

AUTOMOTIVE AND TRANSPORTATION

NIO

NIO improves testing processes to attain industry certifications

Product

Polarion

Business challenges

Grow workforce while increasing production

Adhere to industry certification

Pioneer innovation within the industry

Keys to success

Implement agile workflow for software management

Integrate industry-relevant toolchains

Spearhead efficient testing processes

Results

Enabled efficient workflows and improve R&D productivity by 16 percent over 380 days

Improved testing processes to attain industry certifications

Achieved ASPICE Level 2: Managed certification

Using Polarion ALM to enable efficient workflows and improve R&D productivity by 16 percent

NIO has operated in China's premium electric vehicle market to design, jointly manufacture and sell smart and connected premium electric vehicles (EVs) since 2014. NIO focuses on next-generation technologies including connectivity, autonomous driving and artificial intelligence (AI) in the electric vehicle industry. NIO aims to provide users with comprehensive, convenient and innovative charging solutions and other user-centric service offerings.

As a relative newcomer to the electric vehicle industry, NIO is still in the initial growth stage. To help the company manage its expanding research and development (R&D) demands and facilitate R&D processes efficiently across teams in multiple locations, NIO needed an advanced application lifecycle management (ALM) platform.

To achieve this, NIO partnered with Siemens Expert Partner, Teamlive Works Technology (Teamlive) to use Polarion™ ALM™ software, which is part of the Siemens Xcelerator business platform of software, hardware and services. Siemens





Digital Industries Software recognizes partners that exemplify expertise in a Siemens solution or industry. These Siemens Expert Partners are validated by customers and Siemens for demonstrating their business and technical acumen.

Teamlive provides comprehensive R&D management solutions for customers across China that strive for product quality and R&D efficiency while adhering to stringent industry standards including ASPICE for the automotive industry.

Compliance with industry certification

The automotive industry is stringently monitored, with Automotive Software Process Improvement and Capability Determination (ASPICE) and International

Organization for Standardization (ISO) 26262 certification becoming the de facto standards in recent years.

As NIO must adhere to ASPICE and ISO 26262 industry standards, the company is required to integrate the relevant toolchains that were widely used in the automotive industry. To facilitate its adherence to these toolchains, NIO needed an ALM platform that had an open architecture to integrate its existing toolchain while also covering its end-to-end R&D management process.

NIO considered using SVN and Git as version control systems alongside other isolated testing tools that they were already using. The company deemed both SVN and Git inadequate, as neither versions control system met NIO's end-to-end R&D management requirements.

NIO also needed to integrate Jira, a software application it was using for issue tracking and project management, into the ALM platform alongside version control systems and isolated testing tools. Without proper integration with the isolated testing tools, efficiency would become an issue and team members would need to take the time to enter testing results manually. This would not be feasible due to the size of the projects.

// Using Polarion ALM has provided us with a good user experience and solved the low adoption problem in our R&D management platform."

Helen Cai
Engineering Process Management
NIO

As well as improving R&D quality and efficiency, NIO also wanted ASPICE Level 2: Managed certification to set them apart from competitors. However, without an adequate version control system to meet the company's end-to-end R&D management process, NIO felt it would be too hard to establish full traceability and execute impact analysis in the course of the testing process. Without the assurance of full traceability, ASPICE compliance would become problematic.

An iterative approach to R&D processes

NIO was impressed by Teamlive's extensive experience in R&D management, which covered three levels, namely the product level for using Polarion ALM, the company-level overall strength and the team-level professionalism. After considering NIO's requirements, Teamlive suggested the company use Polarion ALM.

"The Teamlive implementation team has experience in R&D management and a deep understanding of Polarion ALM software," says Helen Cai, engineering process management at NIO. "The combination maximizes the value of using Polarion for NIO's project needs."



Polarion ALM is a unified platform that you can use to cover end-to-end functionality, including requirement management, project management, test management, software configuration management, issue and change management. Compared to competitor products, Polarion ALM is a web-based ALM platform with an open architecture. These features allowed Teamlive to customize the software to target NIO's specific needs for better traceability and improved cross-departmental collaboration. By using Polarion ALM, NIO seamlessly achieved toolchain integration and incorporated its Jira project management software.





To increase return on investment (ROI) and respond more rapidly to market changes, Teamlive proposed delivering this project by using an iterative approach to project management and software development. NIO divided the project into five stages, with each one corresponding to a different function in the ALM software as well as a different stage in the R&D process.

Each of the five stages includes a complete process from demand research, scheme design, development and implementation, internal verification, customer acceptance and training. The goal of each stage was to enable NIO staff to effectively use the target functional modules.

Cutting design rework costs

Using the fully integrated functions of Polarion ALM enabled the team to execute a swift platform switchover. NIO implemented a smoother, automated project management process thanks to a comprehensive workflow plan and better interdepartmental communications. Using Polarion ALM as their ALM software allowed NIO to improve their productivity by 16 percent over 380 days.

“Using Polarion ALM and its re-use capability helped product-focused R&D companies like us solve the problem of re-using from products to projects,” says Michael Zhou, chief executive officer (CEO) of Teamlive.

“Using the openness of Polarion ALM helped NIO successfully integrate various R&D tool chains, greatly improving the R&D efficiency and avoiding tool silos,” says Cai.

By implementing Polarion ALM, Teamlive helped NIO significantly reduce the time spent on quick co-location of information, repetitive construction as well as the time spent on automation and user experience, while improving information transparency.

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Michael Zhou
CEO
Teamlive

Solutions/Services

Polarion ALM
[siemens.com/polarion](https://www.siemens.com/polarion)

Customer's primary business

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www.nio.com

Customer location

Heifei
China

Solution Partner

Teamlive Works Technology
www.teamlive.com.cn



Looking to the future

"Using Polarion ALM has provided us with a good user experience and solved the low adoption problem in our R&D management platform," says Cai.

Using Polarion ALM, NIO efficiently reinforced business protocols that helped cut design rework costs caused by human

errors while also reducing the need for constant tool maintenance.

Going forward, NIO hopes to scale its research and productivity to increase its success in the electric vehicle industry and become a household name.

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