

An Evaluation of No-Cost Business Intelligence Tools



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Business Intelligence (BI) can be [defined](#) as "a set of techniques and tools for the acquisition and transformation of raw data into meaningful and useful information." Every organization uses data to make informed decisions. Getting access to data to make fact-based decisions can be self-service or via your IT department.

Self Service BI vs IT Centric BI

Do you need a refresher on the difference between traditional BI tools and modern BI tools? [Read our blog](https://www.excella.com/insights/self-service-or-it-managed-bi-tools-what-you-need-to-know) to learn more (<https://www.excella.com/insights/self-service-or-it-managed-bi-tools-what-you-need-to-know>).

The key to success with self-service analytics is that the data is clean, complete, and accessible. There are many benefits in engaging IT to provide best practice, centralized, and automated data integration in order to enable the optimal user experience with a data discovery tool.

Why Not Excel?

Many companies still use Excel as their primary BI tool. The main reasons are familiarity and the cost. However, there are disadvantages to using Excel as your sole tool to analyze data.

- a. **Scalability** – Excel is a single user experience. With a BI tool, you can post the report(s) on a server and have many people view a report at once in a collaborative environment.
- b. **Manual Data Manipulations** – Modern BI tools make it fast to group data and assign new alias names. Excel often requires manual data entry to enable the same functions.
- c. **Maps are Difficult** – Displaying data on a map in Excel is much harder than the one-click options in some BI tools.
- d. **Limited Interactive Capabilities** – Excel charts tend to be static and you need to create multiple versions. BI tools offer many more options to slice and dice data from a single chart view (and then save or export the results).
- e. **Visualization Options** – Modern BI tools offer many more professional looking chart and map options than standard Excel.

Trying a BI Tool

Some BI vendors offer free versions of BI tools that allow you to explore options beyond Excel. At Excella we often get asked if there are free BI Tool options, so we decided to try out some of the options available today. The contenders were:



Microsoft Power BI (desktop version)



Pentaho Report Designer (version 6.0)



Qlik Sense (desktop version)



TIBCO Jaspersoft Open Studio (version 6.2)

Note: We tried to include Amazon QuickSight in our evaluation. We are an AWS partner and this is our preferred cloud solution. Upon contacting Amazon we were told the QuickSight tool is being rolled out slowly and we were put on a waiting list and told to expect a 1-2 month wait. As soon as we get access, we'll evaluate this tool using the same criteria and see how it matches up.

Evaluation Results

We captured results across multiple categories and summarized them here. We also included some screenshots and a summary of the pros and cons of each tool to help guide you on your journey.



Installation				
Available in both Windows and Mac	●	●	●	●
Easy to download and install	●	●	●	●
User Interface				
Web based interface option	●	●	●	●
Intuitive layout	●	●	●	●
Ease of Connecting to Data				
Ability to connect to files as data sources (e.g., Excel, CSV, XML)	●	●	●	●
Native connection to various databases (e.g., Oracle, SQL Server, Netezza)	●	●	●	●



Data Blending Capabilities				
Ability to blend data from multiple sources within the tool	●	●	●	●
Graphic Ability				
Provides bar, line, pie, area, radar chart types	●	●	●	●
Ability to create maps out of the box	●	●	●	●
Data Filters & Drilldown				
Has drop-downs, search filters, and slicers	●	●	●	●
Ability to drill down from summarized data	●	●	●	●
Data Manipulation				
Ability to create custom fields	●	●	●	●
Ability to assign aliases for display purposes	●	●	●	●
Ability to create hierarchy to allow for grouping or summarizing data	●	●	●	●
Mobility				
Allows user to interact with reports/dashboards through mobile devices	●	●	●	●
Security				
Provides user role based security (create, modify, publish, read)	●	●	●	●
Sharing/Storage				
Visualizations can be easily shared with other users	●	●	●	●
Has a cloud component that allows users to share content with others	●	●	●	●
Has a server component for report/dashboard distribution	●	●	●	●
Print & Export				
Allows user to print visualizations	●	●	●	●
Export reports to text, PDF, Excel, or other formats	●	●	●	●
Training & Support				
Has sufficient tutorials and documentation	●	●	●	●
Provides good user support	●	●	●	●
Web Capabilities				
Visualizations can be embedded in a webpage	●	●	●	●

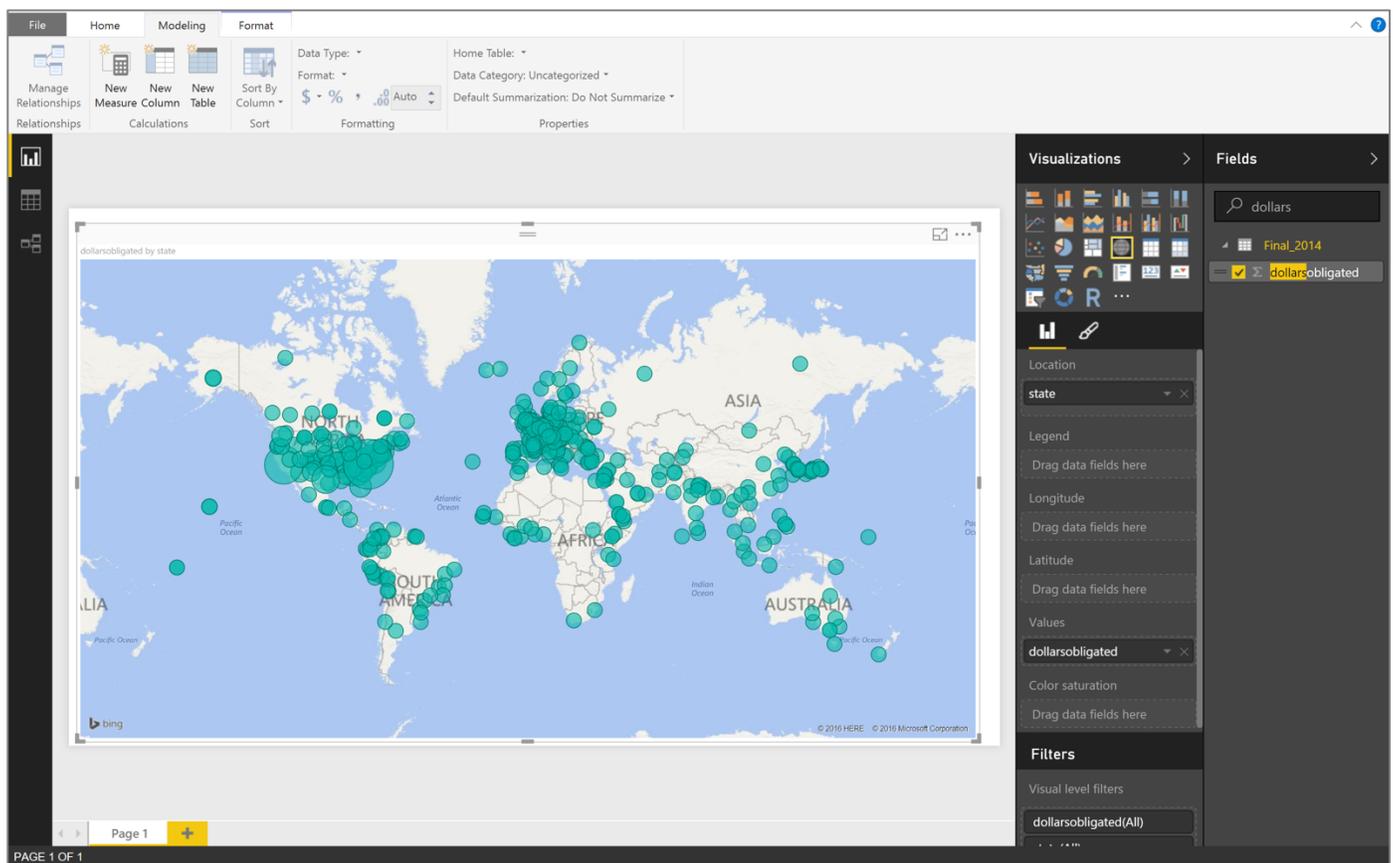
Tool Summaries



Power BI is a tool that allows non-technical users to perform the kinds of analytics previously reserved for technical specialists or IT departments. An analyst can connect to any data source and quickly summarize findings into a simple report. For more advanced users, custom analytics measures can be developed using Microsoft's DAX query language (which has a learning curve similar to Excel's built-in formula language). For anyone who is comfortable building models/spreadsheets/using basic calculations in Excel – they will easily be able to adapt and make the transition to Power BI.

Things to watch for:

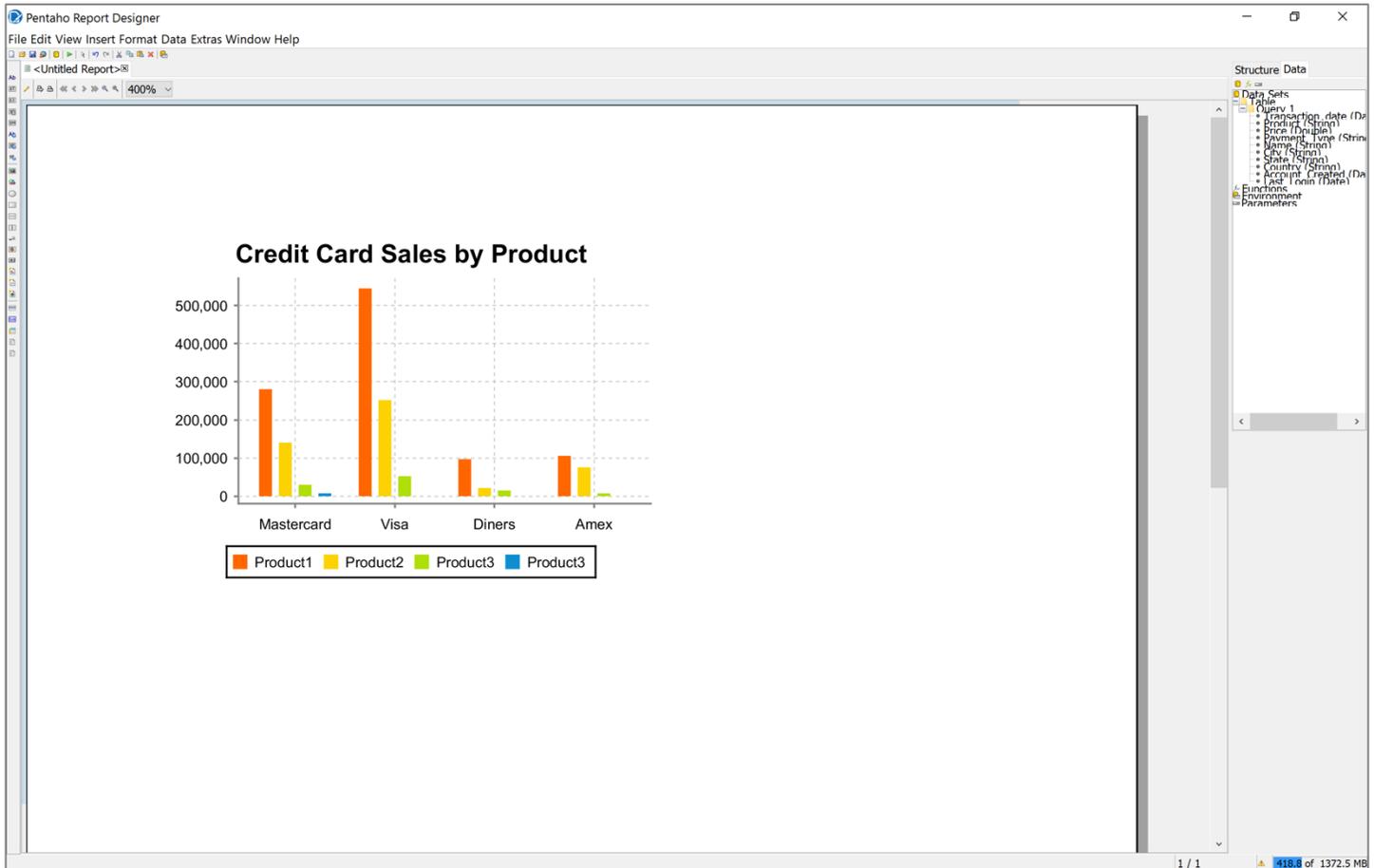
- The desktop version only works on Windows.
- The Cloud version (PowerBI 365) does not have some of the same functions - for example, you cannot blend data sources in PowerBI 365.



A tool intended for developers. As a stand-alone reporting tool, it is good for list reports where all of your calculations are already done (at the database level). For someone who isn't really technical or who hasn't used Pentaho before, there is a steep learning curve to be able to build more complicated and powerful reports. If you use other tools in the Pentaho Suite, it can be more of a powerful reporting tool if incorporated with Pentaho Kettle and Pentaho BA Server.

Things to watch for:

- This is not an intuitive tool for BI beginners.
- Recommended use is with other components within the Pentaho Suite as an integrated reporting solution.

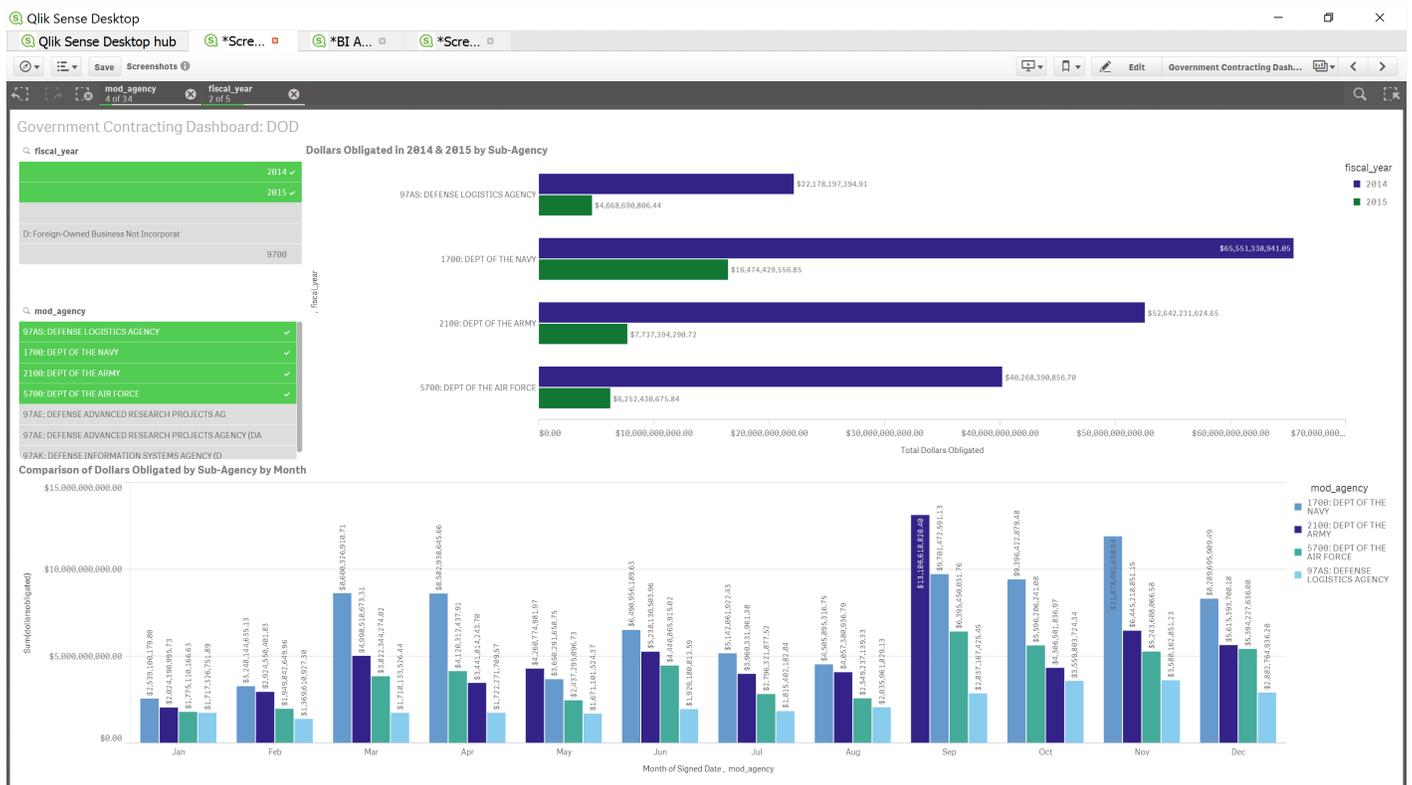




Qlik Sense Desktop is a free, self-service BI tool that enables both technical and non-technical business users to easily import data and create simple visualizations. While free, the tool has many features comparable to those of paid BI tools. The tool allows users to create and share dashboards (called 'apps') easily via QlikCloud (qlikcloud.com) - a free cloud/server component that allows users to import and share their apps online. As for the data connections, users can download and install available connector packages (basically ODBC drivers) to connect to various databases like Oracle, SQL Server, IBM DB2, etc. The tool scored high marks in most test areas listed in the evaluation matrix, and it is a strong contender for organizations that are looking for a free tool for internal use.

Things to watch for:

- Sharing content via QlikCloud has a small space limit of 250MB for each user account.
- Data uploaded to QlikCloud is stored in the Cloud and not locally.



While Jaspersoft Open Studio boasts a variety of features, included but not limited to a bevy of chart and visualization options, easy mobile viewing, and simple report exporting, it fails to deliver these in a user friendly interface. Jaspersoft is a program created for developers, by developers, and is very difficult for non-technical users to learn. For example, any logic to create a calculated field or even a simple label on a bar graph must be done using Java commands. When importing data sets, you must define which fields you'd like to group before you build. When building reports, the user must constantly click over to the "Preview" tab to see what they've created because the building page only gives you a view of what the template looks like. While Open Studio has the potential to create dynamic visualizations, it's barrier to entry is high for non-technical users.

Things to watch for:

- Not recommended for non-technical users due to Java code required when creating calculated fields.

The screenshot shows the 'Chart Wizard' dialog box, specifically the 'Chart Data Configuration' tab. The dialog is titled 'Configure how data are used by your chart'. It features a central bar chart with three data series: 'First' (red), 'Second' (blue), and 'Third' (green). The x-axis is labeled 'Category' and has eight categories: 'One', 'Two', 'Three', 'Four', 'Five', 'Six', 'Seven', and 'Eight'. The y-axis is labeled 'Value' and ranges from 0 to 8. The chart shows varying values for each series across the categories. For example, in category 'One', the values are approximately 1 for 'First', 5 for 'Second', and 4 for 'Third'. In category 'Eight', the values are approximately 8 for 'First', 1 for 'Second', and 3 for 'Third'. The legend below the chart identifies the series: 'First' (red square), 'Second' (blue square), and 'Third' (green square). The 'Series' dropdown is set to '"SERIES 1"'. The 'Value' field contains the expression '\$F{dollarsobligated}'. The 'Label' field contains the expression '\$F{vendorname}'. The 'Dataset' dropdown is set to '[Main Dataset]'. Below the chart, there are fields for 'Increment on' (set to 'None') and 'Reset on' (set to 'Report'). At the bottom of the dialog, there are buttons for '< Back', 'Next >', 'Cancel', and 'Finish'.

Final Thoughts

Pentaho and Jaspersoft offer powerful features, yet we found them more challenging to learn and concluded that these tools would be more suitable for IT-led solutions. Conversely, both Power BI and Qlik Sense are intuitive and allow users to import and blend data, then create and share visualizations easily.

While both Power BI and Qlik Sense offer similar features and both have Cloud options, Qlik Sense edges out PowerBI because of its excellent information for learning online and larger online user community. The latter is invaluable when you need help and aren't paying for support from a vendor.

We'd love to hear about your experiences with these tools and maybe there are others out there you think we should evaluate. Contact us and tell us what you think!

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