

INDUSTRY REPORT

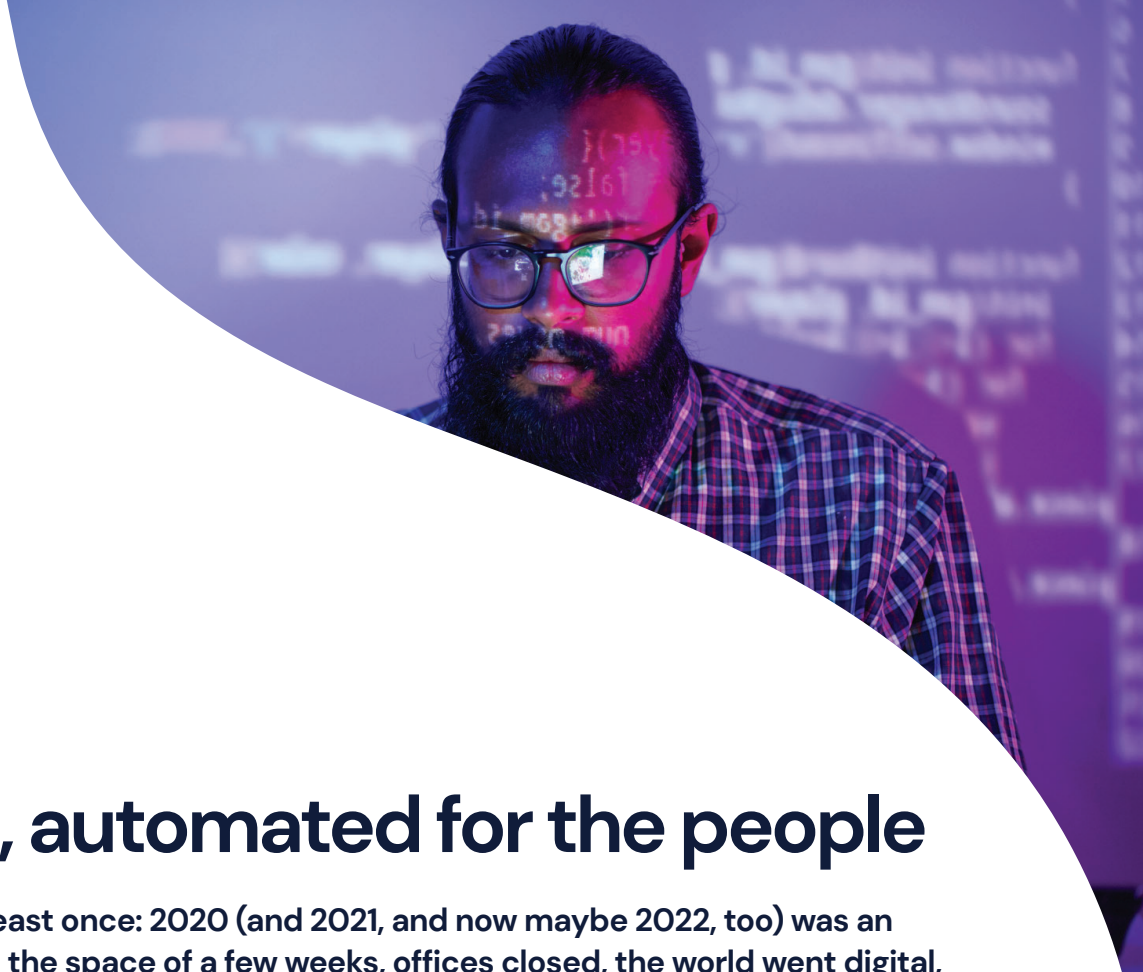
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Leadership trends report: global app development

A 2022-2025 roadmap from building and automating to celebrating





INTRODUCTION

The world, automated for the people

Everyone's heard it at least once: 2020 (and 2021, and now maybe 2022, too) was an unprecedented year. In the space of a few weeks, offices closed, the world went digital, and customer convenience became paramount. And as the pandemic continued, new trends emerged. Automation became an indispensable part of day-to-day life as people embraced tools that made their lives easier, from a transcript that's automatically generated at the end of a meeting to a chatbot that's available 24 hours a day.

But some of the trends are more alarming. Chief among them? A surge in top talent leaving their jobs. Finding top developer talent was already a difficult task, and the pool has been shrinking. **What's an organization to do?**

Adapt and thrive, of course. Hindsight is so 2020. Instead, let's look ahead to the application and automation trends, challenges, and opportunities that will define 2022.

In this trends report you'll find:

What's new in '22

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What's new in '22

Trend 1: Citizen developers to the rescue

Here's some math for you: In 2021, there were 7.1 billion mobile users worldwide. According to projections, there'll be 390,000,000 more by 2025. However, 59% of organizations piloting automation don't think they have the workforce capacity and skills to make it happen. In other words, companies need more apps than their developers can build.

Enter citizen developers, empowered by low-code app development to build apps quickly and easily. According to a Gartner survey, 41% of respondents have active citizen development initiatives, and 20% of those who don't are considering it. In fact, Gartner predicts that by 2024, 80% of technology products and services will be built by non-IT professionals.

107 countries have laws in place to ensure customer data security, many of which have differing compliance requirements.

Trend 2: Prevent "good grief" moments with good governance

Governance is a huge concern for businesses. The good news: Deploying a centralized data governance system reduces total compliance costs by \$3.01 million. Better yet, it helps ensure that every app meets the right service, security, and compliance levels, no matter whether it's made by your most experienced programmer or a brand-new citizen developer.

Non-compliance costs companies an average of **\$4,005,116** in revenue losses over a 12-month period. Even though the amount spent on compliance technologies **increased by 36% from 2011 to 2017**, non-compliance costs have **increased 45% since 2011**.

Trend 3: Accomplish more, more meaningfully

Low-code tools will be a key trend throughout 2022, but it won't end after H2. Revenue from the global low-code market is expected to increase from \$10.3 billion in 2019 to \$187 billion by 2030, and businesses that don't adopt low-code will get left behind.

One result of low-code tools? A workforce with more time to focus on meaningful and complex work. Over the next three years, global executives expect automation to increase their workforce capacity by 27%. That's the equivalent of hiring 2.4 million extra employees—and thanks to those new "virtual" employees, your real employees will benefit from more meaningful jobs and less tedious tasks.

Thanks to automation, organizations have the chance to eliminate unstimulating tasks, speed up project delivery time with instantaneous collaboration, and create a culture of innovation where people can tackle meaningful work, and everyone gets to innovate with experimental "sandboxes."

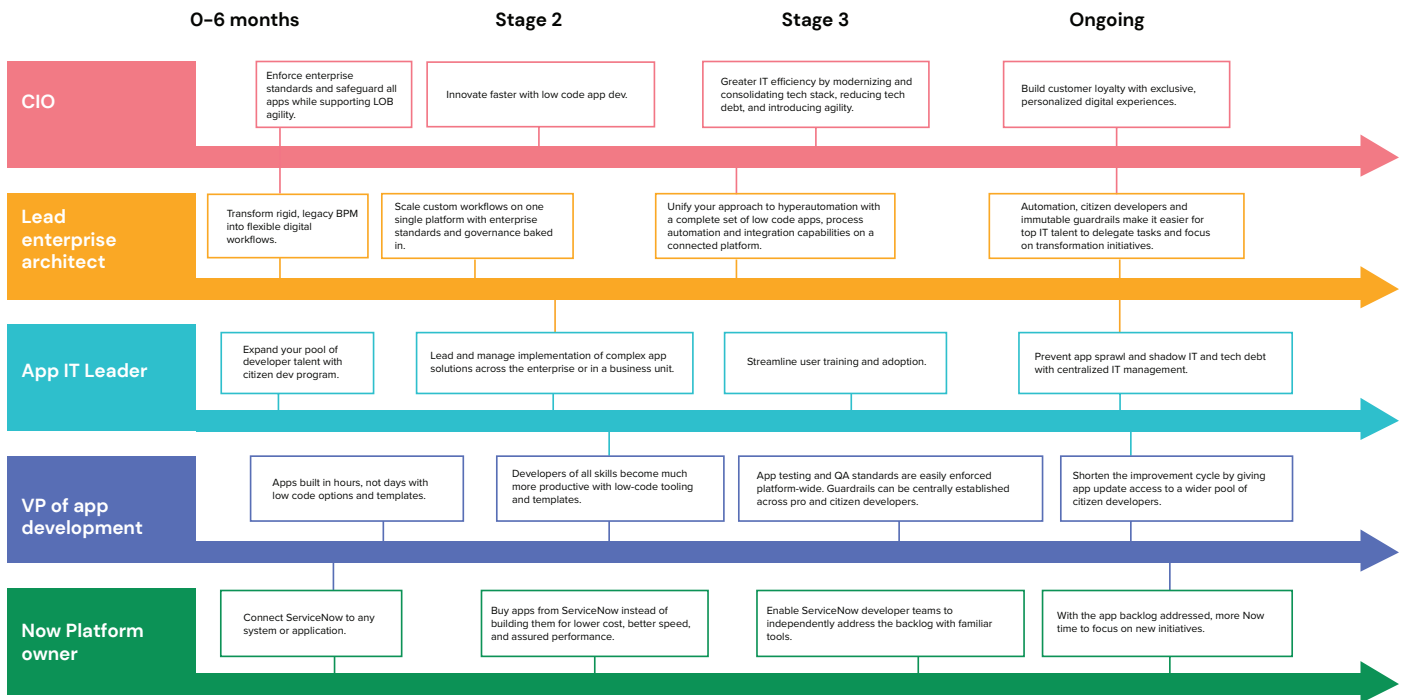
But transformational IT is not a foregone conclusion. You need to position your IT organization for success. That means putting the right tools in place for your IT teams to help them get the work done efficiently and brilliantly. With the core IT tasks covered via automation and continuous feedback to optimize processes, your teams can prioritize work proactively and create digital offerings that fuel the business.

Only then can your teams accelerate software innovation across the enterprise through the at-scale adoption of leading-edge architectures and delivery practices. Plus, you can support a much bigger, broader technology landscape by identifying and seizing opportunities to cut costs, reduce risks and optimize portfolios.

And when you can do all of this, you'll drive the future of the business.

Roadmap to optimization

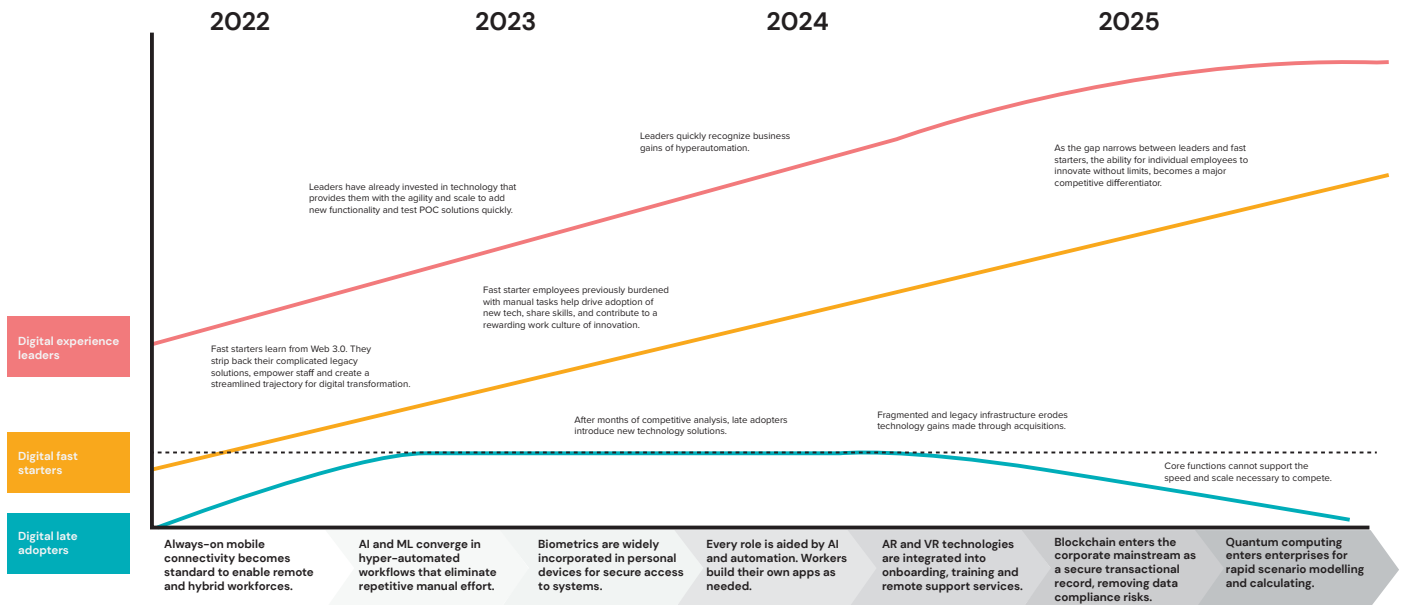
One small step for you, one giant leap for your business. It's as easy as one, two, three. This roadmap shows the path forward for your organization, and your role in it. See what business imperatives will matter most and how you can collaborate with peers to achieve your goals. It's a team effort, and here's the playbook.



Welcome to the future

Digital leaders will need to keep pace and thrive as new technologies are adopted across the enterprise. But not everyone is a Google or an Amazon.

Most companies will take one of two approaches: they work to catch up as quickly as possible, or they wait to see what everyone else does first. Fast starters have the chance to catch up to the industry leaders over time, as they innovate and carve out market space. Late adopters, on the other hand, won't have the right foundations in place to keep up—and in tomorrow's marketplace, they'll fail. Here's a quick look at how digital leaders, fast starters, and late adopters will fare in the next few years, along with a few key milestones.





For the VP of app development

Trending Challenges

In the red with tech debt

Maintaining apps and responding to critical events is already a large task. Add in a few months or even years of app backlogs, and you're stuck with a heap of problems: Piled-up update requests, glitchy apps, and limited resources to help the business achieve its strategic priorities.

Worse still, developers who spend their days playing catch-up are likely to get bored or frustrated. As we saw during the pandemic, workers are getting burned out and leaving jobs at record rates. In cases like this, providing interesting and strategic work isn't just valuable for the value work provides—it's key to retaining top talent.

Fumbling for visibility

Like driving at night without headlights on, lacking a centralized view into your IT environment is a bad idea. A centralized monitoring system is essential to viewing operational status, checking integration help, and leveraging SAP data to take action. Furthermore, low visibility can result in problems like cybersecurity concerns, app sprawl, and a general lack of guardrails around app development—guardrails that are critical to ensure compliance and keep customer data safe, which is more important than ever with the increase in citizen developers.

A lack of visibility isn't just inconvenient. It can lead to major costs for your company.

Disconnected... well, everything

Random app development strategies lead to disconnected processes, a disconnected user experience, and silos all around. It leads to an unsustainable increase in the complexity of the app landscape for you and an inconsistent experience for customers and employees alike. And in an age where people have less and less brand loyalty, a disconnected digital experience could cause you to lose both customers and employees.

Another consequence of disconnection? Even more app backlog and technical debt, which feeds into the second challenge. It's a vicious cycle, but thankfully it can just as easily become a virtuous cycle.

Opportunities

Lead the way with new ways of working

Post-pandemic, people work differently. Teams take an agile approach to projects, and apps need to follow their lead. Apps should be quick to build, easy to scale, and, most importantly, high-caliber from day one. Business-critical apps that departments and teams depend on need to be reliable 24/7.

Imagine what always-on, agile, high-quality apps would do for your team. No more app sprawl or backlog. No more playing catch-up. Instead, there'll be time to focus on innovating and creating new initiatives. Time to focus on creating proof-of-concept apps and production deployment of business apps at scale. Time to work on cutting edge technologies. Time to guide future IT investments and play a more meaningful strategic role in the business. It's a win-win for everyone involved—the enterprise, your team, and you.

Level the playing field

No matter what their skill level is, developers can be more productive with low-code tooling. Whether they're a civilian or a pro, easy-to-use features and tools let developers create enterprise-grade apps in a fraction of the time. Making coding more accessible benefits everyone involved, but it's great for top talent in particular. When simple tasks can be tackled by civilian developers, the pros get to focus on complex, more rewarding work.

And if you need another reason to embrace low-code apps, here's one more: Working from a single low-code platform means that enterprise-quality standards and governance can be baked in to prevent compliance issues before they start. Plus, it lets you use shared databases and sources to provide a consolidated view of app activity.

Set the standards, and keep them high

Enterprise standards are going up globally, especially as customer and employee expectations are going up and more countries introduce legislation to protect customer data and privacy. Now's the time to establish and maintain high-quality development standards across the enterprise.

Establishing consistency is the first step. Digital transformation is a journey, and business doesn't stop in the meantime. Introducing and enforcing compatible development foundations makes it easy to keep the organization running as usual while moving to cutting edge SaaS.

Once you've got the standards set, you can raise the bar to make sure you have the best-quality apps possible. In addition to safeguarding all of your apps, helping with compliance, and ensuring that end-users have a good experience, it'll also help the organization be more agile and responsive to changes. Enforcing high standards keeps you ahead of the competition in a world that's increasingly reliant on digital operating models.

Make things easy with

Pre-approved templates, prebuilt workflow components, and out-of-the-box experience features.



For the chief information officer

Trending Challenges

Backlog, backlog, and more backlog

It's not news that the pandemic changed the way businesses operate. No more silos or outdated metrics—thanks to the digital revolution, the emphasis is on speed, data, and dynamic insights. But it's hard to focus on implementing forward-looking strategies when you're just trying to keep your head above water.

As tech debt and integration backlogs pile up, it's crucial to fix it quickly and move to more strategic initiatives, but there's a catch: It takes valuable time and resources to tackle the backlog, and those resources are also needed to address other critical directives. The question is, what matters most?

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No system (should be) an island

Islands of automation. A fragmented vendor landscape. Integration platform sprawl. Automation tools and enterprise architecture clashes. Increasing tech debt. Those are just some of the many complexities IT has to deal with on a regular basis. And it's not just IT that suffers—it can lead to inconvenient experiences that erode the customer base and create unnecessary tasks and frustration for employees.

Fixing disconnected systems isn't always easy. Overly complex systems can require manual processes, creating barriers to automation. But by not fixing them, data remains siloed and customers and employees alike have a poor experience.

Ever-changing responsibilities

CIO's role is changing. Now, they're becoming stewards of digital technologies and platforms, and their new job is to better empower business units.

But that's no simple task. CIOs need visibility across the organization as a whole. They need accurate and integrated information, not data siloes. After all, what good is a strategy if it's based on incomplete or inaccurate information?

To partner with the business, they need the right platform: one that can provide both a sweeping view and a granular one, and that supports collaboration across departments and teams.

Opportunities

Minimal risk, maximum reward

Want to up-level your organization's capacity for innovation? Low-code tools let everyone be creative, whether they're a top tech developer or just figured out how to hit mute on video calls. With a flexible, integrated development environment, anyone can build an app easily—without getting stuck on unnecessary restrictions, dead ends, or low-value manual tasks.

Even more importantly, they can do it with guardrails that ensure compliance and cross-compatibility. You don't have to risk compliance for creativity. With low-code tools, organizations have the opportunity to build a culture of innovation and accomplishment for all, with minimal risk.

And increased innovation isn't the only benefit of low-code tools. They also let teams address backlog and tech debt with minimal risk and maximum ease. Now, business units have the tools to advance their individual remits—without compromising standards and core systems.

Building bridges across the organization

If we learned nothing else during the pandemic, it's the importance of convenience and collaboration. In most cases, that meant that businesses shifted to largely digital operating models. But even though it was disruptive at times, the transition unlocked new opportunities, including an increase in fusion teams, collaboration across departments, and business unit empowerment.

All of which means that collaborating needs to be simple and convenient, even across teams and time zones. Just as B2C businesses prioritized ease during Covid-19 by offering contactless delivery and other services for customers, organizations should prioritize internal convenience by making it easy for employees to work together, no matter what.

The lesson is clear: Collaboration is king, and digital operating models are the best way to deliver.

Innovation at the speed of light

Frictionless automation. Does that sound too good to be true? It's not anymore. You can unify your approach to hyperautomation with a single platform that offers a complete set of low-code apps, process automation, and integration capabilities. Pre-built workflow patterns and templates are designed to automate the ways people work, making the process simple for everyone, from developers to end users.

The result? Empowered business units. This is a golden opportunity for CIOs to provide a platform for innovation and streamline success with technology.

Oh, and when we say that a single platform lets you innovate faster, we don't mean that it helps you work a little faster. We mean that it's four times faster.

The new normal

- Convenience at the click of a mouse
- Increased customer loyalty
- The right experience for the right person at the right time
- Enterprise prepared for anything



For the lead enterprise architect

Trending Challenges

The need for speed, the right way

Organizations need to be able to scale at speed, and creating new apps and implementing hyperautomation are key to this goal. But there's a catch. Any new and potentially disruptive system requires careful preparation for change management. Fast implementation is jettisoned in favor of planning.

It's not just a hassle for IT. End users get stuck with out-of-date applications when the process is slowed down. Time to value is prolonged. And when an organization can't easily scale or implement new systems, its competitiveness declines.

In other words, it's critical to simultaneously work at speed and make sure new changes roll out smoothly.

App sprawl everywhere and tech debt galore

Low-code platforms are easily accessible. In this case, it's both a blessing and a burden. Not all platforms are capable of oversight during the development life cycle. To make things even more difficult, non-IT units might build their own tools, bypassing IT completely. The result? Unwieldy app sprawl and a shadow IT system.

When app sprawl isn't managed, it can lead to duplicated efforts, inefficient deployments, and growing tech debt. And with compliance issues alone costing organizations approximately four million dollars on average, having oversight into your apps and setting up guardrails to prevent these issues is critical.

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Outdated legacies

It's a tale as old as, well, coding. You implement a system to make things work more smoothly, and it does its job. But as time passes, the environment shifts. People, processes, and technology have all learned and changed. The legacy system, on the other hand, hasn't changed. It's static, and now it's increasing your IT costs. It's making it more difficult to digitize, implement automation, and update your services. It contributes to your organization's tech debt. And worst of all, it can lead to a loss of market share if it prevents you from keeping up with your competitors.

When an organization can't easily scale or implement new systems, its competitiveness declines.

Opportunities

Do IT a solid to pick up the pace

Want to increase IT's efficiency and job satisfaction in one fell swoop? There are plenty of ways, but they all boil down to one simple thing: Make things easier for them. Automation, citizen developers, and immutable guardrails let top IT talent delegate the simple tasks and focus on what really matters: Modernizing the organization for future-ready resilience. And in the process, you'll stay a step ahead of the competition by enabling fast, reliable, and sustainable digital transformation.

As an added bonus, this will attract new talent and help the organization retain the best of the best by keeping them interested and helping them provide value to the whole organization.

Set up safeguards for safe play

It's one thing for something to be simple. It's another thing entirely for it be good. Thankfully, you don't have to worry about that tradeoff when you put QA standards and guardrails on your app development process.

Because of better low-code standardization and enterprise-wide policies and governance, citizen developers can create apps without, say, making something incompatible, or accidentally affecting other apps. Having the right parameters and controls gives you the best of both worlds: Empowered citizen developers and a risk-free environment for them to build in.

And in case you needed another benefit, having these systems in place helps prevent app sprawl, shadow tech debt, and related risks.



For the app IT leader

Trending Challenges

A good developer is hard to find

Filling your team with top talent is essential for success, but during the pandemic, people left their jobs en masse. Good developers have never been so important, and the talent pool is smaller than ever.

The result? A whole host of undesirable outcomes, from app backlogs to unaddressed urgent updates. Organizations don't have enough capacity or technical talent to dedicate time and effort to building new systems or functions. It's a constant struggle to manage conflicting priorities with limited resources and a huge backlog of tickets to get through.

The good news: Citizen developers are becoming more and more common, and can help tackle the easy fixes while your top talent works through the complex issues.

Driving with a foot on the brakes

Too-slow drivers can be infuriating. Unfortunately, they're not confined to the roads. When business units are forced to move at sloth speed when driving digital capabilities forward, everyone loses.

For App IT leaders, slow responses are a key issue. Business units from HR to procurement need improved digital capabilities, and they need them now. Gathering speed and finding ways to innovate faster than ever is going to be one of IT's top challenges—and it'll be a particularly critical one to meet. Modernizing systems has to be at the top of the to-do list.

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Old-school systems

Disconnected, siloed, inflexible: Those are just some of the ways to describe legacy technology. Tactical, one-off technology decisions might have worked well at the time, but now they're blocking interoperability. Without integrated systems and functions, employees and end users experience siloed and inconsistent user experiences. Put simply, inflexible legacy platforms can stop modern-day digital transformation initiatives in their tracks.

The good news is that it's fixable—and once unhelpful legacy technologies are out of the way, your organization can provide a better experience for users and a highly competitive work environment for top developers.

Tactical, one-off technology decisions might have worked well at the time, but now they're blocking interoperability.

Opportunities

Build apps in hours, not days

Traditionally, building apps involved a steep learning curve. They took a long time to build, and even longer to learn how to do it in the first place. That's not the case anymore. Low-code out-of-the-box options and pre-approved templates make it fast and easy for anyone to build an app. Instead of taking days or even weeks to develop an app, it now takes hours.

And now that it's easier to make apps, anyone can stretch their creativity and build a proof-of-concept app that adds value to the organization. Low-code options bring a culture of innovation to the entire company, making it easier to attract and retain talented employees.

Best practices, at lightning speed

Now's the time to fast-track innovation. Create quick routes to innovation and updates, improve response times, and pool best practices to eliminate repetitive efforts and apps. Increase the speed and efficacy of digital transformation initiatives. Work to make your organization more digitally mature and watch it supercharge your strategic business goals.

The opportunity for innovation and expansion is massive. By taking advantage of it, the organization as a whole—from your top talent in IT to the employees who no longer get stuck with a pile of repetitive work—will benefit hugely. Your customers get just as much out of it. When you expand and grow, you get ahead of the competition. talented employees.

Quality for all

Your employees and customers deserve the best, which makes it essential to deliver apps your organization can rely on. By using a single platform of record and action, it's easier than ever for users to adopt new, high-quality apps with minimal training, or even no training at all. ERP workflows can be easily united with niche solutions. And with guardrails in place for quality assurance, a wider pool of citizen developers can handle updates and shorten the improvement cycle, which lets your top talent focus on more engaging strategic work.

The results? Quality applications. Quality assurance for IT. And a quality experience for everyone involved.

Instead of taking days or even weeks to develop an app, it now takes hours.



For the Now Platform owner

Trending Challenges

The clock's ticking on complexity

Delivering new features is essential. But the problem is, it can cost too much money and take too much time. Even when the resources are available, problems tend to stack up. General-purpose integration and automation platforms use too many specialized resources, due to industry-specific use cases. It's unnecessarily complex, time-consuming, and frustrating for everyone involved. Worse still, it might lead to the organization getting behind the curve and losing market share.

It's clear that general-purpose platforms won't always cut it, and as we've learned during the pandemic, a seamless digital operating model is crucial. It's time to switch to something better.

General-purpose integration and automation platforms use too many specialized resources.

Too many priorities, not enough resource

Your teams have been champions over the last two years. Moving to remote working models, working in isolation, picking up the slack from ill or resigning colleagues, all while learning to live through a deadly pandemic. Employees have been superheroes.

But they're exhausted superheroes. They want to take off the cape. They want to go back to ways of working that weren't crushing them. And they need automation to take over the manual parts of the job, so they can provide superhuman results without superhuman effort.

"Where's that thing again?"

Integrating new features with disconnected critical situations is a large task, and any delays have consequences. Unfulfilled requests from ServiceNow stakeholders can contribute to the backlog. And in the meantime, manual, repetitive tasks don't get automated, because no one has the time.

One result of this? Employees don't know where anything is. They spend an inordinate amount of time looking for information and apps, requesting access, and trying to figure out how to accomplish tasks that should be simple. Delays like this are detrimental to employee satisfaction and lead to lost productivity. It's also a lost opportunity to learn, grow, and focus on more meaningful work.

Employees don't know where anything is. They spend an inordinate amount of time looking for information and apps, requesting access, and trying to figure out how to accomplish tasks that should be simple.

Opportunities

It's a buyers market

There are a lot of benefits to building your own apps. But sometimes, you just want something quick and inexpensive that you know is going to work out of the box, and in those cases, buying is a great option.

Taking a modular approach means you can create a uniquely configured workflow while getting away from the pain of trying to customize a platform. Instead of building and maintaining on existing general-purpose platforms, you can take advantage of packaged integration and automation from ServiceNow. Plus, buying apps lowers TCO and shortens time to value, compared to building apps from the ground up.

Better speed, lower cost, assured performance, and less effort for you and your developer teams. What's not to like about that?

Integrate everything without leaving the platform

Yes, everything. Instead of trying to force incompatible systems and apps work together, you can connect them through the Now Platform and let it do all the work. The platform provides data integration, API integration, and process automation, letting you work faster and more efficiently. It's got the most complete set of integration and automation capabilities for modern and legacy systems for ServiceNow use cases, so you can take advantage of intelligent routing and streamlined workflows. And it gives you invaluable visibility into the organization as whole.

In other words, using the Now Platform's native integration capabilities makes things simpler, faster, and more efficient for everyone involved. And best of all, it lets you and your team work on the things that really matter. developers spent their time on other projects.

Build more, build better, and build with autonomy

How much easier would life be if ServiceNow development teams could independently address the backlog? With low-code tools, you can find out.

No matter what their skill level, teams can address issues themselves with an abundance of useful tools. But the tools themselves aren't as important as the outcome. Empowering development teams to independently address issues gives them agency and lets top developers spent their time on other projects.

And increased independence isn't just limited to developers. By implementing an organized, searchable Knowledge Base, employees can have more autonomy with better documented processes, quickly find what they need, and leverage work done by others in the organization more easily..

For civilians:

- Flow designer
- Virtual agent designer
- App engine studio

For pros:

- Action designer
- RPA studio

Eliminating friction to accelerate success at Argonne

Argonne National Laboratory brings together talented scientists and engineers to answer the biggest questions facing humanity. With such an ambitious mission, it's only reasonable that the organization sees digital transformation as key to its ongoing success. According to Cathy Kirch, ServiceNow Senior Business Analyst at Argonne, "We want to accelerate our entire organization by providing a frictionless environment for our people. That means creating a consistent, intuitive employee experience and giving our researchers and staff instant access to the services they need."

By using out-of-the-box ServiceNow capabilities and augmenting these with custom apps, Argonne is creating a comprehensive, streamlined service delivery environment. Their service-oriented transformation strategy is already making a positive difference.

"As we move more services to ServiceNow, we're creating a one-stop shop — everything our people need in one place," Cathy explains. "Even if they've never used a service before, they know exactly what to expect, even if it's a custom app. For example, we're using standard ServiceNow scheduling components for our custom apps, so scheduling always works the same way."

While Argonne has made major strides, it's only just started to tap into the full potential. As Cathy says, "We've had huge demand for new custom ServiceNow apps. In fact, there are 165 apps in the queue. And with so many people offsite now during the pandemic, ServiceNow is the glue that keeps us working together. We're even building an app to schedule COVID-19 vaccinations — that's a real-world example of how we're making a difference that matters."



- **100** Project, 29 agile, 64 change, 34 demand fields retired
- **1** Year to complete 10 epics, 221 stories, and 3 major releases
- **5** Separate division flows reduced to 1 common enterprise

Sunny days ahead

Citizen developers, faster and easier innovation, lowered compliance risks, more meaningful work: Despite the challenges the new year brings, the future looks bright. All around the world, organizations are getting ready to work smarter. To empower their employees be creative, more independent, and fulfilled. To provide the best possible experience to all of their customers, no matter what.

In other words, it's going to be a good year.

Interested in learning more about the future of app development and automation?

Take a look at this resource. [Let's go>](#)

LET'S TALK

Ready to find flow?

Windward helps companies create an IT operations strategy that connects your vision to a roadmap for success. If you'd like to learn more and discuss a strategic IT Ops plan for your organization, feel free to email us at info@windward.com or go to www.windward.com.