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Is change really such a scary word?

Digital disruption and opportunity in financial services

Why should change be embraced and not feared?

Traditionally, all aspects of change for financial institutions have been a concern.

These large behemoths, with extensive decision-making processes and multiple moving divisions, sub-divisions and parts, make for very complex and un-agile organisations.

Payment technology is the bedrock of a Financial Institution, often in place for decades and deeply rooted into the fibre of an organisation. To change this would mean disappearing down a rabbit hole of fixes, overlays and applications housed in a monolith so big it would put Australia's Uluru to shame. However, in this report we want to address why, in the modern technological era, change should be something to embrace and not hide from. Why industry changes as significant as the New Payments Architecture, FedNow or the move to ISO20022 can essentially become insignificant. We explore how the combination of years of experience, expert understanding of technology and a vibrant culture can turn a logistical nightmare into a dream.

You worry about the outcomes...

...let someone else worry about the technology

It is fair to say that financial technology is an exciting place to be, and we are firmly sitting on the edge of a new payment driven revolution.

However, financial institutions have a lot on their plate. The closest analogy is running exceptionally fast to stand still. From meeting the needs of the modern consumer (24 x7, real-time, instant gratification) to the latest regulatory regime(s) and the un-ending push towards ISO20022, CTOs are being kept well and truly awake at night. Then add future-looking concepts such as Open Banking and CBDC's (central bank digital currencies) derived from the bitcoin and crypto movement, and we are starting to see drastic shifts in attitude, behaviour and processes to try and meet demand. The payments and financial technology industry will continue to see a huge influx of innovation, but with this innovation comes change, and change can be a very scary place.

So, how can a financial institution truly insulate their payment technology against changes, and future proof themselves against anything this market can throw at them. The trouble is, the explanation is not necessary a simple one.

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Fear of the unknown

Is that what everyone is scared of?

From an objective point of view and from our experience of working closely with all sizes of banks and financial institutions we know that every single one is different. Rules, business logic, expectations, internal processes, business culture, core banking architecture, transformation culture and technical networking and connectivity are never the same.

These differences are where the concerns stem from when it comes to major regulatory change or scheme changes that impact embedded process in infrastructure. Let's take the NPA as a working example; originally planned to be the most significant change to the UK interbank payment system in years, however the true extent of this is slightly more conservative and will only impact one scheme at a time. Along the way the moving goalposts, changes in scope and moving timelines

have made planning and resourcing a major headache . In addition, technology is moving so fast and this industry is at the forefront of global innovation that knowing how to keep up becomes a minefield of ongoing adjustments for financial institutions. We truly are moving into a period of transition, fast forward 5 years and the landscape will be unrecognisable from the ecosystem we see in 2022.
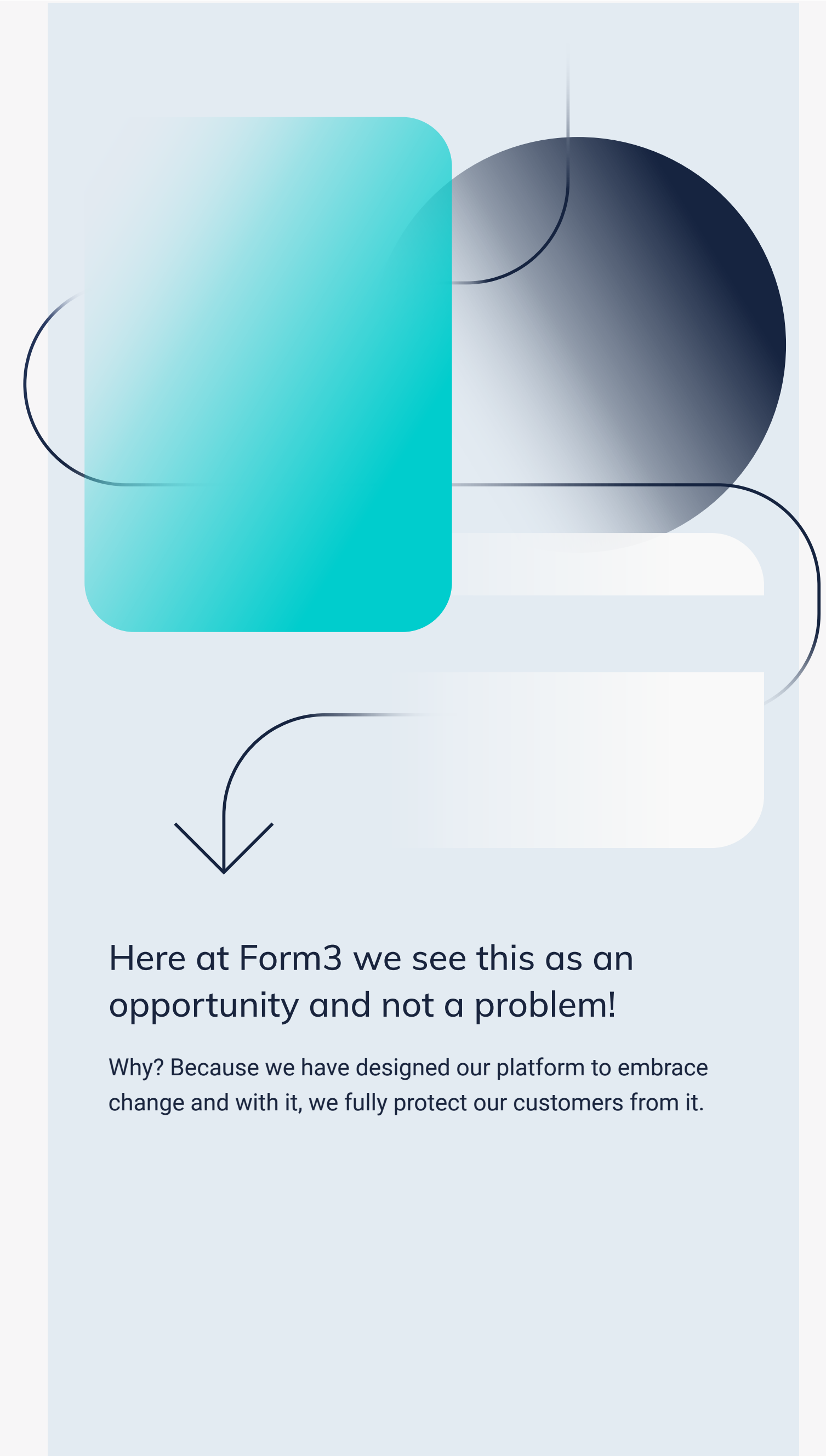
Here at Form3 we see this as an opportunity and not a problem!

Why? Because we have designed our platform to embrace change and with it, we fully protect our customers from it.

The legacy of legacy

Form3 have discussed many times before the issue of legacy technology

It is legacy construction, with monolithic architecture, that puts the fear factor into change projects for many financial institutions. Traditional monolithic based architecture means that changing anything is complex, time-consuming and expensive. The fact that multiple engineers will have worked on the same stack growing the application out of control and inevitably meaning no single engineer will be familiar with the entire monolith makes for an eyewatering endeavour. Legacy suppliers become 'sticky' and leverage fear of change to encourage the status quo. See if this sounds familiar. Bi-annual upgrades and releases where the legacy vendor provides code which you are required to test on your expensive test stack. The code is full of bugs so you mark your vendor's homework. They go away and fix (some of) the bugs and provide you with more code. You re-test, find more bugs and so the dance continues. Why should users pay the price for a vendor's poor code? Why should you pay to have a ful-stack test platform solely to fix buggy code provided by your vendor? We recognised this when we built Form3, we built the organisation ready for change and designed to scale through cleverly selecting the technologies that allow this.

What is more, even at a granular level in relation to frequent small tasks, a monolithic code base creates huge inefficiencies, interface modifications, bug resolution, application modifications etc which are common requirements but unfortunately lead to time consumption, reduced capacity and/or adaptability as well as huge costs. So, from the very beginning, Form3 wanted to address this and create a payments platform that was 'always on' and multi-tenanted using microservices. Multi-tenanted in the pure sense, all of our customers access a set of standardised outcomes/services all of which are maintained independently of one another and easily replicated across multiple counterparties.

Our intention was to abstract these change problems experienced by the market and turn them into our assets. We wanted multiple customers to be connecting and running on the same mutualised codebase (our platform) with the ability to continuously deploy and change without notifying or disrupting the customer. We don't send our customers buggy code. In fact, we don't send them any code. We deploy everything onto the mutualised platform and everyone gets to use the new tech at the first time of asking, at a time of their choosing.

> Our partnership with Form3 is based on the fundamental principle which is to provide the best service for payments for our customers in the most reliable environment at a great price. The continuation of service is extremely important for PPS and its clients which is why we are pleased with the fact that all updates and releases to the Form3 platform are seamless and unnoticed, without any disruption to the real time payments.

Ray Brash
MD, Prepay Solutions

Having built the pillars and the environment how do we leverage this set-up for the benefit of our customers?

We think we have the tech covered and we're convinced it's a question of mindset!

Can we really future proof a bank?

It all starts with the Cloud

Cloud native and Microservices – Just buzz words or gold dust?

Building in a truly cloud native way is in our genetics. I will discuss a number of components that are intentionally built into our business model that aid, facilitate and support a truly agile transformation-led business, but being cloud native as our core strategy has exponentially increased the speed at which we can update our product stack for the benefit of our customers. We see our role in the payment ecosystem as an ever growing, critical and unique one, we are building the platform and technology to power the payments of now and of the future that is completely unique in market and can adapt and adjust purely by how it has been put together. We are in a very lucky position to be able to see the problems in payments from the outside and through the eyes of years of experience. We challenge the status quo by being critical and bringing objectivity to these problems and this is the route to our success and uniqueness so far.

Form3 is built on Microservices; this decouples the monolith and recreates stand-alone product applications that can be developed, deployed and maintained independently from one another on an ongoing basis. Where was this technology back in the 60's when all the banks built their platforms I hear you cry!

Knowing who you are as a business and where you are going in the fintech world is essential, it drives intelligent decisions when it comes to infrastructure and technology choices. At Form3 we had a very clear understanding of where we wanted to sit in the ecosystem from the outset and the problems that existed in that dark and dingy part of the payment world. Scheme access, mobility and flexibility was broken, and we were going to fix that. We built intentionally on microservices from day one to allow us to use different technologies for different services and allow for our intended scalability and maintenance.

So what are microservices and why do they help us become an agile transformation business?

The definition of microservices is very simple, it is a specific type of architecture that allows each component to exist independently from one another.

The definition of microservices is very simple, it is a specific type of architecture that allows each component to exist independently from one another. The implication and perceived wisdom is that each service must be small in nature, however this is not the case; Form3 are able to run large sustainable applications individually with dedicated dev-ops teams employed for the maintenance, development and update of each component. This streamlined team approach increases speed of release drastically as the smaller more agile teams have a very clear and strategic line of communication to the head of the product for that service and it is not spread across a larger organisation. What this means is you can be truly insulated from anything that may come down the payment regulation tube today or tomorrow.

The relevance of a tennis racket

Building on Microservices was a complete no brainer and just the starting point. However, to use another analogy, a Michelin star menu is only as good as the chef that combines the ingredients. Form3 therefore, also made a conscious decision to employ the most experienced and leading minds in the payments market to make our vision become a reality. Afterall, a tennis racket is just a tennis racket until you give it to Roger Federer.

Any specialist operator needs the best tools and the best skills to be successful. Often with legacy platforms, the technology was good, once...and no doubt there are people who know what they are doing, but can that approach still cut it in the helter-skelter environment of the 21st century payments landscape? We don't think so... we think you need the very latest technology and the very best team in the business to truly be able to provide best-in-class and category-leading payment tech.

> From day one, it has been an essential part of Form3's strategy we wanted to hire the best people in the market, creating an environment where innovation and creativity was engrained in the organisation. Having access to this exceptional expertise and experience has allowed us to build a market leading platform and identify and deploy change seamlessly across our products.

Michael Mueller
CEO, Form3

What role does DevOps play?

One of the most exciting areas within Form3 is our approach to a DevOps model.

One of the most exciting areas within Form3 is our approach to a DevOps model. Well actually, we have a dev-sec-ops set-up like nothing seen before. This combination of philosophy, practice and cutting-edge tools means we are able to develop and operate at high velocity improving our service to our customers. Essentially this means that the same engineers that build the platform and individual microservices are responsible for ensuring they run smoothly in production, even if that means getting up at 2am to rework something. Form3 organise our engineering team around different parts of the platform, where the same developers build a feature all the way from a concept to a live service, to supporting

and maintaining that service 24/7/365. They are therefore responsible for all scheme adherence, any small change or insignificant change at the scheme which would cause a major problem in a monolith, are designed and deployed immediately on our technology and assurance that there is no lag between build and run.

This differs drastically from a bank where you have "Run the bank" and "Change the bank". Both are very different areas and often battling over resource to ensure projects are completed. Once again something we were conscious of when we built Form3. We realised if you build independent

ownership over build and run we can scale and maintain with allocated development resource in each product area. Product leads can then be responsible for prioritising build over run or vice versa.

> "All our engineering teams are aligned around services and therefore they work closely with our product owners and service delivery team to set the alerts that make the most sense for their team and their service – because they've designed it and therefore have great insight into what can and possibly will go wrong and ultimately how to solve it when it does.

Kevin Holditch
Head of Platform Engineering, Form3

Standardisation

A Payment is a Payment is a Payment

We believe an API-first approach enables us to abstract Scheme-side nuances from the front-end integration. What does that mean? It means our Payment API is completely ubiquitous and ignorant of the type of payment being made. Each JSON message is just a blob of data. Whether you are making an FPS real-time payment or collecting a SEPA DD, the API and the JSON message are the same. The magic happens once the transaction hits the platform and it gets validated, transformed, routed and submitted to the relevant Scheme. Form3 have created our own language for payments, we abstract the information into a standardised format so that to us a payment looks and feels the same the world over. So to us, a payment is a payment is a payment.

This approach, driven by microservices, means Scheme change does not impact our customers and adding a new scheme hardly impacts our customers. An always on, fully simulated sandbox replaces expensive test infrastructure and timeline test and release processes but also allows for ongoing tweaks and testing as required.

What can we take away from this?

01

Buggy code is a thing of the past.

02

Large infrastructures and test systems are a thing of the past

03

Massive licence and maintenance bills are a thing of the past

04

6-monthly maintenance releases and change management cottage industries are a thing of the past

05

Big bang does not exist anymore

Public Cloud based payment platforms, with active-active-active infrastructure spread across multiple availability zones and potentially multiple public cloud providers is the future of payments technology.

A world does exist where change is not scary. In fact, change can be embraced and mere 'compliance' at great expense can be turned into innovation and enhancing the customer experience to meet their future needs.

Words like Scalability, rapid deployment, discrete flow migration, dev-ops, fully managed and best-in-class begin to represent your payments experience.
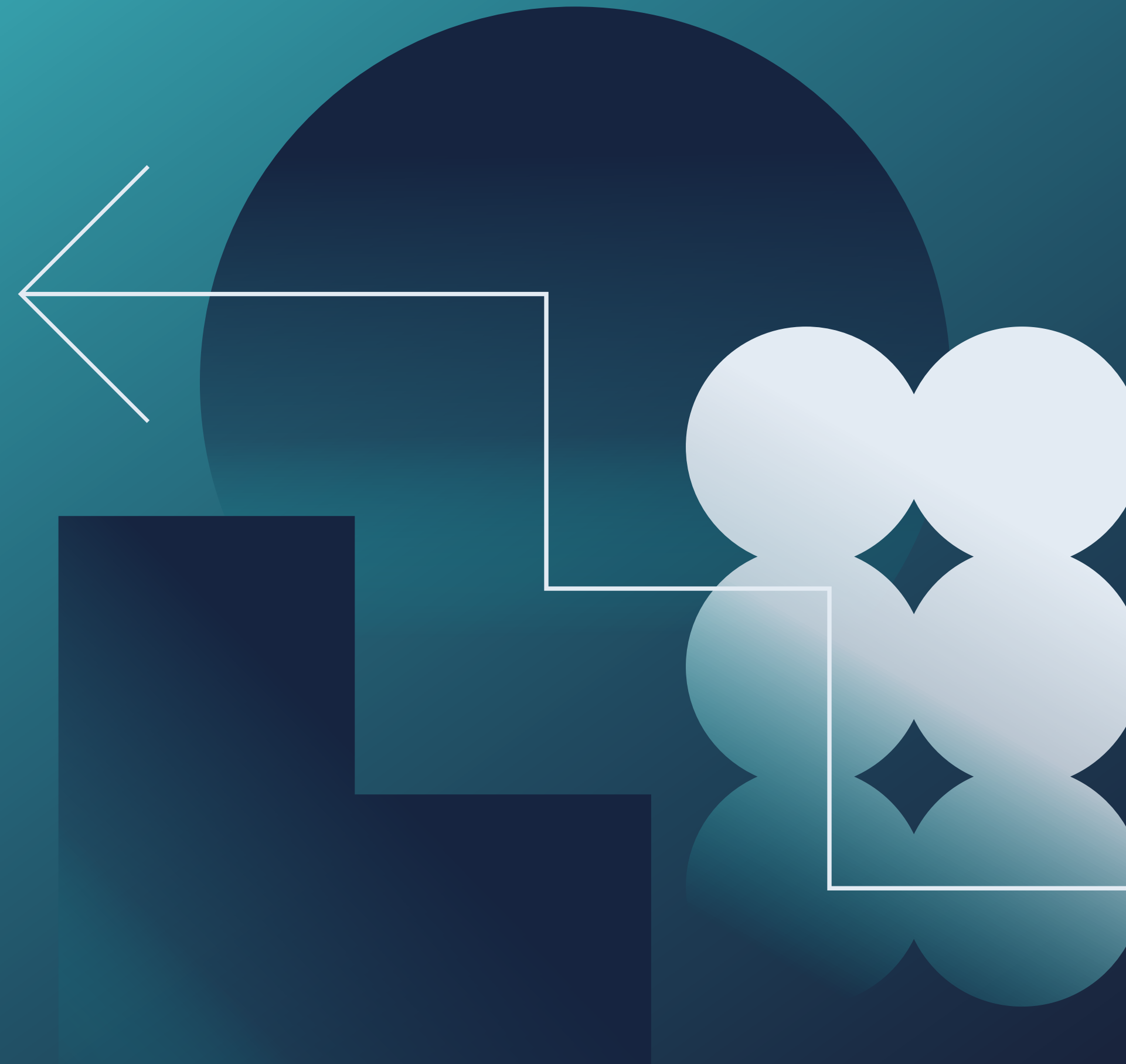
Meet the author

Andrew Frost
Head of Cross-Currency, Form3

About us

Our vision is to be the world's most trusted provider of payment technology.

We provide Banks and regulated fintechs across the globe an end-to-end managed payments service that delivers complete payment processing, clearing and settlement to the universe of payment schemes through a single API. Our platform handles everything so you can focus more on serving your customers' needs and less on managing payments infrastructure.

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