

BIG DATA ANALYTICS FRAMEWORK



Two men operating a mainframe computer, circa 1960. It's amazing how today's smartphone holds so much more data than this huge 1960's relic. (Photo by Pictorial Parade/Archive Photos)

Variety of data sources

- **Internet data** (i.e., clickstream, social media, social networking links)
- **Primary research** (i.e., surveys, experiments, observations)
- **Secondary research** (i.e., competitive and marketplace data, industry reports, consumer data, business data)
- **Location data** (i.e., mobile device data, geospatial data)
- **Image data** (i.e., video, satellite image, surveillance)
- **Supply chain data** (i.e., EDI, vendor catalogs and pricing, quality information)
- **Device data** (i.e., sensors, PLCs, RF devices, LIMs, telemetry)

Analytics Spectrum

SQL Analytics	Descriptive Analytics	Data Mining	Predictive Analytics	Simulation	Optimization
<ul style="list-style-type: none">• Count• Mean• OLAP	<ul style="list-style-type: none">• Univariate distribution• Central tendency• Dispersion	<ul style="list-style-type: none">• Association rules• Clustering• Feature extraction	<ul style="list-style-type: none">• Classification• Regression• Forecasting• Spatial• Machine learning• Text analytics	<ul style="list-style-type: none">• Monte Carlo• Agent-based modeling• Discrete event modeling	<ul style="list-style-type: none">• Linear optimization• Non-linear optimization



Business Intelligence



Advanced Analytics

Risk and Big Data

- Two most common types of risk management are
 - ✓ credit risk management
 - ✓ market risk management.

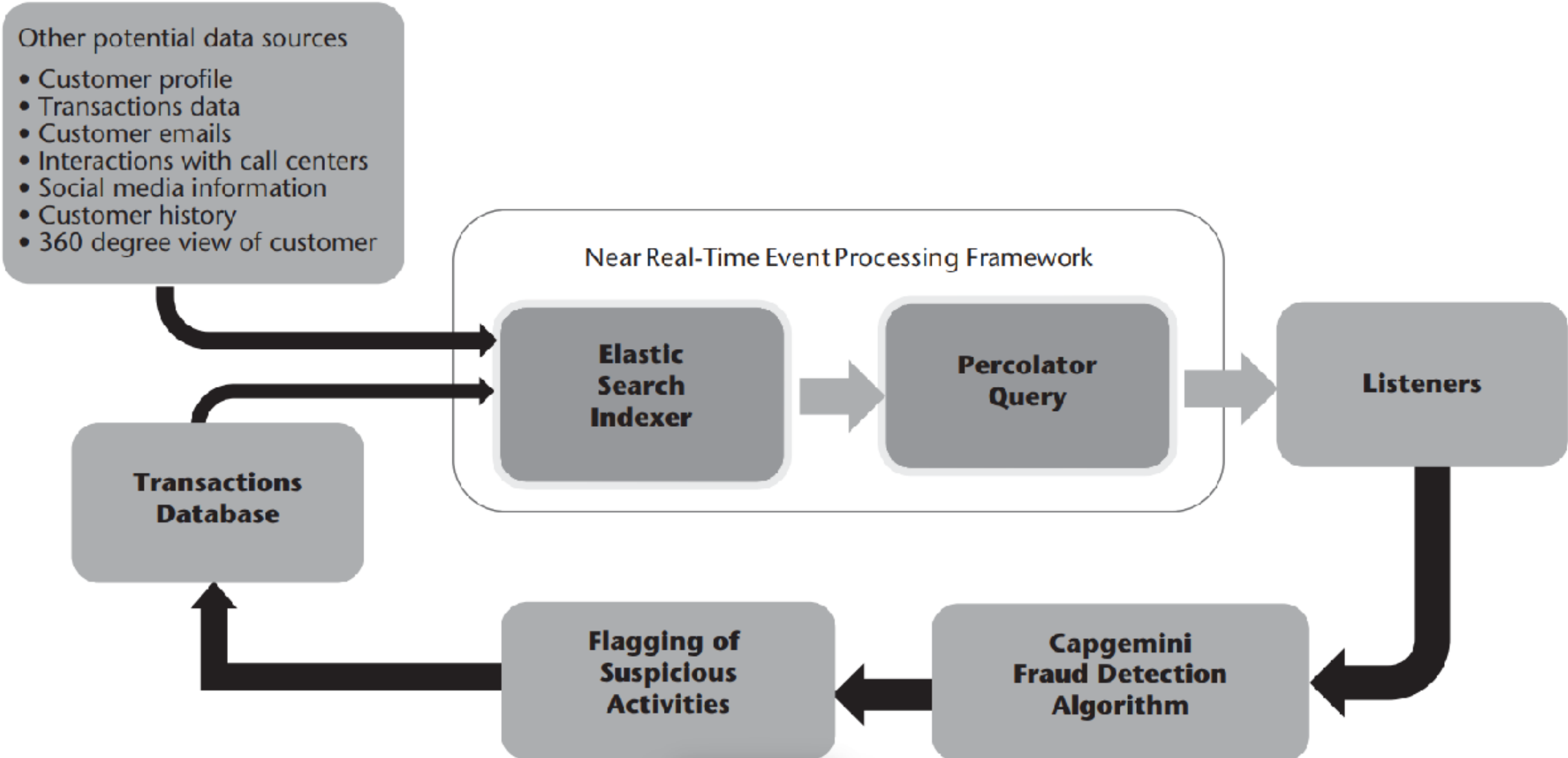
A third type of risk,

operational risk management, isn't as common as credit and market risk.

Credit risk analytics focus on past credit behaviors to predict the likelihood that a borrower will default on any type of debt by failing to make payments which they obligated to do.

Market risk analytics focus on understanding the likelihood that the value of a portfolio will decrease due to the change in stock prices, interest rates, foreign exchange rates, and commodity prices.

Fraud and Big Data



Hadoop

- Is an open-source platform,
for storage and processing of diverse data types that enables data-driven enterprises to rapidly derive the complete value from all their data