

The Power of Predictive Analytics

How new advances in AI can help organizations boost growth, optimize efficiency and reduce risk

Many industries today are facing unprecedented uncertainty. From energy supply chain disruptions in the Middle East[1] to evolving consumer behavior and online search tactics,[2] the world is changing drastically, forcing organizations to quickly adapt to market dynamics, adopt new strategies and seize opportunities for transformation. Thankfully, the power of predictive analytics is more potent than ever.

What is Predictive Analytics?

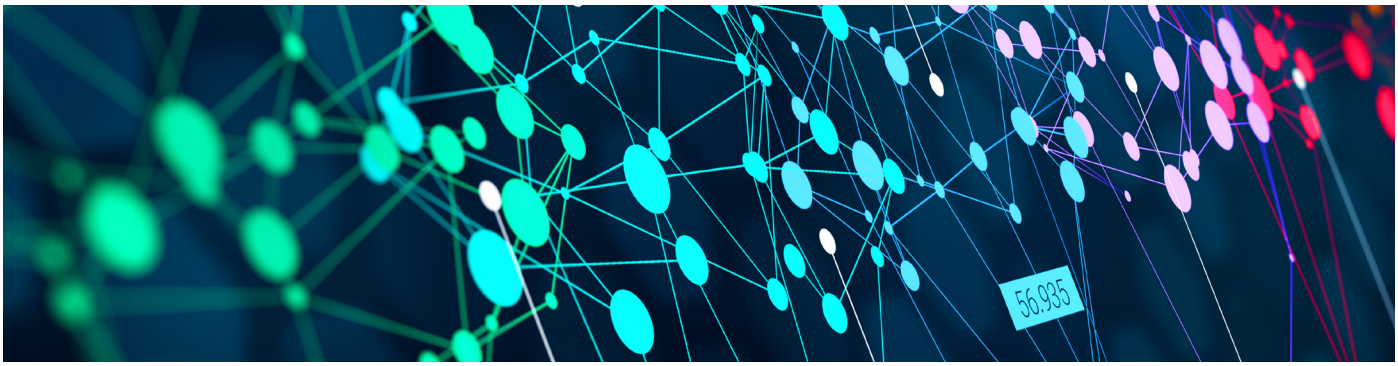
Predictive analytics bridges the gap between raw data and actionable strategies, using statistical modelling and machine learning techniques to detect patterns and correlations within data.[3] The resulting models estimate the probability of future events based on existing data, thus helping firms make better business decisions.

Advances in artificial intelligence ("AI") have progressed the field from classical statistical and machine learning models to deep learning and transformer-based architectures that capture complex temporal and spatial dependencies. Cloud-native AI infrastructure and data centers, meanwhile, enable large-scale model training, real-time inference and scalable deployment of predictive systems.

Opportunities

Predictive analytics has a wide breadth of applications that can help organizations leverage and identify opportunities. Broadly speaking, these opportunities break down into three categories:

1. Revenue growth
2. Efficient optimization and planning
3. Risk mitigation



Revenue Growth

Predictive modeling presents many opportunities for organizations to boost revenue and profitability by analyzing consumer behaviors:

— **Customer Preferences and Personalized Marketing:** In business applications like e-commerce, media and customer analytics, predictive analytics and generative AI models are used to predict user preferences and future actions to personalize engagement and retain attention. These systems dynamically adapt to individual behaviors such as purchasing history, search patterns or browsing activity to optimize recommendations.

— **Consumer Behavior and Sentiment:** This predictive analytics approach models and projects the sales volume of certain products based on consumer demographics including age, gender, income level and geographical location. AI and machine learning models can analyze historical sales, user behavior, market trends and external signals, such as social media sentiment, economic reports and news feeds, to predict future demand patterns — ultimately enabling companies to customize marketing planning.

— **Dynamic Pricing:** Dynamic pricing leverages predictive analytics to automatically adjust prices in response to changing market conditions. This process analyzes real-time data on demand patterns, competitive pricing, inventory levels and customer behavior to continuously identify competitive pricing strategies that balance profit with market competitiveness. Predictive systems can also detect pricing anomalies and recommend more favorable suppliers to improve margins and efficiency.

Efficient Optimization and Planning

Company systems can be optimized and plans can be developed and improved through the use of predictive analytics. Use cases include:

— **Inventory Management:** Predictive analytics offer the ability to forecast demand and order flows. Companies can leverage these capabilities to dynamically adjust production planning and optimize inventory management to maintain optimal inventory levels and meet customer demand with minimum surplus. Optimization algorithms also allow firms to rebalance production schedules and warehouse allocations.

— **Transportation:** By combining real-time data on traffic, weather and delivery demand, predictive models enable companies to respond dynamically to market or environmental changes. In particular, route optimization applies predictive modeling to design the most efficient delivery routes, minimizing travel time, fuel usage and emissions. Predictive analytics can also estimate the number of drivers and vehicles to support workforce and fleet planning.

— **Energy:** Energy emergencies like power outages or grid overload caused by heatwaves or winter storms can leave utility and energy companies struggling to respond in time. Demand and load forecasting supports capacity planning for oil, gas and electricity networks, while digital platforms use traffic forecasting to anticipate usage spikes and respond by optimizing service structure. Regularly updated projections can help companies improve operational and financial planning.

— **Healthcare:** In healthcare, patient survival and disease-progression modeling enable personalized treatment planning and resource allocation. Survival modeling, lifecycle modeling and hazard analysis can predict whether a health event will occur and when it is likely to happen.

Risk Mitigation

Risk is also a major concern for organizations operating in today's global landscape. Predictive analytics can offer insight into upcoming or potential risks. Relevant use cases include:

— **Financial Risk Management and Economic Forecasting:** In financial risk management, predictive modeling is used to predict credit ratings and time-to-default, to precisely discount cash flows or to estimate expected loss due to credit risk. In capital markets, time-series models are deployed to predict asset prices, returns and volatility. On a more macro level, economists and policymakers rely on economic indicator forecasting to inform strategic decisions. Accordingly, financial market crashes can be modeled and projected using machine learning methods applied to market data.

— **Predicting Extreme Weather:** Climate events like wildfires and floods directly impact the livelihoods of entire communities, but informative probability projections by public institutes can provide valuable alerts to residents and assist authorities in inventory planning.[4] A quantitative system projecting the likelihood of events and alerting industries equips companies with data for cash management and finance planning, while wider alerts for authorities can contribute to better emergency and business continuation planning.

— **Supply Chain Disruptions:** Geopolitical events, natural disasters, supplier failures and logistical bottlenecks can all cause supply chain disruptions. Time-series, simulation-based and causality models can all help identify and quantify potential supply chain disruptions. Using predictive modeling, organizations can assess the probability and financial impact of adverse events, evaluate contingency plans and design more robust sourcing and production strategies.





Risks

Common risks present in machine learning methods are also inherent in predictive analysis. From the quality of data an organization uses, to the programming of AI models and their implications, predictive analytics and modelling require a cautious approach. Major potential risks include:

— **Poor Data Availability and Quality:** The quality of predictive analysis results will only be as good as the quality of input data. So if data is unavailable or poor, this will impact accuracy.

— **AI Bias and Over/Under-Representation:** An AI model can present inherent biases, such as the overweighting of opinions from people who speak or post often in sentiment analysis. These biases present prediction accuracy risks and regulatory risks.

— **"Rogue" AI Models:** AI behaviors like hallucinations or unexpected malicious or misleading outputs can compromise analysis quality.

— **Data Governance and Cybersecurity:** When private or confidential data is used for predictive analysis, hackers can pose an additional layer of security risks.

— **Model Performance Risks:** Predictive analytics and its applications are still being heavily researched to improve prediction accuracy. Unfortunately, extrapolating a trained model far into the future significantly decreases accuracy, and situations in which real-world circumstances or market conditions have changed significantly or suddenly can render previous training less predictive.



Conclusion

Companies face more risk and uncertainty than ever; yet at the same time, they stand to gain from major ongoing advances in the field of predictive analytics. Whether you're a financial services firm seeking to better manage credit risk and market volatility or a retail and supply chain company looking to optimize inventory, personalize customer engagement and anticipate disruptions, working with a trusted partner to incorporate predictive analytics into your operations and problem-solving approaches could give you a competitive edge.

Endnotes

1 Rick Jordon, David Schutzbank and Ruth Bang, "How the War on Iran Is Reshaping Transportation & Logistics," FTI Consulting (Mar. 19, 2026).

2 Carl Jones and Akshat Trivedi, "Shopping in the Age of AI: Eight Strategies for Retailers To Win," FTI Consulting (Mar. 26, 2026).

3 Teaganne Finn and Ian Smalley, "What is predictive analytics?" IBM (n.d.).

4 Miriam Wrobel, "Extreme Weather Is Now a Board-Level Risk," FTI Consulting (Mar. 31, 2026).

Michael Diodato
Managing Director
+1 212.651.7168
michael.diodato@fticonsulting.com

Candice You
Senior Director
+1 212.850.5748
can.you@fticonsulting.com

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