

# Re-platforming critical payments infrastructure to the cloud

Uncovering the key questions and decisions that make a Payments-as-a-Service platform an increasingly viable option for banks looking to future proof their payments capabilities.

**FORM3**

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## Preface

# From mainframes to cloud

Like many century old industries, financial institutions established their organisational structures around a physical space, the office. The infrastructure needed to handle their critical business functions followed suit, and with the first computers being the size of a room, it seemed natural for the computer to live in a physical workspace.

Fast forward to the 1990's, server-rooms became the technological pulse of business, with every trade, payment, deal and email relying on it. With advances in technology moving at a rapid rate, so too did the demand for banks to digitalise their offerings. The multitude of business software needed was becoming as large as the hardware to manage it with offices being homes to endless racks of servers that continuously called for updates and maintenance.



In response to advances in technology and growth of digital, software hosting became the new normal with datacentres popping up all over the place enabling banks to host their business applications. Several decades later and this still continues today for many financial institutions around the world.

However, the advent of cloud has seen a steady adoption of cloud-based services, that have now become mainstream across multiple industries. Now we are seeing the adoption of cloud for the very services at the core of banks, including payments. On the latest leg of this journey, cloud native technology has become the new standard for managing and deploying applications which are built for the cloud from the ground up.

In today's new, everything instant world, offices have turned virtual and organisational structures are built around web not physical addresses.

No longer do banks need to keep hosting and maintaining their ageing software applications in the cloud but can remove the infrastructure burden completely by outsourcing the entire payment processing, clearing and settlement to a cloud-native, payments-as-a-service platform instead.

This paper explores a modern alternative, fit for the 21st century, next generation payment technology where the end to end payment journey takes mere seconds and the infrastructure is no longer physical but delivered as a fully managed service. Welcome to a new era of payments technology:

...No hardware, no software, no maintenance and no eye watering professional service fees to perform upgrades.



# Why re-platform?

## Section 1

All Financial institutions running on legacy technology are currently facing the same problem: they need to re-think legacy architectures that are increasingly costly, risky to maintain and slow to develop. Year on year, as customers expect ever more reliable, easy to use digital offerings from their banking services (with challenger banks setting out the realities of the art of the possible), legacy banks look to improve their services to rival that of the challengers.

They then face the problem that their legacy infrastructure, already outdated after a lengthy implementation, is based upon decades old technology that is hard to update. Increasing or decreasing physical capacity isn't possible so increases in demand lead to downtime for customers. When updates are planned for the scheduled downtime inevitably impacts customers. Finally, banks that are tasked to operate and update these systems in the face of regulatory changes and scheme updates are inevitably over-reliant on the expertise of the original implementation teams whose professional services fees reflect this harsh reality.

**“If we want to be digital to the core and act like a technology company, it’s best we learn from the technology greats, figure out how they do it and see if we can’t bring in some of those things internally.”**

**Dave Gledhill, DBS Bank – Mckinsey**

Source:

*'Next-gen Technology transformation in Financial Services' Report*

The problem is global. In Europe, banks are also burdened by having multiple core banking platforms and separate local integrations due to expansion over decades. This makes it impossible for them to effectively roll out updates and patches and develop a unified customer experience.

The desire to investigate alternatives isn't only driven by the negatives of legacy technology. By moving to a 'cloud-first' platform banks can now access the functionality and speed to market now required to adapt and survive. They need to be architected differently, from the core foundations up if they want to really benefit from new banking and payments services. This doesn't simply mean technologically; they need to be architected for constant change across the organisation, from the way they interact with their customers to the way they develop, test and deploy code.

# Through embracing re-platforming to the cloud, banks will be able to:



- Provide a better, richer set of services to their customers
- Accelerate their speed of transformation to a future proofed platform.
- Enable transparency over their Total Cost of Ownership (TCO), whilst improving their return on investment through accessing a more reliable service at lower cost.
- Improve Availability, Resilience, and Scalability that takes full advantage of cloud native microservices. The potential for cloud-agnostic configurations that have multiple simultaneous live environments brings about a greater level of resilience.
- Ensure Security by design, taking advantage of the security of the public cloud.

**“it’s important to recognise that software designed for mainframe servers will simply never port well into the cloud. In order to take advantage of modern architecture principles such as autonomous scalability and resilience, the solution needs to be built around microservices architecture wrapped with a fully managed service offering.”**

Banking software of the past is predominantly based on mainframe services architecture. The software itself is a large program with one input point and one output point. If you need to add new capacity it is a case of linear scaling, you need to add more servers to run more instances of the software in order to have more capacity, or sometimes the only option is to scale vertically by upgrading the servers. Such tasks are traditionally manual and can take months to complete.

This means more material cost to deal with higher demand, potentially downtime and a physical process of increasing your capacity. Thus, the critical infrastructure and one of the core components of every banks output (the ability to send and receive money) is based on physical infrastructure that isn't able to adapt.

# Removing barriers to change

## Section 2

**With Financial institutions being aware that their current payment processing capabilities are unlikely to be fit for purpose in the near future, they then have a whole new challenge to solve: not only transitioning the technology and creating a more sustainable operating model but transitioning the organisational mindset, its structure, its teams and in doing so, its business agility.**

Transformation isn't just about the technology, it's about the business, the governance, the people, the processes, the ownership, the reporting and analytics. In other words, it's about having the right, cross-functional teams who are empowered to develop, operate and enhance the services on a constant, always up environment. This is completely different to the traditional command and control governance, waterfall delivery, of so many large banks. Questions of risk and regulatory scrutiny are very important; with Banks being a critical part of nationwide infrastructure even a small risk of a service blackout is enough to bring transformation projects to a halt.

Culturally, there needs to be a shift from 'the old ways' to a new way of working which requires a mindset change across the organisation. Moving critical payments infrastructure to a PaaS model will vastly improve the technology capability but also optimises processes and crucially changes organisational thinking. And that means spending time on the clarity of purpose, gaining buy-in and thorough design as well as organising collaborative teams to build a sufficient plan around testing and control mechanisms that enables a smooth transition with fewer bumps in the road.

# Steps to a successful PaaS migration

## Section 3 Choosing the right technology partner

Payment processing is a high stakes operation and is becoming more so as we move towards real-time processing and rapidly growing volumes. With increasing consumer and business customer expectations and an increasingly full diary of regulatory change, now is the time to partner with a specialist fintech to deliver a complete, end to end, 24/7 managed service in the cloud.

Adopting a Payments-as-a-Service platform (PaaS) significantly lowers capital expenditure when compared to managing and maintaining expensive and rigid on-premise systems. It also lowers operational risk as the constraints of legacy internal IT systems are removed through the agility enabled by a cloud-based PaaS.



## Success criteria

### In choosing the right PaaS technology partner, the following success criteria should be taken into account

- A truly cloud-native platform (not just hosted applications in the cloud)
- Domain expertise and trusted advisors
- Evidence of scalability, future proofing and approach to change
- Both technical and cultural fit between both parties is very important
- Collaborative teams from both sides work best when they can co-create
- A mindset of partnership works better than a customer/supplier relationship
- A robust service model and 24/7 support is a must have
- A clear roadmap and evidence of commitment with clear and transparent pricing
- A clear and proven migration approach (lowest risk for highest reward)

In order to access the functionality and speed to market now required to adapt and survive, banks are accelerating their digital transformation and re-platforming investment programmes to adopt a 'cloud-first' platform.

# Back-end platforms as enablers of front-end innovation

**Conclusion** Huge advances in technology innovation are transforming the very core of financial services, challenging banks to reassess their front- and back-end platform architecture. It is not surprising that financial institutions around the world have started to examine payment platforms and the capabilities of the cloud as a key first step in moving away from the restrictions and barriers inherent in their existing legacy payment solutions.

One of the key reasons that platform technology can be so effective is its agility. A central element of this is the speed with which the systems can be improved. Paired with the power of the cloud these new agile back-end systems can provide banks the ability to upgrade and enhance on a monthly basis as opposed to previous yearly timeframes. This platform agility is the foundation on which the payment innovations of tomorrow will be built.

## Payment technology re-imagined

### Let's start a conversation

If you want to learn more about the benefits of cloud-based payment processing and how Form3 can support your innovation journey.

Contact us today:  
[www.form3.tech/contact](http://www.form3.tech/contact)



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