

# the architect's guide to digital core banking in the cloud

## Insight paper

Learn about building and implementing your digital core banking platform in the cloud, configurable and with automated deployment

**five°degrees**  
the fintech engineers

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## About five°degrees



**how can you be  
future-proof and  
legacy-free at  
the same time?**

# Introduction

**Clients are increasingly demanding services that are both personalized and efficient. They want access to services and solutions online, using the devices they choose within the time frames they need. Therefore, the focus should be on digital transformation and making a full switch to digital banking.**

As an architect, you face real challenges in fully transforming to a digital banking environment. How do you ensure that legacy systems meet the changing customer demands? How do you simultaneously work on customer experience, operational excellence, and compliance? And how do you visualize and articulate abstract ideas, situations, and business opportunities into technology solutions across functional areas of the business?

There is a fair chance you have already adapted the front-end to the new standards, but digital transformation goes beyond a fancy app or website. For most banks, modernization is happening at the edges because often the core technology is too rigid and too slow to support customer needs. Luckily, the banking world has started to understand that digital transformation can only happen when innovative technology is used throughout a bank. To become truly digital, we believe you should also invest in replacing the core — the mid and back-end — to meet higher client expectations and respond more quickly to changing environments. In our opinion, you can't become a digital bank without core systems renewal. However, how do you ensure you won't end up with the same legacy problems within a few years, despite setting up something new? How can you be future-proof and legacy-free at the same time?

This guide helps you to define what is essential in building and implementing a future-proof core banking system so you can provide a flexible architecture that supports the business. We share the key features of a future-proof digital core banking system, how cloud-based core banking can help you, and why using standard building blocks and configuration editors ensures not only viability but also a smooth implementation.



# 1. Key features of a future-proof digital core banking system and architecture

Traditional core banking systems have been continuously modified by hardcoded updates to cope with changes in business practices and technological evolution. As a result, these legacy systems have become saturated with extra layers of functionality, making them even more complicated and harder to manage. Systems residing in silos are impractical, and the lack of system interconnectivity inhibits business growth. Furthermore, these legacy systems have both client and product data in the same system, preventing banks that run multiple product systems to provide a clear single customer view.

Digital and future-proof core banking systems focus on engagement and help you to get closer to your customer base. Combined with modern architectural approaches, modern core banking systems support constant change while reducing risks.

It is your goal to provide a modern and state-of-the-art architecture to support the business. The following features define a future-proof digital core banking system and help you to ensure a flexible, open, and secure architecture.

## 1. A three-layer architecture

We believe building a digital bank is most effective when you focus on all three layers of the core banking platform: front-end, mid, and back-end. Or as we call them: the presentation layer, the client and orchestration layer, and the product layer.

- A thin presentation layer of information for customers (front-end)
- A client and orchestration layer focused on handling all client related processes and data that orchestrates between the presentation layer, the product layer, and the fintech ecosystem (mid)
- A product layer focused on handling products, ideally containing no client information (back-end)

This architecture enables seamless customer experience and separates product and client data. A composable architecture that comprises these layers which are connected by APIs is the most resilient to future changes and enables a fully-digital customer experience.

## 2. Standardization, configuration, and automation

For many banks, too much built-in customization is the reason why their legacy systems can't meet changing customer demands. Switching to a digital core banking platform that is based on standard building blocks and configuration editors ensures the viability and flexibility you need.

Why? Because the less customization, the less legacy you will create for the future. In most cases, custom code is the reason why architects are facing legacy challenges. It makes it difficult or even impossible to adjust the software to new demands. With standardization, you minimize custom development, and enable flexibility.

There is no such thing as a 'standard bank' and some customization will always be necessary to serve your customers optimally. However, opting for a core banking platform and a vendor that enables customization not by coding but by using configuration ensures more viability.

We believe that picking the standard building blocks — based on best practices — that you need, adapting your processes to it and using configuration editors to tailor it to your business, is the way to go. The key is to minimize the degree of customization to create legacy systems that support your needs, meet rapidly changing customer demands and allow you to work on customer experience, operational excellence, and compliance at the same time. Now and in the future.

### In short

- Standardization enables you to have access to the best practice building blocks;
- Configurability lets you set up your own products and processes without being dependent on IT professionals;
- And with automation, you keep human interaction to the point where decisions need to be made.

## 3. Integration with third-party solutions

Most core banking systems aren't compatible with open APIs, which means you can't provide innovative third-party services to your customers. A future-proof digital core banking system is adaptable with these digital gateways, so you can offer a range of in-house and third-party products and services, allowing a 'plug and play' approach. It helps you to leverage fintech innovations and expand into new markets. Through APIs, you can work together with third-parties and integrate their solutions to ensure the systems meet your customers' demands and requirements, without having to reinvent the wheel yourself. It enables you to easily add and launch functionality, new services, and innovations to your (core banking) systems to enrich the customer experience, improve efficiency, and strengthen compliance.

To leverage the possibilities and benefits of open APIs and third-party solutions, it needs to be easy to build (new) adapters to the outside world. Therefore, a digital core banking system should have pre-built adapters that are available off the shelf when setting up something new.

## 4. An architectural setup that allows self-servicing

A core banking system that has an architectural setup based on standard building blocks and configuration editors allows self-servicing. Adding and removing functionality becomes — at its core — as simple as checking or unchecking boxes.

You no longer need IT or other departments to make adjustments, and you can launch functionality without long lead times which results in a short time-to-market.

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## 5. A secure cloud-based banking platform (SaaS)

Cloud computing is a proven solution to many core banking problems, like interoperability, 24x7 uptime, secure storage, etc. Despite these benefits, banks and financial institutions still show hesitation in adopting cloud-based offerings, citing potential security concerns. However, state-of-the-art SaaS solutions offer a level of security that meets or surpasses on-premise platforms.

Opting for a SaaS platform enables you to spend more time and money on the parts where you can make a difference for your clients instead of focusing on IT and security issues. To ensure viability, we believe that a cloud-based core banking platform is essential. In fact, we can safely say that the effective adoption of the cloud will be a pivotal factor in deciding who emerges on top and who falls behind their competitors in this new age of digital banking.

**Opting for a SaaS platform enables you to spend more time and money on the parts where you can make a difference for your clients instead of focusing on IT and security issues.**



## 2. Cloud vs. On-premise differences, benefits, and best practices

Banks are racing to take advantage of the opportunities and manage the risks that the digital economy creates. To do so, a cloud-based core banking platform that provides greater agility, scalability, and flexibility is a necessity.

Step one is replacing legacy systems with a new digital core banking platform. The next step is deciding how you want to implement the new core banking system. You can either do this in the cloud or on-premise. As said before, we believe that cloud-based banking is essential to ensure viability. But what are the key differences, how can cloud-based banking help you, and what are the best practices for adopting cloud-based core banking?

### The key differences between cloud and on-premise

It is no surprise that cloud-based core banking has grown in popularity as much as it has, as its allure and promise offer newfound flexibility for banks — from saving time and money to improving agility and scalability. The primary key differences are:

#### Infrastructure

In an on-premise environment, resources are deployed in-house and within your bank's IT infrastructure. You are responsible for maintaining the solution and all its related processes. In the cloud, resources are hosted on the premises of a service provider. However, you are able to access those resources and use them at any given time. There are no capital expenses and data can be backed up regularly. It allows you to connect with customers, partners, and other businesses with minimal effort.

#### Cost

When you deploy software on premise, you are responsible for the ongoing costs of the server hardware, power consumption, and space. When you use a cloud-based model, you only need to pay a fixed fee to the SaaS provider. It offers you the ability to reduce system maintenance costs, which lowers legacy technology worries. This allows you to spend budgets on innovation, customer satisfaction, and growing the business.

## Security

As a bank, you must have a certain level of security and privacy. Security concerns remain the number one barrier to a cloud-based solution, which an on-premises environment provides. However, in a cloud environment, high levels of security are ensured, and others can't access the data as most cloud providers ensure proper isolation of data per client. It is hard to let control go to another party when it comes to security, but cloud providers have huge teams that dedicatedly work on security and that is something that a bank can never match themselves.

- A very high level of automation, which results in the cloud solution provider being able to maintain a zero touch environment without human interaction.
- Multi Factor Authentication to perform administrative tasks.
- Privileged Identity Management to make changes that require elevation of permissions and manager approval.
- Encryption at rest and in transport using the most secure encryption protocols.

## Compliance

Banks are subject to regulations and it is imperative that banks remain compliant and know where their data is at all times. When opting for cloud-based banking, you must ensure that your provider is up to date and compliant with all of the different regulatory mandates in the banking industry. When they are, it saves you a lot of work compared to an on-premise environment where you have to stay updated with regulatory changes yourself.



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## How can cloud-based core banking help you?

As said, cloud-based core banking is still relatively new, but it is set to become more mainstream. Migrating core banking systems to the cloud presents banks a rare opportunity to achieve conflicting objectives at once: reducing costs while increasing agility, flexibility, and scalability.

Cloud-based banking enables you to accelerate growth and automate operations and workflows. This results in increased efficiency, security and cost savings. You can refocus your resources to better understand and serve customers, rather than maintaining old technology or managing difficult integrations to legacy systems.

It has become clear that any financial institution relying on legacy infrastructure and architecture can't compete against more innovative digital competitors. With the right digital partner, you are set up to serve customers and rapidly respond to new products and services. We believe the time has come to move core banking processing to the cloud, and it should be on the minds of all architects and banking executives.

## Best practices for adopting cloud-based banking

If you are an architect at a bank and you are considering adopting a cloud-based core banking system, what do you need to keep in mind?

### Gather information and talk to other financial institutions

Immerse yourself in the fintech world and explore the opportunity of cloud-based banking. Why? Reading about it and talking to others who have already implemented cloud computing is a great way to know what options you have and what it brings you. It helps you to decide what the best solution for your bank is.

### Finding the right partner

Finding and selecting the right partner is a critical element of making the switch to digital core banking in the cloud. Essential questions to ask yourself are: Is there a cultural fit? Is the platform based on modern, future-proof technology? Do they have an innovative character? Have they a proven track record? And can you connect with a fintech ecosystem to leverage fintech innovations and expand into new markets?

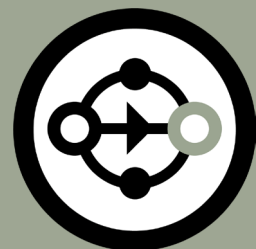
### Perform a risk assessment

When you have found your partner, it is important to perform a risk assessment. Based on assessment criteria, examine the organization and the chosen solution to evaluate hazards and to determine whether the selected core banking system is the way to go.

### Designing and testing workflows

You want to ensure your business processes are in line with the core banking platform. Therefore, it is vital to design and test workflows with your vendor. Creating a proof of concept is an efficient way to do so.

It gives you the possibility to see and experience how a specific element works, to test demarcated functionality and to determine if the selected vendor can help you achieve your goals.





## 3. A smooth implementation by using standard building blocks and configuration editors

Selecting the right digital core banking platform is a major step forward, but successfully implementing and integrating it in the cloud is the final significant step towards becoming digital and fully configurable with automated deployment. This step often proves to be a challenge for banks. A core banking system replacement is a long and expensive process which requires careful planning and configuration to minimize the risks and ensure that everything runs smoothly.

We believe standard building blocks and configuration editors are not only key to building a future-proof architecture that supports the business, but they also makes life easier in the implementation stage.

The building blocks mean you can start the implementation phase with a 'basic' bank that already meets important functionality criteria instead of a blank sheet that requires the custom creation of all functionalities. Together with the vendor, you select the building blocks you need and during the implementation, you make agile adjustments to tailor it to your processes and business.

Often, IT is the bottleneck during the implementation but because of standardization, you are no longer dependent on them for customization. The bank's basis and fundament are already in place before the implementation starts, which makes it more comprehensible, reduces risks, and shortens the time-to-market.

It enables you to focus on matching the requirements, integrating the new platform with current systems, fine-tuning the proposition, testing and adjusting these propositions and to verify your architectural principles.

During the implementation phase, it is also often a problem that once an architectural design is built it doesn't meet the requirements and you have to go back to the drawing board. Standard building blocks ensure that you can build a foundation quickly.

Compare it to building a house. When the foundation of your house is sound it's easy to build the structure to your requirements, and to change the structure whenever your requirements change, using the same solid foundation

Standardization, configuration and building a bank in the cloud simply makes your life as an architect easier and less complex because the architecture of your bank is no longer a tangle of interlinked applications and integrations, and in consequence this will increase reliability. Banking could be as simple as configuring standard building blocks to quickly add and launch functionality. It enables you to spin-up and configure a complete end-to-end bank on the spot. With cloud-based banking, you really are only a few steps away from starting your new bank tomorrow.

**standard building blocks ensure that you can build a foundation quickly**





## 4. Takeaways for you to think about

- Core systems renewal is essential to meet changing customer demand and respond more quickly to changing environments. It allows you to work on customer experience, operational excellence, and compliance at the same time.
- A three-layer architecture, standard building blocks, configuration editors, and integration with third-party solutions are features that define a future-proof digital core banking system and help you to ensure a flexible, open, and secure architecture.
- Migrating core banking systems to the cloud presents the bank a rare opportunity to achieve conflicting objectives at once: reducing costs while increasing agility, flexibility, and scalability. Cloud-based banking enables you to accelerate growth and automate operations and workflows, which results in increased efficiency, security and cost savings. Effective adoption of the cloud will be a pivotal factor in deciding who emerges on top and who falls behind their competitors in this new age of digital banking.
- Standard building blocks and configuration editors are not only key to building a future-proof architecture that supports the business, but they also help you with a smooth implementation. You can focus on integrating the new platform with current systems, then fine-tuning and testing the proposition to verify your architectural principles.
- Standardization, configuration, and automation enable you to spin up a new bank from scratch, speed up innovation and digitization and accelerate the entire fintech ecosystem.



# become future-proof and legacy-free

Discuss how you can provide a modern and state-of-the-art architecture that supports the business and is legacy-free.

Get, for example, advice on:

- How to align the business strategy with the right core banking platform.
- How to translate abstract ideas, visualizations and business opportunities into technological solutions.
- How your business can benefit from standardization and configuration.

Reach out to one of our specialists. They can help you to future-proof the architecture and are happy to help you, regardless of your question.

[Talk to a digital banking specialist](#)



## About five°degrees

five°degrees is a digital core banking technology provider with offices in The Netherlands, Iceland, Portugal, and Serbia. We combine state-of-the-art technology and sound financial knowledge to create unique digital solutions for today's banks and for people who like banking to be quick and easy.

We provide banks and financial service providers with a way to bridge the gap between the old and the new world by adopting digitization and automation. We will achieve this by implementing a flexible digital core banking platform on top of their existing legacy systems.

Matrix, our next generation digital core banking platform, empowers financial institutions to enter the era of modern digital banking. five°degrees sees Matrix as the hub that connects channels, customers, products, services and the fintech ecosystem. Matrix is designed to provide a fully automated banking services platform.

Matrix accounts is the product administration module that enables full front-to-back banking within the Matrix platform and empowers banks and financial service providers to quickly create and adjust banking products, such as cash accounts, term deposits, loans, and FX contracts, and also to handle different payments.

Our client and partner base encompasses retail banks, asset managers, online savings banks and greenfield operations in the financial services industry

Request a demo and get insights on the features and capabilities of Matrix. Our experts will contact you to arrange a demo of Matrix and to answer your questions.

[Request a demo](#)

## For more information



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