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Generative AI is set to be adopted by 85% of the software workforce over the next two years

Three in five organizations see innovative work as the biggest benefit of generative AI use in software engineering; software professionals say generative AI will boost their comms with business teams

Paris, July 10, 2024 – Generative AI (Gen AI) is expected to play a key role in augmenting the software workforce, assisting in more than 25% of software design, development, and testing work in the next two years. According to the Capgemini Research Institute's latest report "*Turbocharging software with generative AI: How organizations can realize the full potential of generative AI for software engineering*", a large majority (80%) of software professionals believe that, by automating simpler repetitive tasks, Gen AI tools and solutions will significantly transform their function, freeing up time for them to focus on higher-value-adding tasks. More than three quarters of software professionals are confident that generative AI has the potential to boost collaboration with non-technical business teams.

While the generative AI adoption for software engineering is still in its early stages, with 9 in 10 organizations yet to scale, the report found that organizations with active Gen AI initiatives are already reaping multiple benefits from its adoption – fostering innovation coming first place (61% of organizations surveyed) followed by improving software quality (49%). They saw also an improvement of between 7 to 18% (on average) in the productivity[1] of their software engineering functions. For certain specialized tasks, time saving was as high as 35%.

Organizations surveyed highlighted that they plan to leverage the additional time freed up by generative AI for innovative work such as developing new software features (50%) and upskilling (47%); while reducing headcount being the least-adopted route (just 4% of responding organizations). New roles, such as generative AI developer, prompt writers or generative AI architect are also emerging.

Improved collaboration between tech and business teams

From better communication to explaining what the code is doing in natural language, Gen AI makes the connection between software engineers and other business teams more effective. 78% of software professionals are optimistic about Gen AI's potential to enhance collaboration.

Augmented software workforce and employee satisfaction

According to the survey, generative AI tools are used today by 46% of software engineers for assisting them on tasks. Almost three quarters agree that generative AI's potential extends beyond writing code. While coding assistance is the leading use case, generative AI also has applications in other software development lifecycle activities, such as code modernization or user experience (UX) design.

[1] Overall improvement in the productivity of the individual from all types of tasks accelerated by generative AI. Productivity advantage increasing with organization size.

Both senior and junior software professionals also report higher levels of satisfaction from using Gen AI (respectively 69% and 55%). They see generative AI as a strong enabler and motivator.

However, according to the report 63% of software professionals declare using unauthorized Gen AI tools to assist them in tasks. This rapid take-up, without proper governance and oversight in place, exposes organizations to functional, security, and legal risks like hallucinated code, code leakage, and IP issues.

Pierre-Yves Glever, Head of Global Cloud & Custom Applications at Capgemini, said: *"Generative AI has emerged as a powerful technology to assist software engineers, rapidly gaining adoption. Its impact on coding efficiency and quality is measurable and proven, yet it holds promise for other software activities. However, we must remember that the true value will emerge from a holistic software engineering approach, beyond deploying a single 'new' tool. This involves addressing business needs with robust and relevant design, establishing comprehensive developer workspaces and assistants, implementing quality and security gates, and setting up effective software teams. The focus should be on what genuinely generates value. Exciting times lie ahead!"*

To access the full report: Link

Methodology:
The Capgemini Research Institute surveyed 1,098 senior executives (director and above) and 1,092 software professionals (architects, developers, testers, and project managers, among others). 20 in-depth interviews were conducted with leaders from the industry, partners, and startups, along with several software professionals.

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