

QualityClouds

Citizen Development White Paper

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SaaS by Nature, Quality by Design

Citizen Development is Here

Here's How To Make It Work In Your Organisation

'By 2025, 70% of new applications developed by enterprises will use low code or no code technologies'.

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

Decentralisation of technology is taking place across the business, but the organisation still needs to manage the change. It's the classic organisational struggle; the business demands fast transformation, IT needs to maintain control and visibility.

In this whitepaper we take a look at what citizen development is, why it works, how to avoid the pitfalls and strategies to help you implement it in your organisation.

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- 02 What are the benefits and how can you avoid the pitfalls?
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1. What's Driving Citizen Development – Why is it happening now?

Tech talent shortfall, demand for applications at speed and the usefulness of commercial nous in IT solutions have all contributed to the rise in citizen developers.

The term refers to non-IT-trained employees who are creating business applications. Sometimes also referred to as low code/no code (LCNC) programming, citizen developers use technology sanctioned by IT to customise existing software for the benefit of the department or clients.

Citizen developers have come from of the demand for more digital solutions, coupled with a shortage of skilled and qualified programmers. This caused a drain on business innovation, as output could not keep pace with ideas.

Into this gap came companies like Salesforce, ServiceNow and Workday. These organisations created applications that could be configured through graphical interfaces rather than traditional (and skilled) programming. It also coincided with the move of infrastructure offsite and the arrival of Platform-as-a-Service (PaaS), leaving organisations better able to focus on generating immediate results from their platforms. Suddenly, a lack of coding talent was less of a problem for business. The citizen developer had arrived!

This decentralisation of IT across the business began because the ability to work with technology has become part of many people's jobs. Anyone who is IT savvy enough can work on applications, without having to be being an expert. At Salesforce, they've even introduced low-code training and certification programmes, like Trailhead. This allows people from teams like Marketing and Sales to learn about low-code and earn qualifications.

Citizen development brings together business nous with a little tech experience. A potentially beneficial combination, which can drive major insights and make impactful changes. That said, it is not without its challenges for the business.

What's happening in your business?

You've probably already got some people tinkering at the edges. Or maybe they're using a system like ServiceNow or Salesforce, that gives your non-technical teams an opportunity to create their own apps and solve their own problems.

As your citizen developer programme expands across the business, it's worth thinking about:

- Which departments would most benefit from an active citizen developer scheme?
- Do we have staff on the business side who would be interested in joining a Community of Practice to help make this work?
- Which tools will be most useful to us, and for which applications?

2. What are the benefits and how can you avoid the pitfalls?

For CTOs or Chief Digital Officers, looking to drive transformation, the arrival of citizen developers is a potential game-changer. Now anyone can solve a customer or departmental problem with a new app, without having to wait for the gatekeepers in IT to develop the solution.

The benefits that citizen development can bring to the organisation include:

Development speed

The challenge for many organisations is keeping up with the pace of change, including demands from external and internal users. Giving some of the development responsibility to the business, rather than the IT department, should improve the rate of change at which new ideas can be put into practice.

Business focus

Citizen developers come from the non-IT sections of the business. Their focus is likely on the needs of users, whether they are clients or internal teams. Citizen developers also tend to be towards the frontline of the business, meaning their thought processes are often led by commercial logic. Like their counterparts in IT, they are problem solvers who confront inefficient processes and investigate more effective ways to achieve their results.

Cost-effective

IT teams have to keep the show on the road and manage change. They are often overwhelmed with requests for apps, whilst also needing to maintain security and the fundamental systems that run the organisation. Citizen Developer programmes can also increase the technical understanding of the wider organisation. This frees-up the IT team to do more complicated work, making it a better use of resources.

Increase productivity

Low code/no code platforms make it easier and quicker for teams to produce their own apps, which increases productivity. It also makes it easier to make changes as the system evolves.

However, some of the pitfalls of citizen development include:

Keeping up with change

The pace of change can be hard for citizen developers to follow. Constant updates to applications and programmes require ongoing training, which starts to impinge on the citizen developers' day jobs.

Quality issues

Poor quality can make an app difficult to run, or have an impact on other systems in the business. Companies that add applications and workflows using low code/no code with non-existent control processes are leaving themselves open to high maintenance costs, as each vendor has their very own best practices.

Cost-effective

An organisation may need its IT professionals to oversee a citizen developer's work, which reduces their cost-effectiveness. It's no good having an app developed by a non-tech person if it significantly increases the technical debt on the platform. For that reason, it may continue to be necessary for the IT team to develop and test a final product to ensure its quality and functionality.

Security Awareness

Citizen developers do not have the grounding in cybersecurity of their counterparts in the IT department. They might not understand the implications of duplicating code, or might decide to use an open-source library against internal rules. Accidentally leaving gaps or open access to the platform is one of the biggest issues a citizen developer can cause the IT department.

3. Quality Clouds Recommends – our strategies for implementing a successful programme.

Citizen Development is already here. It's in the organisation and taking effect. So how can you implement a successful programme and avoid any friction?

We consider these elements when planning or reviewing citizen development strategies in an organisation;

- Oversight – who will have ultimate responsibility?
- Apps – which one is the best fit?
- Sourcing – where will the work happen?
- Governance – who will manage the standards?

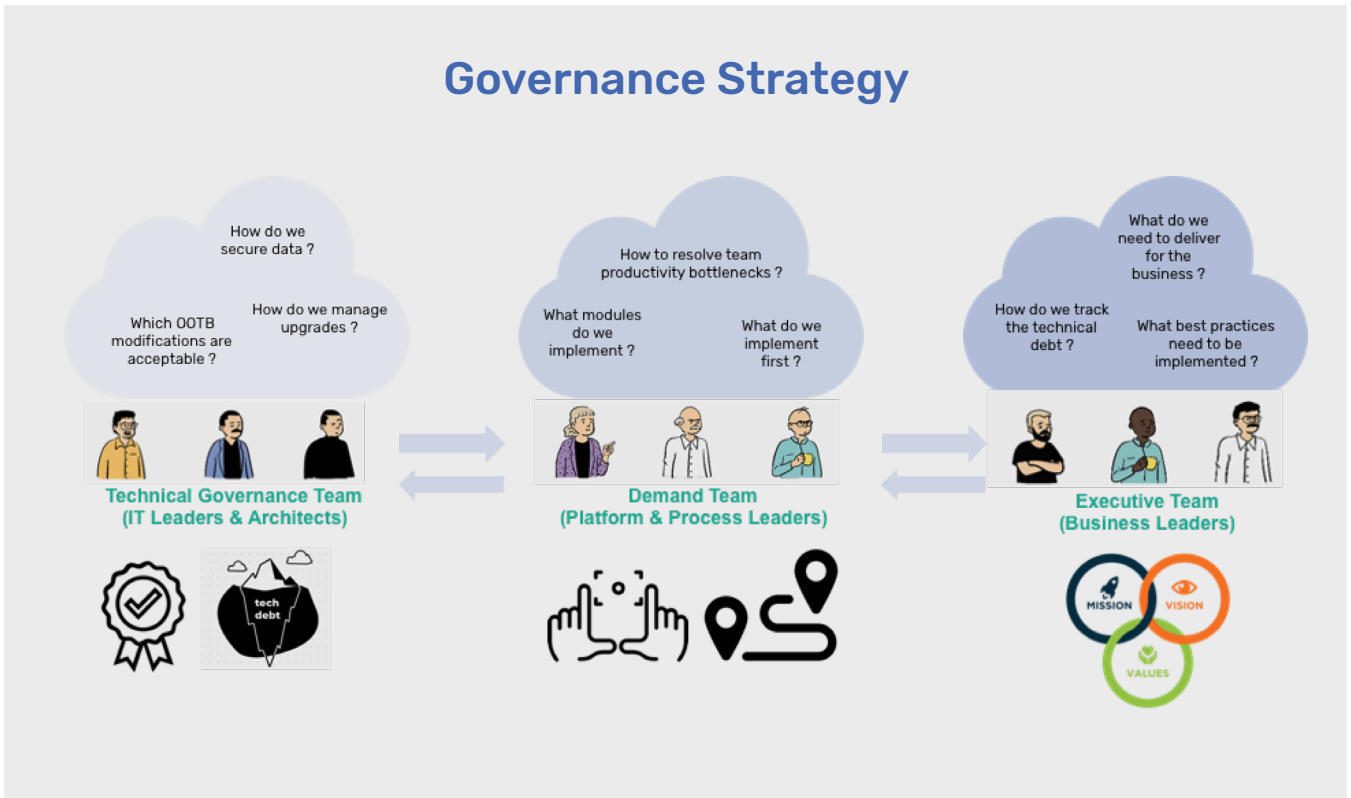
Oversight

A citizen development programme can appear to be going very well. There's lots of new applications, the business is working at pace and users are happy. It all looks good, right up until the IT team comes back to that part of the platform, looking to expand it, and finds a cluttered mess. This is damaging on two counts; one, the system is out of control and two, the productivity gains are undermined because IT now has to spend time restoring the platform.

To prevent this from happening, we recommend setting up a Community of Practice. This is a group of people from IT and the business who are focussed on making citizen development work. Its aim is to learn about and improve the process, providing a framework that enables citizen development within the organisation.

To establish your Community of Practice, consider:

- Who is a citizen developer and what is their role, what improvements are they working on?
- Which IT teams have oversight of the citizen development community. Who is responsible and how will they manage that?
- Does everyone understand that code reviews and security checks are a vital part of any development programme? How will the wider team avoid creating technical debt?



It is essential to keep track of the changes are being made in the platform. This can stop the introduction of vast quantities of technical debt. By having a joint IT and citizen developer team you can ensure that IT has a cleaner platform, which is easier to maintain and scale.

IT teams can consider:

- How do we stop application sprawl; the same app being built by different business units?
- Can we monitor privacy issues?
- How are the code reviews and security checks etc. going to be done?
- Is the company duplicating data and can we be assured of its quality?
- Can the process be automated with DevOps tools, so the benefits of the low code / no code adoption don't become a bigger problem?
- What happens if a citizen developer leaves the company?

Automated tools can shine a light in the shadows and let you see what your citizen developers have been up to. This ensures greater platform control for managers and prevents unexpected roadblocks.

Apps

The type of app you want to develop, and the platform you use to do that, will depend upon what you want to achieve. Large organisations will find that they need more than one software solution. It can be a multi-dimensional challenge for the organisation. At Quality Clouds we help organisations decide which application works best for which project and give visibility and control across ALL the various platforms in use.

One organisation in the oil and gas industry had three production orgs and 25 custom apps. This created quality issues, which hampered the speed of releases and slowed their growth plans. We helped them to accurately track code quality at every step of their development journey, which increased release quality and saved countless hours

To work out the best solution for your organisation, consider:

- Which apps will connect best with downstream systems?
- Which apps are a good fit to be developed in a low/no code platform?
- Which software will work best for this app? For example: ServiceNow, Salesforce, Workday etc.
- Where is the greatest demand for speed, coupled with an ability to apply low/no code processes?

Sourcing

Enterprises will need to consider which sourcing strategy works best for the business; outsource or internal, or a combination. An internal team should lead the programme, but it may be useful to have external, specialist input. Automation and tools are also an important consideration, such as a Software-as-a-Service (SaaS) code and configuration analysis platform.

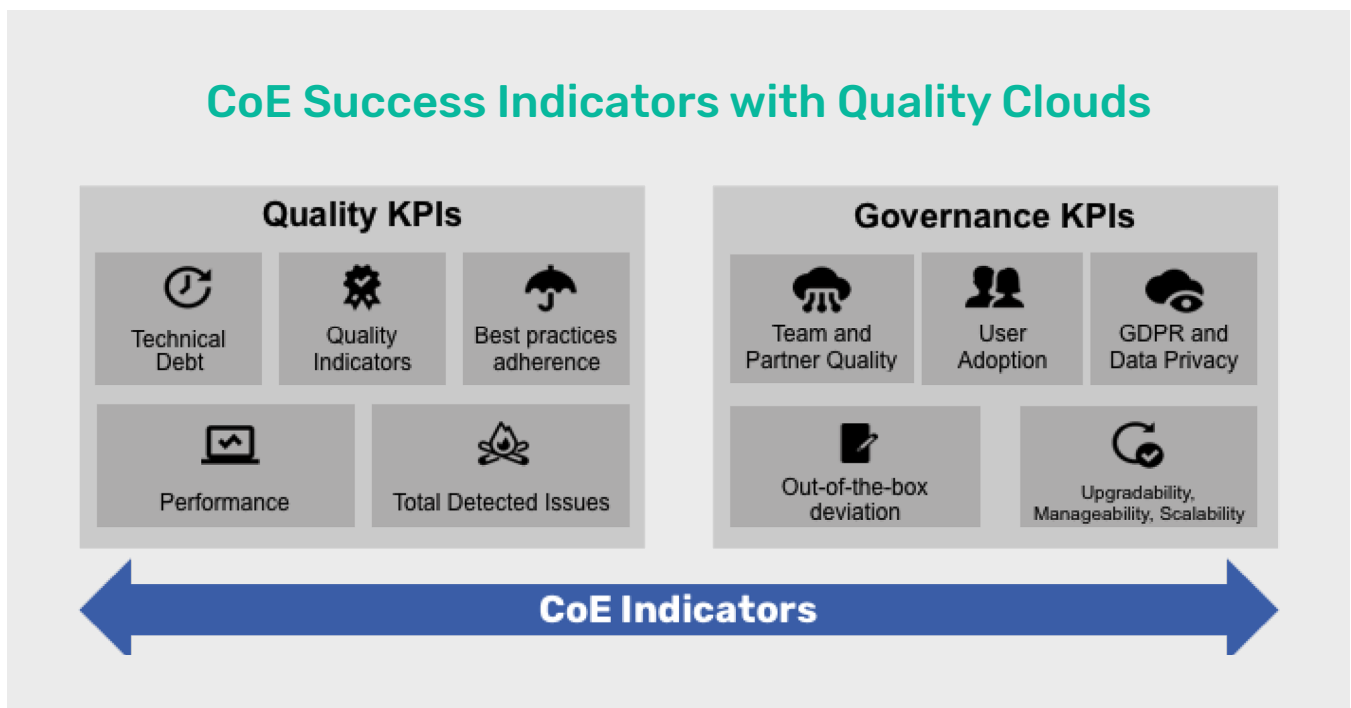
We recommend a combined internal/external team. A global energy group brought in our specialists to help cut their technical debt and organically incorporate quality into their processes. The team cut the organisation's technical debt by 74% within a year, empowering a sustainable platform.

A combination of experience allows organisations to tap into specialist knowhow and combine it with inside knowledge. To do this in your organisation, consider:

- What is the current sourcing strategy, and can this be expanded to include a citizen developer programme?
- How will the platform be opened to citizen developers?

Governance

You can't control what you can't measure. We recommend the Community of Practice focusses on improving and maintaining standards for the platform and also the citizen developers. Working together and understanding what each team is doing is beneficial for both IT and individuals. The citizen developers will appreciate learning more, especially if it permits them to do more themselves. In addition, IT will get a greater understanding of day-to-day platform issues.



To understand how governance can be implemented in your organisation, consider:

- [A list of shared best practices](#)
- How you will implement governance policies
- The importance of automation, like quality-gating tools that let citizen developers learn autonomously on the go
- Regular communication channels

When Citizen Development Works Well

You In its [recently updated report Gartner details](#) how an oil and gas organisation brought in citizen development to relieve business demand. They developed a range of digital platforms; from no-code to highly specialised platforms for geoscientists. Gartner explains that to mitigate risk the company, 'automated security testing, component scanning and licensing and release automation'.

4. What does the future look like for citizen development?

Citizen development has arrived and is here to stay. It will continue to expand across the organisation driven by a desire for rapid change to meet users' needs.

It is an immensely important part of modern platform development. Therefore, it falls on IT to make sure internal procedures and tools are in place to monitor and govern the process. This will ensure the platform remains secure and under control. Working together as a Community of Practice, IT and citizen developers can greatly increase platform development, while not compromising on quality.

To be successful, organisations must get the balance between speed and suitability, between relieving the IT department of work and adding to it, between rapid development and professional, secure oversight.

In the future we see low code/no code becoming a standard practice for fast application development. Forrester expects the top growth areas to be business process applications, web and mobile front-ends and consumer-facing apps. It could also be useful in areas like reengineering technology stacks.

Both Gartner and Forrester predict industry growth. [Gartner reports](#) the industry is worth \$13.8 billion in 2021 and expects +20% year-on-year growth. Over at [Forrester](#) they predict by the end of 2021 up to 75% of firms could be using a low code / no code platform (rising from about half today).

Organisations need to get to grips with citizen development if they are to be successful over the coming decade. It is a marked shift for many businesses, but it can enable innovation, improve productivity and lead to growth when implemented successfully.

We're offering free 30-minute consultations on citizen development. Drop us a line to schedule a call. [Contact us here](#)