Introduction

QlikView® and Qlik® Sense offer an intuitive experience for data exploration, visualization, data discovery, analysis and sharing insight. But like any data-driven platform, these solutions are only as strong as the data feeding them. If the datasets are incomplete, slow to process, have errors, lack context or are missing crucial analytics, your users may be missing a big part of the story—and your work will be for naught.

Further, with ninety percent of all data that exists in the world today being created in the last two years alone, it can be trying to stay on top of the ever-growing number of disparate sources. First, the data being sought can be in many places (e.g. local, data warehouse, cloud, etc.) and second, the formats themselves vary widely.

Creating rich data visualizations to pinpoint trends, discover risks, uncover opportunities and see context is what you’re known for. However, you know it’s the behind-the-scenes work to prepare data and produce analytics that takes two-thirds of the average analyst’s time (affirmed by a 2012 Ventana Research study).

While ‘hacky’ workarounds and ad-hoc scripting may solve some challenges, these methods may be unwieldy for larger datasets built from multiple data sources. Problems are further compounded when new lines of business questioning need to be added.

So the bottom-line is this: Data preparation and analytics done without a systematic and scalable approach risks huge amounts of time and resources. This problem is compounded with every new data source or analytic task taken on. Streamlining, consolidating and automating these tasks gives you the high quality data and time you need for better visualizations and more insightful BI apps.

This paper will show you how to do this using Alteryx for the heavy lifting.

Alteryx adds horsepower to Qlik’s guided analytics applications and self-service data discovery, helping:

- **Find truth**—empower business insight by combining data from any data source (including local, cloud and social data sources) and easily enrich it with 3rd party sources (included in the Alteryx w/ Data product), including Dun & Bradstreet, Experian, TomTom, US Census and more—without programming.

- **Harness advanced analytics**—leverage Alteryx’s R-based predictive and spatial tools to take analysis further. Drive time, market basket analysis, trend extrapolation and more can easily be dropped into an Alteryx workflow, without requiring a Ph.D. in statistics to understand them.

- **Iterate datasets quickly and easily**—Alteryx outputs in QVX format which is immediately usable in QlikView and Qlik Sense.

Learn More...

See how Alteryx’s powerful analytics can enhance your Qlik advantage. Check-out these in-depth companion white papers and resources:

- Driving Data Discovery with Predictive Analytics
- Alteryx Visual Analytics Kit for Qlik

To effectively leverage the power of Qlik’s guided analytics applications or self-service data discovery, you must significantly reduce front end data preparation time and streamline complex analytics.
Preparing Your Data

Data preparation is the process of combining and transforming data from multiple sources to create an actionable dataset for business decision making (such as retail site selection or multichannel profiling), or for driving a specific business process (such as packaging data for sale by data aggregators). Alteryx's data preparation can, for example, readily bring together disparate data (like customer information from a cloud sales automation system like Salesforce.com) with click stream web data stored in a Hadoop file system and segmentation models from Microsoft Excel.

This robust support by Alteryx is important for Qlik® users, because, while all organizations aspire to have completely integrated data management systems, a large portion of data that analysts or BI developers require still resides outside IT-controlled data environments. Alteryx helps you access all of it. Whether the data resides in data warehouses, Excel spreadsheets, social media apps, Big Data platforms, cloud apps or other data sources, Alteryx makes it easy for analysts, BI developers and business users to gather and prepare all of this data in a single intuitive workflow—without programming.

Access

Alteryx gives analysts direct access to data of any type or any source to help deliver a more complete view of the insight they need to make more informed decisions. No longer do you need to rely on others to get the data you need. Removing IT or data specialists from the equation, you can access the full fidelity of:

- Local data (spreadsheets, user device generated data, enterprise data warehouses, etc.)
- Databases and Data Warehouses (Oracle, Netezza, Teradata)
- Hadoop and No-SQL databases (Cloudera, Hortonworks, MongoDB, Cassandra)
- Third party data (Dun & Bradstreet, Experian, TomTom, US Census, etc.)
- Cloud/social data (DataSift, Twitter, GNIP, Facebook, Salesforce.com, Marketo, etc.)
- Other analytics platforms (SPSS, SAS, Google Analytics, etc.)

Integration

Alteryx gives users complete flexibility when it comes to joining multiple datasets by providing an array of tools to help with virtually any data situation. Joining data in Alteryx is not limited to just one field or column, Alteryx allows data of any type or any level to be brought together. This means that it can be joined at both the record and field level and it can even be expanded to include multiple key fields. Alteryx does not discriminate, it is flexible enough to join data on non-identical fields as well as incorporate spatial characteristics such as customer points to be combined into your data. Other tools, like fuzzy matching, give users the ability to match two datasets based on even non-matching data, typically names and addresses.
Alteryx workflows can easily be saved and repeated for further data preparation, processing, updates and analysis. Updating the analysis or report is as simple as updating the data input(s) and running Alteryx again.

Cleansing

Once you have all the relevant data that’s required to answer the business question at hand, and you have your data set in front of you, you’ll probably need to do some data cleansing to remove possible errors.

With Alteryx, these tasks are quick and easy. Duplicates, extraneous characters, trailing zeroes, and other data noise can be cleaned up in a few simple clicks. Alteryx offers extensive tools for data preparation and data cleansing to speed up the time to create the right dataset, without having to rely on outside intervention. With options for restructuring, reformatting, and filling in missing data or incomplete data, Alteryx ensures that data quality, integration and transformations are done by the people who know the data and understand the business best, leading to the right dataset in the least amount of time.

Besides simplifying your data cleansing regime, with Alteryx you only have to define your cleansing process once. Every time you introduce or update your data, Alteryx automatically cleanses the dataset according to the rules you’ve previously set. The result? You now have a truly automated data preparation process you can trust and iteratively refine as your understanding of the data becomes clearer.

Transformation

Beyond data cleansing, Alteryx is instrumental in ensuring that a dataset fits your specific purpose by preparing and shaping it accordingly.

For example, predictive modeling requires a narrow data set with just a few specific variables to establish causality and extrapolate for trends. In contrast, spatial visualization for demographics requires as much data as possible, so you can recombine, compare, and view the data from different perspectives such as gender, income, geography, etc.

Another area where transformation plays a key time-saving role is survey analytics. Raw survey data typically requires very specific data shaping and cleaning before it can be properly dimensioned in QlikView or Qlik Sense.

While reshaping in Qlik Sense or QlikView via custom scripting, or at the source (for example, within a spreadsheet) is possible, the average user could spend many frustrating hours or even days working raw data into a usable form. In contrast, tasks like these are short work for Alteryx.
Our customers have been asking for simple, natural ways to bring more advanced analytics into their Qlik Sense and QlikView environments—all while assuring strict data security, quality, and governance. Combining the predictive capabilities of Alteryx with Qlik Sense empowers users to dive even deeper into their data and generate recommendations to drive innovation.”

- Les Bonney
Chief Operating Officer, Qlik

Enrich Your Data with Analytics
In some cases, even after you’ve combined your data sources, cleansed your dataset and prepared it for analysis, you’ll find you’re still missing key information. To resolve this common problem, you can add meaningful context to your dataset by enriching it with third-party data right from within Alteryx (a feature included in the Alteryx w/ Data product). This, in essence, fills in the blanks, building out a truer story of your data.

For example, by appending household income data to an existing survey dataset with location information, it’s possible to make inferences about how income might influence survey choices in a geographical area.

Preparing for Advanced Analytics
Advanced analytics rely on having good, clean data. Once you have reached this point, you can take the data even further using Alteryx’s advanced R-based predictive analytics and spatial data modelling. Augmenting your dataset, these new dimensions of analytic data can then be included in QlikView or Qlik Sense. For example, you could include segmentation modeling in a customer spend visualization in Qlik Sense, or add geocoding to provide the ability to explore spending patterns by location in a QlikView application.

Whether you use one or both QlikView and Qlik Sense, Alteryx makes your job dramatically easier—giving you the unsurpassed data preparation and analytics tools you need to augment your Qlik dataset.

Please note: With Qlik Sense Desktop, Alteryx is unable to provide ongoing updates as your data changes. To enable ongoing updates, you will need a Qlik Sense license.
**Use Spatial Analytics for a New Dimension of Business Insight**

Virtually any business transaction that has a physical constituent can be a candidate for spatial analytics. Examples of how spatial analytics can benefit your Qlik® data, includes:

- Pinpointing the location of a store where a particular transaction has taken place.
- Analyzing customer drive time, determining where the customer lives and how far they had to drive to your store versus a competitor’s.
- Highlighting dropped cell calls for a particular time period using a heatmap.

Combined with other non-spatial data (such as sales or operational metrics), spatial data adds a new dimension of insight to dashboards, visualizations, and advanced modeling tools and can take your BI apps much further.

**Run Powerful Predictive Analytics to Extrapolate Trends**

The power to predict future business conditions and know customers’ wants and needs is a huge asset to any business.

While analysts and BI developers have always wanted advanced analytics like forecasting, segmentation modeling and time series analysis in their visualizations or BI apps, it has never been readily at their finger tips. Instead, if the capability existed at all in the organization, it was locked away, guarded by IT and data scientists.

With Alteryx, these high-power tools are now a simple drag-and-drop away, and can easily be added to the analytic dataset that powers your Qlik App or visualization.

**With the heavy backend lifting by Alteryx done, the processed data is seamlessly output as a native QlikView® Exchange .QVX file—ready for enhancement in either QlikView or Qlik® Sense.**
Conclusion

QlikView® and Qlik® Sense provide exceptional solutions for guided analytic applications and self-service data visualization. Unfortunately, the datasets necessary to drive these high-performance visualizations and BI apps are often difficult and time consuming to create. Removing this pain, Alteryx’s data preparation is not only quick—it can also be automated, dramatically freeing you and your team’s time. Saving untold hours or even days from your regular data processing workflow, you can then focus on what matters most—creating compelling visualizations in QlikSense and powerful guided analytic applications in QlikView.

Alteryx’s robust data preparation capabilities also extend to both its spatial and predictive modeling tools—giving you an augmented analytic dataset that can easily be used in either QlikView or Qlik Sense. All of this means that analysts and BI app developers can reduce the time to create an analytic dataset from weeks to hours, all without the need to call upon IT or specialist users along the way.

To learn more about the success that Alteryx and Qlik are delivering to companies like yours, explore best practices for success with predictive and spatial analytics, or to simply experience the power and ease-of-use for yourself, please visit www.alteryx.com/qlik.