alteryx

Qlik Q®

Finding Truth:

Using Alteryx and Qlik® for Agile Spatial Analytics

Introduction

There's no question that spatial data can add a powerful dimension of context to traditional and big data analytics. It provides the proverbial 'where' of the business transaction. But like any data type, spatial's value is greatly reduced if the answers it provides aren't timely, visual and actionable in ways that allow for new lines of thought to be quickly explored.

With next-generation platforms like Alteryx and Qlik, the full power of spatial analytics is easily available to the line-of-business users who understand the questions best. Now that Alteryx's spatial analytics can easily integrate with Qlik applications, companies will have access to deeper geospatial insights faster.

Spatial Analytics Offers a New Dimension of Business Insight

Virtually any business transaction that has a physical constituent can be a candidate for spatial analytics. Allowing line of business users to get a clearer understanding of how their product or service is influenced by (or impacts factors related to) geographic or location-based data.

Geospatial data, or, more simply, spatial data, refers to address-related data tied to a specific location. Examples of this include: the location of a store where a transaction took place; where a customer lives and how far they had to drive; the location of a dropped cell call; or the current location of a product en route to delivery. This data can be generated by geocoding addresses (looking up an address and systematically matching it to a latitude and longitude) or by devices such as cell phones, GPS systems and remote sensors.

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.

The following use cases describe how Alteryx and Qlik can be used together to build, visualize and analyze effective spatial analytic models for better business insight.

Use Case 1: Drive Time Analysis for Strategic Location and Determination

Building physical retail locations can be an expensive and risky proposition. To offset this risk, planners must balance ROI against demographics, area competition, operational costs and changes to things like roads and zoning.

These variables take on an even higher level of importance in a hyper-competitive market such as that in which a coffee chain might compete.
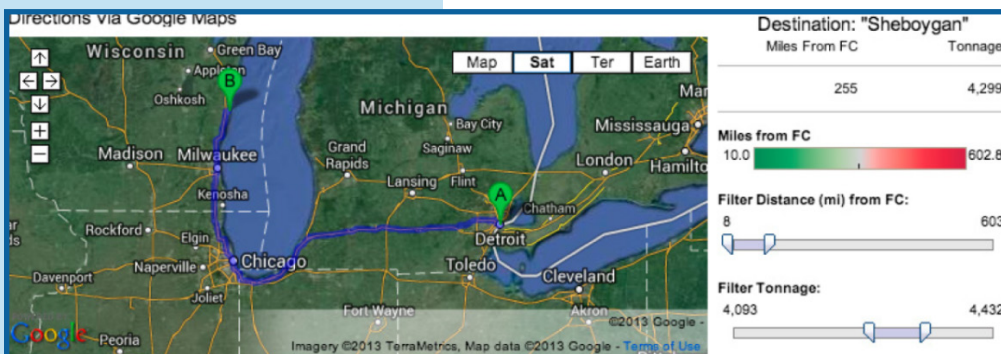
To visualize and understand this location selection risk, a coffee chain could use spatial analysis to understand the interplay of key variables, refining their location selection strategy as more data becomes available.

In Alteryx, one useful way of determining a location is by using customer drivetime analysis. The rationale is simple.

Though a franchise location may be close to customers on a straight-line basis, road-by-road, new locations may be actually further away than preferable. If competing options—like restaurants, other cafes or even existing franchise locations—are situated too closely, the customer base in that region can be cannibalized.

Using their customer loyalty program data and sales by store, the coffee chain can add parameters for competing business. Then, applying drive time proximity to every geocoded customer address, the chain can see their target customer segments within a specified drive time from two potential locations and, more importantly, choose the location with most profit potential.
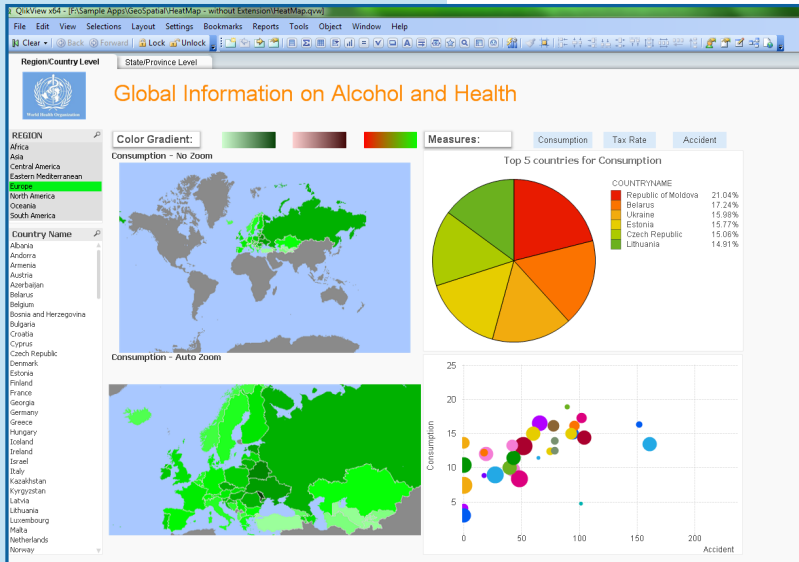
The processed Alteryx output can then be exported as a QVX file—ready to be used by Qlik users to perform geospatial discovery.

Once in QlikView Desktop, users can choose the best UI elements like maps, list boxes (with auto-loaded data), charts, graphs, tables, menus, search boxes and heat maps. All elements that can be added with simple point and clicks will automatically work together in an associative way.

A first take on the app can then be presented to the coffee company for review and be changed in minutes or hours, rather than days or weeks.

Fully deployed, the QlikView app offers the coffee company a variety of useful features to further conversations about strategic locations, including:

Social data annotation and sharing—Useful data perspectives can be snapshot, bookmarked and shared with others in the company for future reference. Additionally, users can comment on app states based on where they clicked on data. This can also be useful to create a log of how group decisions were arrived at. For example, perhaps a particular hotel has exceptionally high sales despite a lot of competition in the area. The marketing team can query the manager there to determine what lifted sales above the norm.

In app collaboration—Links to the app can be shared via email, SMS or instant messaging, allowing real-time interaction with others in the same QlikView app. Whenever anyone makes a selection or clicks on a different tab in the app everyone's view updates instantly. This makes meetings more effective and allows for a social learning and discovery experience.

Use Case 2: To Assess Risk and Mitigation Exposure to Disaster Claims

Insurance companies need to be on top of their game when it comes to setting premiums and mitigating exposure. Spatial analytics is invaluable for this, particularly with regards to disaster claims. Using Alteryx, an insurance company can map its policy holders via geocoded addresses from their policies with an overlay map of seismic information denoting fault lines and maximum probable magnitudes.

In Qlik, users can add additional data, such as 3rd party engineering information on the status of seismic upgrades geocoded by address and predictive data for earthquakes based on historical data. Qlik makes acquiring additional data
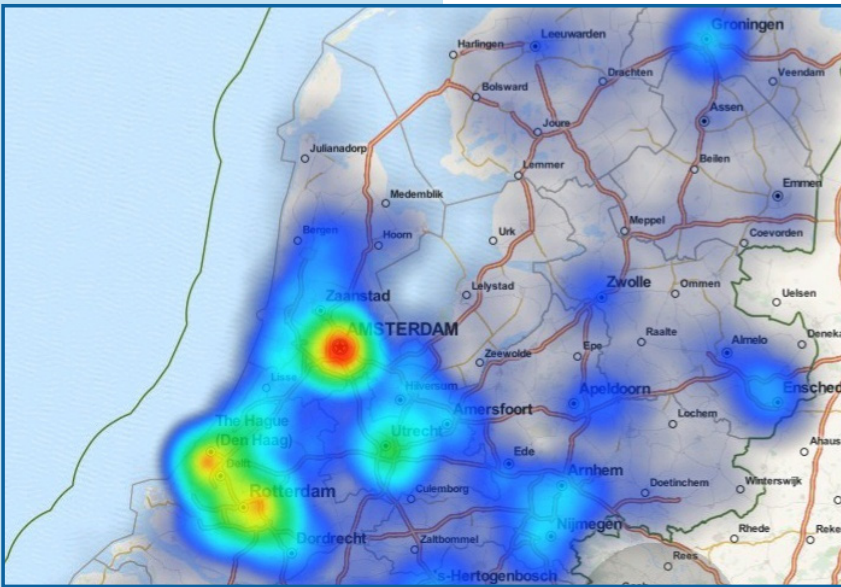
simple and fast, auto-consolidating the new additions in a single view and auto-maintaining the data associations across multiple different sources. Building out their seismic hazard map, the insurance team can remix and reassemble data in new views on the fly for deeper understanding.

Built only once as a light-weight app, QlikView allows business discovery to be fully mobile and location-enabled, meaning users in the field can interact with the data just as well as those at head office. As a hypothetical example, seeing where a large percentage of the claims are occurring in the field, adjusters could flag an area from within their mobile device app so that more adjusters and personnel are sent to help those areas first.

Taken together, Alteryx and Qlik make it easy to determine premiums for a region depending on the degree of risk the area faces—and make claims management more proactive and effective.

Similarly, but taken in a different direction, real estate investors can use hazard data such as flood plain maps to evaluate which properties are valued appropriately. Coupled with predictive analytics and datasets such as listings, sales prices, school enrollment, crime and more, the investor can effectively forecast trends on property values in different areas with relative ease.

## Use Case 3: Advanced Customer Profiling for Enhanced Sales and Marketing

A common use of spatial analytics is customer profiling for sales and marketing, helping companies answer such questions as:

- Who their most loyal customers in a region are.
- Where the best ROI for a marketing spend should be targeted.
- Who is most likely to purchase a specific product in a region.

Typically, this customer information is gathered at the POS at the time of the transaction, by online surveys (requiring a customer to enter their receipt transaction in exchange for entry into a prize draw), or from loyalty card information.

But what if the customer data needed is *not* part of a companies original collected dataset? For example, imagine a home renovation retail chain wants to optimize its marketing spend. The company decides it wants to target home owners for renovation related campaigns and renters for home accessories promotion. Unfortunately, their current customer dataset is unable to distinguish between renters and owners. How then can this data be obtained?

The secret is fuzzy matching. Fuzzy matching allows Alteryx to match data assets that don't have common shared identifiers. Using a waterfall matching process, a user can then change the weights of possible data associations, refining the dataset until they have the highest probability matches and the best data possible. This customer data can be further enriched by overlaying it with Alteryx's Experian Household data file, appending over 350 different variable sets for demographic and psychographic attributes. Referencing data from 235
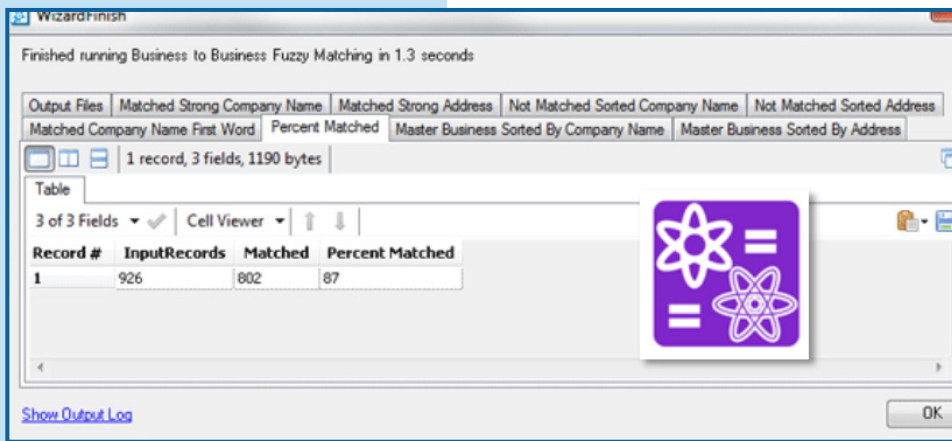
million consumers and 113 million households, a company customer profile will now speak volumes — answering questions such as estimated income, mortgage/home purchase price, dwelling type, and much, much more.

With the heavy backend lifting by Alteryx done, the processed data is seamlessly output as a native QlikView Exchange .QVX file. Then, once in Qlik, interactive elements such as heat maps, graphs, select lists, charts and more are easily added. Evolving quickly with each round of company review, an advanced customer profiling app is born.

Building on the high-level transformations provided by Alteryx, Qlik users can go even further—exploring the customer profile data at a granular household level. By leveraging Qlik's associative nature, users can leverage Qlik's global and associative searching capabilities to quickly browse through the dozens of demographic and psychographic dimensions in order to get to the population of interest. All other sources of data that are part of Qlik's associative model would then provide further context to the analysis and visually answering question after question, click by click, as users move from insight to discovery. Users are empowered to explore information freely by clicking on field values in list boxes, lassoing data in charts, graphs and maps, manipulating sliders, choosing dates in calendars, cycling through various charts and graphs, and more—all with the click of a mouse or a tap of their finger on a touchscreen device.

And because Qlik is a leader in the in-memory Business Discovery space, the responsiveness of the app is near real time with common calculations such as heat mapping shared amongst users so they don't have to be redone every time the app is queried.

With a rich customer profile rolled out as a Qlik app, and taking advantage of Experian Household data (courtesy of Alteryx), the retail chain now knows much more demographic and lifestyle data about its marketing segments than ever before. With this information in hand, the company can find and target new and old customers alike and easily make inferences about how they can be marketed to.

Use Case 4: Optimizing Cell Tower Placement for Reducing Dropped Calls

While spatial analytics is often tied to placement of physical assets such as property, it can be used for so much more. Communications companies are using spatial data to determine where to optimally place cellphone towers to reduce dropped calls.

A company might send out drivers with devices to measure signal strength from particular towers and the range of that signal. This signal strength is plotted on a map to see where coverage is lacking. In Alteryx, this map data can then be combined with 3rd party data for population density, roads and customer locations, ultimately yielding a useful QVX file ready to be plumbed by Qlik's visualization engine.

"Our customers have been asking for simple, natural ways to bring more advanced analytics into their QlikView environments—all while assuring strict data security, quality, and governance. Combining the spatial capabilities of Alteryx with QlikView empowers users to dive even deeper into their data and generate recommendations to drive innovation."

- Les Bonney
Chief Operating Officer,
Qlik

About Alteryx

Alteryx is the leader in data blending and advanced analytics software. Alteryx Analytics provides analysts with an intuitive workflow for data blending and advanced analytics that leads to deeper insights in hours, not the weeks typical of traditional approaches. Analysts love the Alteryx analytics platform because they can deliver deeper insights by seamlessly blending internal, third party, and cloud data, and then analyze it using spatial and predictive drag-and-drop tools. This is all done in a single workflow, with no programming required. More than 600 customers, including Experian, Kaiser, Ford, and McDonald's, and 200,000+ users worldwide rely on Alteryx daily. Visit www.alteryx.com or call 1-888-836-4274.

Taken together and explored with Qlik, business users can quickly get a sense of ideal cell tower placement or even use Qlik to capture any number of business rules that should be applied as the QVX input is being read in order to empower the single version across the Organization. Similarly, Qlik empowers Organizations with a wide range of functions that could be used to derive any type of calculation. Users would be able to plot a minimum desirable cell tower distribution based on a communication company's dropped call tolerances.

Further iterating on the model, the maps can also be overlaid with factors such as negotiated lease rates for placing cell towers on buildings. This provides immediate strategic feedback, and, in essence, dictates the ideal placement for logical, affordable network expansion.

Conclusion

Evolving with your changing business needs, Alteryx and Qlik together can provide an elegant, quick and reliable method to iteratively evolve a robust business and spatial analytics process that can be shared enterprise-wide.

Using Alteryx's powerful spatial analytics engine and intuitive drag-and-drop interface for the 'heavy lifting' offers a huge advantage over calling upon IT and data scientists for every model change. Likewise, the use of fuzzy matching and Alteryx's included 3rd party data sources offer an exemplary means to truly 'get in the head' of your customer or target market. Direct output to a Qlik app provides a fast way to deliver the analytics for visualization. The process is agile, so new data sources and spatial information can be added later from either Alteryx or Qlik.

Qlik in turn offers an intuitive, associative experience that makes drilling into Alteryx's outputted data painless, fun and readily shareable. With a plethora of visualization options, business discovery apps can be rolled out and evolved in days rather than months.

With both platforms pioneers of in-memory solutions, the overall experience is as quick as line-of-business users demand and powerful enough for even the most advanced of users.

Long the dream of line-of-business users and analysts alike, spatial analytics has finally come of age. But while the technology exists—and works, as proven by platforms like Alteryx and Qlik—ultimately its success in organizations will be founded not on development cycles, but rather in a team's willingness to try it for themselves and play. Curiosity is the true seed of innovation.

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

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