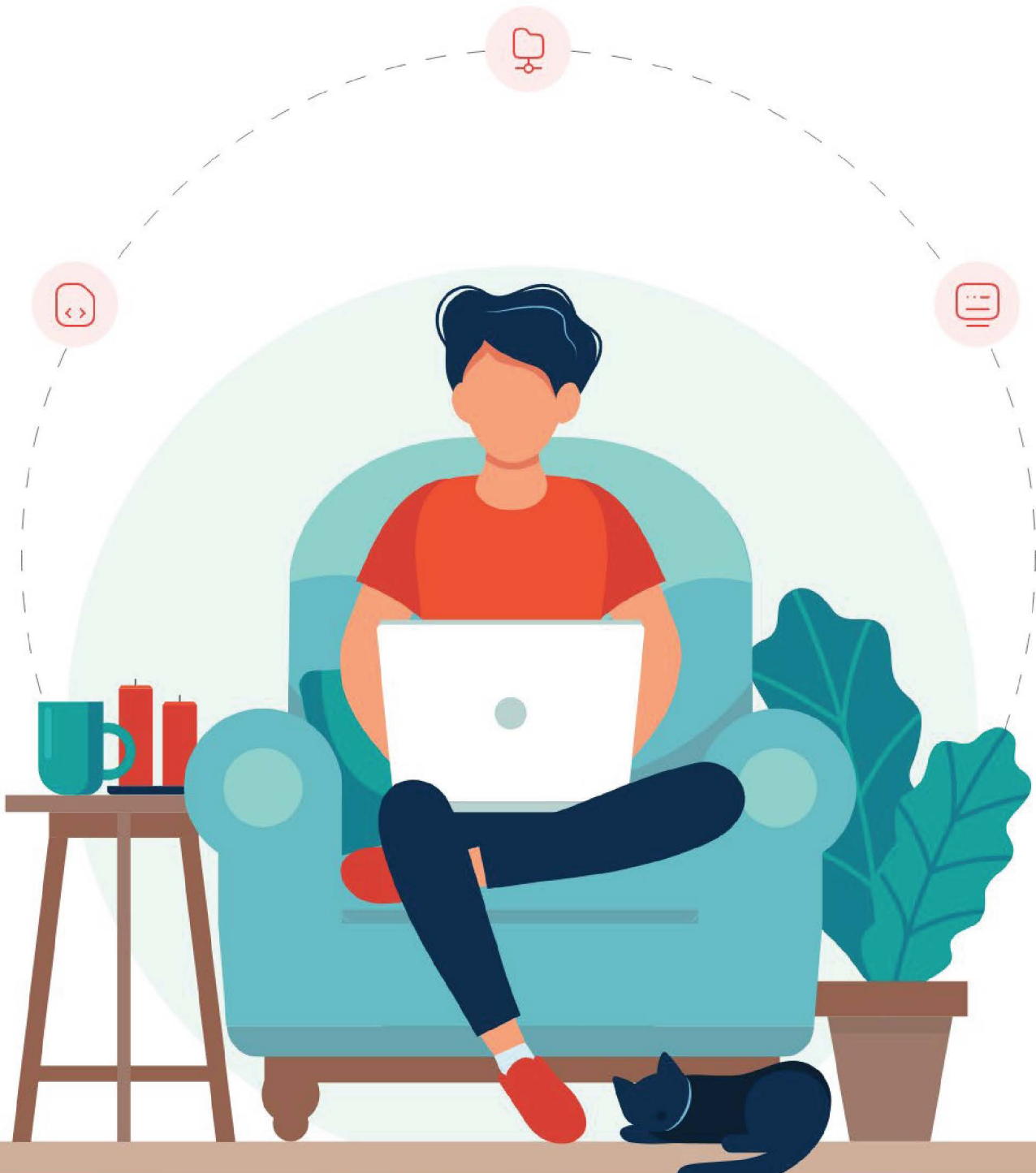




# An introduction to low-code application development

In this guide, you'll learn more about low-code development, when to consider it for your business, and examples of low-code-powered success at several organizations.



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Low-code platforms make software development 10 times faster than traditional methods.

FORRESTER®

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# What is low-code development technology?

Low-code is an approach to software development that requires little to no coding to build applications and processes. A low-code application platform (LCAP) uses easy-to-use visual tools to build user interfaces and drag-and-drop features to add business logic into an application, instead of having to write extensive lines of code.



# Making a case for LCAPs

Organizations today spend huge sums on complex legacy applications to solve key business problems. These commercial apps are used to address the business requirements of the various departments at an enterprise—from sales, all the way to accounting and HR.

Whether your business is a multinational enterprise or a five-person operation working out of a basement, you probably rely on one of two approaches when setting up your business software infrastructure—purchase packaged applications or maintain an in-house development team.

Packaged software is far from bulletproof. What happens when you encounter a deal or a roadblock that simply can't be addressed by readymade software? Furthermore, the traditional one-size-fits-all approach of off-the-shelf applications leaves organizations with many gaps in operations.

However, the alternative is an expensive and time-consuming customization effort for your in-house development team.

**Enter low-code development**, to make the app-creation process easier. The low-code premise is simple: you just need to get someone that understands your business to create the app you need in the low-code environment. You won't have to concern yourself with things like packaged apps and outsourcing, and the dev team's time isn't wasted on limited-use apps.

# How does low-code development work?

Low-code is a visual development approach to application development that uses the concept of abstraction. Low-code platforms offer intuitive visual builders, ready-to-use code snippets, form and report templates, and built-in connectors that speed up application development and extend the ability to innovate to a broader set of people.

## Low-code platforms all have a few things in common:

**Abstraction:** Low-code platforms relieve nontechnical users from having to write code (while still supporting professional developers) by abstracting the tedious back-end plumbing and infrastructure tasks required in application development.

**Intuitive visual builder:** The visual development environment of low-code platforms lets users create complete applications using a drag-and-drop interface. Visual modeling interfaces enable non-developers to grasp application design quickly by allowing them to see how their application looks as they build it.

**Instant development and deployment:** Any good low-code platform comes with standard components like prebuilt templates for form and report creation, and ready-to-use code snippets. These out-of-the-box templates allow IT teams to develop and deploy applications faster, and with fewer errors. LCAPs also eliminate the need for creating frameworks, linking databases, and other tasks that are typically included in traditional development. to see how their application looks as they build it.

**Simplified pre-built integrations:** Low-code platforms allow for easy coupling with external and existing systems and new technologies, with a wide array of out-of-the-box APIs and other smart integration tools. tasks required in application development.



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By 2024, low-code application development will be responsible for more than 65% of application development activity.

Gartner, Inc. “Low-Code Development Technologies Evaluation Guide” February 26, 2019

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As an extension, LCAPs:

## Benefits of using a low-code platform

On a low-code platform, IT and business teams work together to build high-quality applications and accelerate time to market.

**Drive agile development** - Low-code platforms let you iterate apps, and release them as soon as functionality is built. Full-stack development (both client and server-side) bridges gaps between traditional SDLC and modern DevOps. Businesses can accelerate time to value by rapidly creating and launching applications, then enhancing and expanding them over time. The ability to carry out quick changes make agile transformation much easier. Application reworks are considerably reduced, and the business dodges cost overrun to a large extent.

**Align business with IT** - Low-code application development platforms greatly benefit enterprises by breaking down silos between IT and business analysts. Business users can bring innovative ideas to life by just dragging-and-dropping readymade elements or code snippets. These proof-of-concept apps simplify the life of programmers who can use them as a starting point when building enterprise software.

**Eliminate backlogs and reduce shadow IT** - Businesses can streamline, automate, and harmonize manual internal processes so that developers aren't overburdened and can focus on higher-value tasks. Minimizing overwhelming coding needs gives IT relief from the pressure of their often times unconquerable app backlog. This eliminates the need for businesses to employ risky third-party apps outside their certified IT infrastructure.

**Reduce reliance on legacy apps** - Outdated legacy applications, although vital to business processes, drain efficiency, and keep your IT resources in a constant state of updates and fixes. This means you spend more time on maintenance than innovation. Revive your business ecosystem using low-code platforms, with modern frameworks that can build consumer-grade applications.

**Boosts security** - Built-in security features, like audit logs, user-access control, and automated threat assessments, keep low-code platforms safe and reliable. Any new vulnerability identified is fixed through periodic updates. And new apps automatically inherit the latest security protection, ensuring complete safety of data. Plus, the platform provides all the necessary security framework certifications a company may need.

# Low-code vs traditional development

Low-code platforms simplify and streamline the entire app rollout process, offering several advantages over traditional development technologies. Let's take a look at how they compare:

## Traditional programming

## Low-code platforms

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### Skill set/ expertise requirements

Niche, project-specific skills. Needs programmers with expertise in programming languages for web (Javascript, Python, CSS, PHP), iOS (Swift), and Android (Java, C++).

Little to no coding needed. An intuitive drag-and-drop interface makes it easy for both users and developers to create applications.

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### Cost of development (total cost of ownership)

Expensive. Custom-made software requires upfront investment for infrastructure setup, developer fees, continuous maintenance, and more.

Economical. License-based pricing allows you to pay as you grow and save on the massive amount needed for traditional development and infrastructure.

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### Multidevice deployment of apps

Single-OS focused. The specific programming language, environment, and device-focus must be selected before the project even begins. Businesses will need the capacity to develop for various different operating systems, environments, and devices. Applications need to be developed separately for each platform, and code can't be shared between Android and iOS.

Builds multiplatform-optimized apps. Cross-platform app builder helps to build native mobile applications that can be used on iOS and Android devices with multiplatform access. The same application works for mobile, the web, on-premise, and in the cloud.

## Traditional programming

## Low-code platforms

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### Speed to market

Looser timelines. Traditional software development can take months, with multiple teams building applications from scratch through extensive coding and multiple revisions of prototypes. And they offer no guarantees, and often go over schedule.

Exponentially faster. Ready-to-use code snippets and templates allow you to accelerate application development by 10x. Building off an existing framework and configuration is significantly faster than writing, debugging, and compiling code, and end user functionality can be created rapidly.

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### Security and privacy

Demands application-level security initiatives, which need to be manually configured by the developer. In traditional coding architecture, the code behind each form or module will need to be edited to build in the necessary defenses. If deployed into production, vulnerabilities would have to be found ASAP and plugged to prevent access to exposed data.

Safe and reliable, with built-in security features, like audit logs, user-access control, and automated threat assessments. Any new vulnerability identified is fixed in the next update. In turn, all the applications running on the platform automatically inherit the latest security protection, ensuring complete safety of data. Provides all the necessary security framework certifications in place, with proven experience in large-scale initiatives.

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### Enterprise application integration

Limited integration capabilities, without considerable scripting and testing of compatible code to integrate with new external applications. A significant challenge for enterprises with legacy systems that are vital to their business operations.

Fast integrations and complete control due to a responsive development environment. Easy coupling with external and existing systems, with the help of a wide array of out-of-the-box APIs and smart integration tools. Seamless cross-platform workflows to safeguard speed and efficiency.

## Traditional programming

## Low-code platforms

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### Application updates and maintenance

Requires dedicated labor to closely manage revisions and implement updates. Difficult to integrate the latest technologies across platforms (web and mobile) once the application is deployed.

Handled by the hosting company, low-code tools periodically roll out the latest updates and features to all applications built on them, without the need for a team or third-party vendor.

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### Scalability/ revisions

Requires substantial engineering efforts. Scaling after deployment demands a collaborative involvement from cross-functional teams—development, testing, production—to build enterprise-scale applications, with developers bridging gaps between business and IT.

Handled by the hosting company, low-code tools periodically roll out the latest updates and features to all applications built on them, without the need for a team or third-party vendor.

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### Support

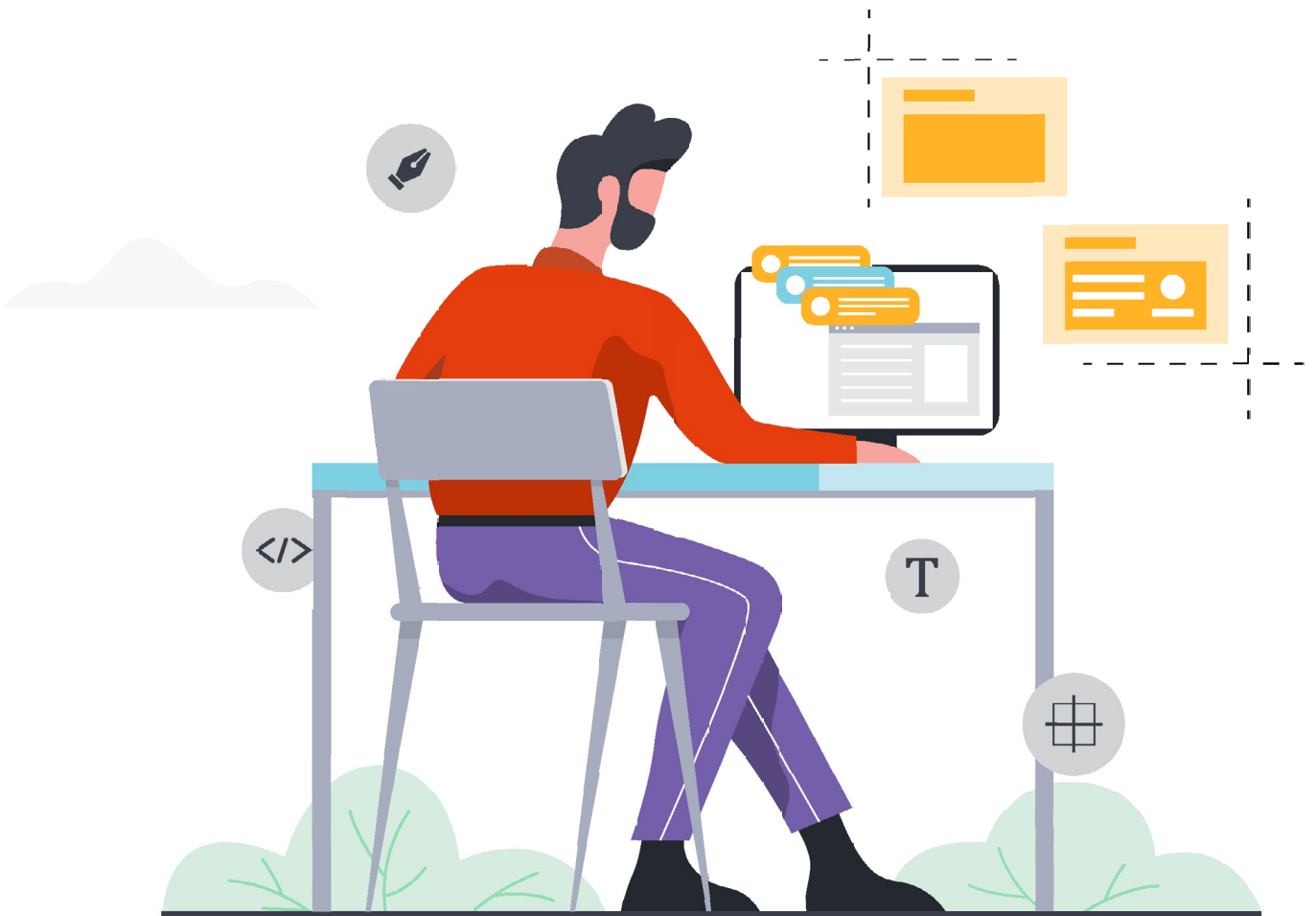
Needs developers with expertise in programming languages for web (Javascript, Python, CSS, PHP), iOS (Swift), and Android (Java, C++).

Lifelong support is provided at a fraction of the cost, through AMC for the platform.

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# Does your business need low code?

Some signs that your enterprise should invest in low-code development:

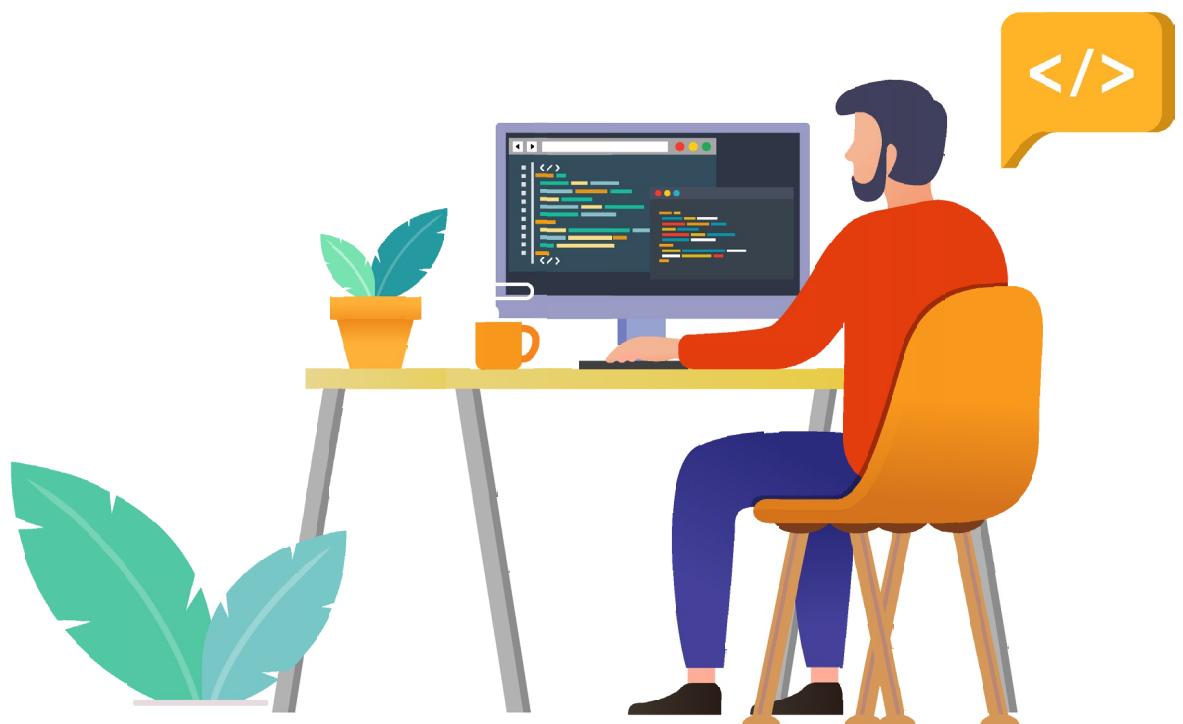


- Your organization struggles to operate at a digital speed. You're a growing business looking to capitalize on new opportunities. However, you're not able to execute on your innovative ideas quickly, and struggle with sluggish app development.
- Your business is slammed with too many projects, and your overwhelmed IT team cannot focus on innovation due to an endless app backlog.

- You work with outdated legacy systems that you installed years ago. They're constantly in a state of updates and fixes, and simply can't keep up with ever-changing customer expectations.
- Your business team has ideas that take advantage of ongoing market trends and needs to quickly craft workable applications, but lack the technical expertise.
- You think app roll-out would be much easier if your business stakeholders could create prototypes of applications as they envision them, to share with IT teams.
- Your business uses a variety of off-the-shelf solutions to get projects off the ground. Shadow IT threatens internal compliance and security protocols.
- Separate teams of programmers are required to build for each platform, as the technicalities of each one are different. This adds to your expenses and prolongs app deployment.
- Your company has budget constraints, and cannot afford skilled or professional developers, or expensive tech solutions.
- UX is currently on the backburner and your applications fall short of user expectations.
- Your competitors are already using low-code platforms.

# What can you build with a low-code platform?

Low-code platforms simplify and streamline the entire app rollout process, offering several advantages over traditional development technologies. Let's take a look at how they compare:



## Customer engagement applications

Build enterprise-grade applications that enable your customers, and partners, to better communicate and perform business transactions. Apps that promote personalized customer engagements help to improve satisfaction, retention, and revenue.

- Customer service management
- Appointment booking
- Point of sale

## **Line of business applications**

Design applications that automate processes to increase the efficiency of your business operations. These apps provide several benefits to a business, including reduced costs and reduced risk of error through automation.

- Operations management
- Supply chain management
- Accounting and financing

## **Workplace applications**

For your workplace, define workflows and build processes for tasks of any complexity, and automate operations across several departments.

- Asset management
- Approval process management
- Task management
- Customer relationship management



# The secret to low-code success

Getting started with a low-code platform by tackling a single application or proof of concept is straightforward. Moving beyond that, toward enterprise low-code deployment, however, is more challenging. The secret sauce to low-code success lies in assessing what you want your low-code platform to do for your establishment, then choosing a platform that's a point solution specialized for your specific business demands.

Zoho Creator, a pioneer in the low-code space, can help you kick-start your low-code journey and simplify application development. Zoho Creator enables you to build applications faster, while giving you the freedom to customize your application on the go.

Zoho Creator has a visually integrated development environment (IDE), drag-and-drop interface, and individual builders that let you design your forms, workflows, reports, and dashboards, and help you roll out the complete application faster.

**Form builder** - You can create online forms on Zoho Creator more quickly than you can fill them out. The platform supports over 30 field types with auto-validation, and customizable themes to create just about any kind of form you need. Just drag and drop field types to create custom forms, or choose from over 100 crafted templates. You can publish the forms online or embed them on your website.

**Workflow builder** - You can set up business workflows in a snap on the user-friendly, drag-and-drop workflow builder. The platform's ready-to-use code snippets let you create automate repetitive tasks, send automated messages, trigger actions based on user inputs, schedule routine tasks, speed up multitiered approvals, and configure payments.

**Report builder** - Zoho Creator offers around 40 different types of reports and charts to choose from. You can pick the one that suits your needs. You also get access to features like custom filters, grouping, and conditional formatting, plus AI-powered capabilities to drill down into your data.

**Page builder** - You can create interactive, meaningful dashboards to track key metrics, bringing together all your important reports. Use components like widgets, gauges, buttons, and custom KPI panels to add everything you need, and get a quick understanding of what's happening.



# Low-code success in action

Zoho Creator is trusted by over 10,000 businesses worldwide, but don't just take our word for it. Here are some of their stories:

## **BRIOTIX** **HEALTH**

Briotix Health, established in 1979, is an industry-leading provider of workforce performance optimization solutions. They provide specialized services in industrial sports medicine and office ergonomics. Based in the United States, Briotix Health clients include SMEs and several Fortune 500 companies in over 63 countries.

### **Low-code success in action**

Briotix Health was making substantial changes to its technology strategy. They had been using off-the-shelf software to run their day-to-day business. However, once they started experiencing rapid growth, they found their solutions to be vastly under performing and failing to meet their needs. Briotix Health serves diverse clients, using an assortment of programs. These programs differ in work-flow, SLAs, operating parameters, and billing models. Off-the-shelf software couldn't provide a segregated and controlled multi-tenancy environment. Managing login credentials for over 100 different systems and generating invoices was challenging.

## Solution

On Zoho Creator's drag-and-drop interface, Briotix Health was able to build database-backed mobile and web apps faster, without being pulled down by hosting costs, platform maintenance, and security updates. They trained their technology team, who became certified Zoho Creator developers, then consolidated most of their technology platforms onto Zoho Creator.

## Results

Briotix Health started from a small POC and then went on to create more than 10 full-scale commercial products and 200+ production applications built and managed on Zoho Creator—with plans to reach 300 applications. They saved 68.8% on a product built-out in Creator, a savings of over \$300,000! They consolidated most of their technology platforms onto Zoho Creator.

“

Every business leader is looking for a solution that'll help them get ahead and solve critical pain points, and Zoho Creator has been the most transformative solution I've encountered in my 20 years of business. It has completely revolutionized the way we think about what we do and how we do it.

**Shelby Spencer, CTO Briotix Health**

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# aboitiz

## Equity Ventures

Aboitiz Equity Ventures is one of the largest conglomerates in Asia, operating in four sectors: consumer goods, utilities, financials, and industrials. Aboitiz's investments are predominantly in banking and financial services. With \$8.1 billion in assets and 3,600 employees, Aboitiz is recognized as one of the best-managed companies in the Philippines.

### **Business challenge**

Aboitiz Group didn't have a proper system in place to track all their CSR activities. Their projects and internal processes were managed on paper and spreadsheets. The entire organization was reliant on the IT department for feature implementation, which couldn't perform at the rate of the organization's dynamic needs. Their IT team needed a platform to help them quickly create apps to manage \$300 million of their CSR funds across business units.

### **Solution**

With Zoho Creator, AEV rolled out a full-fledged web and mobile CSR application. The app was a success and is used by all the business heads, finance executives, and program heads at the company. They then went on to deploy over 40 business apps for different needs. Currently, these apps are used by 4,000+ employees.

## Results

By the end of 2019, AEV automated 1,000+ transactions and saved over \$670K dollars through the efficiency brought into their application development processes by Zoho Creator. They centralized 50 diverse business units and increased productivity by nearly 50%.

“

To date, we've deployed 46 applications with mobile and web capabilities using Zoho Creator, and when comparing it with other platforms, we realized that we've saved \$670k. Zoho Creator brings agility and speed to digital transformation.

**-Jojo Guingao, Chief Digital Officer. AEV**

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# MISSION

BICYCLE COMPANY

Founded in 2008 in San Francisco, Mission Bicycle Company is a custom bicycle shop focusing on commuter, adventure, and track bikes. The company epitomizes bike customization. They let customers design their own bikes at the store or their website, and then hand-make the design in the workshop.

## Business challenge

Being a popular local business, Mission Bicycle Co. realized their paper-based system was no longer adequate, and needed to streamline their process. The main challenge the company faced was the increasing number of errors in order details and bicycle specifications. Organizing the documents and build sheets was a tricky job on its own.

## Solution

Using Zoho Creator, Mission Bicycle built their first order management app. They then went on to extend its functionality to build apps for vendor management, after-sales follow-up, bookkeeping, and more.

## Results

Soon, Mission Bicycle experienced a staggering 500% increase in productivity, with 45% of work hours saved every week. They brought down errors in order-taking to 0% and are keeping their customers very happy.

“

The one word I would use to describe our Zoho Creator experience is 'empowering.' I now feel like we have the tools to address any problem we come up against. Our only limit is our imagination.

**-Ryan Moskal, Operations Manager,  
Mission Bicycle Co.**

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MTN is the eighth largest mobile operator globally, at the forefront of technological and digital changes. They offer voice, data, and digital services, have over 232.6 million subscribers spread across 24 countries in Africa and the Middle East.

## **Business challenge**

Handling multiple regions, tools, and stakeholders, with each producing separate troves of data, MTN had no control over the inconsistencies in the data they received. The data was gathered in various file formats, naming conventions, and columns. Transforming it into one cohesive data set, for deriving actual insights, took weeks. MTN needed an efficient method for managing their data from purchasing, cash flow, and vendor relationships. They wanted to understand their business performance across regions to make smarter decisions. Simply installing an off-the-shelf procure-to-pay tool wouldn't guarantee better reporting, utilization, or compliance for such a giant enterprise.

## **Solution**

Instead, MTN used Zoho Creator's low-code platform to build their own procure-to-pay solution, tailored to suit the company's requirements. Zoho Creator's built-in AI helped with cleaning up, sorting, parsing, and categorizing the data in their spreadsheets. They set up audit trails and established workflow automation, making the data from their organization truly connected.

## Results

Using Zoho Creator's controls and built-in workflows, MTN set up a system that forced users to submit data that met defined criteria and passed validation rules. Thus, the user data collected was smart, harmonized, and ready for analysis, without manual cleaning. MTN gained a centralized space for both technical and non-technical users to gain insights. Stakeholders themselves could log in to the dashboards and see the real-time status of their requests. Clear-cut audit trails helped prevent misuse, hacking, or corruption of information. And automated workflows managed purchase orders, stakeholder follow-ups, and invoice approvals.

“

We were able to push the data from multiple data sources to our dashboard, and translate it automatically to help stakeholders better understand what was going on with their P2P data.

**-Laila Kakar, Senior Data Analytics Manager, MTN,**

”

Read about how the 2020 Customer Awards winners leverage Zoho Creator

## Fast track your company's digital transformation

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91% of organizations are engaged in some form of digital initiative.

- **Gartner**

”

A [Tech Pro survey](#) disclosed that “70 percent of survey respondents said that their companies either have a digital transformation strategy in place or are working on one.” These results aren't surprising. Workforce digitalization has inherent benefits that not only drive growth, but also enable businesses to stay ahead of the curve. Adopting new technologies that can improve productivity, enable innovation, and deliver a better customer experience is just the beginning of the transition.

However, kick-starting the transition isn't easy, and setting up new digital solutions takes time. Low-code platforms can play a pivotal role in a company's digital transformation initiatives.

They reduce the time and money spent on traditional development, empowering enterprise employees to solve business problems, regardless of their technical background. This makes all the difference in the world when ensuring a successful digital transformation.

For companies that prioritize digital transformation and expect returns on investment, [Zoho Creator](#) can aid you in your journey.



# About us

[Zoho Creator](#) is a low-code application development platform that is powerful and flexible enough to adapt to your business needs. It's intuitive, and comes with a host of templates and plug-ins which enable your teams to create process-specific applications easily. Many of the world's largest organizations use Creator's applications to manage their daily operations by streamlining processes, projects, and tasks.

[Sign up](#) for a free trial, build your first application, and experience Creator personally.



[www.zoho.com/creator/](http://www.zoho.com/creator/)

**We'd love to talk! Reach out to us:**

[hello@zohocreator.com](mailto:hello@zohocreator.com)

