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Demystifying the role of the fintech CTO



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This series of articles looks to demystify the various C-level roles within fintech companies today – exploring the career paths taken by top managers, their critical skills, daily responsibilities and challenges, and even how the pandemic has impacted their understanding of running a successful business.

This second instalment of the C-suite Series examines the role of the highest technology executive position within a fintech – the chief technology officer (CTO).

Arguably one of the most nuanced, yet diverse, C-level roles out there, the CTO is tasked with leading a fintech's technology or engineering department – ensuring client expectations are met, by continuously optimising the firm's product and technology infrastructure. This can involve deployment processes, integration testing, research and development, and a host of other technical operations.

But what experiences and qualifications are necessary to become a CTO? What skills are key to being successful in the fiercely competitive fintech space? Have these requisite skills evolved over time? How will the role evolve in the long-term? What challenges and rewards lay in wait for those gifted enough to become a CTO?

To answer these questions, Finextra spoke with the CTOs of Origin Markets, Tymit, and Vestrata, in order to pick their brains, and help demystify the ever-changing role of the fintech CTO.



The role

With financial technology moving at such a rapid pace in the last decade or so, the role of the CTO has become increasingly central within fintech firms.

“In a business world increasingly beholden to digital technologies,” argues a [Financier World article](#), “the role of chief technology officer (CTO) has steadily ascended the corporate hierarchy to become a critical component of day-to-day operations.”

The importance of the CTO is owed to the diverse skillset required to carry out the job. As such, there are [many different kinds of CTO](#). The ‘Infrastructure Overseer’, for instance, might oversee the company's data, security measures, its network, and even implement technical strategy. The ‘Strategic Planner’, meanwhile, will decide how technology should be deployed, in order to effectively meet customers’ expectations. The ‘Consumer Liaison’, on the other hand, will act as a facilitator between the business and the customer, home in on the target market, and help deliver IT projects. Finally, the ‘Thinker’, will help develop corporate strategy, drive technological infrastructure, and test business models.

Considering which of these buckets he falls into as CTO of investment solutions platform [Vestrata](#), Kim Lennen commented: “My strengths are in business process, and application architecture – ensuring we have the right components, modules, vendors and tools to allow the platform to evolve effectively through time.”

Nicolas Magnone, CTO and COO of disruptive credit card provider Tymit, said his strengths are in working with people: “The majority of my day involves communicating with the team, empowering them, mentoring them, and making sure they have everything they need. The rest of my day is dedicated to analysing our service, making sure it is performing as it should – both from a customer service and technology perspective – and optimising the architecture and product.”

Qualifications and experience

But what qualifications and experiences are required to pull off this colourful role within a fintech? Often, becoming a CTO demands at least 15 years’ IT experience, a relevant graduate degree, and a raft of certifications in computer science.

Nicolas Magnone, who was instrumental in developing Tymit’s technology stack from the ground up, followed this traditional route: “My background is in technology, operations and product. I worked with an international bank, Santander, for over 20 years. I’ve worked in 10 different countries working in banking and consumer lending, but mainly cards.”

Lennen echoed the importance of deep financial services and IT experience: “What’s most fundamental today is having a knowledge of the latest technology toolkits, strong experience in DevOps, as well as the technical ability to build, deploy and run a ‘liquid’ cloud infrastructure. That is ultimately what enables Vestrata to run an effective 24/7 operating system and scale vertically and horizontally as we go.”



Arguably, Robert Taylor, CTO and co-founder of electronic issuance platform for debt capital markets, Origin Markets, followed a less traditional route. Describing his career journey, Taylor said: “I studied computer science at Imperial College in London. But, it became clear to me early on that as much as I love technology, I didn’t really want to be a full-time developer. That summer, I did an internship at JP Morgan, and I didn’t understand anything that was going on at the trading desk. So, I went away for two years and did a master’s in a business school in France, HEC Paris. That was great – it gave me a dual understanding of both the tech side, and the business side. From there, I joined the trading desk at Nomura, which is where I met Raja Palaniappan, the co-founder and CEO of Origin Markets. We devoted our evenings and weekends for about three years to our idea – with numerous stops and starts along the way. At some point, the stars aligned. We raised some money going into accelerator, and that was that.”

Clearly, a combination of financial services experience, vision – and the technical ability to implement it – is fundamental to becoming a fintech CTO.

Indispensable tools

Once the position of CTO is reached, what traits are key to being successful?

According to a Forbes article, ‘[13 Skills You Should Still Practice And Hone As A CTO](#)’, a successful CTO requires diplomacy and patience, effective hiring and people skills, strategic thinking, good communication, a flair for coding, the ability to set and execute a vision, strong security and privacy management capabilities, customer service experience, and a skill for mentoring.

“There are three key fundamentals to the role of the CTO in a fintech,” added Lennen. “You need to have a vision, you need to be driven by results, and you must be able to communicate and collaborate effectively. You have to be able to not only speak clearly with your technician, but translate your requirements from a business perspective back to the developers, and vice versa. Coming from a background in wealth management at JP Morgan, I had to leverage my corporate experience and transfer it into this entrepreneurial environment. That transfer is not a copy and paste job. When working at a fintech, there is a lot more focus on being multitasker and being detail oriented, because there’s just less people to troubleshoot with.”

The importance of collaborating effectively also came up in the interview with the CTO of Origin Markets: “In terms of me and Raja’s skillsets, they work great together,” said Taylor. “Raja is very, very strong at looking at the big picture, and having the vision. I, on the other hand, am very detail oriented. This is exactly the partnership you need when building a fintech, and being an effective CTO.”

Martin Magnone, CEO of Tymit – and brother of CTO, Nicholas – added that hard work and perseverance is not only useful, but fundamental to the role of the CTO: “Developing the Tymit solution has been very complex from the get-go. This includes the design, the architecture, and the tech that underpins the product. But this is where Nico’s experience has shone – he has been designing credit card systems since he was 20 years old.”



Evolution of the CTO's role

Another key skill that all interviewees pointed to is the ability of the CTO to remain agile and flexible – ensuring changes in the regulatory and technology landscape can be responded to effectively, and reflected in the product. Indeed, these industry trends represent just some of the factors that have driven the evolution of the role of the CTO – and forced post-holders to stay ahead of the curve.

According to the 2017 Russell Reynolds report, *'Inside the Mind of the Chief Technology Officer'*, the CTO role is evolving faster than ever – requiring the post-holder to connect and translate the creation and management of new products and services with more traditional enterprise IT and operational enablement activity.

"The upshot, determines the report, is that CTOs not only need to have broad technical expertise but also the strategic and commercial acumen to challenge, translate and drive decisions across the enterprise."

Samantha Searle, a principal analyst at Gartner, adds that going forward, "CTOs will be less like 'super-geeks' and more like technology visionaries."

Splitting from the CIO

Once upon a time, a chief information officer (CIO) carried out what would today be considered as both the CIO and CTO role. However, with the exponential development of financial technology, the need to separate the role of the CIO from the CTO became increasingly important to ensuring the continued growth of fintechs. This split means that the role of the CTO has shifted from a supportive function to a key enabler of a fintech's transformation strategy.

"In many organisations, the CTO is responsible for the infrastructure, and the day to day running of the network. The CIO, on the other hand, has much more accountability and responsibility from a security and data point of view. For me, co-ordination between both roles is of utmost importance. The CTO and CIO must share the same vision, in order to transcribe the business vision into the technology platform," said Lennen.

Speaking to how his own role and duties have evolved within Origin Markets in just the last year, Taylor commented: "We have basically doubled in size – from a team of 12, to a team of 25, in 12 months. As such, my role has naturally become less hands on. With the smaller team, we ran a flat structure. Now, we are in the process of breaking up the development and product teams into pods – because, ultimately, a fully flat structure doesn't scale above 25."

A CTO's challenges and rewards

With the plethora of responsibilities a CTO shoulders, comes a clutch of intense challenges, but wholesome rewards.

"I've never enjoyed myself so much in my life, nor have I worked so hard," said Nico. "The role can come with a lot of loneliness – you can wind up on a Saturday afternoon, with a head full of worries and jobs that need to get done. I take the burden of the day-to-day operations, which is a non-stop, 24/7 mission – and the buck stops with either me or Martin. But, I am very lucky to be running a company with my brother."



Martin agreed: “Having a family member on your side, that you can get in touch with on the weekend, who can be a shoulder to cry on, or who you can have a beer with to celebrate, is invaluable. I personally wouldn't be able to do this without the emotional support of a family member.”

On the other hand, the most rewarding part about being Tymit's CTO, added Nico, “is being close to the customers, and seeing a direct and immediately positive effect. In the bigger financial institutions I have worked for in the past, it was harder to see the impact of my work – but here at Tymit, it is obvious, and there is still loads to learn.”

For Taylor, some of the biggest challenges, and lessons, arrived early on in Origin Markets' development: “When Raja and I were building the platform, we didn't really know if it'd go anywhere – it was just a fun exercise, intellectually. In hindsight, the pitch decks and prototypes I was building were incredibly amateur. We literally had no idea how to build a tech company. Yes, I have a computer science background, but I'd never had to build software that banks use. Very soon the challenge became successfully selling to banks, and ensuring the offering we were building made it through the procurement process. To achieve this, we have to constantly improve and upgrade the setup.”

Evidently, the ever-changing regulatory landscape – introducing information security standards, such as ISO 27001 – means CTOs must remain vigilant, and ensure an adequate amount of flexibility is worked into the company's product.

Speaking to the most rewarding part about being a CTO, Taylor focused on the people: “It is a pleasure to watch the juniors we hire blossom and come into their own, as developers. Since London is a very competitive market, I spend a lot of time thinking about how we create an optimal environment for our talent – ensuring they feel happy, valued, and are always learning.”

Hiring new talent

This topic of hiring and retaining quality talent was a common theme in the interviews with Origin Markets, Tymit, and Vestrata. Indeed, the role of the CTO necessitates the post-holder to identify and access strong engineering or developer talent, in order to successfully meet B2B and B2C customers' needs, and thrive in the highly competitive fintech landscape.

“Vestrata is in a sector that requires a very specific skill set,” said Lennen. “We need to find candidates with strong DevOps and cloud computing expertise, as well as experience in capital markets, wealth management, derivatives, equities, and trading.”

As well as these hard skills, Taylor stressed the importance of softer skills: “Over the past few years, it's become very clear that actually, the cultural fit is just as important as a candidate's hard ability on the tech side – it means everything flows so much smoother.”

To assess whether a candidate is a good fit, Taylor likes to ask the problem-solving question: “How many ping pong balls fit in a Boeing 747?” On the rationale behind this, Taylor noted: “I'm less interested in a correct answer, as I am in how the candidate solves the problem and expresses their working. It is almost like popping the hood on their brain and seeing how their mind works.” According to Taylor, the successful candidate tackles the question by extrapolating on a series of informed assumptions: “For instance, they might say ‘Okay, a plane could be around 40 metres long. In terms of the width, I know it's about 7 seats wide with 2 corridors. So, it's about X meters wide.’ The candidate can then calculate an approximate volume of the plane; take the estimated volume of a ping pong ball; divide the two – and solve the problem.”



According to Taylor, the answer is 27 million – but insisted that's beside the point.

The CTO of Tymit echoed the importance of hiring a young and passionate team. "In terms of our values and ethics," said Nico, "We like to reach out and attract younger talent – for engineering, marketing, and product. In an interview, the second we start explaining our company values to a candidate, their faces illuminate. They can see we are devoted to improving the lives of our customers."

Once the right talent is secured, all CTOs interviewed noted how important, yet challenging, it is to retain it. "Even when I used to work for JPMorgan," pointed out Lennen, "all the good engineers and developers wanted to go and work for the likes of Google. It was hard for us to convince them to stay. As the CTO of Vestrata today, I advise our developers to stay because with a start-up they will have a much greater ability to touch all areas and truly understand the business."

The role's outlook

The chameleonic ability of CTOs to cover so many varied functions within an organisation, including the hiring process, is just one reason why they are such high demand today.

The [US Bureau of Labor Statistics](#) predicts that the job outlook for CTOs – along with other computer and information systems managers – is strong. Between 2019 and 2029, CTO employment is expected to rise by around 10%. This is impressive, considering the average for all jobs is 4%.

According to [Investopedia](#), "the continued growth of business conducted over information systems is the main cause of employment growth in this role. Rapid advancements in business solutions and growth in mobile device usage and cloud computing usage have also contributed to the expected increase in job openings."

Lennen says the demand for roles like the CTO will be catalysed further still, by the trend of companies using smart automation and robotics to execute their daily tasks. "All this will still have to be controlled," he said. "You can't implement an operation that sophisticated, expect it to run automatically, and not have somebody overseeing."

Looking to the future

Given the ascendancy of the CTO function within the C-suite, the role has garnered increasing attention – and rightly so. The best CTOs drive continued 'front-to-back' impact within a fintech firm; streamline the customer journey; unlock new revenue streams; widen existing ones; and even boost a company's systemic resilience.

Ultimately, though, it is the scientific mind, and partiality for solving problems, that makes a CTO tick: "Looking to the future, what continues to drive me is both the problem-solving aspect of being a CTO, and continuing to create better solutions for clients," said Taylor. "Looking at a problem, which in the past we considered impossible to solve, and getting around it with a fresh perspective will always be fun."

Also thinking of the road ahead, Nico added: "We are in the fintech space – we need to have the best team and the best tech out there. This is for the long run, there is no short-term view. It's about allowing the business to grow into whatever it's going to become."