

Data Driven Analytics Use Cases Powered by the Avalanche Cloud Data Platform



Table of Contents

- 3 Introduction
- 4 Customer 360 Real-time Analytics
- 6 Healthcare Analytics
- 8 IoT Powered Edge-to-Cloud Analytics
- 10 ITOps Health and Security Analytics
- 12 Supply Chain Analytics
- 14 Machine Learning and Data Science
- 16 About Actian

The Data Driven Analytics Use Cases eBook

Actian empowers the data-driven enterprise with a cloud data platform to make it easy to meet the needs of the most demanding analytics use cases from the edge to on-premises and the cloud.

Thousands of forward-thinking organizations around the globe trust Actian to help them solve their toughest data challenges and to transform how they power their businesses with data.

This eBook is designed for users and application builders looking to use the Avalanche Cloud Data Platform to address a wide range of data analytics, integration, and edge use cases. These examples are taken from real-world customer experiences and deployments to serve as a guide for understanding what is possible with Actian's cloud data platform.

This eBook provides a high-level architecture for each use case, it represents. More detailed implementation guidance is available from Actian's sales and technical teams.

Please contact us to learn more today.

www.Actian.com

Customer 360 Real-time Analytics

A true 360-degree view of a customer can't be sourced exclusively from internal data let alone from a single system or department. Traditional CRM and data warehouse systems can't handle all the data sources needed. Avalanche Cloud Data Platform simplifies customer analytics with built-in data integration, accelerating the mining of data sources and delivering 360-degrees of actionable customer insight.

With the Actian platform, organizations can rapidly personalize the customer experience through micro-segmentation, next best action, and market basket analysis while improving customer acquisition and retention through campaign optimization, and churn analysis to increase customer loyalty.

Customer Profile

Granular, multi-channel, real-time customer profile analytics can tell you about your customers, the best means to connect, the targeted offers that will resonate, predilection to churn, and the best ways to personalize the customer experience to win more business and drive up loyalty levels.

Micro-Segmentation

Create meaningful customer experiences with targeted offers and responses resulting in a higher return on investment. Uncover relationships between customers and key purchase drivers deriving the value of each customer while identifying new segments that provide a competitive advantage.

Next Best Action

Maximize long-term customer value by predicting what a customer will do next while also influencing their next action.

Campaign Optimization

Capture more wallet share using the Actian platform to deploy effective and highly personalized campaigns through deep analysis.

Market Basket Analysis

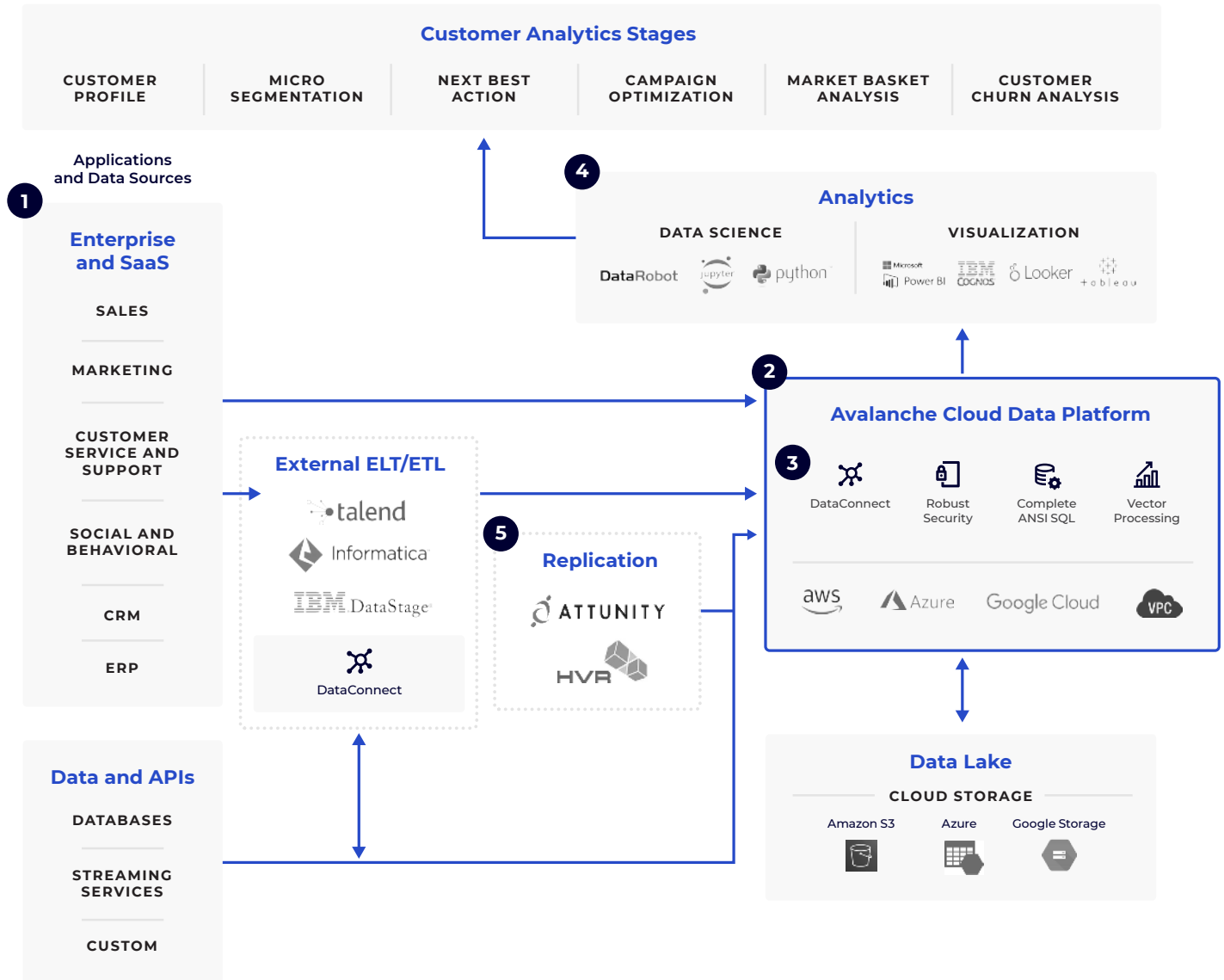
Increase revenue by uncovering your most profitable product groups, learn which products benefit most from associations with other products, understand optimal shelf arrangements, and better target marketing and promotions.

Customer Churn Analysis

Discover customer classifications and assign customer lifetime value and churn scores to understand and monitor which customers you can't afford to lose. Generate raw churn predictions informed by individual customer profitability.

The Avalanche Cloud Data Platform provides a large European retailer with the ability to benchmark store performance across geographies and better understand buying behavior. This allows the retailer to configure shopping experiences, such as displays and sales, and integrate these into digital discounts to customers for complimentary shopping items that are frequently purchased together.

Customer 360 Real-time Analytics



1. Customer Profile Aggregation

Real-time analytics for Customer 360 requires data aggregation across enterprise apps, data lakes, and external data sources.

2. Real-time Customer Analysis

Avalanche Cloud Data Platform delivers superior price-performance for actionable insights in real-time.

3. Built-in Data Integration

Integration includes drag-and-drop support for thousands of different applications and data sources.

4. Popular BI, Data Science Tools

The Actian platform supports popular BI and analytics libraries, visualization, and data science tools, and platforms.

5. REAL Real-time Insights

Actian continuously keeps analytics datasets up to date with no impact on downstream query performance.

Healthcare Analytics

The Avalanche Cloud Data Platform helps healthcare payer and provider organizations leverage analytics to protect their businesses against fraud, increase care delivery, provider efficiency and accuracy while accelerating the transformation to an outcome-centric model.

With Actian, organizations can easily bring together data from any source into a high-performance hybrid-cloud data platform that supports even the most demanding workloads.

Healthcare Fraud Detection and Prevention

Medical billing is prone to errors and waste with the complexity of medical procedures, and the variety of services it provides. The Avalanche Cloud Data Platform tackles deliberate fraud, unintentional errors, inefficiencies, and abnormal patterns and outliers.

Healthcare Provider Analytics

Empower the discovery of clinical insights and increase operational efficiency by bringing together data from any source into a high-performance cloud data platform. Edge data processing and analytics improves medical instrumentation automation, care delivery, and real-time decision support across clinical, ambulatory, and specialty areas. .

Care Delivery Provider and Patient Engagement

Offer products and services more intuitively, communicate more effectively, and engage more consistently with a 360-degree view across all your care delivery providers and their patient touch points.

Modernize Healthcare Applications

Transform your legacy applications and data architectures into intelligent applications on a modern cloud data platform, to increase ROI and leverage cloud, AI, mobile and IoT data.

Data Governance for Healthcare

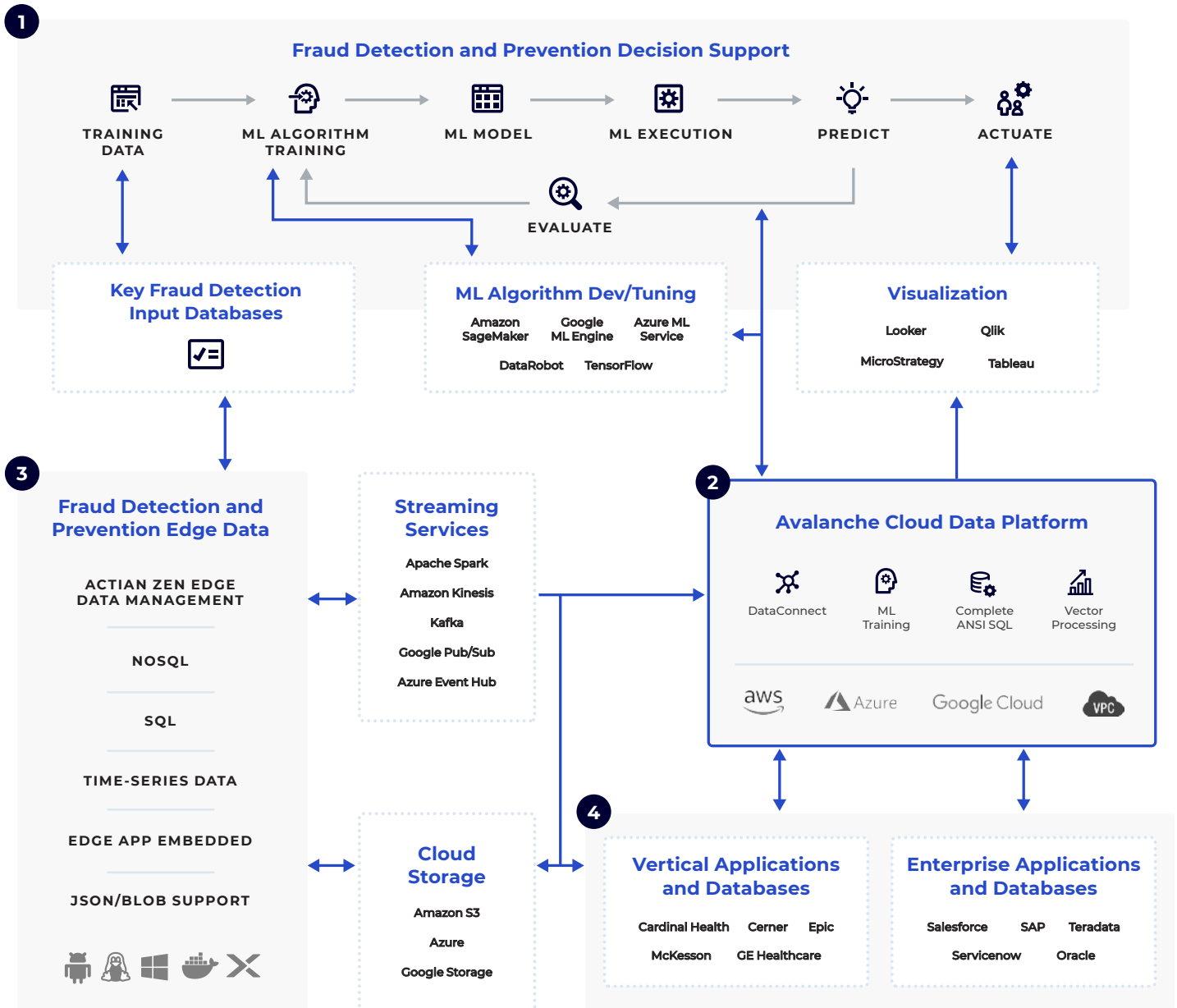
Arm your chief data officer with transparent, timely, secure, and accurate data for regulatory compliance with CMS and other regulations, including data from high-risk sources such as mobile devices and IoT.



"We selected Actian to address our most demanding data analytics workloads. Avalanche offers the perfect combination of great analytics performance and the lowest total cost of ownership available in a cloud offering."

**- Chief Information Officer,
Beacon Health Options, Inc.**

Healthcare Fraud Detection and Prevention



- 1. Fraud Detection Patterns Actuate**
Built-in support for traditional, and new data sets and patterns
- 2. Accelerated Healthcare Analytics**
Provides accelerated analytics across all major public and private clouds, bringing together data, regardless of source or type with low, predictable cost and superior price-performance.

- 3. Edge Data Management**
Zen, available in the Avalanche Cloud Data Platform, provides scalable, secure, SQL and NoSQL data management that can be embedded in mobile, IoT, and other edge applications.
- 4. Built-in Data Integration**
Build no-code data load and prep pipelines for healthcare-specific applications, IoT devices and streaming and batch data sources.

IoT Powered Edge-to-Cloud Analytics

Edge applications and devices increasingly rely on complex data processing and analytics to improve automation and end-user decision support. The underlying cloud and edge data management solutions must leverage a variety of hardware architectures, operating systems, communications interfaces, and languages. The Avalanche Cloud Data Platform and its Zen Edge Data Management option provides broad, high performant and cost-effective capabilities for this demanding set of requirements.

Intelligent and Integrated Automation

IT investments in manufacturing, aerospace and defense, communications, energy production and distribution will only achieve their full ROI potential with the combination of IoT, the cloud and AI-enabled distributed applications. The Actian platform with Zen Edge Data Management provides true edge to cloud connected analytics.

Decision Support at the Point of Action

Edge-to-cloud isn't just about machine to machine. AI-driven digital assistants can combine user-owned learnings and controlled information with scenario-based demographic and behavioral response data to personalize decision support at the point of action in everything from grocery shopping to pilot simulations.

Grid Management

Local and perimeter security defense, oversight and governance for devices or human operations, and software updates including AI models in unsupervised edge device operations require tight communication and collaboration between data management platforms and analytics systems from edge-to-cloud and back.

Tracking and Tracing

Real-time data sharing and analysis across multiple parties with different systems, data stewardship, protocols, and legacy systems typifies many use cases ranging from transportation and logistics to communicable disease control. The Actian platform with Zen delivers performance and data security across cloud and edge environments.

Smart and Autonomous Vehicles

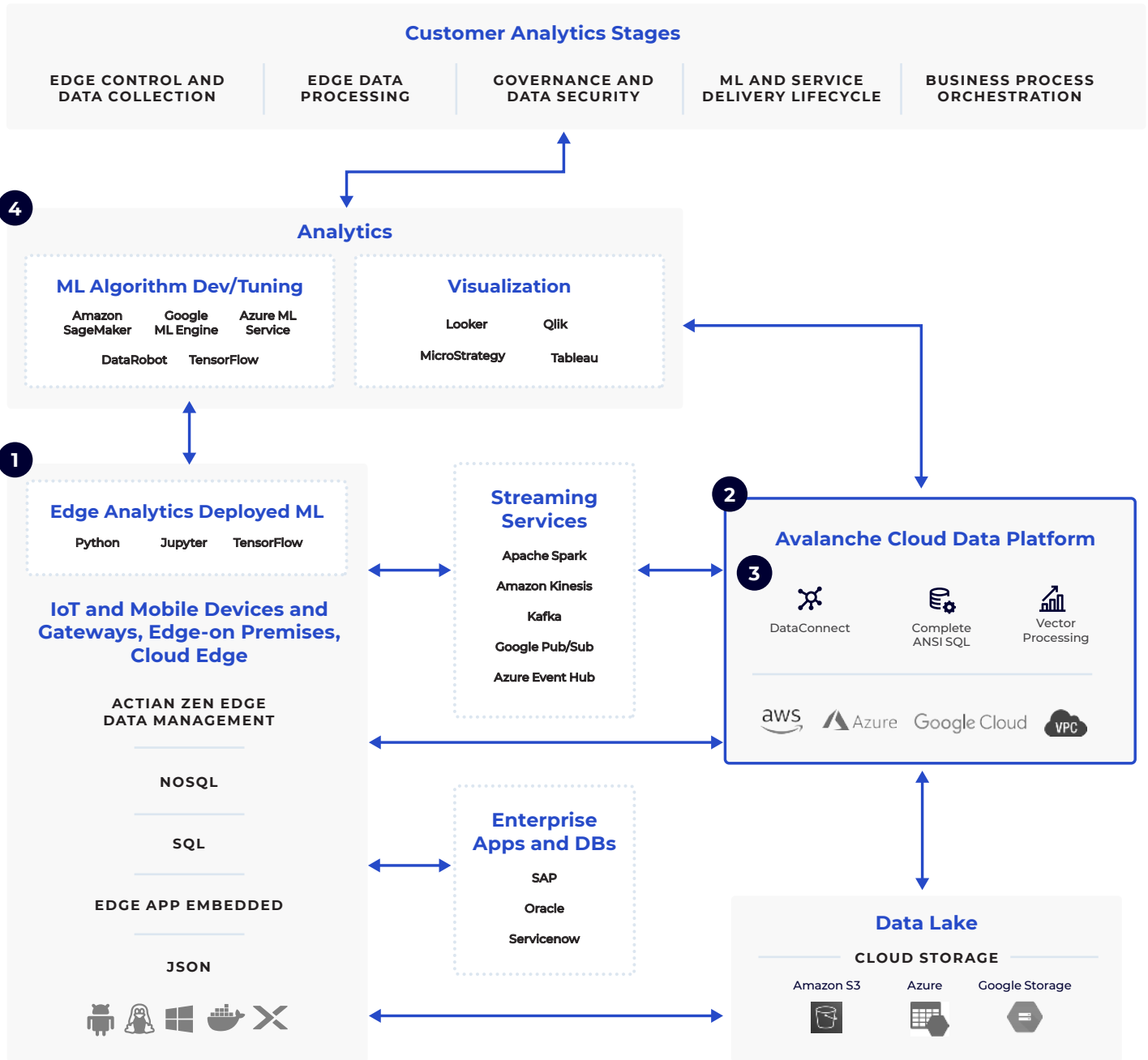
Airplanes, cars, high-speed rail, and other connected mobile equipment represent the most challenging requirements across automation, tracking, decision support, and grid management. From lidar signals processed with local unsupervised AI in self-driving cars, modelled and tuned in the cloud and paired with a Digital Twin, the Actian platform with Zen is an edge-to-cloud data processing and analytics solution.



“With the evolution of the Zen architecture, we can now deploy a small footprint/IoT-enabled database that can run in a serverless mode with just client libraries. That opens up whole new opportunities for customers to put inexpensive IoT-enabled devices into settings that used to require expensive PLC devices.”

**- Chris Okamuro,
Vice President and
Chief Technology Officer,
Global Shop Solutions**

IoT Analytics



1. Edge to Cloud Processing

Zen Edge Data Management provides scalable, secure, SQL and NoSQL data management that can be embedded in mobile, IoT, and other edge applications.

2. Real-time IoT Analytics

Avalanche Cloud Data Platform delivers superior price-performance delivering analytics for actionable insights

3. Built-in Data Integration

Integration includes drag-and-drop support for thousands of different applications and data sources.

4. Popular BI, Data Science Tools

The Actian platform supports popular BI and analytics libraries, visualization, and data science tools, and platforms.

ITOps Health and Security Analytics

Managing the health and security of IT infrastructure has become an increasingly intractable problem. With the explosion of ITOps, DevOps, AIOps and SecOps data streaming from multiple clouds, applications and on-premises platforms, many vendors are working to provide data visibility in their domains. However, they fall short in creating a holistic view to predictively identify trouble spots, security risks and bottlenecks.

How can businesses gain real-time actionable insights with a holistic IT analytics approach? The Actian Clou Data Platform makes it easy to combine data from thousands of data sources into a unified hybrid-cloud data platform capable of real-time analysis of applications, infrastructure, and security posture – all while reducing costs and accelerating response times.

Predictive Analytics for IT Ops

Focus on the most important incidents first and accelerate mean time to repair. Analyze similar previous incidents, change requests and remediation actions to predict the incident priority, business impact and urgency.

Security Incident Response

SEIM/SIEM were not designed to handle the volume and variety of real-time data generated today. Pricing by data volume forces CSOs and CIOs to put their security posture at risk or pay millions for their own data. The Actian platform enables security teams to use one system to analyze data from all sources, enabling faster identification and containment of incidents, at a lower cost.

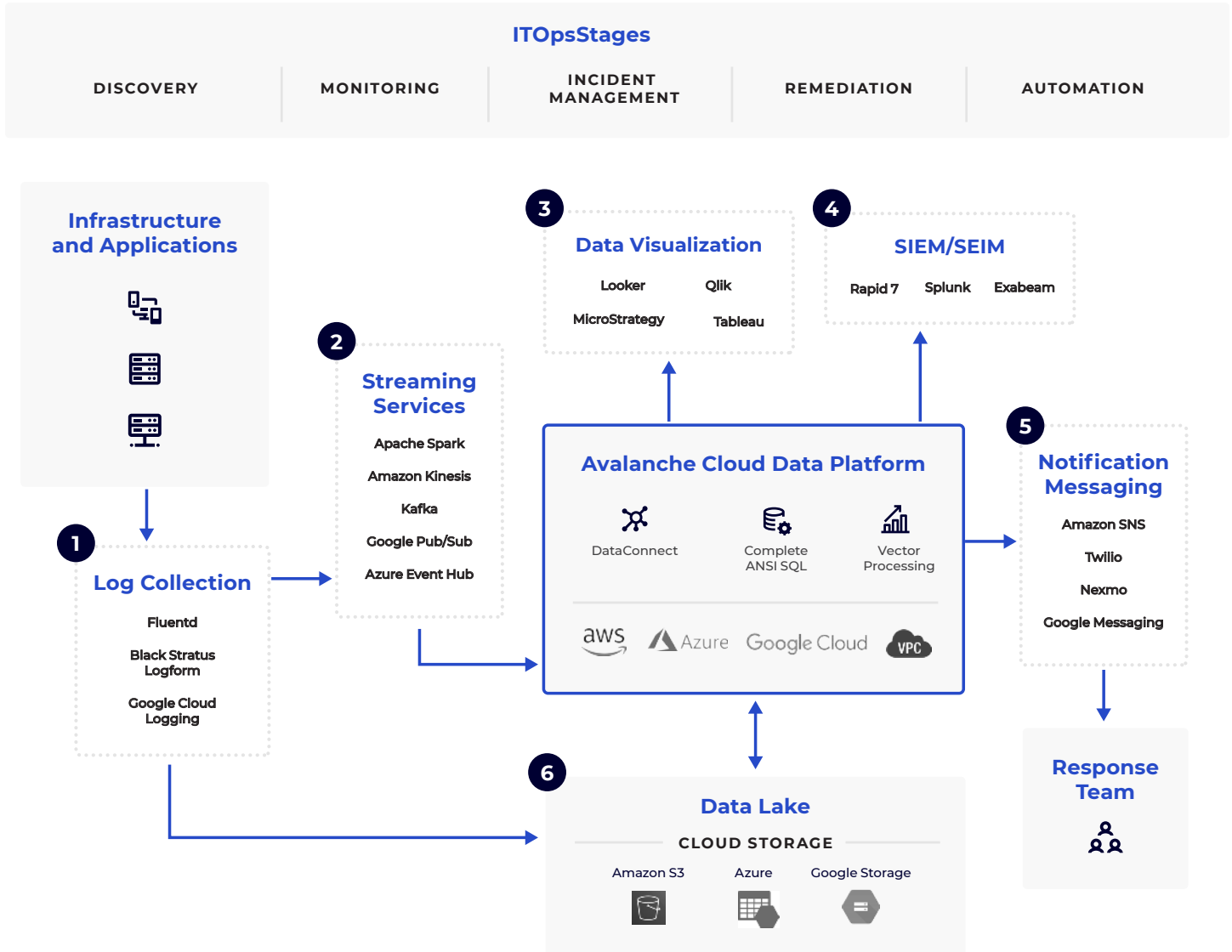
Cyber Threat Forensics

Following an attack, cyber forensics analysts collect, examine, and analyze data from compromised systems, applications, infrastructure, and devices along with contextual data and past patterns. The Actian platform provides a single system to aggregate, enrich and analyze forensics data

Actian makes it possible to gain real-time actionable insight with a holistic IT analytics approach



ITOps Health and Security Analytics



1. Log Collection

Collect log data from applications, systems, and infrastructure for analysis.

2. Streaming Services

Consolidate and pre-process log data through cloud streaming services. Ingest streaming data sources.

3. Ad-hoc Analytics

Connect a wide range of ad-hoc query and analysis tools through JDBC to derive new insights.

4. SIEM/SEIM

Connect security analytic tools to the Actian platform for detailed security posture analysis from multiple sources.

5. Notifications

Create connections through the Actian platform to key notification services.

6. Cloud Storage

Direct storage of log files in cloud storage systems to be ingested into the Actian platform

Supply Chain Analytics

Manufacturing is a far more complex process, compared with just a few decades ago, with subcomponents required to assemble a single final product sourced from several places around the globe. Along with this complexity is a massive amount of data that needs to be analyzed to optimize supply chains, manage procurement, address distribution challenges, and predict needs.

Action helps companies easily aggregate and analyze massive amounts of supply chain data to gain data-driven insights for optimizing supply chain efficiency, reducing disruptions and increasing operating margins.

Data Management and Automation

Gather insights around supplier performance, supply chain diagnostics, market intelligence and risk management through end-to-end information management. Data lake analytics capture supply chain transactions accurately with high consistency and minimum redundancy while deriving patterns for optimization.

Supply Chain Simulation

Model new supply chain strategies based on business and operating model changes, and current and future supply/demand/logistics constraints. Identify and validate the best cost-efficient network to achieve the necessary service level across the value chain.

Intelligent Distribution and Logistics

Gain a more intelligent and responsive allocation across channels addressing challenges such as staffing, distributed warehouses, and direct distribution through real-time analytics.

Intelligent Procurement

Understand where and when to source using advanced machine learning algorithms based on past purchases, commodity pricing, and industry trends.

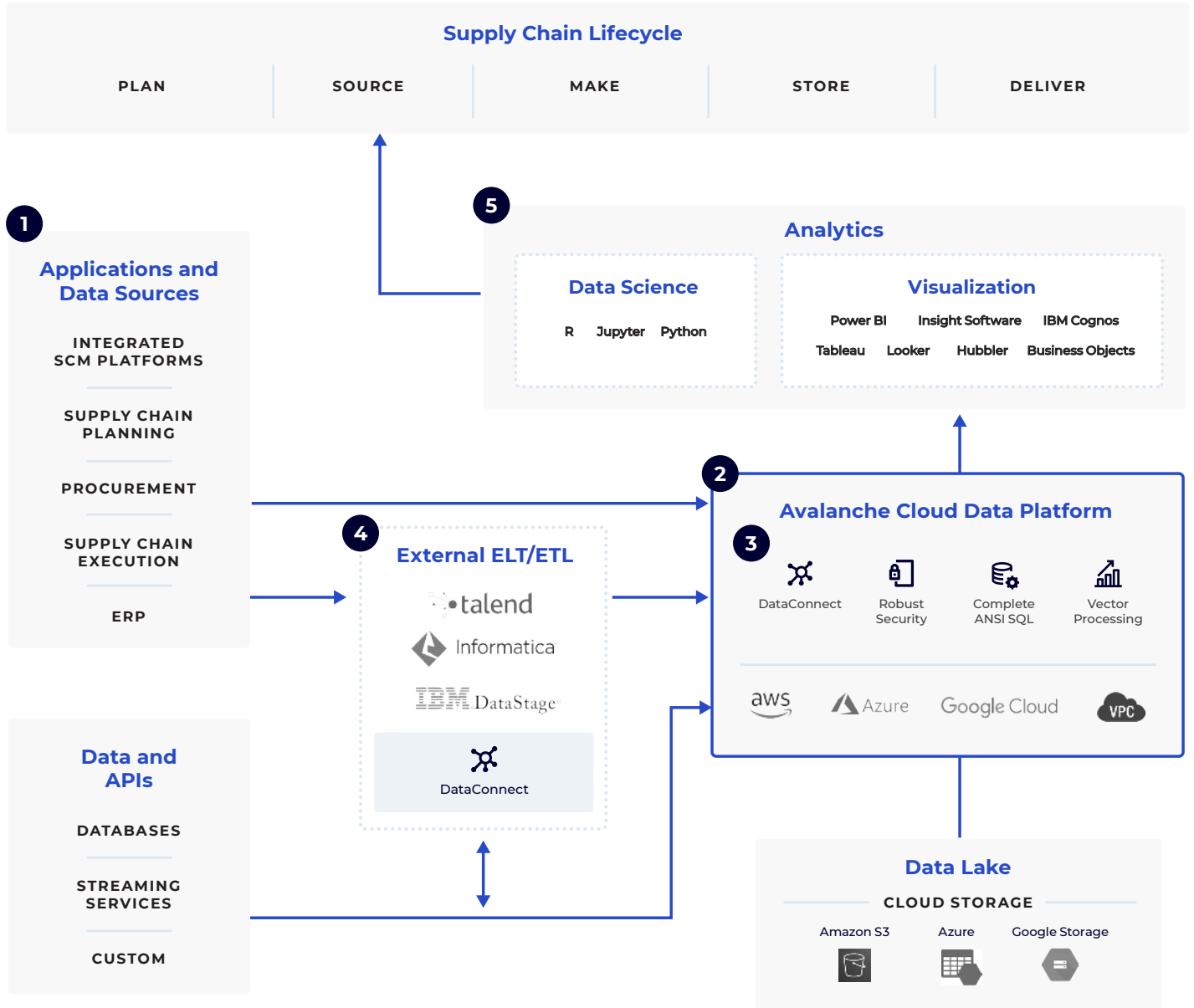
Supply Chain Control Tower

Establish a single source of truth from sourcing to delivery for all trading partners. See and adapt to changing demand and supply scenarios across the world and resolve critical issues in real time.



3rd Party data sources were complicating and slowing down Mizuno's supply chain analytics for their JD Edwards ERP system. By moving to Actian, Mizuno was able to get real-time data feeds, massively increasing supply chain efficiency which has had a measurable impact on its bottom line.

Supply Chain Optimization Analytics



1. Supply Chain Data Lake

Aggregate and enrich data from supply chain applications and enterprise data across the lifecycle into a cloud data lake.

2. Optimize in Real-time

The Avalanche Cloud Data Platform provides superior price-performance for delivering actionable insights in real-time.

3. Built-in Data Integration

Integration includes drag-and-drop support for thousands of different applications and data sources

4. Leverage External ETL/ETL

Connect data pipelines into the Action platform for aggregation and analysis.

5. Popular BI, Data Science Tools

The Action platform supports popular BI and analytics libraries, visualization, and data science tools, and platforms.

Machine Learning and Data Science

The Avalanche Cloud Data Platform enables data science teams to collaborate across the full data lifecycle with immediate access to data pipelines, scalable compute resources, and preferred tools. In addition, the Actian platform streamlines the process of getting analytic workloads into production and intelligently managing machine learning use cases from the edge to the cloud.

With built-in data integration and data preparation for any streaming, edge or enterprise data source, aggregation of model data has never been easier. Combined with direct support for model training systems and tools and the ability to execute models directly within the data platform alongside the data can capitalize on dynamic cloud scaling of analytics compute and storage resources.

Simplify and Accelerate Machine Learning Model Training

The goal for machine learning is to predict and anticipate the next action based on current and real-time data. Training a predictive model demands large volumes of data be consolidated, processed, and updated regularly. The training datasets and models are in constant evolution requiring a cloud data platform that can aggregate and analyze data in real-time to provide the latest data for the model to run against.

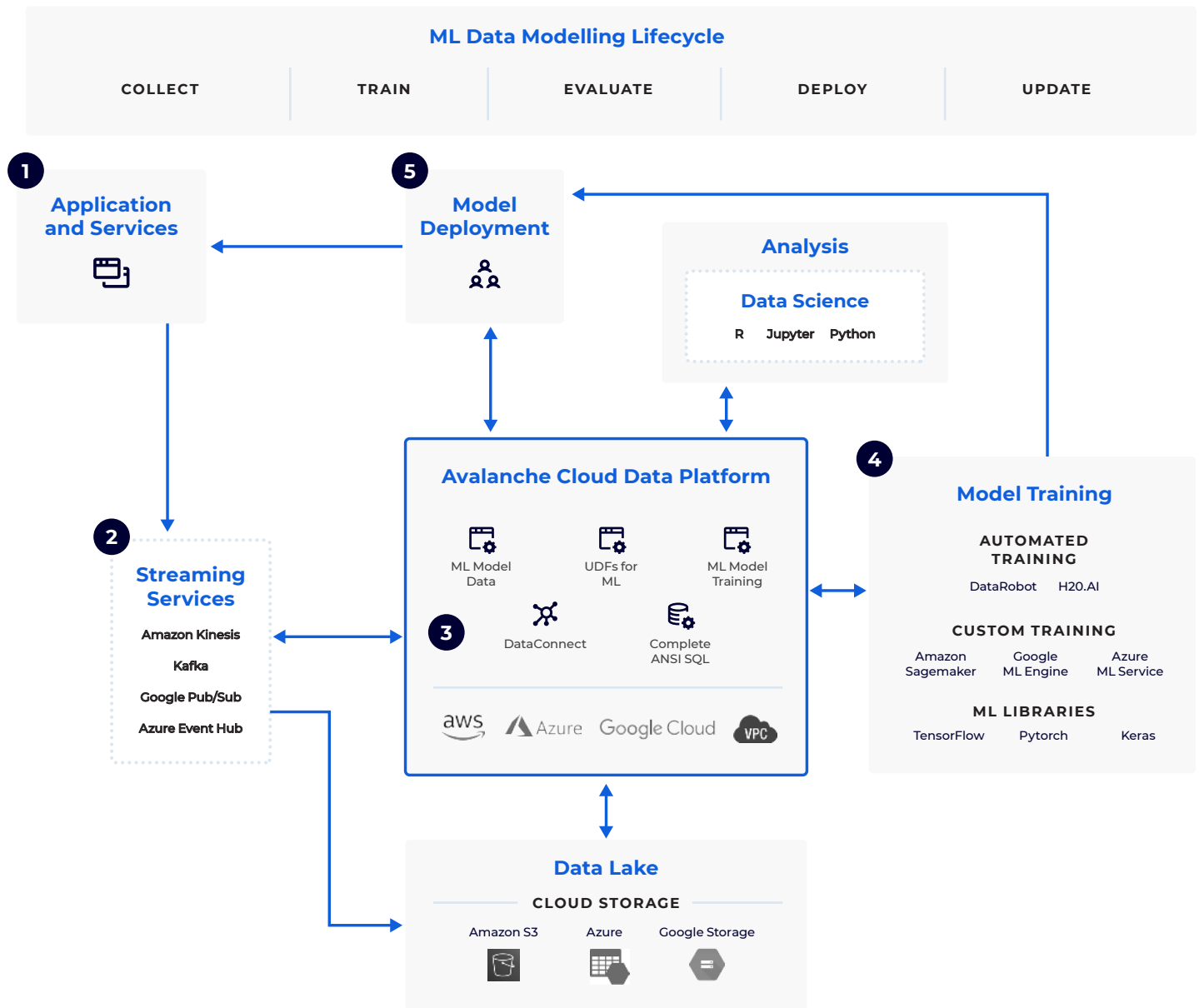
Data Science Analytics

Data scientists often wear multiple hats including data analysis, pipeline development, and data stewardship. The Actian platform's support for popular data science tools, including built-in drag-and drop data integration across streaming, batch and custom REST-based data sources, provides a flexible edge to cloud platform that supports a wide range of data science use cases.

Streamline the process of getting analytic workloads into production and intelligently manage machine learning use cases across the business from the Edge to the Cloud.



Machine Learning and Data Science



1. Collect Training Data

Applications and services produce model training data either as a streaming source or as data in cloud storage.

2. Aggregate Into Actian Platform

Consolidate and pre-process training data through streaming services into the Actian platform.

3. Built-in Data Integration

Integration includes drag-and-drop support for thousands of different applications and data sources.

4. Model Training

Data scientists use Actian UDFs and tools in the Actian platform to create predictive models.

5. Model Execution

Deploy models directly in the Actian platform, applications accessing data in the Actian platform or via streaming for real-time predictions.

About Actian

Actian transforms business by simplifying how people connect, manage, and analyze data. The Avalanche Cloud Data Platform gives customers a flexible and comprehensive solution that enables fast innovation by gaining real time insights, leveraging native data integration, and deploying anywhere. Its cloud data platform offers maximum interoperability by combining data integration, management, and analytics solutions across all systems, while its ongoing partnership model makes scaling fast, efficient and effective. Customers benefit from its always-available support that proactively detects and solves potential issues, which is also a crucial feature for data-intensive enterprises. www.Actian.com.

