**Program Metrics Tutorial**

**Program Overview**

The cards on the left side of the page show key metrics at a glance, while the grid in the middle summarizes the entire program.

Data visualizations in your report are interactive and dependent.

Clicking on a Business Unit in the grid will filter the cards on the side to display those key metrics for the selected Business Unit. Click the selection again to unfilter.

You can sort the grid by clicking the column header of the column you want to sort by. Click the header again to sort descending.

The **Spend** tab details your product spend for the last 12 months and provides some interesting opportunities for data exploration. Use the slicers on the left side of the page to filter all of the data visualizations on the tab. Hold down the Ctrl key to make multiple selections.

The **Trailing 12 months Product Spend** card gives you at a glance value, sliceable by Business Unit, Site or Item Category.

The **Average Monthly Product Spend** visual compares average monthly spend over the last 12 months to the average monthly spend over the last 3 months and to the total spend over the last 30 days.

Note that the tooltip that pops up when you hover over a visual has additional information. In this case, we see that over the last 30 days we’ve spent <X%> of what we averaged per month over the last 12 months, and <X%> of the monthly average of the last 3 months. If you use the slicer to select a specific Business Unit, the tooltip values will also change to reflect that selection.

**Slicer Navigation**: Selecting items in the slicers can be a little bit persnickety. Clicking “Select All” will, of course, select all items, but… if all items are selected and you click on an individual Business Unit, it actually toggles that Business Unit off. To see just one Business Unit (or site) at a time, uncheck the “Select All” box so that all of the squares are clear and then check the individual Business Unit or site that you wish to filter. Slicer “hierarchies” can be expanded and collapsed by right clicking anywhere within the slicer and select “Expand” or “Collapse” as desired.

The **Product Spend by Month** visual shows product spend month over month for the last 12 months, separated into Replenishment, Spot Buy and Grinding Services spend types.

We’ve included the ability to view your spend data by Major Item Category as well. If you want to look at Cutting Tool spend only, clear the Select All box on the Item Category slicer and then click on the box next to CUTTING TOOLS. You can further drill into subcategories. Click on the down arrow next to Cutting Tools to see the available subcategories. Select or deselect categories as needed to analyze spending on “just solid carbide”, for example. Hold down the ctrl key to make multiple selections. “Solid Car”, “Solid Carbide” and “Carbide Tip”, perhaps. Please note that this information should be considered “pretty darn close estimates.” We’ve spent a significant amount of time data mining and categorizing our item data. As with all data projects, refinement is an ongoing process.

One quite handy feature of data visualizations in our platform is the “**Show as Table**” function.

Click the ellipses in the top right corner of any visual and select “Show as Table” from the pop-up menu. You’ll see a larger version of the visualization itself, along with a table of the data values that are being illustrated. To exit this enlarged version, click the “Back to report” link.

One question that is frequently asked is if we can now port these visualizations to other programs. There is not, unfortunately, an official “Send to PowerPoint” or “Send to Excel” feature to use the chart or graphic in another program. It is on Microsoft’s list of possible future enhancements but there is no estimated release date. In the meantime, you can do screenshots/screen clips, or, you can **export the data to excel** with a few clicks:

Click the ellipses in the top right corner of your visual and select “Export Data”.
Summarized Data is the only option we currently have.
Choose between Excel .xlsx file or comma separated .csv file.
Click the Export button.
Save your file and then go open it.

The data that is exported is in an unpivoted format. It is likely that anyone who really needs the data in Excel already knows how to do a pivot table. The way the data is formatted in the export makes it fairly intuitive once you click “Insert Pivot Table” in Excel.

The **Scope Spend by Month** visualization illustrates how much of the product spend for the last 12 months is in scope and out of scope.

If you would like to see any visualization larger, but without a data table, click the “**Focus Mode**” button in the top right corner. The “Back to report” link returns you to the main report tab.

The next two visuals on the Spend tab are the **Top N lists**. The reason we use the N is that you can choose how many items you’d like to see on your list. Click the left arrow in the top right corner of the report page to expand the Filters Pane and then click the Top N Items (or Top N Suppliers) visualization. Click the down arrow on the Item Number filter and type the number of items you’d like to see in the appropriate box. Click “Apply Filter” to adjust the visualization. Close the filter pane with the same arrow that is now pointing right. Now you could go to focus mode to review the list, or export the data to excel to use in other places.

The final visualization on the Spend tab is the **Total Product Sales by Major Category** tree map, showing you the visual breakdown of product dollars across item categories. Clicking on one of the categories in the tree map cross-filters the other spend data visualizations, with the proportion of that category’s data highlighted and the remainder greyed out. Clicking the same category on the tree map removes the cross filtering.

The next tab in the Program Metrics report is the **Inventory** tab.

The **EOM Inventory** card is the value of inventory held for this site at the end of each month. We take a snapshot on the last day of the month and use that dataset in each months’ inventory calculations.

**Current Inventory Turns** is the number of times inventory turns over in a year, calculated against the most recent month’s inventory. The formula for turns is: the last 6 months of replenishment COGS, annualized, divided by the most recent month’s (current) inventory value. Our goal is an industry standard 4 turns.

The **Inventory Turns by Month & Year** shows month over month progress toward the turns goal.

The **Aged Inventory %** card displays what % of inventory is aged in the way our contract describes aged. There are sometimes clauses in program contracts that require us to use something other than just the amount of time an item has been in inventory to consider the item “aged”, so while we may have purchased an item 12 months ago and our standard definition of aged means “Over 12 months”, we may have separate contractual terms for different types of items. The **Aged Inventory %** card, and the **Aged According to Contract** visualization show the dollar amounts of aged inventory in the specifically defined contract terms. They are not, as yet, linked to items. So, while the other visualizations on the Inventory tab can be sliced by Business Unit, Site, Item Category and Lead Time Bucket, the Aged According to Contract visualization cannot. That enhancement is planned for the future.

The **Inventory Value** visual shows chronological aging and value of inventory (not contractual aging.) The age is calculated from the date of receipt of the item to the date of the inventory snapshot, which is on the last day of each month.

The **Top N lists** are sliceable and exportable just like on the previous Spend tab. One thing to note is that, although the Aged According to Contract visual is not linked to items, as we discussed earlier, the **Top N Aged Items in Inventory** list can be a nice approximation. It uses a chronological aging of “over 12 months” and is sliceable by all on page slicers.

The **Inventory Value by Major Category** visual details the category makeup of the most recent month’s inventory.

**Lead Time Bucket slicing**: Some inventory metrics are more effectively analyzed when item lead time is taken into consideration. Inventory turns, for example, should be higher for shorter lead time items. It may be impossible to turn an item over 4 times a year if it takes 6 months to receive the item. Using the **LT Bucket** (Lead Time Bucket) slicer, you can analyze your inventory by fast turn around time items (less than 30 days), 30-90 day items and over 90 day items. All visuals are filtered by the LT Bucket slicer except the Aged Inventory % card and the Aged According to Contract chart.

The slicers all work in conjunction with one another, so if you want to see “Fast turn around cutting tools for Aerostructures”, you can apply the appropriate filters and be able to see all of the inventory information using those parameters (except the aged according to contract). Top N visuals are also filtered by the slicers so you can export lists of just about anything you want to mine. Handily, the exported data file includes detailed (if ugly) notes about the filters you’ve applied so that you don’t have to try to remember just how far down the slicer rabbit hole you’d gone.

The slicers sync across all pages of the entire report, so take care that you’ve readjusted your slicers if you need to take a higher-level view of the data.

The **Cost Savings** tab details actual program savings by business unit and site.

The **YTD Savings** card shows the EBIT “eligible” savings (those that count toward our cost savings guarantee), while the **YTD Avoidance** card shows the amount of cost avoidance. In other words, the additional savings that does not count toward the savings guarantee.

The **Savings %** and **Savings % Goal** cards illustrate current progress toward the contractual cost savings guarantee.

The **Cumulative Cost Savings** visualization shows a month by month illustration of savings and avoidance amounts (the columns) and the savings guarantee (the orange line.)

The **Savings % Goal and YTD Savings % by Month and Year** visualization illustrates the realized savings % compared to the savings guarantee %, to help monitor the trend of our progress toward the goal.

The **Top N lists** and **YTD Savings by Major Category** tree map function on this tab as they do on the other tabs. Many times, a savings project is not associated with a specific item, so the Major Category may not be available to display – leading sometimes to a high value of “blank” item categories.

In some cases, data visualizations can be personalized If you would rather see the tree map as a donut chart, click the **Personalize** button in the top right of the tree map and then select “Donut Chart” from the visualization menu as the visualization type. There are a lot of things you CAN do in the personalize menu, but not all of them SHOULD be done. For example, while you CAN turn the YTD Hard Savings by Major Category into a line chart… it doesn’t make much sense to do so.

To clear a personalization, click the eraser button. To close the personalization box, click the X.

Personalization changes are “one time use only” actions and will go away when the page is refreshed. So if you should accidentally “break” something – just refresh and no one will ever know.

The **YTD** tab simply has year to date (instead of trailing 12 month) versions of the visualizations on other tabs.

The **YTD Product Spend Summary** and the **YTD Cost Savings Summary** tabs are two user requested tabs built, really, for data export. Remember that the exported data will have to be “re-pivoted” in Excel. Building the pivot table from the exported data should be quite intuitive.

The **Scope Spend** tab was also user requested and displays details about product spend from a scope perspective.

The platform and the data model are designed to be quite flexible. We are happy to modify to facilitate any needed data analysis.