

Prospects

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The point of view

Low-code and AI: the revolution in software development

Thanks to major advances, the future of software development looks hugely promising. To stay competitive and become more efficient, companies are having to rethink their development methods and adopt practices such as **low-code/no-code and AI-assisted coding**. **These tools respond** to the growing need to meet business requirements and shorten time to market¹ for solutions developed.

2024: a year of exceptional fundraising for software

In 2024, the software segment comfortably topped the list of the most attractive areas for investment in French tech². According to [EY's annual survey of venture capital in France](#), the amount of funds raised in the sector rose sharply in 2024 to €3 billion, 46% higher than in 2023. **Powered by the rapid rise of generative AI**, France is the European leader in the sector.

European AI champion Mistral AI wrapped up France's biggest funding round, followed by Poolside AI, a start-up founded in 2023 that specialises in applying generative AI to software design, with a smart coding assistant for developers.

Low-code/no-code: game-changer for businesses large and small

Developed over the last ten years or so, low-code/no-code (also known as LCNC) refers to software development methods that require little or no code to be written. Developers can use LCNC platforms to build apps intuitively and visually using simple graphical interfaces with tools such as drag and drop.

According to forecasts by Precedence Research, the market for low-code application platforms, or LCAPs, was estimated at \$10.45 billion in 2024 and is set to grow to around \$82.37 billion by 2034, equating to an annual growth rate of 22.92% over the period. This ramp-up is backed up by projections from Gartner, which estimates that, by 2029, 80% of critical business applications will be developed using low-code platforms, compared with 15% in 2024.

There are currently over a thousand LCNC tools in the market, with Mendix, OutSystems, Microsoft, ServiceNow, Salesforce and Appian among the main low-code platforms. Meanwhile, the most popular no-code solutions are those provided by Google AppSheet, Bubble, Zapier, Webflow, Shopify and Convertigo.

¹ Time taken to design and launch a product or service on the market.

² French start-up ecosystem

Simple and widely accessible applications for “citizen developers” – i.e. those with little or no professional coding experience – generally rely on no-code rather than low-code tools. There is a persistent popular misconception that low-code tools are extremely easy to use. In fact, low-code tools are aimed more at seasoned users with a minimum of technical knowledge, to whom they can provide significant added value.

Proofs of concept³ (POCs), websites, business applications, forms and chatbots are all common use cases for LCNC tools.

However, set against the speed of deployment and lower development and training costs of LCNC platforms are issues of interoperability, dependency and reversibility. Furthermore, project technical requirements are often underestimated, and a lack of understanding of the IT environment in which an LCNC solution is deployed can also be an obstacle.

Because they allow users to design applications precisely tailored to specific needs, LCNC tools are also targeted at business application development. These new solutions enable people to focus on higher added value tasks thanks to collaboration and project management based on agile methods.

Nevertheless, **lines of programming code can now be generated with no more than a simple prompt**. Google says 25% of all its new code is now generated by AI and reviewed by engineers, boosting its developers’ productivity and efficiency.

Given all of the above, while one might legitimately wonder whether generative AI is set to supplant other development methods, does that mean LCNC will stop being such a beneficial approach?

While generative AI offers clear advantages for some simple coding tasks, it cannot replace LCNC platforms, which take care of much broader and more complex aspects of development. Indeed, **low-code development is accelerating the adoption of generative AI and vice versa, giving rise to synergy rather than competition between the two technologies**.

Software development transformed by AI

Like LCNC tools, AI-assisted coding can be used to more quickly create apps in a context of limited resources, with experienced programmers in short supply over the past few years.

The market for AI-powered coding assistants is expanding significantly, paving the way for new solutions. Paris-based start-up Poolside AI secured \$453 million of funding before it had even launched its product, with its €2.70 billion valuation putting it among the ranks of France’s unicorns.

No longer are AI-powered coding tools mere accessories for software developers; they are becoming an essential element of modern software development, running in the background as coding mentors with 24/7 availability.

These tools are designed to lead to **faster development cycles and higher-quality code**. They can be applied to a wide range of industries, including in particular fintech, healthtech and e-commerce start-ups.

It is important, though, to highlight the challenges such start-ups must overcome if they use AI-powered coding tools. First, there are **budget constraints**. Some start-ups, with limited early-stage budgets, cannot always afford to sign up for comprehensive plans that include access to advanced

³ The process of demonstrating the feasibility of an idea, technology or project before embarking on large-scale development.

functionality such as that included in the premium versions of GitHub Copilot and Tabnine. Furthermore, **it takes time to adapt** and learn to use these technologies effectively.

Incorporating AI-powered tools into existing workflows can be a complex business, particularly for start-ups with legacy systems. This challenge is closely related to the distinction between open and closed systems, which plays a key role in interoperability issues. For example, integrating a tool like Amazon CodeWhisperer into infrastructure not built on AWS can lead to inefficiencies or require additional configuration.

Companies are particularly focused on the security of the data they use. One risk that is so far still neglected is excessive reliance on AI.

Software 2.0: towards a new generation of software development?

Will systems one day be able to write their own code, learn from their mistakes and independently improve without human input? That's the promise of Software 2.0, a term coined by Andrej Karpathy, former director of AI at Tesla, to describe the shift in software development driven by machine learning algorithms and neural networks.

Examples include driverless vehicles and smart voice assistants. Rather than explicitly programming each and every potential scenario, with Software 2.0 the solution is trained on huge volumes of data.

Unlike traditional software, which is explicitly coded by programmers, Software 2.0 independently improves over time through machine learning and data integration. ■

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