

# The Rise of the Citizen Developer

The Secret to Successful Innovation



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# Introduction

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With data spreading like wildfire and software eating the world, how can you keep up with digital transformation if you don't have enough skilled developers? How do you drive the innovation of your business if you don't have the right tools or the right people?

According to leading German research and consultancy firm Empirica, in Europe alone there will be a deficit of 500,000 developers by 2020 (Software Developers in Europe and the World Nexten.io, 2018). The problem is clear and expectations are that the gap between the supply and demand of talent is only going to get worse.

And a shortage of developers isn't the only problem businesses are facing. In many organizations, the goals of the business are not yet perfectly aligned with the goals of IT. And as long as the business and IT are not on the same page, there's no moving forward for either.

As a modern business or IT leader, how can you fix both problems? You make application development easier so everyone can do it. When you democratize software development, you open the door for more of the workforce to meet the exponential demand for software.

These are your Citizen Developers, and they're about to change the IT world as we know it. Citizen Developers are users who build applications to facilitate the processes of business operations while following the



development guidelines of IT. Unlike a professional developer, they may not have formal training in programming, and developing may not be part of their actual job description. They think of creative ideas to improve areas of business such as customer relationship management, internal operations, and product development. And they know the business better than anyone, because they are the business.

With the ability to create and adapt software by using no-code platforms, now is the time to let Citizen Developers rise up. Armed with the right tools, they can help optimize, extend, and innovate your business forward in a digital age.

No-code development and Citizen Development are more than just software, and more than a technological orientation. They represent a full-on paradigm shift of how we think about software development, and who can be a developer. This whitepaper will provide you with a guide to navigate the changing tide, and give you tips on how to implement Citizen Development successfully.

### **The biggest advantages of Citizen Development**

Every industry today is facing 3 major problems in terms of digital innovation:

1. IT and the business are not perfectly aligned
2. IT doesn't have the manpower to proactively innovate and stay ahead of the curve
3. IT is providing tools, but not educating business leaders how those tools can be used

But no longer do companies have to deal with these severe disadvantages. Because not only do no-code platforms have the potential to greatly decrease the time needed to meet business requirements (up to 10 times faster than the speed of traditional processes), they also play a vital role in automating operational processes. These platforms provide a tool for all kinds of developers to save a lot of time. By empowering both the business leaders and business users (Citizen Developers), IT teams and the business alike can accelerate innovation.

Bricklog logistics consultants are intimately familiar with the problems of the current logistics market, for example. "30% of trucks you see on the road are empty. It's a bad situation that needs to change fast," says founder Hubert Benneker. Benneker relates those issues to inefficiency in data processing due to the scarcity of IT developers. "Citizen Development might just be the answer logistics needs so badly. It enables people working in linear careers to learn new skills and create new opportunities."

In an era when rapid changes have become the standard, it is extremely important that business priorities are integrated with IT resources. You also need a firm foundation on which new business solutions can be deployed quickly and securely.

When integrated correctly, Citizen Development will push the innovation of your organization forward with an increased speed, agility, and openness in doing business.

# Meet Your Citizen Developer

Citizen Developers aren't a new phenomenon: Think of the power users and Excel sheet wizards of the 90s. The business world has been taking IT into their own hands for decades. But today's Citizen Developer is miles ahead of yesterday's power user. "There's a big difference and that is the tools," says Kees Kranenburg, low-code platform solutions lead at Atos. For Kranenburg, the low- and no-code platforms on today's market are enabling Citizen Development to take off like never before. That's because, in contrast to traditional programming, these systems are hands-on, playful, and intuitive. This opens the door for any tech-savvy business user.

## No-code platform + Citizen Development =

- Turn idea people into application kickstarters
- Decreased time to market (up to 10x faster)
- Automated operational processes
- Accelerated innovation
- Better collaboration between business leaders, business users, and IT teams
- Test solutions easy and fast without disrupting the overall IT landscape
- Both departmental and enterprise-grade applications

Thanks to automation and cloud architecture, today's low- and no-code platforms are unlocking the full potential of Citizen Developers, who are now able to develop more – and more sophisticated – solutions than in the past. Not only does a platform give them the resources they need to build applications and innovate within the organization, but it also provides a centralized system to ensure that all activities are sanctioned and supported by central IT.

### Profiling your Citizen Developer

Citizen Developers have an aptitude to use tools to their advantage to find solutions, and they don't need intensive training due to the ease of use of no-code platforms. As many of them are digital natives who grew up with and understand the value of software, they are open to learning and implementing new tools that increase productivity and assist their workflow.

Citizen Developers are not people who can fully replace your IT department. Instead they're an extension of your existing workforce who work closely together with your IT department to develop solutions for his or her own department.

Anyone in your existing workforce can be a Citizen Developer, as long as they meet a few requirements. If you ask the experts, they all agree.

Citizen Developers are:

- ✓ Adventurous
- ✓ Pragmatic
- ✓ Creative and innovative

- ✓ Tech-savvy
- ✓ Problem owners who know exactly what solution they want
- ✓ True 'do-it-yourself' types

In short, Citizen Developers are on a mission. They are solution-driven problem solvers who want to be in the driver's seat.

### **Where do Citizen Developers fit into your organization?**

Naturally, it may feel uncomfortable to hand over the keys to an unknown driver. You may fear that Citizen Developers don't have enough knowledge to develop applications that add business value. Or worse: That they know just enough to create a mess the IT department has to clean up.

Implementing Citizen Development within your organization requires planning, structure, and organization in order to avoid these risks. Later on, we will outline the specific needs an organization must provide in terms of governance, training, and support. But for now, we'll emphasize the importance of close collaboration with the IT department and other more experienced developers.

When launching a no-code platform together with Citizen Development, you'll want to work in multidisciplinary teams including the full spectrum of developer profiles. Check them out here:

### ***Citizen Developer***

A Citizen Developer is tech savvy and knows what it takes to kickstart a business application. As a member of the sales or marketing team (for example), he's able to spark the initial idea, but doesn't necessarily have



the skills to build it with code. Citizen Developers are able to prototype new applications, but all under the supervision of the IT department or a no-code developer. He is a user with the ability to build and adapt software by using a no-code platform.

### ***No-Code Developer***

A No-Code Developer goes one step beyond. He is an expert in the field of building no-code solutions and may also have experience in doing some programming himself. He uses no-code software to improve the efficiency of his organization with business, web, and mobile applications. The No-Code Developer can create software without traditional coding.

### ***IT professional***

IT professionals are experienced developers. They can build any application using the most fundamental (yet sometimes complicated) programming languages. They've had formal training in programming and developing software is the core of their job description. With the implementation of Citizen Development, the IT professional acts as a mentor. He oversees and guides the actions of the Citizen Developer, helping him or her gain more skills and confidence, while also providing a secure work environment.

With each of these profiles comes a unique set of skills that can benefit your organization in ways that traditional developers by themselves cannot. One of the greatest benefits of extending the capacity for development outside of core IT is that your organization can be infused with new and fresh perspectives, which promote innovation. In other words, Citizen Developers have a lot to offer by bringing to the table the expertise and way of thinking from business disciplines.



# Accelerate Innovation with No-Code Platforms and Citizen Development

According to a blog post by Forrester Research, there are whole classes of platforms out there meant to support business users and Citizen Developers ([The Four Faces of Rapid Development](#), Rob Koplowitz and John Rymer, Forrester Research, Inc., February 28 2019). These include:

- 1. Low-code for AD&D pros (professional developers).** These vendors typically target many use cases with products designed first for pro developers. These platforms are generally well suited for development of large numbers of applications and handle basic- and medium-level process complexity.
- 2. Low-code for business developers (businesspeople).** These vendors typically target many use cases with products designed first for businesspeople.
- 3. Digital process automation for wide deployment.** These platforms are process-first and focus on rapid deployment. They are less focused on the professional developer experience but can easily handle a very wide variety of low-code use cases. They are less well suited to most

complex process requirements but tend to cost less than DPA solutions for deep deployment.

- 4. Digital process automation for deep deployment.** These platforms excel at the high end of process complexity but may also be the right solution to meet the needs for a wide-deployment, low-code standard in your organization, albeit generally at a higher price point.

As Citizen Developers are empowered and supported with these platforms, their development skills will further increase and they will ultimately be able to build applications that have higher business value. So by leveraging Citizen Development platforms, digital transformation can be accelerated even more over time. What does this look like in practice?

Dutch insurance company Univé's Innovation Lab runs on a no-code platform. The Innovation Lab allows for the freedom and flexibility to develop new propositions for their business by proving to stakeholders that their ideas actually work. By using no-code software, Univé's Innovation Lab is powered by a team of brilliant minds from all backgrounds who can build the technical solutions they need – and they can build them now, not in 5 months when the IT department can get to it. This has brought time-to-market of new business propositions down from a year to 2.5 months, speeding development up by 75%. Says Bas Wit, Innovation Manager (and non-programmer turned no-code guru), "We did the pilot in an even shorter time than we thought, with less money than we thought it would cost, and what we achieved was even bigger than we expected."



Some of the applications Citizen Developers build with a low- or no-code platform can contribute to automating workflows and improve productivity. Others (in the case of Univé may completely transform the way you do business. Either way the message is clear: An investment in Citizen Development can be an investment in the future success of your organization.

### What can Citizen Developers help you build?

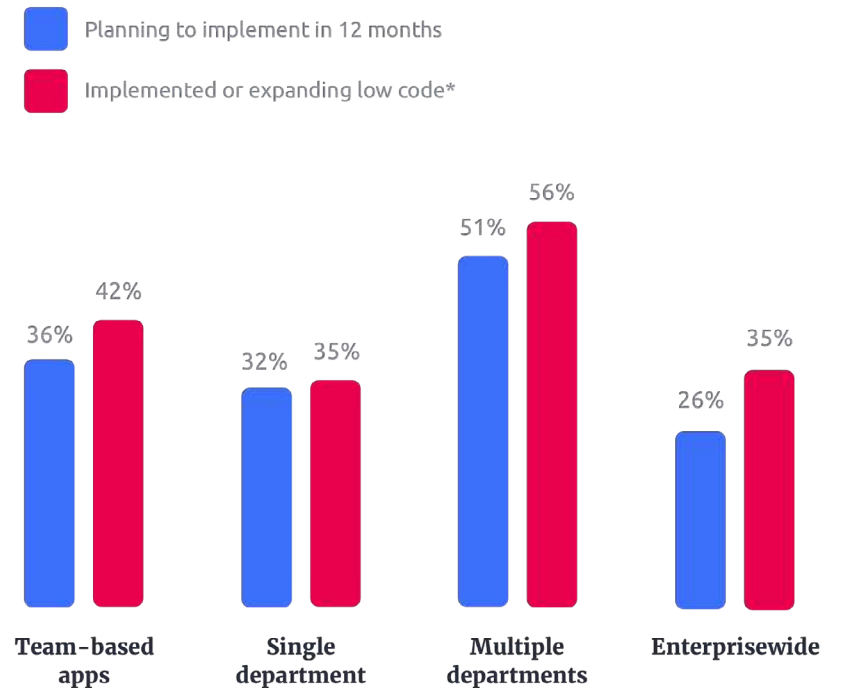
One area where Citizen Developers can excel is in the field of administration, data-tracking, and reporting. These are often applications that currently run on separate spreadsheets or database tools. Moving them to a shared no-code platform allows IT to control all of them, rather than having dozens of unsynchronized, unmonitored applications floating around in every department.

Since administrative and reporting programs usually fall under the radar of IT, without Citizen Developers they may never make it to production. This way, Citizen Developers and IT professionals can engage in a symbiotic relationship, empowering the entire business.

Citizen Developers are granted the tools they need to influence innovation from within, while IT leadership gains access to oversee all of the applications in the organization. With this approach, developers can begin to make changes on a small scale, before implementing them on a bigger level. This gives headspace to the innovation team, allowing it to easily test multiple solutions without interfering with or violating the overall IT landscape.

### Low Coders Build Apps Of All Sizes

“What is the scope of applications your organization develops using low-code platform(s)?”

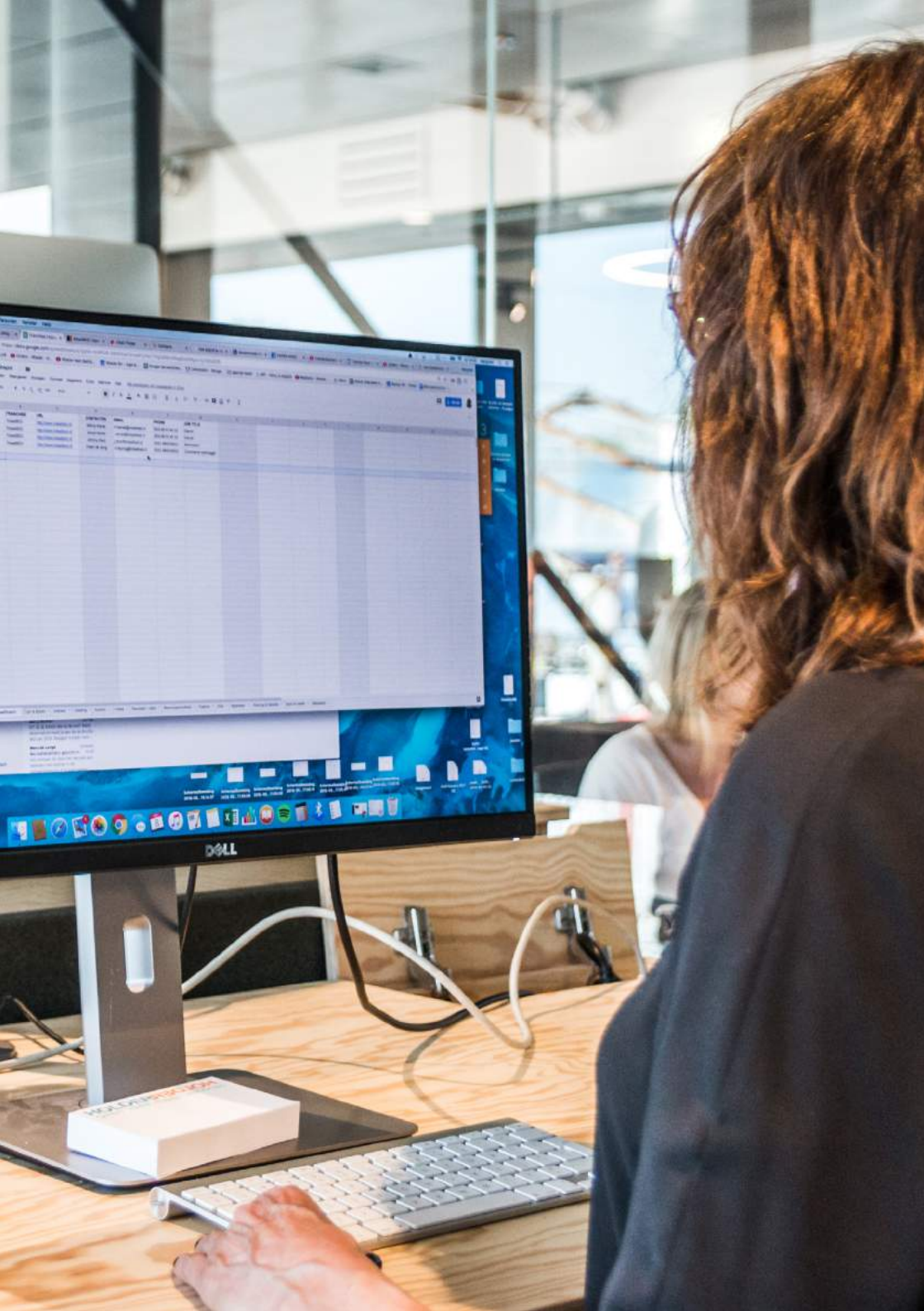


Base: 710 developers who have plans to implement a low-code platform but don't have one yet

\* Base: 746 developers who have implemented a low-code platform

Source: Forrester Analytics Global Business Technographics® Developer Survey, 2018

(Understanding Low-Code Developers, John Rymer and Bill Seguin with Jeffrey S. Hammond, Christopher Mines, Abigail Livingston, Andrew Reese, Forrester Research, Inc., April 8 2019)



### **What about shadow IT?**

But before Citizen Developers start building, they need a few things – and not only the right tools. Good implementation of Citizen Development relies heavily on the collaboration between the business and IT department to make sure that it doesn't devolve into shadow IT chaos. According to a blog post by John Rymer of Forrester Research, “Without the right governance and support, a businessperson building software is dangerous. This type of rogue IT results in half-baked software that can hinder long-term progress” ([Help Rogue IT Go Legit with Citizen Developer Platforms](#), John Rymer, Forrester Research, Inc., December 10 2018).

Shadow IT is what happens when users are building and implementing solutions under the radar of the IT department, and it's one of the key objections to no-code platforms by CIOs and IT managers alike: “How will this be different than the Excel sheets?” or “How will it survive the next generation of employees?” are often heard (and valid) concerns.

The difference is that no-code platforms allow Citizen Development to be governed. You take that tangled web of ad hoc solutions and Excel sheets and put them onto a no-code platform, which outsmarts Excel and does so in a more visual way. And, most importantly, allows for controls like role management and monitoring.

By embracing Citizen Development rather than fighting to suppress it, you legitimize it. And with legitimacy comes security controls and quality standards.

So how do you ensure a Citizen Development initiative does not result in the creation of shadow IT? By providing structured support and a clear governance strategy.

### **Guidelines for Citizen Development**

The success of Citizen Development isn't all about the tools: It depends on a strong alliance with IT and organizational support, as well as ongoing training. It is tempting to think that a no-code platform could be a one-stop solution for all things Citizen Development, but that's not the case.

According to Betty Blocks CEO Chris Obdam, "It is really important to note that you do not accomplish Citizen Development with a platform alone. That's what people tend to think, just get a low-code or no-code platform, get up and running, and that's it. But there needs to be a very big organizational change — and a strategy — as well."

Citizen Developers are already technologically savvy and self-motivated learners by nature. It's what makes them Citizen Developers in the first place. But that doesn't mean that they don't need guidance.

### **Training and mentoring**

Training and mentoring can help Citizen Developers gain new skill sets, more confidence, and explore new working techniques. The more professional development and guidance you allow your Citizen Developers, the better equipped they will be to align with IT and the goals of the organization.

**It is really important to note that you do not accomplish Citizen Development with a platform alone. That's what people tend to think, just get a low-code or no-code platform, get up and running, and that's it. But there needs to be a very big organizational change — and a strategy — as well.**

Chris Obdam - CEO of Betty Blocks



### **Collaboration with IT**

IT departments should also generally be actively involved in overseeing Citizen Developer projects to eliminate the risk of shadow IT and unmonitored applications running throughout the organization. While this promotes security and control, Citizen Developers can also learn from IT by working together on projects led by traditional developers.

### **A solid governance strategy**

A solid governance model should serve as the backbone of any Citizen Development program. By developing a governance model that integrates Citizen Development into the existing framework of your organization and your IT strategy, you can ensure that it meets the structural requirements to augment existing IT efforts rather than hinder them. Additionally, assigning protocols for monitoring and support and establishing standards and guidelines eliminate security and quality risks.

### **Continued support**

For a Citizen Development program to live up to its full potential, CIOs and IT managers need to promote the movement within the entire organization. This ensures that the entire company culture is in support of the Citizen Development movement.

Continued support on the organizational level is essential because there is no end-game in innovation. A successfully implemented Citizen Development strategy leaves room for continued adaptation and improvement.



# The Future of Citizen Development

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In today's digital age, the workplace and workforce are subject to significant shifts in needs and composition. It's no longer sustainable for organizations to rely on spreadsheets and other quick stopgap measures counter to innovation. In the long run, these types of solutions only serve to set your organization further back.

Across all industries, people are already noticing the effects of implementing Citizen Development into their strategies. In 2018, 45% of global developers had already adopted or planned to adopt a low-code tool in their company ([Understanding Low-Code Developers](#), Jon Rymer and Bill Seguin, Forrester Research, Inc., April 8, 2019).

Employees don't want to be reliant on IT anymore. Business users are well able to recognize the need for innovative software solutions to facilitate their work, and they are motivated to help develop these solutions. More employees want to be a driving force for the company, and to initiate action themselves.

The future of Citizen Development is inextricably linked to the future of no-code application development. Change agents need an instrument of change, after all. And no-code application development platforms give Citizen Developers the tools they need to serve the future of innovation.





# Recap: Massive Potential

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Technology cannot be separated from human experience – it’s a direct extension of it. The devices and applications we use today have so easily become integrated in our daily lives for the simple reason that they build on natural human tendencies. They amplify the potential to create, communicate, connect, and form networks.

No-code platforms amplify our existing potential to innovate by enabling Citizen Developers. No-code removes programming as a barrier to develop solutions and allows us to capitalize on our capabilities to solve problems and transform organizations. It democratizes software, which is necessary in an era when software has literally become everyone’s business.

The rise of the Citizen Developer represents a major paradigm shift in the way we think about software development, and that can be scary. But it doesn’t have to be. It just means you have to establish clear objectives before you get started. Establishing governance, defining guidelines, and fostering cooperation with central IT gives you the safety net you need to empower the Citizen Developers who will power the shift forward.

With proper training comes potential. Imagine a future where you solve today’s biggest problems in IT by creating a functional system within your organization that produces more software – and more developers. That future is now, and if you’re not jumping in on it, you’re missing out – and missing out in a fast moving world isn’t something you can afford.

# About Betty Blocks

Betty Blocks is the leading Citizen Development platform in the world. As the only truly no-code platform based in the cloud, Betty Blocks enables the business to build complex, enterprise-grade applications efficiently and effectively. With their focus on the people, Betty Blocks empowers organizations to experiment towards the right solution and enable the workforce to take control of their innovation.



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Greetings from the team!