Turning uncertainty into competitive advantage

Take lessons on improving prediction from the racetrack to the boardroom
A Formula E race condenses a year’s business cycle into 45 minutes. Thousands of hours of strategic planning and operational fine tuning are put to the test on narrow city circuits. This is the world’s first fully electric international single-seater championship, with 11 global racing teams and 22 drivers.

Once on the track, each driver must make split-second decisions, putting the team’s strategy into action. It’s the teams that can draw on their collective data, insight, experience, and instinct that have an edge over the competition.

Envision Virgin Racing is collaborating with Genpact to connect data from its cars, drivers, tracks, and team to enhance decision-making, improve race performance, and secure more podium finishes. Using AI and advanced analytics, we’re tackling a highly coveted variable in race strategy: the total number of laps in every timed race.
In 2018, Formula E announced a new strategic challenge. Instead of a fixed number of laps, each race now runs for 45 minutes, plus one final lap. This means teams must manage their energy with great accuracy as a lot can happen to disrupt their strategies.

Each car runs on a battery that cannot be recharged or changed during the race, so teams must manage energy carefully. One of the worst outcomes for a Formula E driver is to fight for a podium result, only to run out of energy right before the finish line.

Every overtake or defensive maneuver costs energy that could be needed later. And adverse weather or crashes can have a devastating impact on the pre-race strategy, especially if a red flag sends cars to the pit lane while the track is cleared. When that happens, teams must quickly pivot to a new approach.

The challenge
Making podium-winning predictions
The solution

Transforming race-day strategy with AI

To better predict how many laps there will be in each race and efficiently manage energy, Genpact developed the Lap Estimate Optimizer (LEO), an AI-based scenario engine that houses a variety of different algorithms.

LEO runs alongside Envision Virgin Racing’s existing systems to assess thousands of potential scenarios and understand the impact of an overtake, an accident, or sudden hailstorm on the team’s strategy. This gives drivers superior insight into how to best take a corner and use battery power, and enables engineers to make fast decisions based on changing track conditions.

LEO learns continuously and gets smarter as it takes in new data after every run on the track. With LEO, the Envision Virgin Racing drivers start each race having left very little to chance.
LEO gives Envision Virgin Racing superior insight for every race, so it can make the right decisions when a safety car pauses a race, the weather turns, or when a competitor attacks. LEO’s insights are particularly helpful when faced with changing track conditions, as was the case in Paris and Hong Kong, where LEO offered benefits over classic analysis methods.

LEO has also consistently predicted the actual number of laps ahead of the existing technology, most notably in Santiago where it settled on the right number 15 laps earlier.

Through our partnership, the team has a better understanding at every stage about how many laps remain and, so far, neither driver has run out of energy before the end of a race, unlike some of their rivals. This accuracy improves energy management, driver performance, and the likelihood of a winning finish.

By combining Genpact’s data science and fresh perspective with Envision Virgin Racing’s expertise in motorsport and engineering, LEO provides a vital edge. Every advantage counts in a racing championship where a fraction of a second separates the winners from the forgotten.
Read on to see how our work with LEO can enhance your business.

Consumer goods and retail

Ready for the unexpected

Genpact and Envision Virgin Racing are focused on lap optimization because getting everything else right doesn't matter if the car runs out of energy. Consumer goods and retail companies face a similar reality. Having the best product or promotional campaign doesn't matter if there isn't enough inventory to meet sudden demand spikes.

The same attention to excellence that we use with Envision Virgin Racing can streamline supply chains. Real-time decisions based on market demands cut down on costly stockpiles and reduce delivery delays. And workflows guided by advanced analytics and customized, flexible business rules adjust to new market realities, just as the race team adapts to every scenario.

It takes more than getting the stock in the shop to make sure it's sold. Where the products go in the store makes a difference to a customer's propensity to buy – putting them on the top shelf vs. at eye level can impact buying behaviors. With predictive insights, retailers can make accurate decisions on space optimization, keeping customers engaged from the moment they step into the store until they check out.

Finance and accounting

Maximize working capital opportunities

Just like the energy in an Envision Virgin Racing car, working capital is a precious business resource. When working capital decisions are based on backward-looking reports, fragmented data, and limited visibility of receivables, inventory, or payables, organizations make inefficient choices. Cash is tied up while expensive external borrowing meets investment and operational needs. The opportunity to release cash from balance sheets by optimizing working capital is significant.

In the same way as it is for the drivers on the track, the ability to consider multiple complex factors at once and make the right decisions is key. We combine automation, AI, and predictive analytics to identify liquidity-boosting opportunities. With consistent insights across payables, inventories, and receivables, we can improve liquidity by up to 70% while reducing short-term external borrowing by more than 20%.

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Manufacturing

Factory operations in high gear

Teams win when every process is in perfect alignment. Car, driver, and engineers must work together at maximum efficiency with minimum hesitation. But manufacturers struggle when manual and error-prone processes disrupt factory operations. Fragmented systems, poor-quality data, inefficient supply chains, and low productivity all impact customer satisfaction.

To achieve operational excellence, leading manufacturers analyze data and maximize the scope of automation. Streamlining the service workflow with data-driven insights helped one medical manufacturer reduce product launch time by over 80%, slash service request closure time by 75%, and cut an entire day out of the end-to-end cycle time to ship spare parts.

Insurance

Keeping the team on pace

On the track and in business, teams win when they maintain streamlined processes and stay in sync. Many insurers still handle quotes and submissions with outdated processes that result in low quote-to-bind ratios, lost business, and unhappy customers. Many of the delays come from multiple intake channels and the streams of unstructured data that take underwriters days to review.

We put insurers on a path to victory with data ingestion and data services that eliminate delays and quality issues from manual processing. Submissions can also be automatically scored based on risk appetite and potential profitability. By predicting where to focus underwriting effort, companies increase gross written premiums and deliver a more satisfying experience for brokers and customers.
Anti-money laundering (AML) and fraud teams face increasingly complex and well-organized opponents. Financial institutions must rally finite resources at speed to clamp down and protect assets. But first they need a renewed, integrated approach to fraud and AML.

By combining automation with AI, banks can eliminate manual investigative processes and centralize systems. And by using predictive analytics, banks can create rule-based models to predict the likelihood of fraud, easily identify behaviors linked to malicious activities, and reduce false positives.