Calculating Savings

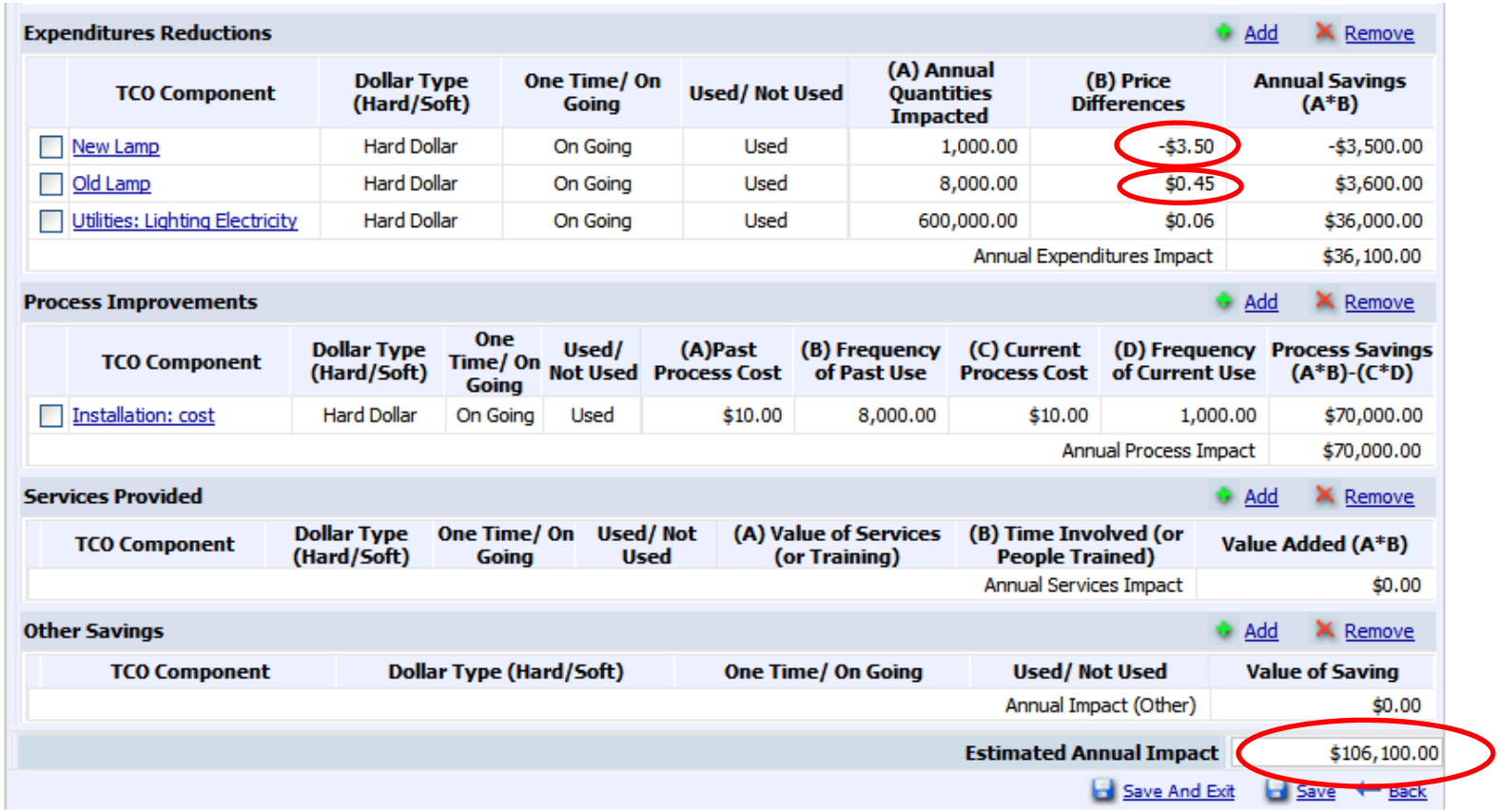
The following example compares two lighting options: the old incandescent lighting most of us grew up with and the new compact florescent that many of us are changing to.

In order to calculate the savings, we need some baseline information. This example looks at an office building, hotel, or plant where incandescent lighting is used.

Question	Answer	UOM
1 What is the unit price of the original product being used?	.45	Dollar Value
1 What is the unit price of the replacement product?	3.50	Dollar Value
2 Need to convert between Watts and Kilowatts, enter: 1,000.	1,000	1,000
2 Need to differentiate the old from the new price, enter: -1.	-1	-1
3 How many sockets are there in the plant?	2,000	Physical Count
3 What does it cost in labor to perform each installation?	10.00	Dollar Value
3 What is the life, in hours, for the new lamp?	8,000	Number of Hours
3 What is the life, in hours, for the old lamp?	1,000	Number of Hours
3 What is the wattage for the new lamp?	25	25 Watts
3 What is the wattage for the old lamp?	100	100 watts
How many days does the plant operate per year?	250	Number of Days
How many hours does the plant operate per day?	16	Number of Hours
What cost does the customer pay for a single kilowatt?	.06	Dollar Value

Please note that the numbers are just examples and may not reflect your costs.
This is just one example of how to measure Total Cost savings.
Note: calculators such as this can be built for any product or service that reduces the customer's total operating costs.

Based on the information of the previous page, this customer would save $106,100 per year for paying $3.50 per light bulb verses the original $0.45.



Expenditures Reductions — Add / Remove

TCO Component	Dollar Type (Hard/Soft)	One Time/ On Going	Used/ Not Used	(A) Annual Quantities Impacted	(B) Price Differences	Annual Savings (A*B)
New Lamp	Hard Dollar	On Going	Used	1,000.00	-$3.50	-$3,500.00
Old Lamp	Hard Dollar	On Going	Used	8,000.00	$0.45	$3,600.00
Utilities: Lighting Electricity	Hard Dollar	On Going	Used	600,000.00	$0.06	$36,000.00
					Annual Expenditures Impact	$36,100.00

Process Improvements — Add / Remove

TCO Component	Dollar Type (Hard/Soft)	One Time/ On Going	Used/ Not Used	(A)Past Process Cost	(B) Frequency of Past Use	(C) Current Process Cost	(D) Frequency of Current Use	Process Savings (A*B)-(C*D)
Installation: cost	Hard Dollar	On Going	Used	$10.00	8,000.00	$10.00	1,000.00	$70,000.00
							Annual Process Impact	$70,000.00

Services Provided — Add / Remove

TCO Component	Dollar Type (Hard/Soft)	One Time/ On Going	Used/ Not Used	(A) Value of Services (or Training)	(B) Time Involved (or People Trained)	Value Added (A*B)
					Annual Services Impact	$0.00

Other Savings — Add / Remove

TCO Component	Dollar Type (Hard/Soft)	One Time/ On Going	Used/ Not Used	Value of Saving
			Annual Impact (Other)	$0.00

Estimated Annual Impact $106,100.00

Save And Exit | Save | Back

How is this savings calculated? By evaluating three cost drivers:

1. Price: while the new product costs more per unit, it lasts longer, requiring fewer units
2. Energy: The new lamp only uses 25 watts versus the 100 watts used by the old lamp
3. Installation or personnel costs: since the new bulb lasts longer (8 times as long) maintenance time can be reduced

So how can you know the savings are real?
In this case, the saving calculations can be followed below:

1. The plant operates for 250 days a year (how many days the lights are on)
2. Multiplied by the hours per day the lights are on (16) and you get the hours per year all the lights are on.
3. Multiply this by 2,000, the number of lights in this building and you get the energy hours consumed per year.
4. If you then multiply this by the difference in wattage (100 vs 25 watts) you get the energy reduction

Formula Box - Expenditures Reductions - Utilities: Lighting Electricity Refresh Formula Save Back

(A) Annual Quantities Impacted

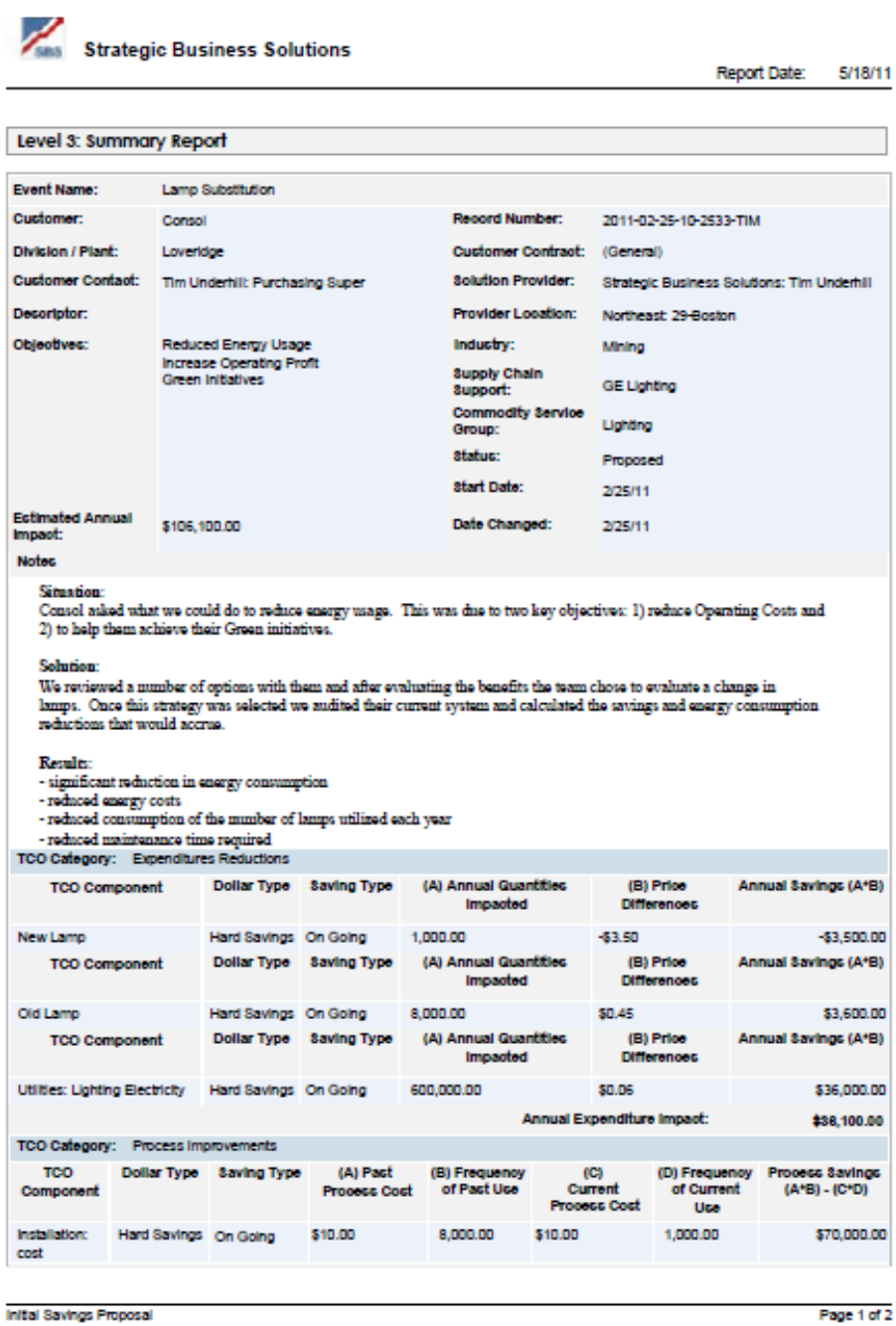
Enter Formula (((250.00*16.00)*2000.00)*(100.00-25.00))/1000.00 Help

Value	Description
250.00	How many days does the plant operate per year?
16.00	How many hours does the plant operate per day?
2000.00	3 How many sockets are there in the plant?
100.00	3 What is the wattage for the old lamp?
25.00	3 What is the wattage for the new lamp?
1000.00	2 Need to convert between Watts and Kilowatts, enter: 1,000.

(B) Price Differences

Enter Formula 0.06 Help

Value	Description
0.06	What cost does the customer pay for a single kilowatt?



Strategic Business Solutions

Report Date: 5/18/11

Level 3: Summary Report

Event Name:	Lamp Substitution		
Customer:	Consol	Record Number:	2011-02-25-10-2533-TIM
Division / Plant:	Loveridge	Customer Contract:	(General)
Customer Contact:	Tim Underhill: Purchasing Super	Solution Provider:	Strategic Business Solutions: Tim Underhill
Descriptor:		Provider Location:	Northeast: 29-Boston
Objectives:	Reduced Energy Usage Increase Operating Profit Green Initiatives	Industry:	Mining
		Supply Chain Support:	GE Lighting
		Commodity Service Group:	Lighting
		Status:	Proposed
		Start Date:	2/25/11
Estimated Annual Impact:	$106,100.00	Date Changed:	2/25/11

Notes

Situation:
Consol asked what we could do to reduce energy usage. This was due to two key objectives: 1) reduce Operating Costs and 2) to help them achieve their Green initiatives.

Solution:
We reviewed a number of options with them and after evaluating the benefits the team chose to evaluate a change in lamps. Once this strategy was selected we audited their current system and calculated the savings and energy consumption reductions that would accrue.

Results:
- significant reduction in energy consumption
- reduced energy costs
- reduced consumption of the number of lamps utilized each year
- reduced maintenance time required

TCO Category: Expenditures Reductions

TCO Component	Dollar Type	Saving Type	(A) Annual Quantities Impacted	(B) Price Differences	Annual Savings (A*B)
New Lamp	Hard Savings	On Going	1,000.00	-$3.50	-$3,500.00
TCO Component	**Dollar Type**	**Saving Type**	**(A) Annual Quantities Impacted**	**(B) Price Differences**	**Annual Savings (A*B)**
Old Lamp	Hard Savings	On Going	8,000.00	$0.45	$3,600.00
TCO Component	**Dollar Type**	**Saving Type**	**(A) Annual Quantities Impacted**	**(B) Price Differences**	**Annual Savings (A*B)**
Utilities: Lighting Electricity	Hard Savings	On Going	600,000.00	$0.06	$36,000.00
				Annual Expenditure Impact:	$38,100.00

TCO Category: Process Improvements

TCO Component	Dollar Type	Saving Type	(A) Past Process Cost	(B) Frequency of Past Use	(C) Current Process Cost	(D) Frequency of Current Use	Process Savings (A*B) - (C*D)
Installation: cost	Hard Savings	On Going	$10.00	8,000.00	$10.00	1,000.00	$70,000.00

Initial Savings Proposal

Page 1 of 2

Add in a write up, and you have a sample report that allows you to discuss the benefits of substituting products.

Not only does this show the potential total cost savings, it also points out why some customer personnel (maintenance and/or operations for example) might want to work with a supplier that offers products and services that cost more, but save them time and other costs.

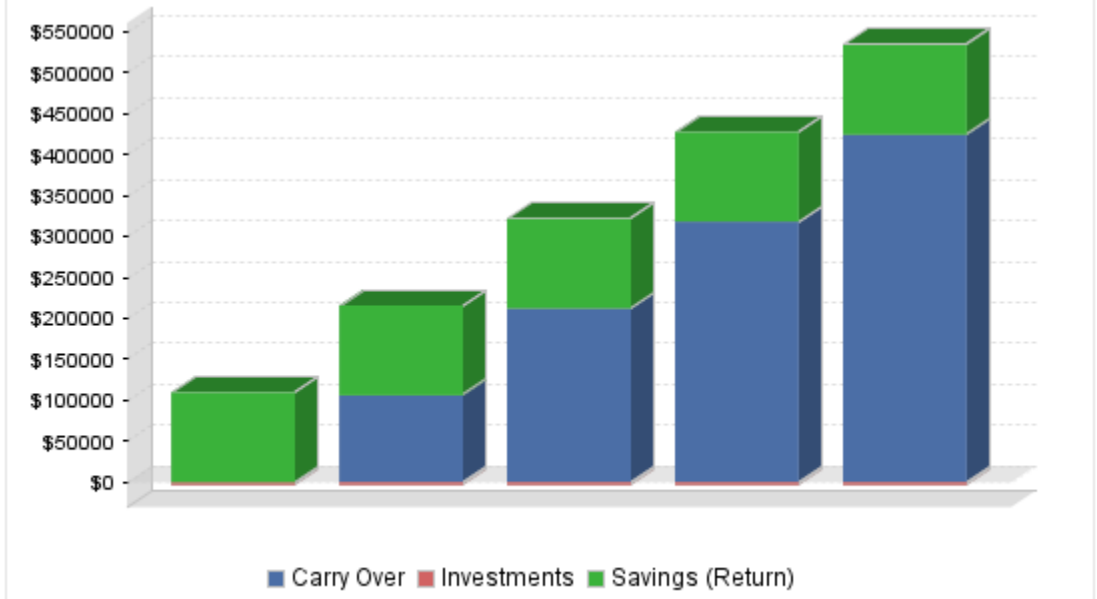
Purchasing: imagine being able to evaluate suppliers on a Total Cost basis, how would having such reports help you hake sound financial purchasing decisions?

Sales: imagine being able to prove you are the lowest total cost supplier. Imagine the competitive advantage it could create.

Now imagine the impact if you could use this to understand the Return on Investment and Payback periods from such products.

Cumulative Yearly Calculation	Feb 2010-11 First Year	Feb 2011-12 Second Year	Feb 2012-13 Third Year	Feb 2013-14 Fourth Year	Feb 2014-15 Fifth Year
Carry Over	$0.00	$106,100.00	$212,200.00	$318,300.00	$424,400.00
Investments	($3,500.00)	($3,500.00)	($3,500.00)	($3,500.00)	($3,500.00)
Savings (Return)	$109,600.00	$109,600.00	$109,600.00	$109,600.00	$109,600.00
Annual Impact (Net Profit)	$106,100.00	$106,100.00	$106,100.00	$106,100.00	$106,100.00
Cumulative Impact (Cumulative Profit)	$106,100.00	$212,200.00	$318,300.00	$424,400.00	$530,500.00
ROI= Annual Impact (Net Profit)/Investment	3,031%	3,031%	3,031%	3,031%	3,031%

Payback Period	Approx. 0 year(s) and 0 month(s)
Cumulative Profit Over a 5 Years Period	$530,500.00



Thank You for Your Time

If you have any questions or comments,
please feel free to contact us.

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