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## Fact Sheet

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### **Introduction to Total Cost Assessment (TCA)** **by Mike Ukena**

Total Cost Assessment is a decision tool for business. It is designed to provide the data necessary for management to make decisions on capital expenditures as well as operational or procedural changes. TCA differs from traditional approaches to these tasks in that it includes environmental considerations and the costs and savings associated with them as a key part of the equation.

Traditional business financial decision tools focus on the financial impact of a purchase or operational change without considering the environmental aspects. The key points were capital cost, operational cost, interest cost, and return on investment. The trouble with this classic approach is it ignores a key component that every business owner must be concerned with.

TCA requires that the business owner take into account every impact of a change. The purchase of a new machine requires changes by employees. It most likely requires electrical power. It usually requires some plant changes and permitting. It may require changes in the whole plant layout and how to handle the flow of traffic as well as how to allow for the easy access by handicapped employees.

Additionally, environmental issues are a part of almost every purchase or operation that a business conducts. In screen printing, with our need for chemicals (including inks), it is hard to imagine a purchase or change that does not have an environmental impact. Something as simple as buying a machine that uses less electricity than the one it replaces, not only saves operating expenses, it also has a positive environmental impact by saving natural resources.

The following sample list is just a partial example of the items that can be included in the TCA approach to the purchase of a new automatic screen reclaiming system.

1. Cost
2. Cost of financing
3. Permit cost (if necessary)
4. Electrical cost
5. Plumbing cost
6. Productivity improvement savings
7. Chemical savings
8. Employee training
9. Start-up expenses
10. Waste disposal cost
11. Filtration cost

In the classic financial models, only the first six or seven items might be addressed. With TCA the list should include even the smallest item that is impacted by the change/purchase.

### **Added Benefits of TCA**

The side benefit of considering this expanded list is that many of the newly included items actually save money rather than add to the cost. For instance, if a new screen cleaning device cuts down on the volume of hazardous waste, then the cost of hazardous waste disposal will drop. If the new system recycles solvent and uses it over and over rather than just one time, the cost benefits can be very substantial. Now the real side benefit is the reduction in stress on the environment.

Another excellent use of TCA is in calculating the possible benefit of operational and procedural changes in a business. All businesses historically, have used some sort of model to decide on whether or not to buy a new piece of equipment. It is more rare to use such models for small changes such as a procedural change might be. TCA is excellent for these smaller changes too.

An example of a procedural change that might be considered would be the flow of materials through a plant. The original method of handling income shirts may be to take the boxes of shirts directly to a press and lay them out only as needed. A new method being considered may be to open the boxes in a receiving area and lay them out on carts so that they can be wheeled in to position quickly when needed. In addition, a better job of counting can be done away from the pressure of production.

How does this example benefit from TCA? Very simply, this small change would have the following impacts:

1. Improve the quality control by assuring more accurate counts.
2. Improve the quality control by being able to find more damaged garments before they are printed instead of after.
3. Shift the job to lower paid employees (receiving vs. production personnel).
4. Improve production flow and reduce downtime by always having shirts ready to print.

There may be no environmental impact of this change. But it still benefits from TCA by asking the questions that will help the business see if there is a financial benefit for the change.

## **Summary**

TCA creates a disciplined atmosphere in a business in regards to changes. By using the model for procedural changes, operational changes, and not just capital equipment purchases, the business gains a perspective on every possible impact the decision might make. Businesses no longer have the luxury of simply buying a piece of equipment just because it will save money on finished goods. All aspects of the purchase need to be taken into account. In the end, they all have a financial impact on a company anyway. For example, if you do not address an environmental impact of a purchase on the front end, you will have to do it later anyway. TCA helps to make sure that there are no costly surprises later.

## **Software**

Software for calculating TCA already exists. Even better, there is software that has been specifically designed to benefit screen printers. The software is P2/Finance and is available free of charge from the Screenprinting and Graphic Imaging Association (SGIA). It can be downloaded from the Associations web site at [www.sgja.org](http://www.sgja.org).

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