Penske Transportation Solutions boosts custom software engineering with AI

Successful pilot with GitHub Copilot increases developer productivity

Client: Penske Transportation Solutions

Region: North America

Industry: Automotive

Client challenges:

With technology changing rapidly, Penske's custom software engineering team needs to stay focused on its mission to deliver quality code faster and create digital solutions for the market more quickly.

Solution:

Working with Capgemini, Penske conducted a pilot with GitHub Copilot to provide software engineers with an AI assistant that helps them write better quality code faster and focus on higher value work.

Benefits:

- 10–12 percent developer productivity gains with GitHub Copilot pilot
- Early delivery of features and capabilities on multiple projects
- Reduced costs by thousands of dollars for new digital solutions

Penske Transportation Solutions partnered with Capgemini to explore the potential of AI to improve custom software engineering productivity and quality through a pilot program using GitHub Copilot. Following a positive response and a 10 to 12 percent boost in productivity, the company is expanding the tool to other areas of software engineering and pursuing innovation driven by AI.

Software engineering and innovation

Penske Transportation Solutions, headquartered in Reading, Pennsylvania, delivers innovative transportation and logistics solutions that are vital to the success of businesses and customers. The business is built on a commitment to customers and dedication to excellence and innovative thinking that keeps the world moving forward.

Custom software engineering is at the core of how Penske runs and grows its business. Every department in the company uses technology, and the software engineering team collaborates with the business team to bring ideas to reality, building software tools that can be effectively used across the business.

"Eighty percent of our software engineering is custom-built, and the reason is our industry is very niche," said Rohit Talwar, Senior Vice President, Software Engineering, Penske Transportation Solutions. "There are no existing products that will help you lease or rent trucks. So we have to build our own products for internal and external consumption."

Searching for productivity gains

"Our mission in software engineering is to deliver quality code faster," Talwar said. "As the technology changes, as software engineering evolves, our business processes have to evolve with it. We have a culture of automation, and software engineering plays a critical role. That puts a lot of demand on software engineering because software is what drives and runs our digital products and business."

Penske has been approaching generative AI in a very pragmatic way, by starting small with a focus on measurable business value. It is not about the technology itself but rather how it can impact one of three main focus areas: productivity, customer experience, and operational excellence.

"It is not just about building code but actually delivering value to our business and our customers," he said. "Software engineering is evolving. The way we used to build software five years ago is very different than how we do it today. And along with that evolution, technology is changing rapidly, so we need to keep up."

With more than 25 years of experience working together, Capgemini is well-versed in Penske's custom software engineering practices and its business. Penske chose to work with Capgemini on an AI project because it understood the technology, business processes, and strategy, and had the industry and technology experience needed for the project.

"Capgemini really helped us with this idea on how to boost the productivity of our engineers," Talwar said. "When we think about Capgemini, they are an extension of our team, supporting different areas of our technology and our business."

Exploring productivity gains

In 2024, Penske wanted to explore the capabilities of GitHub Copilot. A pilot would be a way to accelerate software delivery to keep up with the inputs coming from the business and serve as a hands-on experience to boost AI literacy in the company.

Capgemini was integral in building the pilot roadmap, defining and implementing measurable metrics, and helping train engineers both onsite and offshore. We were also critical in helping scale across all the Penske engineering teams.

The three goals of the GitHub Copilot pilot project were:

1. To reduce the amount of time lead developers spend supporting junior developers so they can focus on more valuable activities
2. To reduce the amount of time developers spend doing repetitive tasks like writing glue and boilerplate code so they can focus on software design and architecture
3. To support the modernization of old code bases in Penske's existing software.

After using GitHub Copilot for three custom software projects, Penske saw a 10 to 12 percent increase in productivity, early delivery of projects, and significant cost savings in the exploratory stage. Now the tool is being rolled out across software engineering and the team is experiencing further productivity gains as developers find new ways to use it.

"Over the past 25 years, we've built a rich and extensive software ecosystem. With that maturity comes a tremendous opportunity to modernize, simplify, and make enhancements that will position us for faster innovation and easier maintenance going forward," said Victor Chelladurai, Senior Director, Systems Architecture and Agile Development, Penske Transportation Solutions. "As Gen AI capabilities were added to GitHub Copilot, junior developers are now able to work more independently. This reduces the amount of hands-on support required from lead developers and allows them to focus on high-value design and architecture work."

Penske treated the introduction of GitHub Copilot as an organizational change and not just a tool rollout, to ensure the team understood the benefits. Initially there was some reluctance to change but the training plan was designed to help software engineers understand the benefits. Once developers saw how GitHub Copilot helped them learn new skills, they embraced it.

"Developer response has been overwhelmingly positive, because they are using it as a learning tool," Chelladurai said. "They can spend time on higher value work and that gives them more confidence. They do not have to jump between different tools to get answers."

Exploring more value

By boosting productivity, Penske has increased its speed-to-market so it can deliver quality digital solutions more quickly. It is now exploring opportunities in the other two areas of focus: customer experience and operational excellence.

Penske is just starting to scratch the surface with GitHub Copilot. It is now exploring the entire lifecycle of software engineering and finding unexpected ways to generate value.

"When we started, we had a certain set of metrics that we knew were going to help our developers," Talwar said. "But since we've scaled, developers are actually finding new ways of squeezing value out of the tool that we didn't even know existed, like updating older software versions. Based on our experience with just software engineering, we are projecting the potential for 18 to 20 percent productivity gains in our context when we expand how we use the tool."

"We rely on Capgemini to bring outside-in perspective, both from an industry and technology standpoint. We don't understand our blind spots so that is where our partnership with Capgemini is so critical. They bring us perspectives which we can then collectively put into our custom software engineering and engineering practices."

– Rohit Talwar, Senior Vice President, Software Engineering, Penske Transportation Solutions

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