

Comparison of Data Analysis Tools

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# Introduction

Data analysis tools are software programs that help a person or business collect, analyse, and visualise data. Data in this context can mean any piece of information that is collected in vast amounts, for things like sales, statistics, marketing, security, or business performance (Indeed Editorial team, 2023). As a data analyst, the primary focus is to utilise these tools to analyse vast quantities of data in an insightful and meaningful way, in order to assist in making important business decisions and help the business progress toward better performance overall.

Analytics itself is not just down to sales figures or profit margins. Analytics incorporates itself into every facet of a businesses functions. This means that, unless growth is not a part of your main focus, data analytics is a requirement of all businesses regardless of size, function, speciality, or focus (Domo, n.d).

# Microsoft Excel

While it is true that pretty much every company uses data analytics as a core function of growth, a lot of smaller companies and even those who just have a knack for data input will know about Microsoft Excel.

Microsoft Excel is an application that is part of a suite of tools that help everyday people input information in meaningful ways. It is available on almost any device and can be utilised for so many different things. Someone has even gotten a basic doom-like representation to run in Excel (Connor, 2020)!

The versatility of Excel is a major reason why most employees have some form of exposure with the application. Some functions include basic calculations, data analysis, and easy data entry all laid out in a way to easily separate data items into useful rows and columns. Its this easy use that it is touted as the everyday data collection application. However, it does have its drawbacks and limitations, primarily that unless you’re a student or teacher, the applications are not free; and, depending on the level of freedom you need with it, mainly windows/Mac only or usage across multiple devices, these can have a one off or subscription cost respectively (Rayome & McAuliffe, 2023).

Another drawback, particularly important for those with data analytics as a career in mind, is that Microsoft Excel has limitations with both data storage volumes and visualisations. Sure, Excel is great for small businesses needs, however, because of its flat file storage, it can only store around 1 million rows of data and, while this may seem like more than anyone needs, you’ll find that outside of a small family business, data requirements can be easily 10 times more than this (GoDataDrive.com, 2023). Similarly, functionality takes a hit with the relatively steep learning curve required to manipulate data, which can involve graphing, formulaic expressions and data proofing, especially for those not experienced with spreadsheet applications.

# Tableau

In basic terms Tableau is to Microsoft Excel what Paintshop Pro is to MS paint. Where data analytics and manipulation is concerned, Tableau is a massive step ahead in taking massive amounts of raw data and converting it into a wide array of interactive graphs and charts that can easily be understood no matter which boardroom of CEO’s you are presenting to. The main goal of Tableau is to ensure that no matter your position within the business, you can understand the data that is being presented before you without knowledge of the system it is built on.

This type of data visualisation tool helps a business of any size interpret data sets in an insightful and meaningful way, which hopefully in turn helps every business section perform better, which will lead to growth in future.

Tableau does this in a few different ways: Firstly, it takes a data set and converts it in visually appealing ways, allowing the analyst to better understand their data. Secondly, because of the visualisation capabilities of Tableau, analysts gain a more intricate and profound understanding of the datasets, better able to see trends, relationships, and patterns within the data (DCruz, 2020). Finally, another key ability of Tableau is its collaboration tools and scalability, allowing multiple users access to the same data sets and allowing datasets to be taken from multiple different data formats. This means better productivity and performance in bigger companies and from bigger teams (GoDataDrive.com, 2023).

# PowerBI

If we are going to continue with the comparative analogies, PowerBI is to Tableau as Netflix is to Disney+. Both are popular among data analysts in their own right. Both are also very capable with large datasets. Both focus on providing meaningful insdights into data using easy to view visualisations. Essentially, like Netflix & Disney+, both do very similar things from a very similar function base, however there are a few key differences.

Because of PowerBI’s parent company Microsoft’s hold over a lot of widely used software, PowerBI works much better with Microsofts other suite of apps including SQL Server and Excel. Also because of this, its pricing structure is a lot more affordable than Tableau, especially if you are a teacher or a student. On top of this, PowerBI uses an ‘extract, transform, load’ (ETL) function for data insertion and data modelling. This provides much better data cleaning functions without requiring too much hardware performance. This is the primary reason PowerBI is quickly growing as the tool of choice for data analytics and manipulation, despite being released in 2014 (as opposed to Tableau’s 2003 inception) (Biswal, 2023).

# Conclusion

Where the wider Information Technology landscape is concerned, more often than not a newer product is usually created to provide functionality that is otherwise missing from the landscape. This is usually the driving force behind better technology, and better integration and functionality. While there is not much difference in base functionality between Tableau and Power BI, it goes without saying that Microsoft’s suite of software applications are better tailored to interconnect in a more interactive way.

While all three applications have their power- users and supporters, in business, at home, or to render doom-like applications on, Power BI is a tool that takes the base functionality of tableau and provides the support, tools, functions and interconnectedness that only a (arguably) monopoly can provide. Because of these reasons (and more) I believe Power BI is one of the most functionally important application tools in a Data Analysts toolkit.

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