Empowering citizen developers through Pega's low-code factory approach

PEGA®

The promise and pitfalls of citizen development

Demand for underline professional developers far exceeds the availability of skilled talent.[1] At the same time, working professional developers spend a majority of their time maintaining legacy code. As competitive pressures push businesses to become more agile, more personalized, and digitally accessible by using modern technologies, business units from human resources to operations to sales to marketing are increasing demands on enterprise IT organizations. Is it any surprise that IT capacity bottlenecks are a major issue and that IT leaders feel constant pressure to manage backlogs?

The idea of using low-code application development tools to empower business users is tremendously appealing – especially in a world where IT capacity is a competitive advantage and demand for IT resources from business units is significantly greater than IT's ability to meet that demand. It's also why the term "citizen development" is becoming more commonplace in the enterprise.

But what exactly is a citizen developer? In Gartner's view, "A citizen developer is an employee who creates application capabilities for consumption by themselves or others, using tools that are not actively forbidden by IT or business units. A citizen developer is a persona, not a title or targeted role. They report to a business unit or function other than IT."[2]

As a strategic approach, there is certainly significant promise in the democratization of IT capacity. But there are also pitfalls.

Just because citizen developers are using tools that are not actively forbidden by an organization doesn't mean that business and IT are aligned. In fact, it's tempting for business units to license citizen development tools directly, without including IT in the process at all. Therein lies the challenge. When business and IT are not aligned, a citizen development program can frustrate business users while actually increasing demand on IT and exposing businesses to risk. Active collaboration and cooperation with IT are key to a successful citizen development program.

Benefits of business and IT collaboration

- **Better outcomes** for all stakeholders

- **Reduced spend** from redundancy and lost economies of scale

- **Decreased security risks** from misconfiguration

- **Better regulatory compliance**

- **Increased communication and cooperation** across departments

- **Reduced potential for shadow IT**

- **Busted data silos and increased agility** for responding to threats and opportunities

- **Reduced maintenance problems** from orphaned apps

Citizen development done right
Pega's low-code factory approach to citizen development

Not all approaches to citizen development are created equal. It is important to understand that by itself, a low-code platform is not a guarantee that an organization will realize the promise of citizen development. Such platforms are only tools; and as tools, they are only as effective as the organizations that govern them.

Pega's low-code factory approach is a holistic view of what it takes to successfully leverage citizen developers to create departmental applications. Choosing the right technology is important, but more important are the people and processes the technology supports. In fact, Pega's approach works because the values and best practices for successful citizen development are not isolated but embedded within the technology itself.

The purpose of this eBook is to provide an overview of Pega's approach to citizen development. In it, you will learn:

✓ Keys for readiness
✓ Elements for success
✓ Program organization
✓ Use case qualification
✓ Ways to scale the program

Pega's low-code factory approach to citizen development allows business users to increase their productivity – by empowering them to quickly and easily build and automate workflows in a way that relieves IT backlogs and limits risk.
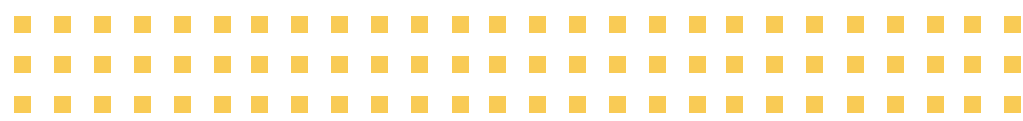
Are you ready for citizen development?

Many of the risks associated with citizen development come as a result of thinking of it as merely a technical solution. In order to realize the full promise of citizen development, it needs to be thought of holistically in a way that considers people and process in addition to technology.

Pega's low-code factory approach to citizen development understands that enterprise IT's existing level of maturity in solving complex, mission-critical problems with low code is a precondition for success. IT leaders experienced in low-code app development can guide citizen developers with the best ways to solve simple business problems.

How do you know if your organization is ready to incorporate citizen developers into your application development process? Assess your preparedness with these questions:

1. **Is there a need for citizen development?**
   Are you experiencing issues with IT capacity? Is there demand from the business to automate highly manual, repetitive processes? Are business users turning to unsanctioned tools to solve low-complexity process automation?

2. **How mature are you in your use of low code within enterprise IT?**
   Are you successfully using a low-code platform to solve complex, critical problems? Do you have an established center of excellence governing the use of low code (either in-house or via a third party)? Do you have access to trained professional developers that can create integrations and other shared components that citizen developers will need to succeed?

3. **Are business users and IT ready to work together?**
   Do you have an executive champion for your citizen development program? Are business users and IT aligned and committed to working together to realize the promise of citizen development?

"In order to realize the full promise of citizen development, it needs to be thought of holistically in a way that considers people and process in addition to technology."

The elements of a citizen development program

People | Process | Technology

Establishing a strong foundation at the outset is essential to the success of any program. For a citizen developer program, that foundation is the right people, processes, and technology.

The right people

Establish a community of practice that clearly defines the roles and responsibilities of persons involved in a citizen developer program: practice managers – typically from IT, makers (the citizen developers), coaches, and professional developers. These people are an essential part of the onboarding and app qualification process and collaborate toward the program's success. A community of practice also promotes an ongoing and sustainable approach to education and enablement, which will decrease the amount of effort required to maintain your program over time – even as it grows.

The right processes

A community of practice helps ensure that apps are properly qualified and makers are provided with the tools they need to be successful. Effective processes promote scale through coaching and reuse, and provide a path for graduation in cases where apps become complex and critical enough to warrant full ownership by IT.

The right technology

The best tech for citizen development complements the range of people and processes within your program. Pega's App Studio, for example, gives makers access to a powerful and easy-to-use environment for creating intelligent workflows. And in Pega App Factory, makers are provisioned a development environment that enforces compliance with security and brand guidelines, fosters collaboration, encourages reuse, and promotes best practice according to skill level.

The right people
Establishing your community of practice

The purpose of a community of practice is to offer a lightweight governance structure that focuses as much (if not more) on enabling citizen developers as it does on enforcing compliance with technical requirements. Practice managers play an important role, supporting makers and coaches as product owners and subject matter experts who work to strike a balance between business interests and IT concerns.

As product owners, practice managers define the integrations that need to be made available to makers, then work with professional developers via the center of excellence to prioritize their creation. They also work with makers to understand and address pain points of the low-code factory program overall.

As subject matter experts, practice managers represent the IT teams that build and maintain corporate applications. They conduct architecture and design reviews to ensure that data security and integrity are maintained. And they have an excellent view of the enterprise IT landscape, which allows them to avoid the unnecessary duplication of existing capabilities in maker-developed apps.

Because the enforcement of technical guardrails should be automated by the low-code platform itself, practice managers focus more on driving business value and lowering barriers to entry than on monitoring code quality. While the ratio of practice managers to makers may be high at first, that ratio will decrease significantly over time as makers become more experienced, the integration library becomes more complete, and more coaches are onboarded.
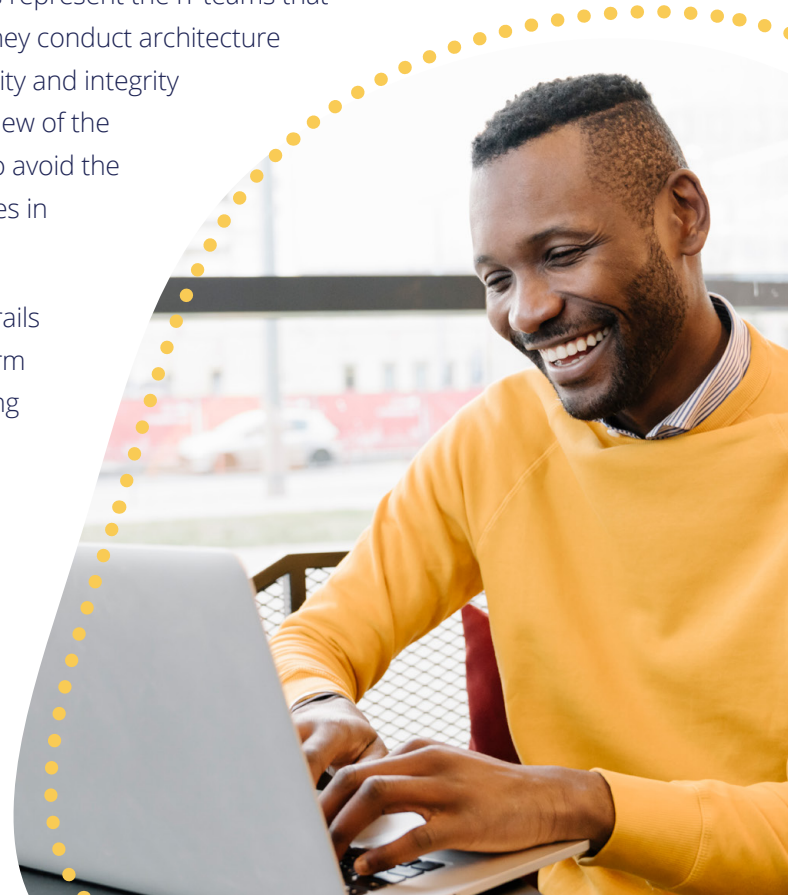
Common roles in a low-code factory approach

Makers: A non-professional developer who uses an enterprise low-code platform to create and modify applications or application workflows. *Maker* is a term specifically used within a Pega App Factory community of practice as a way to acknowledge the collaborative relationship between maker and enterprise IT.

Coaches: IT developers or proficient makers skilled in low-code development who serve as a resource to newer makers.

Practice managers: IT leaders or employees with knowledge of the organization's application landscape and best practices. Practice managers oversee all low-code development.

Professional developers: Professional developers work collaboratively with practice managers through the center of excellence to establish technical guardrails and governance processes that ensure security, compliance, and the long-term sustainability of the citizen developer program from a technical perspective. They also create reusable low-code components and tackle technical obstacles in the application development process. While professional developers may not officially function as members of the community of practice, partnership is essential – especially in the first years of the program.

The right processes
Qualifying makers and apps

Projects that best fit a citizen development program are low-complexity, internal, and departmental.

Consider the following when qualifying a citizen development use case:

- Does the maker have the necessary training to be successful (i.e., have they completed relevant missions on Pega Academy?)?
- Is the business problem well understood?
- Is there an existing IT solution for the business problem?
- Is the solution external facing?
- Does the solution write back to a system of record?
- Does the solution involve sensitive data?
- Does the solution solve a similar problem for multiple departments?
- Is assistance from a professional developer required?

If the proposed app meets the above criteria, the project is initiated and goes through three stages:

Intake: At the intake stage, the practice manager ensures the maker's business problem is well defined, verifies that the problem has not already been solved elsewhere in the IT landscape, and assesses whether the proposed application is a good fit for citizen development or whether it is critical and/or complex enough to justify ownership by enterprise IT.

Provisioning: Once the maker and app have been qualified, a practice manager provisions an environment for the maker using an application template that provides access to tools and integrations in a way that is role appropriate. Caution should be exercised and an approval process should be in place for granting access to personally identifiable information and other sensitive kinds of data.

Maturing: Once a deployment pipeline has been created, makers may modify built applications or push updates to production. In some cases, an application may eventually mature to a level of complexity beyond the skillset of the maker or become mission-critical to the business. When this happens, practice managers will work with the maker to "graduate" the application to ownership by enterprise IT. An application may similarly be "retired" when it is no longer required.

Common features of maker-developed applications

- Requests to fulfill
- A well-defined Microjourney® (workflow)
- Work queues (manage work)
- Multiple personas involved
- SLAs to meet
- Notifications with escalations
- Approvals, including multi-level
- Attachments and documentation
- Multiple channels (email, mobile, web)
- Integrations with existing, well-defined endpoints (e.g. a REST API)

The right technology

## Use a low-code platform built for speed and collaboration

Pega's low-code factory approach to citizen development is supported by two key technologies: Pega Platform™ App Studio and Pega App Factory. These two technologies are complementary and essential to the program's success.

Pega App Studio

The right technology must be easy for makers to use and for enterprise IT to manage. Pega App Studio brings together all the right people in an intuitive, low-code authoring environment that works in tandem with your internal business processes and governance structures. Too many low-code app development players focus solely on creating apps – losing sight of business value and creating silos that decrease adoption and time to value. Because design thinking is built into the App Studio interface, makers are forced to fully understand the workflows they are trying to automate as well as the user experience from start to finish.

Pega App Factory

The fundamental issue a citizen development program addresses is lack of IT capacity. Where governance is manual, however, the risk is that the burden on IT will increase as a citizen development program grows. Pega App Factory supports practice managers in every aspect of their role. It uses app and deployment templates that enforce compliance with technical requirements – in a way that minimizes the need for testing by professional developers and empowers makers to push changes to production without direct assistance from IT.
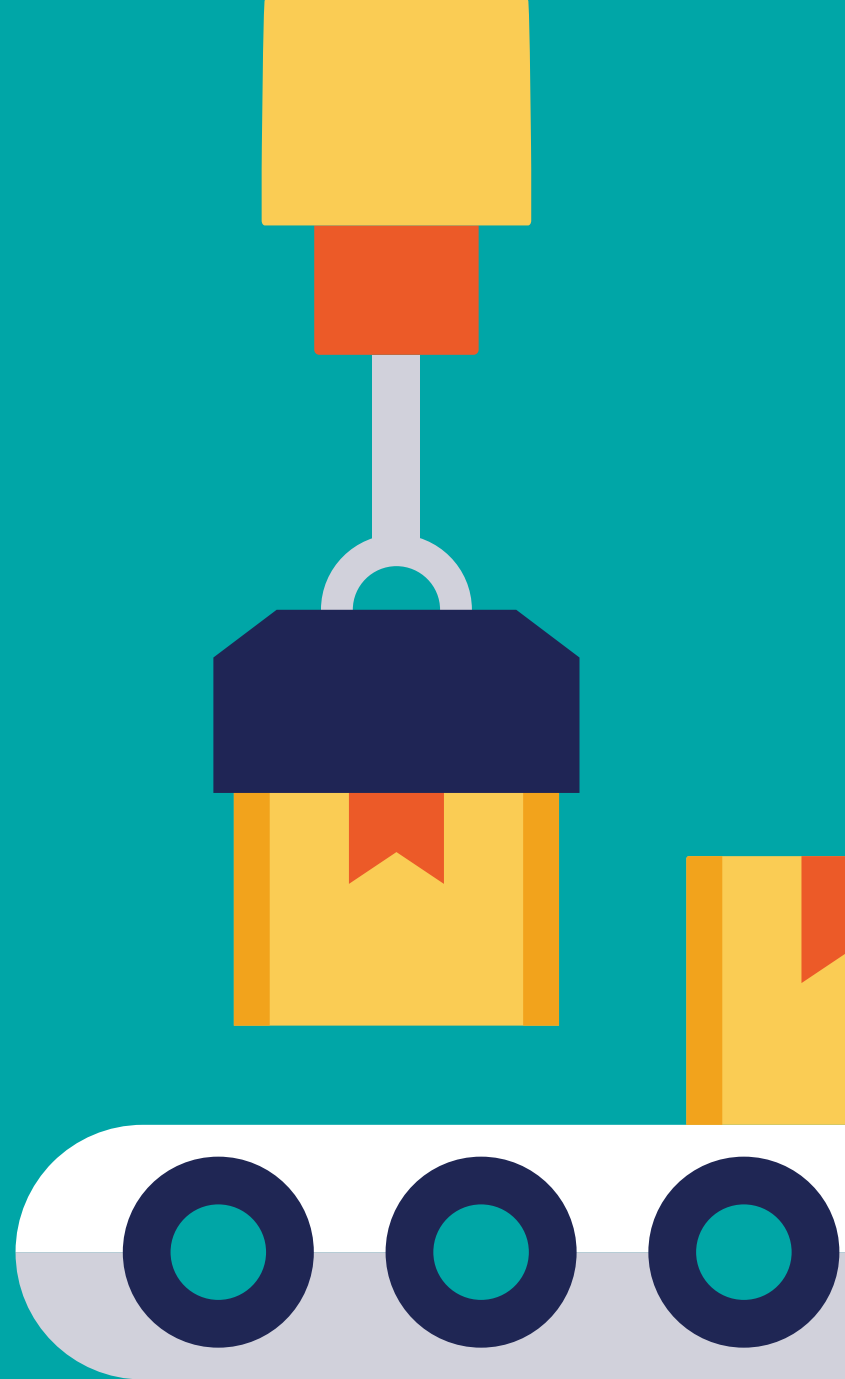
Realizing the promise of citizen development

Growing your citizen development program

The promise of citizen development is the ability to scale. According to Forrester's TEI study, the average Pega client can expect a 12% increase in productivity from the creation of departmental or divisional applications and a 16% savings in development costs from citizen developed apps.[3] We're seeing positive results from clients like transportation provider Deutsche Bahn, who is using citizen developers to create workflow solutions.

Start with a few makers and build your citizen developer program over time. Support from professional developers may be required in the early stages of a low-code factory program to configure integrations, build connectors into bespoke systems, and create additional shared components. Pega Platform's low-code integration adapters help your team connect quickly to the data, channels, and front-end technologies needed.

By demonstrating early success with a small group of makers in the first year of the program, interest will grow throughout the organization and the number of makers and apps will accelerate. As early makers advance their skillset, they can become coaches that support your growing program. The need for direct IT involvement will decrease significantly even as rates of adoption rise – all because of your early investments in the creation of high-demand integrations and shared components, as well as the automated enforcement of technical guardrails.

What you can do to accelerate the progress of your citizen developer program:

Focus on the fundamentals. The rate at which you can grow your program will depend on how eager workers are to participate. A poor initial experience can significantly hinder participation rates. In the first year of the program, focus on the community of practice, creating templates to enforce appropriate guardrails, building shared components, and promoting quick wins.

Pick the right people to sign on as early adopters. Work with a small group of enthusiastic early adopters who can provide feedback based on their experience. By working closely with them, you'll ensure their success and encourage their roles as evangelists and coaches as the program grows.

Footnotes

[1] Evan Data Corp, "Worldwide Developer Population & Demographic Study 2021, Volume 1," July 2021.

[2] Gartner Glossary, September 2021.

[3] Forrester Total Economic Impact™ (TEI) of Pega Platform™ for Low Code, March 2020.

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About Pegasystems

Pega delivers innovative software that crushes business complexity. From maximizing customer lifetime value to streamlining service to boosting efficiency, we help the world's leading brands solve problems fast and transform for tomorrow. Pega clients make better decisions and get work done with real-time AI and intelligent automation. And, since 1983, we've built our scalable architecture and low-code platform to stay ahead of rapid change. Our solutions save people time, so our clients' employees and customers can get back to what matters most.

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