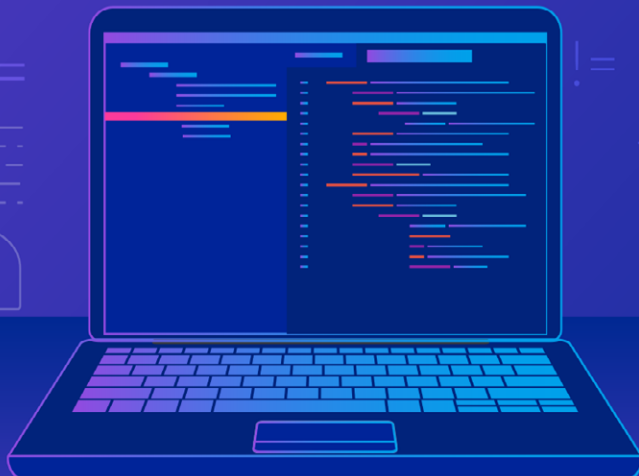**Progress®**

Low-Code Platforms: What Developers Think and Why

A Progress survey of 5,565 web and mobile application developers reveals their daily challenges and how low-code app development platforms could help.

WHITEPAPER

Executive Summary

Increasing business demands for modern multichannel applications to drive competitive advantage is creating tremendous pressure on development teams to produce more apps, which in turn keeps businesses on a constant search for developer talent to meet the demand. In response, high productivity application development platforms are growing in popularity to accelerate delivery of business applications, both internal and customer-facing, to deliver better customer experiences.

Progress (NASDAQ: PRGS) recently surveyed 5,565 web and mobile application developers to explore how development teams are delivering innovation, their challenges, and how those professionals feel about low-code platforms that are being increasingly relied upon by organizations. Low-code platforms are evolving to increase developer productivity, but there is still some confusion distinguishing between low-code platforms for professional developers that streamline and simplify their work, and no-code platforms for "citizen developers," enabling them to build functional but limited apps without having to write code.

The critical questions this survey seeks to answer for application strategy leaders include:

1. How are professional web and mobile dev teams organized across industries?
2. What talent is delivering these apps and what are their preferences?
3. What are the biggest challenges in app delivery according to pro developers?
4. How do existing pro developers feel about low-code strategies?
5. Where are the opportunities to improve application development strategies?

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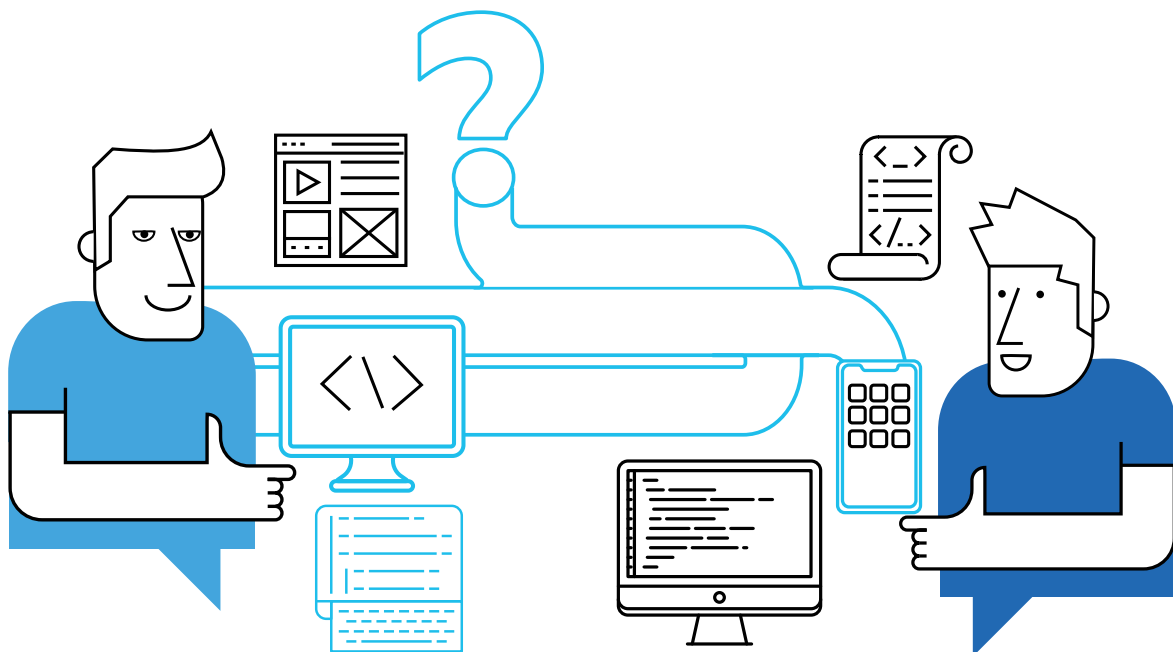
Breaking Down the Numbers

5,565
SURVEY PARTICIPANTS

WEB DEVELOPERS
4,944 RESPONDENTS

MOBILE DEVELOPERS
621 RESPONDENTS

47% | 37%
NA

31% | 33%
EMEA

19% | 27%
APJ

4% | 3%
CAL

Role

Developers
IT/Application
Managers
Support Engineers
Architects
CxOs
Other

Industry

IT Services
Technology Company
Financial Services
Retail/ecommerce
Healthcare
Education
Manufacturing
Government/Military
Telecommunications
Other

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The Demographics—Who We Talked to and What They Do

5,565 survey participants

Roles

Web Developers	Mobile Developers
4,944 respondents	621 respondents
68% Developers	58% Developers
9% IT/Application Managers	10% IT/Application Managers
7% Support Engineers	9% Support Engineers
7% Architects	6% Architects
1% CxOs	1% CxOs
8% Other	1% Other

Industries

Web Developers	Mobile Developers
IT Services **27%**	IT Services **30%**
Technology Company **20%**	Technology Company **25%**
Financial Services **10%**	Financial Services **7%**
Retail/ecommerce **7%**	Retail/ecommerce **6%**
Healthcare **7%**	Healthcare **7%**
Education **5%**	Education **5%**
Manufacturing **4%**	Manufacturing **3%**
Government/Military **4%**	Government/Military **2%**
Telecommunications **3%**	Telecommunications **3%**
Other **12%**	Other **13%**

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Geographies

Web Developers	Mobile Developers
North America **47%**	North America **37%**
EMEA **31%**	EMEA **33%**
APJ **19%**	APJ **27%**
Central/South America **4%**	Central/South America **3%**

Cross-Platform Application Development: Who Does What?

Among our 5,565 respondents, more than half of the teams are not delivering across platforms. It's more common for a web developer to work on a dedicated web team than for a mobile developer to work on a purely mobile development team. Only 43% of respondents who are web developers also tackle mobile application development. Among the mobile developers, 64% say their team also develops web apps.

Web and Mobile Developers **Does your team develop both web and mobile apps?**
Yes **45%**
No **52%**
Unsure **3%**
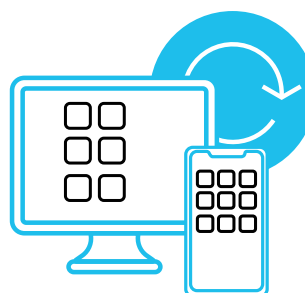
There's an immediate opportunity for web developers to leverage cross-platform strategies to increase their productivity. There are technologies—many open source—to enable developers to meet increasing demand, without completely disrupting your organization's capabilities.

Dedicated web app teams shared reasons they do not deliver mobile apps

"Large enterprise requires a separate team for mobile app development."

"Developer's specific specialty [is] for mobile infrastructure."

"It's outsourced."

"No need since app is internal."

"Unsupported by current infrastructure."

The Apps They Build and the Tools They Use

The survey data shows that external-facing apps are more commonly delivered than internal LOB apps. That distribution is even greater for mobile-specific teams. Developer control over the user experience becomes critical in this class of applications.

What types of web apps do you build?	What types of mobile apps do you build?
Commercial product—**45%**	Commercial product—**31%**
Consumer websites—**42%**	Consumer mobile apps—**49%**
Internal LOB—**39%**	Internal LOB—**22%**
None—**6%**	None—**14%**
Unsure—**2%**	Unsure—**4%**
Other—**5%**	Other—**5%**

What frameworks, libraries and tools do you use? (JavaScript frameworks)

For cross-platform development, Angular 1.x and 2+ are the most popular JavaScript frameworks in enterprise development, followed by React. When looking at larger organizations with more than 500 employees, the percentage of web developers building on Angular (2+) is 44%, AngularJS (1.x) is 45%, React is 38% and Vue is 29%.

Web Developers	Mobile Developers
jQuery—**56%**	jQuery—**45%**
Node.js—**35%**	Node.js—**45%**
Angular (2+)—**26%**	Angular (2+)—**34%**
AngularJS (1.x)—**19%**	React—**28%**
React—**18%**	AngularJS (1.x)—**22%**
Vue.js—**8%**	Vue.js—**10%**
Other—**13%**	Other—**7%**
None—**5%**	Unsure—**5%**
Unsure—**2%**	None—**3%**

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There's an immediate opportunity for larger organizations to enable existing JavaScript, Angular and Vue developer teams to deliver native mobile apps faster by using NativeScript, an open source framework that allows significant code reuse between web and mobile tiers. For React developers, React Native is the equivalent cross-platform framework to NativeScript.

Cross-Team Collaboration

Responses to 'Who do you collaborate with?' indicated that the primary differences in team collaboration is around IT infrastructure and DevOps, which are 12% higher for web-first respondents as compared to mobile-first. Serverless architectures, popular with modern apps, limit the dependencies on dedicated DevOps and IT infrastructure teams, which may explain the contrast in how mobile-first teams are organized.

Both mobile and web developers consistently work with UX designers, further underscoring the need for developer control over the user interface. For the mobile-first segment, UX designers were the second most common collaboration team after project manager.

What other teams do you work with?

Web Developers	Mobile Developers
Project Manager—55%	Project Manager—51%
IT Infrastructure—48%	UX Designers—38%
DevOps—42%	IT Infrastructure—36%
UX Designers—37%	DevOps—34%
Enterprise Architect—26%	Enterprise Architect—18%
Security Architect—21%	Cloud Architect—18%
Cloud Architect—20%	Security Architect—17%
None—9%	None—15%
Unsure—2%	Unsure—3%
Other—2%	Other—3%
Average—2.8 other teams	Average—2.6 other teams

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The Big Challenge—Deliver More Apps and Do It Quickly

Survey respondents indicated that most development teams are being asked to deliver more than one web or mobile app over the next 12 months. Respondents answered on behalf of their immediate team, versus the entire organization. This represents a significant demand for apps being delivered by professional developers, with 57% delivering two or more per year. It's more than reasonable to conclude that the demand for apps will only continue to escalate—further stressing the capabilities of current development teams.

How many apps—web, mobile or both—will your team be asked to deliver in the next 12 months?

| Web and Mobile Developers Does your team develop mobile apps? |
| --- |
| 2-4 apps—**39%** |
| 1 app—**21%** |
| 5-10 apps—**14%** |
| None—**11%** |
| Unsure—**11%** |
| 11 or more apps—**4%** |

What Do Developers Need to Help Them Meet Demand?

Free text survey responses indicated that the need for faster application delivery doesn't vary based on company size in terms of employees or considering the number of apps to be delivered in the next 12 months. The two biggest "asks" to speed application development and delivery from both web and mobile developers were tools and platforms.

Delivering on increasing app requests to support growing digital businesses will be key for growth over the next 12 months.

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What would help you deliver apps faster?

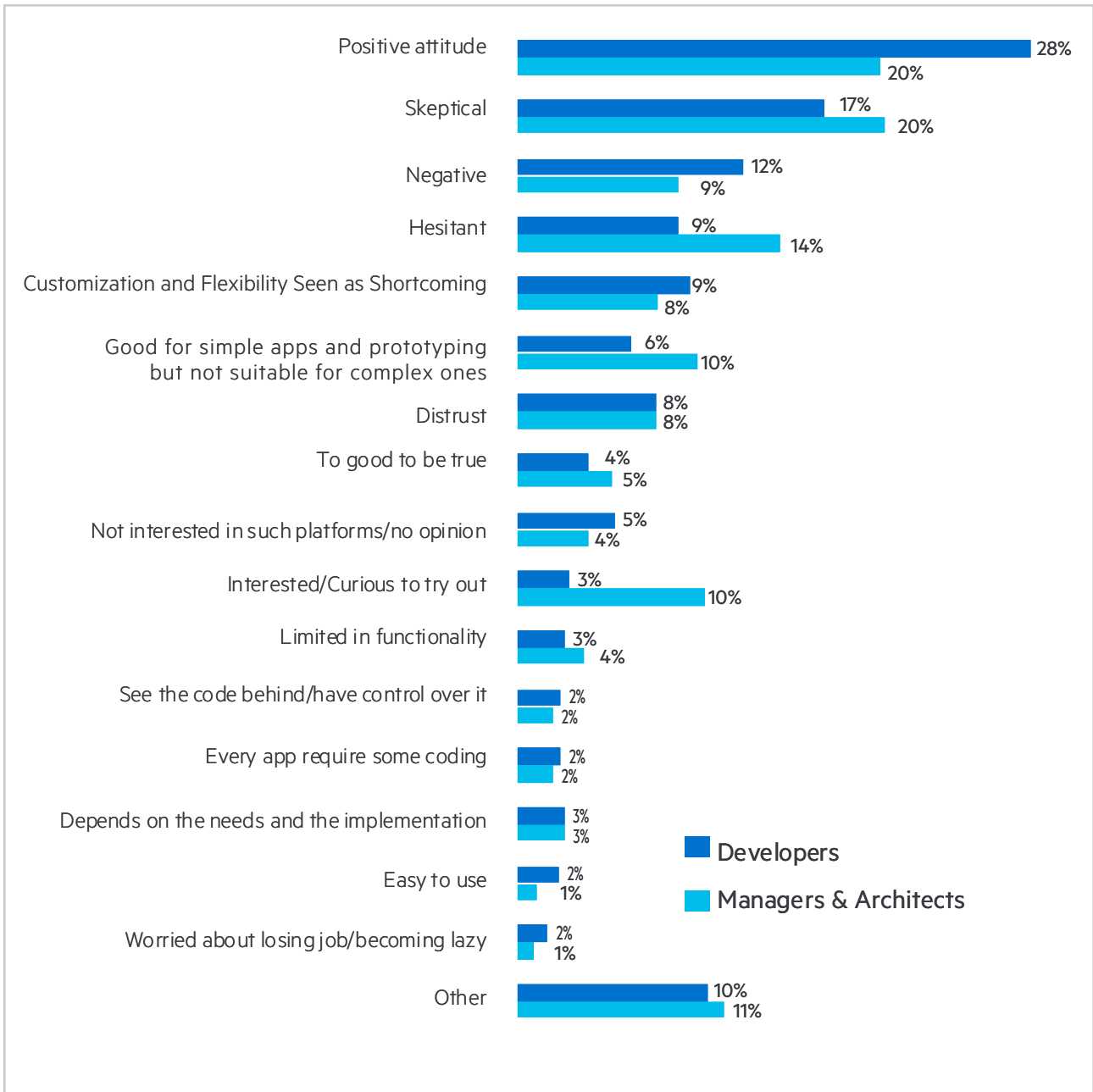|		
21%	●	Tools, general—UI, testing, debugging, etc.
9%	●	App dev platform/framework
8%	●	Testing tools/environment
8%	●	Debugging tools
7%	●	More staff
6%	●	Clear, unchanging requirements
6%	●	Documentation, tutorials, samples from vendors
5%	●	More experienced staff
2%	.	More time
2%	.	IDE
2%	.	Needs related to delivery, deployment, devops
2%	.	Low-code/no-code/predefined/drag-and-drop
2%	.	Needs related to CI CD
2%	.	Process automation
2%	.	Team communication/collaboration
2%	.	Process/planning/workflow
2%	.	Tools/platform/process integration
1%	.	Management of teams/processes
1%	.	API
1%	.	Security concerns
1%	.	Money/budget
28%		Other
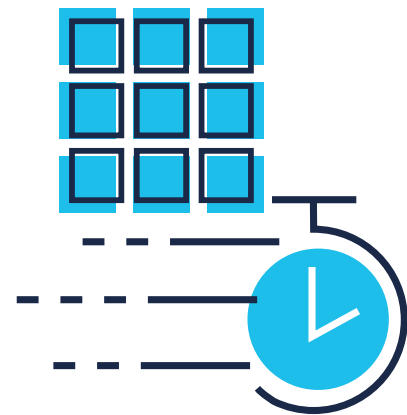
What would help you deliver apps faster?

"Common code for all mobile platforms with native UI support."

"Hybrid development platform that allows greater control of how code is generated."

"A vast selection of pre-built themes, templates, components that I can drag and drop, and customize."

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How do you feel about platforms that promise to deliver apps without coding?

Developers tend to be slightly more skeptical about no/low-code platforms than managers and architects, as illustrated below:

	Developers	Managers & Architects
Positive attitude	28%	20%
Skeptical	17%	20%
Negative	12%	9%
Hesitant	9%	14%
Customization and Flexibility Seen as Shortcoming	9%	8%
Good for simple apps and prototyping but not suitable for complex ones	6%	10%
Distrust	8%	8%
To good to be true	4%	5%
Not interested in such platforms/no opinion	5%	4%
Interested/Curious to try out	3%	10%
Limited in functionality	3%	4%
See the code behind/have control over it	2%	2%
Every app require some coding	2%	2%
Depends on the needs and the implementation	3%	3%
Easy to use	2%	1%
Worried about losing job/becoming lazy	2%	1%
Other	10%	11%

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An analysis of the free text survey responses looked at sentiment from developers, managers and architects and revealed that 67% of respondents felt negative about no/low-code platforms. Surprisingly, 28% of developers had a positive attitude, even though only 3% of developers expressed direct interest in trying a no/low-code platform. One possible explanation is that developers currently see these tools as targeting non-technical users and not as a potential part of their own development stack. In contrast, 10% of managers and architects were interested in trying a no/low-code platform.

When looking at more specific feedback, 13% of overall respondents were concerned about losing control of code behind black boxes and being unable to make customizations. They may share some skepticism with the 10% of overall respondents that felt this approach would be appropriate for simple apps.

Developers—How do you feel about platforms that promise to deliver apps without coding?

"They only work for simple applications and we write complex applications which we want to be able to control in detail."

"Can be useful for basic functionality—drag and drop flowchart kind, workflow kind of apps."

"It's hard to trust black boxes. A big part of confidence comes from testability…so [a no-code platform] could be useful if it supports test automation."

"Generally, they aren't flexible and fast enough for the enterprise integration needed. However, non-coding tools are desirable for prototyping and it would be great if they could code generate to start the building process."

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Conclusion

The business needs more consumer-grade apps every day, and time to market is crucial to remain competitive. Developers of all stripes are being asked to deliver more applications faster than ever before and they're calling for tools and platforms to help them keep pace.

Developer talent is scarce, so organizations need to enable the developers they have with tools and platforms and foster a culture that can retain and attract talent. Developer sentiment and extended application delivery teams should be considered when making top-down decisions on app strategy.

Explore the latest innovation from Progress around high productivity application development suitable for the full range of professional developer sentiment:

> Progress® Kinvey™ is a high productivity app platform for professional developers that delivers low- code development processes on a serverless architecture, built-in microservices frameworks, out of box enterprise integrations, intelligent offline capabilities, cloud cache and security. Developer control is powered by NativeScript®, an open source framework for building cross platform native mobile apps with Angular, Vue.js, TypeScript, or JavaScript.

To learn more about how organizations are leveraging their existing developer talent to accelerate business-critical app innovation, please contact us.

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