appian

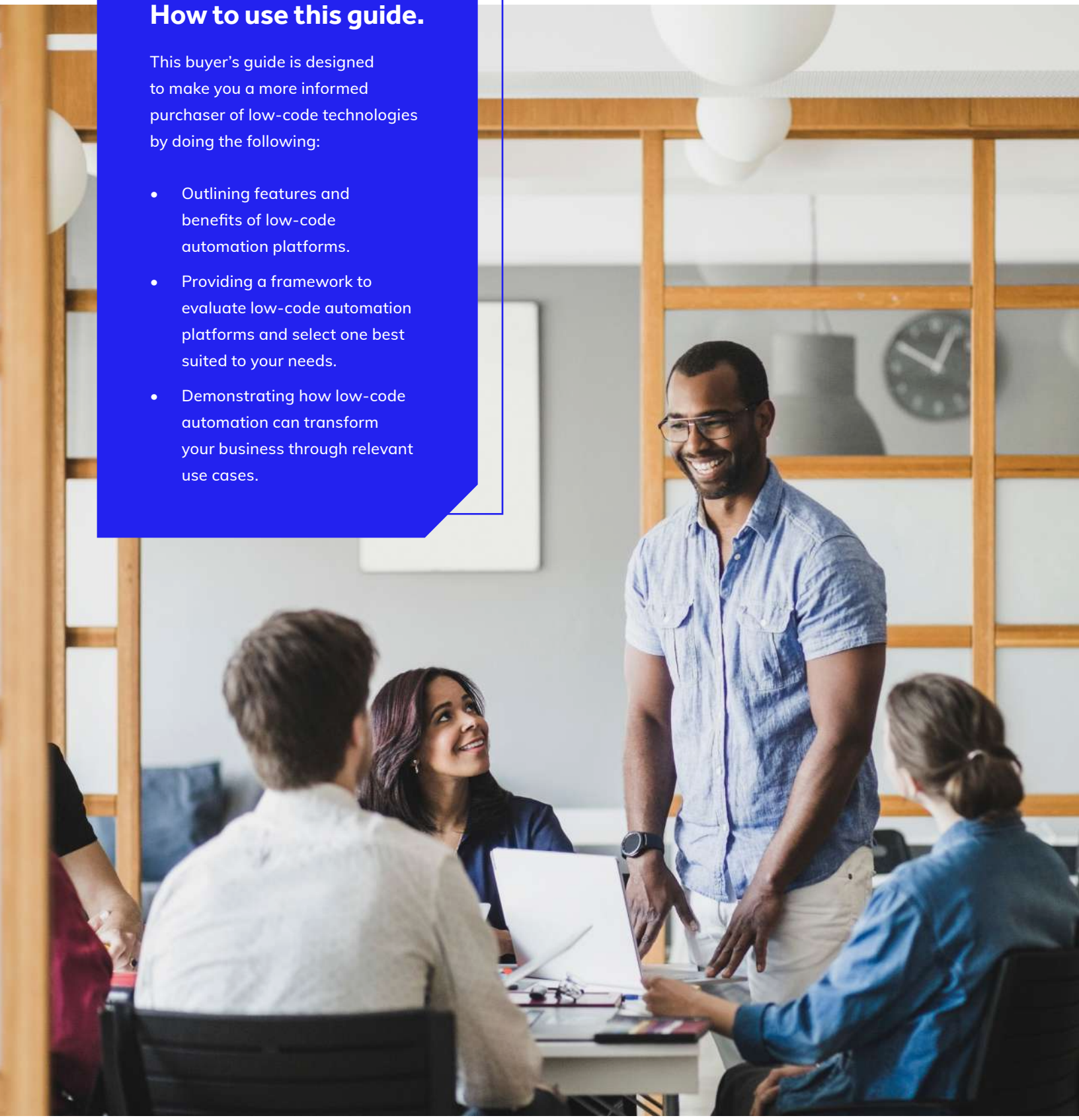
The 2021 Ultimate Low-Code Automation Buyer's Guide

Contents

How to use this guide.

This buyer's guide is designed to make you a more informed purchaser of low-code technologies by doing the following:

- Outlining features and benefits of low-code automation platforms.
- Providing a framework to evaluate low-code automation platforms and select one best suited to your needs.
- Demonstrating how low-code automation can transform your business through relevant use cases.



The low-code revolution.

A revolution is transforming organizations, and it's driven by low-code. Low-code dramatically speeds application development time. Instead of writing lines of code, you build software by drawing a flowchart, and the platform then writes the code for you.

Using low-code, businesses can quickly build—even in only a few weeks—enterprise-grade applications that would once have taken months. By speeding development time and decreasing technical debt, low-code reduces IT backlog and gives developers more time to innovate. With the right low-code platform, it's easier to integrate, update, and modify enterprise applications, so organizations can adapt and evolve more rapidly.

In 2020, low-code went mainstream. The COVID-19 pandemic highlighted the weaknesses of many organizations. To continue working, they needed virtual processes, but off-the-shelf, one-size-fits-all solutions couldn't address their unique needs. Nor could they easily adapt their aging enterprise resource planning (ERP) systems to meet the new challenges of a sudden shift to remote work.

In contrast, organizations with low-code automation platforms were able to quickly respond and adapt. Their example became a catalyst for widespread low-code adoption; it demonstrated to enterprise organizations that low-code could solve real challenges in record time.

Forrester predicts that by the end of 2021, 75% of development shops will use low-code platforms (up from just 44% in 2020).[1]

The need for guidance.

The search for the right low-code automation solution can be challenging. Categories are blurring as vendors scramble to deliver more comprehensive solutions. Demand for low-code is exploding, with dozens of vendors claiming the category. With so many offerings, it's hard to know where to start. At the same time, both vendors and analysts are competing to define the lexicon. That means the frameworks for assessing low-code automation platforms are shifting. You need help to make sense of it all.

Who should read this guide.

This guide is intended for business and IT leaders who oversee automation and application development projects. Low-code automation offers a world of opportunities and possibilities for IT departments who have limited time and resources but need to meet the high demand for powerful new applications and automated processes. IT leaders need to ensure that low-code can be used to develop powerful, stable, and secure applications. Business leaders have to know it can solve their most complicated challenges.

1. Jeffrey Hammond et al., "Predictions 2021: Software Development," Forrester (October 2020)

How low-code automation has evolved.

Rapid app delivery is only the beginning of what low-code can do. The most advanced platforms deliver powerful business process automation capabilities. These low-code automation platforms unite robotic process automation (RPA), artificial intelligence (AI), data, employees, and business rules to automate even the most complex business processes imaginable. This mix unleashes tremendous power, speed, and savings for organizations. It enables them to finally realize the promise of true digital transformation.

Low-code is still evolving, and some platforms have evolved further than others. Because each has its own set of features and capabilities (often aimed at different users), it's helpful to categorize low-code platforms across a spectrum.

Forrester divides the low-code market into four segments:[2]

- **Low-code for business (or citizen) developers:** Often called "no-code," these solutions target business users who need to solve pressing challenges without involving the IT department or professional developers.
- **Low-code development platforms for application development and delivery (professional developers):** These platforms are typically aimed at professional developers who need to build and deploy a variety of applications to meet business needs.
- **Digital process automation (DPA) platforms for wide deployment:** Solutions in this category help both professional developers and citizen developers quickly automate moderate workflows and processes.
- **Software for DPA platforms for deep deployment:** Professional developers use these platforms to rapidly automate the full spectrum of processes, including those that are highly complex. These solutions often have strong low-code development capabilities.

Low-code automation platforms.

Low-code automation platforms are the most powerful and expansive solutions within the software for DPA platforms segment. While this subcategory goes by many names, such as intelligent process automation and hyperautomation, for this guide, we will refer to it simply as "low-code automation."

Low-code vs. no-code.

The distinction between no-code and low-code can be confusing. As Gartner puts it in their recent research note, *Quick Answer: What Is the Difference Between No-Code and Low-Code Development Tools?*, "'No-code' is a marketing term, implying the tool is for non-professional developers… Fundamentally there is really no such thing as 'no-code.' There is always code and software running somewhere, just hidden."[3]

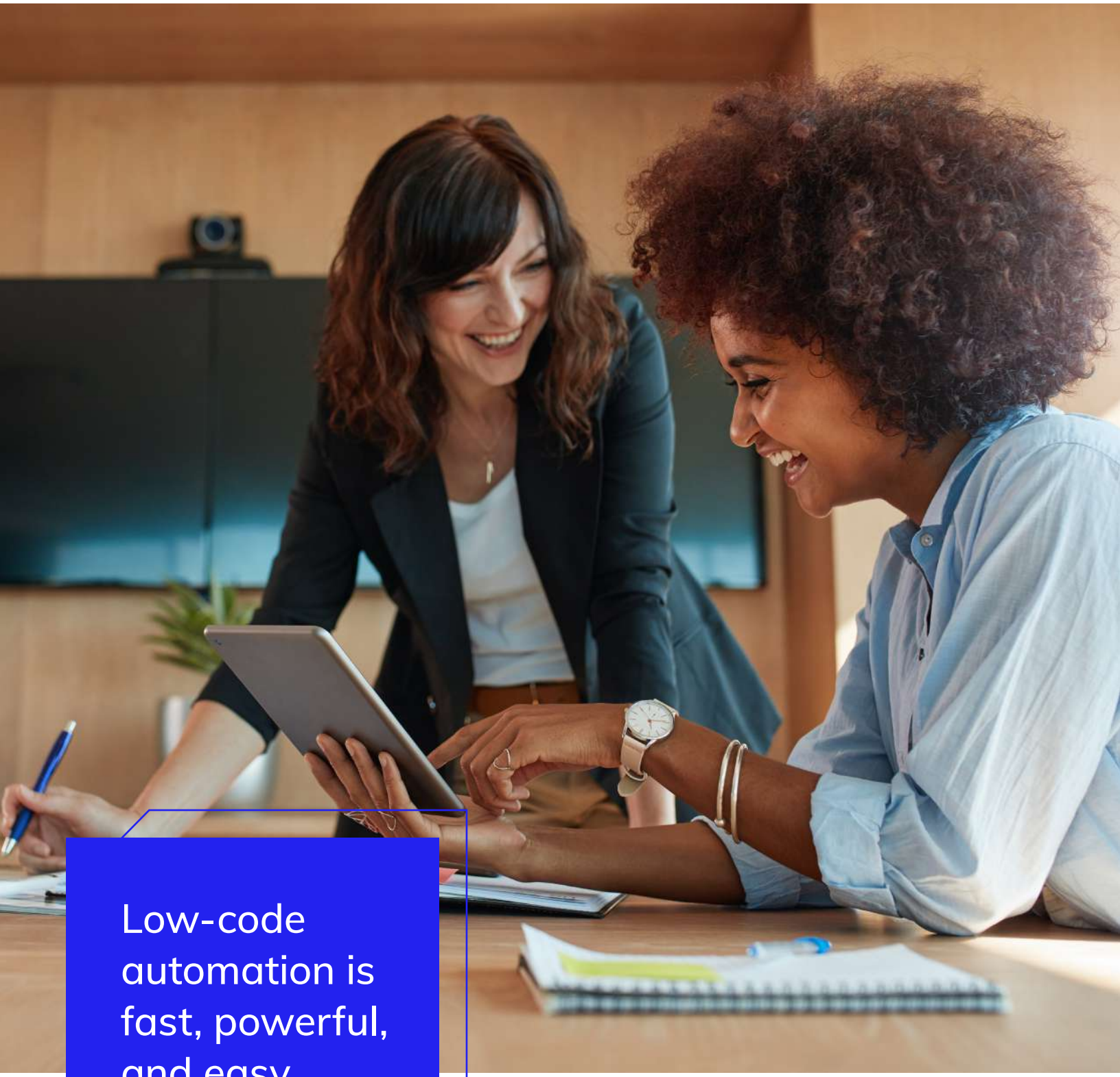
The core difference is that low-code allows for customization, whereas solutions labeled as "no-code" do not.

2. "Navigating The Rapid App Delivery Market," Forrester (September 2020)
3. Gartner, "Quick Answer: What Is the Difference Between No-Code and Low-Code Development Tools?" Paul Vincent et al., (March 2021)

> Automation frees people to perform the higher level cognitive tasks they are best equipped for, rather than the tedious work that's better suited to machines.

Low-code automation platforms enable businesses to rapidly automate their applications and workflows. Basic low-code tools can create applications that help users perform simple tasks. But to streamline larger processes and integrate all the systems in your organization, you need more advanced capabilities: RPA bots to automate tasks, (Intelligent Business Process Management System (IBPMS) to automate processes, AI for cognitive decision making, business rules to define complex business logic, case and exception management, and data integration to connect data sources.

What's sometimes overlooked is that end-to-end process automation also connects technology to people, because only people have the intelligence needed to perform high-level cognitive decisions. When automation works well, the result is not just increased efficiency and ROI, it's also better collaboration between people and technology. Automation allows humans to be more human. It frees people to perform the higher level cognitive tasks they are best equipped for, rather than the tedious work that's better suited to machines. It leverages and augments their problem-solving and interaction skills, making them even more valuable.



Low-code automation is fast, powerful, and easy to maintain.

Understanding the power of low-code automation.

By creating code in the background, according to the highest security and standards, low-code platforms take care of the (coding) details and automatically stay up-to-date with the latest technology. This approach pays out in three big ways:

1. **Low-code is fast.** With the right platform, development can be 10 times faster than traditional approaches. Iterative development and rapid feedback enable easy, consistent collaboration between business and IT departments.
2. **Low-code is powerful.** Complete automation enables applications to easily integrate into core business systems. The most powerful platforms have built-in mobile-native deployment, so developers can build once and deploy everywhere. Any application built on the platform will be a native mobile app with no extra effort, coding, or resources.
3. **Low-code is easy to maintain.** Applications built with low-code require far less maintenance and allow for easier updates. Because the vendor keeps the platform up to date with the latest security and device standards, those updates are automatically passed on to the applications built on the platform. Imagine building applications that are automatically natively mobile on devices that haven't even been invented yet. With a powerful low-code platform, you can see 50% savings, less technical debt, and more time for IT to develop new processes, apps, and automations. They also make it easier to scale applications since there's no need to redesign for each new technology.

Do you need a low-code automation platform?

Use this checklist to find out.

You need a low-code automation platform if...

- ☐ Speed to market is critical.
- ☐ Your organization/market requires rapid change and agility.
- ☐ Complex business processes must be automated.
- ☐ Routing and approval paths are cumbersome.
- ☐ You need to be able to minimize coding errors, reduce security vulnerabilities, or increase data quality.
- ☐ You need to increase the productivity of your developer.
- ☐ You have bottlenecks slowing down your ability to make rapid and informed decisions.
- ☐ Multiple data sources must be integrated without migrating data.
- ☐ Your organization operates in a regulated environment that requires strict compliance.
- ☐ Your IT department has a large amount of tech debt they need to reduce or eliminate.
- ☐ Your IT team is wasting time on maintenance instead of innovation.

If these challenges seem familiar, your business can realize big rewards from low-code automation.

What to look for in a low-code automation platform.

So you've decided a low-code automation platform can help your organization. Here are the most important features and considerations, and the questions to ask as you evaluate a platform:

Complete automation.

A robust low-code automation platform helps you rapidly build and automate workflows by combining people, technology, and data in one place. If you want to realize the full power of low-code, you need automation that unites and augments all of your workers and resources, including the following:

- **Robotic Process Automation (RPA):** Bots perform repeatable, routine tasks, freeing employees to focus on more important work. RPA can also help connect older systems that don't have APIs.
- **Artificial Intelligence (AI):** AI can make simple cognitive decisions, suggest next steps, and ensure that business rules and logic are followed. That power is useful in many contexts. For example, implementing intelligent document processing to automatically classify documents and extract data from them, and turning unstructured information into structured data.
- **Business Process Management/Workflow:** The backbone of automation, workflow orchestrates RPA, AI, systems, and people in a cohesive process, ensuring it seamlessly progresses from start to finish.
- **Decision Rules:** Simple interfaces enable developers to add complex business rules to any workflow without coding.
- **Case Management:** Manage exceptions and ad hoc workflows in a single location for better visibility and improved collaboration, speeding up your path to resolution.

Questions to ask a vendor:

- Does the platform offer unlimited bots, or will you have to be wary of additional licensing costs?
- Are AI capabilities built into the platform, or will you need to purchase through external vendors?
- Does the platform enable you to scale automation across any end-to-end business process, beyond simple tasks and regardless of complexity?
- Can business users easily collaborate with the IT team to build automations quickly and iterate on them?

Low-code data.

To deliver value, data needs to be accessible and synchronized across the entire organization. A robust low-code automation platform should let you access and incorporate data from any source without expensive migrations or database programming. It should have pre-built connectors to leading enterprise systems like Salesfoce, SAP, AWS, and more.

Questions to ask a vendor:

- How easy is it to build custom reports with actionable data?
- Does the system provide closed-loop reporting across various data sources?

Security.

Low-code automation platforms include security features that automatically govern the applications running on them. This makes IT's job easier, and it also means the security of the platform is always kept up to date.

Questions to ask a vendor:

- Does the vendor involve InfoSec as part of the design and development of the platform's capabilities and features?
- Does the platform provide customer instance isolation, encryption, and data loss prevention?
- Does the platform align its security controls and monitoring to leading frameworks like NIST?
- Does the platform undergo frequent and regular third-party audits to validate that controls are operating effectively to protect customer data?

Integration.

Integrated applications deliver more value by linking new functionality with existing solutions and legacy systems. To make sure your low-code applications fit seamlessly into your existing architecture, look for an extensible platform that allows for future growth.

Questions to ask a vendor:

- Can you connect to legacy systems and easily integrate with office productivity suites, enterprise applications and databases, cloud services, and DevOps tools?
- Does the platform include no-code connectors to systems such as Salesforce, SAP, AWS, and other leading enterprise systems?
- Does the platform have the ability to provision and stage cloud-native apps and deploy them to your cloud(s) of choice, on premises, or both?

Data governance and compliance.

When you have multiple applications deployed with various users and roles on your low-code platform, you want to ensure that IT remains in control and that guardrails are in place.

Questions to ask a vendor:

- Does your platform have comprehensive role-based access control features to enable easy management of access and security rights?
- Does it allow you to assign different levels of access to users, specify access by data source, and assign integration points in specific processes to team members?
- Will the platform allow for robust app development monitoring with observability features like time stamping?
- Will you have the capability to define and enforce compliance policies in the environment, automate security policies, and encrypt data?
- Do the platform's hosting and compliance standards meet your organization's regulatory requirements?
- Does the platform maintain business data within geographic regions?

User experience.

The platform you choose should wow your end users. Look for two elements: ease of use and user-friendly design.

Ease of use: Look for a user interface that removes the technical complexity from the design process. The best ones are the most intuitive, enabling users to quickly draw processes like a flowchart.

Questions to ask a vendor:

- How much of the experience, logic, and integration can be developed using the visual designer, versus with custom code?
- Does the skill set required align with your expected user base?

User-centered design: The platform should enable you to easily create highly usable interfaces for your end users, in line with their needs. Rapid prototyping will allow you to get fast feedback from your users and iterate as you build.

Questions to ask a vendor:

- Does the platform have built-in templates and components with which to build?
- How easy is it to create custom branded pages?

Mobile.

The platform should have cross-platform functionality standard in its design, tuned to the specific capabilities and usage patterns of iOS, Android, and Blackberry devices. No separate development, maintenance or upgrades should be required to deploy your applications on mobile.

Questions to ask a vendor:

- Do you have to build separate mobile apps?
- Does the mobile app support offline form-fills?

Open Platform.

Your selected platform should be built with open standards to provide access to third-party applications. This ensures you can leverage your prior investments and third-party vendors as needed.

Questions to ask a vendor:

- Does the platform enable you to derive value from prior investments and systems or are you locked into the vendor's capabilities?
- Does the platform have standard no-code/low-code integrations to the systems you can use?

DevOps.

Building fast is great, but applications don't start delivering real value until they're in your users' hands. The software development life cycle consists of building, testing, deploying, and monitoring to release high-quality applications fast. Your low-code automation platform should deliver an integrated DevOps experience that's fast and fluid within the build process.

Questions to ask a vendor:

- How does the platform support collaboration within development teams?
- Does the platform support unit, functional, and performance testing?
- Does the platform offer a deployment pipeline out of the box? Does it also support integration with continuous integration/continuous delivery (CI/CD) tools?
- Does the platform provide out-of-the-box real-time dashboards with alerts to flag problems?
- How easy is it to make changes to an application that is already in production?

Low-code automation platforms: The best of the best.

The most powerful platforms should confidently commit to these three benefits:

- **10x speed over normal development.**
  Platforms that don't reliably deliver this kind of speed are not going to provide you with the true power of low-code. Vendors who don't have the numbers to back up this claim may not have the experience or tools you need.
- **50% savings.**
  Low-code automation delivers tremendous efficiency that translates into savings. Your vendor should be able to measure that and back it up.
- **Superior functionality compared to traditional development.**
  Low-code automation enables your business and your employees to do more, and to do it better. Ask about all the ways that the platform makes this happen.

Common low-code misconceptions.

As you embark on your low-code journey, you're bound to come across some misconceptions. Often people within your own organization will voice these concerns. Here's how to address them:

1. Low-code platforms are for citizen developers, not professionals.

Fact: Low-code is for every developer in your organization. In fact, IT likely needs the tenfold productivity boost even more than citizen developers, because they're building the mission-critical applications on which the entire company relies.

2. Low-code platforms have no support for high-code options.

Fact: Robust low-code platforms give developers a high degree of flexibility to extend the platforms to meet new requirements. Developers can add extensions to integrate with external systems, support additional UI components, and add new logic or process patterns. After all, low-code platforms should not only help you drive change—they should embrace change and evolution themselves.

3. Low-code platforms are only good for small-scale applications.

Fact: Low-code has evolved by leaps and bounds over the past decade. A 2021 IDC study[4] found that 30% of organizations have formalized low-code developer programs in place, and 40% of internal developers have used low-code tools. Today, leading organizations use low-code to solve incredibly complex, mission-critical business problems. Case in point: Aviva, the UK's largest insurance provider, used a low-code automation platform to unify 22 different systems into one single platform for call center operations. Explore additional examples of how major organizations have used low-code to solve their challenges here.

4. You can achieve similar results with off-the-shelf software solutions.

Fact: It's true that sometimes these products can provide the functionality you need. But connectivity to other systems and solutions is typically an issue, as is extensibility. You end up having to adapt to their software, as opposed to their software adapting to you. The result? Silos of data and processes that just create more problems and more technical debt.

4. IDC European Accelerated App Delivery Practice, 2021

Evaluating low-code automation platforms.

Now that you've learned what low-code automation platforms can do, follow these best practices to put together a shortlist of vendors and evaluate their products.

Start with analyst reports and customer reviews.

Use reports from trusted analysts such as 2020 Gartner Critical Capabilities for Enterprise Low-Code Application Platforms and Forrester to build a shortlist of vendors you're interested in. While creating your shortlist, review sites like Gartner Peer Insights, TrustRadius and G2 can provide additional perspectives on platforms from organizations similar to yours.

Evaluating platforms: The demo, proof of concept, and bake-off.

Some vendors may show you a one-size-fits-all demo. That can be a good introduction to the platform, but you shouldn't stop there. You need to understand the platform's capabilities and how they align with your objectives, take a deep dive into the technical aspects, and see the platform in action firsthand.

Start with an operational walkthrough with the vendors you're evaluating. It is worth investing the time in a half- to full-day workshop to give the vendor a clear picture of your current situation, opportunities, and vision for the solution(s).

Based on the findings from the walkthrough, you and the vendor may agree to one of three next steps: a custom demo, a standard proof of concept, or a proof of concept bake-off.

1. **Custom demo** is a demonstration of a small representative application based on the operational walkthrough you did with the vendor. It's jointly designed and iteratively configured. A custom demo simulates the desired functionality and user experience but doesn't address software architecture. Custom demos are created by remote teams over the course of a few weeks.

> Don't stop at a one-size-fits-all demo. Invest the time to understand the platform's capabilities, its technical aspects, and see it in action firsthand.

2. **Proof of Concept** allows you to experience the iterative design process firsthand and see the solution coming to life before your eyes. It can help to prove functional or technical capabilities. A proof of concept is executed in a set amount of time, typically three to four days, with the core team co-located onsite. This is typically your first real opportunity to see the platform in operation.
3. **Proof of Concept Bake-Off** is similar to a standard proof of concept, but it's executed simultaneously by multiple vendors of your choice, working under the same time and resource constraints. Bake-offs provide the most accurate side-by-side comparison of the design complexity and speed.

A technical deep dive and review of the designer experience should happen as part of either a custom demo or proof of concept. These will help you understand the platform architecture and technical capabilities, as well as the experience your developers can expect. Be sure to see the visual designer first hand—it's important to experience building an application as a designer would. Many vendors offer a free trial or free basic version, which can allow developers to experience the platform firsthand and on their own time.

Meeting with vendors.

In addition to learning about features and functionality, you want to make sure your low-code provider is a good fit with your company. Keep an eye out for these things:

- **Culture:** As a software provider, the vendor should be able to see eye-to-eye with your IT staff on technical issues and perspectives. Do their standards and values align with yours? Do your challenges seem familiar to them?
- **Collaborative mentality:** Are they interested in acting as a partner or is the discussion just about making the sale? Do they have your best interests in mind?
- **Expertise and preparedness:** Are they able to quickly and confidently answer your questions? Do they have a deep understanding of their product or do they seem unprepared?
- **Transparency:** Do they provide clarity into how the proof of concepts work, or does much of the process seem to occur behind the curtain?

Real-world use cases of low-code automation.

Chances are there's a business in your industry with challenges similar to yours. It's also likely there's at least one company that's solved those challenges with a low-code automation platform. Read on to find real-world use cases for low-code, organized by industry.

Financial Services

Bankhaus von der Heydt

The problem: Speed was of the essence for Bankhaus as they sought to shift their strategy away from wealth management and private banking to institutional asset servicing, including blockchain and cryptocurrency.

New applications were taking too long to create with traditional software development platforms and methods. As one of Europe's oldest banks, their legacy systems were failing to address new business requirements and the dynamic fintech market. Existing software interfaces were neither user-friendly, modern, nor mobile.

The solution: Bankhaus's need for speed was answered with a low-code automation platform. Customer onboard times were reduced from one week to under 10 minutes, leading to a higher conversion rate and much lower operational costs, giving them an increased competitive advantage.

It now takes only one day for Bankhaus to customize an individual partner solution, allowing them to scale their business without increasing headcount. With core banking system integration, they linked their brokerage system and crypto services while fully integrating a Know Your Customer process with visibility for partners on one platform. Automating back-office operations and bolstering their IT stack allowed Bankhaus to offer services like data APIs to professional customers.

Insurance

Aviva

The problem: Over the course of 350 years, Aviva—the largest insurance provider in the UK—had acquired 750 insurance organizations, resulting in an increasingly unwieldy accumulation of different systems, data, and processes. Front-line customer care employees needed to access as many as 22 different systems to resolve just one customer service request.

The solution: Utilizing a low-code automation platform, Aviva unified the 22 different systems to provide a single platform for call center operations. The solution allowed agents to launch a single screen with a 360-degree view of each customer, including every policy a customer has with the company, leading to a 9x decrease in customer service response times. RPA bots now handle repetitive work, allowing representatives to focus on delivering exceptional experiences.

Powerful case management functionality allows for simplified customer self-service. Aviva connected the low-code automation platform to their customer portal via Web APIs, meaning, customers could now transact business with the company without having to go through Aviva's contact center.

Public Sector and Government

The United States Air Force

The problem: Senior leadership set a goal to shave a collective 100 years from the schedules in the service's acquisition programs. The accumulation of legacy acquisition systems had created a need to standardize acquisition contract writing across the Air Force.

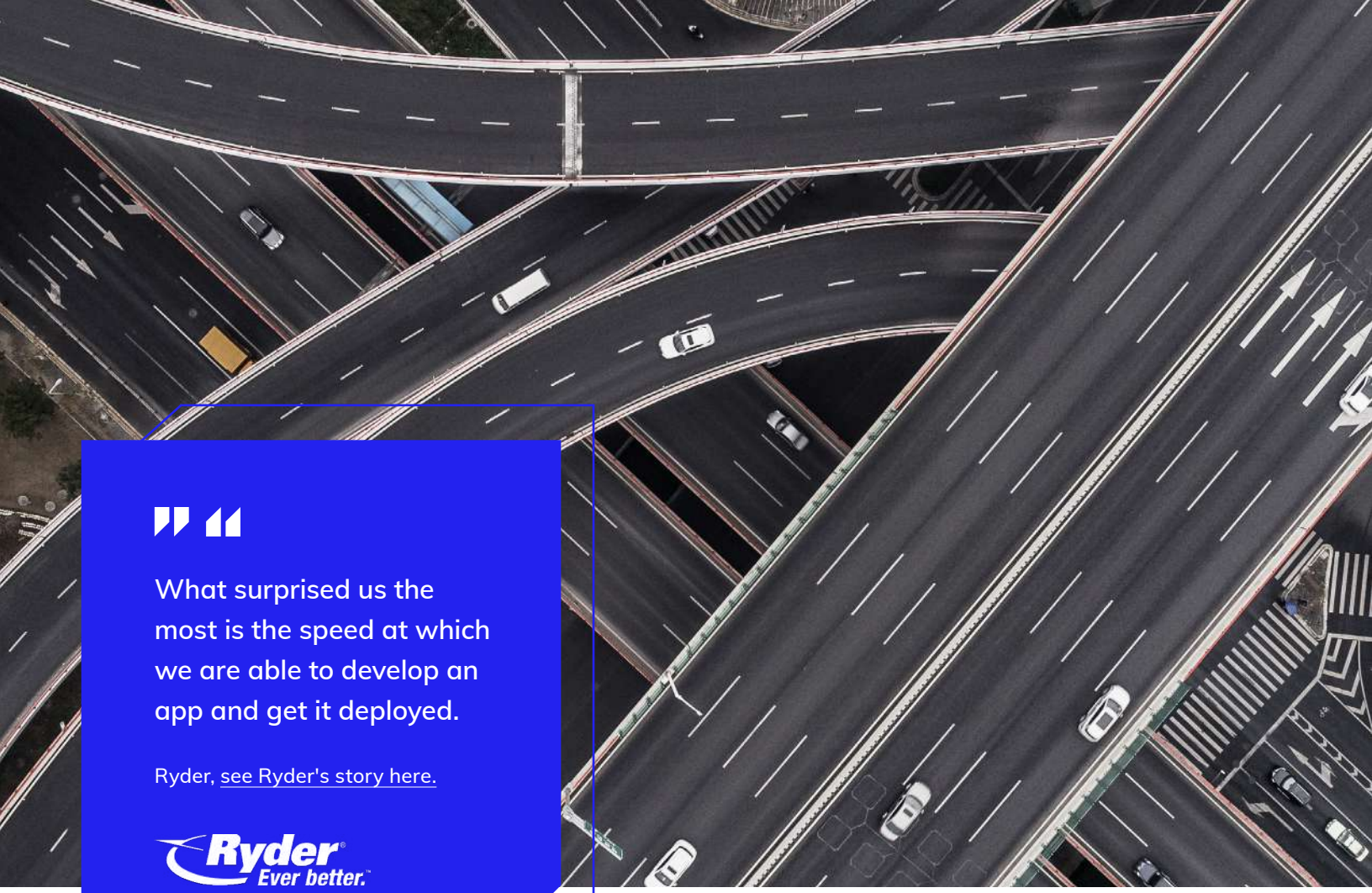
The solution: Working on a low-code automation platform enabled the Air Force to design, develop, and deploy its Contracting-Information Technology (CON-IT) cloud application in less than nine months. With powerful business process management technology and low-code development, the Air Force easily configured and redeveloped legacy acquisition systems into CON-IT, helping the Air Force meet specific requirements for the contracting community. The CON-IT program migrated all of the Air Force's contracting offices to a single contract management system and will eventually replace seven legacy contract writing systems. The cloud solution is hosted in an Impact Level 4 (IL4) data center, which covers Controlled Unclassified Information (CUI), which under law or policy requires protection from unauthorized disclosure, and other mission-critical data. The platform's ability to deliver at IL4 provided a distinct advantage to DoD Agencies. Ultimately, the Air Force was able to standardize acquisition contract writing, drive efficiency, and reduce costs with a platform that lets them enhance functionality and make statutory changes fast."

Telecommunications

TELUS

The problem: Following an internal audit of all of their digital systems and tools, Canadian telecommunications company TELUS identified the need for a platform to support the launch of 5G to their 10 million subscribers. Accommodating and supporting rapid growth was key, given that the company expected the launch to result in 10x the volume of activities previously managed. They set out to achieve four main requirements in this journey: efficiency, scalability, connectivity, and automation.

The solution: Utilizing a low-code automation platform, TELUS developed an end-to-end workflow management tool in just 12 weeks to automate and maintain all build activities surrounding the 5G network. Ten thousand business activities now flow through the platform, which is immediately accessible from any device. Using RPA, TELUS interfaced with their legacy systems, allowing users to speed development time by 10x compared to traditional methods. This significantly simplified their digital landscape, collapsed 5+ legacy homegrown applications into a single, cohesive platform, and eliminated 20,000 email notifications to users per month. The streamlined process meant fewer clicks were required to access real-time information. Eleven legacy and external systems will be integrated upon completion of the project.



> What surprised us the most is the speed at which we are able to develop an app and get it deployed.
>
> Ryder, see Ryder's story here.

Ryder Ever better.

Looking for more low-code automation solutions relevant to your industry? Explore additional industry-specific resources below:

- Automotive and Manufacturing
- Energy
- Education
- Financial Services
- Government
- Healthcare
- Insurance
- Life Sciences
- Retail
- Telecom and Media
- Transportation
- Supply Chain

What will you do with low-code automation?

The power of low-code automation is immense: 10x increases in development speed and 50% decreases in cost are the new normal. What will you do with this power?

To make the most of low-code, you need to identify the goals, no matter how lofty, that can help your organization reach its full potential. That may require a change in mindset within your company. Think beyond the old sense of what was possible.

Selecting a low-code automation platform has to start with your business mission. There are use cases in every industry, but your use case may be different because your businss is unique.

The power of low-code automation is the power to help your business change and grow as it chooses—enabled by technology, rather than constrained by it.

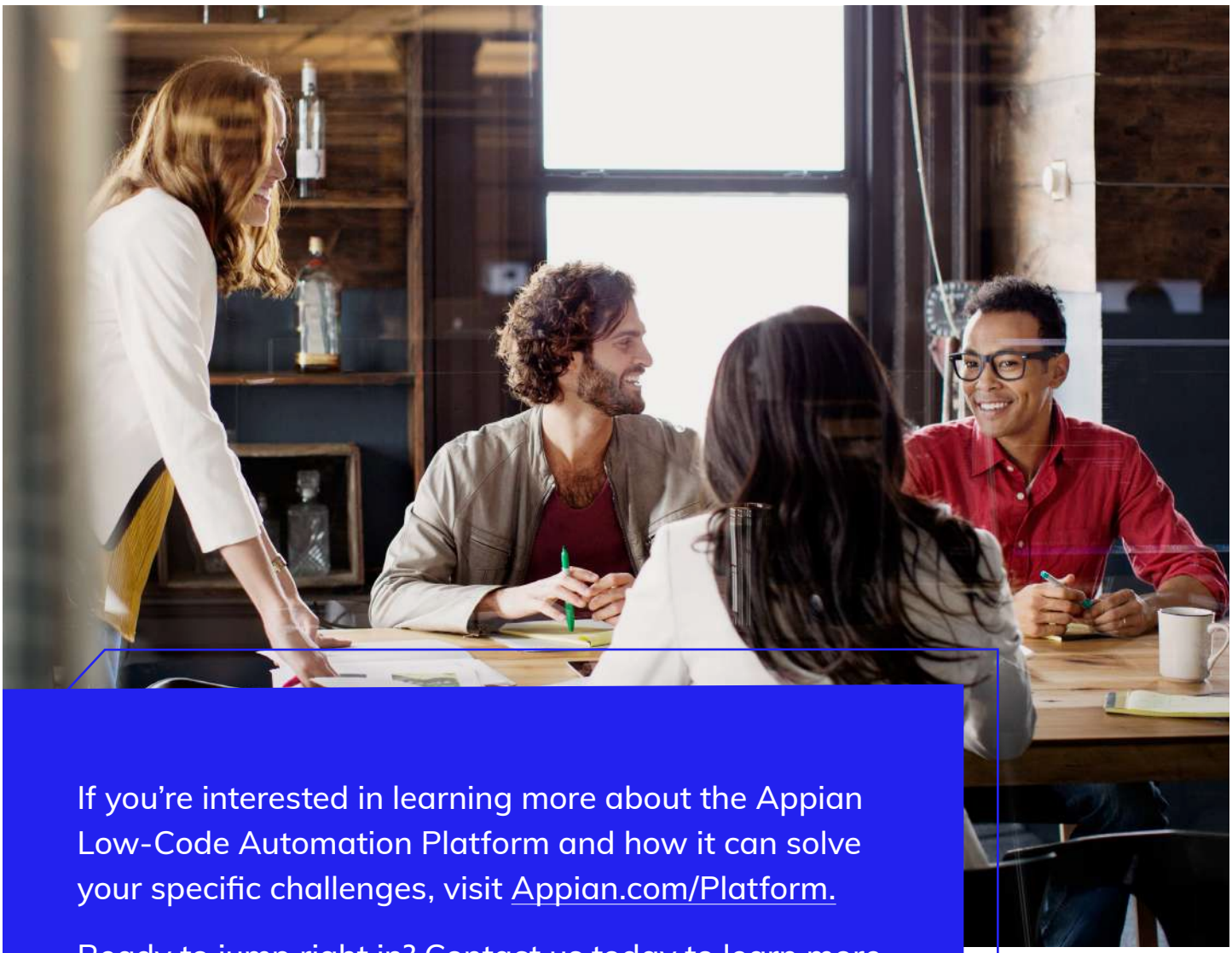
Next steps.

- Complete the checklist on page 7 to determine if you need a low-code automation platform.
- Survey the field of potential vendors via market-neutral resources like the 2020 Gartner Magic Quadrant for Enterprise Low-Code Application Platforms, the 2020 Gartner Market Guide for Intelligent Business Process Management Suites,[5] and industry-specific reports such as The Forrester Wave™: Insurance Agency Portals, Q3 2020.
- Talk to peers and read reviews about others' experiences with low-code platforms. Reports like the 2021 Gartner Peer Insights 'Voice of the Customer': Enterprise Low-Code Application Platforms and review sites like G2 and TrustRadius are great places to start.
- Identify the vendors that align best with your needs and values, and make a list of which to evaluate.
- Reach out to vendors and request additional resources, arrange demos, and identify your best use cases.

5. Gartner does not endorse any vendor, product or service depicted in its research publications and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's Research & Advisory organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. Gartner Peer Insights reviews constitute the subjective opinions of individual end users based on their own experiences and do not represent the views of Gartner or its affiliates.

About Appian.

Appian helps organizations build apps and workflows rapidly, with a low-code automation platform. Combining people, technologies, and data in a single workflow, Appian can help organizations maximize their resources and improve business results. Many of the world's largest organizations use Appian applications to improve customer experience, achieve operational excellence, and simplify global risk management and compliance.



If you're interested in learning more about the Appian Low-Code Automation Platform and how it can solve your specific challenges, visit Appian.com/Platform.

Ready to jump right in? Contact us today to learn more or get hands-on experience with our free edition.