Designing scalable systems

What benefits can it bring to your business?

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Designing scalable solutions

We specialise in designing scalable systems that provide flexibility, performance and stability. With our solutions, companies can respond dynamically to growing workloads while minimising the risk of failure and optimising operational costs. Our approach allows for efficient infrastructure management and rapid introduction of new features.

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Who benefits from automation and provider integrations?

Application owners

Gain the ability to scale their systems according to current needs, reducing operating costs and optimising infrastructure management. Flexibility allows better adaptation to growing user and market requirements.

Users

Get stable, reliable applications that can run smoothly even under heavy load. Improved performance and real-time data synchronisation translate into greater satisfaction and engagement.

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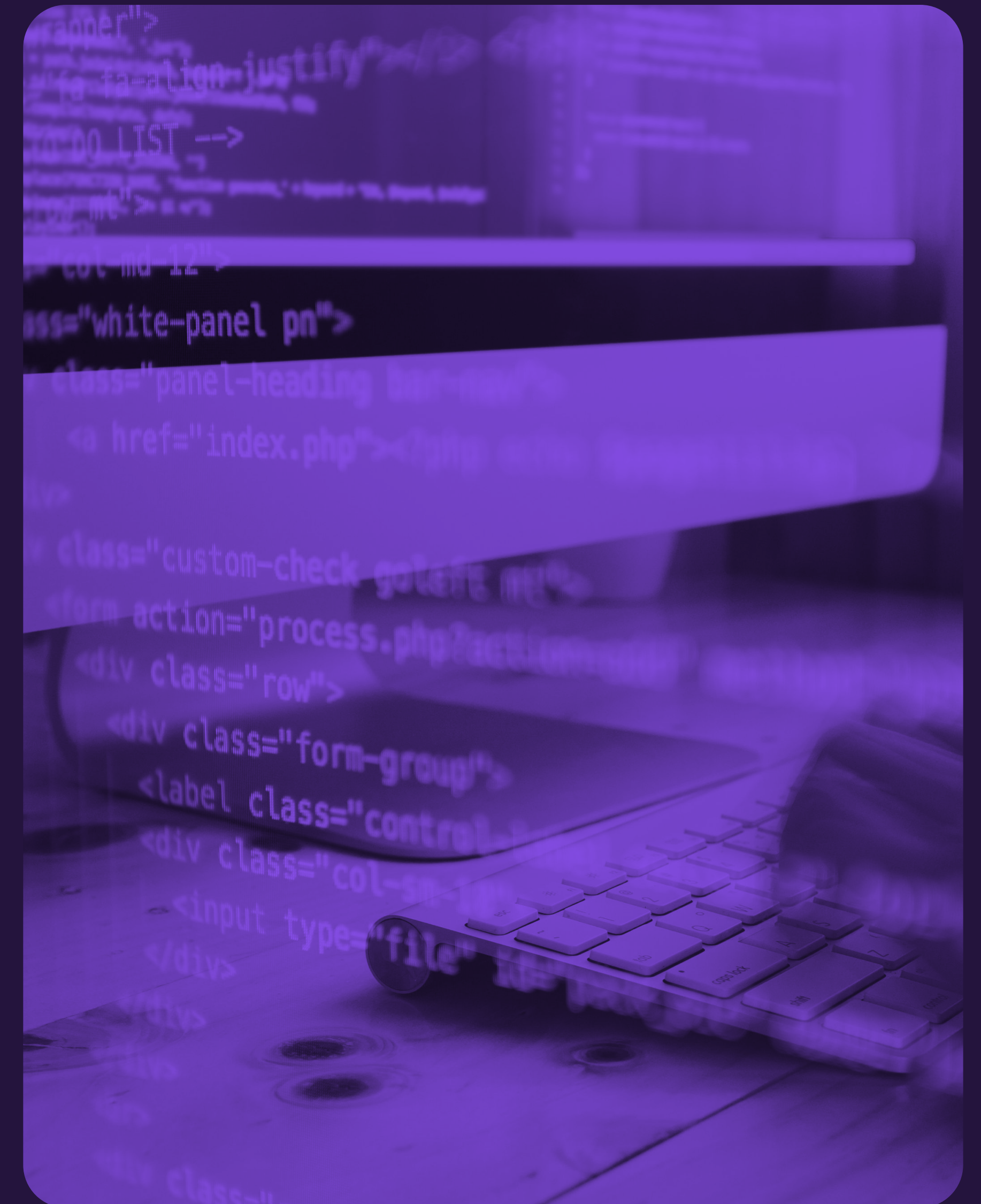
Problems we *solve*

- Increasing system complexity as scale increases, leading to difficulties in managing and maintaining infrastructure

- Database issues such as connection pool maintenance, sharding and clustering design decisions

- Lack of appropriate scaling tools, resulting in a decrease in system performance with an increasing number of users

- Complexity of introducing caching solutions that improve performance but increase system complexity

- Irregular management of resources, resulting in system instability during busy periods

- Lack of automation of monitoring and load testing, leading to increased response times to problems and increasing the risk of failure

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Opportunities we seize

A balanced data model that provides flexible access to data and the ability to scale with the growing needs of the application

Implementation of microservices that enable isolation of system functions, which speeds up development, increases reliability and allows independent scaling of individual modules

Real-time data synchronisation, which increases user engagement and improves the experience of using the app

Automatic system scaling with tools such as AWS CloudFormation, allowing resources to dynamically adapt to growing traffic and user needs

Advanced monitoring and load testing tools (e.g. CloudWatch, Locust) that allow ongoing performance optimisation and rapid troubleshooting

Optimise operational costs by moving infrastructure management to proven cloud platforms, eliminating the need for manual server management

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The main problem

How do you build a system that scales effectively as the number of users grows, ensuring application stability and high performance, as well as rapid deployment of new features, without the risk of downtime and decreased user engagement?

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Idea

The implementation of a balanced data model, microservices architecture and advanced monitoring and automation tools enables automated infrastructure management, real-time data synchronisation and flexible scaling to guarantee system stability. By using proven tools such as AWS CloudFormation for infrastructure management, AWS CloudWatch for monitoring and Locust for load testing, we deliver scalable, efficient and reliable solutions in a short timeframe with minimal risk of disruption.

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Implementation process for scalable systems

- We start by defining the client's requirements, taking into account the potential scale of the traffic and the risks

- We implement infrastructure management tools such as AWS CloudFormation to simplify the automation process

- We are implementing monitoring and analytics tools, such as AWS CloudWatch, so that performance can be tracked on an ongoing basis and issues can be addressed quickly

- During the testing phase, we implement load testing solutions (e.g. Locust) to identify possible weaknesses before the system is put into operation

October 2024

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What does designing scalable systems provide?

Automatically scale the infrastructure according to traffic volumes, eliminating the need for manual server management and ensuring stability

Synchronise real-time data across multiple devices, improving user engagement and allowing applications to run smoothly even under heavy load

Manage user authentication with secure and flexible login methods, which enhances security and convenience of applications

Monitor performance and user behaviour using advanced analytical tools, allowing ongoing adaptation and optimisation of applications

Reduce operational costs by automating infrastructure and security management, reducing the need for DevOps resources
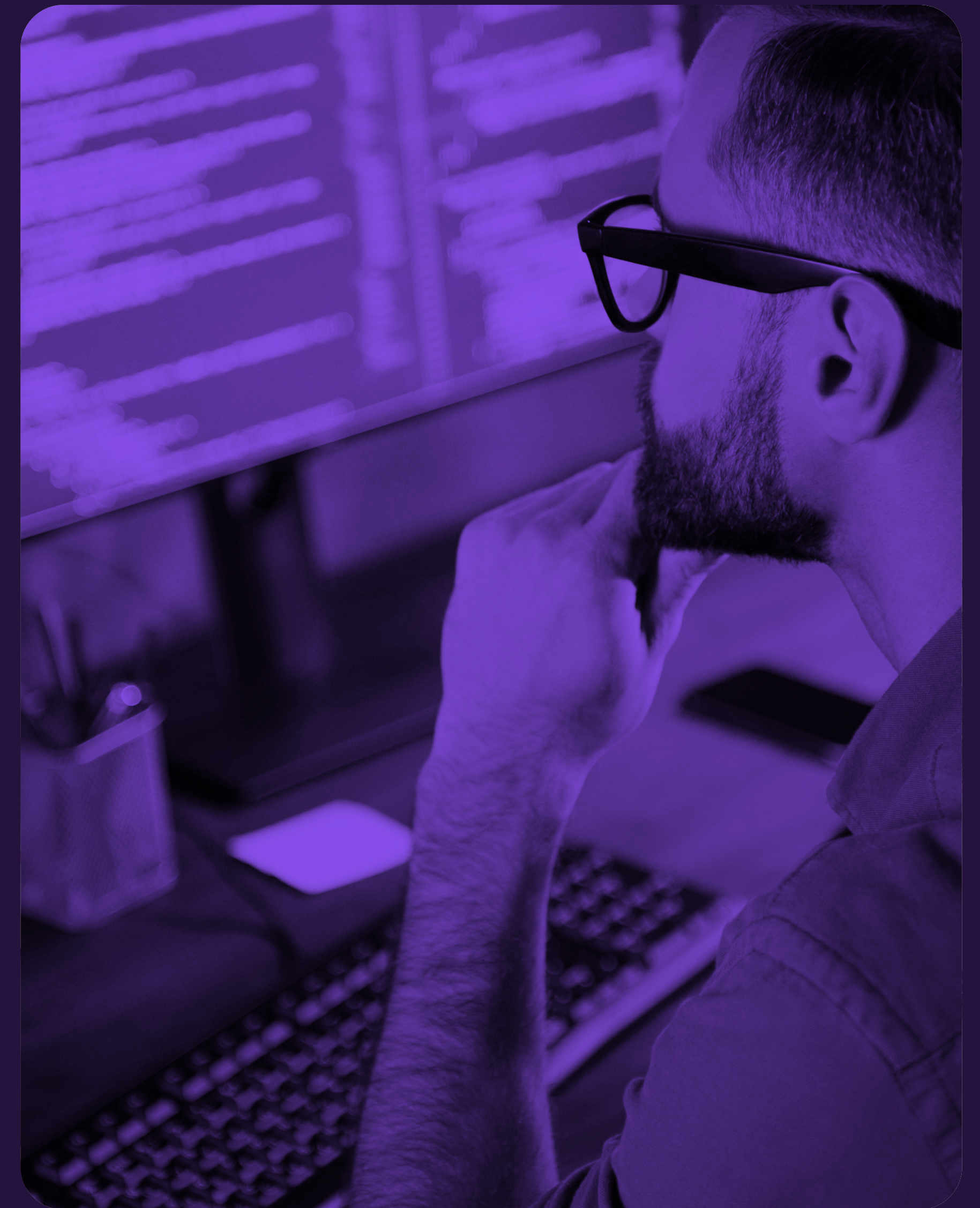
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The implementation of scalable systems at Neoncube has contributed to significant improvements in operational efficiency and business performance. Key results include:

- Increased user engagement through real-time data synchronisation, resulting in a 30% increase in in-app interactions

- Reduce operating costs by 25% by automating infrastructure management and reducing the need for manual interventions

- Reduced time to implement new features by 40%, allowing faster response to market and user needs

These solutions have achieved three key objectives:

- Reduced development and deployment time for innovations, accelerating application development

- Reduction in infrastructure costs, which improved profit margins

- Improved application stability and scalability, resulting in a better user experience and greater engagement

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The Neoncube Team

Do you want to implement scalable systems in your company?

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