Introducing Intelligent Exploration for Analysts in Financial Services

How Advanced Analytics Tools Turn
Data Analysts into Strategic Heroes

VIRTUALITICS®

Organizations need to do more with their data than current approaches and personnel allow. New exploration solutions upskill data analysts with user-friendly, AI-powered tools and processes. With Intelligent Exploration, analysts can go deeper than surface-level pivot tables and dig into what's really going on, providing the business with the nuanced insight needed to make the right decisions.

Introduction

Organizations know they need to do more with their data. They recognize it holds the keys to staying competitive. But they run up against a common set of barriers:

▸ **Without advanced data science skills, analysts are only able to do surface-level analysis of limited attributes.**

▸ **The tools they have at their disposal—Excel or BI tools—are designed to report, not explore.**

▸ **It's up to analysts to identify actionable insights, which they may not have the skill, knowledge, or time for. So what's important gets overlooked.**

▸ **Legacy analytic techniques and dashboards don't produce visually intuitive outputs that properly illustrate complex relationships. It's hard to see what findings mean or predict what's ahead.**

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Artificial intelligence is shifting this equation. Both at the enterprise and line-of-business levels, companies can empower the people already on data and business analysis teams to get beyond all the obstacles to get the insights they need from data.

The right AI resources can uplevel data analysts' skills, leading to discoveries that normally require a data scientist. Equipping analysts with user-friendly data science techniques and AI-powered analyses empowers them to explore all relevant data, extract as much value as possible, and lead their organizations to better strategic decisions.

Companies with a business-as-usual approach to data analysis are ceding competitive ground that could be hard to regain. This e-book explains how AI-driven Intelligent Exploration can tap the full potential of your data-savvy people, resulting in strategic advantage.

Limitations of the Same-old BI

The way data is analyzed hasn't fundamentally changed in 50 years. But the quantity, scope, and connectivity of data being collected has grown far beyond what most BI software was designed to handle. Basic data analytics tools are holding you back in several areas.

One is traditional dashboards. **Descriptive and diagnostic analytics are designed to give a summary of the current state of affairs.** Analysts assemble data, take samples, and present univariate reports and 2D graphs of the metrics on top of everyone's minds. But these are only snapshots of the past or current situation. Trying to get a sense of how multiple attributes interact means reviewing multiple graphs in an attempt to grasp the connection.
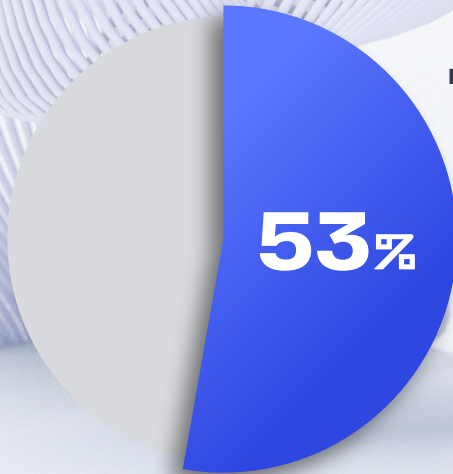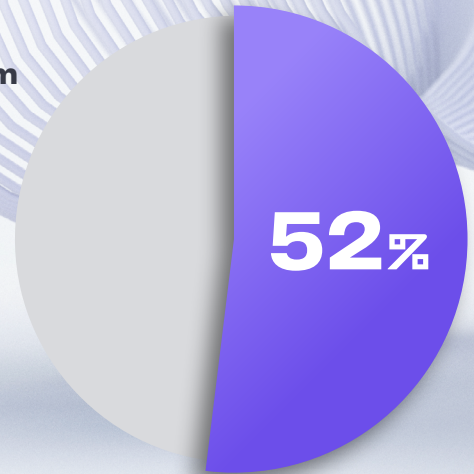
Results from a 2023 CIO.com survey of senior data and analytics leaders showed:

48%
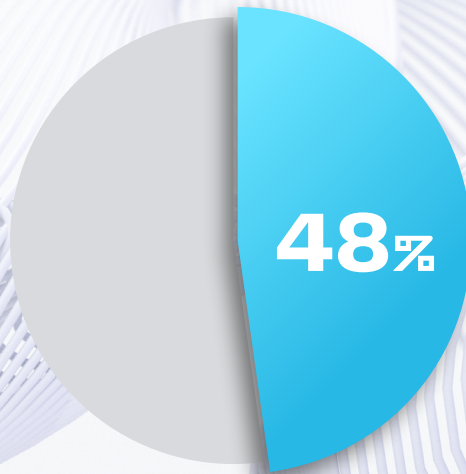
report inaccurate results from AI and analytics projects

53%

of organizations surveyed report a lack of actionable results from past AI and analytics projects

52%

say data exploration is being held back by the inability to explore more than a limited number of data points

Data Projects Aren't Being Built on Solid Understanding of Data

Another drawback is that **it's difficult to investigate problems from every angle using current data analytics.** BI is not designed for exploration. Businesses learn what's going on but they don't know what's connected or what actions are best to take in response. Strategy remains shackled to over-simplified conclusions, instead of pulling out more nuanced insight that can shape new approaches to business.

A third weak point in analytics is **decision-making based on assumptions**. Data contains variables, connections, and relationships beyond those we think we already know. Yet, most organizations start every analysis with a hypothesis to narrow the data to be explored. That means every choice—from the data points you include in your dataset, to the questions you ask of the data, to the conclusions that you spot—is driven by that hypothesis.

These shortcomings of traditional data analysis leave actual data exploration by the wayside. Deep data exploration of all the relevant data has typically been time-consuming, resource-heavy and dependent on data scientists. This means that it happens apart from the business analysts closest to decision-making—or sometimes not at all. **Organizations miss out on domain expertise** that could guide bigger data-based projects such as AI.

What Most Get Wrong in Data Analysis

The limitations of traditional analysis have kept analysts from getting at the insight they need—sometimes even when they know it can be found within available data sources.

The inability to explore the data holistically keeps actionable answers out of reach. Take this example of an institution that was trying to understand where they were losing customers.

Process		Observations	Consequences/Outcomes
1	Observe the problem (or opportunity).	*Some customers aren't renewing.*	Loss of revenue and increased cost of acquiring new customers.
2	Collect customer data that might shed insight.	*Is it management? Customer experience? Price? A combination?*	Dataset with more than 2 dozen possible factors.
3	Begin analysis using BI, creating tables for each factor.	*Churn is most distinct when looked at regionally.*	This result keeps surfacing, but it's not actionable.
4	Attempt to group factors in multiple combinations.	*Only regional manager + region seem to correlate to churn.*	It's an insight but what about root causes? The finding isn't enough to build a strategy on.
5	Create strategy based on findings.	*There are no actionable insights beyond telling the regional manager to figure it out.*	Without a strategy, customer churn remains unchecked.

Intelligent Exploration Takes Business Intel from Surface Level to Deep Insight

Data exploration is the proper foundation for any data-driven initiative, from a single big business decision, to regular reports that inform user action, to new AI that can optimize the business. But when exploration is skipped, or superficially attempted with pivot tables, decisions are on shaky ground. And this puts anything built atop it at risk.

Intelligent Exploration arms data analysts with the power of AI to explore, visualize, and mine complex data for insight.

Intelligent Exploration empowers analysts so they can:

▶ find signal with AI-generated insights, no matter their skill level.

▶ see relationships and dependencies between different data points and communities.

▶ produce visualizations and reports that convey complex insights in simple terms and plain language.

▶ consider all relevant data so that nothing gets overlooked.

▶ extend their capacity to explore data deeper and provide strategic insight.

▶ identify opportunities to automate early and become valuable contributors to AI and other advanced data-based projects.

AI looks at all the data that matters from the start, so analysts don't have to leave anything out. It describes and diagnoses what's going on, even when it may be counterintuitive, providing explanations for the relationships, communities, and insight discovered.

Here's what the previous workflow looks like with Intelligent Exploration.

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2 **Collect customer data that might shed insight.**	*Is it management? Customer experience? Price? A combination?*	Dataset with more than 2 dozen possible factors.
3 **Begin analysis using Intelligent Exploration.**	*What drives customer churn? After region and manager, the biggest driver of customer churn is a lack of engagement by the customer team.*	Customer engagement is something that the customer success team can influence. Is there anything else to consider?
4 **Continue exploration with another AI technique that creates customer profiles.**	*Network analysis reveals 12 groups of customers; two produce most of the churn.*	The high-churn communities again align with a lack of engagement but also a lack of dedicated customer success managers.
5 **Create strategy based on findings.**	*To reduce customer churn, focus on strategies that encourage customer engagement and dedicated customer success managers.*	A customer success team could trial any number of actionable strategies: ▶ conduct a regular check-in call. ▶ offer financial education webinars. ▶ make the business case to hire more customer success managers. ▶ automatically flag customers who aren't engaging for more followup.

Leveling Up the Role of Data Analyst: Two Examples

There's enormous potential when organizations upskill their analysts. With Intelligent Exploration, analysts can better contribute to data-based strategies across the organization. AI-powered analytics enables them to accomplish data exploration without getting blocked by too much data, too many connections between the attributes, or the inability to find the signal in the dataset.

For example, say a financial services company wants to boost its business in lines of credit for small and medium-sized businesses. Maximizing this opportunity requires the company to understand who their ideal customer is and how best to reach them.

A data analyst might look for customer journey signals across a broad variety of data types beyond credit scoring models, risk management systems, and regulatory requirements:

▶ proprietary historical and remarketing data.

▶ social media and search engine activity.

▶ seasonal trends.

▶ corporate annual reports.

▶ news stories.

▶ geolocation considerations.

▶ economic forecasts.

With traditional tools, painting a complete picture from this wide set of data would take a lot of advanced data science skill and time to complete. But with Intelligent Exploration, the analyst can discover groups of businesses that would be strong candidates for credit extensions, and understand why they were recommended. Armed with this insight, the analyst could collaborate with the marketing and environmental-social-governance (ESG) teams to identify the ideal customer persona to target, then prioritize appropriate business development projects.

Another example is identifying online security risks. This requires analysis of large, complex data streams including user behavior, phishing test results, and network activity. Using AI, analysts can discover and rank all of the driving attributes that lead to security breaches. They can identify what is legitimately a red flag and where interventions, education, and even programmatic monitoring are best applied.
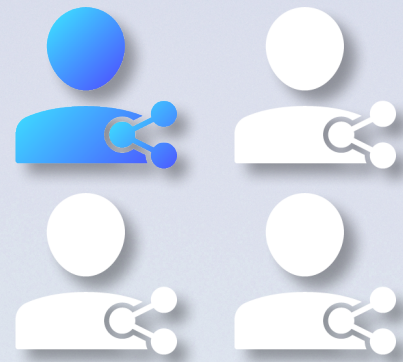
Only 1 in 4
business analysts possess advanced analytic skills
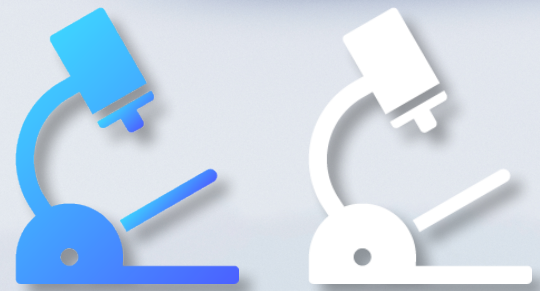
Almost Half
of data science programs are limited by the number of potential use cases they can identify

How Data Analysts Can Get started with IE

Those new to advanced analytics can think about it as a three-stage process. Exploration involves identifying all relevant data attributes, framing the problem(s) to be solved or asking the AI to find them, getting initial insights, and iterating. Stage two takes the insights developed, pressure tests them, and forms them into an actionable narrative. Then the analyst moves into collaborative decision-making and solutions.

1. EXPLORE

Quickly uncover deep insight in your complex datasetsby leveraging no-code data science techniques.

2. DEFINE

Validate your insight, and revisit it if necessary. Once you've confirmed its value, prepare your data story.

3. SOLVE

Review insight and potential options with stakeholders; select, develop, and deploy the right solution.

Comparing Traditional Data Analysis and Intelligent Data Exploration

BI tools support dashboarding and reporting, looking at data at a superficial level. Data exploration lets analysts uncover what's happening below the surface.

Then tidily package insights and recommend forward-looking actions.

Basic Data Analysis	Intelligent Exploration with Virtualitics
Charts are univariate, limiting the breadth of exploration across multiple factors.	Out-of-the-box AI routines quickly explore complex data sources with all potentially relevant dimensions included.
Data teams spin through cycles of queries in search of direction.	AI analyzes all of the data at once to provide immediate direction.
Guesswork on what attributes to analyze can skew conclusions.	Analysis of wide datasets means insights are rooted in data, not hypothesis.
Relationships with significant business impact may be overlooked.	AI surfaces insights that people may not think to look for or have the experience to note as significant.
Advanced analytic techniques require additional skill and experience in coding and data science.	Automated analytics like anomaly detection, smart mapping, and network extraction uplevel analyst capabilities.
Users determine how to visualize queries to best explore and convey results.	AI applies the visualization best suited to explore and communicate results, and suggests alternate perspectives.
Visualizations limited to univariate plots requiring multiple visualizations to express relationships between 3 or more dimensions.	Intuitive, 3D visualizations with plots showing how multiple dimensions interact with each other, making relationships clear.
Exploratory AI routines limited to data scientists or advanced analysts capable of manual coding.	Natural Language Querying allowing anyone to input a request in plain language.
Human interpretation is needed to discover meaningful, statistically significant insights; lack of data literacy skills limit what is uncovered.	AI routines automatically pull out statistically significant insights, presented in plain language.
Legacy reporting formats unequal to the task of explaining complex data relationships → difficulty communicating findings to business SMEs and stakeholders.	Automated reporting with 3D visuals, annotations, and linking that clearly illustrate findings → more actionable results for the business and buy-in for data-based projects.

Organizations Win When Data Analysts Have Tools to Do More

Organizations that upskill data analysts by equipping them with advanced analytics solutions remove common roadblocks to data-driven decision-making. It's simpler to bring in external data and combine it with proprietary data for more comprehensive analysis. It's easier for business stakeholders to grasp preliminary findings, refine them with their domain expertise, and decide on best next steps. And data analysts can become the first step in discovering, validating, and socializing AI projects that make sense for the business, ensuring that data science teams are able to focus on viable projects with the greatest business value.

AI-driven data exploration is the best bet for organizations looking for measurable results from data-based projects. People across departments and business units and up the org chart gain better understanding of AI and data models. There's less friction to get buy-in for data projects that can be game-changers for business strategy. And data analysts become supercharged, strategic facilitators who can use data to show what happened in the past, what's going on now, what's likely to happen next, and what to do about it.

See Intelligent Exploration in action

About Virtualitics

Virtualitics, Inc., the Intelligent Exploration company, harnesses the power of AI-and machine learning-guided data exploration to transform organizations. For more information about Virtualitics, visit virtualitics.com.

Our customers create measurable results with accessible AI

Virtualitics, Inc. is an advanced analytics company that helps enterprises and governments make smarter business decisions faster, with ready-to-use AI that can be understood by analysts and business leaders alike.

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