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COOKBOOK SERIES

6 Steps to Data Blending for Spatial Analytics

What is Spatial Analytics?

Spatial analytics goes beyond understanding the physical location of key assets on a map, enabling you to gain deep insights into how the relative location of customers, stores, services, and more impact your operations, transactions and interactions.

By blending spatial data with traditional datasets and analyzing their relationship during the decision-making process, you can drive greater efficiencies, improve operations, and enhance profitability.

What Can Spatial Analytics Help You Understand?

Blending spatial data with traditional data delivers location intelligence that can be used to:

- **Customize location services or inventory based on your key customers' habits** — Understand nearby consumer buying behavior for specific products and services to optimize and customize inventory or service experience at each location.
- **Improve store, service, or asset location strategy** — Determine how the proximity of competitors or existing locations impacts new site expansion, and understand how far customers are willing to go for your product or service (e.g., 5 minutes, 30 minutes, or more?)
- **Ensure service availability and improve customer experiences** — Identify and prevent service time latency or gaps in service by ensuring key hubs are located within an appropriate distance from each other.
- **Drive efficiencies in marketing programs and offerings** — Customize your marketing offerings to match demographic purchasing preferences in targeted locations.

Most data has some aspect of location information to give it relevance. Use it to understand the "where" of your data and how it impacts your organization.

Not All Spatial Tools Are Created Equal

Most existing business intelligence and analytics tools simply display spatial data on a map, leaving the analysis between points to the user.

More sophisticated, but niche, tools exist and are only available to a select number of expert users for spatial analysis. These tools are complicated, narrow in scope, and/or expensive to use, and don't allow users to easily blend spatial data with other forms of data. The result? Most organizations can't readily make use of them in the broader decision-making process.

Other spatial tools are not analytics tools at all, but rather simple mapping tools that create beautiful maps after a completely separate software platform has performed the analytics.

Alteryx Enables Data Blending for Spatial Analytics

Alteryx offers the unique ability to “see” and treat spatial data for exactly what it is: data.

Alteryx brings spatial analytics out from behind the data specialist curtain to make it accessible and usable by all analysts.

With an intuitive workflow that allows you to bring in several datasets, geocode them, combine them spatially, and even enrich them with demographic data, Alteryx makes spatial analysis easy.

The intuitive workflow of Alteryx Analytics helps analysts

- Access and use all the location data needed
- Geocode data quickly and easily
- Blend location data with traditional datasets
- Perform advanced spatial analytics
- Enrich datasets with demographic, firmographic or industry-specific data
- Visualize, model and analyze data in new ways

Recipe for blending spatial data in 6 simple steps using Alteryx:

1. Gather all the data from the sources needed for your analysis
2. Geocode your datasets to prepare them for spatial analysis
3. Create a trade area to analyze location, radius details, and drive times
4. Blend your datasets to analyze customer and location relationships
5. Perform advanced spatial analytics for additional insight
6. Prepare data for reports and visualizations, or for export to feed downstream processes

Ingredients you need

- A copy of Alteryx **alteryx.com/download**
- A list of the data sources you want to blend
- Access to each database or source you are going to use
- A rough specification of the dataset you need
- A clear understanding of the analysis you want to deliver

See demo videos on Data Blending at **alteryx.com/solutions/data-blending**

1 Gather all the data from the sources needed for your analysis

- Using the ***Input*** tool, you can easily incorporate data from a variety of file formats, including spreadsheets, databases, and unstructured data from your hard drive, data warehouse, social media, and cloud-based systems such as Salesforce.com.

Input tool: Connect to Customer Database

Input tool: Connect to Site Location Information

- Once you set up connections to relevant datasets, you can prepare them for spatial analysis.

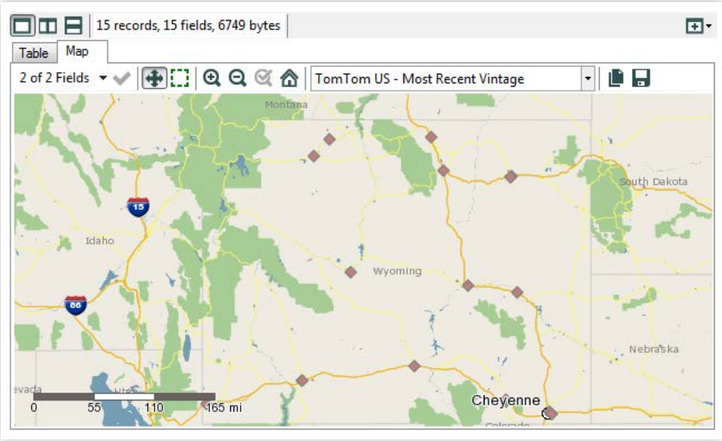
TIP: Preparation is key

- Ensure you have the right credentials to access all your data sources before starting
- Consider what you are trying to accomplish, then seek the data you need—not the other way around

2 Geocode your datasets to prepare them for spatial analysis

- The ***Street Geocode*** tool will spatially enable your data by quickly and easily taking standard address information and geocoding it to determine its latitude and longitude. The resulting spatial point is added to each record in the dataset.

  In this example, we will geocode both site location and customer data.



Street Geocode tool: Enrich datasets containing street addresses with latitude and longitude information for each record

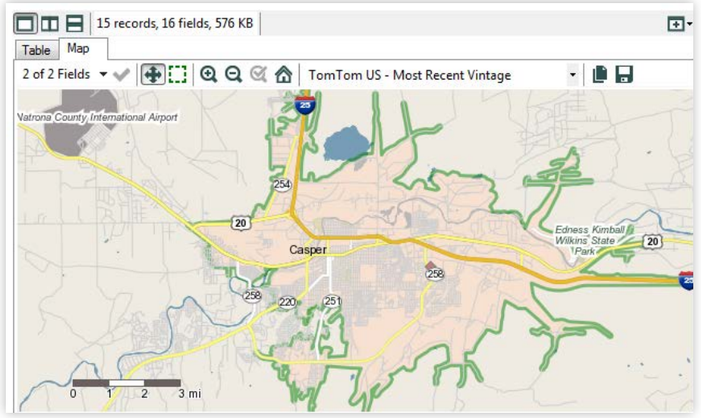
Browse tool: View the geocoded points on a map, quickly and easily

TIP: Be selective and standardize address data

- Data sources often have many fields that may not apply to your perfect dataset quest. To streamline your workflow, remove those fields early using the *Select* tool
- Ensure accurate geocoding by using the *CASS* tool to clean up and standardize address data

3 Create a trade area to analyze location radius details and drive times

- The *Trade Area* tool allows you to see exactly what is happening within a targeted area surrounding each location.
- To create a 10-minute drive time polygon, the *Trade Area* tool will start at each location and traverse the road network until it reaches a point that's 10 minutes away.



Trade Area tool: Create a 10-minute drive time area around each location

Non-Overlapping Drive Time tool: Create non-overlapping trade areas based on the shortest drive times to each location

You can create a trade area in one of two ways:

- Define a circular radius around a point
- Calculate a drive time using the included geospatial data from TomTom, which is generally more realistic when dealing with customers and their preferences

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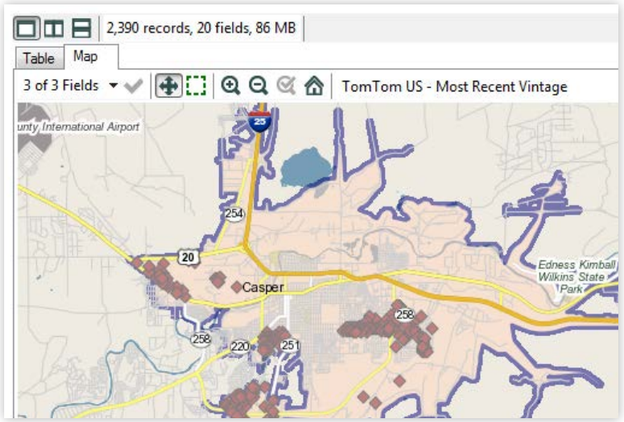
Blend your datasets to analyze customer and location relationships

- The *Spatial Match* tool enables you to establish a spatial relationship (contains, intersects, touches, etc.) between two sets of spatial objects.
- To see how many customers fall inside or outside the 10-minute drive time area of each location, use the *Spatial Match* tool to combine spatial points from your customer dataset with site location trade area polygons.



Spatial Match tool: Establish the spatial relationship between your customer dataset and location dataset

TIP: Ensure the spatial relationship between datasets is correctly established

- From the configuration properties for the *Spatial Match* tool, make sure the "Target" is your point object and "Universe" is your polygon object so your Target is within the Universe

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Perform advanced spatial analytics for additional insight

Alteryx includes a suite of tools that make advanced spatial analytics accessible to line-of-business users. Additional tools include:

Distance tool: Calculate the distance or drive time between a point and another point, line, or polygon

Find Nearest tool: Identify the closest points or polygons in one file to the points in a second file

Heat Map tool: Generate polygons representing different levels of "heat" (e.g. demand) in a given area, based on individual records (e.g. customers)

TIP: Add a Filter

- The *Filter* tool queries records in your file to meet specified criteria
- The *Filter* tool creates two outputs: True, where the data meets the specified criteria; and False, where it doesn't

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Prepare data for reports, visualizations, or export to feed downstream processes

- Alteryx makes it easy to output the results of your analysis and share insights with business decision-makers.
- With advanced mapping tools, you can overlay data on top of detailed maps or satellite imagery to illustrate results clearly.
- You can also output your analysis in a variety of file formats, such as Microsoft Excel, ESRI, XML, PDF, Tableau and Qlik, to feed other downstream analytic processes.

Output tool: Export data in the format you need

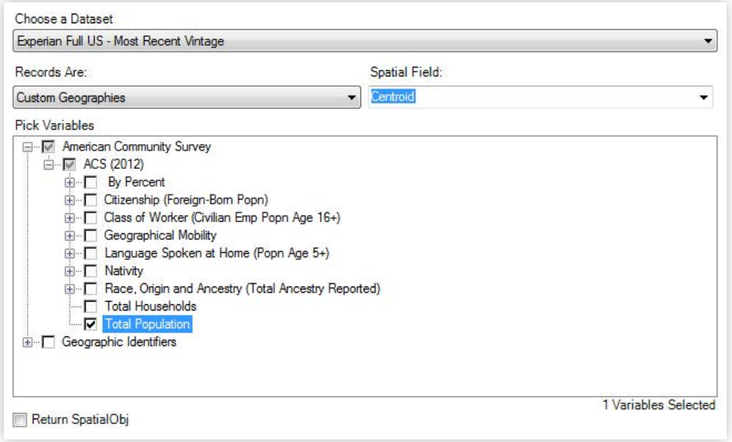
TIP: Quickly update workflows with new data

- Schedule workflows to run at specific times and refresh the resulting reports, visualizations, and other exported data to ensure everyone is working with up-to-date data

Bonus! Enrich your data with third-party information

Alteryx offers the option of enriching your data with demographic, firmographic, and behavioral information that can be used to derive even more business insights.

- Append Experian household data to your trade area to understand a wide variety of variables and attributes of those living within your target locations, such as total population, purchasing preferences, and more.
- Add firmographic information from Dun & Bradstreet to analyze the risk from competitive locations and assess the relationship between high-performing locations to other types of businesses.
- Analyze consumer behavioral patterns of key customers by blending Experian household information with your data to understand how far a consumer is willing to drive for specific services or goods.



Allocate Append tool:
See how many people live within the 10-mile target area of each location

Bonus! Predict buyer behavior and location performance

Alteryx includes over 30 additional tools for statistical and predictive analysis that can be inserted into the same analytic workflow used for spatial analytics.

- Analyze past and potential purchases, including amount, frequency, and types of items purchased, to determine how location impacts buying decisions.
- Identify over- and under-performing locations as well as gaps in your location strategy.
- Predict the revenue impact of adding a new location, both in terms of projections for the new location as well as the revenue cannibalization at nearby locations.
- And much more!

AB Analysis tool: Compare the percentage change in performance to the same measure over a similar time period

Decision Tree tool: Predict a target variable using one or more predictor variables that influence the value of the target variable

Logistic Regression tool: Determine the probability that someone will respond to a campaign

Lift Chart tool: Assess the comparative accuracy of different models to predict new data

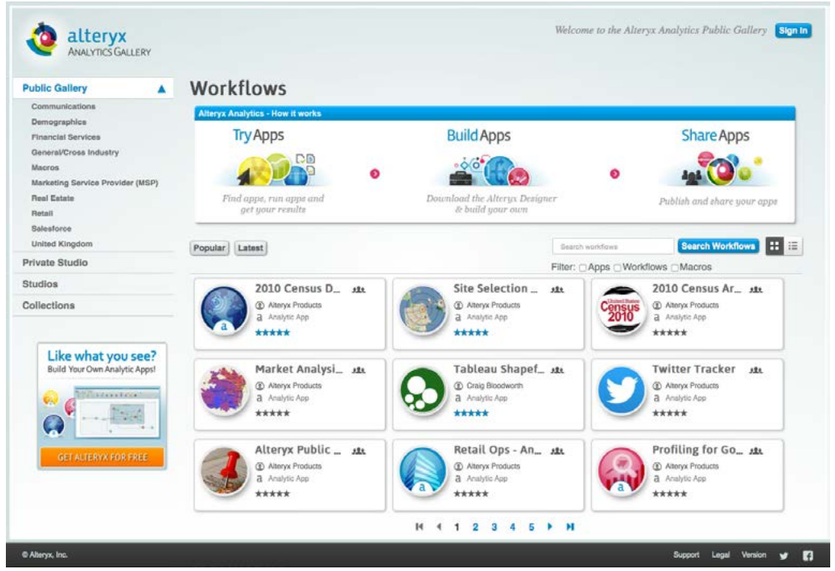
Bonus! Automate and parameterize your data processes

- Save and automate your workflow to run the same processes with updated data and eliminate the potential for errors.
- Package your workflow into an analytic application that can run in a browser-based environment by other employees who do not have Alteryx.
- Give decision-makers the ability to customize and run analytic applications without having to build workflows.
- Visit the **Alteryx Analytics Gallery** to browse and run sample analytic applications.

alteryx ANALYTICS GALLERY

TIP: Empower others in your organization

- Create a workflow once and reuse it for future processes or outputs
- Create a macro to ease repeatable processes



Alteryx Supports Great Clips' Growth Strategy with Site Selection and Location Analytics

Great Clips®

Great Clips uses Alteryx to put analytics in the hands of its real estate managers with an easy-to-use, fast, and accurate way to find and qualify all potential new franchise locations.

- **Deeper Insights.** Conducted analyses on three times as many potential new franchises per day than before, enabling the company to open new franchises more quickly with a greater chance of success.
- **Hours vs. Weeks.** Reduced time to assess a new location by 95 percent, often producing an analysis in five minutes instead of two hours.
- **Intuitive Workflow.** Created a sophisticated site-selection application used by the company's national real estate management team, which includes drive time, demographic, consumer behavior, as well as spatial data, in a single analytic workflow.

Read their case study
to learn more

"It now takes a real estate manger five minutes to produce an analysis for a new franchise location rather than two hours. That not only gets the information into the hands of existing franchisees more quickly, but also ensures that we are in a position to close on the best locations as they become available and before our competition can."

– Drew Moore
Senior GIS Analyst at Great Clips

Rent-A-Center Optimizes Retail Network with Alteryx

With Alteryx, Rent-A-Center's frontline users can obtain rapid insight through ad hoc analyses by interactively querying prospect sites and adjusting trade areas to research markets, all without the need for technical training or programming experience.

- **Deeper Insights.** Enhanced decision-making processes with frontline users having instant access to necessary maps, reports, and files anytime, anywhere.
- **Hours vs. Weeks.** Reduced time required to create GIS maps for 3,000 stores from over 12 weeks to just under three hours.
- **Intuitive Workflow.** Created a central repository of all store locations and customer maps utilized by nearly every department in the company, including drive time calculations from different neighborhoods served by the store and the corresponding demographics within each store's trade area.

Read their case study
to learn more

"At first, I used Alteryx only for data management and did all the GIS heavy lifting with GIS software. Then, I realized that I could transfer most of the routine mapping and a lot of the batch processes over to Alteryx. Finally, I realized that I could do all the drive time generation, geocoding, customer demographics, and many of the spatial analyses in Alteryx as well."

– Deanna Sanchez
Market Planning and GIS Manager at Rent-A-Center

Alteryx Delivers the Three Things Analysts Need Most

Empowers analysts to access all the data they need, when they need it, and analyze it in the optimal manner

Gives them a **single intuitive workflow** for a complete data blending and advanced analytics process

Delivers **deeper business insight** without relying on others for spatial or predictive analysis

Why Should You Use Alteryx for Spatial Analytics?

With Alteryx, you can:

Rapidly add location insight to static data for a better way to analyze interactions

Eliminate manual processes to deliver more consistent data

Spend a greater proportion of time focused on analysis rather than on preparing data

"With Alteryx we will be able to dig deeper into our customer transition data and find more about our customer … on a store-by-store basis and a household-by-household basis."

– John LeTourneux
Senior Analyst, Kroger

Next Steps

Learn more about spatial analytics in Alteryx
alteryx.com/spatial_analytics

View customer videos
alteryx.com/customers

Try data blending and spatial analytics in Alteryx
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6 Steps to Data Blending for Spatial Analytics

More than 1000 customers and
thousands of data analysts worldwide rely on Alteryx daily.
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