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Accelerating product migration with **GenAI, reducing manual efforts by 60%**

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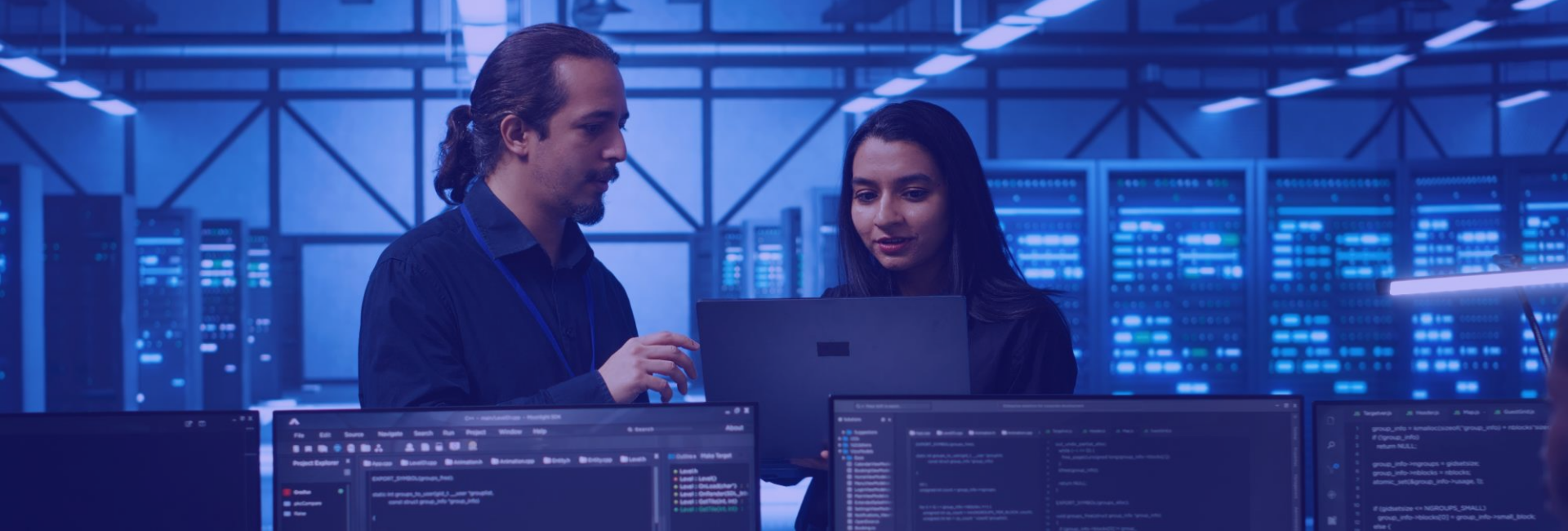
# Client **background**

Client was a leading provider of practice management software solutions for mental and behavioral health providers. They were in the process of merging multiple legacy products into a single, cohesive platform. The migration involved transitioning from Backbone.js to React and ensuring that unit testing and documentation were streamlined. Given the scale of the project, the client sought to automate the migration to save time, reduce costs, and boost productivity across their development teams

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# Business **challenges**

**1** **Backbone to React migration –** The client's products were originally built using Backbone.js, a legacy JavaScript framework. To enhance their UI capabilities and ensure a scalable front-end architecture, they sought to migrate to React. However, this migration presented a significant challenge due to the extensive number of screens across multiple products. Manually rewriting each screen would have been too time-consuming and inefficient. The client required a faster, automated solution to streamline this migration while maintaining high code quality.

**2** **Unit testing automation –** Ensuring robust testing practices in their React-based codebase posed another challenge. Developers previously relied on manual test case writing using frameworks such as JEST for React and NUnit for .NET code. Given the project's scale, manually creating unit tests would have significantly slowed deployment timelines. An automated solution was essential to accelerate testing without compromising test coverage.

**3** **Automated documentation generation –** Creating comprehensive technical documentation was a crucial part of the client's development workflow. Manually documenting code was tedious, error-prone, and diverted developer resources from core development tasks. An efficient and automated documentation solution was necessary to improve productivity and ensure accuracy in their technical documentation.

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# Value **Delivered**

**CitiusTech collaborated** with the CTO's office to **measure GenAI's impact on product productivity,** establishing clear metrics at the **product, team, and developer levels**. Our solution delivered impactful results:

**1** **Backbone to React migration –** The team demonstrated how GitHub Copilot could accelerate migration by automating the conversion of Backbone screens to React components, reducing manual effort and saving time.

**2** **Prompt Playbook for seamless migration -** A comprehensive playbook of GenAI-driven prompts was developed to guide developers through the migration process. This streamlined the conversion of Backbone-based UI into React components with minimal intervention.

**3** **Unit testing automation –** By leveraging GitHub Copilot, developers could instantly generate unit test cases for React and .NET components using frameworks like JEST and NUnit. This boosted deployment speed and ensured a more reliable codebase.

**4** **Automated documentation –** Leveraged GenAI to automate the detailed code documentation, improving accuracy and saving developers' time. Developers could highlight code blocks, and GenAI would generate clear, concise documentation, ensuring consistent and up-to-date records throughout the migration process.

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# Business **Outcomes**

**Significant time savings –** Automation tools reduced manual effort in the Backbone-to-React migration by over 60%, enabling the client to meet migration deadlines efficiently.

**Substantial cost savings –** By minimizing manual labor in code migration, unit testing, and documentation, the client achieved substantial cost savings in both development hours and overall project expenses.

**Enhanced productivity –** With clear productivity metrics and GenAI tools, the client experienced measurable improvements at the developer, team, and product levels.

**Improved accuracy –** Automated unit test generation and documentation minimized human errors, ensuring the final product met high-quality standards.

**Accelerated time-to-market –** The streamlined migration process shortened the overall project timeline, allowing the client to launch their unified product faster and gain a competitive edge.

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# Thank You

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