

An introduction to **composable banking.**

Ten core principles
and some real-world
examples.

Table of contents.

— Introduction

The future of banking is a moving target. 03

— Section 01

Why real agility matters. 06

— Section 02

Introducing composable banking. 09

— Section 03

Ten principles of composable banking. 13

— Section 04

Compose the bank you want to be. 16

— Section 05

The benefits of composable banking. 18

— Section 06

How Mambu does it. 20

Composable banking in action

New10 by ABN AMRO. 24

Composable banking in action

N26 takes off. 25

— Conclusion

Compose yourself. 26

About Mambu. 28

— Introduction

The future of banking is a moving target.

And it always will be.

Banking has changed a lot over the last decade. But the next decade will make that pace seem glacial.



New entrants are cherry-picking services and reinventing them from the ground up.



Elegant, automated processes and experiences are replacing clunky, manual ones.



Customers raised on Amazon and Netflix are looking at their banks with new eyes.

For the vast majority of banks, this rapidly accelerating change is an existential threat.

Their sunk investments in legacy IT act as a strait-jacket attached to a ball-and-chain set in concrete.

But for some banks, change isn't a threat at all: it's a major opportunity and a serious competitive advantage.

These banks—startups, spinoffs and incumbents alike—are taking a completely fresh approach to their core banking infrastructure challenges.

Instead of coding and customising, they're configuring and integrating.

Instead of on-prem workloads, they're deploying in the elastic cloud.

Instead of enduring major, disruptive releases (or remaining static), they continually improve.

This is composable banking—and it makes even the biggest, most established bank as nimble as a fintech startup.

This guide will introduce you to the concept of composable banking, showing you what it is, why it matters and what it looks like in action.

Let's dive in.



— Section 01

Why real agility matters.

New market forces.

In a market as dynamic and unpredictable as banking, agility moves from 'nice-to-have' to a survival issue.

One thing is clear, 'Small A agility'—the ability to make choices from a limited spectrum of options— isn't good enough anymore. Today's banks need real Agility, with a capital A.

- **New banks** are reinventing end-to-end customer experiences to offer easy, fast, mobile-first banking services.

- **New customer expectations** mean it's no longer good enough to have data locked in silos. Customers expect better relationships with faster, simpler communication.

- **New regulations** create a heavier burden on incumbent banks with their complex, legacy infrastructures. (They also create opportunities as, for instance, regulatory frameworks embrace the cloud).

- **New technologies** create powerful opportunities for anyone wanting to design new banking services—but only if they can adapt their tech stacks to make use of them.

Clearly, the advantages of scale no longer outweigh the benefits of agility.



“We have the best of both worlds.
The agility of a startup—with all
the new technologies available
—and all the expertise of ABN
AMRO—on data, on fraud, on credit
—and the deep customer data.”

Mark Schröder,
Co-founder & Commercial Director, New10

Play to your strengths

As exciting as the new banks and fintech plays are, today's established banks still have major assets to bring to the table:

- **A customer base—**existing relationships make it far easier to launch new initiatives and offers.
- **A strong balance sheet—**to fund innovation without the need for outside investment—and to support competitive rates.
- **Data—**to run models that help you predict demand and shape new offers.
- **Trust—**from many years of brand recognition.

Those are significant assets. Today's challenge is to combine them with the agility of the startup banks.

To be more like a fintech and less like the venerable, inflexible banks of our parents' generation.

The imperative is clear: it's time to release the company from the shackles of legacy tech stacks so you can compete with anyone, anywhere.

That's where composable banking comes in.

— Section 02

Introducing composable banking.

Composable banking is based on the well-established **principles** of composability in system design and software development.

The idea is simple: instead of locking you into a monolithic core banking stack with hard-coded integrations,

composable banking optimises for **speed, agility and freedom.**

"rapid"

Applying agile principles to build, test and release new capabilities in days or weeks.

"flexible"

Pick and choose to combine systems in unique ways creating competitive advantage.

"assembly"

Choose off-the-shelf cloud solutions, as well as custom-built value-generating IP, to differentiate in the market.

Composable banking is an approach to the design and delivery of financial services based on the rapid and flexible assembly of independent, best-for-purpose systems.

"independent"

Avoiding massive monoliths or excessive dependencies on single companies as potential bottlenecks.

"best-for-purpose"

Based on the need of the stakeholder and the problem set, be it customer-facing or an internal process.

"modern customer experiences"

Meeting the demands and expectations of dynamic markets.

It helps banks create modern customer experiences to compete in the fintech era — and constantly evolve them to respond to change.

"fintech era"

The rapid infusion of tech-driven business models which lower operating costs while improving customer relationships.

"evolve"

Continuously change by adding, removing or redesigning which systems are used, and how they're assembled.

Today, even the simplest banking service involves a complex orchestration of core systems, transaction processing, decisioning, reporting, analytics, authentication, security and beyond.

Instead of locking these functions together for dedicated applications and workflows, composable banking separates the functions so they can be combined and recombined in new ways to deliver new services and customer experiences.



— Section 03

Ten principles of composable banking.

Not every system
is suitable for the
composable banking
environment.

And not every system
that claims to be
modular is composable
(see next page).

**Here are some of the
core principles of
composable banking:**

01

Ecosystems beat pre-integrated suites.

No single vendor can innovate on every front as well as a healthy ecosystem of vendors, each dedicated to one thing. As new technologies and vendors emerge, you need to be able to access the potential, composing new services that include them. Need a cross-border payments solution? Choose one of several specialists. Fintech is your friend.

02

Start with a composable platform.

Customers don't care about your back-end banking system. They care about their experiences with you. So owning and managing your own core systems is no longer a competitive advantage. Choose a banking platform that's designed for composability and you can focus on new, better services and customer experiences.

03

Think cloud-first.

Like most modern software, composable components belong in the cloud, where they're always-on, accessible, and can scale forever, securely.

04

Every component is self-contained.

Each module takes care of one specific business process, end-to-end, and is designed to be integrated. So, for example, a payments engine handles the entire payment process and an authentication module handles authentication only.

05

Everything must be exposed via open APIs.

High-quality, well-documented APIs are the essential connectors of composability. Closed or severely limited APIs restrict agility. A risk assessment application needs to be able to easily call out to an AML module or a Know Your Customer service using REST APIs or webhooks.

06

Building new connectors must be simple and straightforward.

If you want to integrate a new service with your existing payment gateway system or fraud alerting, you shouldn't be dependent on any vendor to get it done.

07

Scaling must happen elastically and horizontally.

Scaling from ten thousand to ten million customers should just mean adding servers, not adding loads (and CPUs and memory) to existing servers. So you don't need to buy into huge infrastructure to future-proof your services. And scaling back down should be just as easy.

08

Continuous delivery beats big upgrades.

Updates should happen through small, granular feature improvements instead of massive, disruptive upgrades. You still test everything, but you get new features automatically, faster and with lower risk of disruption.

09

The commercials need to be as flexible as the software.

Complex pricing of any module—for instance permutations of licensing, maintenance and usage pricing—is hard to support in a composable environment. Best practice is to simply connect price to a single metric, like usage, so you don't need a new license or contract just to invoke or scale a component.

10

A self-service developer experience is essential.

You shouldn't have to take a certification course just to compose new banking services. Developers need to be able to work with open, public APIs and access existing developer forums. Every component must be easy to trial and test. And turnaround times for error reporting and support need to be fast.

“Modular” does not mean composable.

Banking systems vendors have been touting modularity for years. What they really mean is a pre-defined suite of proprietary modules that extend the functionality of their core systems. They're extensible but they're not flexible or open. An apt metaphor is the jigsaw puzzle piece vs the Lego brick:

**Modular**

- Combine pieces into one, pre-set picture
- Hard or impossible to swap out pieces for better ones
- Locked into one vendor

**Composable**

- Combine independent components to make anything
- Re-use, swap in or swap out any component
- Choose best-for-purpose: no vendor lock in

— Section 04

Compose the bank you want to be.

Composability is all about combining the specific components you need—no more and no less—to deliver a new service with a great customer experience.

Your ecosystem of **available component** will include third-party APIs as well as the services and tools you built in-house.

You choose the components you need, combining best-for-purpose software instead of simply the modules your mono-vendor offers.

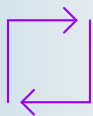


Source: McKinsey, "Next-generation core banking platforms: A golden ticket?"

— Section 05

The benefits of composable banking.

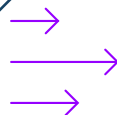
The benefits of composable banking:



Agility and flexibility.

Composable banking gives you the freedom to quickly combine and recombine solutions whenever you need to.

- Cloud-native banking platform
- Swap best-for-purpose components in and out
- Integration through APIs



Speed to market.

Get new products or whole new banks to market in a few months.

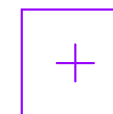
- Combine existing components, designed for composability
- Eliminate disruption of any legacy tech
- Integration simplified via REST APIs and webhooks



Lower total cost of ownership.

Composable banking increases your developers' productivity and reduces the technical debt that drives so much IT spend.

- Fewer resources needed to go live
- Minimal customisation, integration and bespoke development
- Lower maintenance costs and automatic upgrades



Better customer relationships.

Start with a blank sheet of paper to design truly customer-centric services.

- Focus on the front-end experience not the back-end stack
- Choose or build the best customer onboarding and digital channel apps
- Optimise for UX, simplicity, mobility and speed

Section 06

How Mambu does it.

Mambu's pioneering
composable banking
solution is built on
three pillars.

The Cloud Banking Engines.

To enable rapid financial product creation (lending, transactional banking, deposits and more) with powerful transactional capabilities.

- **Easily configured:** The engines can be configured to your specific needs without the need for additional customisation and development.
- **A better developer experience:** With intuitively-designed APIs, webhooks, developer portals and other tools to compose in a truly Agile way.
- **Instantly scalable:** With a cloud-native architecture fit for modern digital businesses and fast-moving DevOps teams.
- **Built for continuous delivery:** So core banking never slows you down or distracts you from the new, unique customer services you need to build.
- **Configuration-as-code:** So you can include your core banking platform in your continuous integration/continuous delivery pipeline, automatically provisioning changes via APIs.

The Process Orchestrator.

Empowering banks to quickly integrate or 'compose' their IT landscape with integrations and no-code business processes that add real value to end customers.

- **No-code/low-code:** An intuitive interface to design, build and maintain holistic API-driven business processes.
- **Built for speed:** Using RESTful APIs and a rapid implementation approach that ensures you aren't developing or maintaining code every time you integrate.
- **Agile integrations:** That get rid of all the time and effort it takes to re-deploy your code any time there's a change in business processes.

Ecosystem Integrations.

So banks can select and integrate any technologies they need, or choose from our pre-integrated and managed connectors to best-for-purpose fintech.

- **Pre-integrated connectors:** Productised, fully-supported connectors that allow you to work with best-for-purpose vendors without building or maintaining your own integrations.
- **Mambu Marketplace:** A carefully pre-selected list of partners based on vendor viability, compatibility with the ecosystem, quality of service, API design and sandbox availability.



“Any player starting completely from scratch today would always say, okay, let’s go cloud instantly. With AWS and Mambu, it becomes a ‘plug & play’ approach. Within a couple of weeks you’ve set up everything to create a new credit product.”

Mark Schröder,

Co-founder & Commercial Director, New10

Composable
banking in action

New10 by ABN AMRO.

New10 is a new small business lending start-up by ABN AMRO, offering a strikingly modern mobile user experience including a 15-minute credit decision and fast onboarding—all online.

To launch quickly, New10 took an entirely cloud-native approach, choosing Mambu as the composable banking platform and deploying on Amazon Web Services.

The composable architecture let them choose the best, most innovative technologies available, including:

- Front-end origination
- Customer portal
- Know Your Customer profiles
- Credit scoring and decisioning
- Anti-Money Laundering

All components were easily integrated into a complete service via APIs, hosted in the cloud (on AWS) and built in complete isolation from the parent company systems.

They launched in record time—with a minimum viable product in 4 months and the full launch in 10.

“Bringing a fully digital approach to life meant an entrepreneurial approach and a fully cloud-native environment. As lean and agile as the business itself.”

Jaap Boersma,

Co-founder & CTO, New10

The result

Within the first six months of launch, New10 signed on more than **2000 accounts**, resulting in more than **100 new loans**. More than **65% of customers** are new to ABN AMRO. And they're happy: with a Net Promoter Score of **60+**.

Composable
banking in action

N26 takes off.

Speed to market was critical to N26. Headquartered in Berlin, it's the first pan-European mobile-only retail bank, offering a free basic current account and debit Mastercard plus overdraft facilities, investment products, a savings account and premium current accounts.

With a composable banking platform, N26 built a production MVP in under 6 months, while minimising operating costs and IT resources.

And the customer experience is impressive, with an 8-minute, fully digital customer onboarding experience.

“We were able to cut our core operating costs drastically, essentially creating a fintech hub to meet the needs of experience-focused customers.”

Gino Cord,
CTO, N26

The result

Today, N26 has over **3.5 million** customers in **22 countries** (and growing), with over **\$1bn in transactions** per month.

— Conclusion

Compose yourself.

To make change your biggest advantage.

Banking is no longer a sleepy oligopoly. Today it's a hotly-contested market boiling with disruption, new entrants and innovative 'neo-banks' spun out from established banks.



No one can predict the future with any degree of confidence. But few doubt that the pace of change will only increase.

Whether you're an incumbent bank rising to the challenges of disruptors or a new challenger taking aim at a slice of the market, size and scale will not be not your greatest assets. Without doubt, the new killer advantage is agility.

Wherever you're going, you'll need to respond quickly to changes in markets, customers, competitors, regulations and technologies.

But agility isn't something you sprinkle on at the end of your architectural design process. It's either built to the very core of your business or it isn't.

That's the choice for today's banks.

And that's why composable banking is growing so quickly.

About Mambu.

Mambu exists to make banking better. We empower financial institutions to rapidly deliver business value in a constantly changing market. Our leading cloud native solution is the driving force behind our customers as they grow, scale and transform to meet evolving digital demands.

To know more, visit mambu.com

