

Why IT struggles with innovation— and what to do about it



Traditional approaches to software development and lifecycle management are broken. Companies are facing an exploding digital backlog, mounting technical debt, increasingly complex IT landscapes, and a perpetual talent crunch. The time, cost, and expertise required to build new apps—amid all of these challenges—make traditional software production unsustainable. And the need for better software, faster, continues to grow.

The result? Business leaders have lost faith in IT and digital teams. Innovation is suffering at a time when they could be moving forward with new cloud-native apps powered by generative AI.

If this sounds familiar, you're not alone: 58% of companies surveyed reported slower app delivery or no noticeable improvements to app delivery speed in the past year.¹



43%

of businesses report that technical debt interferes with their ability to innovate.²



¹ OutSystems. [The State of Application Development 2023](#)

² Insight and Foundry. [The Path to Digital Transformation: Where Leaders Stand in 2023](#)

The three challenges that hold back innovation

Seventy-one percent of organizations are spending more time maintaining legacy apps than they are on innovation.³ These three obstacles are why it's so difficult to keep up:

1. People

Businesses often fall behind in meeting customer expectations and competitive demand. IT teams that operate with legacy waterfall mindsets—instead of adopting modern DevSecOps practices and CI/CD—lack agility, speed, and flexibility amid shifting priorities. This mindset and differing priorities can lead to a disconnect between business and developers, leading the teams to become frustrated with one another as communication breaks down. Compounding these issues is the perpetual competition for development talent, driving up staffing costs and reducing the availability of crucial skills.

Solution: Equip IT to embrace CI/CD and to increase productivity, not people.

2. Time

Another reason developers find themselves with an intimidating backlog of requests, projects, and fixes is that they are working with inefficient tech stacks. In addition to the time that traditional coding takes, they lose time replicating processes when setting up projects, fixing errors caused by poor documentation and confusing code, and managing infrastructure. They are unable to take optimal advantage of component and coding libraries, AI-assisted development, and back-end automation. App development is tedious, slow, and behind the competition.

Solution: Equip developers with a platform that can automate and abstract tedious tasks and accelerate innovation.

3. Cost

Finally, all of these issues, combined with siloed legacy systems and processes, add up to high, unnecessary costs. Technical debt leads to customizing every new project, driving up development costs. Often, legacy system work can only be handled by a few developers with specialized skills and knowledge who are aging out. They are not easily replaced because most of today's developers code in a language that differs from the legacy system. Businesses suffer from lost opportunity costs, continued inefficient processes, and an inability to scale operations and app development.

Solution: Equip IT with a more flexible development environment that accelerates productivity, reduces costs, and enables teams to build apps that modernize the stack and drive revenue growth.

³ OutSystems, [The State of Application Development 2023](#)

An increasingly complex world

As if those pressures weren't enough, these two universal truths don't make innovation any easier:

1. The demands for new software are not slowing down. As every process in every department in every industry goes digital, the demands for software and on software have skyrocketed. Access to dev talent has not. Enterprises can't keep up by doing what they've always done.

2. The traditional software supply chain is broken. Companies can't hire enough developers to keep up with digitization. The talent crunch, technical debt, and the relentless pace of change make traditional software production unsustainable. So, growth and innovation suffer.

The ability to compete will increasingly depend on a company's digital strategy and its ability to meet customers, employees, and partners across the digital touchpoints that they've come to expect.



More initiatives

Enterprises have more than ever at their fingertips—data, computational power, and innovative technology like AI and business automation. These technologies are fueling high-level initiatives in the service of transforming companies into efficient, customer- and digital-first organizations. These initiatives include:

- Customized digital experiences. Increase competitiveness and grow revenue faster by providing tailor-made experiences and servicing your end users more conveniently.
- Automation and efficiency. Every business must do more with less, whether that's time, money, or people. It's critical to minimize manual work and find new ways to streamline workflows.
- Legacy modernization. As we saw earlier, technical debt—like legacy systems that don't integrate well with modern technologies and require specialized skills to keep running—limits innovation and efficiency, so modernizing these systems is a priority.
- Agile culture and development at scale. To keep pace with the competition, technology advances, and consumer expectations, companies must build agile DevSecOps and fusion teams that can launch more innovative apps without suffering the burden of managing the software development lifecycle (SDLC) for these apps and without cutting corners on governance, compliance, and security.



More differentiation

Both business users and customers expect elite-level, consumer-grade apps and software that are slick, intuitive, and highly customized. Whether IT teams are customizing off-the-shelf enterprise applications, building a distributor portal, or creating a patient self-service app or new shopping app, these applications need to be differentiated with seamless user experiences.



More technology advances

Building future-proof applications is no small feat, nor is finding staff who are skilled in the latest technologies. Developing modern applications typically involves a number of different coding languages, development frameworks, and libraries, which come in and out of favor each year. New technologies, such as generative AI and cloud-native app development, arrive faster than you think. What you choose today could be outmoded tomorrow.



More programmer agility

The need for differentiation and incessant technological advances has led to a demand for programmers who can keep up with all the tools and languages required for digital and mobile development. Greater complexity and a global shortage of modern digital development skills have combined to leave IT leaders in a difficult position. Skills particularly in demand are AI/ML, cloud, UX design, cybersecurity, computer vision, Internet of Things (IoT), and full-stack development.



59%

of IT professionals rank cloud-native app development as a high or the highest priority in their organizations.⁴



BY 2025,

86%

of IT professionals expect to get some form of assistance from AI in their software development practice.⁵

⁴ OutSystems. "State of App Development Report results: The future looks bright," 2023

⁵ Ibid.



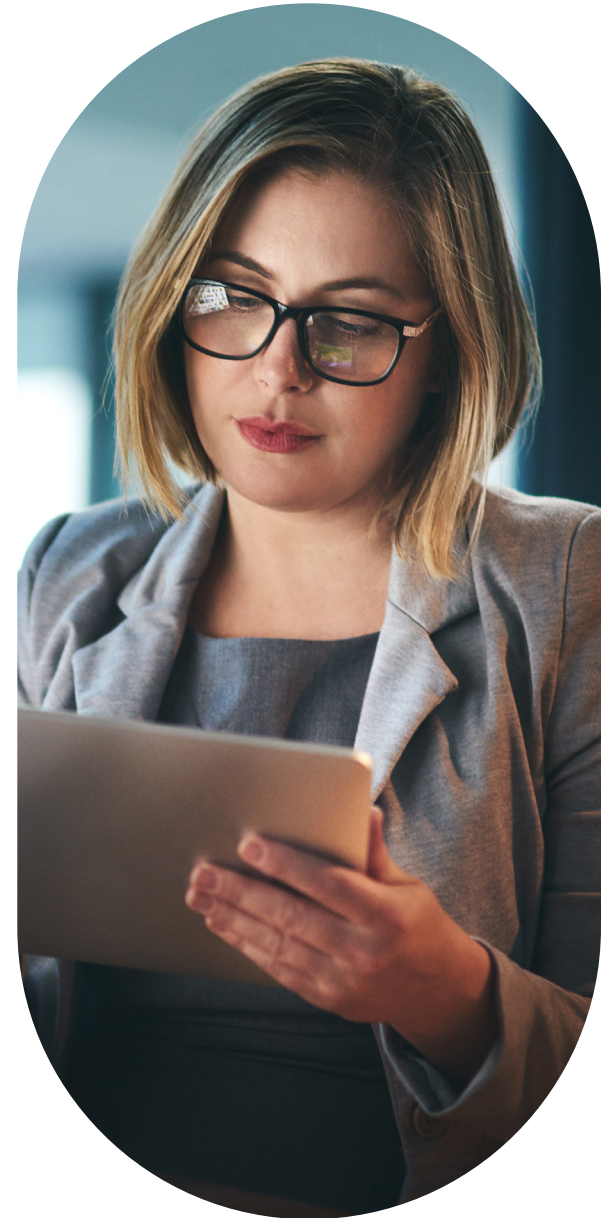
More change

Speed to market and speed to change are key competitive differentiators in our digital economy. Whereas application updates used to happen about once a year, many organizations now want at least some of their applications updated monthly, weekly, or even faster. But achieving continuous integration alongside continuous deployment (CI/CD) is hard work, and it requires significant investments in technology and personnel.



More to manage

What all of this demand and change adds up to is more apps than ever. The planning and development of these apps is just one piece of the puzzle. There's also testing, deployment, security, ongoing performance management, and updates. The key to keeping up with the work created by new apps is the ability to build enterprise-grade apps that abide by strong DevSecOps practices in the first place.



54%

of companies said low-code tools made development more iterative.⁶



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of organizations said that they were able to maintain or increase the quality of their software after incorporating low-code development tools.⁷

⁶ D-Zone. [Low Code and No Code: Automation for the Modern Organization](#). 2022

⁷ OutSystems. [The State of Application Development 2023](#)

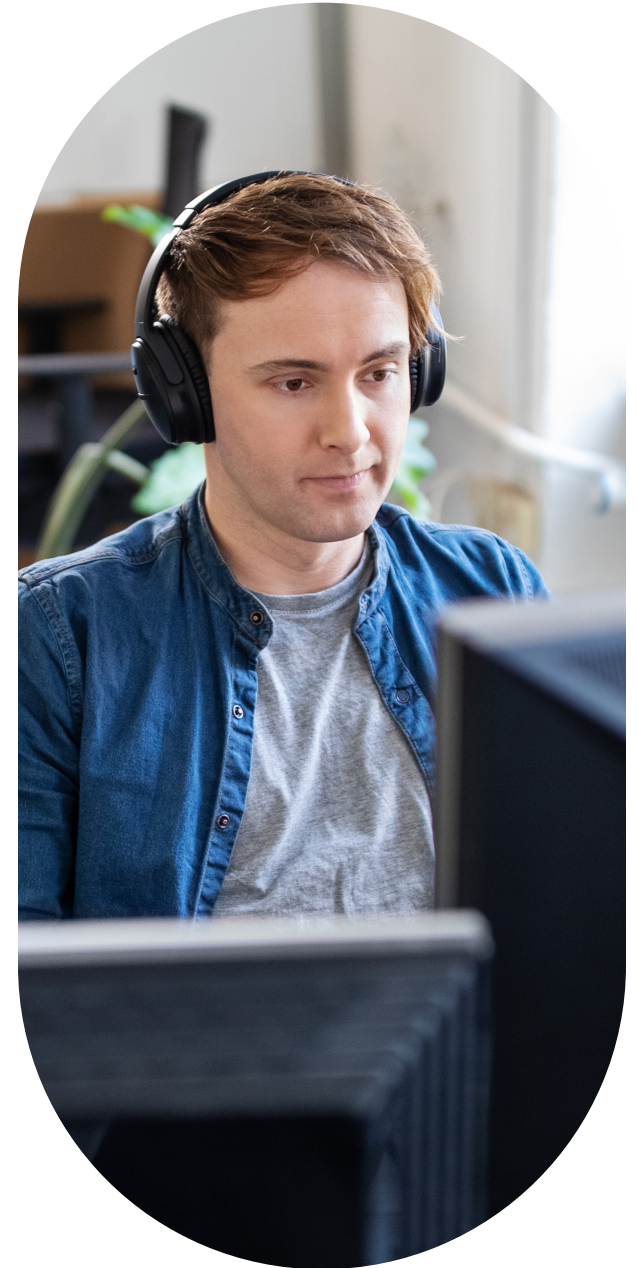
The search for a solution

The search for solutions to address today's challenges, many IT organizations consider approaches—such as no-code or low-code solutions or buying off the shelf—that seem like a silver bullet at first glance but fall short during implementation.

No-code and traditional low-code

No-code and traditional low-code in the form of visual, model-based development can speed development and upskill junior developers, but many platforms are built for users with limited technical skills seeking to create apps with simple functionality. They may not offer the capabilities required to deliver enterprise-grade, mission-critical apps, such as:

- An end-to-end platform supporting the full DevSecOps lifecycle
- AI-powered automation throughout
- Collaboration tools for multi-disciplinary teams
- A broad array of reusable components and integrations
- Support for continuous change
- The ability to access and tweak the underlying code
- Enterprise-grade security, compliance, and governance



What about buying?

SaaS enterprise software is often for point solutions and thus not built to meet every need, and it cannot be customized to the degree that monolithic legacy systems could. In fact, customization adds technical debt that becomes increasingly costly the longer it goes unaddressed. Commercial off-the-shelf software is fine when your needs are the same as any other organization. But certain circumstances call for in-house development—specifically when it comes to applications that:

- Differentiate your business from your competitors
- Must adapt as quickly as your organization and your competitive environment
- Innovate rather than maintain the status quo

By contrast, a modern application platform offers an opportunity to create applications built from the ground up to serve a specific need—not by modifying commercial software, but by integrating with it to share data and other resources.



A platform for perpetual digital innovation

Businesses that want to leapfrog the competition should consider a new approach to application development that goes beyond the traditional definitions of no-code/low-code development and off-the-shelf solutions. They need the power to build highly custom applications at scale, supported by automation of key phases of the app lifecycle from code to production and beyond.

A modern, AI-driven application platform should bring together the best aspects of low-code—visual creation with abstraction of the technical details—with AI augmentation, extreme reusability, and high automation across the SDLC. And it must all be done without compromising enterprise-grade power, security, scalability, and governance.

Simply put: It should help everyone who touches app development become better at their jobs—more productive, more focused, more collaborative, and more innovative. Modern application platforms allow businesses to meet three development imperatives to succeed in the digital age:

1. Build it better
2. Manage it better
3. Evolve it better



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of organizations say they'll develop the majority of their apps with a modern low-code application platform by the end of 2024.⁸



53%

classify themselves as either advanced or expert users of these platforms.⁹

⁸ OutSystems, "[State of App Development Report results: The future looks bright](#)," 2023

⁹ Ibid.

Build it better

Speed is a top priority when it comes to application development, but just as critical is creating well-built apps that provide great experiences for end users and are secure and performative without adding technical debt. To achieve this velocity and quality, companies must streamline and accelerate development, allow for expressive code that's easy to understand, create solutions that integrate with other enterprise applications and systems, and engage in whole-team collaboration.

A modern application development platform supports building better apps with:

- A visual, model-driven, drag-and-drop development environment with out-of-the-box AI automation and guidance
- Pre-built UI patterns, app templates, and code modules
- Extreme composability and reuse of existing components to dramatically decrease development time
- Well-built third-party integrations with enterprise systems, databases, and custom applications
- The ability to get in and tweak code when needed to differentiate your application
- A modern, team-based environment to support collaboration between IT and business users without the back-and-forth of the traditional app development process
- Simplified back-end services that help developers start working fast
- Automated provisioning, streamlined integration with cloud services, and management of microservices and containers

“We’ve seen a significant increase in development efficiency. We deliver simple applications up to five times faster and more complex apps around two times faster.”

– Seiichi Shinagawa, Technical Leader,
IT Department, Mazda Motor Corporation



74%

of organizations find that low-code positively impacts their ability to build and deploy cloud-native applications.¹⁰

Manage it better

Just as important as building great experiences is managing those apps for their entire lifecycle. Look for a development solution that helps you manage the SDLC, end to end, with automation so that your teams can focus on innovation. It should also offer mission-critical stability, enterprise-grade security, and guardrails to ensure adherence to DevSecOps best practices and efficient change processes.

A modern application development platform enables companies to better manage the software development lifecycle with:

- Real-time, AI-assisted architecture governance and performance monitoring
- Automated impact analysis, dependency checks, and bug-checks for error-free, consistent builds
- Version control in and visualization of/control over changes in a multi-dev build environment
- Governance and guardrails for junior devs/business users/citizen devs
- Automated runtime analysis for performance/quality control and AI-recommended remediation
- Role-based approval across app pipeline stages and layers
- Comprehensive, enterprise-grade security, governance, and compliance capabilities
- Generation of real code with no vendor lock-in, so that it can be scanned/verified by trusted third-party security vendors

“One of the most exciting achievements is that we are now working like a full-stack software company, building outstanding applications with low costs on our fully scalable platforms.”

– Ingo Paas, CIO, Green Cargo



The top three benefits businesses reported from using low-code for cloud-native application development are¹¹:

1. Automating infrastructure provisioning and development (27%)
2. Streamlined integration with cloud services and APIs (25%)
3. Rapid prototyping and iterative development (24%)

¹¹ OutSystems, [The State of Application Development 2023](#)

Evolve it better

Technology is always evolving and so, too, are business needs, competitive pressures, and customer expectations. A low-code modern application platform should evolve with the times with a roadmap that reflects technology advancements, new supported integrations, and updated component and framework libraries. You should be equipped to continuously evolve your apps as well—without making compromises that add technical debt and complexity and make updates difficult. Not to mention: You need to be able to scale.

A modern application development platform helps you better evolve your IT landscape with:

- A flexible and open environment via third-party integrations to keep apps and use cases fresh
- Continuous change with a fully automated CI/CD pipeline
- Vertical and horizontal scalability that can handle the most complex, large-scale consumer experiences without affecting speed or performance
- A roadmap that stays on the leading edge with emerging technologies for continuous innovation, such as generative AI, IoT, and robotic process automation (RPA)
- Portability and flexibility with a deployment system that can run in any cloud or in your data center
- Security and compliance features that stay current with evolving threats and requirements

“We’re now much more in control of our product roadmap. By eliminating SaaS sprawl and legacy debt, we’re no longer dependent on external vendors for new features. We’re now much more responsive to business requirements.”

– Jesse Eterovich, Vice President of Technology, US Acute Care



69%

of organizations take a month or longer to release new software versions; 15% of low-code adopters release software versions daily vs. the 9% average.¹²

Transforming the business through innovative development

With a modern application development platform, IT and digital services can cast off its reputation as a barrier to innovation and insight, leading to a center of digital excellence that supports mission-critical business initiatives.

Customized digital experiences

Prioritize the user experience with seamless omnichannel experiences, intelligent assistance, and prescient personalization driven by various sources of data.

CASE STUDY

Rather than heavily tailor an off-the-shelf CRM for its needs, Green Cargo built a customer portal from the ground up, massively improving the customer experience, eliminating data entry of customer orders, integrating ERP connections for its customers, and gaining an estimated 10x cost savings.

[Read the full case study.](#)

Automation and efficiency

Optimize communication between multiple tools and systems to operate most efficiently and cost-effectively with intuitive front- and back-office business applications. These apps do double duty by making operations more efficient and enabling employees to be more engaged, productive, and satisfied.

CASE STUDY

Rossmann, Poland's largest drugstore chain, went from a variety of different software development technologies to a single platform that accelerated the transformation of its operations, including its built-in-house supply chain app that ensures every store is well-stocked.

[Read the full case study.](#)

Agile culture and development at scale

Empower innovation across the business with agile and collaborative development methods. By making development faster, streamlined, and more automated, you can upskill existing resources, create a flexible talent pool, and engage business users for their critical POV.

CASE STUDY

Entel, the leading telco in Chile and Peru, transformed its legacy system and created a team of nearly 100 OutSystems developers who support 28+ apps, enabling the company to be faster and more responsive to market opportunities and customer preferences.

[Read the full case study.](#)

Legacy modernization

Modernize existing applications and systems to reduce complexity, maintenance needs, and software licensing costs while increasing IT agility. Unify data across apps, reduce technical debt without risk, and migrate apps to the cloud.

CASE STUDY

Leading reinsurer Gen Re simplified its complex legacy IT architecture by building a high-performance development team that delivered 30 applications in its first nine months, including time-sensitive, business-critical projects.

[Read the full case study.](#)

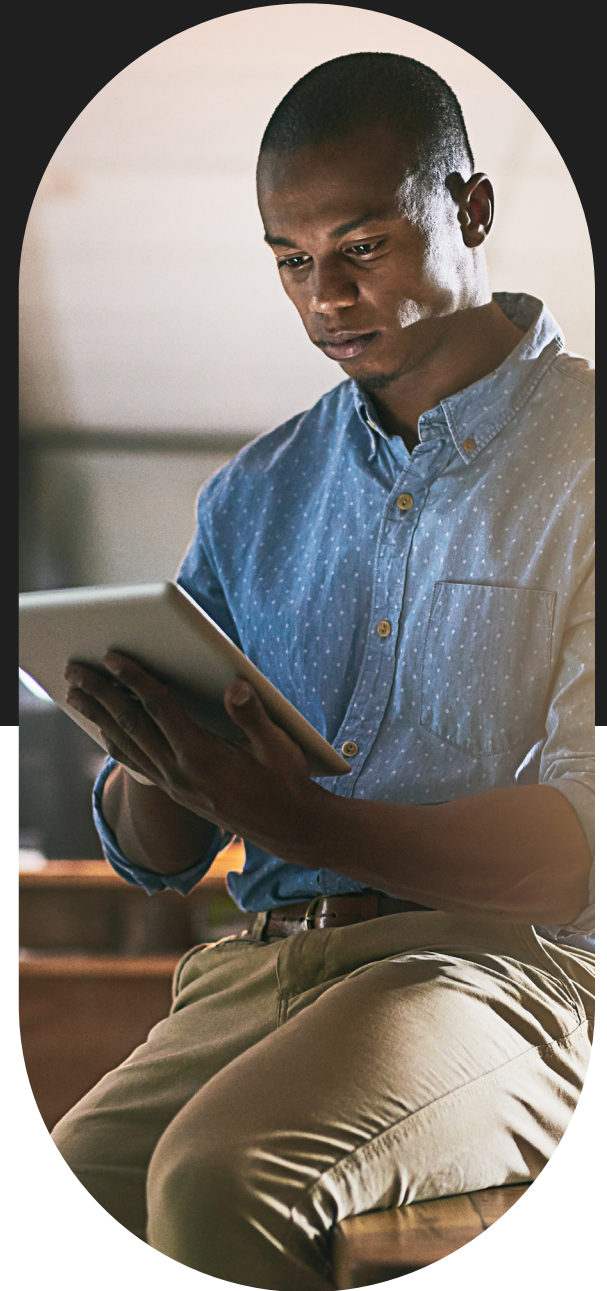




In a world where change is the only constant, success requires innovation at speed and scale.

Building applications for digital experience transformation, business efficiency and automation, and legacy technology modernization is a complex undertaking that once took months to achieve—time that damaged the reputation of IT and time that organizations can no longer afford.

The OutSystems high-performance low-code platform helps companies overcome this challenge by giving them a better way to deliver the software that matters most. We help companies increase digital momentum by automating software delivery so you can move faster and play to your strengths, with less risk, cost, and complexity. With OutSystems, digital teams can go from a source of frustration to a source of innovation and competitive advantage for the business.



To learn more about OutSystems and the benefits of a high-performance low-code application development platform, check out these resources:

- Where are your peers? Read our full [State of Application Development 2023 report](#) for the latest trends and benchmarks.
- Learn more about [the role of AI in modern software development](#).
- Visit [our customer story library](#) to learn how other organizations used OutSystems to boost innovation.
- Find out why Gartner recognized OutSystems as a Leader for the seventh consecutive time in the [2023 Gartner® Magic Quadrant™ for Enterprise Low-Code Application Platforms](#).
- Visit [OutSystems.com/platform](#) to learn more about OutSystems.