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Generative AI to transform application development and testing

In today's rapidly moving technology environment, information technology (IT) leaders in life sciences are faced with the challenge of being on the cutting edge of digital innovation while also being able to deliver core IT services and solutions rapidly at the lowest cost possible. The advent of generative artificial intelligence (AI) has made the first challenge a bit more difficult as business teams across R&D, supply chain, and commercial are being inundated with lofty promises that the new technology can be a panacea for their issues—and they are asking their IT counterparts to provide a point of view.

At the same, and without making equally lofty promises, we believe that generative AI has the potential to help IT organizations improve their operational efficiency and speed so that they can ultimately deliver with higher quality and lower costs. Major technology platforms are already releasing and developing high-potential capabilities that can improve typical IT tasks. Figma's Builder.io plugin renders mock-ups—and converts those mock-ups into code—from simple written prompts in seconds. GitHub Copilot and Atlassian Intelligence significantly expedite the speed of application development by streamlining coding, user story creation, and other

related tasks. ServiceNow's App Engine Studio empowers citizen developers to build applications that meet specific business needs via an intuitive chatbot feature. The list continues to grow.

Generative AI has the potential to impact virtually all IT functions and services, but we've shaped this post to focus squarely on one specific area: application development and testing. What could the generative AI-enabled future of application development and testing look like? Coding will be democratized, and business context—rather than technical barriers—will likely be the bottleneck to delivery. Testing new products, features, and designs could be faster, cheaper, and easier, making creativity a better long-term predictor of success. And as many activities become automated, integrating outputs into consuming applications will unlock new productivity improvements. The table below details potential outcomes enabled by generative AI at each step in the application development and testing process.

Potential outcomes enabled by generative AI

Application planning and requirements	Interview and workshop notes will be transcribed live, and then summarized, with pertinent themes extracted. After human decisioning, requirements will be generated and plans will be updated automatically.
Product design	Product designs and mock-ups will be created and edited live, without the need for deep technical expertise. Creativity will become the only barrier to testing new ideas.
Application development	The pace of end-to-end development will be faster, supported by code generation and debugging.
Testing	Test scripts, code, and data will be automated, with pipelines joining these outputs to testing automation tools.
Hypercare and transition	Better planning, issue-resolution, and user engagement will shorten hypercare periods and improve business adoption.

The future of application development and testing demonstrates how generative AI can create value. First, it will likely help supercharge productivity, enabling—and rewarding—greater experimentation. As the time and cost of application development and testing plummets, a much larger swath of employees will be armed with the tools to innovate. Mock-ups will likely be cheaper, brainstorming sessions will come to life, and time-to-value for digital solutions—both internal and consumer-facing—could shrink to a fraction of the current industry standard.

Second, generative AI will enhance the quality of work outputs. Individual contributions will be augmented and refined by AI-generated content, pulled from a veritable treasure trove of data. Third, generative AI will drive cost savings. In the long run, its capabilities will likely help improve throughputs and shift talent needs. IT organizations may also capture meaningful savings by shaving weeks off expensive hypercare periods.

How should IT leaders begin their generative AI transformations? Many IT leaders across industries are taking these actions in the short term to proactively meet the generative AI moment:

1. **Chart a vision for generative AI.** Determine the role and impact that IT will seek to make utilizing generative AI.

2. **Establish a generative AI mandate.** Appoint a generative AI champion(s), equip them with the resources to be successful, and empower them to act nimbly and decisively.

3. **Activate a coordinated enterprise approach.** Employ value realization teams to partner with the business to identify and prioritize top generative AI opportunities.

4. **Develop a generative AI-friendly IT ecosystem.** Select and establish a generative AI sandbox and/or platform that can underpin use case development.

5. **Employ a trustworthy AI framework.** Ensure that the use of AI is reliable, responsible, and trustworthy.

6. **Experiment and demonstrate value.** Execute proof of concepts (be it in IT or with the business) and validate that IT has the capability to deliver this new technology.

7. **Establish a longer-term road map.** Identify the right capabilities, platforms, skill sets, and initiatives that will be needed to achieve your vision.

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