



CASE STUDY →

ENHANCING PATIENT CARE

WITH BI AND SQL
ANALYTICS AT QCENTRIO



CLIENT CONTEXT

A leading automotive OEM was looking to streamline their product development process by implementing simulation technology to predict vehicle aerodynamics.

The automotive industry is constantly evolving, with new technologies and features being introduced at a rapid pace. As a result, automakers are under pressure to develop new products quickly and efficiently in order to stay competitive in the market. One important aspect of product development is aerodynamics, which plays a crucial role in the performance and efficiency of vehicles.



CHALLENGES

The client faced several challenges in their product development process:



Time-consuming and costly physical wind tunnel testing

The traditional method of testing vehicle aerodynamics in a wind tunnel is time-consuming and expensive. It requires building physical prototypes, setting up the wind tunnel, and conducting multiple tests to gather accurate data. This process can take several months and cost millions of dollars.



Lack of flexibility and agility

With the traditional method, any changes or modifications to the vehicle design would require building new prototypes and conducting additional tests. This lack of flexibility and agility in the testing process can result in delays in product development.



Limited understanding of aerodynamics

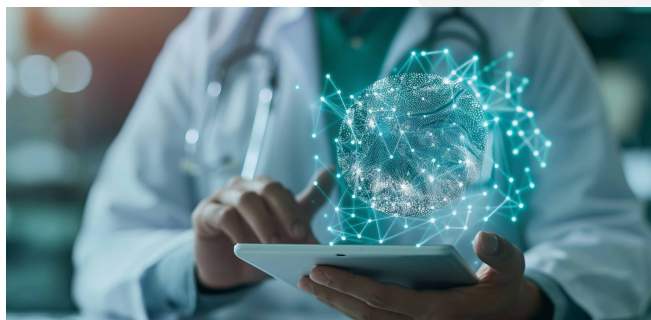
The client's engineering team had limited knowledge and expertise in aerodynamics, making it difficult for them to accurately predict the performance of their vehicles.

SOLUTION

The client decided to implement automated vehicle aerodynamics simulations to address these challenges.

The solution involved using computational fluid dynamics (CFD) software to simulate the flow of air around the vehicle and predict its aerodynamic performance.

This would allow the client to:



TECHNOLOGIES USED

- ANSYS Fluent
- OpenFOAM
- STAR-CCM+



Reduce time and cost

By using simulation technology, the client was able to eliminate the need for physical wind tunnel testing, saving both time and money. They could conduct multiple simulations in a fraction of the time it would take to conduct one physical test. This allowed them to make design modifications quickly and efficiently without incurring additional costs.

The client estimated that they were able to save millions of dollars in development costs by using simulations. They also reduced their time-to-market by several months, giving them a competitive advantage in the market.



Improve flexibility and agility

With simulations, the client could easily make design changes and test their impact on vehicle aerodynamics without having to build new prototypes. This improved their flexibility and agility in the product development process, allowing them to respond quickly to market demands and stay ahead of their competitors.



Gain a better understanding of aerodynamics

The CFD software provided detailed and accurate data on vehicle aerodynamics, giving the client's engineering team a better understanding of how their vehicles performed in different conditions. This helped them make informed design decisions and optimize the aerodynamics of their vehicles for improved performance and efficiency.

They were also able to identify potential issues early on in the development process, avoiding costly redesigns and delays. This helped them produce higher quality vehicles and maintain customer satisfaction.

BUSINESS IMPACT

The implementation of automated vehicle aerodynamics simulations had a significant impact on the client's product development process. They were able to:



SAVE TIME AND COST

The use of simulations helped the client gain a better understanding of vehicle aerodynamics, allowing them to optimize their designs for improved performance and efficiency. This resulted in higher quality vehicles and increased customer satisfaction.



IMPROVE PRODUCT QUALITY

By eliminating physical wind tunnel testing, the client saved millions of dollars in development costs and reduced their time-to-market by several months. This allowed them to bring new products to market faster and stay ahead of their competitors.



INCREASE FLEXIBILITY AND AGILITY

With simulations, the client could easily make design changes and test their impact on vehicle aerodynamics without incurring additional costs or delays. This improved their flexibility and agility in responding to market demands and staying ahead of their competitors.

BOTTOMLINE

A partnership between Qcentrio and the client has significantly improved healthcare centers' and retirement homes' management and reporting capabilities. The BI and SQL analytics solution has enabled faster and more accurate decision-making, ultimately contributing to better patient care and operational efficiency.



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