Creating a Purchased Price Index as a Key Performance Indicator

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92nd Annual International Supply Management Conference, May 2007"

Developing and maintaining a Purchased Price Index and comparing it to external indexes are recognized best practices and essential Key Performance Indicators (KPI) to demonstrate Supply Management's value added.

A rather common issue for Supply Management organizations is their desire to provide faster information that clearly shows that they are in fact doing a good job at obtaining best pricing from suppliers. This can be extremely difficult when cost reductions are difficult to obtain and prices are going up because of economic conditions that fall beyond the control of the either buyer or seller. One of the best ways to show Supply Management's pricing performance is to compare the changes in prices paid by the organization to the changes in published Indexes. This article will explain this process by taking the reader through a typical scenario.

For the 1st time since taking over the Supply Management organization you have found that for the 12 month period just completed your prices for purchased materials and services has actually gone up 4 %. This is very disappointing since you have always been able to show a 3 to 5% annual cost reduction. Because of this increase in cost of goods and services your CEO has asked you to come to a meeting to explain to the Executive Board how you can justify your statement that Purchasing is doing a very good job at getting competitive prices for your major commodities. You feel that the best way to respond to the question is to develop a Purchasing Materials/Services Price Index. Developing the index will answer the immediate question and also provide you with a means to continuously support your belief that your Supply Management Operation is World-Class in obtaining best pricing. You will compare the Purchase Price Index that you developed for your organization to the Producer Price Index (PPI) for the same commodities and mix and hopefully show that your department is doing a better job than the industry in general. If not, the comparison will assist you in determining areas in which to focus improvement programs.

From your spend profile you have determined that the entire spend can be represented by the following four listed categories. You have selected for each category a specific part or service that represents well the price movement of the entire category and a PPI series that corresponds to the category selected.

Category	PPI Series	Weighting	Selected Part Number	Starting Price Oct. Year 1	1st Period Price Dec. Year 1	2nd Period Price Mar. Year 2
Category 1	3492 A	20%	A234	200.00	203.00	205.00
Category 2	3498 B	25%	B231	100.00	103.00	106.00
Category 3	2821 C	45%	C214X	150.00	160.00	160.00
Category 4	3571 D	10%	D134	1400.00	1300.00	1360.00

So that you will have some history with which to compare, you have decided to start the Index in October Year 1, which is defined as the Base Date.

You develop a simple spreadsheet application based on the following which results in the Purchased Price Index for each reporting period for the spend profile you have defined.

Index for Parts

Category	Item representing Category	"A" Category Weighting	"B" Starting Base Price	"C" % of Total weighted Base Price Index	"D" Actual Price Period 1	"E" Period 1 Index	"F" Actual Price Period 2	"G" Period 2 Index
1	A234XX	20	200	20.000	203	20.300	205	20.500
2	B231XX	25	100	25.000	103	25.750	106	26.500
3	C214XX	45	150	45.000	160	48.000	160	48.000
4	D134XX	10	1400	10.000	1300	9.286	1360	9.714
		100		100.0		103.336		104.714

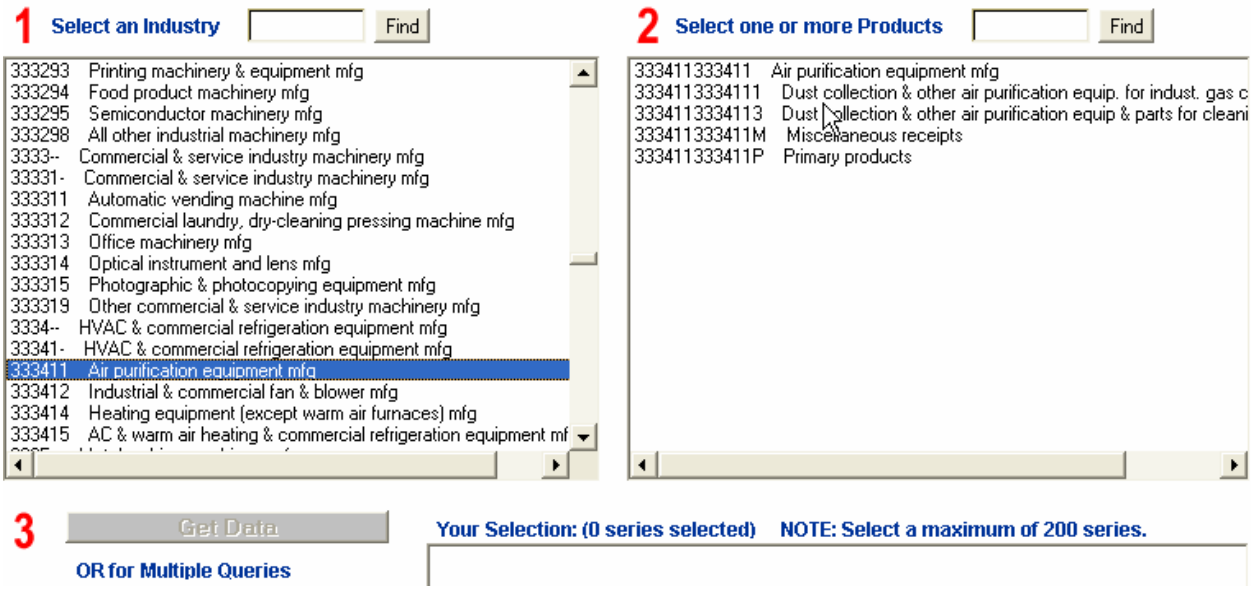
"A"=Weighting of Category as % of Total Spend Being Indexed
"B"= Starting Price of item being tracked to represent Category
"C"=(Starting Price/Starting Price) X "A"
"D"=Price for 1st period to be measured against Starting Price
"E"=(1st Period price/Starting Price) X "A"
"F"=Price for 2nd period to be measured against Starting Price
"G"=(2nd Period Price/Starting Price) X "A"

You now have a Purchase Price Index for the base period and each subsequent period to be measured. Since the index starts at 100 it is simple to see the % change between each period and the base period. In our example prices have increased 4.714% from the base date to the 2nd period. Based on this increase, we could say that the Supply Management Organization is not performing as well as before. But would this be accurate? What if the general economic conditions caused a significant increase in prices for the overall market even grater than that reflected in the Purchase Price Index? In which case, we would say that Supply Management did an excellent job to get better prices than the market increase. Or the opposite might have occurred in that the PPI may have decreased or not increased as much as your Purchase Price index. Then we would have to say that our Supply Management Organization did not do as well as the market place. To tell the whole story of our performance we must therefore compare our Purchase Price Index with the PPI (or any other suitable indexes) for the same mix of items.

We in the United States are extremely fortunate to have Governmental agencies like the Bureau of Labor Statistics that publish online a wealth of economic data. Included in this data is the PPI series that is available at no cost to any one who wants to access it. There are over 6000 industries, commodities and services listed in searchable data series.

Since we want to develop a PPI index showing the changes in PPI for the same periods as our Purchase Price Index we go to the Internet to obtain the actual index for each commodity being tracked. The following are the steps to obtain the PPI for the 1st category defined.

1. We went to the Bureau of Labor Statistics site and selected Producer Price Index Revision-Current Series for Industry, http://data.bls.gov/PDQ/outside.jsp?survey=pc (there is a Current Series for Commodity as well at http://data.bls.gov/PDQ/outside.jsp?survey=wp, but basis for selection are beyond the scope of this article).



2. After selecting the broad Industry for Category 1 in section 1 of the 3-part application, and selecting a more specific sub series in Section 2.
3. Section 3 simply requires us to click on the “Get Data” button.
4. The data screen is displayed and we are requested to select the years for which we are seeking data and the output options which result in the following:

Producer Price Index Revision-Current Series
Series Catalog:
Series ID : PCU3492#
Not Seasonally Adjusted
Industry : Category 1
Product : Category 1
Base Date : 9106
Data:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year 1	126.9	127.2	127.3	127.3	127.3	127.4	127.8	127.9	127.9	128.1	128.0	138.1
Year 2	138.8	139.3	148.1									

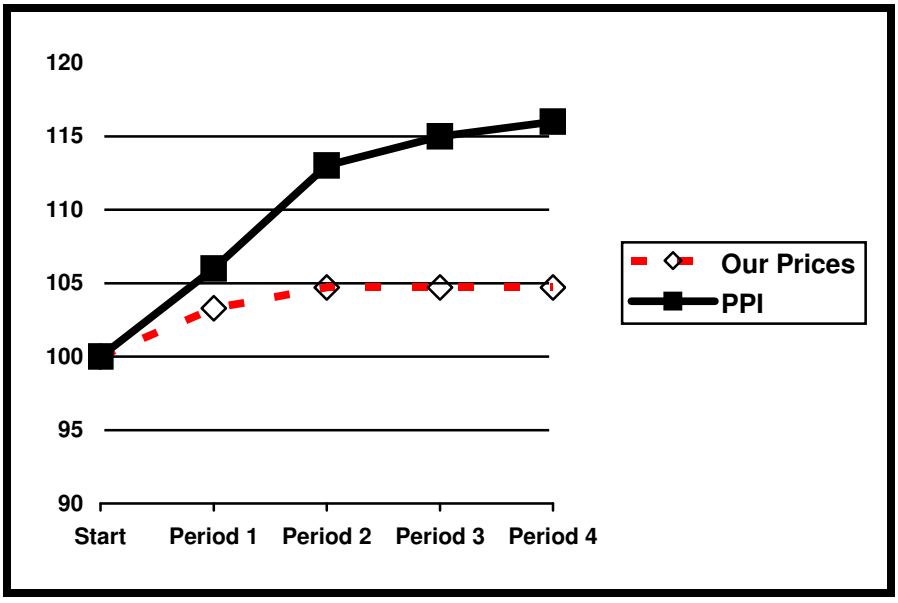
With this data and the PPI indexes collected in the same manner for the remaining categories we can now develop a composite PPI Index that corresponds to the Purchase Price Index we developed for the organization. Again we set up the following simple spreadsheet application:

Index for PPI

Category	PPI # For Category	"A" Category Weighting	"B" Starting Base Index	"C" % of Total weighted Base Index	"D" Actual PPI Period 1	"E" Period 1 Index	"F" Actual PPI Period 2	"G" Period 2 Index
1	3492 A	20	128.1	20.000	138.1	21.561	148.9	23.247
2	3498 B	25	152.2	25.000	158	25.953	165	27.102
3	2821 C	45	166	45.000	180	48.795	190	51.506
4	3571 D	10	65.6	10.000	69	10.518	74	11.280
		100		100.0		106.827		113.136

"A"=Weighting of Category as % of Total Spend Being Indexed
"B"= Starting PPI Index of item being tracked to represent Category
"C"=(Starting PPI/Starting PPI) X "A"
"D"=PPI Index for 1st period to be measured against Starting index
"E"=(1st Period PPI/Starting PPI)X "A"
"F"=PPI Index for 2nd period to be measured against Starting PPI
"G"=(2nd Period PP!/Starting PPI) X "A"

We can now see that the Supply Management Organization was able to hold the price increases as represented by the Purchase Price index for the 2nd period to 4.7% from the base date to the 2nd period while the PPI index developed for the same basket mix shows an increase of 13% during the same period. Our result of holding increases for our organization to well below the general market increases for the same commodities is an indication of good performance by Supply Management. Depicted the comparison graphically gets the information to the decision makers simpler and faster.



This is an example of only one of the many uses of economic data available at no cost from the Internet. Creative professionals have and will continue to apply this data to report and improve Supply Management's performance with meaningful KPIs.