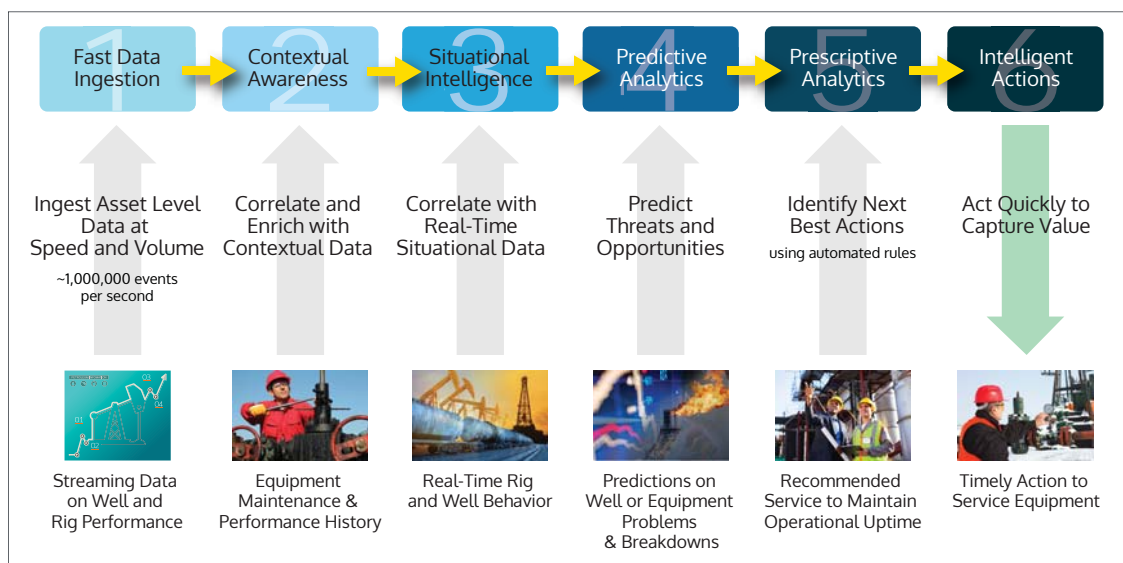# Vitria Analytics Value Chain
for Oil and Gas Industry

CHALLENGE: Oil & Gas companies have significant requirements to monitor, manage, and act on real-time information and situations at their production facilities in the field.
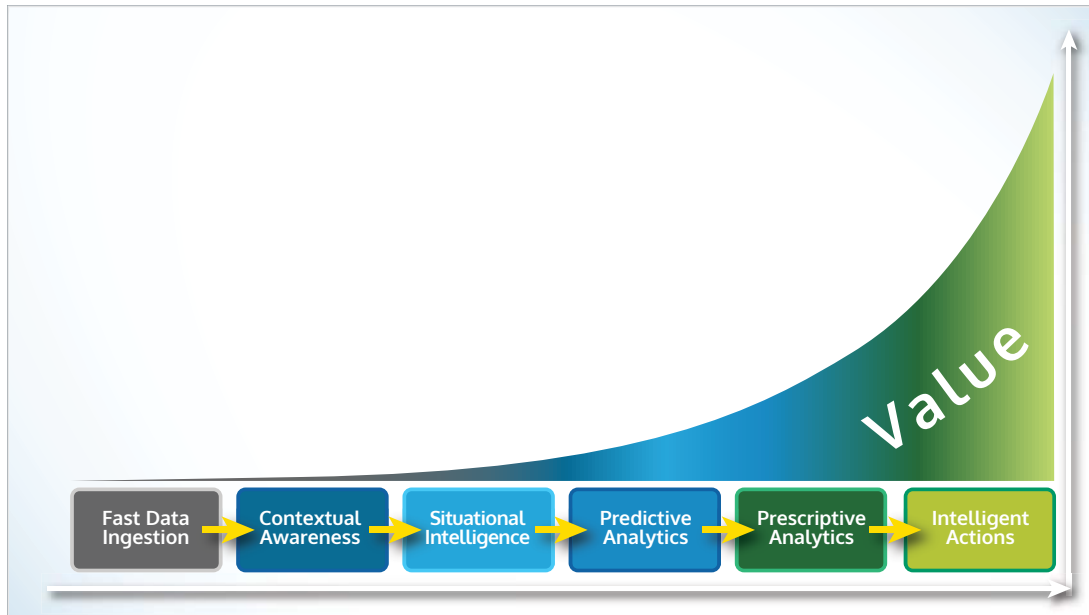
SOLUTION: Stepping through the analytics value chain concept used in Vitria's IoT Platform helps to define some specific solutions to these unique challenges.

1 Fast Data Ingestion	2 Contextual Awareness	3 Situational Intelligence	4 Predictive Analytics	5 Prescriptive Analytics	6 Intelligent Actions
Ingest Asset Level Data at Speed and Volume ~1,000,000 events per second	Correlate and Enrich with Contextual Data	Correlate with Real-Time Situational Data	Predict Threats and Opportunities	Identify Next Best Actions using automated rules	Act Quickly to Capture Value
Streaming Data on Well and Rig Performance	Equipment Maintenance & Performance History	Real-Time Rig and Well Behavior	Predictions on Well or Equipment Problems & Breakdowns	Recommended Service to Maintain Operational Uptime	Timely Action to Service Equipment

1) Ingesting data on assets and equipment used at production sites at speed and volume sets the stage for additional processing. Vitria's platform processes incoming streams of data from IoT sensors and devices on a rig or well.

2) This data is then correlated with contextual and historical data to provide a baseline for advanced analytics. Contextual data includes data like drill rig history, mean time between failures of equipment, and other historical data.

3) The next step is to add real-time situational data to the stream to provide information that can inform real-time decisions. This could include data such as weather, well equipment performance behavior, or rig service schedules.

4) The next step is to predict equipment problems or failures using predictive analytics that are based on machine learning over contextual and situational data. This usually means predicting well or equipment failures or malfunctions before they occur.

5) Another critical step in the analytics value chain for oil and gas producers is to apply prescriptive analytics to determine the next best action to take.

6) This next best action could be a wide variety of actions – real-time adjustment of drilling equipment, pausing a drill to prevent equipment failure or urgently dispatching a service technician. The goal is to capture value quickly by maintaining maximum uptime and avoiding costly breakdowns.

VITRIA®

Vitria's Analytics Value Chain – The Key to Timely Outcomes in IoT

Analytics on the tremendous volume of data in The Internet of Things (IoT) offers great potential to create new business value – but it requires a unified approach to analytics. Analytics must be executed in real-time across the Analytics Value Chain (streaming, historical, predictive, and prescriptive analytics) with relevant contextual and situational data. This capability paired with the next best action creates the greatest value - as shown in the figure below. Vitria's Advanced Analytics Platform for IoT is the fastest way to achieve these results.

1) Ingesting data at speed and volume from IoT sensors and devices sets the stage for additional processing.

2) This data is then correlated with contextual and historical data to provide a baseline for advanced analytics. Contextual data can include information like geographic data or historical sales information.

3) Situational data and intelligence is the next stage of refinement and increased value. This includes information such as weather or customer location.

4) The next step is to predict failures, anomalies, or patterns using predictive analytics based on machine learning over historical and situational data.

5) The next step in the analytics value chain are to apply prescriptive analytics to determine the next best action. This could be a wide variety of actions such as better customer service or avoiding equipment downtime.

6) The final critical step in the value chain is to execute the real-time action to capture value.

About Vitria Technology

Vitria's advanced analytics solutions empower enterprises and industrial customers to achieve better outcomes faster in their business operations.

The company was founded in 1994 and has a long history of success in streaming analytics, business process management, enterprise application integration, and operational intelligence. Vitria is also a leading player in the rapidly growing IoT (Internet of Things) analytics market.