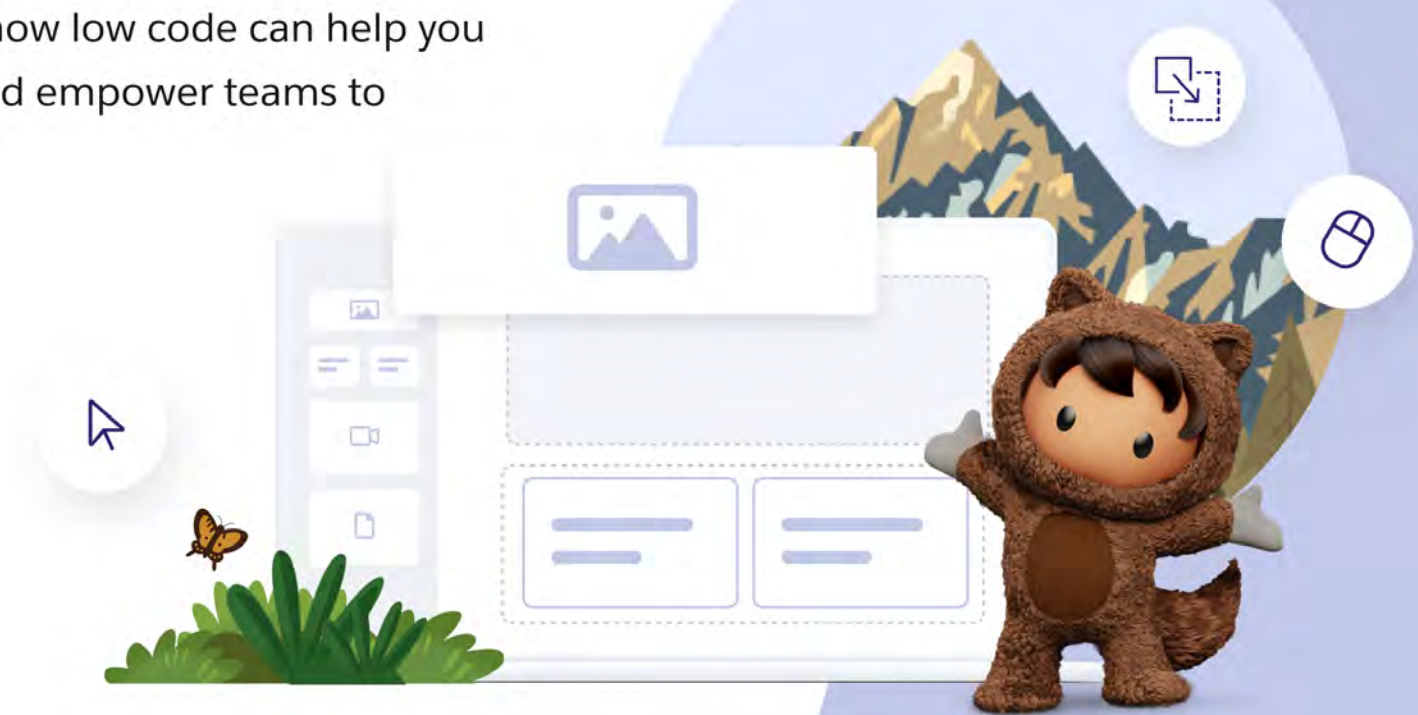




A Complete Guide to Low Code

A guide to understanding how low code can help you transform your business and empower teams to innovate fast.





Introduction

Low code is an alternative to traditional development that empowers business users and professional developers to get their apps and workflows to market faster.

Use this guide to discover what low code is, why it's important to IT leaders, and how it can improve your business. We've also included a checklist to help you choose a low-code platform that reflects your growth priorities.

Keep reading to understand what you gain when you introduce low code into the development process:



- ✓ The ability to create and deploy apps quickly with greater efficiency.
- ✓ More human resources flexibility with reduced costs
- ✓ A secure solution that protects your apps and data with governance controls.

Overcome development obstacles with low-code.

1. What Is Low Code?
2. Why Low Code Is Important to IT Leaders
3. Create Applications that Solve Business Challenges
4. Choose the Right Platform with Our Low Code Checklist
5. Start to Build and Innovate

What is Low Code?

It's a modern approach to software development that utilizes little to no computer coding.


Low code is more than a development buzzword. It's an alternative approach to traditional software development that is visual instead of manual. With a [low-code development platform](#), teams can use friendly graphical user interfaces (GUIs) - think “drag and drop” and “point and click” - to customize apps.

Since specialized software knowledge isn't needed, business users can use clicks to support professional developers in creating the custom applications and workflows your customers, employees, and partners need.

By bringing app development down to Earth, low code closes the gap between IT and the rest of the business. Product managers and marketers can take a more active role in app development, for example. In turn, IT departments can create more bandwidth for other technical priorities. Meanwhile, the spread of software development from root to branch can pave the way for a more profound digital transformation across the business.

But that doesn't mean low-code platforms are child's play. In fact, even very experienced software developers love working with low code. Now, your enterprise can:

- Differentiate itself from its competitors
- Get products and services to market faster
- Reduce costs
- Maximize human resources
- Be more agile and adaptable
- Protect sensitive data
- Improve the customer experience
- Accelerate digital transformation




"On average, 41% of employees in an organization are business technologists — that is, employees who report outside of IT departments and create technology or analytics capabilities for internal or external business use. LCAPs (low-code application platforms) empower diverse fusion teams to deliver innovation."



GARTNER, MAGIC QUADRANT FOR ENTERPRISE LOW-CODE APPLICATION PLATFORMS, 20 SEPTEMBER 2021


JASON WONG | KIMIHIKO IJIMA | ADRIAN LEOW | AKASH JAIN | PAUL VINCENT



Before you travel too far down the low-code path, it's essential to understand more precisely what low code is and how it works. An excellent place to start is with the phrase itself.

What is the difference between low code and no code?

If you're researching low code, you might also come across the terms "[no code](#)" or "zero code." Low-code and no-code platforms still use code. It's just that you might not see it. With a low-code development platform, you can see the code, but you don't have to write it yourself. You can drag and drop chunks of pre-written code to add functions and features to your app automatically. And then, if you want to, you can add custom code on top to enhance your app and differentiate it.



By 2025, 70% of new applications developed by enterprises **will use low-code or no-code technologies**, up from less than 25% in 2020.

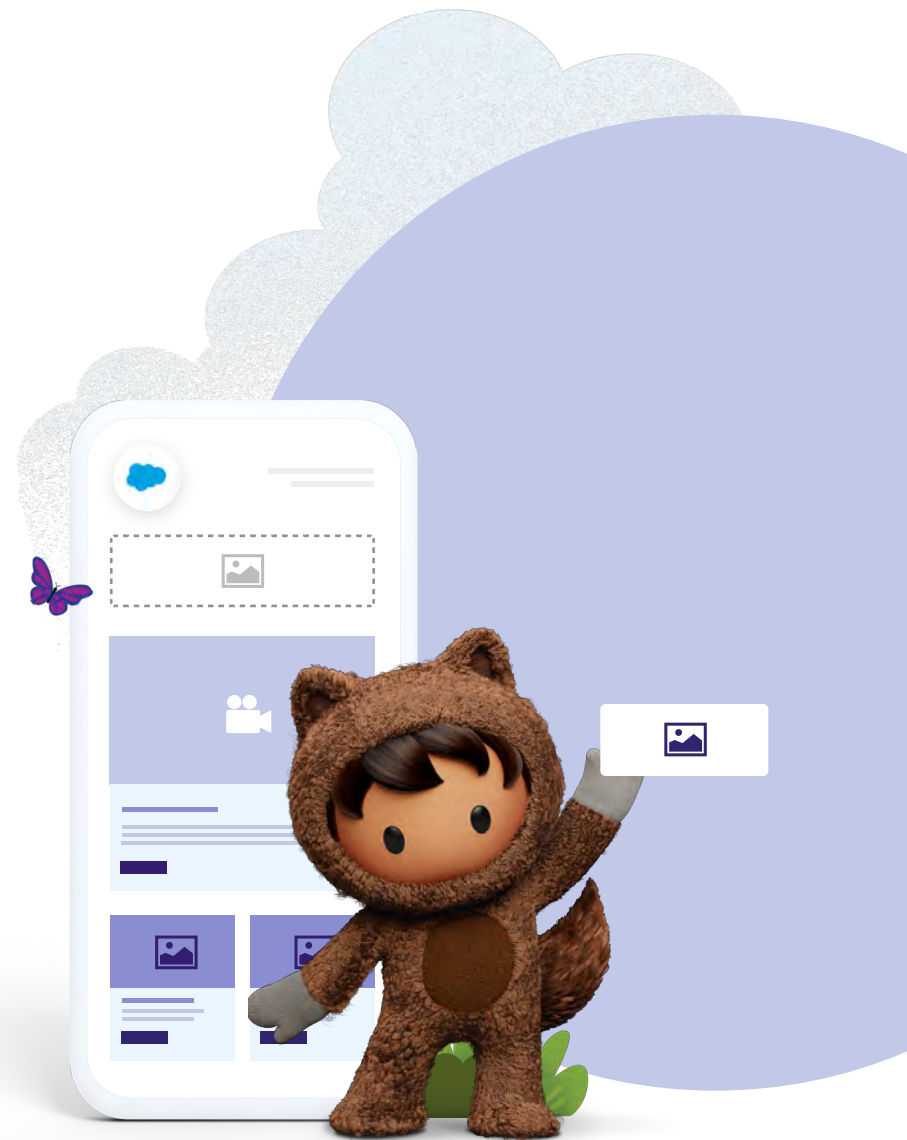
[Gartner LCAP Report 2020](#)



With a no-code development platform, you can neither see the code nor customize it. Instead of the underlying programming, you're dragging and dropping final components – a button, for example, or a form.

The right solution provides both your business and professional developers with the tools they need to create apps and workflows quickly.

Next, we want to show you why businesses are using low code to accelerate their digital transformations and deliver cost-effective solutions quickly.



Why Low Code Is Important to IT Leaders

Low code aligns IT and business

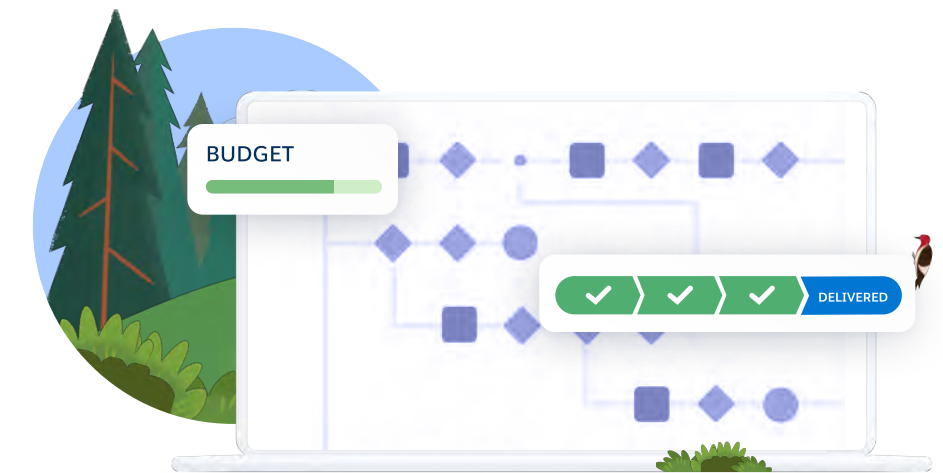
Low-code development platforms will be a [\\$187 billion global market](#) by 2030, up from \$10.3 billion in 2019. So if your organization isn't using low code yet, there's a good chance it will be soon.

One of the most exciting aspects of low code is how it democratizes software development. It bypasses complicated programming languages so that even non-technical users can create applications. That makes low code compelling not only from a tactical standpoint, but also from a strategic one. In fact, [100% of enterprises that use them say low- and no-code development platforms have generated positive ROI](#), according to KPMG.

At the end of the day, that means IT leaders can deliver more and faster benefits to employees, partners and customers.

As early as 2012 McKinsey¹ reported that “large IT projects run 45 percent over budget and 7 percent over time while delivering 56 percent less value than predicted,” with “every additional year spent on the project increasing cost overruns by 15 percent.” The current reality sees businesses developing more apps, more often, and on a larger scale than ever. With this in mind, companies will need a reliable tool that helps them meet delivery and stick to their budgets.

¹McKinsey, “Delivering large-scale IT projects on time, on budget, and on value,” 2012



Seven ways low code can transform your development process.

1. More human resources flexibility

Even with the growth of low-code development platforms, the [U.S. Bureau of Labor Statistics](#) foresees a 22% increase in software developer jobs by 2030. Demand for software developers is so high that there are more jobs available than coders to fill them. In that case, low-code platforms can be a critical business enabler. Because there's no coding expertise required, virtually any employee can use low-code tools to create apps.

That means companies can be more strategic with their human capital, which can fortify them in competitive hiring markets. For example, companies can use low code to put app development in the hands of business users. That gives IT staff the ability to tackle [innovation projects](#) that might otherwise end up backlogged, and ensures that the business continues to create value with apps regardless of available IT resources.

2. Faster speed to market

With a low-code platform, you can create applications much faster compared to traditional software development – sometimes in a matter of hours or even minutes.

When you can create and deploy apps quickly, it means you can launch new products and services ahead of your competition. Likewise, it means you can accelerate digital transformation initiatives that might make your business more intelligent, efficient, and responsive to its customers. Companies can implement user feedback and refine products faster because low code allows you to iterate quickly for continuous improvement.



of respondents believe that if low- or no-code approaches were made available to business users, they could create connected experiences that improve outcomes.

[2021 MuleSoft IT and Business Alignment Barometer](#)

3. Greater efficiency and productivity

The reason low code is faster than traditional software development is that it's also more efficient. Low-code platforms feature automated processes to ensure precision and quality. That means there's less chance for human coding error. Software developers can streamline their workflows with drag and drop instead of hand-coding. Developers don't have to reinvent the wheel thanks to reusable templates and prebuilt components, which are significant features of low-code development platforms. This means they can complete more apps than your competitors in less time.

4. Easy collaboration and integration

Business users are attracted to the step-by-step guidance low code gives them. From the first click to sending their finished app to the cloud, low code ensures they don't miss a thing. Along the way, they can add pre-coded processes, logic, and data models with the click of a mouse. Suppose they want to customize their app's look or function beyond what's available? In that case, they can partner with a programmer to create and incorporate custom code that's needed. Interoperability is built-in to low code – apps often integrate well with enterprise data, systems, and web services. For this reason, low-code platforms can be a technical bridge as well as a cultural one.

5. Reduce costs

Traditional methods of building with code often take a long time and require big-dollar investments. In 2021, Infoworld magazine [reported](#) that even “simple consumer applications built from scratch in native code take anywhere from six to 25 months (average 12 months), so simple native applications are likely to cost about \$72K to develop.” Because low code has pre-built components that are standardized and tested out-of-the-box, this can lead to apps with fewer bugs and integration issues. Companies using low code can expect to spend less on app maintenance and troubleshooting, along with the labor to address these issues. Finally, many low-code development platforms are [cloud-based](#). So, companies can reduce spending on on-premise infrastructure, too.



Align business and IT for big benefits*

64% Improved collaboration

58% Improved operational efficiency

54% Better customer experience

*MuleSoft IT and Business Alignment Barometer, 2021

6. Deliver complex solutions with customization and integration

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7. Grow with a platform that prioritizes your security

Trust and transparency are the foundations of a secure low-code platform. When you build an app on a low-code platform, the vendor has typically vetted its prebuilt code for vulnerabilities. Therefore they can ensure the technical quality of apps built with its tools. If the solution is cloud-based, the vendor typically has baked platform security into its cloud infrastructure to protect your apps and data.



\$8.19M

Cost of an average data breach*

279 DAYS

Time needed to identify a data breach*

Keep your environment secure in a work-from-anywhere world with low code:

- Help everyone in your organization understand their role in security
- Equip your company with resources that eliminate virtual vulnerabilities
- Allow IT and business to work together to find effective ways of protecting data
- Download the [IT Guide to Data Security and Governance](#)

* IBM, Cost of a Data Breach Report, 2021

Create Applications to Solve Business Challenges

Low code enables you to create engaging, immersive digital experiences.

With low code, you can take any business problem and create a set of pages using drag-and-drop tools that directly solve your business needs. Low-code development platforms are versatile enough to build game-changing experiences, including:

- Operational efficiency applications
- Employee engagement applications
- Process automation applications
- Customer engagement applications
- Workplace applications
- Data management applications
- Line of business applications
- Legacy modernization applications



“ When we need fast development — especially mobile apps, the low-code platform comes in handy. It allows the Business Analysts with very low development experience to customize the apps with some minor tweaking.

Mark Hartlage, Chief Product Owner, CRM

The potential doesn't end with business applications. With some low-code platforms, you can create everything from smart forms to full-blown webpages. Things move fast. The market is constantly changing, and every business is unique. The right low-code platform helps enterprises keep up with the increasing demands of their employees, customers, and partners. As a result, every industry can benefit from low code.



Financial Services

Customers expect a seamless process from opening new accounts to getting quick support. With low code, companies are using digital process automation to speed up frequent customer transactions. For example, Canada Life [automated its manual processes](#) for their customers such as disputing transactions or checking credit scores.

“ We use low code for a billing application which sends bills to customers. It's a mission-critical application for us with frequent updates. We utilize low code to be able to deliver the features to production quickly.

IT Decision Maker at a Utilities Customer



Public Sector

Standards for quality customer experience are continuously being redefined for all organizations, including the government. With low code, companies can build self-service portals for their customers to access the information they need quickly. With a shrinking workforce and budget, the City of Chicago created [an online portal](#) that reduced their service calls by 70%, improving the front-end customer experience.



Healthcare & Life Sciences

Customers require up-to-date, medical information that makes them feel safe. Low code can create tools to track vaccination rates and manage supply chain concerns. For example, the UC Berkeley-Innovative Genomics Institute used low-code to build a [patient-provider portal](#) site to facilitate COVID vaccine testing in one day.



Communications

Growing companies rely on their sales teams to maintain the momentum. Low code can provide sales reps with the customer data they need to personalize interactions and win deals. And Vodafone did just that by providing their representatives with [mobile access and AI](#) that reduced the time to close a deal by 12%.

Choose the Right Platform with Our Low-Code Checklist

Seek out a flexible tool for change.


The right low-code platform needs to be easy to adopt and must have a convincing experience that gets users up to speed fast. Before we share what to look for in a low-code platform, we should also talk about knowing when to look. If you're starting to see a consistent increase in the number





of development requests, adopting a low-code platform could help you prevent an IT backlog. Alternatively, suppose you anticipate a significant growth period and want to add capabilities. In that case, low code can help your business be ready to level up.

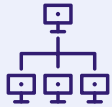





Low-Code Platform Checklist

Understand what's essential in a Low-Code platform.

Low-Code Feature	Why You Need It
 <p>Click-to-build apps and workflows</p>	<p>The main draw of low-code development is that it enables non-coders to create high-quality apps and workflows fast. Appealing graphical user interfaces (GUIs) make application design possible for the everyday user with prebuilt components. What's great is that developers can even build custom, reusable components that users can drag and drop to create more complex applications.</p>

Low-Code Feature	Why You Need It
 Data-centricity	<p>Any platform you're considering needs to grow with you to meet future requirements and support all possible programming languages. Additionally, it should be flexible enough to scale up and down based on the transaction volume coming from the users and include built-in services for testing, analytics, and deploying the applications.</p>
 Extensibility	<p>Any platform you're considering needs to grow with you to meet future requirements and support all possible programming languages. Additionally, it should be flexible enough to scale up and down based on the transaction volume coming from the users and include built-in services for testing, analytics, and deploying the applications.</p>
 Integration	<p>Low-code platforms shouldn't operate in silos. Because your apps will likely need to import and export data from various sources, your platform must be compatible with many different data formats and many different enterprise systems, both internal and external.</p>
 Performance	<p>You want to deliver powerful end-user experiences. High performance means faster page load times and ensures that users can access what they need quickly.</p>

Low-Code Feature	Why You Need It
 <p>Governance</p>	<p>In industries with heavy regulatory burdens, like healthcare and financial services, it pays to ensure that your low-code vendor has built its platform with compliance in mind. Any platform you choose must help IT provide the governance necessary to manage business users with smart guardrails in place. Look for role-based access controls for governing who can do what on the platform. The platform must also help you align development standards and handle consumer data according to national/industry compliance standards. A robust platform makes it easy to manage your data residency needs throughout the data life cycle and adhere to data retention policies and regulations.</p>
 <p>Privacy/Security</p>	<p>Look for enterprise-grade security to protect your apps and data from cybersecurity threats. A secure platform can encrypt data at rest and backup data and metadata, and easily restore to a previous state in the event of data loss or degradation. In addition, it should let you automatically log interactions, monitor user activity, and block unsafe or undesirable insider activity when it takes place.</p>
 <p>AI/Automation</p>	<p>Built-in, scalable automation tools and templates to help admins and developers create intelligent workflows and streamline business processes quickly. AI improves the customer experience by delivering actionable insights and predictions. See how the best low code tools are using AI to speed up development.</p>

Low-Code Feature	Why You Need It
 <p>Analytics</p>	<p>Having insights in the same place as your customer data is an advantage. All business stakeholders, especially those in data science and strategy roles, want solid out-of-the-box reporting, dashboard, and notification capabilities. Ensure that you can display data using a variety of visualization options for your customer and business data. Ideally, look for a solution that offers lightweight reporting for most business users and the ability to tap into more complex visualizations for data professionals.</p>



Which features matter the most?

You know your business and what your customers, employees, and partners need better than anyone. The features that matter most are those that move your business forward. You may not need every feature and functionality, but any platform you're considering should be able to work with the systems you already have.

The app landscape is evolving quickly. To ensure that your apps remain relevant, stable, and secure, seek partners with a large customer base and a long track record. These are indicators of continued platform investment and future business viability.



Start to Build and Innovate

Low code embraces innovation

Free up your teams to think about the experience they want to deliver rather than worry about how they'll build it. Apps and workflows built primarily on native code often prove challenging to change or update over time. Yet, businesses need to pivot quickly without breaking much code. You can inspire your business and professional developers to innovate and create the experiences they need by providing them with a low-code platform.



By 2025, 70% of new applications developed by enterprises **will use low-code or no-code technologies**, up from less than 25% in 2020.

[Gartner LCAP Report 2020](#)

A robust, Low-Code platform builds the web and mobile applications your business needs to grow without requiring any compromises to security, scalability, or creativity.

FIND YOUR PLATFORM

Low code delivers lots of inspiration, but that only happens after you've chosen the right platform to fit your company's needs. The ideal framework provides these key features:

- ✓ Performance – a fast, responsive user experiences
- ✓ Click to build apps and workflows(drag-and-drop tools)
- ✓ Low code that extends to custom code
- ✓ Integration with your data and systems
- ✓ Security, privacy, and governance controls
- ✓ AI and low-code automation tools to streamline complex workflows quickly
- ✓ Analytics
- ✓ Support for common third-party development

