HOW YOUR BUSINESS WORKS
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Pain and Gain – the ROI of BI

By Todd Saunders

Spend a little time doing a Web search on the return on investment of a business intelligence project. If you have done your own ROI projections before, you'll see the usual approaches: spreadsheets that help you capture and categorize costs and benefits. Fill in the spreadsheets with your own information and voilà, you have a very detailed and specific ROI for your project. And of course, we all know that the return on BI projects is huge! We see success stories everywhere where the ROI on someone else's BI project was 100, 200, 300 percent or more.

Here's a small reminder in case you're a little rusty: The ROI of a project compares the cost of doing the project to the financial benefits that will be achieved by the solution produced by the project. The measurable quantities will be 1) the additional net income (i.e., profit) that can be generated and/or the reduction in costs that will be achieved and 2) the costs of the project. If presenting to a CFO, he or she will ask how much more money will go into the checking account, and how much less money will come out of the checking account (and over what time period). The actual ROI formula is:

$$\text{ROI} = \frac{(\text{Net Financial Gain-Cost})}{\text{Cost}}$$

For example if you invest $500,000 to build a new BI solution and expect $750,000 in profits (or cost savings) as a result (assuming the same time period for both), your ROI is ($750k - $500k) / $500k = 50 percent. That 50 percent is then compared to your company's internal rate of return and to the ROI of other projects being considered in order to determine if the BI project is worth pursuing.

Where's the ROI?

So why aren't you seeing those huge ROI results when you do your calculation? Why are you struggling to come up with what looks like, at the very least, a break-even proposition? The short answer is that the true ROI of a BI project is based on both quantitative and qualitative measures, and the qualitative measures usually dwarf the quantitative measures. Except in rare cases, you will probably not be able to deliver

a satisfying ROI for your BI project based on the quantifiable measures alone.

The main benefits of a BI solution typically have at least one degree of separation from the actual benefit that is realized. That is, a BI solution is usually not going to produce revenue, but it is going to facilitate revenue-producing activities. And a BI solution may not save more money right away compared to your current solution since you have to spend money for new hardware, software, training, etc.

If you ended up drawing the short straw and have been tasked with producing the ROI for the desired BI solution, you will likely find yourself struggling to tie quantifiable benefits directly to the BI solution and likewise will find only minimal concrete savings. However what you will learn in the process will likely convince you that BI solutions can indeed be a great investment that will provide huge returns to your company – just not directly. And it's these lessons that you need to successfully convey to the people who will sign the checks for this project.

Examples of Indirect Benefits

To illustrate what I mean about tying the quantifiable benefits directly to the BI solution, consider the following:

- A company uses its BI solution to discover a large number of existing customers who are likely to upgrade one of the company's products that the customers already own. The BI solution produces the customer list. However, more effort needs to be made to actually get the customers on that list to spend money on the upgrade. The BI solution only produced a list of customers. It did not generate the revenue directly. Is that a quantifiable benefit that can be attributed directly to the BI ROI?

- A health care provider is negotiating a contract with a large company to be the primary care provider for the company's employees who have selected that particular health plan. The health care provider needs to negotiate rates for services. Most of the workers that would be on this plan live in the area. The health care provider has information about their own patients – again, people from the area – so it has a good idea about the health demographics of the people in that area. Or at least they thought they did. To negotiate rates at a competitive yet profitable level, they need to know roughly what mix of patients and ailments they can expect to see. But when they attempt to gather that information about their own patients over the years, they find that they simply can't pull that information together in any kind of reasonable time frame without a time-consuming, herculean effort. So what is the cost of writing a less-than-optimal contract with the large company? How much revenue will the health care provider miss out on because they didn't have a clear picture of what to expect? Should this amount be part of the ROI calculation?
- A telecom executive has a question about how much service is being pushed to competitors' trunk lines. Because they lack a BI solution, several people in the organization need to scramble to find the appropriate data, extract it to a place they can work on it, understand it, integrate it, filter it, apply appropriate business rules to it, aggregate it, summarize it, and finally present the answer back to the executive. A BI solution can greatly cut down on the amount of time and effort to produce reports like that. Should that cost of development be included in the BI ROI? How? Is that a standard process with predictable time commitments? How often does it happen? How precisely can you estimate the cost of the resources? Can fewer report developers be employed if a better solution was in place? And can the telecom actually collect more revenue if they understand this particular process better? And how much do you attribute to the BI solution in your ROI calculation?

What you generally will find as you investigate the costs and benefits of a BI solution is that it's reasonably easy to compile the costs of building a BI solution, but it is harder to find quantifiable benefits that tie directly to the BI solution. The BI solution will help you do a better job of targeting your customer base, but it's the marketing and sales departments that really drive the revenue. The BI solution can show you where you are over-producing slow-selling products, but until someone modifies the product mix strategy, savings can't be realized. The BI solution can help you predict what times of day or weeks of the year to staff more ER doctors, so patients don't get sent to other ERs because no doctors are available to see them, but the hiring and staffing changes need to occur before more patients are seen.

In all these cases, the BI solution provides better information, but it is of little or no value until it is acted upon. That is why it is so difficult to make the case that these benefits should be included in the direct ROI calculation.

What's Missing?

So have I convinced you it is nearly impossible to develop a positive, convincing ROI for BI solutions? Something must be missing in this line of thinking since BI solutions have been widely adopted and are well-established worldwide. Obviously, a lot of companies agree that BI solutions provide a positive ROI. So how have they come to that conclusion, and where are these huge ROIs coming from?

From my experience as a BI consultant, here is how this process usually transpires. First, we are brought in to assess a company and provide a recommendation for a BI solution because the company has recognized a certain amount of pain from not having BI capabilities. We perform the assessment and suggest a solution that will require investment (i.e., spending money for hardware, software, services, training, etc.). When the client sees that they have to spend money, they decide that they need to produce an ROI to justify the solution, just like any other internal project that requires funding. The executives, especially the CFOs, want to know how much money is going to come out of – as well as go into – their pockets as a result of the project. Then the real fun starts.

We can pretty clearly identify the direct costs, but what about the other costs? Should we include a cost for the time it takes to interview business people to gather requirements? If we are running part of the solution on an existing server, do we allocate some cost for that server?

And What About Cost Savings?

The obvious target for cost savings is the number of people doing reporting. Will the solution allow that count to be reduced? And will those people be let go or simply moved to a different job function? If they are moved to a different job function, is that really money going back into the CFO's pocket? Or what if you have BI software sitting on the shelf? Is that part of the cost or is it "free" since it was bought to support another project even though it was never used? And we usually have the need to go through the exercise of determining what to expense and what to capitalize.

Regarding benefits, as mentioned above, it's rare that a BI solution actually generates revenues or profits directly. Most likely, the BI solution is an enabler and facilitator for revenue generating or cost- saving activities, and it is not always easy to convince the executives that that is the case.

Where we have seen the most resistance to BI projects from an ROI point of view has been from large, mature companies that are performing reasonably well from a revenue and profit point of view. They can hit goals fairly regularly just by doing things the way they always have. Until an acute pain arises, it will be tough to move an initiative like BI forward. These types of companies have a high tolerance for the manual efforts required to manage information. They feel like their costs are low – and they probably are, relatively speaking – because they are running very lean IT teams. It will probably require a visionary business unit leader in a company like that to drive a BI solution forward.

So Now What?

You've jumped through all the hoops, talked to lots of people to get the necessary information, restructured your spreadsheet a thousand times and your ROI is still way below where you need it to be.

This is when it is best to go back to the items that got this ball rolling in the first place. Who first recognized the need for a BI solution? What was the business pain that made people think that something needed to be done? Those are the items that most likely will push the approval process across the finish line. For many companies, it usually comes down to spelling out the consequences of not having a BI solution in place: lost revenue opportunities, unhappy workers, conflicting reports, unhappy customers, shrinking market share, technology failures due to data volumes or increasing IT costs.

In some cases, processes may simply break. If data volumes are getting too big for the existing system, daily updates may start failing. If updated information is needed every morning to open retail locations, the impact of not being able to open the store and serve customers is compelling. Not being able to print out accurate bills to mail to customers can be devastating. If competitors are capturing market share because they can remain profitable while lowing prices, not understanding your own pricing structure can be fatal to your business.

The inability to predict in any reasonable way how your various revenue generation channels will perform in the coming years based on historical information can set a company up for missed opportunities or overspending in the wrong areas.

One Final Consideration

When identifying the business drivers, indirect benefits and intangible benefits of a BI solution, you will likely want to stratify them in a way that is meaningful to your company. The highest level of benefit is fixing a key process before it breaks or enabling a new process that has obvious benefits (i.e., a burning platform scenario).

The next level might be facilitating a process that drives revenue, although the amount of such a benefit is uncertain (e.g., providing timelier customer information to the sales force). There will be benefit, but it is not obvious how much to attribute to the BI solution and how much to attribute to market conditions.

Then you try to make it easier for people to do their jobs by providing them better information, leading to improved decision-making. This sounds reasonable but is very hard to quantify.

In summary, you will likely need to put together your quantitative ROI analysis for the BI solution. But the key to moving forward with your BI solution rests with your ability to convey the qualitative benefits. Companies that have reported ROIs in the hundreds of percent have attributed some indirect benefit to their BI solution. The BI solution did not cause the benefit directly but was a key component of the process that did.

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