*A Mariner White Paper*

**

**Tableau versus Power Pivot:**

**Introductory Analysis**

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# Abstract

The purpose of this white paper is to compare two of the leading tools for Self-Service BI, Tableau and Power Pivot. There seems to be a stigma around these tools saying that Tableau is a visualization tool and Power Pivot is a data modeling tool. Is this really true? That’s what we’re here to find out. This type of examination was done about three years ago.  Click [here](http://sqlmag.com/blog/microsoft-powerpivot-vs-tableau) if you would like to read it.   Many of the flaws listed for Tableau have been worked out in the newer releases, while Power Pivot has not gotten the same treatment.  This is a major issue when comparing purchased products to free products.  However, our examination is from the user's perspective.  This means that current and future functionality must be considered, as well as pricing.

In this paper, we will examine the following types of tasks in these tools, Time Intelligence, Data Cleansing, Mapping, and Data Modeling. If you are in a rush, the results can be found in the Results section. However, if you are serious about examining these two products, then you should definitely take the time to read this. Don’t be overwhelmed by the page numbers. We are examining two very visual tools from a user’s perspective. Therefore, there are a lot of pictures. We welcome you to join us as we get to the bottom of this question, once and for all.

This is the third white paper in the series. If you haven’t read the first one, it can be found at <INSERT LINK HERE>. If you haven’t read the second one, it can be found at <INSERT LINK HERE>. We hope you enjoy these examinations!

# Time Intelligence

In this section, we will talk about utilizing Time Intelligence within both of these tools.  Time Intelligence is probably the most common category of KPIs.  Everybody wants to know how they compared against last year, last quarter, the last three months, etc.  For this reason, both of these tools have built-in functionality for these calculations.  However, we will limit this investigation to the introductory problems, as we are calling them.  In subsequent white papers, we will get into the more complex Time Intelligence situations.  As usual, we will use the Superstore Sales sample data set from Tableau.

**Category 1: Three Month Moving Average**

The moving average is arguably the most common time intelligence calculation.  Let's see how Power Pivot handles it.

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|  |
| Three Month Moving Average of Sales (Power Pivot) |

We won't go into a long explanation of this procedure.  If you are interested, a colleague of ours, [Javier Guillen](http://www.linkedin.com/in/javierguillen), wrote a nice blog post about it [here](http://javierguillen.wordpress.com/2011/09/13/calculating-moving-averages-in-powerpivot-dax/).  This calculated field leverages the time intelligence functions DATESBETWEEN(), FIRSTDATE(), LASTDATE(), and PARALLELPERIOD().  Unfortunately, there is no built-in function for moving averages in Power Pivot.  There's likely a way to get Excel to do this instead of using Power Pivot.  However, that would add another level of complexity to this calculation.  Also, it would be more difficult to get that data in Power View if you wanted to use it in a chart.  Alas, we have wandered.  Let's check out our final values.

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|  |
| Three Month Moving Average of Sales by Month (Power Pivot) |

These values look good.  This calculation seems to work exactly how we wanted it to.  The major downside is the complexity of the calculation.  Next, let's check out Tableau.

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|  |
| Three Month Moving Average of Sales (Tableau) |

This function is one of the many "Quick Table Calculations" within Tableau.  We reached this menu in four clicks, which makes this far easier than Power Pivot.  Also, this is a menu-driven process with no coding involved.  That's a huge plus in our book.  For more information about "Quick Table Calculations" check out the second white paper on this topic.  Let's see how the output looks.

|  |
| --- |
|  |
| Three Month Moving Average of Sales by Month (Tableau) |

These are the same numbers we saw in Power Pivot, albeit in 30 seconds as opposed to 5 minutes.  This is a no-brainer.

*Winner: Tableau*

**Category 2: Year over Year Growth**

Year over Year Growth, also known as "This Year vs. Last Year % Δ", is one of the other extremely common KPIs.  Let's see how Power Pivot handles it.

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| --- |
|  |
| Year over Year Growth (Power Pivot) |

This calculation is significantly less complex than the previous one.  It leverages the SAMEPERIODLASTYEAR() function which is designed to do exactly this.  The main thing that we didn't like was the fact that this calculation returned errors for the first year.  Therefore, we had to wrap in an IFERROR() function.  All in all, this was not a complex task.  Let's check out the results.

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|  |
| Year over Year Growth by Month, Year (Power Pivot) |

These values look reasonable.  Next, let's compare it to Tableau.

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|  |
| Year over Year Growth (Tableau) |

Once again, a Quick Table Calculation saves the day.  In fact, we didn't have to use any other menus this time.  All we did was click a few times and the answer popped right out at us.  Let's check out the results.

|  |
| --- |
|  |
| Year over Year Growth by Month, Year (Tableau) |

These values are the same as the ones we got from Power Pivot.  This example is exactly like the last one.  Tableau edged out Power Pivot again because of its easy-to-use Quick Table Calculations.

*Winner: Tableau*

**Category 3: Three Month Forecast**

This is a bit of a bonus category for us.  Forecasting is a newer feature that isn't present in many tools.  For quite some time, it's been a feature for the Mathematicians and Statisticians.  However, it's becoming more and more common for business users to try for themselves.  Let's see how Power Pivot handles this.

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|  |
| Forecast (Power Pivot) |

We could not find a built-in way for Power Pivot to do any forecasting.  However, Excel has some very powerful trend lines that can be used to forecast future values.  Our issue is that it requires a significant amount of statistical knowledge to create good forecasts using this system.  Another downside is that the range for this chart is hardcoded.  This makes updating the chart more complex.  Now, let's see how Tableau fares.

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|  |
| Forecast (Tableau) |

Not only can Tableau's trend lines do pretty much everything that Excel's trend lines can do, except for forecasting, but Tableau 8 has a new forecasting algorithm that uses advanced statistical procedures to account for trend and seasonality.  This would be much more than a menu-based task if we attempted it in Excel.  Once again, this is an easy decision.

*Winner: Tableau*

**Section Summary**

Power Pivot has some very powerful Time Intelligence that allow the user to create virtually any calculation they want.  However, they do not have many built-in calculations for the more common calculations.  On the other hand, Tableau lacks the Time Intelligence functions, but has "Quick Table Calculations" which cover the majority of the KPIs you would find.  Also, Power Pivot was completely unable to offer a reusable forecasting algorithm.  Tableau's algorithm is in its early stages, but is still very useful.  The bottom line is this: If Tableau's Quick Table Calculations can handle your KPIs, then Power Pivot can't compete.  If your KPIs are more advanced than that, then perhaps Power Pivot's functions can help you out.

# Data Cleansing

In this section, we will talk about Data Cleansing.  In short, data cleansing is the process by which you take raw data from a source and prepare it for end-user consumption.  Source data can come in all sorts of unusual formats.  The first step of the analytical process is to make sure that your data is "clean", as it is being called.  As usual, we will use the Superstore Sales sample data set in Tableau, as well as a table from Wikipedia.

**Category 1: Inconsistent Text Labels**

This is an extremely common problem when combining data from disparate sources or sources with poorly regulated user entry.  In this example, we have taken the State names in our data set and changed some of them to the 2 letter abbreviation.  For example, some rows will say California, while other rows will say CA.  We want all of these rows to be categorized under the same state.  How do we do this?  First, let's see what the data looks like.

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|  |
| Sales by State (Dirty) (Power Pivot) |

As you can see, we need some way to collapse these varying state names into the proper categories.  In order to do this, we need to create a table that maps CA and California to California, FL and Florida to Florida, and so on.

|  |
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|  |
| State Dimension |

Now, let's see what Power Pivot can do with this.

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|  |
| Joining States to Orders (Power Pivot) |

Technically, this is a dimension because it links directly to our Orders Table.  However, in a true Star Schema, this table would link to the State Dimension.  The process of adding dimension tables onto dimension tables is called Snowflaking.  Finally, let's check out the results.

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| --- |
|  |
| Sales by State (Clean) (Power Pivot) |

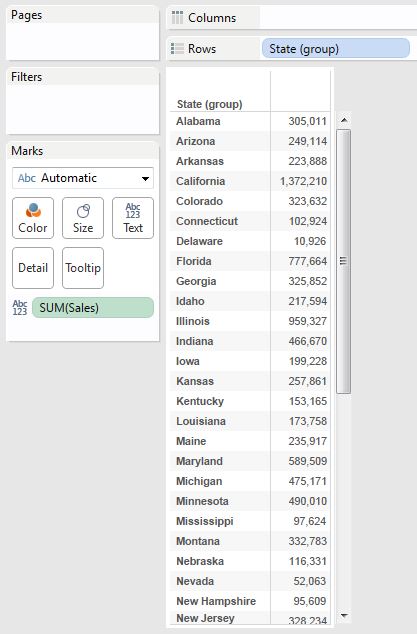
We simply use the clean states instead of the dirty ones, and Power Pivot takes care of the rest.  As you can see, there are no abbreviated states in the table on the right.  Now, let's try this in Tableau.

|  |
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|  |
| Sales by State (Dirty) (Tableau) |

Tableau has a neat feature called “Grouping” that allows us to collapse dimension values. Let’s see how it works.

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|  |
| Group Members (Tableau) |

This was as simple as right-clicking. Now, all we have to do is repeat this for all of the violations. We also have to rename each group because it will call them “CA & California”, “FL & Florida”, etc. Finally, let’s see the results.



Sales by State (Clean) (Tableau)

We can see that these are the same values we saw using Power Pivot, which is a very good thing.

The Power Pivot portion of this exercise required us to create an entirely new table with every value in it, then map each one to its “Clean” value. On the other hand, Tableau made us sort through the list CTRL-Clicking every value we need, then grouping them individually. So, if we only need to change a couple of values, then Tableau would be the quicker option. However, if we needed to change a lot of values, then Power Pivot would become the easier way. Therefore, we are forced to call this one a tie.

*Winner: Tie*

**Category 2: Pivoting**

We often see data that is in a reporting style tabular format with measures across the columns.  However, there are some times when you think that data would be better represented as a single measure with an added dimension.  This is called pivoting.  Let's look at the following table headings from a data set from Wikipedia.

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|  |
| Crime Table Headings |

As you can see, there are 7 different types of crimes listed here.  However, in its current format, how would you aggregate certain types of crimes?  For instance, how would you get the total number of crimes?  You would have to individually type the names of every single column, then sum that total.  Heaven forbid you try to do something complex such as a standard deviation of all crimes.  That would be a nightmare to create.

So, what we really want to do is pivot these crimes into two columns,

“Crime” and “Cases / 100k”, which is the unit of measure of these columns.  We could possibly do this with Excel.  However, it would be a somewhat complicated task.  Therefore, we are going to introduce another free add-in for Excel 2013 called Power Query.  Power Query specializes in data transformation and manipulation.

You might say "Why are you talking about Power Query in a Tableau vs. Power Pivot examination?"  Well, Power Query is part of Microsoft's Power BI toolkit, which includes Power Pivot, Power View, and Power Map.  It's also a free tool for use with Excel 2013 and is great for handling these types of issues.  Now, let's see how we would do this.

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| Unpivoting Crimes |

We simply select all the crime columns, right-click, and select "Unpivot Columns."  Power Query does the rest of the work for us.  After a little more cleaning, such as changing column names and types, we have the following:

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|  |
| Crime (Pivoted) (Power Query) |

If you look on the right side of the window, you can see a list of steps we took.  We can backtrack any number of steps if we wanted to.  We could also save this query and run it again at a later time.  Now, this data set is now ready for use in our tools.  When we want to save this table, we can save it either as an Excel table, or we can send it directly to our Power Pivot model.

On the other front, there is a similar add-in for Excel that comes from the Tableau community.  It is commonly known as the Tableau Data Shaping Tool.  Its basic premise is to take a "Report-Style" data set and turn it into a "Table-Style" data set.  It has three basic features.  First, it can pivot.

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|  |
| Pivot Data (Tableau Data Shaping Tool) |

It can copy data from a pivot table, with no formatting, which can be done via Paste Values.  Lastly, it can fill down, which can be immensely helpful

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| Fill Down (Tableau Data Shaping Tool) |

As you can see, this tool is useful, yet very rudimentary in its design.  It is no match for the shaping power of Power Query.  But, since neither of these tools play any significant amount of favoritism towards Tableau or Power Pivot, we cannot declare a winner.  We recommend downloading both of these add-ins because they can be extremely useful at times.

**Section Summary**

For some of the basic data cleansing procedures, such as typecasting and collapsing dimension values (the procedure in the first section), Power Pivot and Tableau are about equal.  However, once your needs get more advanced, it is advised that you look for a more powerful tool, such as Power Query.

# Mapping

In this section, we will talk about mapping in these tools.  Mapping is extremely important because it allows the user to see geographic patterns that may be missed if you were to use a more traditional chart type, such as a bar graph.  We will use a variety of sources in this post to illustrate the effective use of each of these types of charts.  For those of you that read our first paper on this topic, you will remember that Power Pivot does not have any built-in mapping capability.  We also showed that Power View's mapping is somewhat lack-luster.  Therefore, we will introduce the final piece of Microsoft's "Power BI" toolkit, Power Map.  Power Map, formerly GeoFlow, is a new add-in for Excel 2013 that allows users to map their data in a variety of different ways.  The question remains, "How does it compare to Tableau?"  Let's find out.

**Map 1: Choropleth**

A Choropleth, a.k.a. Filled Map, is a map that is separated into distinct regions, where each region is colored according to a numeric value.  So, let's look at Profit by State, using our Superstore Sales sample data set from Tableau.  First up is Power Map.

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| --- |
|  |
| Choropleth (Power Map) |

As you can see, this map looks pretty good.  Power Map automatically connected to the underlying Power Pivot source, which could have been a big hassle.  Our big concern is that we had to look individually at 8 different background themes to get one that didn't overshadow the data.  On this same note, the map is filled with only one color, which would make analyses on something like profit somewhat more difficult.  Next, let's see how Tableau does.

|  |
| --- |
|  |
| Choropleth (Tableau) |

Tableau seems much cleaner to us.  The color scheme is much better for this case, primarily because Montana had a negative value, which we never saw in the Power Map version.  As far as ease of use goes, Tableau was simply a drag-and-drop experience, while Power Map forced us to look through a bunch of different styles before we found one that looked decent.  We will give Power Map one advantage in that its maps look more interesting because of all of the texture and whatnot you can see in the background. However, this type of information is purely for aesthetics and is slightly detrimental due to the fact that it slightly overshadows the data. Therefore, we have to give this one to Tableau.

*Winner: Tableau*

**Map 2: Heat Map**

A Heat Map is a map that is not separated into distinct categories, yet is colored by how many values appear close to each location.  It is very good for finding "hot spots" among countable data.  So, let's look at [John Snow](http://en.wikipedia.org/wiki/John_Snow_(physician))'s Cholera data.  For those of who have never heard of this map, it is arguably one of the most influential maps of all time.  Feel free to Google it if you are curious.  First, let's see how Power Map handles it.

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| --- |
|  |
| Heat Map (Power Map) |

This map looks really nice.  We can easily see where the deaths occurred and identify a couple of hot spots.  The default color scheme is also very nice as well.  This map did take a little bit of tinkering to get right, but it was well worth it.  Let's see what Tableau can offer up.

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|  |
| Heat Map? (Tableau) |

To our knowledge, Tableau does have any built-in functionality for a geographic heat map.  The best we could come up with is the circle approach seen above, which really isn't much better than what Power View could have done.  It still shows us the hot spots, but not as clearly as the Power Map version.  We also cannot easily distinguish when there are multiple sets of moderate values in close proximity.  This map wasn't too difficult to create, but it utterly fails in comparison to an actual heat map.

*Winner: Power Map*

**Map 3: Journey Map**

A "Journey Map" as we are calling is a map depicting the time-based travels of a person or thing.  It is great for seeing how efficient your shipping methods are or any other type of analyses surrounding that type of data.  In order to show this, we will use Napoleon's March to Moscow.  This is another very famous set of mapping data that depicts the catastrophic defeat Napoleon suffered when trying to march on Russia, originally created by [Charles Joseph Minard](http://en.wikipedia.org/wiki/Charles_Joseph_Minard).  We thought that this map would be great for examining the true mapping power of these tools.  This data, and the Tableau workbook used for this exercise, were originally compiled and created by Kim Rees of Information Aesthetics.  You can view her work on their [website](http://infosthetics.com/archives/2010/06/review_big_three_online_viz_tool_benchmark.html) and on [Tableau Public](http://www.tableausoftware.com/public/blog/2010/06/mindard-visualization-napoleon-march).  Now, let's see how Power Map handles this.

|  |
| --- |
|  |
| Journey Map (Power Map) |

We tried to find any way at all of connecting these circles and we came up empty.  So, this is the best we could get from Power Map.  If we were inclined, we could replicate each of the rows in the data while slowly moving the locations so that we could fake a line.  However, that's quite a bit of work that’s just not worth the effort.  This map is ok.  It shows a general trend of the circles getting smaller as Napoleon marches to and from Russia.  Alas, the lack of a line pretty much ruins this graph's analytical capabilities.  Next, let's see what Tableau can do.

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|  |
| Journey Map (Tableau) |

This map is so much more intuitive that the Power Map version.  We will concede that this map did take a little bit of Tableau knowledge to create.  However, the results are well worth it.  We can easily see how Napoleon was losing more and more troops as his journey went on.  Also, we removed the two branching routes from this view because they made the Power Map chart even harder to read.  This is what the original map looked like.

|  |
| --- |
|  |
| Napoleon's March on Moscow (Tableau) |

It's pretty easy to see that Power Map is not very good at creating this type of map.

*Winner: Tableau*

**Bonus!**

Both Tableau and Power Map have the ability to create maps that change at regular time intervals.  These time intervals could be very short or quite long, it's up to the user.  Power Map's timing feature requires a datetime field to be present in your cube, whereas Tableau can work on any discrete field.  On the other hand, Tableau only has 3 speed settings while Power Map lets you explicitly define the duration of the show.  To be honest, we've never seen a situation where either of these features were put to good analytical use.  They are great features for "WOW"ing an audience, but not much more than that.  Also, Power Map has the ability to save virtual demos of your map as video files, which can be shared with other people.  Nevertheless, we chose not to let these features impact our experiment.

It should be noted that Tableau uses a static geocoding source, whereas Power Map can pull its geocoding directly off of Bing Maps.  Moreover, Tableau does allow the user to create custom geographic dimensions.  You can supply Tableau with the dimension values, latitudes and longitudes.  Then, you can use that geographic dimension on any chart you want.

A curious reader questioned whether or not a security risk is posed when Power Map queries Bing Maps for the mapping information.  Is any of the data left vulnerable?  Could a clever snooper intercept this?  We cannot say for sure, but it’s definitely worth thinking about.

**Section Summary**

We saw that Tableau beat Power Map in its ability to create Filled Maps because of its cleaner aesthetics.  However, Power Map fought back by creating a truly inspiring Heat Map that Tableau was unable to replicate.  Finally, Tableau showed its true colors by creating a Journey Map that Power Map could not compete with.

# Data Modeling

In this section, we will talk about Data Modeling.  These models will be slightly more advanced than the models we saw in the first white paper on this topic. However, these are all tasks that a business analyst would face in the real world.  For this examination, step into the shoes of an analyst working at a bank.  We will use two mock-up data sets during this analysis.

**Model 1: Fact Tables of Different Granularity**

We have a list of transactions per customer as well as a list of closing balances for those customers.  Let's take a look at these data sets.

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| Transactions |

|  |
| --- |
|  |
| Closing Balances (Multiple Fact Tables) |

Now, your job is to make sure that these numbers add up.  Therefore, you need a way to combine the fact tables to do your analysis.  Let's see how Power Pivot would handle this.

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|  |
| Multiple Fact Tables with Different Granularities (Power Pivot) |

It is important to note that every dimension we want to slice by needs its own table in the model. Therefore, we were forced to create a Month Year dimension as well as a Date dimension.  This was an extremely important decision and the model would fail without it.

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|  |
| Closing Balance by Account and Month Year (Power Pivot) |

Closing Balance was extremely easy because the fact table already existed at this granularity.  We simply used the pivot table to display the data we already had.  However, getting the totals and subtotals to calculate correctly is a much more complex task that will be handled in a subsequent white paper.  For now, we simply chose to hide them.  Now, we need to create a calculation that adds up our transactions in order to compare them to the closing balances.

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|  |
| Closing Balance (Transactions) (Power Pivot) |

Needless to say, this is not a beginner's calculation.  It requires knowledge of filter context and row context, as well as how context propagates across calculates.  At the heart of this calculation is the idea that we need add up all the credits for a month and subtract all the debits for a month.  The rest is just syntax.  Now, let's see if they add up.

|  |
| --- |
|  |
| Closing Balances by Account and Month Year (Power Pivot) |

As you can see, the numbers match perfectly and your boss is now very happy.  Next, let's see how Tableau would handle this.

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| --- |
|  |
| Credit Amount and Debit Amount by Account and Month Year (Tableau) |

As always with Tableau, we need to create our canvas first.  In this case, we want to use Account by Month, just like in Power Pivot.  Now, we need to create our calculation.

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|  |
| Running Sum of Credit (Tableau) |

This calculation is probably the simplest of all table calculations.  All we need to do is add up the credits for this month and all previous months, aka a running sum.

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| Running Sum of Credit by Account and Month Year (Tableau) |

The only caveat here is that we need to set the "Compute Using" to Pane.  This allows the calculation to reset for each Account.  Next, we can repeat this process for the debits. Finally, we calculate our balance by subtracting our two running sums.

|  |
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|  |
| Balance (Tableau) |
|  |
| Balance by Account and Month Year (Tableau) |

As you can see, these are the same values we got in Power Pivot.  Now, we need to add Closing Balance to this sheet.

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|  |
| Balance and Closing Balance by Account and Month Year (Incorrect) (Tableau) |

As you can see, the closing balances are blending properly across Account (which exists in both tables) but not across MY(Date) (which doesn't exist in the closing balance table).  So, we need to tell Tableau that it can blend MY(Date) with Month Year.

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|  |
| Edit Relationships (Tableau) |

In the data menu, we can go to "Edit Relationships."  This menu will allow us to tell Tableau how to blend across data sources. Next, we need to tell Tableau that it can blend MY(Date) with Month Year.

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| --- |
|  |
| Blend MY with Month Year (Tableau) |
|  |
| Balance and Closing Balance by Account and Month Year (Correct) (Tableau) |

Finally, we need to make sure that the connections are being used.  We can tell by looking at the Orange chain links in the Dimensions Shelf.  We can see that the balances are in fact the same and we have kept our job.

Completing this task in Power Pivot took an advanced knowledge of DAX calculations.  A beginner would have significant trouble with accomplishing this.  In fact, we had so much trouble with it that we had to consult our colleague for assistance.  Tableau, on the other hand, took only a beginner's knowledge of table calculations and how to edit a relationship.  Any intermediate user should be able to complete this task without much trouble.  Therefore, we can make our decision with ease.

*Winner: Tableau*

Many thanks to our colleague, [Javier Guillen](http://www.linkedin.com/in/javierguillen), for helping us with the Power Pivot portion of this model.

**Model 2: Many-to-Many (M2M) Relationship**

The M2M relationship is one of the more complex modeling scenarios you will find.  It seems to pop up in almost every scenario and each case is different.  We will limit this model to a very simple M2M scenario.  We have closing balances for 3 accounts.

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|  |
| Closing Balances (Many-to-Many Relationship) |

We also have a list of customers linked to each account.

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|  |
| Customers by Account |

As you can see, some of these accounts are joint accounts that have multiple customers linked to them.  To make it even worse, John has 2 accounts, one of each type.  So, why is this a problem?

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| Naive Many-to-Many Relationship |

As you can see, if you naively join these tables, the totals will be off because some of the balances will be duplicated.  This is the epitome of the M2M relationship.  So, how would you fix these totals?  Let's try it in Power Pivot first.

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| Many-to-Many Relationship (Power Pivot) |

The most important part of any Power Pivot analysis is the model.  In this case, we can see that the Customer dimension isn't even connected to the fact table.  This is the issue we have to overcome.  A very interesting blog post was written on this topic and can be found [here](http://gbrueckl.wordpress.com/2012/05/08/resolving-many-to-many-relationships-leveraging-dax-cross-table-filtering/).  Let's see the resulting calculation.

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|  |
| Closing Balance (Proper) (Power Pivot) |

As you can see, this calculation is only one line of code.  You wrap your aggregation in a CALCULATE() statement and tell it to use the bridge table.  Power Pivot magically takes care of the rest.  Well, it's not magic, but it sure seems like it the first time you see it.  Let's see how our chart turned out.

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|  |
| Closing Balance by Account and Customer (Power Pivot) |

All of the totals add up correctly, now we can do our analysis on this data without having to worry about duplicates.  Power Pivot even gives us an error (the yellow box above the field list) letting us know that we have tricked it into doing our bidding.  Next, let's move on to Tableau.

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|  |
| Customers by Account (Tableau) |

We start by pulling Account and Customer from the bridge table.

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| --- |
|  |
| Closing Balance by Account and Customer (Tableau) |

Then, we simply drag Closing Balance onto the chart and the blending takes care of the rest.  Frankly, we work with Tableau every day and were still amazed that blending handled this situation so easily.  This one was an easy decision.

*Winner: Tableau*

**Section Summary**

First, we saw that rolling up account balances is not a trivial task in either of these tools.  However, Tableau showed us how its blending mechanic can help out in these situations.  Then, we saw that Power Pivot and Tableau were very strong at resolving Many-to-Many relationship.  However, Tableau edged out Power Pivot because of the simplicity of data blending.

# Results

This examination turned out pretty well. Here are the results:

|  |  |  |  |
| --- | --- | --- | --- |
| **Time Intelligence** | **Tableau** | **Power Pivot** | **Tie** |
| Three Month Moving Average  Year-over-Year Growth  Three Month Forecast | X  X  X |  |  |
| **Data Cleansing** |  |  |  |
| Inconsistent Text Labels |  |  | X |
| Pivoting |  |  |  |
| **Mapping** |  |  |  |
| Choropleth  Heat Map  Journey Map | X  X | X |  |
| **Data Modeling** |  |  |  |
| Fact Tables of Different Granularity | X |  |  |
| Many-to-Many Relationship | X |  |  |

The above table makes one thing very clear. This is Tableau’s niche. Introductory analysis is precisely what this tool was made to do. Most simple analyses are nothing more than a click away in Tableau. That’s not to say that Power Pivot isn’t useful. We’re simply saying that Power Pivot’s true potential shines with more complex analyses that require true data modeling. If you want to see some of these complex analyses, stay tuned to our blog. Thanks for reading.

# About the Author

|  |  |
| --- | --- |
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