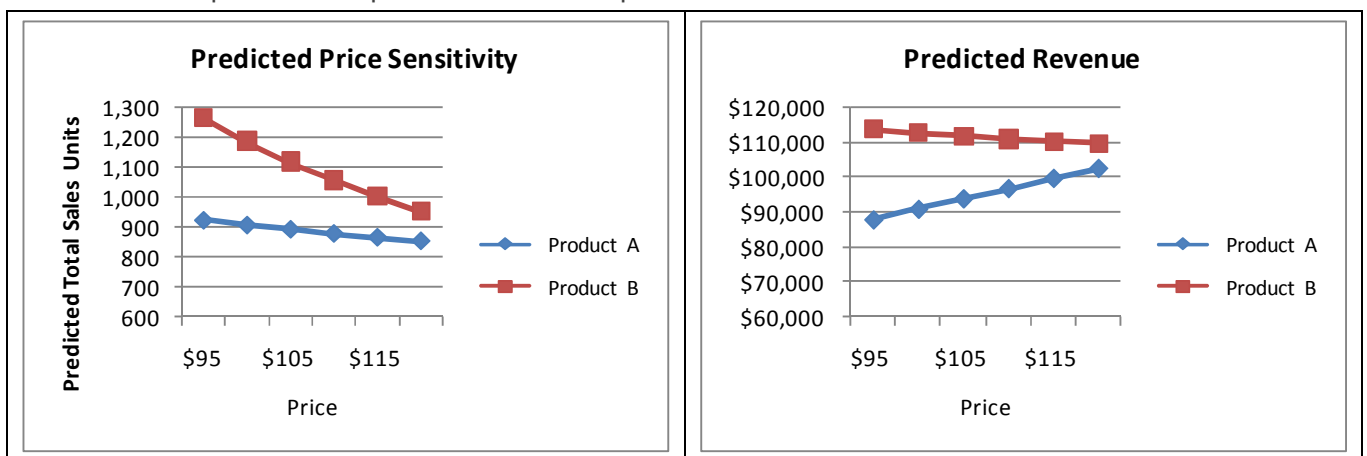
Download a white paper with more information and a case study at <http://templates.modelsheetsoft.com/my/getfile.aspx?name1=whitepaper-marketing-programs>
 Customize and download spreadsheets for marketing programs analysis at <http://templates.modelsheetsoft.com/modelsheettemplates/marketing-programs-templates.aspx>

4. Pricing Decisions

The objective of pricing is to maximize a combination of profit and long-term market position. Pricing decisions involve many factors. The most important ones are competitive offerings, your own costs, and factors that differentiate your products from competition in the eyes of customers, and sensitivity of customer s to prices.

The sensitivity of customers to prices can best be analyzed by computing "price elasticity" from market test data. Price elasticity tells you ratio between percentage change in sales and percentage change in price. Advanced analysis methods can tell you not only what this ratio is, but can estimate the prices that optimize revenue or profit.

Figure 5: Price Sensitivity and Revenue Impact, Predicted from Pricing Test



Download a white paper with more information at <http://templates.modelsheetsoft.com/my/getfile.aspx?name1=whitepaper-price-elasticity>.

Customize and download spreadsheets for analysis of price elasticity from market test data

- Price elasticity analysis for one product. <http://templates.modelsheetsoft.com/modelsheettemplates/product-price-elasticity-templates.aspx>.
- Price elasticity analysis for several products. <http://templates.modelsheetsoft.com/modelsheettemplates/price-elasticity-templates.aspx>.

5. Sales Reporting and Analysis

The most basic kind of marketing analysis is to analyze sales data. The key challenge is to improve the quality of decisions and organizational buy-in by providing reliable quantitative answers to many key questions that arise in business reviews. The solution should use analytic tools that executives, middle managers and professionals can use without a lot of training.

A number of different sales reports are usually needed to cut the sales data in several ways. The most basic report consists of pivot tables and pivot charts to analyze data cubes that are segmented by products (and services), selling locations, customer industries, time period, and other variables as needed.

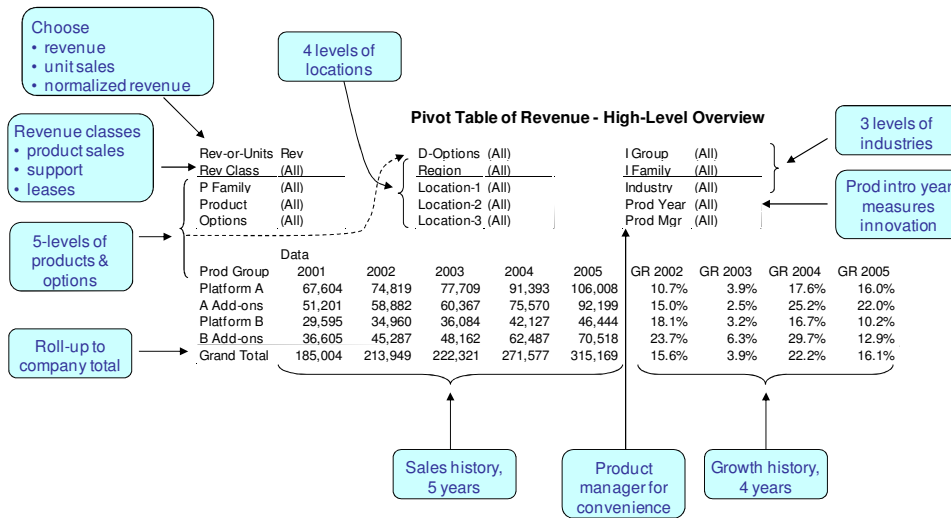


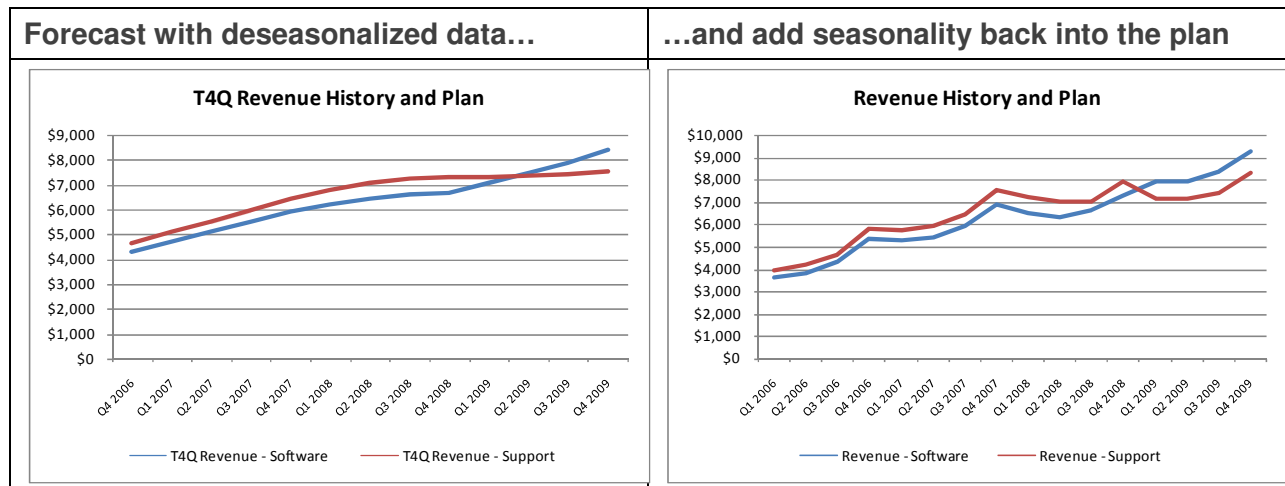
Figure 6: Pivot Sales Report with High-level and Low-level Views

Download a white paper with more information and a case study at <http://templates.modelsheetsoft.com/my/getfile.aspx?name1=whitepaper-sales-reporting> .
 Customize and download a spreadsheet sales reporting with pivot tables at <http://templates.modelsheetsoft.com/modelsheettemplates/sales-report-templates.aspx> .

6. Sales Planning/Forecasting

The main objective of sales planning is to improve allocation of sales and marketing resources to maximize sales results. This is particularly difficult in businesses with tens of thousands of product-market segments – which is not unusual when you multiply together numbers of products, selling locations, sales channels, customer industries, and other segmentation factors.

Figure 7: Sample Sales Plan Generated by ModelSheet Sales Planning Application



A good plan should be controlled by human judgment, with historical sales data playing a subordinate role.

Humans are better at analyzing changes in the environment that alter historical trends. Historical data captures many trends and correlations among small segments that are too numerous and complex for humans to track. The human judgment should come from all the experts in your organization – product managers, country managers, industry experts and so forth.

You can download a white paper with more information and a case study at <http://templates.modelsheetsoft.com/modelsheettemplates/sales-plan-templates.aspx> .
 Customize and download spreadsheets for sales planning containing pivot tables at <http://templates.modelsheetsoft.com/modelsheettemplates/sales-plan-templates.aspx>.

7. Sales Commission Planning

Aligning the interests of you sales force and the company is one of the most important sales management functions. The standard plan of paying one commission rate on all products at all revenue levels, sometimes fails to accomplish alignment. We identify five common mistakes in designing commission plans and how to avoid them.

ModelSheet's sales commission model enables you to simulate different commission plans, then compare the plan with actual results for each sales rep and each product. You can design plans that pay commission on revenue, gross margin or other profit margin, and unit sales. You can assign different commission rates to different products and sales reps, and use graduated commission rates that changes as revenue rises. The model also gives you a mini-income statement for each sales rep and each product.

Financial Summary by Product and Sales Rep					
	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012
Products 1					
Sales Rep 1					
Revenue	\$93,750	\$93,750	\$93,750	\$93,750	\$93,750
Price Discount %	0.0%	0.0%	0.0%	0.0%	0.0%
Gross Margin	\$65,625	\$65,625	\$65,625	\$65,625	\$65,625
Gross Margin %	70.0%	70.0%	70.0%	70.0%	70.0%
Contribution Margin	\$65,625	\$65,625	\$65,625	\$65,625	\$65,625
Contribution Margin %	70.0%	70.0%	70.0%	70.0%	70.0%
Commission	\$12,985	\$12,985	\$12,985	\$12,985	\$12,985
Sales Rep 2					
Revenue	\$93,750	\$93,750	\$93,750	\$93,750	\$93,750
Price Discount %	0.0%	0.0%	0.0%	0.0%	0.0%
Gross Margin	\$65,625	\$65,625	\$65,625	\$65,625	\$65,625
Gross Margin %	70.0%	70.0%	70.0%	70.0%	70.0%
Contribution Margin	\$65,625	\$65,625	\$65,625	\$65,625	\$65,625
Contribution Margin %	70.0%	70.0%	70.0%	70.0%	70.0%

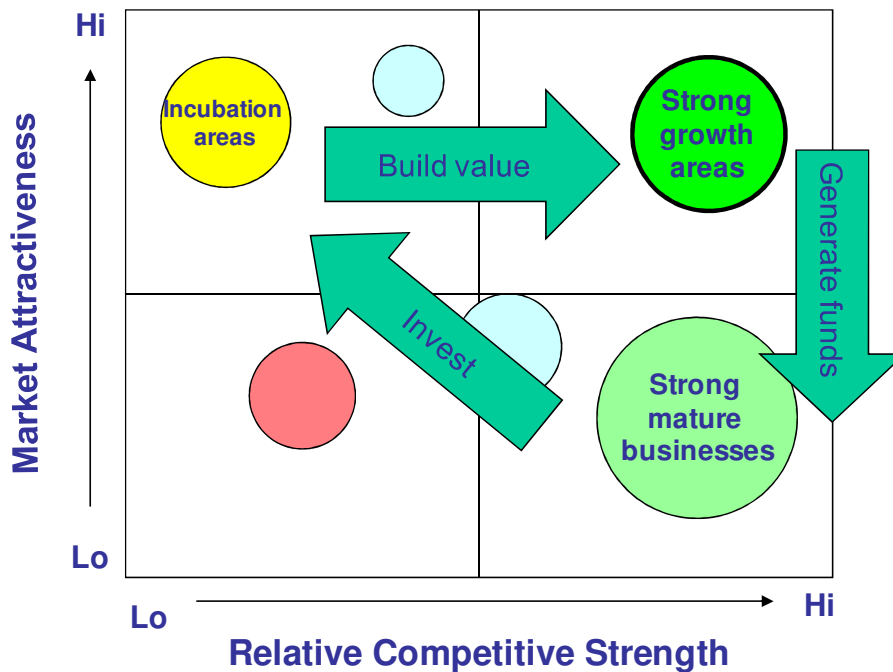
Figure 8: Sales commission and performance metrics for sales reps and products

Read a blog with more information about commission planning
<http://blog.modelsheetsoft.com/2011/avoid-mistakes-with-sales-commission/>
 Customize and download spreadsheets for sales commission planning at
<http://templates.modelsheetsoft.com/modelsheettemplates/sales-commission-templates.aspx>

8. Strategic Evaluation of Investment Projects

Sound evaluation of investment candidates requires strategic analysis of future potential. The most important rule of business strategy is that you want to invest to build areas of greatest competitive strength that serve markets that offer the most attractive conditions for success. When used in the absence of strategic analysis, simple criteria – such as current and future estimates of sales and profits, or expanding to serve new customers with new products – are not adequate, and lead to suboptimal decisions.

Portfolio Matrix depicts match of strengths and opportunities



Objective:
 Start / move
 businesses to
 the upper right.

Figure 9: Key to strategy is to match external opportunities with internal capabilities

Download a white paper with more information and a case study at
<http://templates.modelsheetsoft.com/my/getfile.aspx?name1=whitepaper-strategic-evaluation-investments>
 Customize and download spreadsheets for strategic evaluation of investments at
<http://templates.modelsheetsoft.com/modelsheettemplates/strategic-evaluation-templates.aspx>

Conclusion

The information revolution makes analytics the second-fastest moving frontier in marketing, after internet marketing. Analytics can help you make better decisions to optimize business results, and present more compelling arguments for correct conclusions. Marketing management is a fertile area for analytics because it pulls together many functions to deliver business results.

Check out the ModelSheet blog

<http://blog.modelsheetsoft.com>

Users of business analytics don't have to be analysts. Good users of analytics should frame questions that help the company to make better decisions, and challenge analysts to answer those questions with information backed by hard data. Users of analytics and analysts should collaborate to determine the analyses and reports that best assist constituencies make better decisions.

Business domain experts who sponsor spreadsheet applications don't have to be IT professionals. Domain experts can introduce and use spreadsheet applications with minimal dependence on IT professionals.

Spreadsheets for marketing analysis

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