

CALCULATING BUSINESS PROCESS IMPROVEMENT BENEFITS

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It is often obvious that a particular change in the way we do some work would be beneficial but how to put numbers on the benefits is not always at all obvious. And, without the numbers it may be very difficult to gain approval, especially when a change requires investment – even trivial investment that would pay for itself in a matter of weeks.

This article covers how to calculate benefits to determine the “Bottom Line” effectiveness of a proposal. It includes worksheets and instructions on how to use them. It also deals with the relations between benefit calculations and downsizing. In short we eliminate work not people.

The Bottom Line

Calculating the benefits and costs of the changes is an important part of effective process improvement. Many benefits can be easily stated in dollar amounts. However, some involve intangible factors such as security, good will, morale and legal risk and are usually stated in more general terms.



The dollar calculations involve determining the current costs per year and comparing them with proposed costs per year. These calculations are straightforward and provide reasonable approximations which help management to have an idea of the impact of their decisions. Also, because the calculations are performed separately for each of the recommendations of a proposal, it is possible to let management know how much of the gain is attributed to each of the changes. Occasionally this permits management to tailor their acceptance, or it may help to sell a particularly beneficial recommendation that otherwise would not have won approval.

One of the numbers used in several of these calculations is an estimate of the volume of business for the ensuing year. Since this figure is usually a rough estimate at best, the calculations provide inexact but

never-the-less very helpful guidance. Therefore, in doing these calculations there is no need to split hairs over precise numbers. Rather, it is crucial that the numbers be realistic.

Before introducing the calculations themselves there is one issue that deserves attention. This issue invariably surfaces when calculating savings for labor costs and it is directly related to downsizing. The issue is, whether savings in labor can be accomplished without reducing staff. At face value it would appear that staff reduction is necessary. Fortunately that is not the case.

Are the Benefits that We Calculate Real Dollars?

Time is a treasure. Anything we do that improves our use of time will benefit us. That statement is fundamental. You can count on it. But, it is not always easy to convince some people that a specific change will in fact create a benefit.

Benefit calculations involving labor costs are often disputed on the grounds that the dollars stated are not actually available. The argument usually goes like this. "As long as we are still paying the employee our payroll costs are just as high as they were and there is no saving." This argument continues on to justify the termination of employees in order to realize the savings.

Let us examine this rationale with an example. Suppose in the course of an improvement project we discover that an employee completes a report once a week and it takes him about two hours. Then we discover that the reason for this report ceased to exist a year or so ago and that the report has absolutely no value today. What benefit can we realistically attribute to this discovery? By the argument stated above there would be no benefit. A two-hour reduction in work is not nearly sufficient to discharge an employee. But will the employee continue to complete the report. That would be ridiculous. And, why is it ridiculous? Because, the employee would be wasting his time doing something that has no value. Will there be a benefit if we stop wasting our time?

The answer to that question depends on the quality of the organization. If the employees are enthusiastic and proud of their work there will be almost immediate benefit because the hours freed up will be shifted to activities that have value. In such organizations people continuously strive to do as much as they can as well as they can. These organizations can keep taking advantage of opportunities for improvement constantly. Because they often find improvements that free up their time, they are able to stay abreast of advances in technology. And, their improvement activities reinforce their pride and enthusiasm.

Organizations of this sort exhibit a lot of adult behavior which enables them to adapt easily and embrace change. And, very important, their employees do not feel that they have to pretend to be busy every minute. They work smart and they enjoy it.

However, what about organizations that don't have that enthusiasm and pride? What about organizations made up of people who are turned off and are striving to do as little as they can? These are organizations that exhibit less adult behavior and a lot of immature behavior such as making excuses and posturing. And, of course, they need to look busy all the time.

Even in organizations of this sort the discovery and elimination of wasteful activity can be of benefit. It simply won't be as immediate. Benefits will be achieved over time as the organization gradually changes its attitudes. When we eliminate a wasteful activity we reinforce the adult notion that each person's effort matters and we move a little closer to the healthy organization described above.

But, what if management denies the benefit of eliminating waste unless it is accompanied by staff reduction? By doing so, they clearly establish a corporate attitude that seeks improvement only to reduce payroll. People are treated as an expense to be gotten rid of. Employees associate improving work with losing their jobs and they apply their ingenuity to being busy and avoiding improvement. Thus, management's policy reinforces the unhealthy behaviors of employees just described. In these organizations it is always difficult to find time (time that would be readily available if the attitudes were different). When new demands are placed on the organization, additional people are needed. When technological changes require preparation time and cooperation, neither are available. In their efforts to create short run profits at the expense of their people these organizations alienate their people and risk their future.

The True Benefits of Eliminating Waste

Return on Investment

Whenever we discover that we can eliminate some work or do it faster we free up time that we can use for something else. Let's imagine that we have an employee who is doing valuable work during half of his time but is contributing no value during the other half. If we eliminate the waste and put that time to doing things of value (equal to the valuable work already being done) we double that employee's value to the organization with no increase in cost. The return on investment of that employee's wages is doubled.

Unit Costs

Whenever we eliminate unnecessary details in the work required to perform a task, the cost per unit for that task drops. Let's say that employees typically process twenty transactions each day but there are a number of steps that they currently perform that are found to be unnecessary. We eliminate those steps and the employees now process forty transactions per day. The cost per transaction is halved. When corporations do enough of this type of work they find the spread between their prices and their costs steadily increasing. This also permits them to lower their prices, which helps them to maintain the demand for their output.

Effectiveness and Efficiency

As we organize our efforts, it is best to focus on the effectiveness of our products and services to our customers and the efficiency with which we can supply them. In this way we continuously produce better products and services at lower prices or if we are a government, better services for lower taxes. Organizations that do this well usually don't have to worry about the bottom line. It takes care of itself.

Long Term Rather than Immediate

Think of doubling the business you are now doing with the same staff rather than doing the same business you are now doing with half of the staff.

Think of doing exciting new things that could not have been done a few years ago rather than what you are currently doing. Assume that your business will look very different and be prepared to embrace the changes continuously.

Welcome incremental change, which has a quality like growth. Don't think of change as surgery and replacement.

Treat your employees like a precious asset and when changes disrupt them look out for them. Work to develop your employees. Expect that they will be doing different things down the road and you are going to do all that you can to have them ready.

Assume that turned-on employees will accomplish far more than driven employees.

And, do whatever you can do to make sure that your people never have reason to associate improvement with punishment. If you think loyalty is old-fashioned, rethink. Loyalty and trust cut costs enormously and support live, growing organizations.

Savings

When you calculate benefits and costs, do it as if you expect the freed up time to be made use of effectively and efficiently. Assume that you have good people who will see that it happens. When you do this, you give a positive self-fulfilling prophecy a fighting chance. Of course, if you assume that you don't have that kind of people, the odds are you won't (even though they might well have been). The negative self-fulfilling prophecy works quickly and powerfully.

The calculations described on the following pages permit you to estimate the potential savings of improvement ideas. They represent the costs of doing the work that is eliminated, or the difference between the costs of work as it is currently being done and costs of doing it as we propose. The worksheets are self-explanatory. In addition to the cost work sheets there are also several that state non-dollar benefits, reduced handling, reduced processing time and reduced errors.

Preparing a Draft List of Changes

Calculating benefits and costs begins with preparing a draft list of changes. We do this by examining process charts. The current process is displayed on an "As-Is" chart and the proposed process is displayed on a "To-Be" chart. The person who drew these charts can usually prepare a list of the differences between these charts quite easily.

This list of changes is a draft. The project team rewrites it to produce a list of recommendations that will be presented as a proposal. Here are some sample recommendations:

- Combine the requisition and the purchase order into a single electronic form.
- Eliminate checking operations on purchases under \$100.
- Deliver purchase orders directly to accounting - electronically.

Completing Benefit and Cost Worksheets

The team and the facilitator (who prepared the charts) then analyze the rewritten recommendations using the benefit-and-cost spreadsheets and checklist. When they have completed this effort they add the benefits and costs to each recommendation and total them to determine the "bottom line" of the proposal.

Honest Estimates are Not Guesses

Keep your estimates honest by avoiding guesswork. Don't guess at how long something takes. Use a measurement. You can use a wristwatch to measure the time that it takes you or someone else to do the task. Preferably you should time someone who is familiar with the task. If you cannot time the actual task you can get someone to pantomime it. But, use some form of measurement rather than a guess.

If you don't know how often something occurs, find dependable records or go to the files and create some. You can review records of sales, production, traffic, purchasing, etc. You can take samples. Don't guess.

If you don't know how much something costs, phone or visit and find out. Go to people who know. The key to effective estimates is honesty and the road to honesty is paved with facts. The acid test of honesty is that you can explain your figures.

The recommendations previously given in draft form might appear as follows when revised with benefits and costs.

- Combine the requisition and the purchase order into a single electronic form. Reduces labor costs by \$100,000 and material costs by \$22,500 per year. Eliminates handling 150,000 pieces of paper per year and removes an error source from the process.
- Eliminate checking operations on purchases under \$100. Reduces labor costs by \$166,700. Also eliminates handling 100,000 pieces of paper per year. Reduces processing time on 67% of the purchases by an average of eight hours.
- Deliver accounting copies of purchase orders directly to accounting, electronically. Eliminates handling 150,000 pieces of paper per year. Reduces processing time by an average of six hours.

The Worksheets

There are seven worksheets for calculating benefits and costs. Of these, four are used to calculate dollar benefits and three for non-dollar benefits. Each has detailed instructions printed below the worksheet. If these instructions are followed and the worksheets are used with common sense, useful results can be produced quite easily.

Dollar Worksheets

The four dollar worksheets help us to come up with estimates of the impact of our changes on the costs of people, materials and equipment. There are two worksheets for dealing with equipment because of the difference in costs depending on whether the equipment is purchased or rented.

The Labor Cost Worksheet – Because labor is such a major part of the cost of doing business, this is usually a very important worksheet. The calculations produce increases or decreases in labor costs for the ensuing year that will be a direct result of the changes being recommended. When multiplying by the wage rate, it is fairly common practice to include burden in the amount used to the wages.

The Material Cost Worksheet – Most employees are not aware of the costs of the materials that they work with. Finding out simply requires phone calls. This exercise is not only useful for providing information to assist management with their approval decision, it is also helpful for the employees. It gives them a better idea of the costs involved in their work which helps them to think about it more realistically, like an entrepreneur.

The Equipment Purchase Cost Worksheet – This worksheet produces a simple, straight-line depreciation calculation. It is generally sufficient for improvements where the amount of equipment involved is small. However, where changes involve major equipment acquisition, the team should enlist

the advice of someone familiar with capital acquisition calculations. Other factors such as possible tax advantages, the interest lost on the money tied up and related costs of delivery, installation and maintenance become significant when the purchases are large.

The Rental Cost Worksheet – Equipment may be leased, in which case calculating the costs is more like determining material costs. All that is required is a few phone calls. One side benefit of this worksheet is that the figures will include the amounts that the renting company builds in to cover maintenance. For this reason, a team may occasionally use a rental cost in reporting their benefits and costs even though they intend to purchase. It gives them a conservative estimate.

Non-Dollar Worksheets

The three non-dollar worksheets provide us with estimates of the impact of our changes on paper shuffling and material handling, cycle time and accuracy.

The Material/Paper Handling Worksheet – The dollars associated with material and paper handling will already have been calculated on the Labor Cost Worksheet. The reason for stating the benefits again in this form is to present an image of a different, non-dollar aspect of the change. For instance, when the changes are installed, the offices will be a lot neater because the employees will be handling 800,000 fewer pieces of paper per year, which equates to over 3,000 pieces per day.

The Speed of Processing Worksheet – There are probably more improvement projects motivated by a desire to reduce processing time than any other objective. This worksheet, like the Equipment Purchase Worksheet, provides a simple way of assessing processing time saved. It focuses on two aspects of processing time, delay, which is the waiting time that usually precedes performing a work step and processing time, which is the time it takes to perform the work steps themselves. This worksheet can produce rough estimates of processing time savings. However, it takes a fair amount of common sense to figure processing time realistically in complex procedures. Therefore, on projects where processing time reduction is the primary objective, it is very helpful to prepare a time line of the process. This permits the team to work through the processing time more carefully. It helps them to spot bottlenecks that might not be caught otherwise and it provides a very professional display to help convince management.

The Error Reduction Worksheet – Quality is always important. This worksheet offers two special benefits. The first is that, before completing their project, it gets the team to rethink their improvements in terms of quality and as they do so they often come up with refinements to their ideas that make them better. The second is that it helps to offset a common concern of management that changes to their work processes will cause a lot of confusion and errors. It is encouraging to think that these changes will actually reduce errors.



Benefits Check List

After completing the benefit-and-cost spread sheets, review each recommendation against this checklist. Occasionally one of these items will call attention to an outstanding benefit that deserves to be included in the presentation. Imagination accompanied by a healthy dose of common sense is what it takes.

- ❑ Floor Space – The value of increases or decreases in floor space requirements may be estimated with a per-foot cost. Check with Engineering.
- ❑ Processing time reduction can produce specific benefits such as:
 - ❑ Main mission improvements such as justice in courts, life and health in hospitals, security in military, police, fire, etc., learning in schools, shelf life for perishables, sales revenue from more customers or customers on the books sooner.
 - ❑ Reduction in interest paid.
 - ❑ Reduced inflationary costs.
 - ❑ Reduced discounts lost.
 - ❑ Reduced rental, lease, demurrage payments.
- ❑ Error reduction can produce:
 - ❑ Main mission improvements as above under processing time.
 - ❑ Reduced labor and material cost for correction and disposal.
- ❑ Reduced Legal risk.
- ❑ Comfort/morale.
- ❑ Flexibility.
- ❑ Reduced maintenance.
- ❑ Reduced need for overtime or temporary help.
- ❑ Reduced credit and theft losses.

Most of these items occur as benefits but they may occur as increased costs. Where common sense prevails the balance should always be favorable.

Summary

As mentioned several times in this article, the key to performing these measures effectively is common sense. If we will avoid guesswork and use these tools carefully they will help us to produce realistic estimates of the impact of our ideas. When that impact is large, as it often is, it not only results in the ideas being accepted, it also adds to the enthusiasm and pride of the employees who came up with the ideas.