

A network diagram featuring a central dark grey horizontal bar. Above and below this bar, there are clusters of nodes connected by lines. The nodes are colored in shades of blue and orange. The lines connecting the nodes are also in these colors, creating a complex web-like structure. The overall aesthetic is modern and technical.

# AYASDI

## Understanding Ayasdi Core

## The Challenges with Gleaning Valuable Insights from Complex Data

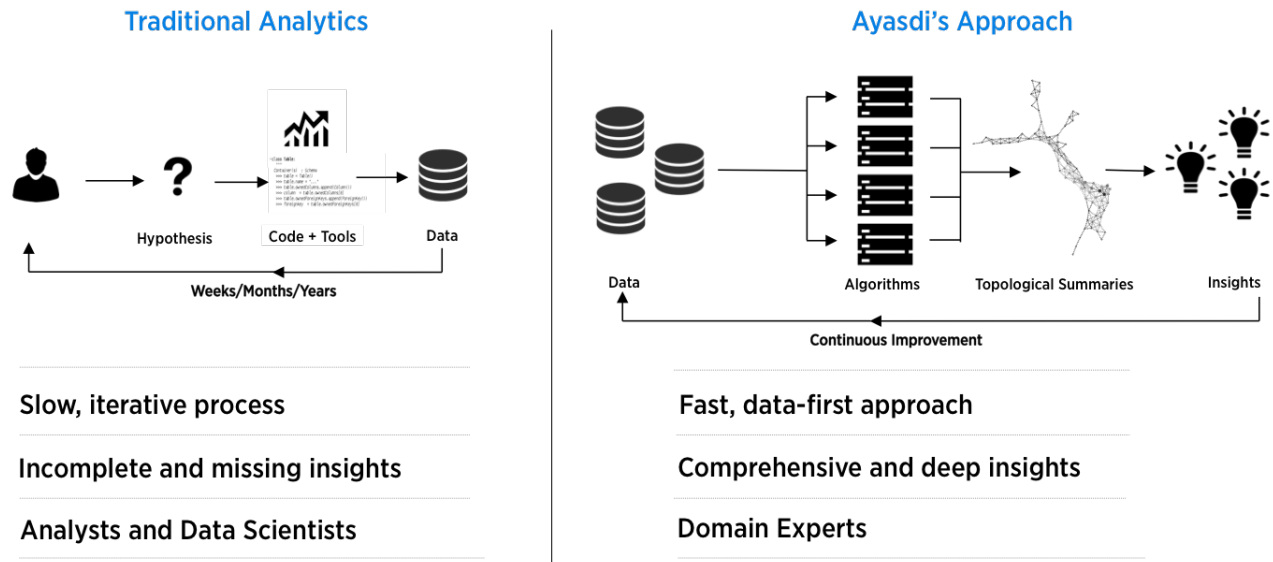
Your organization continues to amass vast amounts of complex data. You have a tremendous opportunity to tap into this data and uncover insights that facilitate new discoveries, drive additional revenue streams, forge stronger customer relationships, prevent fraud, and mitigate risk.

But how do you effectively query and analyze all of your highly complex data that has thousands or even millions of attributes?

How do you know what questions to ask of your data?

How do you then rapidly iterate through various hypotheses to uncover critical insights from your data?

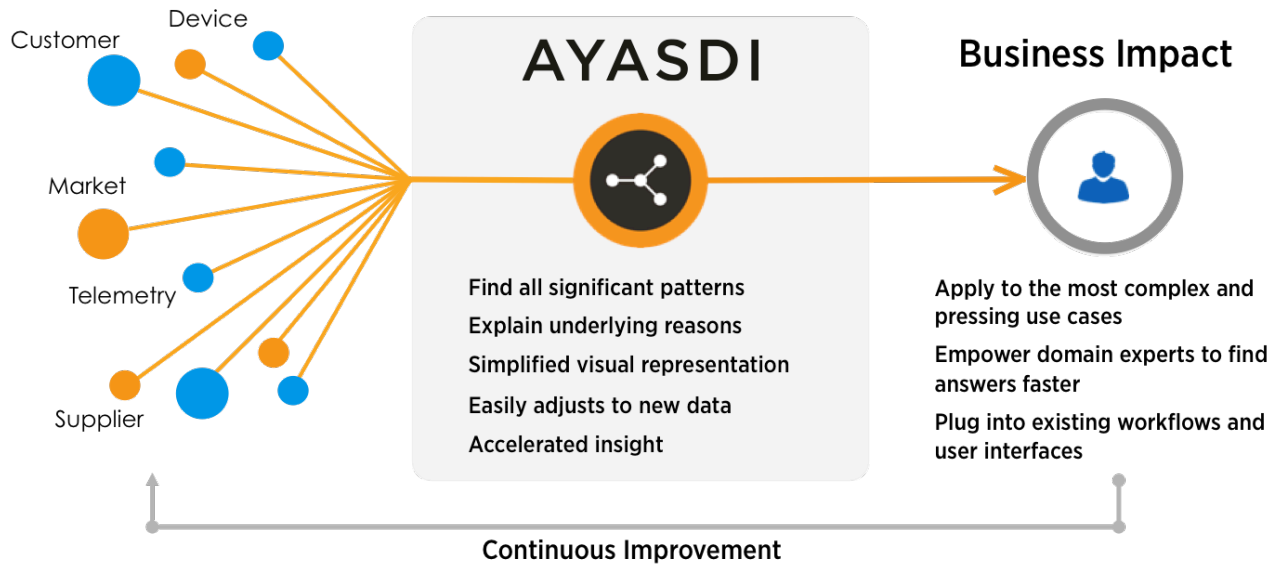
Conventional approaches to data analysis are not equipped to handle highly complex data. These approaches are hypothesis-driven and heavily reliant on specialized individuals asking the right questions of the data. Iterating through different hypotheses is time-consuming and expensive. And as these query-based approaches are typically limited to subsets of the data, they can potentially miss critical insights.



Comparing Ayasdi's approach with traditional analytics

## Introducing Ayasdi Core: Discover Hidden Intelligence in your Data

Ayasdi Core™ accelerates the discovery of critical intelligence from complex data – previously hidden or overlooked by conventional analytics tools.

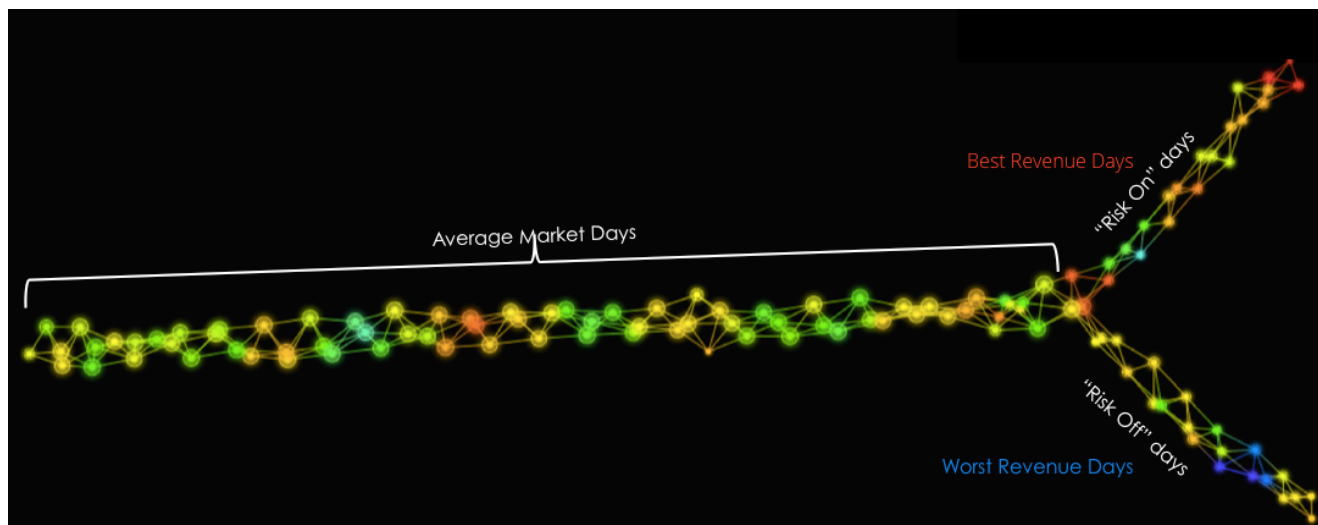


How Ayasdi Core discovers critical insights from complex data

### DEEP AND COMPREHENSIVE INSIGHTS

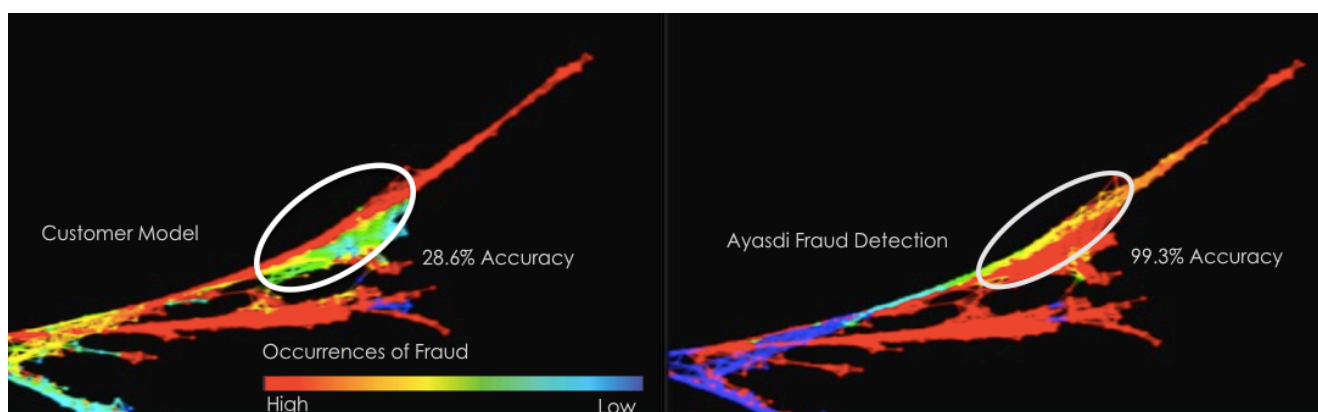
Ayasdi Core fundamentally simplifies the analysis of complex data by utilizing topological data analysis (TDA), a technique pioneered by our founders. It starts with your data. It then applies combinations of algorithms - from statistics, geometry and machine learning - to analyze thousands of attributes simultaneously and find and explain all the significant patterns in your data. It uses the geometry of your data to create topological summaries that reveal subtle insights - often invisible to other methods.

For example, a Fortune 50 investment bank used Ayasdi Core to analyze transactions and correlate its clients' trading revenues with 100+ market and economic indicators. The bank was able to identify the precise market features that characterized trading days and pinpoint specific customer segments that were sensitive to certain market conditions. Armed with the uncovered insights, its sales force can now precisely target clients with specific products based on market conditions.



**A deep understanding of market conditions makes the sales force more effective.**

In another instance, a major credit card company analyzed its transaction records and uncovered seven telltale characteristics, that when simultaneously present, indicate fraud may be occurring. By incorporating these findings into its fraud detection models, the firm increased the accuracy of detection from 29% to 99% in a subset of transactions. Most conventional analytic solutions would be hard pressed to uncover such subtle insights in complex data.



**Uncovering combinations of characteristics improved fraud detection.**

### ACCELERATED INSIGHT DISCOVERY

Ayasdi Core accelerates the time to insight by taking a data-first approach to analysis.

Unlike the iterative, hypothesis-driven analytic approaches that are heavily dependent on a few specialized individuals to scale, Ayasdi Core empowers your domain experts to find answers faster without having to write queries or code algorithms. It expedites insight discovery by starting with your data and then applying a

A major investment firm reduced its variable selection process from three months to two weeks with Ayasdi Core

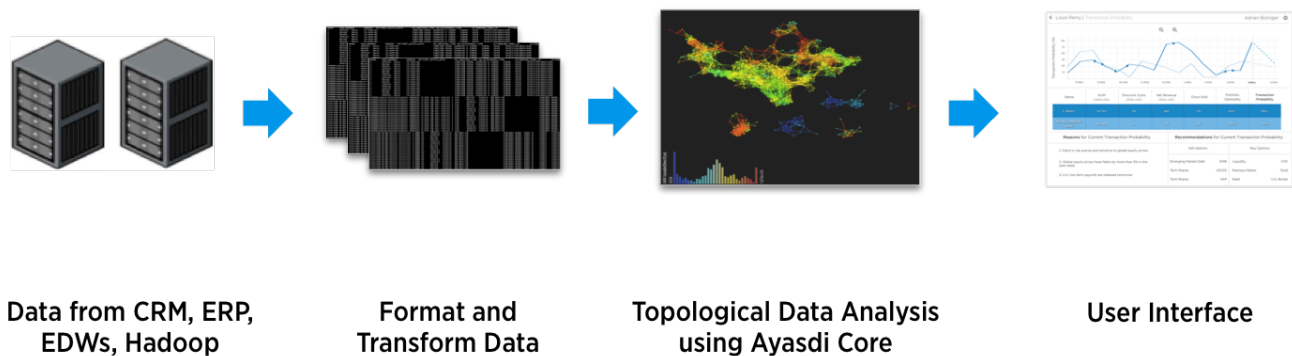
broad range of algorithms to it. The discovery of patterns lets your experts focus on understanding the underlying reasons. It enables them too build more accurate classification schemes and prediction models.

For example, a Fortune 50 institutional capital markets firm used Ayasdi Core to rapidly analyze and correlate 2,600 macro-economic variables and their impact on revenue streams to identify and incorporate the right variables into their risk management models. They were able to shorten the variable selection process from three months to two weeks.

Ayasdi Core's approach augments existing analytical resources. It is easily repeatable thereby significantly speeding the time-to-insight. Models created using Ayasdi Core dynamically adjust as new data arrives. This helps improve the accuracy of these models over time.

### RAPID TIME-TO-VALUE

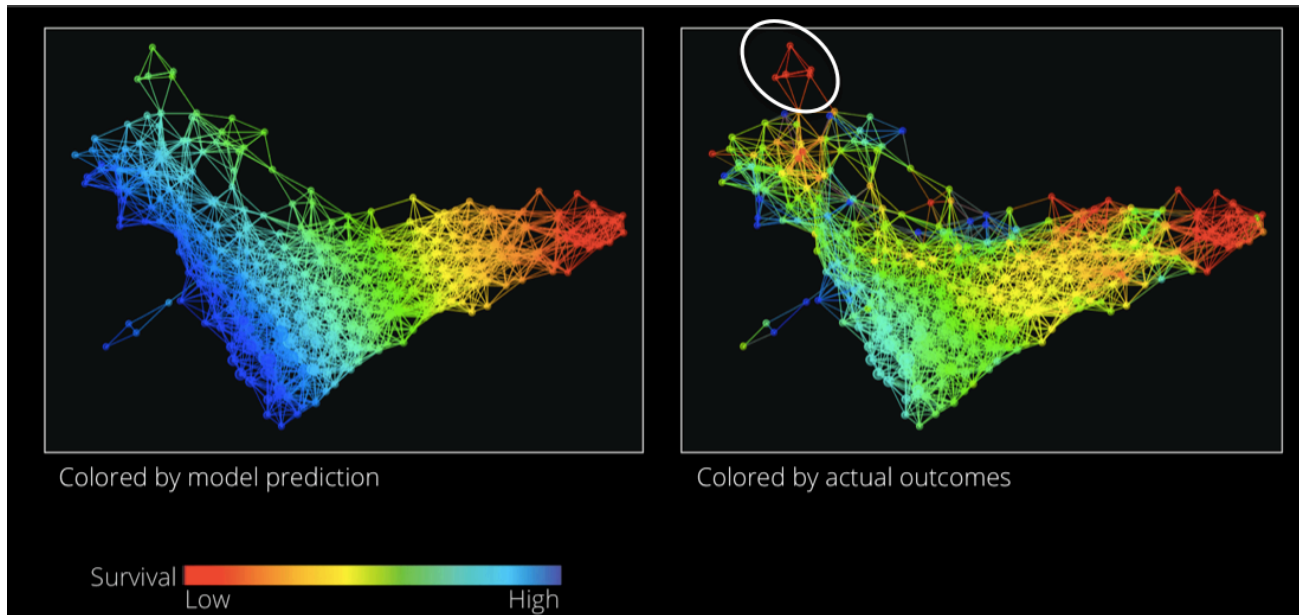
Most organizations have made significant investments in Big Data Analytics tools with little pay off. The current analytical approaches are slow, manually intensive, and expensive. Ayasdi Core speeds the time-to-value for your analytics investments by making insight discovery and exploration accessible to your domain experts. It lets you analyze all of your complex data and present insights in one place. It reduces the need to invest in disparate tools to analyze different types of data.



**From data to value – How Ayasdi Core works**

### How it Works

How does Ayasdi Core analyze data? Think of a spreadsheet in which every row in the table is a data point and the columns represent the attributes of these data points. Ayasdi Core applies algorithms to your data to group similar data points into nodes. It then connects the nodes that share data points with edges to create a data network or a topological summary. The topological summary reveals insights and patterns in your data that conventional analytics tools cannot bring to the surface. For example, a flare in a topological summary could potentially indicate anomalies. Ayasdi Core lets you easily explore the key features that characterize that flare or subgroup of interest to help you understand the underlying reasons for these anomalies. By utilizing a revolutionary Topological Data Analysis (TDA) framework that brings together a broad set of algorithms from statistics, geometry and machine learning, Ayasdi Core helps reveal the most comprehensive set of insights.



Exploring flares and subgroups of interest via topological summaries

## Solving Complex Data Challenges in the Real World

Leaders in the financial services, healthcare, energy, consumer goods, high tech and public sectors use Ayasdi Core to discover critical intelligence that helps them tackle a wide array of challenges including precisely segmenting customers, delivering superior patient outcomes, detecting unusual instances of fraud, identifying indicators of risk, or finding the next major oil field.

Healthcare	Financial Services	Life Sciences	Public Sector	Consumer	Energy	High Tech	Communications
Clinical pathway development	Client segmentation	Precision medicine	Target discovery	Personalized marketing	Unconventional exploration and recovery optimization	Design simulation optimization	Customer segmentation
Population health management	Market conditions analysis	Drug target discovery	Patterns of life detection	Customer segmentation	Drilling and deepwater exploration	Anomaly detection	Personalized marketing
Denials reduction	Model validation	Clinical trials analysis	Model improvement	Sales and operations planning	Signal processing	Predictive maintenance	Churn analysis
Comparative effectiveness	Risk management	Indication discovery	Signal processing for threat detection		Predictive maintenance	Cyber-security threat prevention	Network optimization
Precision medicine	Fraud detection	Adverse drug events	Public health initiatives		Breakthrough event prediction		
Fraud, waste & abuse detection		Supply chain optimization	Text analysis		Trader surveillance		
Provider network management		Comparative effectiveness					
		Precision marketing					

Ayasdi Core lets you precisely segment your data and quickly detect subtle signals and anomalies. By accelerating the discovery of deep insights within complex data, Ayasdi Core frees you to spend time on what you do best: creatively applying advanced analytics to solve your most pressing business problems.

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## ABOUT AYASDI

Ayasdi is on a mission to make the world's complex data useful by automating and accelerating insight discovery. Our breakthrough approach, Topological Data Analysis (TDA), simplifies the extraction of intelligence from even the most complex data sets confronting organizations today. Developed by Stanford computational mathematicians over the last decade, our approach combines advanced learning algorithms, abundant compute power and topological summaries to revolutionize the process for converting data into business impact. Funded by Khosla Ventures, Institutional Venture Partners, GE Ventures, Citi Ventures, and FLOODGATE, Ayasdi's customers include General Electric, Citigroup, Anadarko, Boehringer Ingelheim, the University of California San Francisco (UCSF), Mercy, and Mount Sinai Hospital.

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