



# Enterprise Low-Code:

Your lever for business acceleration  
and application modernization



# Why should you read this paper?

If you already have some experience of low-code and want to unleash its full potential, this paper is for you. If you think low-code apps are only good for simple solutions, this paper might change your mind. If you're interested in how to scale low-code in your enterprise, this paper gives you guidance. If you already believe low-code and pro-code are not competitors but best friends, this paper fully supports you. We're excited by enterprise low-code, as we call it, and we believe in its huge potential - when it is done in the right way. We hope you find our perspectives and approach valuable, and we welcome your feedback.

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Let's start with a definition. Enterprise low-code is an approach to maximize business value by the composition of low-code and pro-code into fusion apps through a framework of governance, architecture, security, compliance, and platform operations.

The ascendancy of low-code has been rapid, but its true impact is not yet fully appreciated or fully utilized. However, we believe the stars just have begun to align for enterprise low-code, as it perfectly addresses current business challenges and needs. Its power continues to accelerate as businesses recognize that it can do a whole

lot more than create small productivity apps. In fact, it can transform your enterprise, revolutionizing capabilities, behaviors, expectations, and aspirations across the wider commercial landscape.

Digital transformation is enabling businesses to thrive in highly disruptive environments. This means there's an increasing pressure to bring value-added products to market faster, to become more product centric, and to achieve success through multi-disciplinary teams. Now is the time to make enterprise low-code your first choice.

# Harness the true power of enterprise low-code

The true power of enterprise low-code lies in its ability to unlock the full potential of enterprise-wide applications at enterprise scale. Right across the realm of complex and mission critical systems. By leveraging the latest technologies, like Generative AI (GenAI), enterprise low-code platforms enable the delivery of cutting-edge applications that provide unprecedented insights, automation, and agility.

Concrete examples:

- 1. Core System Extension or Modernization:** Enterprise low-code is a game-changer when it comes to extending or modernizing core systems (e.g., SAP, Oracle, other). Whether it's integrating new functionalities, optimizing workflows, or enhancing user experiences, enterprise low-code platforms streamline the process, allowing organizations to adapt their core systems, 'keeping the core clean'.
- 2. Apps Landscape Modernization:** In the realm of modernizing the applications landscape, enterprise low-code solutions play a pivotal role. They facilitate the transformation of legacy systems into agile, efficient, and user-friendly applications as well as getting shadow IT under control. This can involve revamping outdated interfaces, improving data integration, and ensuring seamless compatibility with evolving business requirements.

- 3. Catalyst for innovation:** The agility of enterprise low-code is an enabler for innovation. The simplified development methods and the easy deployment options allow optimal collaboration with business users. They know the challenges that enterprises are facing and within a controlled environment, they can help boost change. Rapid iterations allow experimenting with emerging technologies such as GenAI and IoT and thereby introduce new ideas and innovations that really benefit the business.

This is where it gets interesting. If we look at the different application use cases, we see their levels of complexity and impact increase as they develop from providing simple business solutions, to complex processes supported by complex data structures, to mission critical solutions, and then to organization-wide initiatives. Standalone low-code apps can provide basic productivity tools or simple business solutions, with an appropriate level of governance, compliance, or security setup required. But as the complexity increases, so does the implicit need for enterprise grade characteristics, such as governance, scalability, performance, and security. Beyond the simplest application, only fusion apps can deliver.

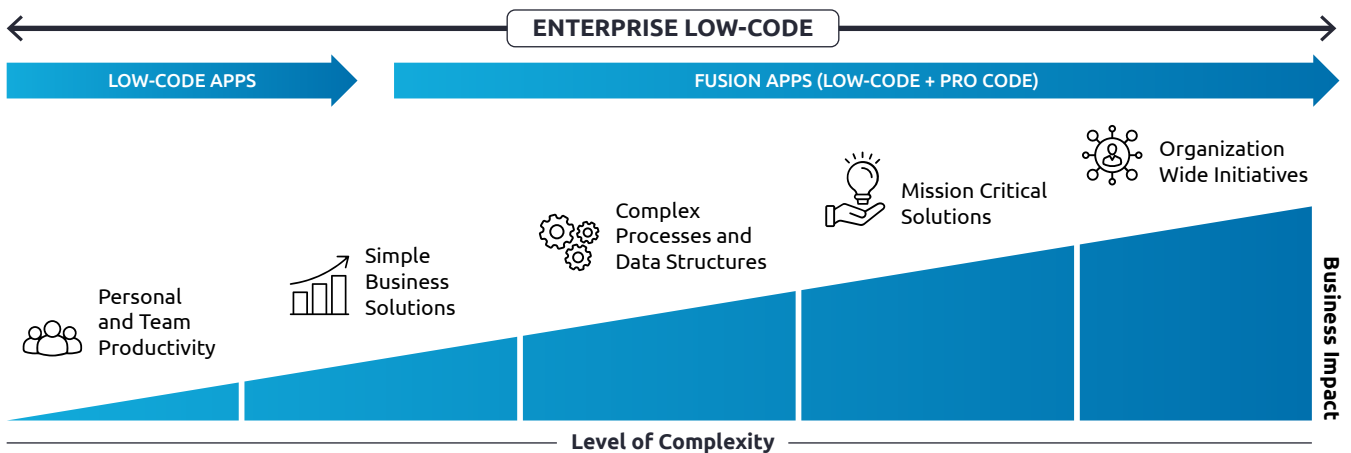
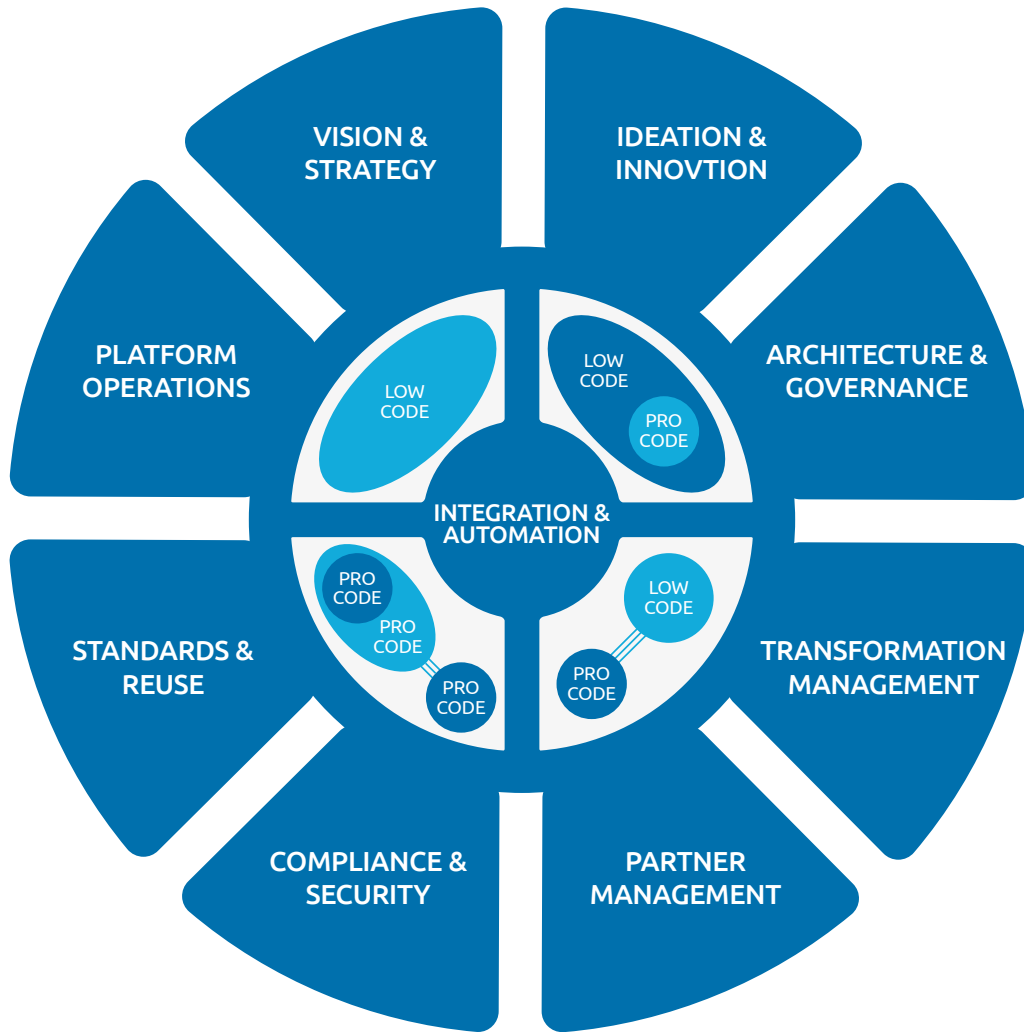


Figure 1 Enterprise low-code complexity spectrum

*Begin your journey, from a vision to an enterprise mindset*

Before you begin your enterprise low-code journey, it's important to identify what you want to achieve, what considerations will impact your progress, what will happen on your journey, and when is the best time to start.



**Figure 2** Enterprise low-code framework

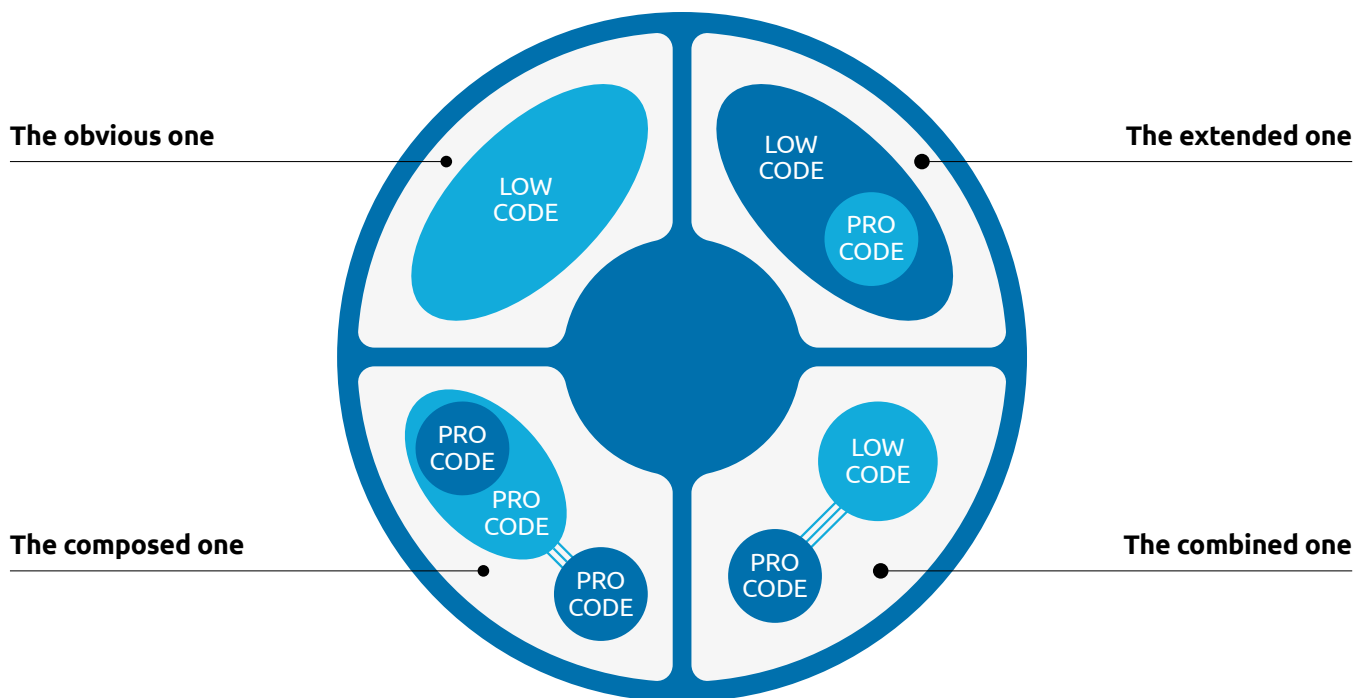
This is no small feat, and it would be easy to get lost considering all the options. Therefore, we developed a framework (see figure 2) that shows you what to do and how to execute, guiding you along the entire journey. Of course, the framework is product and platform agnostic, so it can be applied anywhere. It helps you navigate the fundamental questions you will face, particularly those in the dimensions of business, organization, and technology.

Our enterprise low-code framework consists of two parts – the apps and the encapsulating gearwheel. All the gear teeth combined ensure a smooth integration into your enterprise landscape and allow the apps and respective development efforts to concentrate on value and time-to-market.

# It is not a case of either / or... Hello fusion apps

At the core of our framework are the applications – the more the better. And we're not only talking about low-code apps here. When it comes to creating apps, low-code is not an either / or decision. Fusion apps are well-architected compositions of low-code and pro-code apps. From design to development to quality assurance to deployment, from

enhancement to maintenance, their lifecycle occurs within the platforms of your choice. The apps can be standalone or as-a-service. They're the heart of the landscape and thus the heart of our framework. Here, the focus is on business value and time to market.

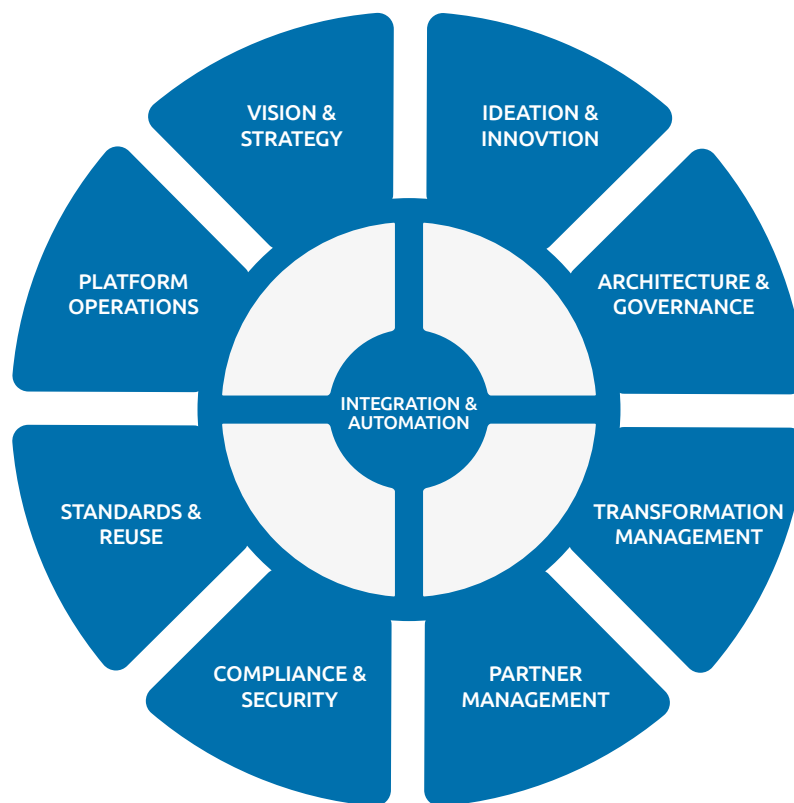


**Figure 3** Four patterns of fusion apps

We see four major patterns of fusion apps (see figure 3). What we call the obvious one uses entirely low-code to create powerful and valuable applications, with the least pro-code software engineer involvement and the fastest time to market. The extended one comes into play in cases of complex business logic or special non-functional aspects, using the right portion of pro-code within the low-code platform. This direct and seamless integration of code, such as Java or .net, extends the graphical development. Meanwhile, the combined one satisfies even more complex

scenarios with an architecture made up of low-code and pro-code micro services connected via modern API integration. This pattern is also the right choice for reusing the services. And last, but certainly not least, the composed one is the best option when you're developing complex and mission critical apps. Because by leveraging the best of both worlds and making smart architecture decisions, you'll ensure your solutions are fit for purpose.

# The gearwheel – innervating our framework



**Figure 4** Enterprise low-code gearwheel

The second part of our framework is the gearwheel (see figure 4). Its primary goal is to create a conducive environment that enables apps to rapidly generate business value with minimal time to market, while ensuring a long-term stable and well controlled enterprise landscape. It supports the apps ecosystem with services, providing guidance and guardrails to app development, especially in the non-functional area. The inner component of the gearwheel **Integration & Automation** ensures smooth communication, orchestration, and maintainability of the ecosystem. All the dimensions of the gearwheel are equally important but may vary in priority over time.

Here is a quick explanation of each geartooth:

**Vision & Strategy** including objectives and guiding principles is where you need to start. This must be tailor-made to satisfy enterprise specifics and maximize value. The vision, as well as the strategy, needs to be well aligned with stakeholders from across the organization,

ensuring that they share a mutual understanding of the goals, as well as taking ownership.

**Transformation Management** is important, as the whole journey and all its impacts on people, processes, and tools need to be supported by a well-defined change management program. Communication, enablement, and empowerment are key to getting everyone on board. If people don't know or understand how and why, even the best strategy won't fly.

**Partner Management** is about finding the right partner with the right product. In the early stages of the journey, you'll evaluate different platforms and take a decision, followed by contract negotiations and alignment on collaboration models. Besides the platform itself, the relationship with the vendor and the mutual trust you develop is critical. Later in the journey, the geartooth of partner management is also about usage monitoring and license optimization. And of course, it's also about

collaborating with partners to shape the journey and master fusion-app development.

**Ideation & Innovation** need space to take effect. The whole gearwheel is about giving that space to the apps and their development. It's important to understand that this isn't about controlling the innovation or even pulling it out of the app creation. It's about enabling ideation and innovation. And it's about creating and sharing outside-in impulses, showcasing new platform features, and developing ideation methodology.

**Architecture & Governance** are important to guardrail enterprise scaling. The fine line between restraining control and giving freedom to the actual app development must be defined, continuously monitored, and adapted. The principle regarding architectural guidelines and governance is "as much as is needed, as little as possible". The communication between central committees and the operational teams must be particularly clear, so that the app development can be agile, innovative, and fast while considering the enterprise-wide, lightweight blueprints and processes.

**Compliance & Security** are key elements in all activities, both globally and locally. Although they're part of the Architecture & Governance topics, we believe they deserve

their own geartooth to define measures that aim to protect enterprise data and ensure that regulatory and enterprise standards are met. This includes data privacy, encryption, and loss prevention, as well as all other (cyber)security related topics, and identity and access management.

**Standards & Reuse** also play a crucial role in the Architecture & Governance. But same as for Compliance & Security we are highlighting the importance of defining standards and promoting reuse by giving them a specific geartooth in our framework. This is about defining software and quality standards centrally, through the whole development lifecycle, to enable and scale excellence of delivery. Here, our mantra is, "do more with less". Achieve greater efficiency, cost savings, and productivity gains through reuse of existing assets and resources. Besides giving guidance, this is also about spreading the word and optimizing communication between teams.

**Platform Operations** is about unified administration, DevOps, usage analytics, system health, quality checks, and activity logging. This enables efficient management and operations of the platforms. The resulting transparency and visibility not only ensure stability and security, but also help you scale in a healthy way, both operationally and economically.

## Composable architectures for flexibility

Leaving the gearwheel for a moment, let's return to the fusion aspect of our apps. We believe the architecture of the apps is critically important, because the ubiquity of composable architectures has meant the demise of traditional, monolith app architectures. Increasingly, software architects and developers are choreographing composed architectures, actively designing the interactions, and consciously deciding on and managing the dependencies. Equipped with low-code and pro-code options they now enjoy even more flexibility when choosing

the right platform for the right parts of their solution.

Enterprise low-code enables you to enrich composable architecture as a business front and back end, while orchestrating the composition or connecting the choreography. If you conduct things well, enterprise low-code will also help keep the core clean. By that, we mean that the core system stays standard, while the customized functionality is implemented outside the core in a thoroughly integrated fusion app.

# It's about much more than technology

Enterprise low-code is about much more than technology. To really unleash its value, you'll need to focus on business, collaboration, and enablement. Therefore, our framework provides valuable business and organizational aspects.

Consistency is crucial and it's important to focus on the same core elements as part of the transformation journey. These are provided through our enterprise processes, and innovations like our gearwheel.



## How do you start your enterprise low-code journey?

The key is to think big and start small. It's best to take a phased approach to the journey to help you and your organization understand each step and make the right decisions at the right time.

First, you'll need to do your preparation, pinning down a robust vision and strategy. A sharp vision and adaptable strategy based on strong principles will enable you to create a solid foundation for architecture and governance. It's never too soon to start working on governance for your enterprise applications.

Second, you'll need to get going. Once you have identified the best partners for collaboration along the way, you're ready to go live. Don't wait too long, create the first MVPs and grow your expertise.

Third, you'll need to scale, shifting focus to acceleration and industrialization. How can you bring the power of enterprise low-code to more solutions and more people, right across your business? As well as optimizing the potential of enterprise low-code, this is also about standardizing its use across your operations. Step by step, you must establish enterprise low-code as an organization-wide mindset.

*It's about establishing enterprise low-code as an organization-wide mindset*

To fully realize its power, enterprise low-code needs a proper foundation in your IT department. It also needs clear governance to safeguard business value. And while it's a catalyst for the proximity of business and IT, it also essentially depends on it, making the relationship reciprocal.

The inevitable proximity between business and IT is a superb opportunity to introduce and embed enterprise low-code. The proximity enables you to create greater business value faster and also decreases the risk of misguided app development.



# Designed to let you take control

The best way to develop strategic projects is to harness knowledge and share it across your organization. The most valuable collaborations are achieved by bringing together experts from different functions.

Establishing a center of excellence will help you accelerate faster. In the early phase of the enterprise low-code journey, it will be the nucleus where you make enterprise low-code tangible, establish knowledge, and speed up your journey under the right level of governance. In time, it will

bring together all your people, processes, and technology, becoming a true enabler of your whole business.

Establishing a design authority for enterprise low-code will allow you to make design decisions centrally, but innovate business locally. The central design authority will be a group of senior experts that guides and enables your journey, orchestrating and assuring the required standards as you develop enterprise low-code and fusion apps, right across your organization.

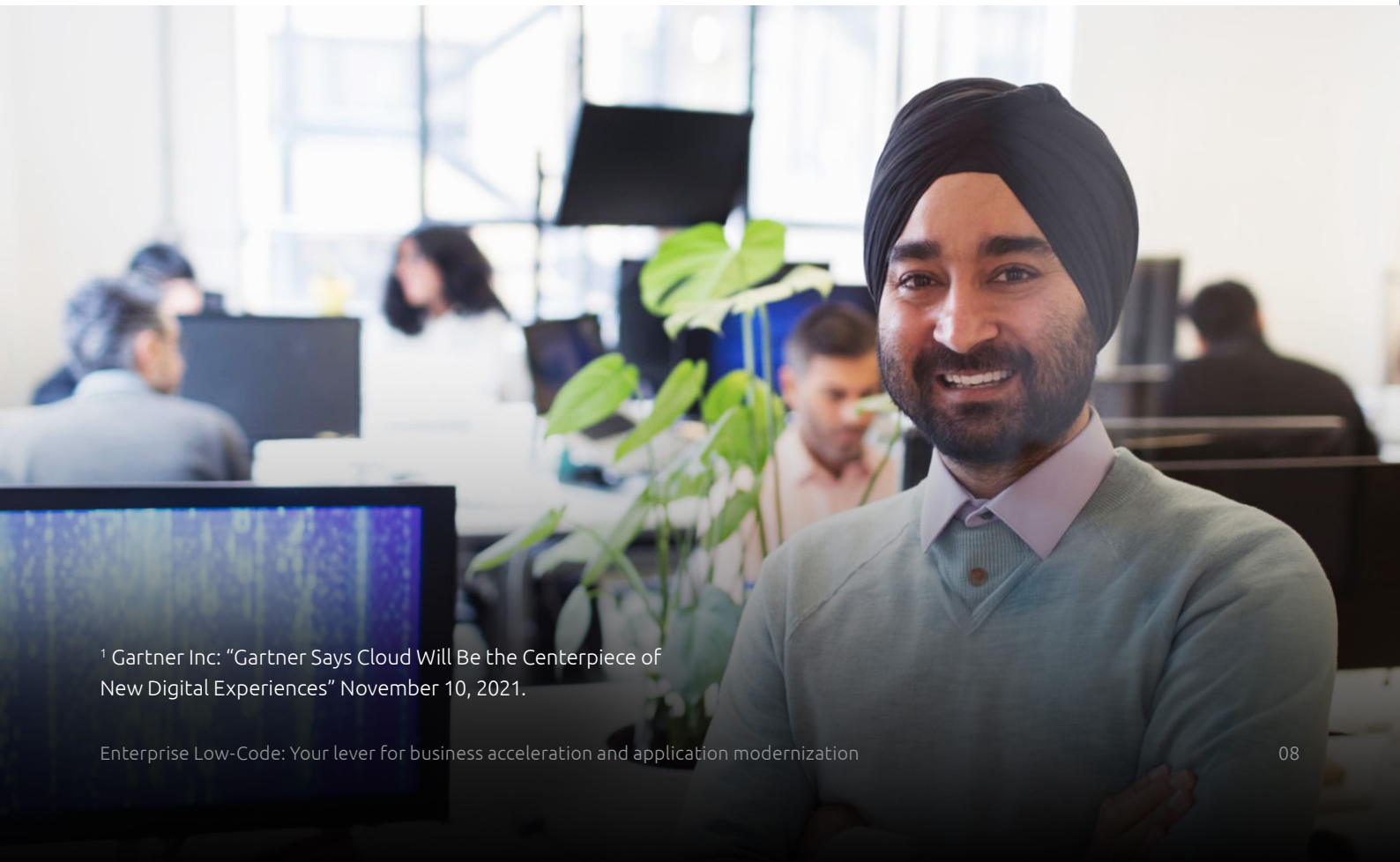
## Reap the rewards

Of course, as the number of apps you create increases, the total cost of ownership per application decreases, while maintainability, quality, and control are stabilized. By harnessing the power of enterprise low-code, your organization will reap a wide range of benefits.

In our experience, enterprise low-code dramatically increases productivity and accelerates the creation of value. According to Gartner, through digital transformation, 70% of new applications will be using low-code by 2025, while more than 500 million new apps will be on the cloud by 2023.<sup>1</sup>

*Enterprise low-code dramatically increases productivity and accelerates value generation through proximity of business and IT*

<sup>1</sup> Gartner Inc: "Gartner Says Cloud Will Be the Centerpiece of New Digital Experiences" November 10, 2021.



# GenAI is the perfect match

You may have heard it said that GenAI is the death of low-code. We believe the opposite. It's a perfect match in both directions. Low-code empowers GenAI and vice versa.

On the one hand, low-code development simplifies the building of GenAI-empowered features in apps. It also reduces the knowledge needed to develop applications that include features utilizing GenAI.

On the other hand, GenAI simplifies enterprise low-code app development, while platforms can utilize GenAI to improve the development experience. AI-integrated software engineering transforms enterprise low-code app development from a visual or model-driven process to a more intuitive, natural language-based one. By leveraging the ability of AI to understand human language and intent, it simplifies development, opens it to a broader audience,

and enhances speed and quality even further by providing insights, optimizations, and issue detection.

That said, GenAI projects, like any AI, need to be controlled by human experts and a strict governance model, especially to review the quality of its output. Businesses must recognize the confidentiality and IP risks involved, the potential costs of uncontrolled GenAI use, and how the technology can impact the structure, skillset, and ways of working of their software engineering teams. It's essential to integrate enterprise low-code experts and pro-code architects seamlessly into product teams, ensuring a collaborative and effective development process. However, there's little doubt that AI-integrated software engineering is the next evolutionary step in application development. That is also true for the perfect match of AI and low-code.

*GenAI projects, like any AI, need to be controlled by human experts and a strict governance model, especially to review the quality of its output*

# Capgemini is your enterprise low-code partner of choice

There's little doubt that enterprise low-code will accelerate your business transformation. However, while there's no one-size-fits-all vision for how enterprise low-code can boost value creation, there is a consistent need to focus on the gearwheel elements as part of the transformation journey. This is where collaboration with an experienced partner to deliver end-to-end solutions becomes a necessity.

Capgemini is world-renowned for delivering complex projects to the biggest organizations. Our enterprise low-code framework aims to leverage the full power of the Capgemini Group by bringing industry leading best practices and accelerators to the enterprise low-code space.

By unleashing the power of enterprise low-code, you'll reap immediate and impactful business benefits. We'll help you

leverage enterprise low-code to improve the speed and quality of your app development, while continuously putting business value to the center of our actions. We'll help you identify and avoid the pitfalls as you leverage enterprise low-code development. You'll benefit from faster time to market, streamlined development processes, and a reduced dependency on scarce and expensive technical resources.

But the true power of enterprise low-code lies in its power to unleash enterprise-wide applications in the realm of complex and mission critical systems. We will help you to deliver cutting-edge solutions. Applications that provide unprecedented insights, integration, automation, and agility to enable you to compete and win in today's volatile and disruptive business environments.

# Authors



## Joao Zorro

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Since joining Capgemini over ten years ago João has held several roles for the Group. Notably leading the UK Microsoft Application and Cloud engineering capability and the Dynamics 365 team. In his current role as Application Modernization Offer Leader for the Cloud & Custom Applications Global Business Line, João helps clients worldwide ensure they benefit from a modernized Application estate that delivers the highest business value possible for their organization.



## Matthias Sonderrmann

CTO for Cloud & Custom Applications, Germany

Matthias is CTO for Cloud & Custom Applications in Germany. Coming from the pro-code side as a software developer and architect he is eager to leverage the technological benefits of all coding worlds to create fusion apps for maximum business value.



## Nils-Frederik Priebe

Director, Low-Code Lead for Germany

In Germany, Nils is leading the C&CA Low-Code Team and is driving the go-to-market as part of it. His background is in 10 years of cloud & custom solution development in different roles along the software development lifecycle.



## Nico Lindert

Lead Business Analyst, Cloud & Custom Applications, Germany

Nico is a dedicated Lead Business Analyst, an enterprise low-code expert and a key influencer in the growth of enterprise low-code initiatives for the Capgemini Group. His contributions include strategizing with the Center of Excellence Solutioning team, exploring the synergy between GenAI and enterprise low-code, and talent training.

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## About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2023 global revenues of €22.5 billion.

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