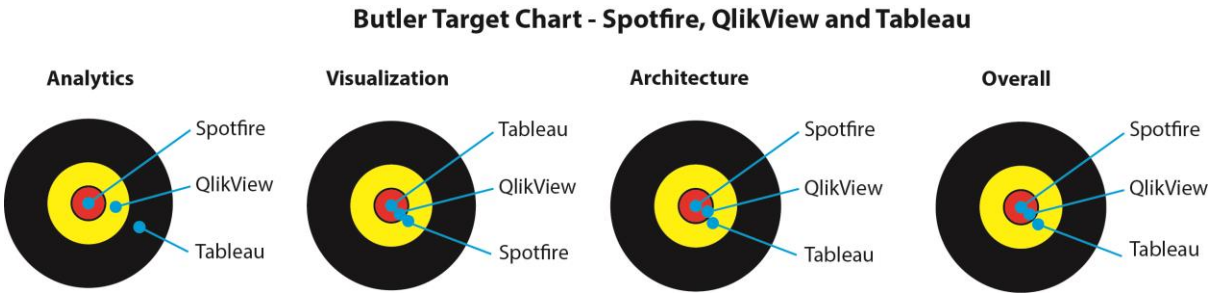
Spotfire, Tableau and QlikView - In a Nutshell

Verdict

Pick Spotfire if your analysis is likely to become complex as time progresses. Pick Tableau if you primarily want to satisfy the less complex needs of business users, and choose QlikView for productivity, and if you want a broad architecture that satisfies general needs. If you want a completely open road then Spotfire is the safest way to go - almost anything can be accomplished in R given the relevant skills.



Spotfire ★★★★½

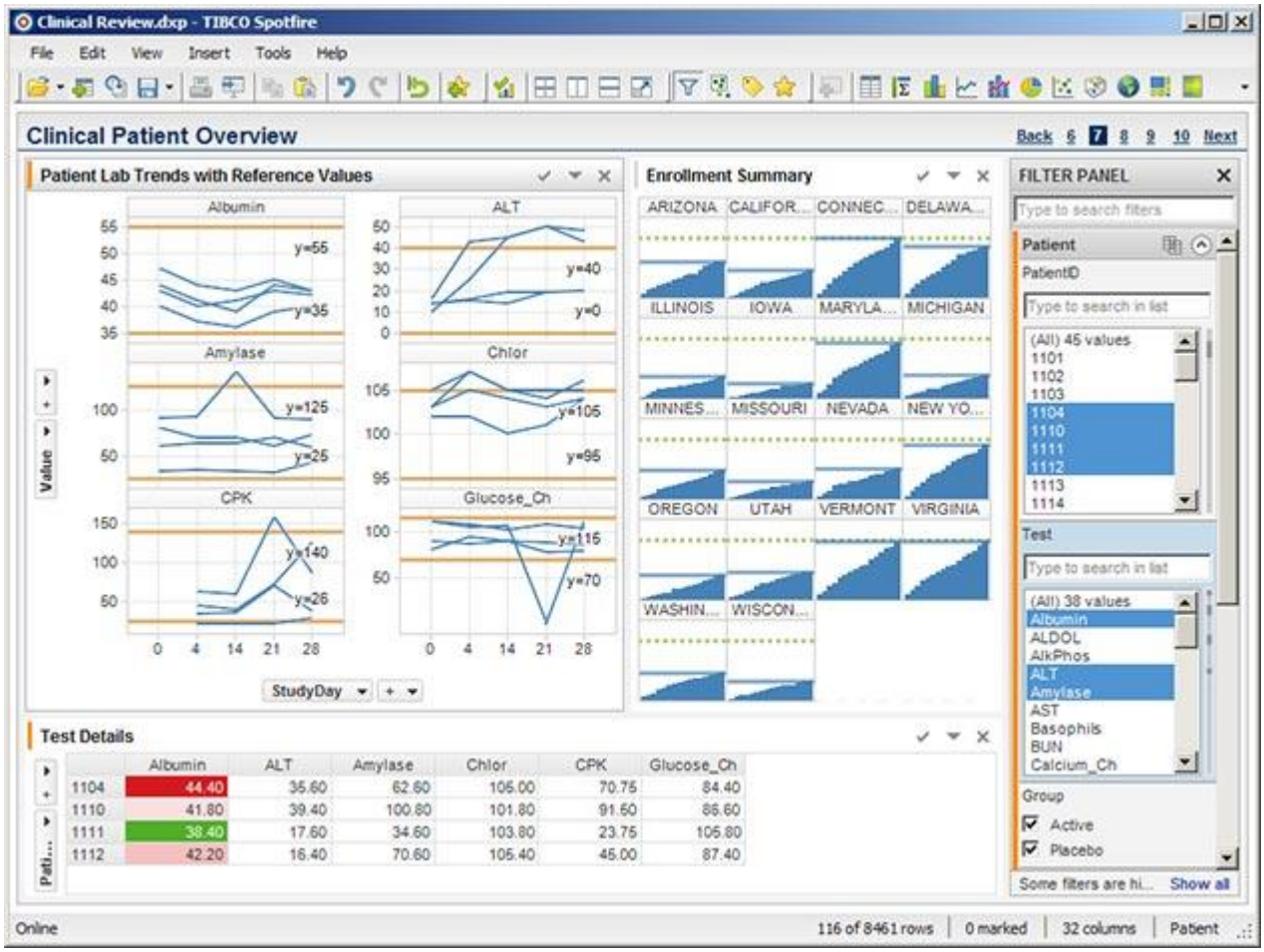
Unlike many of its competitors Spotfire provides a full arsenal of visual and computational analytics tools. These deliver powerful analytical capabilities ranging from the preparation and distribution of data visualisations, to the development and implementation of sophisticated data mining models. Users take whatever they need. If they just need tools that provide access to various data sources and allow that data to be graphed, then Spotfire will oblige. If on the other hand a predictive sales model needs to be developed and embedded into a dashboard it will do this too. The bottom line with Spotfire is that there should never be any dead ends.

It should also be remembered that TIBCO is not a one trick pony. For over twenty years it has provided leading process and data integration technologies and Spotfire benefits from this infrastructure capability immensely.

Like: A full range of capabilities - from simple graphing to real-time analytics.
Dislike: The silly marketing messages - 'two second advantage' - really!

Visualisation

You need only download the Spotfire free trial to see that it will admirably serve the data visualisation needs of any reasonable user. All the usual suspects are available including tables, cross tables, graphical tables (tables with graphs in them), bar charts, line charts, combination line and bar charts, pie charts, scatter plots, 3D scatter plots, map charts, treeMaps, heatmaps, parallel coordinate plots and box plots. Interacting with these various graphical types is a very dynamic experience with some useful rescaling features, highlighting, creation of legends and so on. Hierarchies can also be created to add additional information to a chart. We might graph sales of our top twenty customers over the last year. By adding the industry sector to the x-axis the customers will be grouped accordingly. Obviously filters play an important part in all of this and when Spotfire loads data it provides a filter panel for each attribute with many, many configurable options.



Ad-hoc analysis, interactive reporting and dashboards are all supported and Spotfire provides various mechanisms for collaboration - both free form and structured. Spotfire WebPlayer provides a zero footprint web based environment to access published documents, and effectively makes the environment scalable to the most demanding of needs.

Data Sources

If the data storage mechanisms you use are not some home-grown oddity then Spotfire will be able to get at them. You have to remember that TIBCO has been in the data and process integration game a long time, and so they know how to access data. There is no point providing a list, it would be two pages long.

Analysis

So, you have created some graphs, charts, tables and dashboards, but now you want to get a little bit fancy. Maybe you want to do some correlation analysis or create some predictive models to embed into charts. This is where Spotfire really excels, and none of the newer generation of BI/analysis tools equal it in this respect. There are several components including Spotfire Statistical Services to execute R, S+, SAS and MATLAB routines, and Spotfire Miner, a graphical environment for data mining and creating predictive models. And as you may or may not know, R is a free, Open Source statistics and analysis package that is very widely used, and so it makes sense to be able to embed R based analysis into your analytics environment.

Performance

Spotfire employs a hybrid of in-database (processing carried out in the database system environment) and in-memory (data held and processed in local memory - i.e. on your PC). In the main it works very well, although conducting analysis on 100GB of data will mean waiting a few minutes for it to be loaded into memory (if you have that much). This is the reality of processing large data sets, and you certainly wouldn't want to load a central server with dozens of such requests - you might be waiting more than a few minutes.

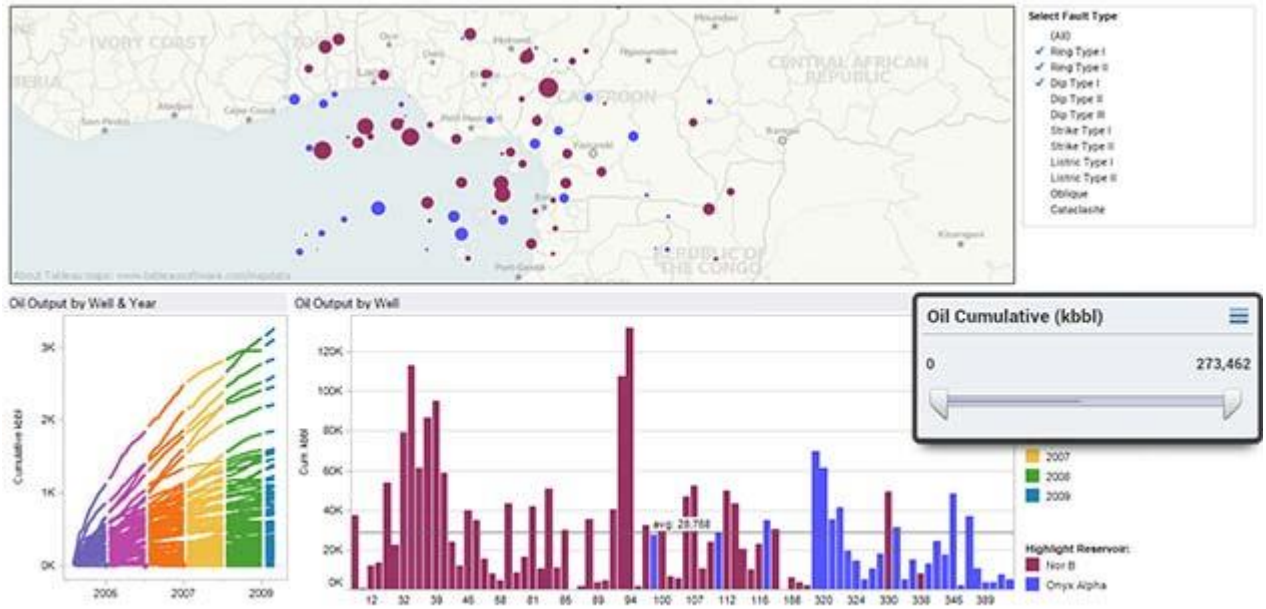
TIBCO

TIBCO's roots go way back to 1985 and for many years it majored on it's middleware products so that applications and data could be integrated. The actual name TIBCO (The Information Bus Company) was adopted in 1997.
The company is headquartered in Palo Alto US and has offices around the world. It is a publicly quoted company with revenues of around US$1 billion.

Tableau ★★★½☆

Tableau is charting, graphing and data analysis with go-faster stripes. It has obvious appeal, with prolific amounts of eye-candy and a relatively easy to use interface. As with other products of this nature its utility is firmly anchored in visual exploration of data using every format imaginable. It is not a data mining tool or a text analytics tool, but sits in the traditional business intelligence camp, albeit with a rich visual interface. It is positioned as one of a new breed of BI tools designed to deliver pervasive BI capability throughout the organization, or at least to those who need such tools.

Likes: Lots of eye candy and attractive visualisations.
Dislikes: Not much in the way of computational analytics.



The entry level product is Tableau Public, available as a throttled down free version, or in a Premium version with fewer restrictions. It is primarily targeted at the creation of graphics for web sites and offers a 'paint-by-numbers' approach to the creation and publishing of such graphics. A rich set of formats are supported including bar and line charts, heat maps, bubble charts, geo maps and many others (you are spoiled for choice really). Graphics are updated automatically when the underlying data is modified and links can be made to other content on a web site. The Premium version supports larger data sets and the optional suppression of access to the underlying data set. There are numerous web services of this nature (Jolicharts for example), but Tableau Public is certainly one of the best free offerings.

Tableau Desktop supports the visualization of data on the desktop and connects to a bewildering array of data sources, either individually or in concert. The Tableau Data Engine sits on a PC and calls upon the relevant data sources when needed. It executes queries in-memory for speed and switches data in and out of memory automatically, although clearly some wisdom is needed when accessing live data sources.VizQL is Tableau's Visual Query Language and is claimed to bypass the usual extraction, format, graphing process to build a direct link between data sources and visual representations.

Tableau Server supports browser based tools for data visualization and as such opens BI up to a very wide audience. It provides the very wide range of visualizations and dashboards supported by Tableau, and also make them available on portable devices (iPad and Android).

Tableau places great emphasis on the ability to create visualizations without the need for any technical skills (scripting). Provided Tableau always offers what you need this is fine, the moment you want something different this could be problematical. For this reason I think it is wiser to have both options – scripting free visualizations for run-of-the mill tasks, but scripting capability for more unusual needs. Other offerings are stronger in this respect.

QlikView ★★★★☆

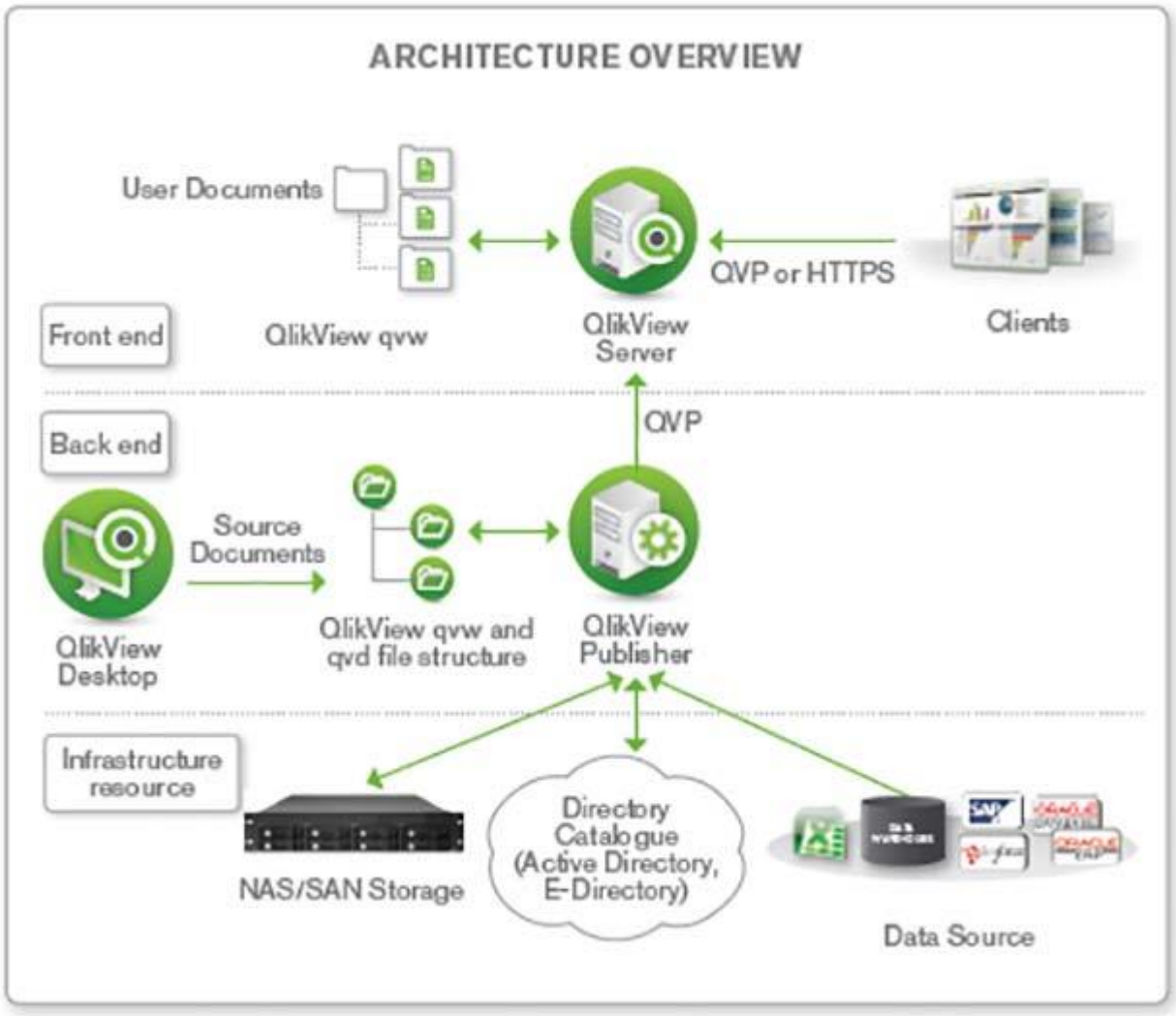
Likes: Very clever structuring of data for analysis purposes.
Dislikes: None really, but could have more computational analytics capability.

QlikView has more than just a pretty face, there is some truly innovative, and very useful technology on offer here. The company talks of maintaining associations between data, and this facilitates a much more flexible approach to data exploration and visualization. In practice what this means is that users can search available data resources with the knowledge that any relevant items will be retrieved, no matter how disjoint the origins of the various data items. In a way it is almost a merging of enterprise search with BI - something I talked about several years ago. The QlikView Business Discovery Platform provides an enterprise wide solution to the need for information. It embraces IT (instead of alienating it), business users and analysts. This is comprised of three main components - the QlikView Server, QlikView Publisher and QlikView Desktop.

- QlikView Desktop is where the associations between data items are established and where the user interface is laid out for QlikView Apps. An SQL like scripting language is used to create associations for use by business users and analysts.

- QlikView Server is the engine of the architecture where in-memory processing takes place and where issues such as security are addressed. It also handles communication with clients (web browsers, mobile or desktop) and includes a web server, although Microsoft IIS can also be used.
- QlikView Publisher loads data from the various defined data sources and distributes documents to the QlickView Server(s) for consumption by users.

Because the users generate their own reports and visualizations IT is left to get on with addressing the infrastructure issues associated with BI, including security, capacity, governance and systems management. The analyst typically uses QlikView Desktop to create the data models users will need. Meanwhile business users are presented with an environment where the data can be viewed as a unified whole, where a rich visualization environment is provided and where needed, QlikView supports extensive collaboration features.



QlikView has clearly thought the whole thing out both conceptually and practically. The net result is that every function in the organization should get what it wants. This is a different, and potentially much more productive, approach to BI. The capability does not extend to data mining or other forms of analytics, and it doesn't pretend to. The scripting language provides ample means to create highly bespoke solutions to individual organization needs, and as a BI tool it should not run into any dead-ends. QlikView is certainly worthy of serious consideration.

BUTLER ANALYTICS

This is a completely independent, unsponsored review and comparison of Spotfire, Tableau and QlikView.

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