

The Rubicon 2.0 Story

How Mahindra Racing rebuilt its competitive edge with AI



Overview

Rubicon is the race-day strategy platform developed by Tech Mahindra that powered Mahindra Racing's comeback following the GEN3 regulation shift in Formula E. Designed as the central nervous system of track operations, Rubicon helped the team make faster, clearer decisions during qualifying and races - bringing structure to how strategies were planned, adapted, and executed in real time.

What sits underneath this shift is a more fundamental change in how intelligence is built, used, and creates value, when it is rooted in Tech Mahindra's tenets of AI Delivered Right. For us, at Tech Mahindra, the challenge was beyond merely handling extensive data. Rather, it was to make sure that insight could keep up with the speed of the race and allow decisions that scale performance. Rubicon 2.0 reflects the balance of speed without chaos, and AI that supports judgment; as a true testament of what we mean by Scale at Speed™.

Through this case study, we explore how Rubicon has since evolved and what its next generation is enabling for Mahindra Racing today.

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The Starting Grid: Drowning in Data, Yet No Insights

At the beginning of the Formula E season, Mahindra Racing faced a paradox of plenty. Every practice, qualifying session, and race generated an ocean of data: intricate GPS traces, real-time energy curves, sensor streams, and frantic radio chatter. Engineers could, with painstaking effort, reconstruct a perfect post-race post-mortem.

Yet, as the lights went out on Sunday, a critical disconnect emerged.

Opportunities like a rival's fading battery or a brief overtaking window slipped away unseen. Strategy calls, while analytically sound, arrived a heartbeat too late. The team was rich in retrospective explanation but lacked prescient action.

As one strategist put it:

"We were historians of our own race"

The team had all the information but lacked the instantaneous intelligence to use it under pressure.



The Race-Day Dilemma: Seconds Too Late

The issue wasn't a lack of tools or talent. It was a fundamental mismatch of pace.

Our intelligence was fragmented as critical data lived in isolated systems: timing here, telemetry there, radio recordings elsewhere. To answer a single strategic question, engineers had to manually bridge these digital islands, reconciling numbers and validating assumptions while the race clock ticked mercilessly.

"We knew the information was there. The difficulty was extracting what mattered fast enough to use it"

This was the moment when the team realized that Rubicon needed to evolve.

The radio, a vital nerve center, presented its own challenge. Buried within the static and shorthand were priceless clues - a competitor's technical worry, a driver's subtle feedback on tire wear. But extracting these gems from raw audio in real time was a monumental, error-prone task.

The painful pattern became clear: Decisions were failing because clarity arrived seconds after the moment had passed.

TechM Lens:
It was time to Scale at Speed™.





Evolving the System:

Building Rubicon 2.0

The team's existing platform, Rubicon, was already operational, but its ambition needed to be scaled. The mandate for Rubicon 2.0 was audacious yet simple: **Make the system comprehend and contextualize information as fast as the race unfolds.**

Instead of spending time validating numbers, we could trust analysis we were seeing and focus on the decision itself."

This was not about adding more dashboards. It was about rebuilding the foundation.

TechM Lens: AI being embedded directly into the flow of decision-making is the core proposition of AI Delivered Right. It transforms unstructured inputs into clear, usable intelligence without adding complexity.

UNIFIED INTELLIGENCE

Disparate data streams were fused into a single, resilient architecture built on modern microservices, ensuring uninterrupted flow.



FROM REFERENCE TO ENGINE

Live timing data transformed from a passive feed into an active computational core, constantly calculating strategic indicators.



BUILT FOR THE UNPREDICTABLE

The system was designed for adaptability. Engineers could plug in new analytics, third-party feeds, or custom tools without rebuilding the core - a critical feature for a sport where no weekend goes to plan.



Rubicon 2.0 was engineered to remove friction from human judgement.

Listening to the Race: Real-Time Radio Intelligence

The most dramatic leap forward came from an unexpected source: The team radio. In 2025, **Tech Mahindra's AI Delivered Right** proposition came into play and replaced laggy, cloud-based transcription with locally deployed AI, built with **OpenAI's Whisper model coupled with bespoke Large Language Models (LLMs)**.

The effect was transformative. For the first time, the chaotic symphony of race radio, from our own drivers and competitors, was being translated into structured, searchable, and contextualized intelligence in near real-time.

"It was like gaining a sixth sense" described a race engineer.
"Instead of just listening, we were understanding; While the story of the race was still being written."

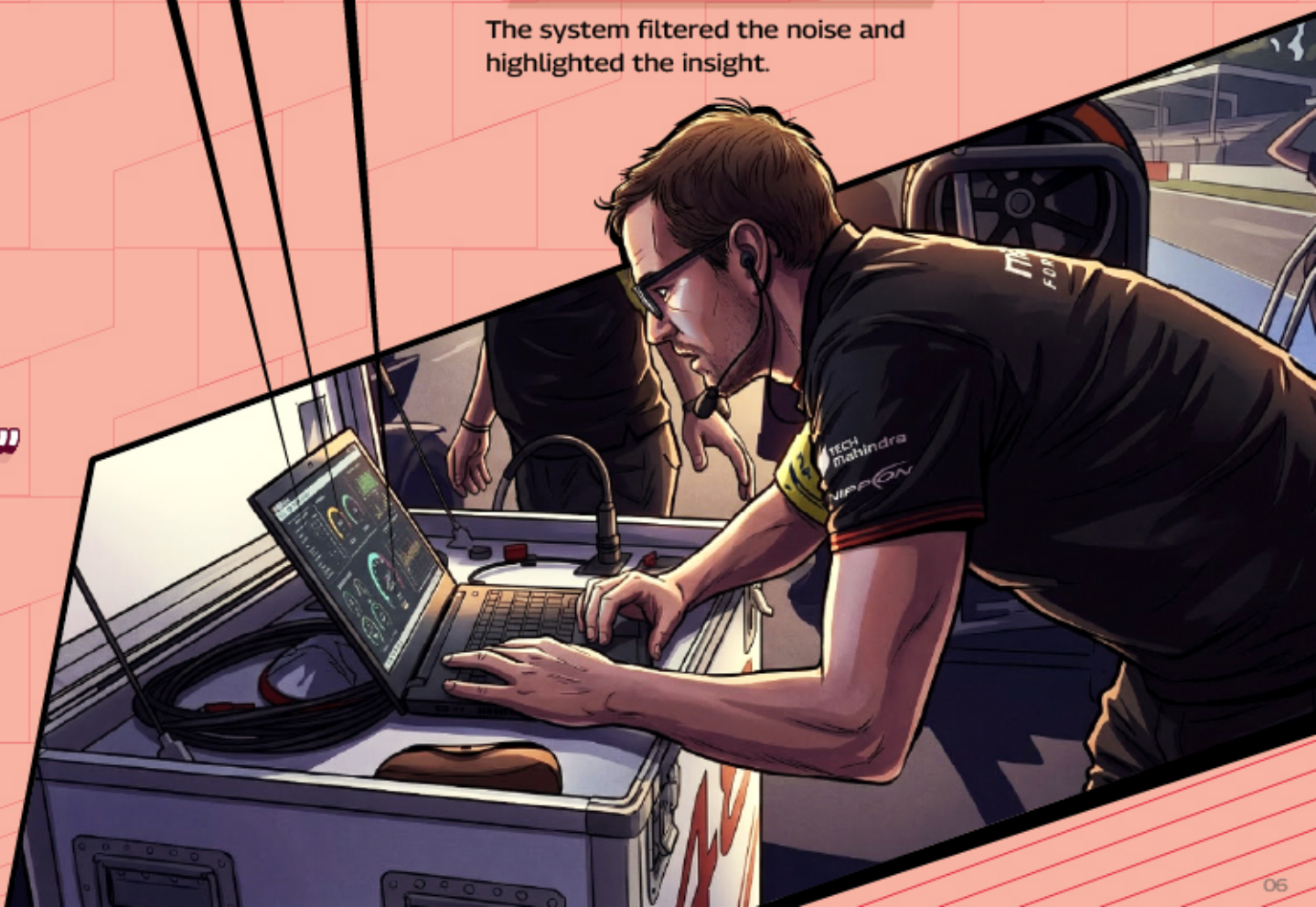
Engineers could now instantly spot patterns:

"Car 5 is conserving energy"

"Driver reporting rear grip loss"

"Potential safety car mention"

The system filtered the noise and highlighted the insight.



BEYOND THE PITS: FROM LIVE RACING TO CONTINUOUS LEARNING



Rubicon's impact soon expanded beyond the white-hot pressure of race day. It became the bridge between the track and the factory.

TechM Lens: In practice, Scale at Speed™ translates into systems that can absorb increasing volumes of data and complexity while maintaining responsiveness. It ensures that transformation is not just scalable, but also immediate, enabling faster execution and continuous adaptability.

Real-world race data now flows seamlessly into Mahindra's advanced simulation environments, including driver-in-the-loop rigs. A strategic dilemma from Sunday's race in Jakarta can be replayed, tested, and solved in the simulator on Tuesday. "What-if" scenarios moved from conjecture to quantifiable experiment.

This closed-loop learning system meant the team stopped treating races as isolated events. Instead, each E-Prix became a live data chapter, feeding a continuously evolving playbook. **Preparation became proactive, not reactive.** The learnings from one race weekend directly shaped the strategy for the next.

"Things that used to take days to extract now take seconds. That changes how many ideas you're willing to test."

Building, Not Buying: How Customization Became Our Edge

A defining shift followed.

A profound cultural shift underpinned this technical evolution: we stopped relying on generic, off-the-shelf software. Mahindra Racing, powered by Tech Mahindra, embraced the role of maker, and that's when Rubicon 2.0 matured from a tool into a platform that the team could mold to their exact needs.

This “freedom of the maker” became a unique competitive edge. “Off-the-shelf solutions answer standard questions,” explained TechM rep/MR rep. “By building our own, we can ask entirely new questions. That’s where true innovation happens.”

TechM Lens: AI Delivered Right is built on a set of core principles: Embedding AI into business processes (**Transformation**), improving efficiency through intelligent automation (**Productivity**), enabling new capabilities (**Innovation**), and ensuring trust, governance, and compliance (**Assurance**). Together, these ensure AI is not only powerful, but also reliable and enterprise-ready.F

Custom AI models
were integrated for:



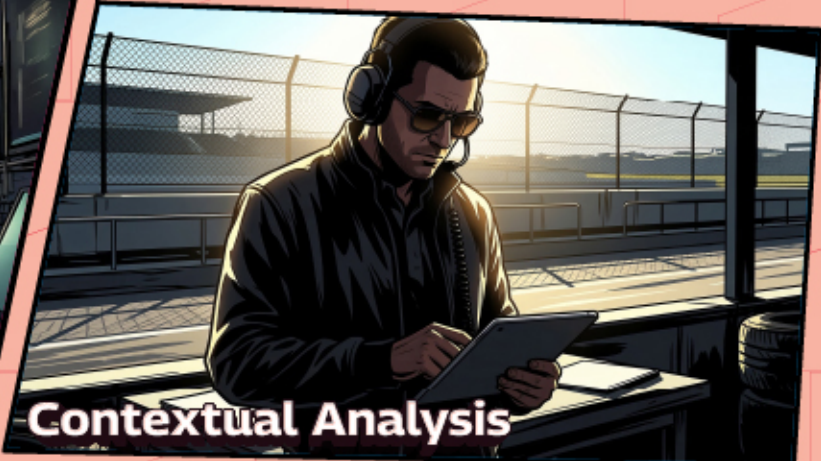
Anomaly Detection

Flagging irregular car behavior instantly.



Bayesian Estimation

*Predicting race
outcomes with
greater probability.*



Contextual Analysis

Making sense of complex, unstructured data.

Improved Execution to

Podium Finishes

By ensuring the right people had the right insight at the right time, Rubicon 2.0 fundamentally elevated team performance.

Execution grew sharper. Energy management became more predictive. Strategic gambles were taken with greater confidence. The crescendo of this effort was a series of standout podium finishes across the iconic circuits of Monaco, Jakarta, Berlin, and London.

These results were a testament to a team operating with newfound coherence. As the Team Principal reflected:

“Rubicon didn’t change our passion or our drive. It amplified our intelligence, making it easier to turn great decisions into winning actions.”



The Road to Gen4: Engineering Tomorrow's Race

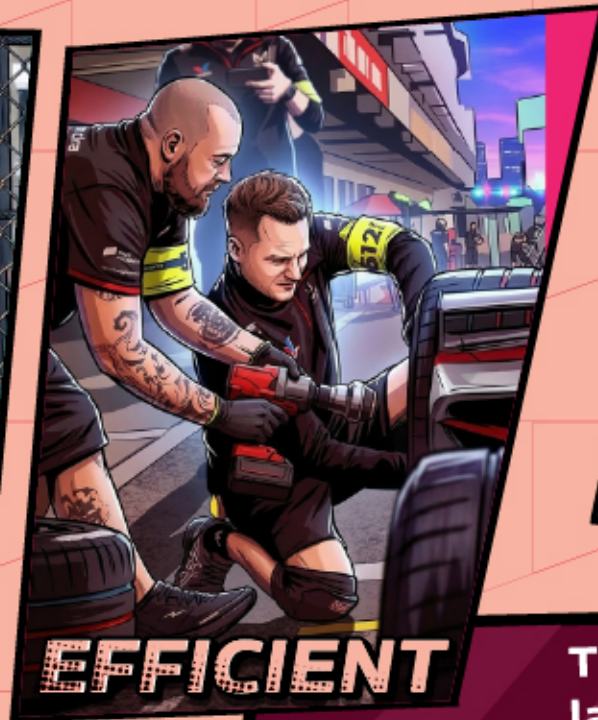
As Formula E stands on the brink of the more complex, more intense Gen4 era, Mahindra Racing's philosophy is clear. **The future will be won by teams that can learn fastest and adapt quickest.**

Rubicon 2.0 is the foundation for that future. It is engineered to be:



Ready to handle an exponential increase in data complexity.

Consuming roughly 400 kWh per season, it aligns with Formula E's core principle of sustainable performance.



A living platform that will evolve alongside new regulations, technologies, and racing strategies.

This is not the finish line. Rubicon 2.0 is the launchpad for the next chapter of competition.

TechM Lens: This is a mirror of how organizations need to build systems that can keep pace with change, and intelligence remains usable, reliable, and directly tied to outcomes. In this era of non-episodic transformation, **AI Delivered Right** is an organizational mandate to **Scale at Speed™**.

CEO Speak

"Rubicon represents everything Tech Mahindra stands for: Innovation under pressure and AI that delivers real outcomes. It transforms data into performance, enabling teams to anticipate race scenarios and make smarter, split-second decisions. This reflects how we bring together technology, talent and purpose - on the racetrack and for our clients worldwide."



Mohit Joshi

CEO & MD, Tech Mahindra



CEO Speak

"Rubicon 2.0 gave us both speed and clarity. In Formula E, the margin between a good decision and a right one is measured in milliseconds. Now, we have the tools to close that gap."

Frederic Bertrand

CEO & Team Principal, Mahindra Racing

TechM Lens: When speed coincides with clarity in execution is when AI Delivered Right consistently delivers outcomes. **This is the key factor enabling Mahindra Racing and enterprises to Scale at Speed™.**



The Human Edge

In the end, motorsport remains a deep human endeavor. The roar of the crowd, the driver's instinct, the strategist's gambling cannot be automated. Background noise, overlapping transmissions, and high-pressure shorthand could sometimes result in partial or imperfect transcriptions, reinforcing the continued importance of engineer validation and human judgment.

Rubicon 2.0 was never designed to replace these elements. Its purpose was to enhance them. By shouldering the burden of data synthesis and real-time analysis, it freed the team's greatest assets, their expertise, intuition, and creativity, to focus on what truly matters: racing.

Progress in Formula E is measured in thousandths of a second. Rubicon 2.0 ensured that Mahindra Racing's greatest ideas no longer got stuck in the pits. They reached the finish line first.

The race for insight is never over. With Rubicon 2.0, Mahindra Racing is already on the fast track.

MAHINDRA RACING & TECH MAHINDRA HISTORY

Starting 2021, Tech Mahindra and Mahindra Racing joined hands in a bid to further the vision of 'One Mahindra' and build a more sustainable mobility solution by integrating differentiated technological innovation with a world-class design.

Situated in Banbury, UK. Mahindra Racing is the greenest team in motorsport with a vast number of sustainability credentials including the first and only motorsport team to be certified a Net Zero Carbon footprint since inception Tech Mahindra and Mahindra Racing's partnership is focused on bringing electric vehicles to the track for a sustainable future.

This partnership is a landmark collaboration in which Tech Mahindra delivers cutting-edge digital transformation and consulting solutions but also pioneering business re-engineering strategies like **AI Delivered Right**. Through insights and advanced analytics, we continue to push the limits of technology and performance, setting new benchmarks in innovation and sustainability, reflecting our brand promise of **Scale at Speed™**.



LINKS

[Rubicon >](#)

[Tech Mahindra x Mahindra Racing >](#)

[Mahindra Racing Net Zero Emissions >](#)

[Tech Mahindra Net Zero Mission >](#)

[Tech Mahindra Sustainability Ethos >](#)

[Mahindra Planet Positive Initiative >](#)

About Tech Mahindra

Tech Mahindra (NSE: TECHM) offers technology consulting and digital solutions to global enterprises across industries, enabling transformative scale at unparalleled speed. With 152,000+ professionals across 90+ countries helping 1100+ clients, Tech Mahindra provides a full spectrum of services including consult-ing, information technology, enterprise applications, business process services, engineering services, network services, customer experience & design, AI & analytics, and cloud & infrastructure services. It is the first Indian company in the world to have been awarded the Sustainable Markets Initiative's Terra Carta Seal, which recognises global companies that are actively leading the charge to create a climate and nature-positive future. Tech Mahindra is part of the Mahindra Group, founded in 1945, one of the largest and most admired multinational federation of companies. For more information on how TechM can partner with you to meet your Scale at Speed™ imperatives, please visit <https://www.techmahindra.com/>.



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