Audi Transforms the Car-Shopping Experience Using ZeroLight 3D Technology on AWS

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-Thomas Orenz, leading the Audi Visualization Engine initiative at Audi AG

The Changing Car-Buying Landscape: The Journey Begins Online

In today's world, many activities—like cashing a check, buying clothes, or even grocery shopping—are done digitally. The process of car shopping is no different. Traditionally, this process began by heading to a car dealership, but in today's digital-first world, there's no need to leave the couch to research, configure, and confidently choose the perfect car. According to the digital marketing agency Rebixit Consulting, 97 percent of today's car buyers start their purchase process by first going online. Dealerships, while still an essential part of the car-buying lifecycle, have become places for validating and finalizing the purchase of a specific car already chosen and customized. The online channel is crucial for automotive retailers to reach, educate, and excite potential buyers as this is where most decisions are made – which brand, which car model, and which options.

For Audi, a leading luxury car manufacturer known for producing sleek, sporty, and timeless vehicles, it wasn't enough to offer customers a standard online car-shopping experience. The company, which places technology at the forefront of its development strategy, instead sought to revolutionize the car-shopping journey across digital channels and within dealerships by providing shoppers with an immersive adventure powered by virtualization and 3D rendering.

Making the Car-Buying Process Immersive, Exciting, and Personal

Audi embraces innovation and exploration when it comes to improving the customer experience. "From the beginning, we aimed to do something no one has done before," says Thomas Orenz, leading the Audi Visualization Engine initiative at Audi AG. "We began by providing customers with a virtualized experience throughout Audi City showrooms, but we found the visuals lacked quality and were slower to render than we would have liked. In 2014, we decided we wanted to go bigger, to be bolder. So we sought to identify solution partners who could provide cutting-edge technology to improve the solution's visual quality and performance and to increase customer interaction opportunities, both online and in Audi dealerships."

To enable beautiful visualization of virtually every car configuration option for customers at a faster frames per second (FPS) rate, Audi knew it needed to upgrade its technology stack and move away from providing a 2D digital experience, which tends to be more static and less engaging. The company decided to take a leap and experiment with a 3D game engine format to develop a new digital car configurator and rendering solution.

About Audi AG

Audi is a German car manufacturer. The Audi Group—with its brands Audi, Ducati, and Lamborghini—is one of the most successful manufacturers of automobiles and motorcycles in the premium segment. The company is present in more than 100 markets worldwide and produces at 16 locations in 12 countries. Audi is part of the Volkswagen Group.

Challenge

Consumers are increasingly starting the car-buying process online. To stay at the forefront of technological development and exceed consumer expectations, Audi sought to revolutionize the car-shopping journey across digital channels and within dealerships by providing shoppers with an immersive adventure powered by virtualization and 3D rendering.

Solution

The company chose to work with ZeroLight to first begin developing visualization technology for showrooms. Audi then decided to engage with ZeroLight to build a 3D online configurator solution on AWS to help customers visualize the car of their dreams online before moving to the purchasing stage. ZeroLight then developed an online marketing pilot for Audi, enabling customers to use the 3D configurator to evaluate the A4 Allroad model on Audi's German website.

Benefit

Audi's initial pilot produced enough positive results to build a strong business case for rolling out the 3D online configurator solution to additional Audi models and markets. Customers using the 3D configurator showed a nine percent increase in feature selection with three additional features on average, corresponding to an average upsell increase of 1,198 euros per car. The company also saw a 66 percent increase in engagement.

Audi City Showroom configurators

A Game-Changer for Real-Time Automobile Rendering: From Brick-to-Click

As a technology company using 3D rendering to push the boundaries of what is possible for retailers, ZeroLight's mission is to provide an optimal user experience by removing the barrier between the product and its customer and by making sure the experience follows the customer – and not the other way around.

Together with ZeroLight, Audi started by developing an optimized Audi City experience using virtualization technology to provide customers with a more engaging car-buying experience. "The results of the showroom pilot were impressive," says Francois de Bodinat, chief marketing officer at ZeroLight. "Audi saw an increase in upselling and engagement at the point of sale."

The Audi VR Experience allowing customers to visualize their car in a completely immersive environment

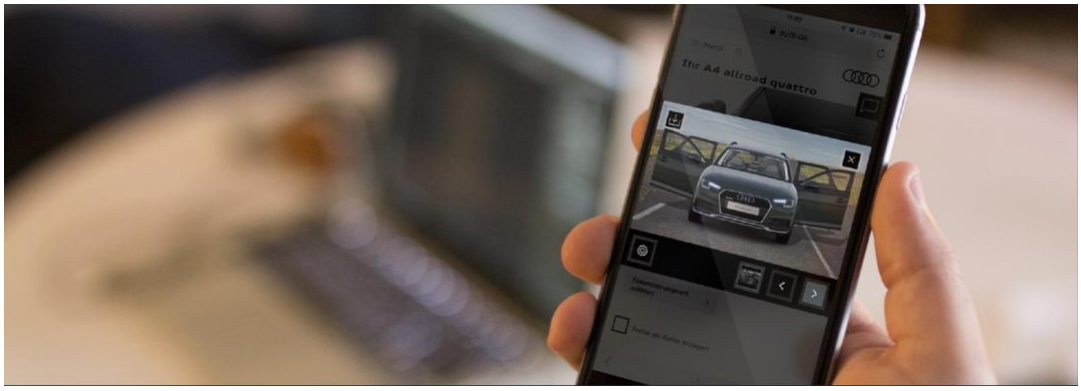
The ZeroLight team came from a gaming background and believed their expertise and 3D rendering software typically used in the dealership could also be migrated online with AWS. The team focused on providing Audi with the ability to help customers visualize the car of their dreams online before moving to the purchasing stage. "Buying a car should be as exciting as owning a car," says de Bodinat. "We wanted to show Audi that they could provide a high-quality digital experience to customers alongside each stage of the customer journey, not only at the dealership, and all in real time."

He says running the solution on AWS would provide Audi with both quality and performance. "We want to create an online retail experience that is smooth, responsive, and engaging, regardless of the device or system a customer is using," he says. "We feel that AWS has the technical capabilities – such as highly performant graphics processing unit instance types – and the global reach we need to be able to render and deliver a seamless online experience, on any device. Building on AWS was the obvious choice for us if we were to meet and exceed our aggressive processing and rendering requirements globally."

ZeroLight's Online Configurator Solution Delivers a New Customer Experience

Audi engaged with ZeroLight to build an online configurator after a presentation to the company. "ZeroLight impressed us with its ability to demonstrate how we could collaborate to define the best visual approach and work to get closer to still, offline visual quality in an online, dynamic environment by running on AWS," says Orenz. First, the ZeroLight solution was validated using the Audi A7 model on the German Audi website. followed by a technical marketing pilot with Audi to demonstrate the potential business impact of using its 3D online configurator solution to deliver a new digital experience.

ZeroLight then developed an online marketing pilot for Audi, enabling customers to use the 3D configurator to evaluate the A4 Allroad model on Audi's German website. During the pilot, customers received a live 3D representation of the model that was fully configurable and accessed within five seconds for high-quality and dynamic rendering, regardless of their device – PC, mobile, or tablet. Using AWS, ZeroLight created a secure virtual infrastructure using Amazon Elastic Compute Cloud (Amazon EC2) G2 and G3 instances, which provided the graphical processing capabilities needed to render the software in real-time.



Audi A4 online configurator working on any device, mobile or tablets

Changing the Customer Experience While Creating New Revenue Opportunities

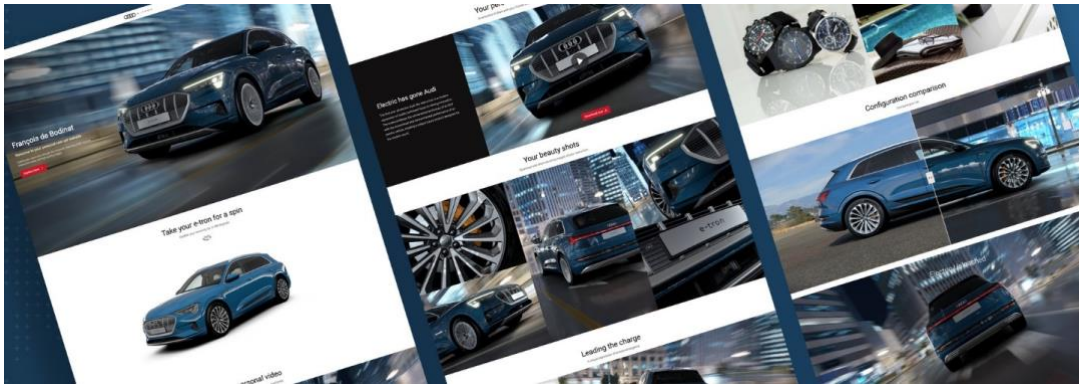
To measure the success of the online pilot, Audi compared user basket selection in a typical A/B testing process from customers who received the configurator with the new 3D streaming versus those who used the more traditional 2D alternative.

Conducted over four weeks, Audi's initial pilot produced enough positive results to build a strong business case for rolling out the 3D online configurator solution to additional Audi models and markets. "We measured what customers using the new 3D configurator selected, and we saw a nine percent increase in feature selection with three additional features on average," says Orenz. "This corresponded to an average upsell increase of 1,198 euros per car. We also measured a 66 percent increase in engagement. Users were staying on the product page for longer amounts of time, and we found a very significant increase in conversion from online to dealer visits. Given that is just for one model of car in one market, we feel the opportunities for revenue growth are substantial using the 3D configurator," says Orenz.

After a successful rollout of the solution in Germany, the configurator is now available in France, Italy, the Netherlands, Poland, Turkey, Switzerland, Portugal, Norway, and Ireland. “The central team plans to launch the solution in 25 global regions, with six additional territories expressing interest in participating,” says Orenz. “We want to create a connected customer journey that is consistent across markets. Our goal is to create a solution that will bridge the gap between the online and in-store experiences and make Audi synonymous with personalization in the automobile industry.”

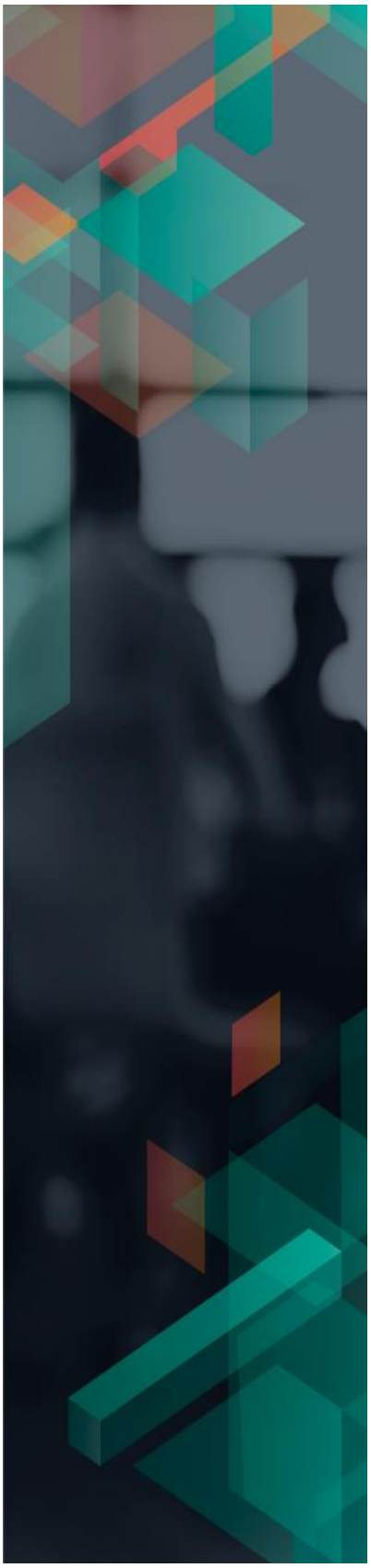
Expansion of the pilot to all Audi models in 25 markets - here showing the new Audi Q8

The solution also allows car manufacturers to go paperless by replacing traditional generic paper brochures with a personalized rich media microsite containing the exact customer configuration and option list, while also allowing the customer to access interactive content, pictures, videos and recommendations.



Audi plans to use personal microsites to replace generic paper brochures

With ZeroLight as a long-term partner, Orenz believes Audi will continue to optimize its use of the solution and drive more innovation. “ZeroLight is an invaluable partner,” says Orenz. “Working together with the team at every step of this process has been great. They always find a solution, and they make things work. My team trusts them, and it’s a pleasure to work with them. I cannot recommend ZeroLight highly enough.” For the ZeroLight team, the next step in Audi’s evolution lies with the wealth of data collected since the project began in 2015.



"By using our technology on AWS, we capture invaluable real-time anonymous data on customer behavior, and when we aggregate that data, we can find out more about trends and preferences," says de Bodinat. "We also use machine learning to distinguish the experience by proposing contextual recommendations to each customer, in a 'next-best-action' form. In this context it is clear that we do not need individual customer information anymore to create tailored customer experiences; we just need real-time anonymous behavior."

Orenz feels the multi-year project has been successful because of the relationships forged between ZeroLight, AWS, and Audi and the synergies between each company's technology solutions and teams. "What we're doing has never been done before in the automotive retail space," says Orenz. "Using a state-of-the art real-time solution from ZeroLight and taking advantage of the stability and scalability of AWS, we've begun successfully rolling out a 3D configuration system around the world for Audi customers. In every scenario, the solution works very well. That's a huge success."

Learn More

Learn more from Audi and ZeroLight by watching the AWS Industrial Software Competency video about this project.

ZeroLight

ZeroLight is a market-leading omnichannel visualization platform for the automotive industry. Pioneering real-time 3D solutions for retail, online, and asset creation, ZeroLight empowers OEMs to sell smarter and engage customers with interactive product experiences that enhance the buying process. The company is an AWS Partner Network (APN) Advanced Technology Partner and AWS Industrial Software Competency Partner.

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