Інформаційні технології

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LOW-CODE AND NO-CODE PLATFORMS: THE FUTURE OF WEB DEVELOPMENT OR A THREAT TO PROGRAMMERS?

Summary. *This article examines the phenomenon of low-code and no-code platforms, their impact on web development, the mobile app market, and the labor market. It examines the advantages and limitations of such platforms, their role in business, and potential implications for professional programmers. Based on the analysis of current trends, data, and use cases, it is concluded that low-code and no-code technologies do not replace traditional development, but transform it, creating new opportunities and challenges. The article also examines the long-term prospects of these technologies and their impact on the IT industry as a whole.*

Key words: *code, low -code platform, no-code platform.*

Introduction. With the development of digital technologies and the increasing demand for software, traditional development methods are becoming less effective in meeting the growing needs of businesses. Low-code and no-code platforms such as OutSystems, Mendix, Bubble and Webflow offer an alternative approach, allowing you to create applications and websites with minimal or no code. These tools are becoming increasingly popular among companies looking to speed up development processes and reduce costs. However, their proliferation has sparked discussions about the future of the programming profession and the possible risks for the IT industry. The purpose of this article is to analyze the impact of low-code

and no-code platforms on web development, the mobile app market, assess their role in business and determine whether they pose a threat to professional programmers.

Methodology. The study used data from open sources, including reports from analytical companies (Gartner, Forrester), cases of using low-code/no-code platforms in business, as well as opinions of experts in the field of IT and web development. The analysis was conducted based on a comparison of traditional development methods with the approaches offered by low-code and no-code platforms. Particular attention was paid to the impact of these technologies on business processes, the labor market, and the long-term prospects of the IT industry. The study also considered the limitations of low-code and no-code platforms and their potential for integration with traditional development methods.

Results and discussion.

1. Advantages of low-code and no-code platforms

Low-code and no-code platforms provide the ability to quickly develop applications without the need for deep knowledge of programming. For example, the Webflow platform allows you to create complex websites using a visual interface, and Bubble allows you to develop web applications with basic functionality. Such tools are especially useful for small and medium businesses, where development resources are limited. According to Gartner, by 2025, more than 70% of new applications will be created using low-code or no-code technologies.

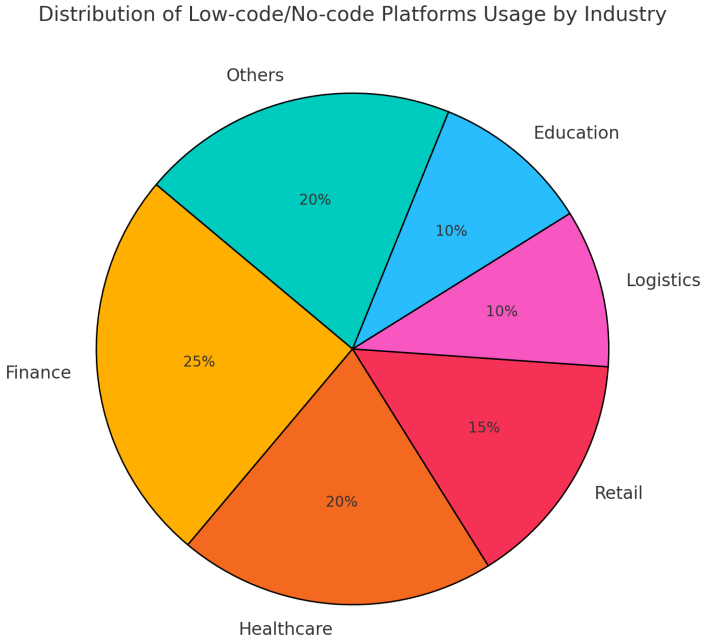
These platforms also reduce barriers to entry by allowing non-technical specialists to create prototypes and MVPs (minimum viable products) without involving expensive developers. For example, startups can use Bubble to quickly test ideas, which significantly reduces development time and costs.

2. Impact on business

Low-code and no-code platforms significantly speed up development processes, which allows companies to respond to market changes faster. For

example, Coca-Cola used the Mendix platform to automate internal processes, which reduced development time from months to weeks. Another example is Siemens, which uses Microsoft Power Apps to create enterprise applications, allowing employees to independently solve problems without the involvement of the IT department.

These technologies also contribute to the digital transformation of business, allowing companies to implement innovations and improve processes. For example, the Airtable platform is used to manage projects and data, which increases the efficiency of teams. In the context of a shortage of qualified programmers, low-code and no-code platforms are becoming an important tool for businesses, allowing them to reduce dependence on IT departments and accelerate the implementation of new solutions.



3. Mobile application market and low-code/no-code solutions

The mobile application market is also actively using low-code and no-code platforms. Tools such as Adalo, Thunkable, and Glide allow you to create mobile

applications without writing code. For example, Adalo provides a visual interface for developing applications, where users can drag and drop elements and customize the logic. Thunkable allows you to create iOS and Android apps using blocks, making the development process accessible even to beginners.

These platforms are especially useful for small businesses and startups that want to quickly enter the market with minimal costs. For example, restaurants can use Glide to create food ordering apps, while fitness centers can use it to manage workout schedules. This allows businesses to compete with large players without investing significant resources in development.

4. How low-code and no-code platforms work

Low-code and no-code platforms work on the basis of visual programming and pre-built modules. Users can drag and drop interface elements, customize logic using blocks, and integrate data from various sources. For example, in Bubble, a user can create a database, set up an API, and develop an interface using visual tools.

These platforms also support integration with external services such as Google Sheets, Salesforce, and Stripe, allowing you to create complex applications without writing code. For example, Zapier allows you to automate processes between different applications, which makes low-code and no-code solutions even more powerful.

5. A threat to programmers?

Despite their advantages, low-code and no-code platforms have limitations. They are suitable for standard tasks, but are not able to replace complex custom solutions that require deep customization and optimization. For example, creating high-load systems or integrating with unique technologies still requires the participation of professional developers.

Moreover, these platforms create new opportunities for programmers who can specialize in integrating, customizing, and expanding the functionality of low-

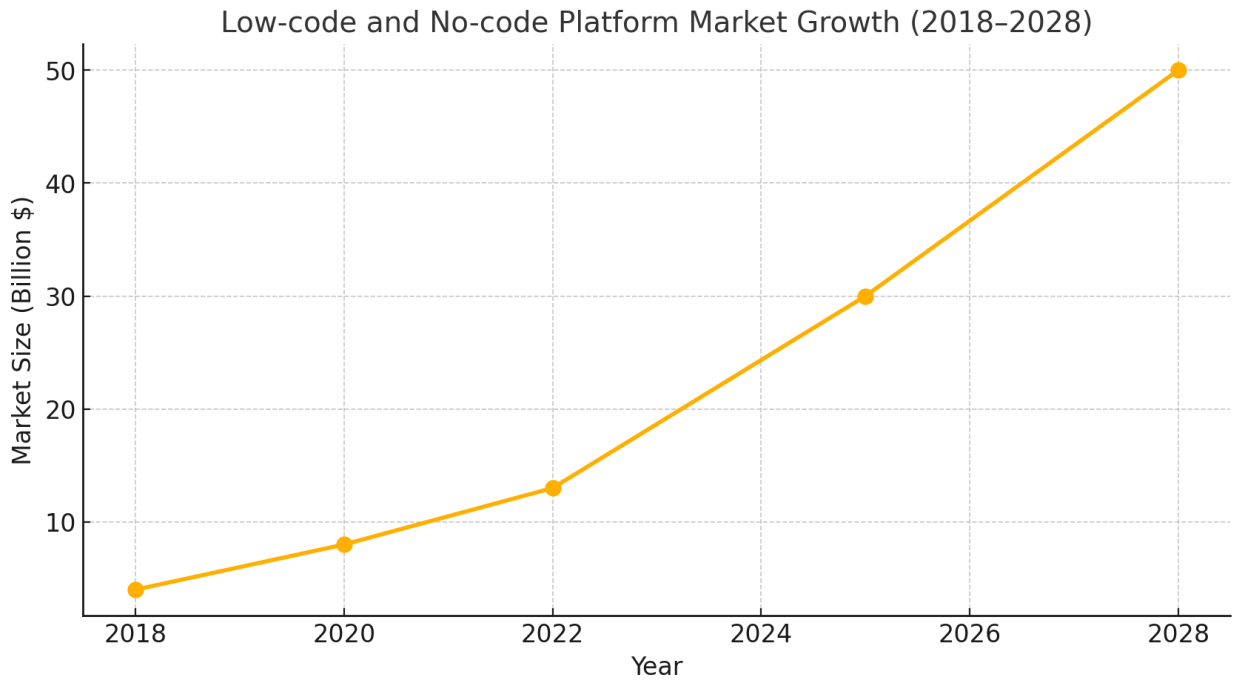
code/no-code solutions. For example, Microsoft Power Apps is actively used by developers to create enterprise applications, which requires knowledge of programming and architecture.

According to Forrester research, the demand for developers who can work with low-code and no-code platforms is growing. This indicates that these technologies do not replace programmers, but transform their role, shifting the focus from routine development to more complex and creative tasks.

6. Long-term prospects

In the long term, low-code and no-code platforms are likely to become part of the development ecosystem, complementing traditional methods. They can be used to quickly create prototypes and MVPs, while professional developers will focus on creating complex and unique solutions.

In addition, the development of artificial intelligence and machine learning can enhance the capabilities of low-code and no-code platforms, making them more flexible and powerful. For example, the integration of AI into platforms such as OutSystems already allows for the automation of part of the development process, which further accelerates the creation of applications.



7. The Future of Low-Code and No-Code Platforms

In the future, low-code and no-code platforms are likely to become even more intelligent and autonomous. With the development of artificial intelligence and machine learning technologies, these platforms will be able to automatically generate code, optimize processes, and offer data-driven solutions. For example, platforms like Wappler are already using AI to automate routine tasks like creating databases and setting up APIs.

In addition, low-code and no-code platforms are expected to become more specialized, offering solutions for specific industries such as healthcare, finance, and education. For example, platforms like Appian already offer industry-specific solutions for automating business processes.

Another important area of development is the integration of low-code and no-code platforms with the Internet of Things (IoT) and cloud technologies. This will allow for the creation of more complex and scalable solutions that can work with large volumes of data and devices.

Conclusion. Low-code and no-code platforms represent an important stage in the evolution of web development and the mobile app market. They are not a threat to professional programmers, but they transform their role, shifting the focus from routine development to more complex and creative tasks. For businesses, these technologies open up new opportunities, allowing for faster and cheaper app development. However, their use requires a thorough analysis of tasks and limitations.

In the future, low-code and no-code platforms are likely to become part of the development ecosystem, complementing traditional methods but not replacing them completely. Their development will further democratize development, making it accessible to a wider range of users, but at the same time maintaining the need for professional programmers to solve complex problems.

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