Ensuring Profitable Return-on-Investment (ROI) in Pharmaceutical Marketing

Using Analytics and Metrics to Improve the Bottom Line

By Dr. Andree K Bates

EULARIS

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SECTION 1:

Basic Marketing Return Measurement Principles

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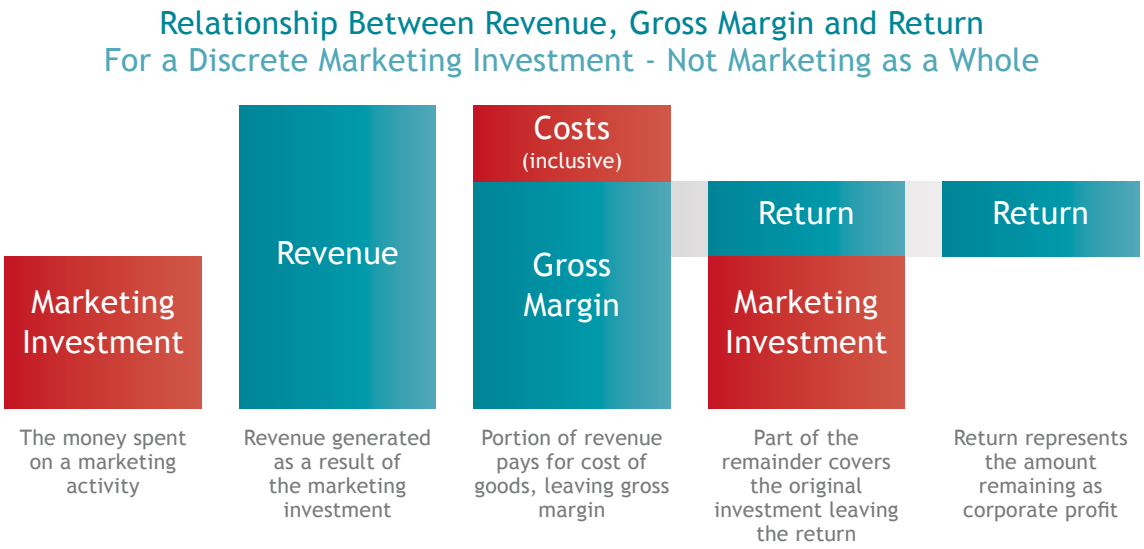
Figure 2.1 Relationships between revenue, gross margin, and return for a discrete marketing investment



In Figure 2.1 the red investment bar represents the amount invested in the marketing programme. The green revenue bar represents the revenue generated as a result of the marketing investment. This is divided up into Costs (red Costs bar) and Gross Margin. The gross margin should include the revenue gained after the time period being investigated via the use of NPV (Net Present Value). The Gross Margin includes the original investment cost plus the actual profit. So the Marketing Return formula (used in ROI formula later) is shown below.

Marketing Return = Revenue - Costs of goods & expenses - cost of the marketing investment

Actual Marketing Return is minus original investment and, of course, we are considering discretionary individual marketing activities against each other, not marketing as a whole. To convert this to ROI, this Marketing Return is expressed in a percentage of the original investment.

$$\text{ROI} = \frac{\text{Marketing Return (i.e. Gross Margin - Marketing Investment)}}{\text{Marketing Investment}}$$

It is represented this way so that when the gross margin is equal to the marketing investment, the ROI is 0% and the investment is considered to be breakeven.

As a simple example, a person buys 100 shares of stock at $40 each for an initial investment of $4,000. Add to this the cost of the transaction which was $25. There is a risk that all $4,025 will be lost. This is the true investment. If the shares were all sold the next day for $4,500, the income is $4,500. Deducting the initial $4,025 investment from the $4,500 return nets $475 which is the total return. When putting this in a ROI % equation you get 11.8% ROI:

$$\%\text{ROI} = \frac{\$4500 - \$4025}{\$4025} = \frac{\$\,475}{\$4025} = 11.8\%$$

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Now let's consider another ROI calculation where all profits are generated immediately (to temporarily avoid an explanation of Net Present Value):

A company has developed a new product and will need to generate sales through marketing. The marketing campaign has a total budget of $100,000 and this is the total investment at risk (i.e. the amount that will be lost if no sales are made through this specific marketing campaign). Let's say the marketing campaign generates $500,000 in product revenue, which has a cost of goods of $250,000 and additional expenses of $100,000. The gross margin is $ 500,000 – $250,000 – $100,000 which equals $ 150,000. The % ROI is calculated as below:

$$\%ROI = \frac{\$150,000 - \$100,000}{\$100,000} = \frac{\$50,000}{\$100,000} = 50\%$$

The marketing campaign earned 50% above the initial investment.

One other thing to keep in mind when dealing with ROI is the ROI hurdle rate.

The ROI Threshold or ROI Hurdle Rate is the minimum ROI level for an investment. It is up to a company to decide what this is, but it often around 25%. Theoretically, it should be equal to the discount rate, both of which should represent the company's cost of securing capital. However, this is not a practical expectation since the ROI threshold may need to be adjusted higher to account for margins of error in calculations, protecting against potential overlap and recovering general marketing expenses. Sometimes companies set this based on the level of risk anticipated for the marketing investment. Once a company sets its ROI hurdle rate, this is used to assist deciding which activities get funded and which do not.

2.4 Challenges of Applying the ROI Formula

Applying the formula is also not devoid of challenges. The most common pitfalls are;

- *Using 'Revenue' in place 'Return' i.e. Gross Margin MINUS the Original Investment*
- *Applying ROI to marketing as a whole rather than individual investments*
- *Counting only immediate profit and neglecting future value*
- *Counting only the total customer lifetime value in place of incremental profits*
- *Applying ROI without keeping the 'I' constant*
- *Using positive ROI as the funding threshold*
- *Neglecting to align the ROI analysis with the decision to be made*

2.5 Where ROI Goes Wrong

The most common way ROI is calculated is often expressed in a percentage of the original investment.

$$\textbf{ROI} = \frac{\textbf{Marketing Return (R)}}{\textbf{Marketing Investment (I)}}$$

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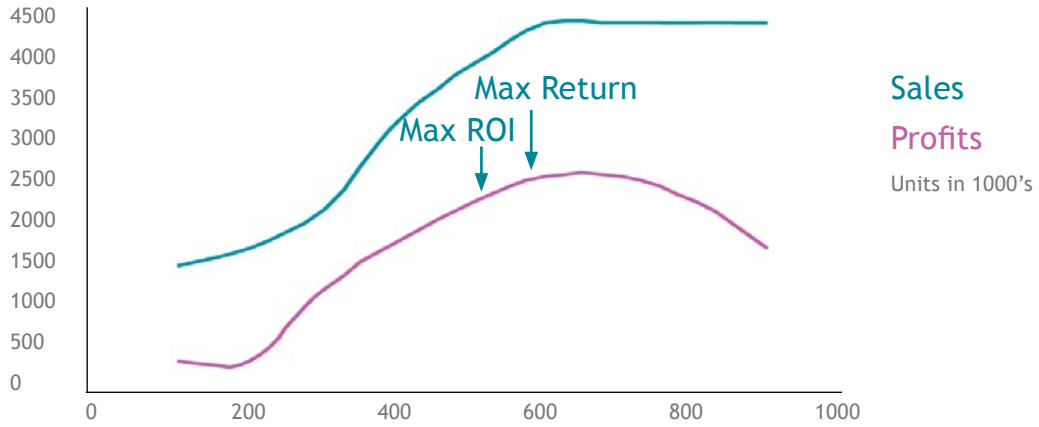
But, in actual fact, this division equation can be misleading as it ignores what the objective is. Usually the objective is to maximize bottom line return, *which an equation based on marketing ROI* often is not optimal at achieving. Let's take this example discussed by Ambler[11].

	Max ROI	*Max bottom line return*
Revenue $	**3,550**	**4,200**
Profit pre-marketing $	**710**	**840**
Marketing spend $	**500**	**600**
Net Profit $	**210**	**240**
% ROI	**42%**	**40%**

This is illustrated graphically for each incremental investment in this programme.

Figure 2.2 The relationship between maximum profit and maximum ROI



If one company spent $1 million on a marketing investment and generated a $500,000 profit (after recovering the $1m investment). This was an ROI of 50%. But, another marketing spend of $3 million on a different activity generated a profit of $1 m (after getting the $3m investment back). This would be an ROI of 33.3%. So, the higher ROI is not necessarily a sign of the highest financial return, bottom line profit. Sometimes a high ROI (cost recovery) is at the expense of growth and profit.

Why does this happen? It is simple arithmetic.

If the 'I' (Investment amount) is held constant then the R-I peaks at the same point as R/I does.

If 'I' (Investment amount) is not constant the ratio can be misleading because the immediate reaction to a high ratio is the supposition that more investment would produce the same ratio again which is mathematically flawed.

11) Marketing and the Bottom Line, by Tim Ambler. Published by Prentice Hall 2003

SECTION 4:

Metrics Progression: From Activity Tracking To State-of-the-art Analytics

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Not too long ago, companies relied in large measure on anecdotal evidence, marketers' experience and rudimentary tools to plan their marketing strategies and tactics, implement them and measure their effectiveness. In the rich pipeline/blockbuster days, it was simply accepted that marketing cost money and the impact was not seriously questioned as there was industry wide growth of 20% and good profit margins.

Marketers and their bosses are increasingly feeling pressure to demonstrate accountability. Early endeavours to address this issue relied on techniques used by CFOs to quantify spending. The result for marketing has been less than impressive. That is because using this data to plan marketing activity allocation and marketing budget allocation requires more than a ROI technique; in fact, it requires more than a straightforward mathematical or statistical technique.

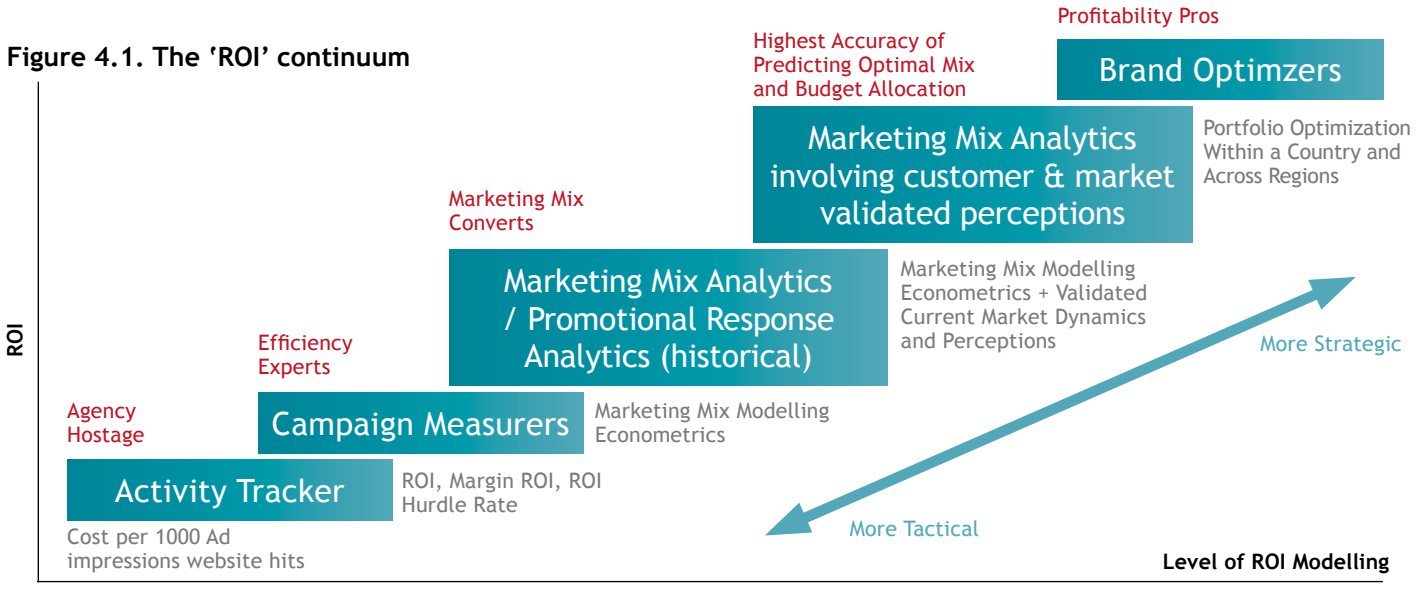
The good news is that marketing measurement and metrics are progressing. Despite the progress, the gap in using relevant marketing measurements and analytics is still high and must be closed if companies are going to effectively bring the discipline of financial performance analysis into marketing.

There are a number of methods pharmaceutical companies use to demonstrate accountability. These range from basic activity tracking to really analysing and optimising cross country and brand portfolios. All of these have their place but not all of them neatly or accurately tie into guiding what strategic marketing decisions must be made moving forward for real bottom line return now or in the near future.

ROI is a term or a concept used in multiple ways across and within companies. It does not always mean 'ROI' in the traditional 'Return on Investment' formula approaches. Various other methods are currently employed to measure ROI. These include market research techniques, Customer Relationship Management (CRM) interaction analysis, traditional Return on Investment (ROI) techniques, Marketing Mix Models, Econometric Models, and Predictive Analytics (Historically based, Analogue based and Current market based).

Figure 4.1 shows the ROI continuum from more tactical (activity tracking end) to strategic (brand optimiser end). Each stage outlined in Figure 4.1 will be discussed in more detail in this section.

Figure 4.1. The 'ROI' continuum



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4.1 Activity Tracking

Figure 1.1 shows what the majority of companies consider as ROI, and also shows the wide range of measurements covered, including number of leads generated and cost per lead. Of course all activity must be tracked but this in itself is not ROI; it is activity tracking. The two case studies from papers on ROI detailed below clearly illustrate this point.

Case study 1: Asacol website (US)

A classic example of activity tracking being mistaken for ROI was reported in the White Paper by DB Marketing Technologies[27]. In this study Procter & Gamble wanted to grow brand awareness and prescriptions for Asacol used to treat ulcerative colitis. The small number of sufferers, of which there are only 500,000 in the US, caused the company to decide against mass media with a broad focus and to take their agency's advice and create a web-based approach' This had the aim of targeting new patients as well as hopefully increasing compliance in existing patients. The agency developed a focused website providing a lot of information on the condition of ulcerative colitis, the benefits of Asacol as a treatment and advice on how to make lifestyle changes to reduce the impact of the illness. Patients could enrol for personalised information on treating the condition. The website was marketed with a print campaign targeting 30 metropolitan areas, as well as internet marketing. P&G were very happy with the ROI which they measured in terms of website 'hits'. In the first month the website had 48,000 hits, which the sponsor was led to believe meant they were reaching 10% of the US ulcerative colitis population. This is activity tracking.

Websites can be set up to be able to track everything and are thus a great medium for really measuring results. Although this example will have been exceptionally successful in its results, the approaches used to demonstrate it to management were inadequate and misleading in what they suggested. By tracking this activity, they were not tracking ROI, but simply activity itself (albeit at a basic level). To know the return they would have needed to take it further and to have assessed how this linked into the number of new scripts they got from this activity and whether this was more in terms of profit than their outlay for the website.

Case study 2: iPhysicianNet eDetailing study (US) [28]

iPhysicianNet offer live videoconferencing for face-to-face details. Data from the company, from a six month 1,130 doctor study showed encouraging returns for the sponsoring company.

The cost of running a detail through iPhysicanNet is less than traditional sales reps. In a study involving Novartis, it was found that sales reps using the iPhysicianNet live video detailing system:

- *are able to complete 13 calls per day compared with 8 for field reps*
- *spend 9 minutes per call compared with 3 for field reps*
- *deliver 2.7 details per call compared to 1.6.*

Novartis also found that virtual reps cost Novartis $18,000 less per year than field reps and their cost per minute is only $14 against $58, yielding a total cost per detail of $48 compared to the traditional $106. Measured against prescribing results, Novartis reported an ROI 20% higher than for field reps. However, the research also shows that 58% of primary care doctors prefer to have calls equally divided between field calls and so-called e-calls.

27) 'Pharma CRM: What Works, What Doesn't, and Why', Published by DB Marketing Technologies 2003

28) eDetailing; A Strategic Analysis of Implementation and ROI, by Andree K Bates & Edwin Bailey 2001 Published by Mednet Media

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As you can see from this case study, activity tracking was widely used as an ROI measure in around 2001 when this occurred. However, the saving point for this case study is that they did actually then look at how this impacted the bottom line prescribing results.

Other activities that can also be put in this area on our graph include 'intent to prescribe' where you are tracking perceptions activity (which often does not link to actual prescribing), share of voice tracking and so on.

Activity tracking is important, certainly. It is the cornerstone from which all analyses are based. However, you must track the right metrics in order to demonstrate results. And activity tracking per se is not return on investment. Getting a cheaper cost per thousand, or more 'hits', or larger share of voice means very little if in the end you are not growing the brand with real prescriptions and growing bottom line profit.

4.2 Campaign Measurers

These are the classic ROI formulas covered in great detail in section 2. These formulas do examine 'how well we did' and have their place for that purpose. However, a danger arises if the ROI results from these formulas are used for guiding decisions on how well we will do in the near future, as the situation may have changed. The pharmaceutical marketing environment is a dynamic one with constant changes occurring in our marketplace (outlined in section 3) and, given the dynamic nature of our market environment, ROI formulas are not well suited for making decisions on marketing mix allocation moving forward.

4.3a Marketing Mix Analytics Using Historical Data

Also called Econometric or Predictive Analytics, Promotional Response Models, Resource Allocation Tools and Variants on Regression Analyses.

Due to the inherent predictive limitations of the traditional ROI formula models, many pharmaceutical companies have been using ROI models such as econometric models, promotional response models and other such resource allocation tools that utilize historical data. In the simplest terms, these models measure past relationships between variables (usually marketing activity spend and sales or market share) and then attempt to forecast how changes in some variables will affect the future course of others [29] [30] [31] [32]. Typically 3-5 historical points in time are chosen on which to conduct the analysis. Econometric models were embraced initially by the finance sector many years ago. However, after the great stock market crash of the 80's, according to respected sources such as the Economist, it was evident that only a handful of people in the world had predicted it. None of these were Technical Analysts using econometric models in their calculations. This is not a criticism of analysts and econometric models per se. It is simply

29) Samuel H Hymans, Forecasting and Econometric Models, The Concise Encyclopedia of Economics, 1993

30) Howrey, E. Philip, Saul H. Hymans, and Michael R. Donihue. "Merging Monthly and Quarterly Forecasts: Experience with MQEM." Journal of Forecasting 10 (May 1991): 255-68

31) Klein, Lawrence R., ed. Comparative Performance of U.S. Econometric Models. Especially chaps. 1, 3, 10, 11, 12. 1991.

32) Klein, Lawrence R., and Richard M. Young. An Introduction to Econometric Forecasting and Forecasting Models. 1980.

33) C Frangos 'Regression of Perceptions of Influential People on the Market Share in Listed Companies'. 20th European Meeting ofStatisticians, University of Bath 1992

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that, without taking the changing market dynamics into account by using solely econometric models based on historic relationships between input and output, real predictions cannot be made. These models, relying on historical data, are particularly inadequate today given the dynamic nature of the pharmaceutical industry marketplace. Historical performance is not going to be able to 'prove' the return on a marketing programme for the future as it may not pay off in the same way, as the environment in which it is operating is dynamic.

Despite the relative sophistication of most of these models, if these analyses are based on *historical data* combined with current sales data they actually do very little to predict what will happen in a changing market environment. This means that they are taking past data and inferring what will happen in the future. Again, I draw your attention to the fact that this does not work in changing markets such as pharmaceuticals where environmental changes & lifecycle changes have a dramatic impact on results.

For example, when a product is launched, sampling may be found to be a valuable marketing activity to drive prescriptions. However, a little further into the lifecycle of the product, sampling may not be helping drive prescribing so much any more and in fact by sampling the brand is really simply paying for market share which ceases to become economically viable in large quantities. However, if one used an econometric model, without looking at current prescriber perceptions and data, the econometric model may mistakenly suggest that sampling is still vital for driving significant prescribing. However, the model would be correlating old relationships using historical data to predict - when in reality, at this point in time for this product, sampling could in actual fact be doing very little to drive prescribing and long term brand growth.

The bottom line is that, without access to current validated customer-based data[33], analysed hand-in-hand with models using predictive algorithms, it remains impossible for company executives to effect change with any real degree of certainty that their efforts will produce the right results. The past does not equal the future is something that must be kept in mind when evaluating different ROI models especially in an unstable environment as the pharmaceutical industry is increasingly becoming.

4.3b Marketing Mix Analytics Using Analogue Data

The danger of historical analyses is well documented. Because of this, the industry began experimenting with the use of analogue models wherein these types of mathematical calculations are performed not on historical data, but on analogue brands. Typically analogue brands are chosen by finding brands in different therapeutic categories that are facing similar situations around them. Much research has shown that different therapy categories have different drivers influencing physicians to prescribe. By relying on results from analogue brands in different therapy categories, marketers are taking a real risk that the accuracy of the results will be seriously diminished by the difference in drivers for the categories concerned.

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4.4 Internal Marketing Database Tracking Combined With Analytics

In many companies, incomplete data, integration issues, and spotty, less than relevant results have shown that this approach has been suboptimal. In countries such as EU and Japan, doctor level data is simply not available and this renders this approach difficult if not impossible. In fact, new data protection laws in Europe, beginning on 1st April 2007, will be rolled out prohibiting sale or purchase of even brick level physician prescribing data. This means that the process outlined in section 4.5 and section 5 will become the best way for pharmaceutical companies' European offices to measure the prescribing impact of their sales and marketing activities now and moving forward, as well as the best way to target and segment their physician target lists. In countries, such as USA, where the data quality is high, this approach can be very useful in inferring how well certain elements of the marketing mix contributed to bottom line growth.

In cases where the data a company has is well documented and highly organised, applying statistical analysis to this data can clearly illuminate the impact and effectiveness of individual and synergistic activities. This type of analysis is often used in pharmaceutical companies within the US as they have access to high quality granular data. However, even where the data is highly accessible and trackable, it only illuminates how well a campaign did, not how well it will do!

4.5 Predictive Analytics Using Validated Current Market Perception Data

If one wants to really demonstrate strong bottom line growth, there is a need to examine and incorporate all the relevant components possible in a marketing return measurement model -including such constructs as the market environment, customer attitudes, brand and competitor sales and marketing activities, brand sales/market share & econometric models. One system (which is detailed in depth in section 5) collects current up-to-date market data and validates this against all brands in the category *as well as* current national level MAT unit volume market share data, to uncover the underlying real influencers at this point in time. Doctor level and brick level prescribing level prescription data is not required, which makes this approach especially attractive in European markets. The data is then processed with predictive models that include market share data and brand promotional spend data to provide a prediction that has the highest degree of mathematical certainty possible – largely due to taking both validated current customer market data and hard data simultaneously into account. Although this model is not 100% accurate, it has been found in studies examining over ten years of back data, to be sufficiently accurate for measurable brand growth.

4.6 Brand Optimisers

Brand optimising takes the same process described in section 4.5 but conducts it over multiple target groups and in multiple countries to be able to show what target audiences/markets provide best growth opportunities. If a global marketing director is given a marketing budget of $90 million, by using this kind of analysis he/she can know which brands, regions and countries should get what budget for maximum company overall growth. By doing this, serious mismatches between the level of marketing support regions and products are receiving and their potential growth and profit are highlighted.