

QEV TECHNOLOGIES

Case Study



Photo © QEV Technologies

Challenge

Spanish electric vehicle developer QEV Technologies works with global automotive OEMs to accelerate the transition to electric mobility. As it continues to scale its business, it needed a platform to integrate its product development data, consolidate its knowledge base and enable effective collaboration.

Solution

QEV Technologies adopted the 3DEXPERIENCE platform on the cloud to create an always-on collaborative working environment for its engineers. A single, centralized database allows it

to bring together its CAD data, store and securely share product information and connect the supply chain to manage complex projects.

Benefits

The business is delivering on its goal to enhance information sharing and ensure effective collaboration both internally among its engineers and externally with customers by having a single version of the truth and real-time product updates. Any device access via the cloud also enables QEV Technologies to remain fully operational anytime and anywhere.



"I see the 3DEXPERIENCE platform giving us a good foundation to offer the best experience and integration."

– Joan Orús, COO, QEV Technologies

ELECTRIC TRANSFORMATION

QEV Technologies (QEV Tech) is on a mission to transform the world for the better through the power of electric mobility. The full electric vehicle developer has its roots in racing and knows what it takes to create a winning supercar. It managed the NextEV-NIO team to victory in the inaugural 2014/15 Formula E championship, and in 2021 it plans to run a team in the brand new Extreme E championship. Off the race track, the company is busy sharing its expertise with the wider mobility industry and helping global automotive original equipment manufacturers (OEMs) accelerate their transition to electric technology.

Headquartered in Barcelona, Spain, QEV Tech's vision also is linked closely to its local community's needs. It sees a future where its home city's inhabitants get around using electric vehicles, a city that bets on sustainable mobility and is united against climate change.

Through its three business lines – motorsport, electric hypercars and electric buses – QEV Tech partners with leading OEMs to help them develop electric powertrain technology and full e-vehicles, from design concept and prototyping to full production.

"The motorsport industry is where we started out," said Joan Orús, COO of QEV Tech. "It's where we have our know-how and it's a great marketing platform for us to branch out and share our expertise more widely. Then we have our second line – electric hypercars – offering our services to different manufacturers and working with them to build prototypes from scratch. And our third line is the electric bus, where we sell our e-kit platform to manufacturers, or work with them to develop a complete e-bus. We want to apply this technology to change the world. We want to have clean cities. For us, it's not just about developing the fastest, most expensive cars; we need to focus on lowering costs and bringing greater efficiencies to the wider mobility industry, and we can use our expertise to do that."

In the Philippines, for example, QEV Tech is tackling high pollution levels by working with local manufacturers to convert thousands of minibuses, called jeepneys, into e-buses using its Astrokit, which includes the motor, inverter, gearbox, cooling, charging, battery pack and all electronics needed to transform a combustion-engine vehicle into a fully-electric vehicle.

"There are a lot of smaller manufacturers out there producing the external shell of a bus, but they don't always have the ability to move to electric," Orús said. "It's hard for them to develop this technology from scratch. So we sell them the platform or work with them to build a full e-bus."

SCALING UP

But as QEV Tech scales its entire business and broadens its global reach to keep up with demand, it faces the challenge of increasing complexity. Transitioning from a start-up with just a handful of engineers to a team of more than 50, the company needed a platform to bring everyone together, streamline workflows and collaborate on complex designs, while ensuring they have access to the most up-to-date product information.

"It was difficult to manage all the information we have across our facilities," Orús said. "With that and having to monitor all our products and manage all the related data, we were having to contend with changing file names and locations. When you start out as a small company with three people, it's fine. But at the level we are now, it was becoming much more complicated."

The company already used Dassault Systèmes' design application CATIA and felt the 3DEXPERIENCE® platform could be a good fit for its needs. Working with Dassault Systèmes' business partner Principia, QEV Tech assessed how the platform could deliver the collaboration, simulation, integration and project management capabilities it required. Principia listened to the QEV Tech team's specific requirements and suggested the move to the 3DEXPERIENCE cloud with the CATIA and ENOVIA applications.

"Our relationship with Principia has been really positive," Orús said. "They came to us and studied exactly what we required and presented a really compelling solution – not just a product – that considered everything we needed, including training and role definition. It didn't feel like just a commercial transaction; they have been a true partner."

CONTINUITY IN THE CLOUD

One of the biggest drivers for choosing the 3DEXPERIENCE platform on the cloud was to improve collaboration both within QEV Tech's business as well as with its external clients,



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and clearly define a common way of sharing information and knowledge. A cloud-based implementation suited the business on many levels, allowing it to get up and running quickly without the need to install additional servers and hardware. Most importantly, it meant that users could access the platform at any time and from any place and any device, while ensuring that all data and intellectual property was protected from data loss and unauthorized access.

Principia worked with QEV Tech to get them on cloud as quickly as possible. By week 10, everything was in place and

the first training phase was complete. They couldn't have timed it better. The following week, Spain went into a state of emergency as a result of the coronavirus pandemic and locked the country down.

"It was an amazing collaboration," Orús said. "We held regular virtual meetings with Principia to ensure all the processes were correct and they made sure we had everything we needed. We had to quickly switch to working from home and I'm so happy we implemented the system just in time. It's allowed us to keep our business going and meet our schedule."

Had the company not moved to the cloud, it would have been far harder for QEV Tech to ensure business continuity and support a remote workforce during the coronavirus crisis.

"Using the **3DEXPERIENCE** cloud, our engineers have been able to access all the tools and information they need from their home offices and collaborate and share information with customers to keep the momentum behind projects going," Orús said.

COLLABORATIVE INNOVATION

QEV Tech is using the **3DEXPERIENCE** platform to empower its engineers to work together and pool their expertise on new projects. With everyone connected via one system, they can track the progress of projects, work on designs and concepts concurrently and securely share information with external partners.

"We don't have one product that one engineer creates solely by themselves," Orús said. "It requires a team of engineers to work together. Today, it's much easier for them to find the right files at the moment they need them. We also have external collaborators, and we can now make sure they have access to the most up-to-date information to work effectively with us."

Critically, the platform on the cloud ensures that everyone is working with the latest version of a design and using the most up-to-date apps, which are upgraded automatically with every new cloud release. "One of the biggest things our engineers appreciate about the new platform is the guarantee that when they access information about a product or go to work on a design, they know they're looking at the most recent version," Orús said. "As our team grew, we used to make mistakes using the wrong version of a part, losing us a lot of time and money."

Now, everybody has access to error-free, structured data across the value chain, helping to speed up product development and complete projects on schedule.

GROWING CAPABILITIES

QEV Tech is a long-term user of CATIA CAD software and appreciates all the new capabilities that come with the **3DEXPERIENCE** platform.

"Before, we used CATIA for mechanical design," Orús said. "But we're now also using it in our electrical department and exploring how we can use it in dynamics too. People are really enjoying using the tool and are finding it makes them far more efficient as they don't have to switch between applications."

The company is also beginning to use ENOVIA to enable collaborative innovation and manage design changes seamlessly.

"Importantly, it gives us the possibility to determine the version of a part as well as track its evolution," Orús said. "As we use it

More about the solution:

The Electro Mobility Accelerator solution enables mobility innovators to accelerate innovations to market at competitive cost and optimal quality, on Cloud or on Premise. The solution provides the industry-proven capabilities to germinate new EV vehicle ideas, explore regional options, virtually simulate and validate performance, all on one secure, powerful platform.

Benefits

- Accelerate optimal innovation
- Enable better productivity and save costs
- Create and validate better innovations
- Boost efficiencies and reduce time-to-market cycle



Top image: Hispano Suiza partnered with QEV Technologies to custom-design the electric powertrain of the Carmen Boulogne hypercar.

Bottom image: QEV Technologies develops and produces parts for electric vehicles, ranging from components for Formula E to electrical systems for converting or manufacturing minibuses.

Focus on QEV Technologies

QEV Technologies is an engineering company specialized in electro-mobility, covering motorsport, electric hypercars and electric buses. The company is a pioneer in electric motor racing and uses its expertise to design, build and offer all the necessary technical support for new electric prototypes. It is also involved in training the next generation, partnering with the Central University of Catalonia on their Motorsport & E-Racing Master's Degree.

Products: Design concepts, full vehicle development, battery-pack development, software development, prototype assembly, small-scale production, bus e-kit platform, full e-bus production

Employees: 50

Headquarters: Barcelona, Spain

For more information: <https://www.qevtech.com>

Focus on Principia

Principia is a Dassault Systèmes Platinum Business Partner, selling and providing services in Spain and Portugal around their software products for design and simulation. It has experience in consulting engineering and design and simulation software to help its customers solve complex problems in applied mechanics and deliver advice for innovating and improving their product development processes using CAD/CAE/CAM/PLM tools.

For more information: <https://principia.es>

PRINCIPIA

more in our processes, it's going to make a big difference to the way we handle product definitions and share design data across our supply chain."

DELIVERING THE BEST EXPERIENCES

Powered by the **3DEXPERIENCE** platform, QEV Tech is confident of its ability to partner with more automotive manufacturers and help them make the transition from traditional combustion-engine powered cars to electric vehicles.

"We're not in this industry to create a brand; we want to help others embrace our technology and knowledge, and accelerate the development of electric vehicles," Orús said. "Our goal is to work with the big manufacturers and bring our expertise to them. I see the **3DEXPERIENCE** platform giving us a good foundation to offer the best experience and integration. Working together, we can change the world."

Our **3DEXPERIENCE®** platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE** Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating 'virtual experience twins' of the real world with our **3DEXPERIENCE** platform and applications, our customers push the boundaries of innovation, learning and production.

Dassault Systèmes' 20,000 employees are bringing value to more than 270,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit www.3ds.com.

