# EXCEL ‹‹‹‹‹‹

By Bill Jelen

# Charting Bad Data with Paste Special Links

This is a story about dealing with bad data on a daily basis. One person in my Power Excel seminar showed up with a budgeting template sent to him by corporate headquarters. The document included five years of monthly budget data stretching across the worksheet. It included 47 projects, each of which had multiple line items. This was a dynamic document. His team at the manufacturing plant was constantly adjusting numbers in the document and then needed to produce a stacked area chart showing only specific rows, like Manhours or Budget, from the spreadsheet. (See Figure 1.)

This worksheet represents a typical bad data situation. You are one division of a large multinational corporation that has dozens of divisions. All divisions are expected to use the same format. Every month, a new version of the document arrives from headquarters. You're expected to communicate changes back to headquarters by returning the workbook in the original for-

mat. You didn't create this format and are forced to live with the format.

The data analyst dealing with this workbook is stuck in the middle between the corporate office who created the format and the 47 project managers who constantly update their forecasts. You can imagine the daily flow of changes to this document. As a 10% increase in Project 17 puts the division over budget, small cuts ripple through other projects. The analyst has to constantly make updates and summarize them in a series of charts.

**Figure 1**

| | A | B | C | D | BJ |
|---|---|---|---|---|---|
| 1 | Type | Project | Jan 2015 | Feb 2015 | Dec 2019 |
| 2 | Manhours | Project 1 | 20000 | 1886 | 1791 |
| 3 | Labor Cost | Project 1 | 1292 | 1349 | 2143 |
| 4 | Budget | Project 1 | 1789 | 1704 | 1852 |
| 5 | Actuals | Project 1 | 1215 | 1958 | 1719 |
| 6 | Type 5 | Project 1 | 1553 | 1467 | 1824 |
| 7 | Total | Project 1 | 1864 | 1118 | 1673 |
| 8 | Comment 1 | Project 1 | Several lines of comments | | |
| 9 | Comment 2 | Project 1 | Another comment | | |
| 10 | Comment 3 | Project 1 | These could go on and on | | |
| 11 | | Project 1 | | | |
| 12 | Manhours | Project 2 | 1286 | 1845 | 1606 |
| 527 | Manhours | Project 47 | 1089 | 1733 | 1713 |
| 528 | Labor Cost | Project 47 | 1765 | 1528 | 1504 |
| 535 | Comment 1 | Project 47 | Only 1 comment for this project | | |
| 536 | | Project 47 | | | |

As an aside, the clutter of the stacked area chart showing 60 months of data made it difficult to figure out exactly what was going on. Yet by looking at the top line of the stacked area chart, it was possible to see if manpower exceeded available resources.

## Alternatives for Making a Series of Charts

As I considered different solutions to this problem, my first thought was a macro to read through the data set and then copy the appropriate rows from the main sheet into three temporary sheets. The first temporary sheet would include only the Manhour rows. You could run the macro, have three new data sets, and create the charts from those data sets.

Another alternative if you're using Excel 2010 or Excel 2013 Pro Plus would be to create a new data set using Power Query. This data cleansing tool from Microsoft would be able to filter only the rows with "Manhours" in column A. As changes are made to the origi-

nal document, you would have to open each of the three Power Query workbooks and refresh the data set. The advantage of Power Query is that the charts would always remain in the Power Query workbooks. Once the data is refreshed, you're ready to print a new chart. Unfortunately, this multinational corporation was still using Excel 2007, which means Power Query wasn't an option.

A number of people in the seminar suggested a pivot table. While I agree the pivot table would allow for quick filtering of the rows to show only Manhours or Budget, the hassle of dragging 60 monthly fields to the Values area made the setup for this alternative take too long.

Another solution is to temporarily filter the data set to show only Manhours. Select visible cells using Home, Find & Select, Go To Special, then create the chart. While this chart initially looks great, the chart data will disappear as you move on to create the Budget chart. Once you change the filter to show Budget instead of Manhours, the data used to create the Manhours chart is hidden, and the original chart become an empty box of white space.
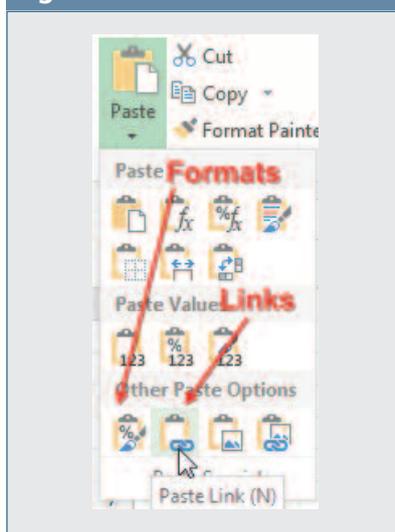
**Figure 2**



**Figure 3**



## Filter and Paste Links

The solution needed to be quick to set up, and it had to provide a live set of formulas to pull the data from the main data worksheet into the charting worksheets.

Here are the set-up steps that must be repeated each time you get a new

document from the corporate office:

1. Select cells A1:A536.
2. Use Data, Filter to have the Filter dropdown appear on column A.
3. Use the filter dropdown in column A to show only the Manhours rows.
4. Select cells B2:BJ537.
5. Copy the data.
6. Insert a new worksheet
7. On the Home tab, open the Paste dropdown and choose Paste Link (see Figure 2).
8. On the Home tab, choose Paste Formats.
9. Repeat steps 3-8 for Budget.
10. Create charts from the new worksheets.

The innovation in this process is the Paste Link in step 7. It creates a set of live formulas that point back to the original data set (Figure 3). Any changes made to the original data are instantly reflected in the chart data and also in the charts. **SF**

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