Extending the Reach of Your Business Intelligence Insight through a Single, Complementary Solution: think AND, not OR

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accommodate the leading standards in the workplace. Whether you need to deploy Web-accessible software as a service; desktop dashboards; scheduled report distributions; power-user modules and macros; or access to an extensible Application Programmer Interface (API) library for your internal developers and a Software Development Kit (SDK) to allow your developers to add internal custom software offerings directly to the Alteryx environment, SRC has provided everything you need to get the job done. In addition, the Alteryx Scheduler enables programs and network users the flexibility of calling Alteryx as they would a robust middleware solution, passing ad hoc service requests or queuing modules for batch processing at a later time.

In Summary

The unique Alteryx geographic business intelligence capabilities discussed here significantly shorten development times and increase application runtime speeds for SRC customers, enabling them to deploy geographic business intelligence solutions quickly and consistently across their networks. Decision makers at every technology user-level in an organization—from the IT department and in-house developers, to DBAs and enterprise application power-users, to operations managers, business analysts, and Intranet, Extranet or Web-based service users—all can access the data they need using a single, efficient, and unified solution. Business analysts, operations managers, and senior executives who can identify precise requirements needed to solve business process problems, need no longer wait to have their data analysis solutions designed and coded by scarce and overbooked in-house IT resources. Alteryx presents a drag-and-drop, icon-based toolbox that is ready to access data from any source, able to extract only the data that is needed, and is well-equipped to clean, filter, append and combine spatial or non-spatial as needed following easy-to-implement, graphically diagrammed steps. Sharing these solution modules through Web-based entry-form applications or desktop dashboards makes the deployment of best-practices to even the least technologically savvy participants in a decision process simple, consistent, repeatable and reliable.

The Alteryx offering defines the industry’s next generation solution: a high-performance, integrated, problem-solving environment that makes it possible to perform data quality actions, build repeatable analyses, test each step along the way, and quickly generate advanced visualization and mapping reports, all tailored to reveal actionable insights for solving a company’s most challenging business process problems.

Executive Summary

To mine raw data and extract crucial insights, business decision-makers need fast and comprehensive access to all the information stored across their enterprise, regardless of its format or location. Furthermore, that data must be organized, analyzed and visualized in ways that permit easy interpretation of market opportunities growth, shifts and trends and the business-process changes required to address them.

Gaining a true perspective on an organization’s customer base, market area or potential expansion can be a challenging task, because companies use so many relational databases, data warehouse technologies, mapping systems and ad hoc data repositories to gather and house information for a wide variety of specialized purposes. Alteryx, the core of the SRC Geographic Business Intelligence™ offering, enables organizations to leverage the best of their current infrastructure through a single, unifying and performance-optimized platform for gaining insight into the true meaning and potential of all this data.
SRC's Alteryx does not have to replace data applications; it has been designed to complement existing tools and allows users at any level to capitalize on the strengths of their current corporate data systems. Alteryx pulls and organizes spatial and non-spatial data from any internal resource in any format and presents it in a highly usable and visually meaningful way, regardless of the original data processing system, file type, format or country of origin. This resulting presentation of data can be produced as a simple Excel file, as a rich Google Earth map, or as sophisticated charts, tables and detailed maps generated with advanced Alteryx mapping and reporting engines.

In other words, Alteryx provides data independence, easing access to and analysis of data from any of the organization’s operational and repository systems. Alteryx also extends this independence to spatial information by fully supporting spatial data types as spatial objects. While Alteryx need not replace the point solutions it so easily integrates and pulls together in a single, unified context, it packs the power and capability to exceed the processing speed and flexibility of the best-of-breed contenders in many categories. For instance, the data independence and database

Spatial Analytics

Core spatial data capabilities designed into Alteryx allow its users to rapidly combine, compare and represent enormous volumes of data, both spatial and nonspatial data, within valuable geographic contexts, a feat impossible to render quickly, if at all, using conventional mapping and spatial analysis systems. Through its scalable support of solutions and users at every level of today’s corporate technology expertise pyramid, the advanced spatial analytics capabilities within Alteryx unlock the power of the best mapping systems and couple that with the convenience of the leading Web-based earth data and map browsing tools. The truly unique accomplishment for Alteryx is that it does all of this at speeds unthinkable using other spatial and mapping solutions, while it accesses, handles, and reports without limitation on business processes that span a corporation’s entire enterprise data landscape.

Reports & Mapping

Mapping and report writing are not separate capabilities within Alteryx; they are combined expressions of this single, data-driven technology. The same Alteryx technology used to create, for example, rapid-responding, browse-able maps, charts, graphics and tables to reveal the most relevant and telling intersections, interdependencies, and interrelationships within your data, is also used to create data-driven graphics, maps, and visualizations in reports that convey these insights clearly and with powerful impact. Alteryx report generation technology integrates beautifully detailed, advanced mapping visualizations with a robust and sophisticated document layout handler, and uses a formatting method that easily accommodates data volume and content variations within a repeatable report structure from one reporting period to another.

In addition, the same data independence and interoperability that enables Alteryx to pull, combine and analyze data from all sources, also provides Alteryx mapping and reporting tools with the means to access, integrate, and apply geographic and spatial data from all sources. Sources such as SRC’s own robust offerings of infrastructure, demographic and physical geography data; professional and vertical industry data; and country data can be quickly loaded and analyzed against a company’s vast stores of both spatial and nonspatial customer, inventory, manufacturing, and other proprietary data. Report outputs include PDF, HTML, PCXML (SRC’s proprietary format), RTF, MS Word 2007, MS Excel 2007, and MHTML.

Scalable and Widely Deployable Solutions

Alteryx brings together the power of visual abstraction and graphical user interfaces (GUIs) to simplify and automate the generation of runtime, batch, network and desktop applications. In this way, Alteryx makes available data analysis and reporting engines that meet every decision maker’s needs, and does so via a technology environment designed to
Data Quality

No business intelligence solution can add value, if it does not first provide the means to improve and ensure the quality of the data being collected for analysis. Alteryx data quality features empower users with the means to quickly peer into and parse spatial and non-spatial data repositories for the purpose of assessing and addressing data quality issues and challenges. The Alteryx Dynamic Input Tool not only provides the means to rapidly view data prior to accessing it, but it enables users to perform selective filtering, verifying, and converting actions, including actions involving spatial objects and spatial analytics, during the input process. Executing transform techniques, such as, cross tab sorts and filtered joins, on just the data they desire from a remote source, prevents Alteryx users from getting bogged down from the usual processing and throughput overhead. An advanced Fuzzy Matching Tool substantially enhances these Alteryx parsing and deduplication data quality capabilities. Unlike other methods, which may be limited when creating keys to the use of predefined fields only or simple data attributes, Alteryx allows advanced parsing and fuzzy matching keys to be created using words, strings, fields or attributes. Coupled with its high-performance data indexing engine, Calgary, Alteryx is further optimized in its ability to execute the fuzzy matching of small into big datasets at extremely fast speeds.

The Dynamic Input Tool can also perform various spatial queries and calculations on relational databases that contain no spatial objects, but do have latitude and longitude coordinates, delivering perhaps the most powerful addition to the Alteryx collection of data quality tools. Additional spatial analytic capabilities Alteryx delivers for solving data quality challenges include the industry’s first open-source geocoder, a road-tested and validated drivetime engine, and an extensive high-precision spatial analytics engine.

Geocoding non-spatial data associated with a physical address can enable the use of precision spatial analysis and data quality techniques, such as point-in-polygon and distance-from-polygon for sorting and selection, and can enable the provisional inclusion of outliers crucial to certain matching routines by providing flexible control of spatial object buffering. The Alteryx drivetime engine, Guzzler®, instantly delivers the ground truth about a geography’s street network, improving significantly over the use of simple radii calculations to identify target market or potential trade area populations, and can easily calculate more complicated spatial relationships, like non-overlapping drivetime polygons, just as quickly. Alteryx also delivers the latest CASS Certified™ and ZIP+4*address resolution and standardization technologies to increase precision and resolve ambiguities.

interoperability features of Alteryx make it a formidable extract, transform and load (ETL) solution. Users without experience in coding can simply view table data in grids, then drag-and-drop elements to create new, syntactically correct compound commands. Alteryx also simplifies the verification of data quality. Users can rapidly view spatial and non-spatial data before accessing it, and can filter, verify and convert data as necessary during the input process. Decision-makers can call up and work with just the data they need from any remote source to avoid getting bogged down in processing and overhead issues. Alteryx is especially valuable when a user needs to create maps or other spatial objects from relational databases. Alteryx can geocode any address’s latitude and longitude precisely, coordinates needed to produce those mapped or spatial representations that make visual sense of any data.

With Alteryx, users can rapidly combine, compare and represent enormous volumes of data—spatial and nonspatial—in geographic contexts and in a single application environment. This is a feat impossible to render quickly, if at all, with conventional mapping and spatial analytic systems, and Alteryx does it at speeds unthinkable using traditional solutions.

Alteryx is easily scalable and can be widely deployed across an organization so that users at every level are able to access the data they need through a single, efficient and unified solution. Business analysts, operations managers and senior executives who can identify precise requirements needed to solve business-process problems no longer must wait to have data analysis solutions designed and coded by their IT departments. With Alteryx drag-and-drop, icon-based tools, Web-based entry-form applications or desktop dashboards can be deployed quickly and shared widely up and down the corporate decision tree.

Harnessing both unmatched data access flexibility and speed in massive data volume processing, and to accomplish these with an ease and sophistication in spatial analytics that goes beyond the limits of traditional geographic information systems, places Alteryx in a class by itself delivering true geographic business intelligence. SRC customers benefit from the use of Alteryx in very concrete ways: realizing resource savings, revenue growth, improved quality of decision-making, optimized market response, accelerated cycle times and speed-to-market.

Why AND not OR?

The value of an enterprise’s data is defined by the degree of insight obtained when that data is compared, counted, combined, reorganized, analyzed, visualized, mapped and summarized in reports. The SRC Geographic Business Intelligence Platform, at the heart of which resides a core data application environment known as Alteryx, leverages the best of an organization’s current information infrastructure through a single,
unifying, and performance-optimized insight discovery platform. Now our customers can mine insights from all of their enterprise data, regardless of type, source, system or country of origin, so they are realizing the greatest degree of value possible from their data.

Relational databases, data warehouse technologies, GIS mapping systems, and even various ad hoc data repositories that frequently populate corporate data landscapes, each of these has been designed to do a particular set of data processing tasks well. Enterprise relational databases, for example, from providers like Oracle, Sybase, and Microsoft, allow hundreds to thousands of users to simultaneously access and modify individual records, one at a time, with speed and security. Data warehousing systems, from companies like Teradata, Netezza, and Sybase, accommodate the storage of vast historical data collections, while providing a relatively small number of users with simultaneous access to large numbers of records for the purpose of producing data summaries and reports. GIS mapping engines from ESRI and Pitney Bowes MapInfo can plot maps and display smaller, manageable amounts of geo-coded data to show proximity and other spatial relationships with representational clarity. Additional data collection and retrieval systems that serve specific business functions, like inventory tracking or sales order-entry processes, are fine-tuned to perform equally specialized operational or analytical tasks. If we could build a solution to enable the convergence of these various best-of-breed capabilities, on both spatial and non-spatial data, using optimized spatial analytic engines and visualization techniques, what insight and value might our customers obtain from viewing all data, internal and external to their organization, that defines their business?

The SRC Alteryx offering has been designed to do just this: complement and capitalize upon the strengths of our customers’ existing corporate data systems, not replace them. To serve managers throughout an organization who are seeking fast, reliable and repeatable ways to analyze and report on their many cross-functional business processes, SRC provides a single technology platform—a critical ability to “connect, compare and visualize” answers to your most challenging strategic and tactical questions through the lens of geographic business intelligence™. The following best-of-breed capabilities have resulted from setting out to solve these numerous technology convergence bottlenecks through a single technology platform.

Data Independence

An analysis and reporting solution that achieves true data independence has the capacity to access and analyze data from operational and repository systems located across an enterprise. The fact that the Alteryx offering also extends this notion of data independence to spatial objects by fully supporting spatial data types as spatial objects, sets it apart from systems that merely pass through such data types, in addition to supporting an extensive list of inputs and outputs, including spatial projection formats, data visualization, mapping, and reporting formats, that solution can be called truly data independent. This complete approach to data independence clearly distinguishes the Alteryx offering from its competitors in the world of geographic business intelligence solutions. Alteryx exercises an ability to use data from the broadest range of data processing systems, file types, data formats, and countries of origin.

International Data & Interoperability

While its data independent extract and load capabilities ensure the use of data from any national standard, Alteryx also delivers full Unicode support. The Alteryx software can be licensed with datasets from any of this growing list of countries: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China (including Hong Kong), The Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, India, The Republic of Ireland, Italy, Japan, Mexico, Monaco, The Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, South Africa, Spain, Sweden, Turkey, the United States, and the United Kingdom.

File Input & Output Support

To ensure the greatest degree of interoperability, Alteryx is designed to access and output the following industry-leading database, GIS, and spatial file formats: CSV (delimited text file), MDB (both for Microsoft® Access™ and ESRI® Personal Geodatabase™), DBF (Database File Format), XLS (Microsoft® Excel®), MID/MIF (MapInfo Professional® Interchange), SHP (ESRI® ArcMap® Shape Files), TAB (MapInfo Professional® Table Files), SZ (SRC Spatial Zip File), YXDB (Alteryx® Database), SDF (Autodesk® MapGuide™ 6.5), Flat (Flat ASCII), KML (Google Earth™, output only), ODBC, DLE-DB, Netezza Spatial, Microsoft® SQL 2008 Spatial, and OCI (Oracle® Spatial).

ETL

Powerful Alteryx data independence and database interoperability features define Alteryx as a formidable extract, transform and load (ETL) solution. The Alteryx Visual Query Builder and an enhanced SQL Editor greatly simplify the automated generation of tested and verified SQL command syntax. Users with little or no SQL coding experience can produce proven database access, transaction, and retrieval commands by viewing available table data in visual grids upon which their drag-and-click actions direct the automated construction of the SQL syntax required to execute those actions. The SQL Editor can be used afterward to view the commands the Visual Query Builder has generated, or users comfortable with writing their own SQL commands can use the SQL Editor to do just that. Specific proprietary and industry connectivity standards supported through the Alteryx tools have been fully tested and verified with these leading database systems: Access™, DB2®, MySQL®, Netezza®, Oracle®, SQL Server®, Sybase®, and Teradata®.