

## The Spotfire A(X) Experience: The Future of Analytics is Now

Accelerating insights for everyone through AI-powered, search-driven, real-time analytics

### INTRODUCING THE A(X) EXPERIENCE: A REVOLUTION IN ANALYTICS

The new TIBCO Spotfire® X platform blends augmented, agile, automated, and real-time analytics so you can get from data to insights in the fastest possible way.

Your company's data is a key stimulus for driving growth, enabling differentiation, and maintaining a competitive edge. But while there's been an explosion of data sources and new technologies for capturing them, what's still lacking in most organizations are analytics technologies that everyone can use. As a result:

- It is not easy to get from data to insights, resulting in people using intuition instead of facts for even everyday decisions.
- It is not easy to get timely, real-time insights, resulting in missed opportunities.
- It is not easy to generate deep insights, resulting in an inability to address complex problems.

We are revolutionizing analytics and business intelligence with the all-new A(X) Experience. This new platform accelerates the personal and enterprise analytics experience so you can get from data to insights in the fastest possible way. With the fusion of technology enablers like machine learning, artificial intelligence, and natural language search, it redefines what's possible for analytics and business intelligence, simplifying for everyone how data and insights are generated, consumed, and acted on.

The A(X) Experience is embodied in the release of Spotfire. X. Let's look at its new features.

## AUGMENTED ANALYTICS

Augmented analytics leverages machine learning and automation through smart features, making it easy for anyone to get started with analytics. The end goal is to make it possible for even non-experts to benefit from data, thereby increasing the adoption of analytics within an organization.

The Spotfire<sup>®</sup> X platform features augmented analytics through a seemingly simple approach that is actually rather sophisticated, a combination of machine learning, automation, and natural language search.

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The search bar is your key to the new Spotfire X platform: Just start typing in natural language to get in-context results.

A search bar with a magnifying glass icon and the placeholder text "What are you interested in?".

## NATURAL LANGUAGE SEARCH

It's hard to even think about what life was like before Google and Amazon. In our personal lives, we search and find information, weather forecasts, products to buy, services to consume. Natural language search is now a core part of the Spotfire<sup>®</sup> user interface.

If you know how to search on Google, you know how to run Spotfire analytics. If you're in Sales and curious about your numbers, go to the Spotfire search bar and type "Sales by Quarter" or "Tell me about sales in the US" and get a fully interactive Spotfire chart and related visualizations in a fraction of a second.

## THE SEARCH BAR

Creating a chart is not all you can do with the search bar. Depending on what you are trying to accomplish, Spotfire results are always relevant to the context and start appearing as soon as you begin typing. For example, here is a non-exhaustive list of things you can do with Spotfire search:

- Create a visualization
- Go to a visualization
- Get AI-driven recommendations
- Search for data sources
- Search and mark values
- Perform actions like clustering, line similarity, exporting data to file, etc.
- Access menu items just by typing the name
- Open analysis files
- Open data connections

Essentially, you can do *anything* in the Spotfire system from the search bar!

## AI-POWERED INSIGHTS AND RECOMMENDATIONS

AI-powered insights start working the moment you start typing in the search bar. They are always working in the background, offering insights you may have never realized before.



Have you ever wondered how Amazon magically reads your mind and presents you with just the right shoe or other item as a product recommendation? The magic is powered by machine learning and artificial intelligence. Not only Amazon, but also Netflix, Spotify, Youtube, and others are making AI pervasive to improve our experiences. By simplifying and accelerating the time it takes to find content we would like, AI and machine learning are greatly enhancing our experiences.

By infusing AI into every step of the analytics workflow, the Spotfire X system helps anyone develop the insights needed to make data-driven decisions. AI-powered insights start working the moment you begin typing in the search bar. For example, when you type “sales per quarter,” not only does a chart showing quarterly sales display, but also relationships between other variables are presented—relationships that previously would have taken a data scientist a long time to uncover.

### UNDER THE HOOD

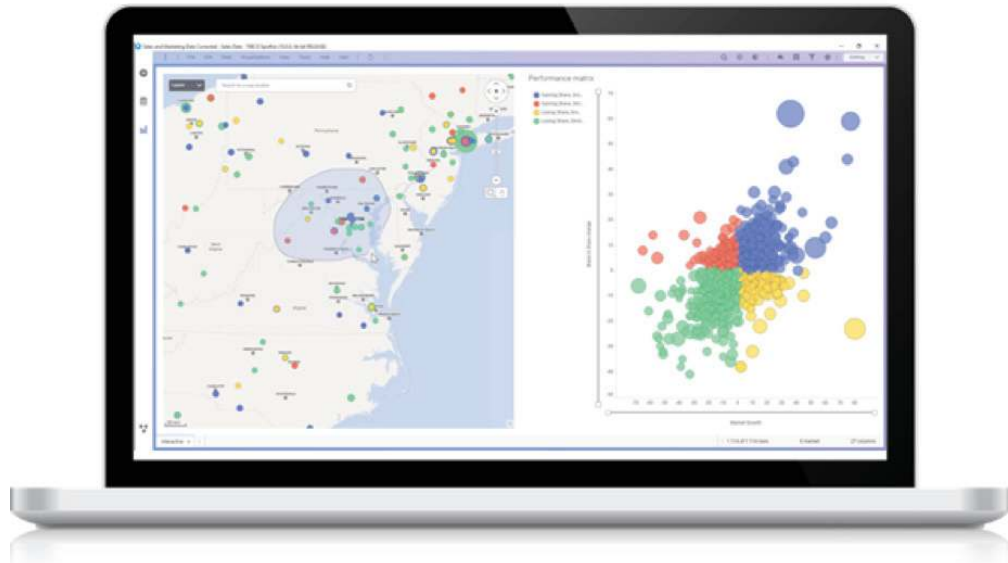
A lot has to come together to make AI-powered insights and recommendations work. Variable relationships are generated by an ensemble algorithm that includes smart data preparation, feature engineering, and multivariate association analysis. Variable relationships include linear and non-linear effects and interactions across all variable types—binary, categorical, continuous, ordered categorical, time, and spatial data. Non-parametric test statistics are then used to rank the insights in order of their strength. Features are then automatically constructed as transforms and aggregations by variable type. Finally, various binning strategies are invoked for continuous and categorical variables depending on summary statistics. For example, date-time variables are rolled up to the level of granularity associated with their observed time spans. The algorithm is robust in the case of data sparsity and distributions, and scales to any data size in Spotfire analytics. Asynchronous execution and tuning of the algorithm provide interactive performance with no noticeable wait times for the user.

## AGILE ANALYTICS

In this day and age, who wants to wait for IT to build dashboards? Several years ago, we saw this new style of agile data exploration and insight discovery as the future of analytics. We were a pioneer in this space, which we call Modern Analytics and Business Intelligence.

## REIMAGINED USER INTERFACE

With the Spotfire X platform, we have totally reimaged the user experience for data discovery and made agile exploration even easier. With a modern look and feel, unified menus, intuitive features, and native streaming with snappy performance, the new platform makes it fun for anyone to work with data.



The user experience fully preserves all the features our customers love about the Spotfire system, such as:

- Finding insights without knowing where or what to look for
- Easily spotting patterns and outliers
- Marking, filtering, drill-downs, and automatic brush-linking across data tables, mashups, and joins

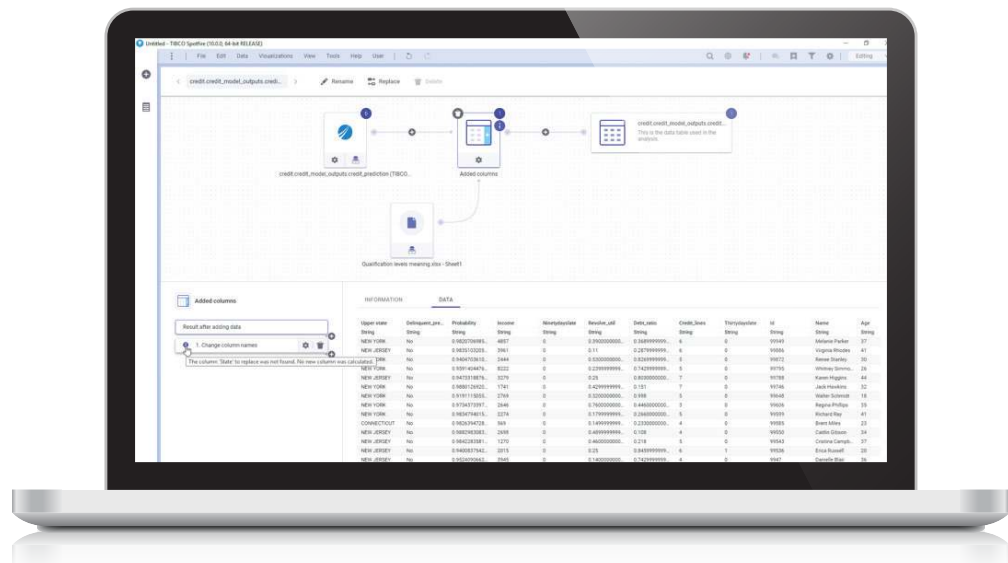
## AUTOMATED ANALYTICS

The Spotfire platform already led the market in automating routine tasks like geocoding, creating time hierarchies (months, quarters, years, type-ahead for formula building), etc. Now we have taken automation even further by making the process of building data lineage 100% automatic.

## AUTOMATIC DATAFLOWS

In the Spotfire X platform, we took a different approach. Most others require users to build boxes and lines. That means you must have prior knowledge of what data preparation steps you want to take.

The Spotfire X platform now builds these data schemas (we call them dataflows) automatically as the user is visually exploring the data, conducting data mashups, and cleaning and wrangling, all in an immersive visual environment. The dataflows can also be easily exposed programmatically via API for other business analysts or user groups to audit and use to standardize.



## REAL-TIME AWARENESS

With real-time data streaming capabilities, the new A(X) Experience not only enables everyone to get to insights about any operational system, it incorporates a whole new way to get you to insights faster than ever before.

## ALL NEW NATIVE STREAMING WITH SPOTFIRE DATA STREAMS

The Spotfire X native streaming capability lets you perform visual analytics on real-time streaming data (not just moving charts) just as you would on data from datastores and local files. This capability requires access to the TIBCO Spotfire® Data Streams add-on that powers connectivity to more than 50 types of real-time data sources.

## REAL-TIME AWARENESS & ACTION

A major benefit of this capability is that now users can relate streaming data to contextual and historical data, combine the past and the present to help understand how and why the data they are seeing came to be, and what they might do to change the future.



With native streaming, the Spotfire platform brings streaming analytics to Main Street. In operationally intensive use cases, for example, in industries like manufacturing, supply chain, and transportation, if you are waiting for somebody to provide you with data to analyze, it's simply too late. Now, plant operators, field technicians, domain experts, and virtually anyone, can create, collaborate, and consume data generated from real-time transactions and sensors all in one place. They can visualize streaming data and also explore it alongside historical data to determine risks and act on opportunities.

### THE A(X) EXPERIENCE ACCELERATES ANALYTICS FOR EVERYONE

Check out the new Spotfire analytics. It's unlike anything you have ever seen. Simple, yet powerful, it changes everything. Because it always has been and always will be about how the user experience enables people to explore the wonderful world of data, if you can augment human intelligence, you can make the world a better place.



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