Sifted \ Reports

Fintech unwrapped 3.0

The crypto and payment newcomers making waves in Europe

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Fintech unwrapped 3.0 is a Sifted Intelligence report, sponsored by Plaid, which profiles startups in the expanding crypto and payments industries, and efforts to modernise identity verification for an emerging finance system. It seeks to investigate the opportunities and roadblocks that lie ahead for these innovations, as well as the timelines for when they will appear fully formed. This report follows our first two *Fintech unwrapped* reports, also sponsored by Plaid, which explored the trends and startups driving innovation in the payments sector, as well as the companies providing infrastructure to the banking industry.

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Q&A with Plaid’s Keith Grose

“Crypto is starting to grow up”

As head of international for Plaid, Keith Grose has witnessed the massive growth in payment and crypto offerings in recent years. Sifted talked with Grose about what he sees as the key trends right now, the impact of the pandemic, and where the future of fintech and digital assets is taking us.

Do you think we're seeing a fundamental shift right now, with more mainstream adoption of digital assets?

It's the same dynamic that's driving all the growth in fintech, where you have people recognising that we live in a digital world now. Crypto, then, is an interesting new way of approaching financial services in a digital world. It's clear that it's becoming normalised as an asset class — we’ve crossed $2tn in market cap, and that’s significant — though less so as a payment method. The internet is borderless, but financial services are market dependent, and I think crypto is facing that, with efforts to regulate it from almost everywhere right now. I think that's the big challenge that crypto is going through, and that's something that we've seen with open banking. You need these platform players that can help you be compliant in all these different markets and I think you're seeing crypto go through that growing up process.

Do you think increased regulations could have a detrimental effect on the growth of the sector?

It very much depends on how the regulation looks, but it will be largely positive in the long run. I think bringing rules around things like KYC [know your customer] and more legitimacy around AML [anti-money laundering] is clearly a good thing for the industry. The issues you're starting to see, and in particular in Europe, is that different licensing regimes and markets are creating lots of costs for companies, so I think we need to find a balance. I also think how rules are rolled out in different countries will dictate where the best companies and talent goes.

> **“It's clear that crypto is becoming normalised as an asset class, though less so as a payment method.”**

What do you see as the key trends going forward?

If you're looking further ahead, there's all sorts of innovation in terms of Web3 and the ability to have an identity that is encrypted but accessible on the blockchain (though it’s too early to tell if it's going to actually take hold). I think the other thing you're seeing is people thinking about where's the most important place to innovate — the wallet, the blockchain or the user experience? I think you're seeing innovation across all these layers.

> **“You're seeing people thinking about where's the most important place to innovate — the wallet, the blockchain, or the user experience?”**

What key developments are we seeing when it comes to the payments space?

We're seeing the cost of transactions drop a lot and that's benefiting both merchants and consumers, and it has positive implications for things like cross-border remittances and money conversion. The other place that you're seeing a ton of innovation is on the payouts level — a pain point all businesses feel. I think we're rapidly going to shift from a world where invoices are payable 90 days or six months after a service to instant payout methods. Look out for a lot of innovation here in the next two years.

Do you see any obvious places that crypto-first startups could or should get involved in?

We're seeing lots of things emerge that we wouldn't normally think of as traditional financial services. Players like Alpaca, which offers solutions like equity trading, APIs and infrastructure, are starting to think about how they offer, if they don't already, crypto trading infrastructure. I think that's the space we’re going to see significant investment in over the coming years, as new applications and services build crypto into their experiences. Making that smooth, and providing the developer tools around that, is really important.

What were the key payment milestones in 2021?

We might have come out of lockdown but the percentage of payments and ecommerce penetration stayed at lockdown levels, which means that consumer habits have permanently changed. The other key milestone was a huge explosion in fintech and crypto funding.

And what do you see for the rest of 2022?

Looking ahead, the big milestones are around regulation and its rollout. What kind of shape will the crypto regimes of Europe, the US and Asia take? I think over the course of the year we're going to see some clarity emerge.

Introduction

The rise of the crypto world

How the previously exotic is slowly becoming mainstream

Over the last few years cryptocurrencies and digital assets have taken the world by storm, making some extremely wealthy and leaving others cursing their luck.

The pandemic has only accelerated these trends, with plenty of people finding themselves with unexpected time and money on their hands thanks to lockdown restrictions around the world.

While those daily Covid-19 restrictions have thankfully been lifted for most of us, digital assets are going nowhere.

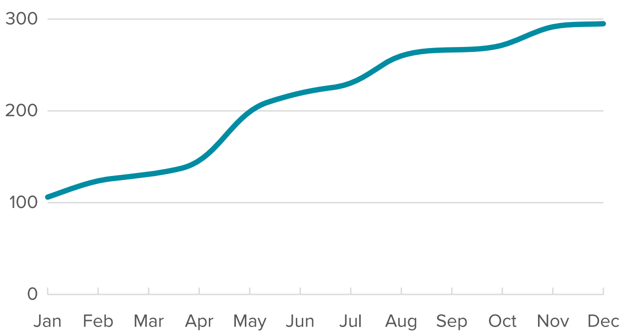
“If you look at the adoption rates of anything crypto related, it has already reached the point of no return. It has massive adoption, especially in western Europe,” says Yorick Naeff, cofounder and CEO of BUX, which claims to be Europe's fastest growing “neobroker”, a platform that aims to make it easier for ordinary people to invest in digital assets. “For many people, it’s the entry point to financial markets,” he adds.

While bitcoin is by far the most well-known cryptocurrency, there are more than 18k other crypto coins available around the world, alongside the arrival of non-fungible tokens (digital assets stored on the blockchain) and other asset classes. The market for digital assets has grown more than 10-fold since January 2019, and the coming years could see further rapid growth.

The number of global crypto owners almost tripled in 2021

Global crypto owners by month in 2021 (in millions)

Source: *crypto.com*



In fact, it’s now estimated that more than $90bn worth of crypto is traded every day, mostly bitcoin or ether, the world’s second biggest crypto token, with the overall market cap amounting to $1.7tn.

“Crypto is already an asset class that is established in the financial world and will never go away,” says Eric Demuth, cofounder and co-CEO of Bitpanda, another neobroker.

> **“If you look at the adoption rates of anything crypto related, it has already reached the point of no return.”**
>
> ***Yorick Naeff****, cofounder and CEO of BUX*

CHANGING THE FINANCIAL LANDSCAPE

In many ways the rise of digital assets has fundamentally altered the way we look at currencies and assets in general, and with more legacy players entering the space, cryptocurrencies are tiptoeing ever closer to the mainstream.

In March this year, Goldman Sachs conducted the first over-the-counter crypto transaction by a major US bank, in the form of a bitcoin non-deliverable option with Galaxy Digital Holdings.

And it’s not just digital assets that are changing the financial status quo, but also the ecosystem and infrastructure that has been built around buying, trading and holding those assets. Europe is playing catch up to Asia and America in these arenas, but that’s changing fast.

Meanwhile, the huge growth in online and contactless transactions during Covid has also rapidly accelerated trends in areas like payments, with the previously exotic now becoming mainstream. While technologies like QR codes have yet to take off massively, and may never become mainstream due to questions over user-friendliness, other fintech solutions could come to dominate.

"Open banking will create a new world of smart payments," says Nicolas Weng Kan, CEO of Yolt, a B2B company that provides open banking services. "These payments benefit from lower cost, increased security, fraud prevention, and can be used to help consumers make smarter payments.

"However, we are still seeing cross border fees and transaction charges as challenges to payments, particularly in Europe and we need to stand up and challenge this as an industry."

"These payments benefit from lower cost, increased security, fraud prevention, and can be used to help consumers make smarter payments."

***Nicolas Weng Kan**, CEO of Yolt*

Zonda

NEW WORLD, NEW RULES

At the same time, regulations — both in the EU and UK — are starting to play a larger role in the sector, with many expecting new crypto rules to come into force as soon as this year.

In March 2022 it was reported that the Bank of England's financial policy committee had taken the first steps toward creating a rulebook for cryptocurrencies, amid concerns over the potential threat the sector poses to the wider market.

The war in Ukraine has brought further attention to the potential for crypto assets to be used to circumvent sanctions imposed on countries like Russia, with major question marks over know your customer (KYC) verification and continued tension between the industry's anonymity and the need for governments to better regulate the space.

Rather than resist increased oversight, many involved in European fintech pragmatically accept that more regulation is needed, while remaining hopeful that the changes put in place won't swing the pendulum too far.

"You will not be able to conduct a crypto business without being licensed in the future," says Przemysław Kral, CEO of Polish crypto exchange Zonda, which has more than a million registered users and over 50 currencies available to trade. This year Zonda also became the first European crypto exchange platform to obtain regulatory approval in Canada.

"At the end of the day it is necessary, because crypto is becoming more and more popular and people are more and more familiar with it," says Kral. "Crypto is not about money laundering, crypto is more of a financial investment asset, and in the future it will need to be regulated."

FRAUD GALORE

Though it's not just crypto with a legal problem; as online transactions have soared, so has every type of fraud, with a constant battle between regulators and those looking to make a dishonest buck. Attacks are getting more sophisticated, prompting startups to shift more from knowledge-based verification like passwords to possession-based technologies like fingerprints or facial recognition.

All told, the speed of change we are seeing today in European fintech is eye-catching to say the least, with exciting new opportunities coming up around Web3 — the vision of a more decentralised internet — and other emerging solutions.

Whatever cryptocurrencies, technologies and platforms eventually come to dominate, European startups are bound to play a central role in this overall transition, aided by their innovation, relative speed of adoption and lack of legacy technologies. A flood of VC money is helping them, too — more on that later.

Bitpanda

"The speed of change we are seeing today in European fintech is eye-catching to say the least, with exciting new opportunities coming up around Web3."

COMING UP

In chapter I, we dig into truly innovative payment methods being developed in Europe — including mobile wallets, QR codes, buy now, pay later schemes and open banking rails.

In chapter II we talk to founders, analysts and investors about what 2022 holds for the crypto industry, including mainstream fintechs scrambling to offer their customers crypto exposure. With people being bombarded with novel products, crypto features and new risks, we also ask: what steps should regulators take to mitigate consumer risk?

As crypto exchanges, crypto companies and other emerging payment players begin to recognise that greater security is needed in a sector that has already seen high-profile instances of fraud, we will also assess the European market for new ID verification tools — with a focus on relevant startups operating in the space.

Chapter III, therefore, considers how the need for new forms of ID verification for the payment authentication process has been heightened by the rapid ascent of the online economy over the course of the pandemic.

Chapter I

Pay it forward: the newcomers changing the way we buy

Europeans are embracing new digital payment tools — a trend spurred by regulation and savvy startups initially, and then accelerated by the pandemic

Building on years of innovation and regulatory groundwork, and accelerated by the pandemic and the introduction of open banking rules, Europe is seeing a rapid expansion and diversification of new digital payment tools.

Customers and merchants alike are embracing new means of payment, from buy now, pay later (BNPL) schemes to QR codes, while a growing range of businesses offer financial tools that leverage data to provide more focused and affordable services for business and retail customers.

Hristo Borisov, cofounder and CEO of expense management startup Payhawk, says that in the space of a few years payment types that were once seen as "exotic" have become normalised. "Europe is at the centre of financial innovation today," agrees Jamie Beaumont, founder of BNPL platform Playter.

> **"Incumbents have grown by acquisition, and their underlying technology is like a rabbit warren, the architecture isn't great."**
>
> ***Charles Delingpole**, founder and CEO of ComplyAdvantage*

Until quite recently payments services provided by businesses other than traditional banks were unusual, and bank-issued credit and debit cards ruled the roost. Now, however, digital wallets such as Apple Pay and Google Pay have spread rapidly across Europe.

Startups have played a central role in the development of new payments, while established financial players have been less fleet of foot. "Incumbents have grown by acquisition, and their underlying technology is like a rabbit warren, the architecture isn't great," says Charles Delingpole, founder and CEO of ComplyAdvantage, a startup that provides anti-money laundering technology.

"We have seen an explosion of payment companies challenging the traditional domain of banks [which] have moved too slowly," he adds. "With recurring revenues and great margins, many payment companies like Adyen and Stripe have become giants very quickly.

"Traditional banks [meanwhile] have a core market of older people who won't necessarily use the apps [so] they can't really innovate."

A LITTLE HELP FROM BRUSSELS

The pandemic has increased take-up of contactless payment and online transactions. Cash and contact card transactions, meanwhile, are becoming rare sightings in countries including Sweden and Poland.

But the foundations of the current boom in advanced payments tech were laid before Covid-19. "Any new business model is a result of something that has come before it," says Payhawk's Borisov. In the case of electronic money, he argues, it's partly a result of EU regulation. "This groundwork has been hugely important."

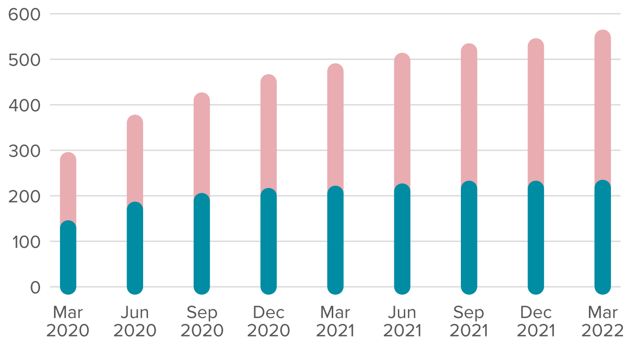
Particularly significant has been the revised EU Payment Services Directive, or PSD2, which regulates electronic payment services and aims to make such payments more secure. Implemented in pieces over several years following its adoption in 2015, PSD2 has already had a wide-ranging impact on the payments sector, including opening the EU market to third-party payment providers, and strengthening security and authentication. It effectively created the framework for the development of open banking in the EU — requiring banks to provide customer transaction data to qualified third parties at the client's request.

Payhawk

The number of third party providers for open banking nearly doubled in two years

Number of open banking third party providers in the UK and EEA, 2020-2022

Source: Konsentus



IF YOU BUILD IT…

Startups that specialise in payments infrastructure have been enablers of further innovation, says Borisov, who cites Stripe, UK-based Railsbank and Bulgaria's Paynetics as examples.

"Usually, when you have the regulation and the infrastructure, that's the seeds for an ecosystem," Borisov says. "We saw players move into the space to provide infrastructure for others to build their solutions on. And we're seeing more and more providers being born."

> **"Usually, when you have the regulation and the infrastructure, that's the seeds for an ecosystem."**
>
> ***Hristo Borisov****, cofounder and CEO of Payhawk*

Payhawk is itself an example of a payment tech startup that has rapidly risen to Europe-wide prominence. It sells a single platform to manage anything to do with company coffers, from credit cards and expenses to bills and invoices. Founded in 2018, Payhawk became Bulgaria's first unicorn in March 2022 and it's developed into a leading platform for SMEs and other clients across 30 countries.

THE WORLD IS BUYING BNPL

Another hot payment ticket in Europe is buy now, pay later (BNPL) services. Rather than paying the full amount of your purchases at the till, BNPL allows you to spread the cost into smaller amounts over a short period of time, usually a few weeks or months. TrueLayer forecasts that BNPL transactions in Europe will increase by 70% between 2021 and 2026, rising from an 8.2% share to 14%, while payment cards will see their share shrink from 40.7% to 33.3%.

While BNPL has received criticism from some quarters for enticing consumers into debt, many seem to appreciate its convenience and the ability to manage payments over time.

"Considering the consumer adoption rate of BNPL, [it's] on track to become a standard credit rail in a digital-first payments environment," says James Booth, vice president and head of partnerships EMEA at local payments infrastructure provider PPRO.

Yet despite a surge of interest in BNPL, only 16% of European ecommerce companies (and 15% in France) offer the service, says Kevin Ohana, cofounder and CEO of Paris-based Joe, which develops BNPL apps. Many retailers are reluctant to go to the effort and cost of integrating BNPL, he explains. To target this gap, Joe, which has acquired 150k users over the past year, provides two main features: a virtual card and a post-transaction service.

The virtual card allows customers to make a payment to a merchant without the latter having an integrated BNPL solution; Joe makes the payment and then receives the money from the customer via staggered direct debits. The second solution is post-transaction, providing customers with a refund on a recent payment to a merchant, which is then paid back to Joe by direct debit. The customer can also opt to pay the sum they owe Joe in full at any time.

Ohana estimates that the European BNPL market is potentially worth €300bn. “Open banking is very important for us, because we have the customer’s financial situation in real time, the big picture,” he adds. “Previously, information was limited and there were refusals based on basic facts about the customer.

“Mobile wallet use will also expand over time — they can be set up in a few seconds without the processes that establishing a bank account requires. Customers like the user experience and simplicity.”

> **“Some are sounding warnings, noting the risks of debt, as well as market saturation in a field that has seen a stampede of new entrants.”**

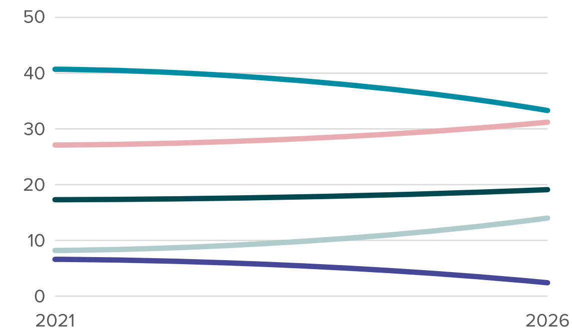
BNPL invoicing, meanwhile, is the niche offered by London-based Playter, which announced a $1.7m raise led by investors Fin Capital and 1818 Ventures earlier this year. The startup converts invoices into smaller and more manageable payments and claims to have grown by over 1,000% in revenue in less than one year.

The slow death of the card

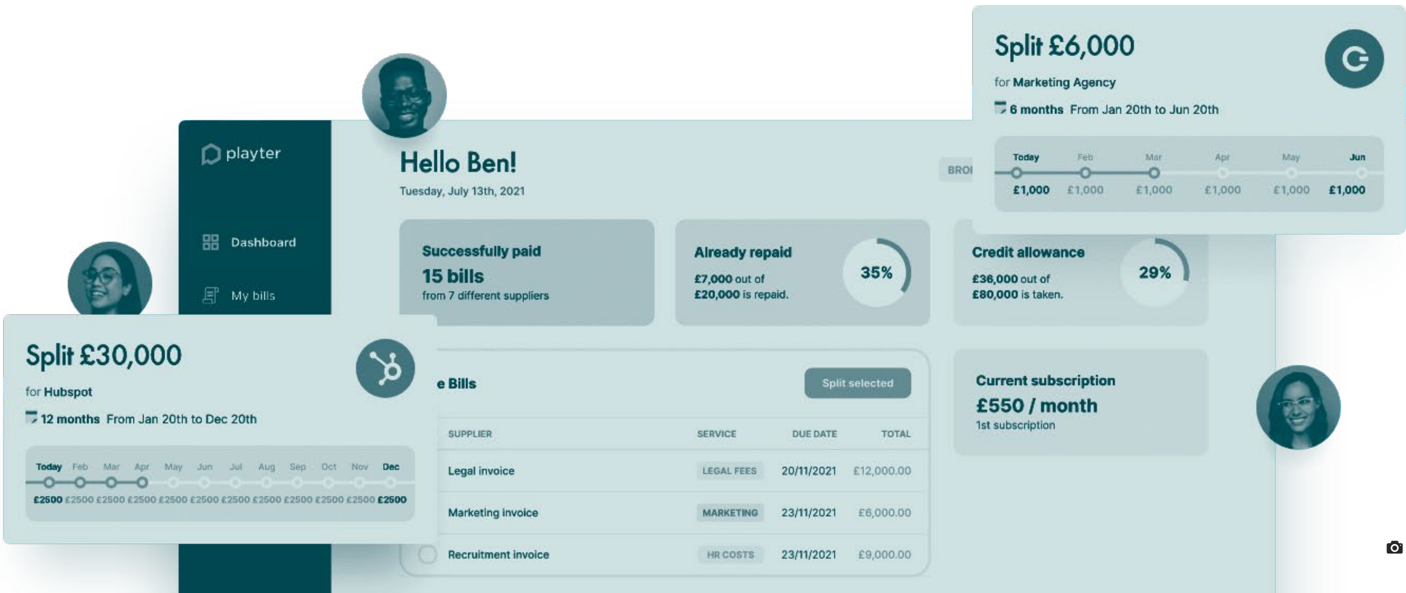
The European payments landscape in 2021 and 2026

PAYMENT CARDS: ▼ -18%
DIGITAL WALLETS: ▲ +15%
BANK PAYMENTS: ▲ +10%
BNPL: ▲ +70%
OTHER: ▼ -64%

Source: *TrueLayer*



Back in the consumer BNPL segment, however, some are sounding warnings, noting the risks of debt as well as market saturation in a field that has seen a stampede of new entrants. “VCs have backed many BNPL firms,” says ComplyAdvantage’s Delingpole. “[However] credit agencies are unable to see the debt created by BNPL transactions, pushing more and more consumers into potentially more precipitous levels of debt.”



Playter

SLOWER GROWTH MARKETS

Direct bank payments are also on the rise, again at the expense of payment cards, and thanks partly to the rise in open banking. Some players in this segment are already well-established. PPRO's Booth cites the example of Austria's EPS (electronic payment standard), an online transfer system.

Launched in 2001, EPS allows customers to simply and quickly pay for purchases using their own banking service, free of charge and in real time, circumventing the need for cards. This has benefited merchants as well as buyers — today more than 80% of online merchants in Austria offer EPS.

By contrast, payments using QR codes — which had a mini purple patch during lockdowns — are less likely to have sticking power with consumers. One reason for that it's less secure than chip-based payments, says Alasdair Ross, director of secure payment and NFC infrastructure at NXP Semiconductors.

Joe's Ohana says that QR codes, while useful for reducing contact in restaurants, are too time-consuming to be of great value in shops, where customers are looking to make a quick transaction and move on without the multi-stage process that QR codes generally require.

NEW DEVELOPMENTS

Alternative payments are nibbling away at the market share of traditional card payment methods and Ross says that the accelerated shift to contactless card and mobile payments will continue until the market reaches saturation, though cash is unlikely to disappear entirely.

The range of players supporting contactless payment will grow, weakening the dominance of traditional players led by Visa and MasterCard. This process is likely to be catalysed by regulatory change, as diversifying payment networks has become a priority for EU officials as they try to reduce dependence on the major US payment card networks.

> **“The European Central Bank is scoping a “digital euro” to examine the potential for a digital currency to operate in parallel with cash.”**

In other developments, the European Central Bank is scoping a “digital euro” to examine the potential for a digital currency to operate in parallel with cash. Open banking rails, meanwhile, are also providing new opportunities, and while cross-border transactions continue to be a challenge, with fees and charges proving a burden, sector leaders expect this to ease over time as pan-European payments become more common.

Cryptocurrencies, the subject of chapter II, are also coming to the game.

Chapter II

The blurring lines between crypto and mainstream finance

Digital assets are fighting for their place alongside stocks, shares and other asset classes — but they still have a distance to go

In recent years the growth of bitcoin, along with thousands of other cryptocurrencies, has helped to spawn a parallel universe of alternative financial services. In many ways this universe has existed alongside — and outside of — the traditional financial landscape of assets, but that's changing fast.

In the beginning crypto was seen as something far removed from traditional finance, with big banks and legacy players extremely cautious about the industry. That appears to have changed, and many are predicting a strong blurring of lines between traditional financial service providers in areas like wealth management and trading in particular, but also potentially loans and even credit cards.

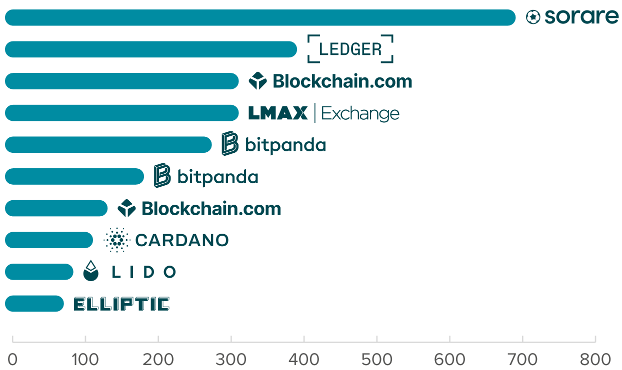
"Lines are blurring, and crypto is a huge entry point," says Yorick Naeff, cofounder and CEO of BUX, Europe's fastest growing neobroker. "The adoption rate is mind blowing, and if you look at the additional features — DeFi (decentralised finance), staking, providing a yield on stablecoins, utilities through utility tokens, for example — everybody's working on it."

"There's certainly going to be convergence," says Ophelia Brown, managing partner of London-based VC Blossom Capital. "Just look at the leading investment banks and some of their forays into Web3," she says, highlighting Citigroup's recently announced plans to hire hundreds of people to join their crypto department. "I think it was inevitable, as people's wealth gathers in crypto."

Here come the megarounds

Top European crypto funding rounds in 2021 ($m)

Source: *Dealroom*



MAINSTREAM ACCEPTANCE

Until recently cryptocurrencies were largely seen as the domain of enthusiasts and speculators, who have flocked to exchanges like Coinbase and eToro to buy and sell digital assets. That's no longer the case, with a growing belief among more traditional investors and others that crypto is far from a passing fad, and that in the future digital assets could take their place alongside stocks, shares and other asset classes.

It is perhaps unsurprising, therefore, that 2021 saw an unprecedented amount of money going into crypto-first platforms like French blockchain-based fantasy football startup Sorare, which raised $680m in Series B funding in September 2021 at a valuation of $4.3bn.

"As our lives become digital, people get comfortable with collecting digital things. On top of that, you can use them to unlock experiences," Sorare's cofounder and CEO, Nicolas Julia, said during a recent *Brunch with Sifted*. "So for us, it's the fantasy game, but it's also meeting the player or having a discount to go to the stadium based on the ownership of the NFT [non-fungible token]. It goes beyond being a pure collectible."

The kind of money sloshing around has put pressure on banks and other types of fintech companies to wade into the world of digital assets, including the likes of Scalable Capital and Trade Republic. Meanwhile, crypto startups are beginning to expand into offering access to other asset classes, and even into areas like credit cards and loans.

> **“The kind of money sloshing around has put pressure on banks and other types of fintech companies to wade into the world of digital assets.”**

“Once you own the customer, you can obviously offer all kinds of services and that's sort of what's happening,” says Dolf Diederichsen, CEO of Amsterdam-based fintech Hyphe, which assists existing financial institutions in making digital currency trading more inclusive.

“In the end, there is a sort of converging, and then the question is just what is the service that you need and who do you want to do it with,” he adds. “Many of these new crypto players are natural service providers and they don't see it as something that they can only do crypto with.”

BRING ON THE BIG GUNS

The adoption of digital assets by legacy financial institutions has gone a long way to reassuring more cautious investors, and those involved in the sector say that the ecosystem has matured significantly in recent years.

“We originally started the company in 2013, and what really has changed in the past two years is the arrival of mainstream financial institutions. That's the core difference,” says Diederichsen.

He adds that they are also far less conservative than expected. “We were thinking that banks would probably start only with the top five coins,” he says. “It's completely different; once they jump in, they jump in with both feet and really push us to expand the number of tradable coins and are quite aggressive on this.”

Eric Demuth, cofounder and co-CEO of Vienna-based trading platform Bitpanda, says that in recent years we've seen a move from retail acceptance to more institutional adoption of digital assets, along with increased regulation and big market consolidation. “It's not just one thing that helps, it's a combination of several different sectors, retail sectors, also adoption by celebrities, but mostly it is the stuff that you don't see: the institutional adoption.”

Even so, Demuth says that when it comes to big bank take up, the US and Asia are more advanced than Europe, “but we're getting here. We see many signals. This is why we have acquired a bigger custody company, especially for the institutional customers, because the demand is there.” BitPanda acquired crypto custodian wallet provider Trustology in February 2022, its first acquisition.

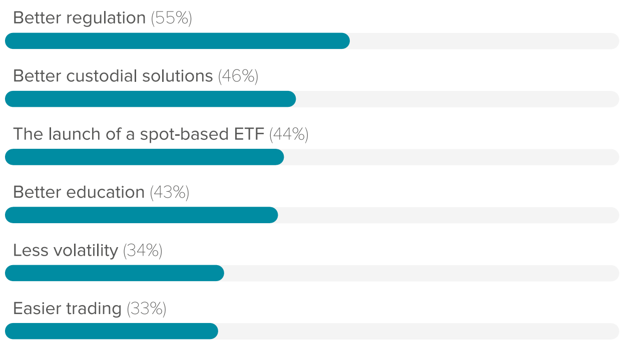
Going forward, much will depend on the growth of the necessary infrastructure around digital assets, as well as the regulations put in place to allow the sector to thrive while curtailing some of the more Wild West aspects of crypto (more on that in chapter III).

“Cryptocurrencies will become mainstream when a more 'mainstream ecosystem' is built around cryptocurrency. Only once cryptocurrencies fit into a recognised payment ecosystem will they have the power to reach bigger audiences,” says Hristo Borisov, cofounder and CEO of Bulgarian fintech unicorn Payhawk.

Financial advisors see insufficient regulation as the biggest barrier to greater crypto exposure

"What would make you more comfortable in allocating to crypto assets in the future?"

Source: *Bitwise*



Bitpanda

BUILDING OUT AN ECOSYSTEM

In the global stock market, some of the biggest players are pension funds. However, many of these have remained on the sidelines when it comes to investing in digital assets, often due to concerns surrounding asset security.

As such, custody startups — those focused on safely moving around digital assets — are attracting billions of dollars. New York-based Fireblocks became the highest-valued crypto asset custodian in January, after raising $550m at a valuation of $8bn. Closer to home, Copper, a London-based startup focused on helping investors store and manage their cryptocurrency investments, raised $50m in Series B funding in May 2021. Meanwhile, both Coinbase and PayPal have acquired custody service providers.

“For custody services, in the last year we saw their valuation skyrocket,” says BitPanda’s Demuth. “That is a huge indicator that there is a big, big push from the institutional side into the space, because this is exactly their customer base.”

Demuth says that this is why Bitpanda has developed a specific platform, White Label, to grow in this space. “We have now already signed very big banks that everybody knows from the old world that will use our services even this year,” he says.

The arrival of mature custody solutions addresses one of the main issues that had been holding the sector back.

“Two years ago banks couldn't trade cryptocurrency and they couldn't hold it,” says Hyphe’s Diederichsen. “Now this has been addressed, and all of the banks we talk to already have chosen a custody solution, or there's regulated custody partners. That changes something fundamentally. It means that these banks can hold coins for their customers and be a custodian of funds, which has been one of the core banking services since the beginning of time.”

“Big telecoms, big social platforms, big banks even, are looking into Web3 and developing their own solutions based on that.”

***Szymon Sypniewicz**, cofounder and CEO of Ramp*

RAMPING UP

Another area that has seen strong growth in recent years is on-ramping, the process through which fiat money is exchanged for cryptocurrencies and vice versa.

“We see major trends where big telecoms, big social platforms, big banks even, are looking into Web3 and developing their own solutions based on that,” says Szymon Sypniewicz, cofounder and CEO of Polish cryptocurrency payments startup Ramp, which announced a $52.7m Series A round in December 2021. “Typically the on-ramping solution has to be implemented in the very first iteration if you are building something with mainstream aspirations. Our pipeline is full of companies of Fortune 500 scale.”

Ramp enables websites, apps or services to embed payments infrastructure into their existing systems without users needing to jump to other apps to buy crypto assets, similar to what Stripe and others have done for the ecommerce space. At its last funding round, Stripe was valued at $95bn.

"We can also see fintechs getting closer to the crypto space and that's great. We're big beneficiaries of that because we are perceived as a company that is comparatively lower risk to some of the others to work with," Sypniewicz adds.

INVESTING IN CRYPTO... PLATFORMS

Investors increasingly see the crypto industry as a prime sector to put money into, especially as it becomes more mainstream.

"I'm excited about companies that bring the KYC [know your customer] aspect that we have in capital markets and banking to crypto, and that do it in a way that isn't cumbersome," says Rana Yared, general partner at London-based venture capital firm Balderton Capital.

"We've seen a lot of players start to emerge. Custodians and KYC providers and people who are applying traditional prime brokerage thinking in a crypto digital asset-relevant way. At the same time, we are still in the first inning of a nine-inning game, and so there's a long way to go," she adds.

Blossom Capital's Brown says her firm is excited about infrastructure providers and solutions for crypto, having invested in crypto-related startups like Moonpay, a fiat-to-crypto on-ramping company that raised $555m in Series A funding in November 2021. "DeFi, which is an alternative finance solution provided by Web3, is another very interesting area," she adds.

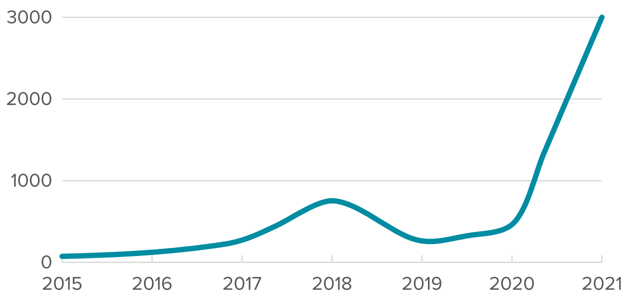
Meanwhile, as the sector matures we could see plenty of strategic mergers, acquisitions and partnerships.

"There is definitely going to be increased competition because blue-chip names entering into any segment is an imprimatur of quality and safety; to retail that signals it's safe, come on down," says Balderton's Yared.

Funding for crypto startups increased by more than 40x since 2015

VC funding for European crypto and DeFi startups (€m)

Source: *Dealroom*



Others, however, aren't so sure, largely because of the deep pockets and technological advantage many of the younger fintech startups now have. "I don't think it's needed because younger players are already disrupting the space," says BUX's Naeff. "If you purely look at the unit economics, the financials of these younger players, they can survive, they don't need these larger players, it's more the other way around if anything."

WEB3/DEFI

Web3, a new iteration of the internet based on blockchain technology, is having its moment in the sun. "We've seen a lot of activity in terms of the consumer opportunity around Web3, whether that be in gaming, collectibles or messaging, for example," says Blossom Capital's Brown. "Gaming is an easy way to bring it mainstream. If you think about the big shifts that happened in gaming to date, we went from web to mobile, and now we're likely to go to Web3. Each of those shifts has brought new business models. We see that as a huge potential sector."

In March, Viktor Fischer, managing partner of Rockaway Blockchain Fund, one of Europe's leading funds investing in blockchain startups, predicted that the UK could outstrip the rest of Europe to become a leader in Web3 development, with the UK already receiving 29% of all European blockchain VC investments.

Startups are also now looking beyond buying and trading crypto assets to DeFi, which aims to bypass centralised licensed custodians by using the distributed ledger technology that forms the basis of crypto for other financial products, like providing loans.

As of now the “total value locked”, or TVL, in decentralised finance stands at more than $215bn, down from its peak of $255bn in December 2021, but up from just $18bn at the start of 2021.

“In the longer term, it’s likely that innovation will shift to DeFi and widespread adoption of Web3 services,” says James Booth, vice president and head of partnerships EMEA at local payments infrastructure provider PPRO. “Right now, there’s significant energy and time going into building and developing this space, so we can expect companies to take note and acknowledge their potential in the coming years, especially for ecommerce.”

NOTES OF CAUTION

As crypto and digital assets become more mainstream, there are concerns about the potential for abuse or criminal activities. “Every fintech that I speak to wants to add crypto to its offering. But this comes with risks — it is possible that crypto can be used to avoid sanctions and facilitate money laundering and terrorist financing,” says Charles Delingpole, founder and CEO of regtech startup ComplyAdvantage.

Others disagree, suggesting that the invasion of Ukraine and the sanctions imposed on Russia as a result, have shown that crypto isn’t a space where anonymity is king and where murky individuals can move their wealth around with little risk of being caught.

“I think it's actually proving some of the value of having public ledgers around transactions — actually showing that it is possible to stop bad actors and is also possible to track the flow of funds from bad actors in a way that's actually almost harder in the traditional financial ecosystem,” says Keith Grose, head of international at open banking platform Plaid.

“As sanctions and things like that have come in, people have been trying to think whether crypto is a way to escape that, and I think what you're seeing is actually in some ways it's easier to track and prevent abuses.”

LOOKING AHEAD

Going forward, if the technology allows it, it seems likely that the mainstream finance and crypto worlds will continue to merge.

Demuth says companies like Bitpanda are taking what they’ve learnt from the crypto industry to cover all asset classes. “The whole financial and stock market, if we would invent it today, would look more like the crypto space. Fractionalisation, 24/7 trading and all these things,” he says. “We will see the crypto and traditional stocks world getting very close together, and then combining. Everything will become digital assets.”

> **“You can have price changes in one day of 20% because the market is not deep. If the market gets deeper, it will be more stable.”**
>
> ***Przemysław Kral**, CEO of Zonda*

However, all this is still some time away. “The things that really need to happen are more in the risk infrastructure in the space, like auditing, security,” says Blossom Capital’s Brown. “I think those tools need to improve in order to have applications that are going to be used by tens of millions. I think there's a lot of infrastructure work that's going to happen to enable even better applications, because it's all about ease of use.”

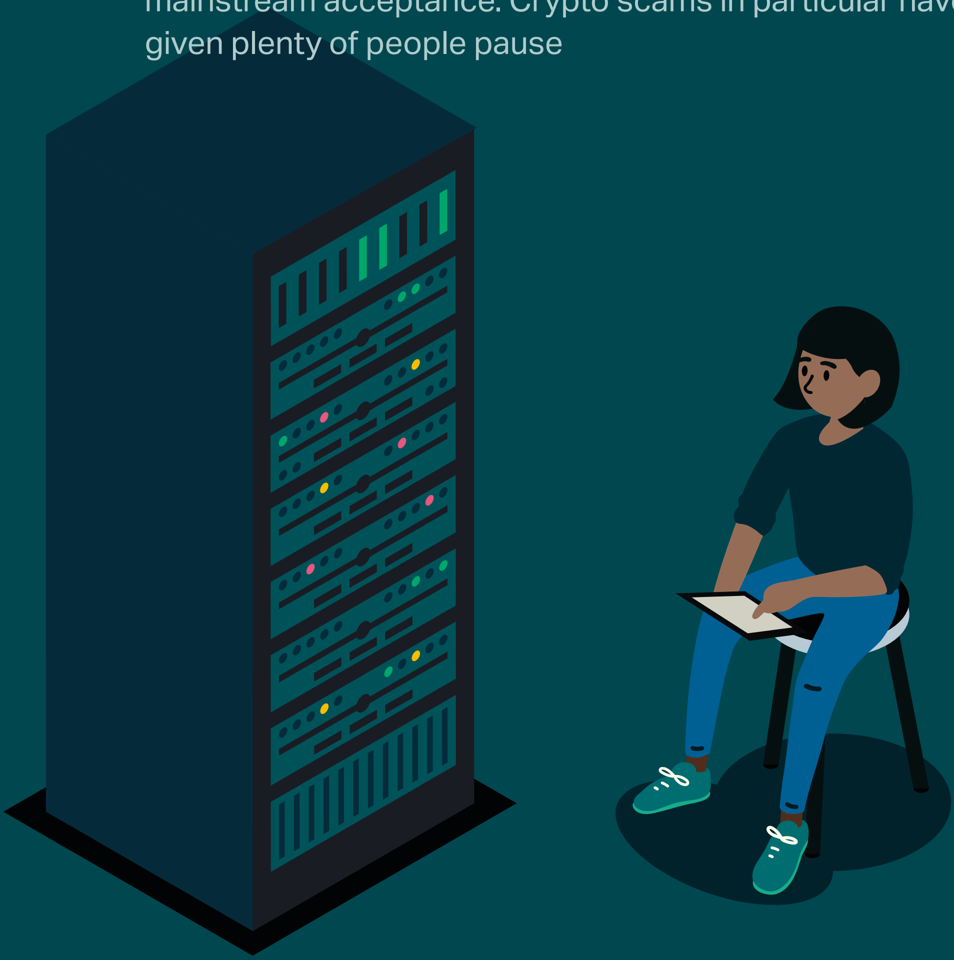
Meanwhile, as the market grows the massive valuation swings we have seen with assets like bitcoin could also become a thing of the past, putting off speculators but drawing in longer-term investors. “You can have price changes in one day of 20% because the market is not deep. If the market gets deeper, it will be more stable,” says Przemysław Kral, CEO of Polish crypto exchange Zonda.

If anything, this will only help to blur the lines further.

Chapter III

The new digital gatekeepers

Despite their growing popularity, crypto and other emerging digital payment systems are still some way off mainstream acceptance. Crypto scams in particular have given plenty of people pause



The rapid growth of ecommerce and online payments in the wake of the pandemic, the broader expansion of fintech, a growing desire for mobile access to services and the rise of cryptocurrencies are all driving demand for a new type of crime-fighter: the digital gatekeeper.

Services such as identity verification, know-your-customer (KYC) and anti-money laundering (AML) have all migrated online with much of the financial sector and economy.

Online verification is an associated area of growth that sees traditional passwords rapidly becoming obsolete, replaced by biometric and other "possession-based" tech.

GROWING FRAUD THREAT

"The rush to move more financial services activities online during the pandemic significantly increased the incentive for criminal networks," says Aarti Samani, SVP of product and marketing at iProov, a biometric authentication operator. "They honed their tactics, and now they're persistently attacking systems every day, specifically targeting weak spots."

iProov

Fraud types that are proliferating include ghost fraud, where claims are made on behalf of deceased individuals; new account fraud, using fake or stolen identities; and synthetic identity fraud, where criminals combine real, fake and stolen information to create an individual profile of a non-existent person. Increasingly sophisticated "deepfake" technology is also raising risks across the board.

In the UK in the first half of 2021 alone, criminals made off with some £750m, an increase of 30% over the first half of 2020, according to industry body UK Finance. The organisation estimates that advanced security systems used by banks prevented a further £736m from being taken — suggesting that while these systems can be effective, they are far from flawless.

> **"The pandemic has made biometrics and other online services that can detect possible fraudsters a must-have."**
>
> ***Barley Laing**, UK managing director of Melissa*

The leading cause of fraud was unauthorised payment card use, which caused losses of some £260m. Globally, card fraud is also on the increase: the Nilson Report, a publication focusing on the global card and mobile payment industry, estimates that the amount stolen will rise from $28.58bn in 2020 to $49.32bn in 2030. However, due to improvements in security technology, Nilson says that the proportion of total transaction value affected by fraud fell from 7.2% to 6.8% in 2020, and will fall further to 6.23% in 2030.

As Barley Laing, UK managing director of Melissa, an identity verification and data quality business, notes, electronic identity verification, or eIDV, checks are now more widely available. With eIDV, real-time cross-checks are run on purchase processes, preventing fraud before it can take place.

"The pandemic has made biometrics and other online services that can detect possible fraudsters a must-have," says Laing.

STARTUPS TAKE THE LEAD

In the past decade, and particularly the past two years, developments in digital gatekeeping have often been driven by startups, rather than payment incumbents, banks or security companies.

"As is so often the case, it was startups that disrupted and transformed the traditional market with their innovative ideas," says Sebastian Bärhold, cofounder of IDnow, a Munich-based KYC platform. "One thing that established companies can learn from startups is the agility with which these young companies operate. Once a new fraud scheme comes along, you need to be quick to adapt your practices and processes."

Bärhold notes that before IDnow was established in 2012, the conventional method for verifying a customer's identity in Germany involved going to the bank branch or post office. After two years of work with regulators, IDnow was able to introduce verification via video — groundbreaking at the time.

In 2018, the company launched a more automated product. In 2021, it acquired French counterpart Ariadnext and Trust Management AG, another Germany verification provider, as part of its expansion. It now offers a completely digital identity verification process for its clients to integrate, boosting user experience and sign-up rates.

> **"There's a constant arms race between the tools available to law enforcement and those available to criminals."**
>
> ***Charles Delingpole**, founder and CEO of ComplyAdvantage*

Even with pandemic lockdowns tapering down in most countries, the shift to online and contactless payments looks set to continue.

The market for verification thus is seeing sustained growth: IDnow reports a 100% increase in the number of identification requests this year. Alongside demand from consumers, there are strong pull factors from fintechs and established financial institutions, as well as companies in a range of other sectors.

"The past 10 years have seen the migration of the bank branch into a phone," says Charles Delingpole, founder and CEO of regtech scaleup ComplyAdvantage. "The economics of identity verification — charging less than £1 for a check of a passport versus manning a branch costing £1m a year — has been particularly lucrative.

"However, there are still holes in the system and fraud is still possible. There's a constant arms race between the tools available to law enforcement and those available to criminals. Companies have to stay up to date the whole time."

Delingpole himself set up ComplyAdvantage in 2014 having seen first-hand "how complex and challenging, and how broad the range of threats are" at his previous outfit, MarketInvoice.

"Any fintech needs a huge arsenal of weapons in that battle," he says. In the arms race he describes, Delingpole identifies emerging threats including "cuckoo smurfing", in which a money launderer splits large transactions into many smaller ones to avoid detection, often using unaware, innocent parties.

Crypto fraud is another growth area, while the war in Ukraine has added to demand for KYC services to weed out potential links to sanctioned Russian and Belarusian bodies.

ComplyAdvantage's biggest market is payments companies, for which it identifies a wide range of potential risks in two main categories — entity and behavioural. Entity risk relates to organisations and individuals that may be subject to sanctions or other blacklists, while behavioural risk relates to potentially suspect activities around a transaction. Delingpole cites the example of the rapper and alleged crypto fraudster Razzlekhan; as soon as she was charged by the FBI, ComplyAdvantage added her to its database, preventing her from monetising the $4.5bn in cryptocurrency she is accused of stealing. Clients and investors alike seem to approve of what the company is doing — in May 2021, the company took its Series C funding round to $70m with an investment from Goldman Sachs.

MOVING BIOMETRIC

London-based startup iProov has also won investor approval for its biometric face authentication technology, scooping $70m from US investor Sumeru Equity Partners. The company plans to use the money to expand its presence in the US, having won the work of several prestigious and security-conscious clients including the UK's National Health Service, the US Department of Homeland Security, the Australian Taxation Office and leading European banks. This helped iProov triple its revenues from 2020 to 2021, processing more online verifications in a single 10-day period in 2021 than the whole of the previous year, and breaking the 1m daily verifications mark several times.

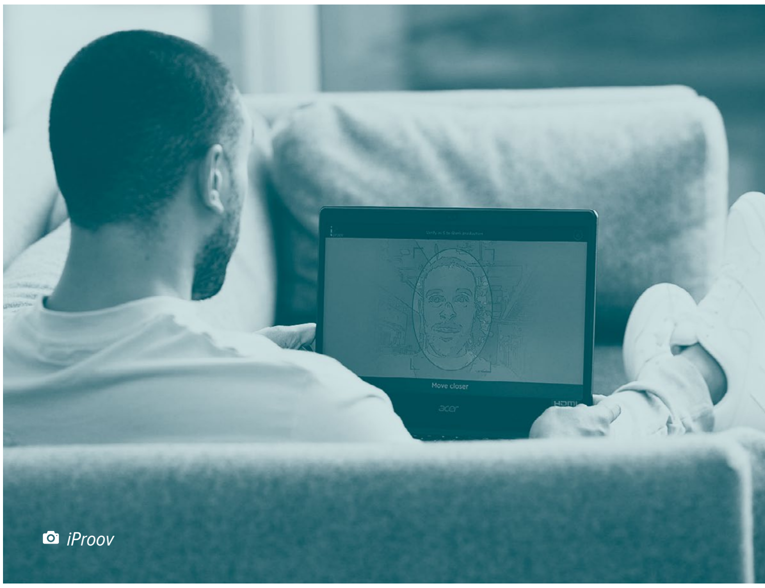
The company's facial verification allows UK residents to complete their NHS onboarding process and access essential online services such as doctors' appointments, medical records and prescriptions.

Facial verification is "proving to be the standout form of biometric technology today", says Laing. Once an applicant has scanned their primary photo ID, technology can check its validity in real-time. Then the applicant can take a selfie via their smartphone, which the software scrutinises using an algorithm.

> **"Intuitive passive verification, where the burden on users is limited, will take the lead in the future."**
>
> ***Aarti Samani**, SVP of product and marketing at iProov*

"The algorithm can distinguish differences between the selfie and the ID image, including head position, hairstyle, skin imperfections, facial hair, makeup and age," says Laing. "What sets facial recognition apart in the biometrics space is that it's reaching maturity."

Laing says that the development of "liveness checks", which challenge an individual to, for example, blink to confirm eye movement, adds an extra layer of sophistication. However, Samani says that these checks



iProov

can be an inconvenience for the customer and a barrier to service use.

"Leading startups in identity are already supporting accessibility by championing passive authentication," she says. "Intuitive passive verification, where the burden on users is limited, will take the lead in the future, with biometric face ID the most obvious solution."

SHIFTING TO POSSESSION

The growth of facial recognition tech reflects the shift towards more "possession-based" identity verification from "knowledge-based" forms, most notably passwords.

As outlined in chapter I, the EU's revised Payment Services Directive, or PSD2, includes a requirement for "strong customer authentication" in financial services. Authentication must include two of three elements: something the customer knows (for example a password or PIN); something they possess (for example, their smartphone); and something the customer is (such as a fingerprint or face recognition).

Yet despite the rise of this form of ID checking, "the majority of our digital apps and services are still ultimately underpinned by passwords, meaning they remain vulnerable to phishing and data compromises," says Andrew Shikiar, executive director & CMO at FIDO Alliance, an industry group dedicated to developing and promoting authentication standards (and eliminating passwords). Shikiar adds that legacy forms of ID checks, such as SMS one-time passwords, can increasingly be bypassed by fraudsters.

"Businesses are seeing the need to implement possession-based approaches, as relying on knowledge-based factors is rife for fraud," he says. "Much of the innovation in this space has come from startups — and we've seen the investment community aggressively fund ID verification companies such as Jumio, iProov, IDNow, Onfido and many more."

Over the coming decade, Shikiar expects to see a shift towards "delegated authentication", in which, for example, merchants are able to verify the customer's credentials directly, or via the payment wallet the customer is using, without recourse to issuer verification. This removes friction for the customer, while preserving security for the merchant.

CRYPTO PRESSURE

The pressure for stronger authentication is creating particular tensions in the crypto industry, which has long capitalised on the anonymity, privacy and freedom from regulation it affords.

Yet there is growing regulatory pressure for better KYC and AML practices — including disclosure of customer data — from national authorities and bodies such as the intergovernmental Financial Action Taskforce. Research in 2019 by CipherTrace, a cryptocurrency and blockchain intelligence company, suggested that two thirds of the top 120 cryptocurrency exchanges had weak KYC, leaving them vulnerable to money laundering, use by terrorists, theft and scams.

"To grow into a truly mainstream form of currency there must be a compromise that sees cryptocurrency exchanges adopt effective ID verification processes," says Laing. "This is the only way for crypto to break through and have a long-term future. Using tools like biometrics and eIDV will help achieve this objective, and prevent funds landing into the accounts of cybercriminals and terrorists."

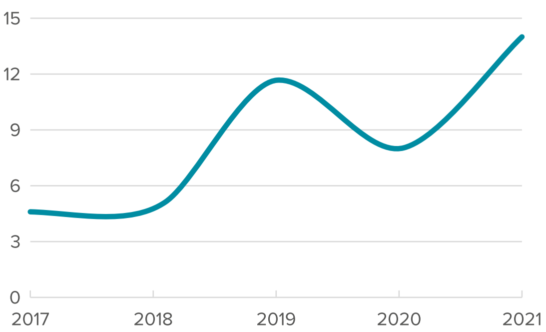
Modern authentication methods could also bring benefits to crypto users, says Shikiar, noting the rise in stories of investors forgetting or losing passwords and thus losing access to millions of dollars' worth of crypto assets in wallets. Knowledge-based methods may not be fit for purpose for access to crypto wallets, leaving the way open for the development of other forms of authentication.

"While a lot of regulation around these digital assets is still being worked out, startups are playing an invaluable role in getting crypto companies ahead of the curve,"

Cryptocurrency-based crime hit a new all-time high in 2021

Cryptocurrency value received by illicit addresses ($bn)

Source: *Chainalysis*



Identity fraud is the main type of crypto crime

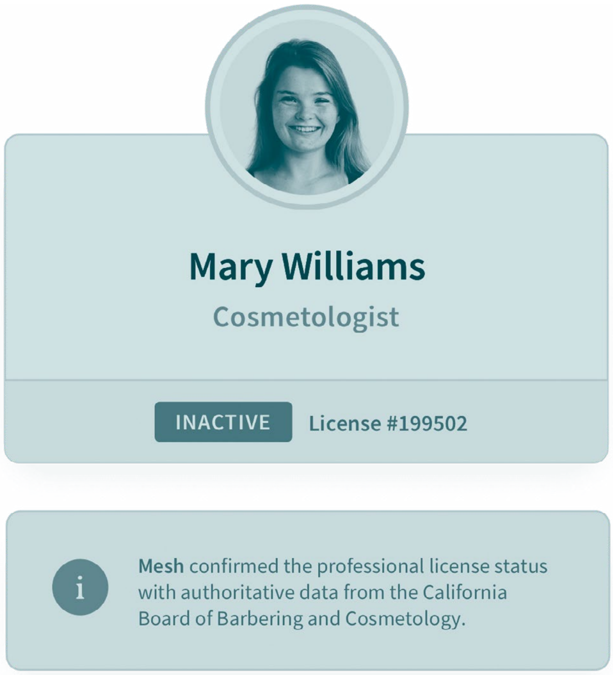
Crypto crimes by type in 2021

Source: *Veriff*

**Identity fraud is an attempt to appear as someone other than oneself* says Samani. “They help keep untrustworthy people out while making ID verification as quick, inclusive and easy as possible for legitimate users with tools like biometrics. Traditional financial institutions devote significant resources to KYC and AML compliance. Cryptocurrency exchanges should, and likely will soon be forced, to follow suit.”

NICHE PLAYERS

The acceleration of the ID verification market in Europe over the past two years has led to a shift in the adoption of modern technology in some lagging segments. Netherlands-based Mesh ID (formerly Finos), founded in 2018, placed itself in such a niche. With founders with deep roots in the fund industry, Mesh ID’s digital onboarding tools targeting the private fund ecosystem were suddenly in demand.



Mesh ID

> **“A realisation occured to all players that the pandemic was not a short term event, but rather one that would adversely affect their operations.”**

***George Pedra**, cofounder and CEO of Mesh ID*

“Prior to the pandemic, most private fund administrators didn't really care how long it took private fund investors to go through the necessary KYC process — despite the fact that those same fund investors have always found this part of their fund onboarding experience absolutely terrible,” says George Pedra, Mesh ID’s CEO and cofounder. “When the pandemic hit, a realisation occured to all players in this space that the pandemic was not a short-term event, but rather one that would adversely affect their operations.”

While some turned to unreliable and unsecure methods such as video calls, Mesh ID was able to offer solutions tailored to the market. “It was evident that startups' role was to bring the necessary solutions to our clients at lightning speed,” says Pedra.

Mesh ID uses digital identity verification techniques including biometric and document security features, but also provides additional digital checks on address verification and other points of identity evidence, with the aim of ensuring the extra level of KYC diligence that funds require.

MANNING THE DIGITAL GATES

As Pedra notes, identity fraud will continue to be a challenge for financial service providers — which with the evolution of open banking will include an increasing range of non-financial businesses. Sophisticated forms of fraud are intensifying and broadening risks, and businesses that are slow to keep pace will become easier targets.

Yet the past few years have shown that innovative startups can provide the technology to tackle fraud and support forms of identity verification that are both user-friendly and ever more secure. Fast-moving and well-funded, they will continue to be at the forefront of protecting the digital gates.

Predictions

Founder and investors sketch the future for crypto, payments and ID verification

We're all crypto people now

"In two to three years, all the main banks and established financial institutions will offer cryptocurrency trading as part of their portfolio — to both their institutional client base and to their retail clients."

***Dolf Diederichsen**, cofounder and CEO, Hyphe*

Clamping down on crypto

"I expect more regulation. There's a lot of stuff regulators will clamp down on in the crypto world. On the one hand that's good, but of course it limits innovation. We have to create a nice balance."

***Yorick Naeff**, cofounder and CEO, BUX*

Crypto will find a mass audience

"We're going to see some major social platforms and big financial institutions offer crypto products for a mass audience."

***Szymon Sypniewicz**, CEO, Ramp*

BNPL hits its limits

"At some point the surge in BNPL providers has to abate — it's not feasible to have 15 different payment providers on a single store checkout platform."

***Charles Delingpole**, founder and CEO, ComplyAdvantage*

Crypto will have to get a lot more secure

"The things that really need to happen are in the risk infrastructure in the space, like auditing, security. I think those tools need to improve in order to have applications that are going to be used by tens of millions. I think there's a lot of infrastructure work that's going to happen to enable even better applications, because it's all about ease of use."

***Ophelia Brown**, founder and partner, Blossom Capital*

Mobile wallet supremacy

"Mobile wallets will become the complete norm. They're still an outlier, but they're going to be used by everyone now that society is used to doing everything on their phones and searching for ways to be sustainable. QR codes are massive in sectors like healthtech and will continue to serve a vital purpose for now."

***Hristo Borisov**, cofounder and CEO, Payhawk*

The bad guys will keep getting savvier

"The bad guys will unfortunately continue to find ways to take advantage of firms that are not prepared. We already see impressive advances in the use of deepfakes in social media, and with time these technologies will only become better and better."

***George Pedra**, cofounder and CEO, Mesh ID*

Payments provider consolidation

"In the next five years, we will see European providers consolidate, resulting in a more unified global payments platform and therefore, faster cross-border payments."

***Nicolas Weng Kan**, CEO, Yolt*

Crypto world will grow more intuitive

"Crypto's not a mainstream asset because the underlying infrastructure doesn't give the comfort that buying an IBM stock does to people yet. That's okay. It doesn't mean there's anything wrong, this is just on the spectrum. It's going to evolve to where it's a more comfortable asset class for more broad usage."

***Rana Yared**, general partner at Balderton Capital*

Open banking eats the world

"Fintechs have latched on to open banking, but we predict that it will infiltrate non-financial services as well. In the next five to ten years, expect to see sectors like healthcare, proptech and edtech all taking advantage of this forward-thinking payment method."

***Jamie Beaumont**, founder, Playter*

Acknowledgements

Sifted would like to thank the following people for contributing their time and insights to this report:

SEBASTIAN BÄRHOLD, cofounder, IDnow
JAMIE BEAUMONT, founder and CEO, Playter
JAMES BOOTH, VP, head of partnerships EMEA, PPRO
HRISTO BORISOV, cofounder and CEO, Payhawk
OPHELIA BROWN, founder and partner, Blossom Capital
CHARLES DELINGPOLE, founder and CEO, ComplyAdvantage
ERIC DEMUTH, cofounder and co-CEO, Bitpanda
DOLF DIEDERICHSEN, cofounder and CEO, Hyphe
NICOLAS JULIA, cofounder and CEO, Sorare
NICOLAS WENG KAN, CEO, Yolt
PRZEMYSŁAW KRAL, CEO, Zonda
BARLEY LAING, UK managing director, Melissa
YORICK NAEFF, cofounder and CEO, BUX
KEVIN OHANA, cofounder and CEO, Joe
GEORGE PEDRA, cofounder and CEO, Mesh ID
ALASDAIR ROSS, director of secure payment and NFC infrastructure, NXP Semiconductors
AARTI SAMANI, SVP, product and marketing, iProov
ANDREW SHIKIAR, executive director and CMO, FIDO Alliance
SZYMON SYPNIEWICZ, cofounder and CEO, Ramp
RANA YARED, general partner, Balderton Capital

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